

JULY / AUGUST 2022

INDIGENOUS SOLUTIONS

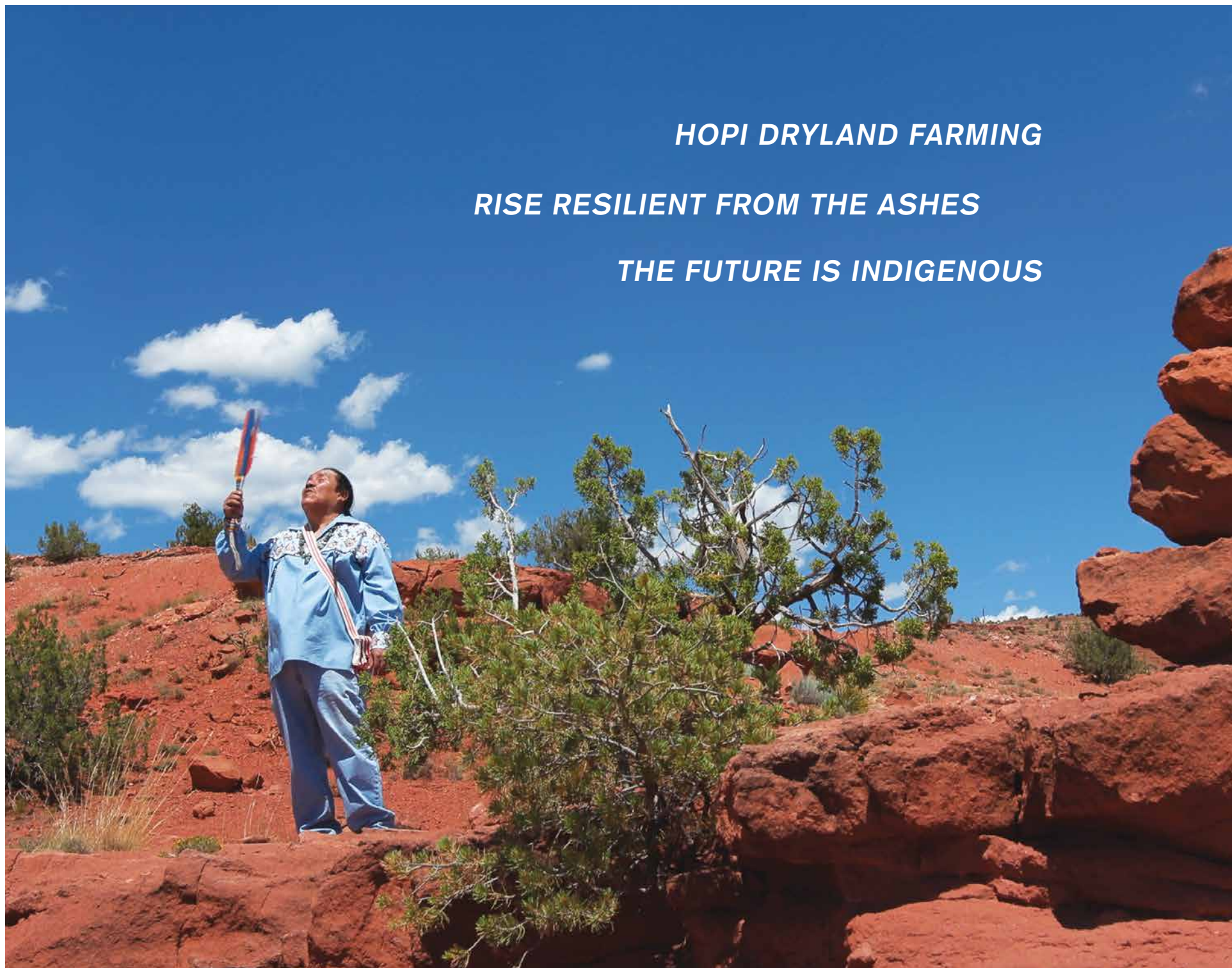
# GREEN FIRE TIMES

*News & Views from the Sustainable Southwest*

**HOPI DRYLAND FARMING**

**RISE RESILIENT FROM THE ASHES**

**THE FUTURE IS INDIGENOUS**



**REBUILDING WILDFIRE-RAVAGED NEW MEXICO**

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**PUBLISHER** GREEN EARTH PUBLISHING, LLC

**EDITOR-IN-CHIEF** SETH ROFFMAN  
EDITOR@GREENFIRETIMES.COM

**GUEST ASSOCIATE EDITOR** ROGER FRAGUA

**ADMINISTRATIVE ASSISTANT  
/ EXECUTIVE CONSULTANT**  
THÉRÈSE WILLIAMS

**DESIGN** WITCREATIVE

**COPY EDITOR** STEPHEN KLINGER

**CONTRIBUTING WRITERS** MALIN ALEGRIA, MIKAHLA BEUTLER, MILES D. CONWAY, SARAH DIEFENDORF, ROGER FRAGUA, SHAWN GRISWOLD, HANNAH GROVER, SHARON HAUSAM, ATHERTON PHLEGER, KELSEY JENSEN, MICHAEL KATUTWA JOHNSON, RYAN MAST, KATHERINE MORTIMER, CYNTHIA NAHA, MARIE RODRÍGUEZ, SETH ROFFMAN, CHASITY SALVADOR, JOSEPH BROPHY TOLDEO, RACHEL WOOD

**CONTRIBUTING PHOTOGRAPHERS** JOHN ACOSTA, CLAYTON BRASCOUPE, VLADIMIR CHALOUPKA, ROGER FRAGUA, MARIE RODRÍGUEZ, GAIL RUSSELL, KELSEY JENSEN, MICHAEL KATUTWA JOHNSON, SETH ROFFMAN, LAUREN VALDEZ, KRISTY WOLF, RACHEL WOOD

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**COVER:** BROPHY TOLEDO ON PUEBLO OF JEMEZ LAND (SEE PAGE 6)  
PHOTO BY VLADIMIR CHALOUPKA

## GREEN FIRE TIMES REALLY NEEDS YOUR SUPPORT

*Green Fire Times* is 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. GFT's small, dedicated staff and multitude of contributors generate articles documenting the interrelationship of community, culture, the environment and the regional economy. The sustainability of our region affects all of us, and requires people from all backgrounds working together to create solutions. One of the unique aspects of GFT is that it provides multicultural perspectives that link green, cutting-edge innovations with time-honored traditions.

Storytelling is at the heart of community health. We have an opportunity to change the story going forward, which can lead to positive transformational change. GFT shares inspiring stories of hope and community action. By helping our communities discover who they once were and what they can become, a more positive future can be created.

Of course, it is an extremely challenging time to continue to produce a free, quality, independent publication. Production costs have greatly increased. Many local and regional publications have folded or have been bought up by corporate entities. Fortunately, a growing number of publications are receiving boosts from nonprofits that are devoted to protecting journalism. GFT is owned by Southwest Learning Centers, Inc. (est. 1973), a nonprofit educational organization. SWLC provides a mentorship program for some of GFT's writers, aspiring journalists and documentarians.

*Green Fire Times* is struggling to survive. We also need funding to upgrade our online archive and make 13 years of articles more accessible to community members, students and researchers. Don't assume that someone else will help. Please consider making a tax-deductible donation through our website, or send a check made out to Southwest Learning Centers (with a notation 'for GFT') to P.O. Box 8627, Santa Fe, N.M. 87504-8627. Also, please advertise! The print edition—currently published every other month, while our website is updated more frequently—is widely distributed from Albuquerque to Taos and beyond. For a rate sheet, visit [GREENFIRETIMES.COM](http://GREENFIRETIMES.COM).

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## CONTENTS

**RESPONDING TO THE WORLD'S CHALLENGES WITH INDIGENOUS ECOLOGICAL KNOWLEDGE – ROGER FRAGUA / 3**

**OP-ED: ROGER FRAGUA AND RYAN MAST – CLIMATE RISKS AND FAILED POLICIES CHANGE THE NATURE OF THE NATIVE RELATIONSHIP WITH WILDFIRES / 4**

**AN INDIGENOUS PERSPECTIVE ON FIRE – JOSEPH BROPHY TOLEDO / 6**

**BIOCHAR PROJECTS MAY BE ESTABLISHED IN NEW MEXICO / 7**

**TERRY CONLEY OF WALATOYA TIMBER INDUSTRIES / 7**

**ACEQUIAS MOBILIZE TO RESPOND TO WILDFIRES – SETH ROFFMAN / 8**

**RESOURCES THAT CAN HELP ADDRESS WILDFIRE IMPACTS / 9**

**LONG-HAUL COVID: ONGOING IMPACTS IN INDIGENOUS COMMUNITIES – CHASITY SALVADOR / 11**

**INDIGENOUS GROUPS RESPOND TO COMMUNITIES' NEEDS / 11**

**PHOENIXES DON'T JUST RISE FROM ASHES BY THEMSELVES – RACHEL WOOD, MARIE RODRÍGUEZ, MILES D. CONWAY, MIKAHLA BEUTLER / 12**

**CHASING THE ELUSIVE: EXPLORATIONS IN ACHIEVING SUSTAINABILITY – HOW NEW MEXICAN COMMUNITIES DAMAGED BY WILDFIRE CAN BUILD BACK STRONGER – KATHERINE MORTIMER / 15**

**THE SOUTHWEST CLIMATE ADAPTATION MENU – CYNTHIA NAHA, SHARON HAUSAM, ATHERTON PHLEGER, SARAH DIEFENDORF / 17**

**THE PUEBLO ACTION ALLIANCE / 19**

**INDIGENOUS CONSERVATION PRACTICES IN HOPI DRYLAND FARMING – MICHAEL KATUTWA JOHNSON / 24**

**DINÉ NATIVE PLANTS PROGRAM – KELSEY JENSEN / 28**

**REKINDLING TRADITIONAL RELATIONSHIPS FOR A SUSTAINABLE FUTURE – MALIN ALEGRIA / 29**

**BOOK PROFILES: BECOMING HOPI; AN INDIGENOUS PEOPLES' HISTORY OF THE U.S.; DEB HAALAND: FIRST NATIVE AMERICAN CABINET SECRETARY; FRESH BANANA LEAVES: HEALING INDIGENOUS LANDSCAPES THROUGH INDIGENOUS SCIENCE; WRITING TO HEAL / 27, 30, 31**

**NEW MEXICO'S EDUCATION REFORM PLAN PRESENTED TO TRIBAL LEADERS – SHAWN GRISWOLD**

**NEWSBITES / 10, 18, 21, 22, 23, 27, 33, 34, 35**

**WHAT'S GOING ON / 36**

## RESPONDING TO THE WORLD'S CHALLENGES WITH INDIGENOUS ECOLOGICAL KNOWLEDGE

BY **ROGER FRAGUA**

As a wise friend, Leslie Elgood, recently advised me, “Looking from a distance offers an opportunity for a new perspective.” I submit the following from Vancouver Canada, where I have been visiting with First Nations leadership, Indigenous-led companies, and meeting with Native youth. Since I left with the largest wildfires in New Mexico’s history in my rearview mirror, they have continued to haunt me as I spend time in green and lush, water-filled environments. But even Canada, with its melting glaciers and unseasonable weather, cannot escape impacts of the climate crisis. And so, there are many opportunities for Indigenous ecological knowledge to be folded into conversations.

*If any entity has proven to be sustainable, it certainly is the tribal communities.*

and we recognize that there are significant opportunities for us to contribute to solving problems beyond our homelands.

Last month I followed Ryan Mast, Flower Hill Institute’s sustainable climate adviser, as he led a delegation of tribal leaders from across the U.S. to

Washington, D.C., where we met with top Biden administration officials. The mantra in all of the delegation’s communication was to encourage the administration to view tribes as a partner—as opposed to a client. We bring to the table solid strategies derived from thousands of years of adaptation, mitigation and implementation of Traditional Ecological Knowledge (TEK) that can address current environmental challenges. If any entity has proven to be sustainable, it certainly is the tribal communities.

Ryan Mast has proven to be a trusted adviser to Indian Country, providing strategic direction for working with federal programs, agencies and departments. He has a commonsense approach to communicating the urgency this time requires for implementing TEK. He has created partnerships for us with leading academic institutions such as the Global Resilience Institute in Boston.

Looking back to New Mexico from Canada, I see opportunities to recover and become more resilient. I am optimistic. I know there are huge challenges; however, I see opportunities for us all to (as our Jemez Pueblo cultural leader and adviser, Brophy Toledo, says) “be more and do more.”

*Roger Fragua (Jemez Pueblo) is director of Flower Hill Institute.*



**OP-ED: ROGER FRAGUA AND RYAN MAST**

## CLIMATE RISKS AND FAILED POLICIES CHANGE THE NATURE OF THE NATIVE RELATIONSHIP WITH WILDFIRES

The events of the past several years leave no doubt that wildfire risk is dramatically increasing across the western United States. This year, New Mexico, in particular, is suffering through a historic fire season with the two largest fires in recorded state history, each burning well over 300,000 acres. While many factors are driving the increase in wildfires across the region, Indigenous-led land management customs may offer a means of adapting to new conditions by reintroducing healthy, regenerative practices to the landscape. For thousands of years, Indigenous people of the Southwest have adjusted to changing environmental conditions. They managed the landscape to rejuvenate the ecosystem and reduce the risk of devastating wildfires. Returning management decisions to Native-led authorities is long overdue and could hold the key to addressing this current crisis.

Traditional land management practices of Indigenous peoples are grounded in environmental stewardship of Mother Earth and all her creatures. For hundreds of generations, it has also been central to cultural practice and preservation, which includes protection of sacred sites and cultivation of native and medicinal plants. In the Southwest, a variety of land management practices have been

employed by Tribal ancestors, including the use of traditional fire. Native peoples in the region used fire to clear fields and forests of overgrowth, replenish soil nutrients and create balance in the ecosystem.

Unfortunately, the loss of historic lands coupled with waning sovereignty over land use within Indian reservations has had a dramatic impact on the ability of Tribal Nations to effectively influence

*Returning management decisions to Native-led authorities could hold the key to addressing this current crisis.*

*It is time to abandon past policies that not only failed to protect us but actually heightened the risk of such disasters.*

current land management practices. This is particularly true of forest management, which is now mostly driven by state and federal agencies through laws such as the National Forest Management Act.

This collective distancing of historic lands from their traditional stewards and management practices has led to devastating impacts to forests and Tribal Nations alike. Rather than a useful management tool, fire has become a source of devastation to homes, sacred sites and wildlife. Federal agencies limit sensible resource extraction by Tribal members while allowing unsound agreements with other extractive entities.

The critical risk wildfires now pose to Native people's historic lands has been exacerbated by conditions resulting from climate change, leading to more frequent and intense events. This crisis and its impacts are also founded in unsustainable practices and leave forest lands and the creatures inhabiting them without the ability to fully recover. This puts at risk the way of life for Tribal communities, who rely on such resources for cultural and economic survival.

In a tragic illustration of these impacts, New Mexico is currently experiencing the worst wildfire season in its recorded history, with over 700,000 acres already burned in 2022. The largest of

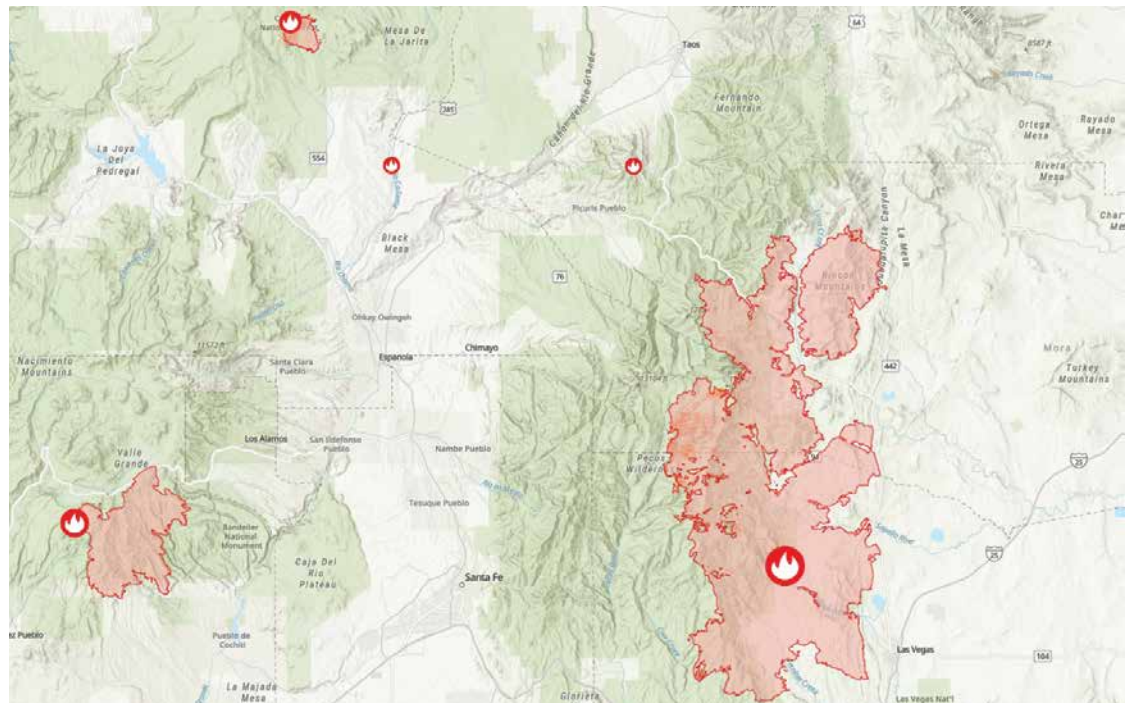
these was the result of poor practices by the very agency charged with the management of national forests. Ultimately, the affected areas include Tribal lands as well as public lands relied upon for ceremony and gathering of traditional plants.

The size and intensity of the fires experienced today are a direct result of decades of misguided policy coming to a head at a moment when the natural environment is least forgiving. These fires are no longer cleansing and regenerative; rather, they leave long-term burn scars impacting areas for years to come. The natural recovery will be slow due to the deep penetration of the fires' impacts, and in many cases they will require human intervention to mitigate further damage.

The consequences of such large and devastating wildfires in New Mexico are also significant as the fire season is quickly followed by the monsoon season. Exposed lands of the burn scars become significantly vulnerable to these seasonal rains, triggering flash flooding and debris flows. Such events lead to further degradation of the forest lands and cause irreparable damage to local homes, streams and wildlife. These compounding risks only further highlight the importance of revisiting current land management practices, especially as they relate to forest lands.

The U.S. Forest Service recently paused its prescribed fire operations and is reviewing its policy concerning this program. While this is a small but positive step in the right direction, the agency and all state and federal agencies charged with forest management should consider a much larger shift in wildfire management policy and practice. Rather than perpetuating long-standing failures, forest recovery and management policy decisions should be led by Tribal officials, who carry with them thousands of years of expertise along with a holistic understanding of this natural resource. The use of prescribed fire along with other fuel management programs can be valuable for forest health; however, they should be a part of a larger strategy that embraces traditional care of the land.

By returning to a Native-led process, practices can be employed that have protected and adapted these lands for centuries despite changing environmental conditions. This will result in regenerative outcomes for our forests as well as improved conditions for



The U.S. Wildfire Info GIS site map displays current wildfire locations.

the wildlife inhabiting these lands. Not only does this provide support and protection of the vast biodiversity of this region, it also enhances preservation of Indigenous cultures, which embodies an interconnectedness between people and the natural environment.

As these current wildfires demonstrate, the impacts of climate change are no longer future threats for which to prepare. They are occurring in real time with harrowing impacts on our communities, cultures and natural resources. It is time to abandon past policies that not only failed to protect us but actually heightened the risk of such disasters. Let's move forward with a future that recognizes and honors the strength and value of Traditional Ecological Knowledge and the sovereignty of those that hold it. Continuing on the path that led Indigenous communities to this moment will only lead to one with nothing left to protect. ■

Ryan Mast serves as climate adviser to Flower Hill Institute. He previously led sustainability offices in the cities of New Orleans and Albuquerque. Roger Fragua (Jemez Pueblo), director of Flower Hill Institute, has dedicated his career to the advancement of American Indian communities. He is nationally recognized as an expert on energy development in Indian Country. Fragua specializes in creating innovative business concepts and promoting partnerships. [HTTPS://FLOWERHILL.INSTITUTE](https://flowerhill.institute)



On May 18, a delegation of tribal leaders traveled to the White House to meet with executives from the Biden administration to discuss climate resiliency and wildfires. The delegation included Gov. Raymond Loretto, from the Pueblo of Jemez; Chairwoman Norma Contreras, from the La Jolla Band of Luiseno Indians; Vice Chairman Virgil Lewis of the Yakama Nation; Shawn Ironmaker, from Montana, coordinator of the Native American Development Corporation; and Roger Fragua, from the Pueblo of Jemez, who is director of Flower Hill Institute. They were joined by White House National Climate Adviser Gina McCarthy; climate adviser Ryan Mast; Stephen Flynn, of the Global Resilience Institute; Denice Ross, Gretchen Goldman and others from the Office of Science and Technology; and Brenda Mallory, chair of the Council on Environmental Quality.

# An Indigenous Perspective on Fire

BY JOSEPY BROPHY TOLEDO



Duane Koyawena (Hopi), *Iitab kwatsiim övah taayugnvaav, tusvkai nit kii ow tunaatyowugnvaav* (Watching from above, helping to protect the lands and their home.) 2019. Acrylic on Canvas. Collection of the Museum of Northern Arizona. This painting acknowledges the symbolic relationship between protectors of the San Francisco peaks and human helpers of the lands. Koyawena states, “It will take a unified spirit and many prayers to recover from the scorched earth on the mountains. This piece is to commemorate first responders, firefighters and hotshots who serve and protect on the ground.”

Fire is a necessity. Fire is valuable. It is a healing part of our Indigenous world. It has a lot of medicinal properties. It clears up a lot of the negativity that people have. Fire brings out a lot of things when new growth happens. We talk to fire, sing to fire, dance to fire.

*“It’s supposed to help the land, the birds, the wildlife.”*

A lot of our people depend on the forest. Our tribal people have been doing a lot of burns to stabilize the land. Not like prescribed burns; they really took their time.

They did sections at a time and kept the flames low. They knew how to not let it get out of control. They took a lot of the brush that wasn’t needed and burned it. That’s how they took care of the land.

The land is so valuable that we always took the time to do it with ceremony. You have to do your burning in the Indigenous right way. All of the mountain region is sacred. We do it for everybody; we do it for the land. When we do ceremonies with fire, we become friends with it. We tell it, “We’re here to help you.” The fires used on the land—we don’t use a match. You talk to the land and explain that you’re going to do it for a reason. It has to value our reason for

*“You have to do your burning in the Indigenous right way.”*

doing it. Everything has to connect to a balance, where we’re not there to hurt, we’re there to help. It’s supposed to help the land, the birds, the wildlife.

Today, they [the Forest Service] need to consult with the Native tribes when they do this. They need to hear us on a lot of the solutions that we’re doing. They didn’t do a government-to-government relationship. There are protocols in our pueblo. There is a right time and a wrong time. We have to get permission. They always pick the wrong time to do prescribed burns. They have messed up so many times. We need to look at the animals that roam a place in a windy time. Winter is the time to do more thinning. Looking at the land with the slope, there is a right way; you never burn up, you burn down. But make sure there is not heavy brush at the top.

Now, with climate change, with so little precipitation, the land is very dry. When everything was green, the fires were minimal. People in the mountains need to make sure that they have a fire line. We put boundaries around. You need to know your danger zones with the fires around you, the embers, and how to set comfort zones. They need to make sure there is a safe zone and have a backup plan. Those types of things need to happen with people living in the forest. They need to know how to protect the land.

How do we bring the rebirth back? You rebuild the soil with carbon. Biochar can rejuvenate the soil. But the biochar that’s left out there now is too much. It heats up too much. The rain will wash a lot of it down. We’re thinking we need to start our own nurseries. With all the trees that have died, we have to go through our own land surveys and see how much is still alive, how much is dead, and decide what we do next. The youth need to know what type of ceremonies... understand how to do things the right way. The plants, the animals know. We’re very concerned about how the animals have been disturbed. We have to speak for them. ■

*Joseph Brophy Toledo, a traditional leader and healer, has served the Pueblo of Jemez in various capacities for over four decades.*



*Brophy Toledo on Pueblo of Jemez land  
Photo by Vladimir Chaloupka*

## BIOCHAR PROJECTS MAY BE ESTABLISHED IN NEW MEXICO



Brando Crespi, co-founder of Global Biochar, Pro Natura International and One Million Forests ([HTTPS://ONEMILLIONFORESTS.ORG](https://onemillionforests.org)), recognized Traditional Ecological Knowledge (TEK) and the value of traditional people's practices around the world that utilize fire. Crespi, who has been based in Santa Fe for several years, has studied biochar since the 1980s. Biochar, an ancient Amazonian terraforming technology, has proven to have many uses and benefits, including for soil and forest

restoration. Crespi currently has an international set of companies working on large-scale biochar projects in Latin America, and he has proposed supporting tribal development through a series of pilot projects in various regions of Indian Country.

The Walatowa Woodland Initiative at Jemez Pueblo, in the wake of New Mexico's record wildfires, is one of the enterprises well-positioned to capture what is often considered waste material and turn it into a great resource. Such a unique approach would require cooperation and partnership among tribes, government and industry. New Mexico's forests could greatly benefit.

One way of defining biochar is that it is an ethical form of charcoal, because forests don't have to be cut down. In one end of a biochar pyrolysis kiln you put in biomass. It heats but doesn't burn it, and black powder comes out the other end. When compressed, it becomes green charcoal. The machines do not emit any gas. They can actually self-sufficiently produce electricity and biochar at the same time. The machines can be brought to areas of need without having to transport large amounts of biomass great distances. All kinds of matter can be utilized, even tree trunks felled by invasive insects. This technology both eliminates agricultural waste, which often would otherwise be burned, and it produces fertile charcoal. Crespi's companies work with local communities to produce biochar based on their waste, integrating biochar into climate-smart, agroecological techniques.

After years of implementation, it has been proven that just one application of biochar stimulates soil metabolism, increasing crop productivity from 50 to 200 percent, and maintains long-term fertility, while simultaneously enhancing carbon sequestration in the soil and fighting climate change. Every time a ton of biochar is used, 2.7 tons of CO<sub>2</sub> are sequestered. By multiplying crops and improving soil health, the use of biochar could greatly contribute to food security and employment in impoverished communities around the world.

## TERRY CONLEY OF WALATOYA TIMBER INDUSTRIES

Terry Conley is the mill manager and a partner of Walatoya Timber Industries at the Pueblo of Jemez. The company produces lumber products from trees harvested from forest restoration projects in the Santa Fe National Forest, the Valles Caldera National Preserve and Jemez Tribal lands. He said, "we make beams, vigas, utility poles; we're making pellets [for wood stoves] from something that you can't make another product out of. I've been doing this all my life—logging and timber sales. I've worked with The Nature Conservancy and environmental groups. We've probably thinned 35,000 or 45,000 acres."

"I'm excited that they're going to put a biochar test in," he said. "We don't have pulp mills like other parts of the country. Burning 'trash' is the way you make biochar. You can do a lot of acres with those pyrolysis machines. You can add biochar to plastics, to cement. It brings the carbon emissions down enormously. You're sequestering carbon and you can make electricity from the heat. That could be the future."

"Usually, [after big wildfires] the Forest Service won't let us harvest anything except the hazard trees that could fall across the road. Wildlife people don't want to take down the dead standing wood. Burn trees start rotting from the top. Those trees have a merchandisable shelf-life of about two years.



© Seth Roffman

"The Santa Fe National Forest supervisor's office said they will try to let us cut some of the trees 14 to 24 inches in diameter that would go to waste. This is going to be a barren hillside with a bunch of oak brush on it in 10 years. How long is it going to take the wildlife to come back?"

"We've got a hydrologist we work with so we can move forward on thinning. We've got an archaeologist and wildlife guys. When you harvest burned areas, you make some ruts in the soil, and that helps keep water from running off. Scattering limbs over the hillside acts as erosion control. The trees that aren't good, you can run over them, and they hold the water back a bit. The grasses come back if you disturb the soil a bit. Now, we're doing mastication. That's the other thing that can be done for a lot of the small stuff. The forest would benefit."

# ACEQUIAS MOBILIZE TO RESPOND TO WILDFIRES

BY SETH ROFFMAN

In recent months, thousands of New Mexico families have been impacted by catastrophic wildfires such as the McBride, Cerro Pelado, Cook's Peak, Hermit's Peak/Calf Canyon, Midnight and Black. Immediate concerns have included safety, survival and displacement, as well as long-term worries about watersheds, forests, fields and homes. After a wildfire impacts an area, the soil becomes water-repellent and any rainfall can quickly turn to runoff. This can quickly lead to debris flows of ash, soot and burned timber.

Writing from firsthand experience about fires that have impacted land-based rural communities, New Mexico Acequia Association (NMAA) Executive Director Paula García said, "We will forever measure our lives as 'before the fire' and 'after the fire.' García described immeasurable impacts to beloved landscapes of Mora and San Miguel counties. "The people are devastated. We lost more than a beautiful landscape. We lost a place that will live only in our memories, we lost a way of life."

"Who bears the blame?" García wrote. "Is it the U.S. Forest Service bureaucrat who decided it was a good day to burn? Is it over a hundred years of federal management of our former common lands (stolen through Manifest Destiny) that resulted in a tinder box? Is it the lack of political will to put the brakes on climate change?" It is certainly not the fault of local people who lost logging livelihoods due to restrictions on access to the forests. It is not the fault of wood gatherers who could have helped harvest and thin our forests."

The NMAA and acequia leaders from the affected communities have tirelessly responded to the fires' impacts by engaging with county officials, the U.S. Forest Service (USFS), National Resources Conservation Service (NRCS), the Soil and Water Conservation Districts (SWCD), and the USFS Burned Area Emergency Response (BAER) team. They have deployed a GIS team to complete mapping of acequias to ensure that they are well documented as part of ongoing planning and mitigation efforts.

*"We will forever measure our lives as 'before the fire' and 'after the fire.'" —Paula García*

The NMAA's work is grounded in the values embodied in *querencia*, love of place and community. NMAA's team is network-

ing with partners to leverage resources by building relationships of mutual aid and collaboration. With much input from the impacted communities, the NMAA is building an equitable and resilient vision of post-wildfire programs and projects that can heal lands, families and communities. Mindful that recovery and healing from such a large-scale disaster will take years, the organization is seeking long-term commitments to reimagine and rebuild generational farms and ranches.

The NMAA can provide contacts for financial assistance and connect people with resources such as the Farm Service Administration's Emergency Conservation Program (ECP), which assists landowners with fire and flood-related damage. The NMAA can also consult on conservation practices that mitigate fire and flood impacts. A resilient post-fire landscape will require instituting widespread soil health practices. The goal is to adapt and

restore acequia agriculture through watershed restoration, water management and governance for long-term sustainability.

In June, the NMAA was seeking a disaster and recovery coordinator to provide updates to the organization's staff, conduct site visits to affected areas, and serve as a liaison among the agencies and organizations working on the recovery. The coordinator will also work with NMAA staff to provide documentation of existing acequia irrigation infrastructure and direct technical assistance to acequias, *parviantes* (water rights holders) and landowners. ■



Top: Santa Fe County Fire Department crews working as part of a mobile retardant base task force on the Hermit's Peak/Calf Canyon Fire were able to keep up with the helicopter demand of more than 20,000 gallons per hour. Below: Monte Aplanado acequia flows through burned area. Below: Santiago Creek in Monte Aplanado following Hermit's Peak/Calf Canyon fire in Mora County. Photo by Kristy Wolf



Paula García



## RESOURCES THAT CAN HELP ADDRESS WILDFIRE IMPACTS

### After Wildfire: A Guide for New Mexico Communities

This guide was created to help communities organize and respond to wildfires and subsequent flooding. It contains safety and flood information, state and federal agency resources and contacts for assistance, ways to mobilize your community, financial and funding tips for communities and families. It is intended to provide useful guidance through a difficult time and to start you and your community on the road to recovery. If you read it before a wildfire occurs, it can be used to plan ahead. [HTTPS://AFTERWILDFIRENM.ORG](https://afterwildfirenm.org).

### FEMA Assistance

Those affected by the wildfires, either by loss or damage to property or by displacement/evacuation, can apply to FEMA for assistance through August 4. Call the Helpline 800-621-3362 or visit [DISASTERASSISTANCE.GOV](https://disasterassistance.gov). Those who are potentially impacted by post-fire flooding can apply for flood insurance, which would go into effect 30 days after purchasing a policy. For more information about how to buy insurance, go to the FEMA flood insurance page.

### USDA Assistance for Farmers and Ranchers

The Farm Service Agency (FSA) has disaster relief programs that are longer term, which don't address the immediate emergency but are available to offset costs in restoring agricultural operations. Interested growers can familiarize themselves with the various programs. [HTTPS://WWW.FARMERS.GOV/PROTECTION-RECOVERY/WILDFIRE](https://www.farmers.gov/protection-recovery/wildfire).

### Links to Additional Resources:

New Mexico State Wildfire Resources (English)  
 New Mexico State Wildfire Resources (Spanish)  
 Fire Adapted NM Learning Network:  
[HTTPS://FACNM.ORG/NEWS/](https://facnm.org/news/)



## AFTER WILDFIRE

A GUIDE FOR NEW MEXICO COMMUNITIES



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## WORSENING WILDFIRES POSE PROFOUND RISKS TO WATER RESOURCES ACROSS THE WEST

More frequent and severe wildfires across the Western United States threaten the quality and availability of water for millions of people—a risk that is underappreciated by policymakers, according to a new report by the Union of Concerned Scientists (UCS).

Local, state and federal actions can help minimize the impacts of wildfires on the West's already limited water resources by reducing heat-trapping emissions, actively managing forests, and investing in climate-resilient water infrastructure, according to the analysis of scientific research and evidence from wildfire-prone regions around the world.

While large, severe wildfires visibly harm air quality, infrastructure and landscapes, they also damage the ecosystems of watersheds by killing vegetation and altering the soil. This can result in a series of “cascading disasters,” according to the report, which includes flooding, landslides and debris flows during heavy rainfalls following a burn, as well as changes in the amount of water in groundwater reservoirs relied on for drinking water and agriculture.

“As people continue to move into and build communities in forested areas, the burning of cars, homes and other infrastructure during wildfires releases toxic compounds that can contaminate water supplies,” write UCS Fellow Carly Phillips and Kristina Dahl, principal climate scientist for the UCS Climate and Energy Program. “Across the U.S., public drinking water systems downstream of large wildfires have experienced high concentrations of compounds such as nitrates and arsenic, which, in some cases, have risen above levels considered safe by the Safe Drinking Water Act.”

The report notes that large, severe fires are projected to continue due to human-caused climate change unless there is a rapid reduction in heat-trapping emissions. In the meantime, it recommends actions to reduce wildfire severity and protect water supplies by removing excess vegetation in forests through thinning and controlled burns, timber removal and replanting after fires to reduce erosion and decrease runoff, and burying power lines if done as part of a holistic approach that addresses forest conditions, climate change and grid resilience. On a local level, the report suggests adaptation measures to strengthen the resilience of water infrastructure that include diversifying water sources and investing in flexible treatment capacity and water-quality monitoring.

“We must make these changes in the Western United States to prepare our water systems for a changing climate and its projected impacts, particularly where wildfires in recent years have underscored the vulnerability of our forests and water supplies,” the authors write. “If we do not limit human-caused climate change and adapt to escalating wildfire incidence and severity, water supplies across the West will continue to be at increasing risk.”

## SENATORS PUSH FOR MORE FUNDING FOR WILDFIRE SMOKE MONITORING

BY HANNAH GROVER, NEW MEXICO POLITICAL REPORT

The Western United States region has experienced some of the largest fires in recorded history in recent years, and the smoke from those blazes has impacted human health and the environment. Politicians from several of the states impacted by the fires are pushing for increased funding for the U.S. Environmental Protection Agency to monitor wildfire smoke.

Sen. Ben Ray Luján, D-NM, joined five other Democratic senators representing California and Arizona in urging the Appropriations Subcommittee on Interior, Environment and Related Agencies to increase the funding by \$20 million to allow for a more equitable deployment of monitoring equipment.

These senators sent a letter to the committee's leaders. “The President's Budget requests \$12.7 million for the EPA to improve communications related to wildfires and air quality and to expand local smoke monitoring capacity. However, as we continue to experience historic fire activity and resulting wildfire smoke across the Western United States, we must ensure equitable monitoring for all communities. Therefore, we urge you to provide \$20 million for this important work, and we ask that you include report language to increase equity and ensure that new monitors are placed in new areas that do not currently have adequate monitoring capabilities,” the letter states.

The Black Fire, which is the second largest in state history, has, at times, led to hazardous air quality in the southwestern region of the state near the Gila National Forest. Meanwhile, the Hermit's Peak/Calf Canyon Fire is the largest wildfire in state history, having charred more than 341,000 acres by late June. At that time, the AirNow map showed areas like Datil, which has been impacted by the Black Fire, having air that is unhealthy for all people, and Peñasco, which has been impacted by the Hermit's Peak/Calf Canyon Fire, with air quality that is unhealthy for sensitive groups. Other fires have included the Foster Fire near Rodeo, the Bear Trap Fire in Socorro County and the Cerro Pelado Fire in northern New Mexico.

Smoke from wildfires has been linked to pronounced increases in nitrogen emissions and also leads to increased particulate matter in the air. It is also linked to increased ozone levels. These impacts on air quality can lead to respiratory problems. The impacts can be more severe for some communities. For example, low-income communities with less health insurance coverage can be more severely impacted by the wildfire smoke because they have less ability to receive the medical care needed in response to exposure.

“As wildfires become increasingly frequent and destructive, smoke will become an ever more present reality in our communities as well as those across the country,” the senators wrote in the conclusion of their letter. “It is critical that we be proactive in ensuring that our monitoring systems are well equipped to equitably protect public health from the hazardous effects of wildfire smoke.”

A fire and smoke map is available for the public to view at [AIRNOW.GOV](https://airnow.gov).

# LONG-HAUL COVID ONGOING IMPACTS ON INDIGENOUS COMMUNITIES

BY CHASITY SALVADOR

Since the onset of the global pandemic that began flourishing in March 2020, COVID-19 has become the third-leading cause of death among Americans—falling just behind heart disease and cancer. But perhaps more striking is how the increasing and ongoing health disparities experienced by Indigenous communities, even now, two years into this new reality, continue to be overlooked.

Indigenous communities across New Mexico have been doing tremendous work to prevent the wide spread of COVID-19, and have protected those most vulnerable in our communities. In the early stages of the pandemic, data was collected on how many people in each pueblo contracted the virus, how many recovered and how many died.

However, to date, not much data has been collected that helps us understand how many Indigenous community members suffer from the lingering symptoms and health complications weeks, months and even years after an acute infection. Long-haul COVID is a medical condition caused by contracting the virus and never making a full recovery, or making a full recovery, then unexpectedly experiencing symptoms. Individuals with long-haul COVID report feeling continuous, debilitating fatigue, breathing difficulties, brain fog, digestive issues, tinnitus, chest pain, heart palpitations and racing heart rates unrelated to anxiety, weeks after their initial infection.

Those with long-haul COVID, chronic illnesses and disabilities have been massively impacted. As Indigenous communities, we need to continue to provide support, care and protection for those most vulnerable—immunocompromised,

disabled, elderly, women and children and, really, every community member. Long-haul COVID is teaching us that it can impact even those most healthy.

Long-COVID has devastated individuals as they struggle to access health care and receive a diagnosis. Some patients have been bed-bound and house-bound for months, and some are not able to work for months or years. Enduring symptoms not only impact the health of our communities, but also our healthcare system. We need to learn how to continue to care for each other in this global pandemic.

Preventing community-wide spread should remain one of our priorities. Masking, updating indoor air ventilation and filtration, testing, reporting and avoiding mass gatherings that lack safety measures brings a measure of justice to those who have passed on due to COVID. As Pueblo and Indigenous communities, we need to stay up to date on COVID realities and data, and remain committed to doing all we can, just as we must remain committed to ending violence against our communities, particularly our Native women.

For more information, follow and contact the following organizations on social media: Body Politic, Long COVID SOS, Long COVID Physio, and The Centers for Disease Control and Prevention. Research the following topics: Long COVID in the United States, Post-COVID, COVID Long Haulers, etc. Also, reach out to your local health care team and connect with others who may be experiencing similar symptoms and health complications. ■



*Chasity Salvador is a community partner with the Coalition to Stop Violence Against Native Women and Tewa Women United. She is a Long-COVID survivor, a poet, birthworker, seedkeeper and farmer from the Pueblo of Acoma.*

## INDIGENOUS GROUPS RESPOND TO COMMUNITIES' NEEDS

In the wake of the New Mexico wildfires, thousands of people have been displaced, and many have lost their homes and livelihoods. In combination with another surge of COVID-19, evacuees have been faced with challenges such as finding temporary housing, getting access to food and personal healthcare products, loss of income, and emotional stress. They have also had to contend with the health impacts of pervasive smoke, which is particularly harmful to immunocompromised people, elders and young children.

A coalition of Indigenous organizations stepped up in the midst of the fires to respond to the impacted communities' needs. In May, Tewa Women United (TWU) received a shipment of 900 N95 masks, 10 air purifiers and 45 personal care kits from Direct Relief. The supplies were distributed to Native and other land-based families in San Miguel, Mora, Colfax, Taos and Santa Fe counties. In May and June,



*Left: Kathy Sanchez (Pueblo of San Ildefonso) and Tewa Women United volunteers at a DIY air filter workshop at the TWU office in Española. Photos by Lauren Valdez*

TWU hosted several workshops at its Española office for elders and youth from Santa Clara, Ohkay Owingeh and Taos pueblos to learn how to make air filters. The Coalition to Stop Violence Against Native Women, Three Sisters Collective and Pueblo Action Alliance also distributed N95 masks and Corsi-Rosenthal box kits to Native communities.

# Phoenixes Don't Just Rise from Ashes by Themselves

*All Hands on Deck for San Miguel and Mora County*

BY RACHEL WOOD, MARIE RODRÍGUEZ,  
MILES D. CONWAY AND MIKAHLA BEUTLER

At this moment, as families and communities reel from the trauma and devastation wrought by the Hermit's Peak/Calf Canyon fires, decisive and bold moves can be made to set the table for true healing and a chance to rebuild in a meaningful way. While community input is essential, the opportunity for healing calls for red tape to be cut and long-winded consensus-building processes among stakeholders and groups to be minimized if fire-impacted communities are to begin the process in a timely fashion.

What are the realities of post-fire response and what are the opportunities now? This article explores the merits of one possibility—reclaiming trees from the fire and using them to rebuild as an integral piece of the communities' healing process.

On one hand, the current crisis offers an opportunity to revamp decades-old policies that prevent communities from entering forests and collecting firewood or harvesting useful timber. Hotter, drier forests make the prospect of managing forests through controlled burns an increasingly dangerous gamble. The old ways, where industrious New Mexicans were permitted to enter the forests and harvest forest resources can be revisited and improved in a manner that abides with what we know fosters healthier, fire-resilient forests.

*Reclaiming trees from the fire and using them to rebuild can be an integral piece of the communities' healing process.*

More than 360,000 acres of standing-dead trees is a reason to mourn. But those trees' sacrifice need not be wasted. With some will, creativity and community buy-in, burned trees can be harvested and processed locally into vigas, latillas and other milled lumber to be used by the community for rebuilding and recovery. To be sure, most burned trees need to remain in the forest, providing nutrients for long-term recovery as they eventually break down and compost the forest floor, but countless trees must be removed for safety reasons.

Already we are seeing elected officials moving quickly, making firewood available to the community. This moment calls for even bolder steps. The Forest Service will move quickly to implement a Burned Area Emergency Response (BAER). Boiled down, the BAER will hire a contractor to remove all of the burned "Hazard Trees" (dead or badly damaged within a certain distance of roadways), and truckloads will be sold at auction. With so much federal money made available and a commitment from the U.S. government to rebuild communities, it is within the realm of possibility that *all* usable wood that is necessary to remove from the forests could be made available as usable lumber to fire-impacted families.

## OUR OPPORTUNITY: PHASE 1

New Mexico lumber mills stand ready. Mammoth Mill in Eagle's Nest, a sustainable forestry-products business, is already offering discounts and free forestry products to those impacted. If we are imaginative, nimble and committed, mills like Mammoth and other local operations are capable of

processing trees from the fire and making them available to the communities for rebuilding projects. Add some homegrown New Mexico adobe organizations, and we have key elements necessary to rebuild structures with traditional materials that might equal the magnitude and beauty of what has been lost. Also, this approach seeds a process that empowers the people and begins to move us through this burn event. Our elected officials need to know that people impacted by fires in San Miguel and Mora counties need bold, decisive action and the chance to rebuild with New Mexico forestry products.

There are numerous phases to follow, including who is doing the building, how it gets paid for, and how building codes may be flexed and made more accessible, allowing for greater efficiency and the ability to incorporate newly available vigas, lumber and adobe resources.

Whether at the scale of the individual or a community, recovery following a wildfire or other disaster is a process. The United Nations recognized the complexity of recovery following a disaster in its 2017 definition of recovery:

*"The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and 'build back better,' to avoid or reduce future disaster risk."*

FEMA (Federal Emergency Management Agency) and SAMHSA (Substance Abuse and Mental Health Services Administration) developed a model that identifies phases of recovery which appear common to most communities following a wildfire or other disaster (Figure 1.)

## Emotional Phases of Disaster Response



Figure 1 – Visual interpretation of the emotional phases of a community recovering from a disaster. <https://www.samhsa.gov/dtac/recovering-disasters/phases-disaster>.

What stands out is how quickly the emotional highs experienced by people when



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Jason K. Brown (Penobscot) & Donna Decontie Brown (Penobscot/Algonquin), *Armored Beauty*, 2017, photography by Decontie & Brown.

*Collaboration is key to creating better outcomes that satisfy diverse points of view.*

they pull together to face a disaster give way to deep emotional lows as reality sets in and a myriad of stepping stones for a long recovery begins to emerge. In the case of the fire, cascading losses may come as monsoon rains lead to dangerous flooding and debris flows.

*The old ways can be revisited and improved in a manner that abides with what we know fosters healthier, fire-resilient forests.*

recovery.

There is an immediate effort to address trauma with important Band-Aids to “stop the bleeding,” like a FEMA trailer or a check from the government, but this will not heal deeper wounds of disenfranchisement of people from their homes and livelihoods.

Home is both a literal structure and an emotional experience. Both are built from the stories we make of it—a tree we planted here, a board we measured growing children against there, a pile of rocks where we buried Good Dog. Part of healthy recovery involves how we incorporate trauma—in this case, the fire—into the story of home.

Perhaps weaving the recovery of our forests into the rebuilding of our homes and businesses allows us to accomplish this.

Those affected by the Hermit’s Peak/Calf Canyon fire must navigate emotional currents as they struggle through devastating losses. You cannot anticipate cascading trauma, but you can mitigate the impacts by setting in motion community conversations that develop clear pathways toward economic, emotional and environmental



*Scorched dead trees*

There are many local, state and federal agencies involved in the immediate post-fire recovery. They have various roles such as providing for public safety, emergency stabilization of the burned area, providing emergency food and shelter to individuals and communities and providing guidance and assistance to communities and individuals for rebuilding. In New Mexico, easy-to-understand information on these agencies and their roles and responsibilities can be found at [www.afterwildfirenm.org](http://www.afterwildfirenm.org).

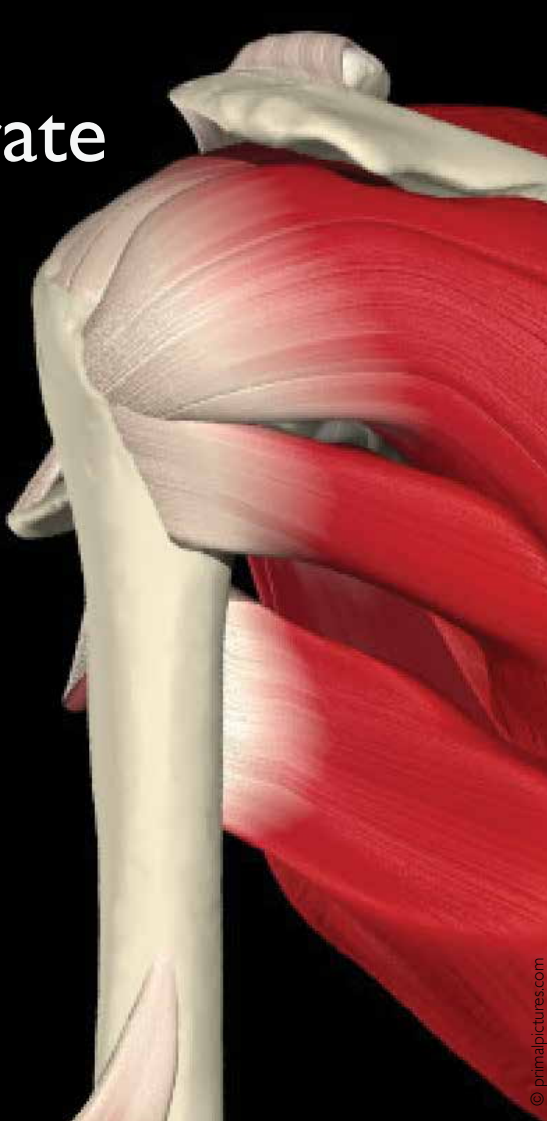
Additional resources in the areas of mental health, medical care and rental assistance, etc., are available at [WWW.SHARENM.ORG](http://WWW.SHARENM.ORG).

While the fragile soil within the burned area cannot always tolerate the impacts of salvage logging, well-planned tree harvesting can be an important tool in stabilizing and restoring burned forests. In addition, the removal of hazard trees along roads, neighborhoods and forest recreation areas is a critical post-fire public safety measure. Incorporating fire-harvested trees into adobe, log or other home construction methods could help people move from despair to healing.

Territorial and pueblo architecture and adobe construction unique to northern New Mexico are typically fire-resistant and energy-efficient. These are homes that commemorate what we’ve lost while looking to a sustainable and resilient future.

As the forest provides the community with materials to rebuild, we can also provide for the forest through projects that stabilize soil, clean waterways and plant trees. This holistic approach to community and forest recovery would require an unusual level of collaboration by all parties. The response to the Hermit’s Peak/Calf Canyon fire has the potential to serve as a pilot for future efforts that could replace the disillusion that typically follows the “honeymoon” phase of recovery with collaborative reconstruction.

*Runoff from heavy rain, days after a wildfire*



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*Territorial, pueblo architecture and adobe construction unique to northern New Mexico are typically fire-resistant and energy-efficient.*

## RESOURCES

Utilizing local materials, whether wood for vigas, beams, lumber, or earth, and organic materials for adobe bricks, keeps dollars in our communities, reduces fossil fuel consumption, supports local businesses and jobs and builds capability and capacity for New Mexicans.

It is important to support and see as allies our New Mexico forest and land management consultants, arborists, forest products industries, nonprofits, builders and architects. They are able to provide vision, know-how, machinery, expertise, innovative ideas and direct assistance to those affected by the wildfires.

Arborists and consultants can provide damage assessments to describe which trees to leave and which to remove, based on whether they are expected to live, and they can provide rehabilitation plans. Vigas, beams, lumber, chips, erosion control wattles and mulch for rebuilding and erosion control are available for purchase from several mills near the burned area.

Building codes can be adjusted and made more accessible to small-scale owner-builders. Information booklets on building and grading lumber, written to increase know-how and empower people can be distributed.

In 1736, Ben Franklin coined the famous phrase “an ounce of prevention is worth a pound of cure” to remind Philadelphia citizens to be vigilant about fire awareness and prevention. This sentiment is true for our forestlands today. While nothing can stop a fast-moving, wind-driven wildfire during extreme drought conditions, forest restoration and hazardous-fuels reduction projects, especially in populated regions, decrease the amount of fuels in the forest and the intensity of fires.

*Burned and unburned sections of forest*



*Milled lumber*

Forest restoration and hazardous fuels reduction treatments mimic natural historic fire processes that occurred frequently due to lightning strikes that started fires during the monsoon season. Fires were known to have been frequent in Ponderosa pine forests, and tended to stay on the ground, clearing out dead needles, branches and small trees in the forest understory, reducing the risk of high-intensity wildfires.

In addition, when done properly, thinning treatments can protect biodiversity and improve forest health by creating more space between the trees, making nutrients, water and light more available for the remaining trees. During thinning, ideally, the healthiest trees are left to grow and some others are removed, increasing forest resilience further. Historically, Indigenous Americans used fire to increase safety and enhance wildlife and vegetation. There exists an opportunity to support our local, family-run wood

businesses in the aftermath of these historic fires. The New Mexico State Forestry Division has a list of thinning contractors, firewood producers, and mills: [HTTPS://WWW.EMNRD.NM.GOV/SFD/FORREST-INDUSTRY-MAP-AND-BIOMASS-UTILIZATION-INFORMATION/](https://www.emnrd.nm.gov/sfd/forest-industry-map-and-biomass-utilization-information/) Individuals can also help protect the forest from future fires by purchasing Source Verified GoodWood®. These products are made from trees harvested for the *purpose* of reducing wildfire hazards and restoring New Mexico’s forests. Visit [HTTPS://WWW.GOODWOODVERIFIED.COM](https://www.goodwoodverified.com).



*High-severity burn*

The defining opportunity now is for us to collaborate, strategize and put the money coming to the best uses. As far as long-term forest management and the prospect of including communities in the revitalization of traditional practices, long-term planning is needed, and collaboration is key to creating better outcomes that satisfy diverse points of view. ■

*Rachel Wood has worked as a forester for over 20 years. Marie Rodríguez is with Promise PCES, LLC Planning, Communications & Environmental Services; Miles D. Conway is executive officer of the Santa Fe Area Home Builders Association, which serves seven northern New Mexico counties; Mikabla Beutler, LPCC, is a licensed psychotherapist in Santa Fe.*

# CHASING THE ELUSIVE

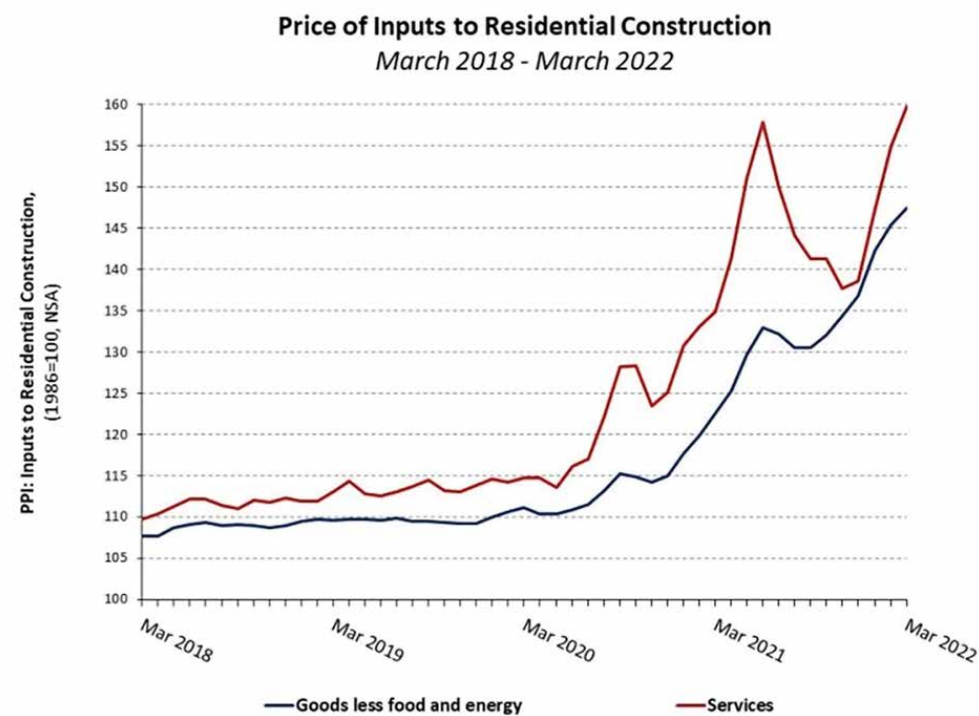
## EXPLORATIONS IN ACHIEVING SUSTAINABILITY

### HOW NEW MEXICAN COMMUNITIES DAMAGED BY WILDFIRE CAN BUILD BACK STRONGER

BY KATHERINE MORTIMER

With the fires still burning and homes still being lost, the process of rebuilding and restoring New Mexico's forests from this year's fires is still a future activity. For resources for practical matters, *After Wildfire: A Guide for New Mexico Communities* ([WWW.AFTERWILDFIRENM.ORG/](http://WWW.AFTERWILDFIRENM.ORG/)) has a wealth of practical resources.

The aftermath of a wildfire takes an emotional toll as well. Healing the emotional trauma caused by a wildfire is an important component to support a community's ability to start the rebuilding process. The current rash of wildfires comes as the COVID crisis isn't completely over. This one-two punch of crises creates a unique environment where, just as communities need to come together, socializing is still fraught with anxiety and fear.



*Community members should lead the reconstruction design process.*

In the aftermath of devastating wildfires in Sonoma County, California, the Sonoma Wildfire Mental Health Collaborative was

created and is still continuing to help people in the county. It provides a variety of services aimed at healing the emotional trauma of residents affected by wildfires, including a mind-body yoga program, training in Skills for Psychological Recovery (SPR) for counselors who wish to provide free or contracted services to individuals impacted by the wildfires, and digital health interventions. The Healthcare Foundation connects people to resources through health education, community resilience, engagement and support. All of their strategies support equitable access to culturally sensitive healthcare and mental health services, and promote overall community wellness. All services are free to the affected community.



*Very dense forest*

Stanford University evaluated the results in *Final Report of the Sonoma Wildfire Collaborative Program Evaluation*, in June 2020, which found that trauma-informed yoga was appreciated and beneficial by those who participated, but some people felt they shouldn't take it if they were going to take a place from someone who was more directly impacted by the fires. The report recommended that all community members be welcomed to use this service. The SPR workshops were well received and perceived

*Rebuilding and re-landscaping provides an opportunity to create an area that is resistant to future wildfires and floods.*

as helpful for the aftermath of trauma. Counselors felt there was a need for additional approaches to support long-term recovery and were open to additional training. Teens felt that a mobile app that was developed as part of the program that includes a self-assessment and data visualization was useful, and they continue to use the app when feeling triggered by new fire-related threats.

The fires here in New Mexico impact a number of counties, some with sparse populations. A solution here might best be led at the state level, coordinating services at the county health department level should such an approach be used here.

Rebuilding in a post-wildfire landscape can be daunting. Rainstorms can cause flooding as the soil and ashes are no longer held in place by healthy plant roots. Fear of a repeat wildfire can make rebuilding scary. However, rebuilding and re-landscaping provides an opportunity to create an area that is resistant to future wildfires and floods. There are fire-wise design strategies and building materials that resist wildfire damage. In addition to the resources available from state and local fire offices, the nonprofit Fire Adapted Communities provides assessment tools and strategies to help communities become more resilient to wildfires and subsequent flooding impacts.

Decisions about how to rebuild an area that has been affected by wildfire is also an opportunity to build a stronger sense of community by having community members lead the reconstruction design process. In an article

in *ALA Architect*, Patrick Sisson describes how, for Chicago-based architect and designer Craig Stevenson, it is always vital to work with, not for, the community. Stevenson is director of the Chicago's chapter of the Open Architecture Collaborative, a national nonprofit that does pro bono work designing buildings and placemaking projects for local communities. "We're not here to impose solutions on people," he says. "It's about figuring out how the community wants to solve the immediate need for public space, and the best solutions to bring people together." Sara Aye, executive director of Greater Good Studio, a Chicago-based social design practice says "If you design something for a group of people, but not with them, you're not doing it for them, you're imposing upon

*As tragic as these fires are, they provide an opportunity to build more resilient communities.*



Top: An area of forest that has been thinned. Above: View from Cochiti Mesa

them." It is not enough to consult community members, which is how we traditionally involve the community.

Rebuilding buildings lost in the fires will be hampered by the recent rise in the cost of building materials. In a report by the National Association of Home Builders, material costs have risen 33 percent since the start of the COVID-19 pandemic. Many people may find that their insurance limits will not be enough to replace what they had.

As tragic as these fires are, they provide an opportunity to build more resilient communities. A large part of the resiliency can be achieved by working together and building relationships between people in affected communities. A report by Jody Horntved of the University of Minnesota explains the many benefits of strengthening the social capital of a community, including improved health outcomes, safety and financial abundance. As difficult as it is for wildfire-affected communities at this time, with support and resources, it may be possible for communities to come together, help each other heal, and create a more resilient future. ■



*Katherine Mortimer is the founder and principal of Pax Consulting, LLC, a New Mexico business providing government and businesses with tools they need to be resilient and sustainable by addressing environmental stewardship, economic vitality, and most importantly, social justice.*  
[WWW.PAXCONSULTING.BIZ](http://WWW.PAXCONSULTING.BIZ)



## AFTER WILDFIRE

A GUIDE FOR NEW MEXICO COMMUNITIES

### "What can I do?"

Mobilize your community: work together, no one can do it alone.

Apply for available funding.

Implement treatments to help burned land and address flood risk.



Reach out to organizations and people who can help.

Make immediate safety your primary concern.

Be aware of the immediate risk of flooding.

Visit the After Wildfire website for additional resources.



www.afterwildfirenm.org

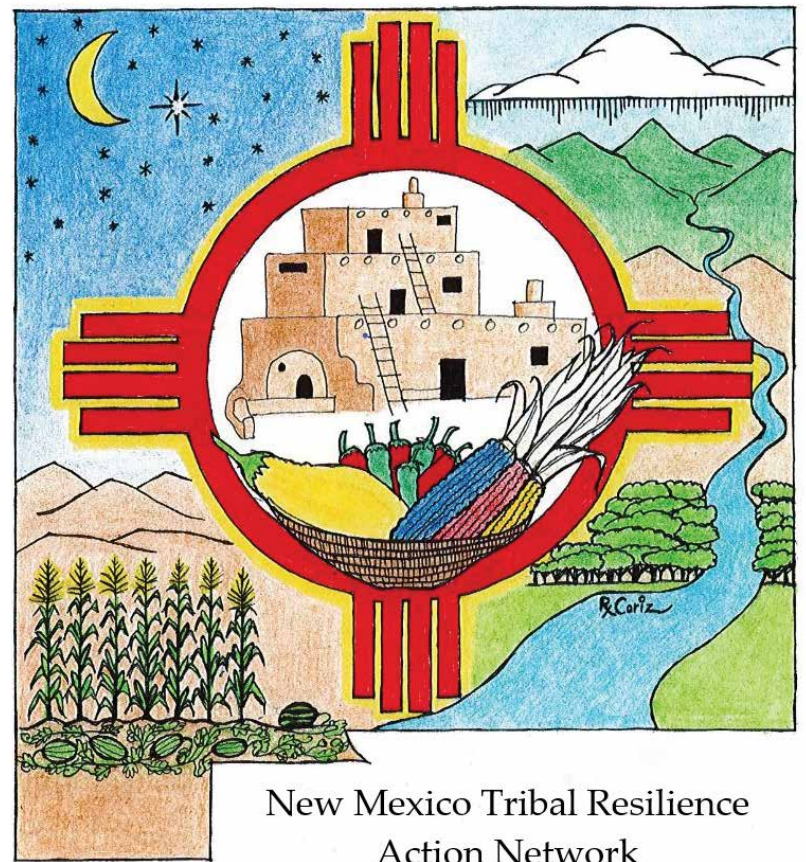


# The Southwest Climate Adaptation Menu

BY CYNTHIA NAHA, SHARON HAUSAM,  
ATHERTON PHLEGER AND SARAH DIEFENDORF

Building resilience to climate change can be a long, difficult process for Tribal communities. There are many potential climate impacts to contend with, such as wildfires, extreme heat, drought and flooding; many adaptation options to weigh, and many factors by which to weigh them, including environmental, cultural and economic.

Our organization, the New Mexico Tribal Resilience Action Network (NMTRAN), is creating a resource to help Southwestern Tribes navigate these factors. NMTRAN's "Southwest Tribal Climate Adaptation Menu" (SWTCAM) will provide a catalog of tools and actions by which Tribal communities in New Mexico, Arizona, Utah, Nevada and California can build climate resilience. Recently, NMTRAN was awarded a Bureau of Indian Affairs (BIA) Tribal Climate Resilience Program grant through our fiscal sponsor, Eight Northern Indian Pueblos Council (ENIPC). The grant will support the first phase of SWTCAM's development.



New Mexico Tribal Resilience  
Action Network

## NATIVE AMERICANS MORE EXPOSED TO CLIMATE CHANGE

Research findings compiled over seven years, published in the journal *Science* in October 2021, show that as a result of being forced to migrate from their original territories onto marginal lands by European settlers, and later, by the U.S. government, Native Americans today are significantly more exposed to climate change impacts.

The data showing land loss of 380 individual tribes was assembled from the Tribal Nations' own records, as well as treaties and other archival documents, mostly from the 1500s to the 1800s. Of those tribes, 160 today have no federally or state-recognized land base. Many were pushed far from their higher-elevation homelands onto smaller lands with less hospitable climates: many more days of extreme heat and less rainfall. Across 220 tribes, present-day lands were found to be just 2.6 percent the size of the historical lands, and average annual precipitation was almost one-quarter lower.

One example cited was the Pueblo of Laguna in New Mexico. Many of the pueblo's ancestors came from the north. Tribal members fled to Laguna during the Spanish Reconquest in 1699. According to the new data, average rainfall at Laguna is half of what the refugees' historical lands received.

The less hospitable locations where the tribes were relocated likely contributed to erosion of Indigenous cultures and languages by prompting tribal members to leave their reservations, often to relocate in urban areas. The authors of the study argue that the data strengthens the case for providing reparations for the damage caused. In the federal Bipartisan Infrastructure Law, \$13 billion has been set aside for Indian Country, including \$200 million for climate adaptation and "community relocation." In April, the Department of the Interior (DOI) announced \$46 million in funding to tribal communities, "to address the unique impacts of climate change in Indigenous communities."

Rep. Teresa Leger Fernández, D-N.M., chairwoman of the House Subcommittee for Indigenous Peoples of the United States, in discussing "the hard history of our nation," said that is not enough and suggested that the government also pursue options such as helping transfer more land—including federal land—back to Tribal Nations or use federal funding to purchase private land from landowners willing to sell.

NMTRAN is an ad-hoc committee of tribal leaders and community members: tribal employees and consultants in natural resources, environmental, planning and related fields; and representatives of nonprofit organizations, academic institutions and government agencies. NMTRAN's mission is to improve tribal resilience to climate variability and change by collectively examining anticipated changes, raising awareness about potential impacts, sharing information about adaptation and mitigation options, and supporting tribal planning and implementation.

The "Adaptation Menu" is designed to facilitate planning. Areas with similar climates or geography have similar climate change impacts, as exhibited in the increasing prevalence of wildfires across large portions of the western United States. Communities experiencing similar impacts and those that share cultural backgrounds can benefit from collaboration and shared resources. Even if a particular solution isn't right for one community, the decision-making process may help them identify appropriate actions. These are the principles driving the development of the SWTCAM.

To construct the Adaptation Menu, NMTRAN and its partners, ENIPC's Office of Environmental Protection, Flower Hill Institute and Environmental Finance Center West, are working to identify other interested groups and organizations throughout the Southwest who can gather ecological data from on-the-ground climate-change adaptation efforts and help determine appropriate ways to integrate Indigenous and traditional knowledge, culture, language and history into the process.

NMTRAN's staff and partners are experienced in intertribal organization and outreach. We hold meetings and workshops to share information and develop the SWTCAM document. Over the past few years, we have conducted sessions on climate impacts, introductions to climate science and tools, networking and youth engagement. More than 140 tribal staff, community members, individuals from 18 pueblos and the Navajo Nation have attended.



The Office of Environmental Technical Assistance (OETA) is housed under ENIPC's consortium, which provides technical assistance to 19 pueblos, two Apache nations and Ysleta del Sur Pueblo in Texas. ENIPC operates and manages several state and federal programs including five U.S. EPA grants. Through these EPA programs, OETA also provides education and outreach to New Mexico tribal communities.

Our lead contractor, Flower Hill Institute, is a native-owned, community-directed nonprofit. Flower Hill's initiatives include preserving and enhancing cultural resources, preparing youth to inherit leadership roles, improving food sovereignty and security, and improving climate-change resilience.

As we move forward with Phase I of the SWTCAM project, if you or your organization, tribe or pueblo would like to participate, please reach out to us. ■

#### Contributing Writers

Cynthia Naha, Ad Hoc Committee chair, [CYNTHIANAHA505@GMAIL.COM](mailto:CYNTHIANAHA505@GMAIL.COM)

Sharon Hausam, Climate Adaptation planner and research scientist, South Central Climate Adaptation Science Center, [SHAUSAM@OU.EDU](mailto:SHAUSAM@OU.EDU)

Atherton Phleger, vice-chair, Flower Hill Institute, [APHLEGER@LAW.UNM.EDU](mailto:APHLEGER@LAW.UNM.EDU)

Sarah Diefendorf, executive director, EFCWest, [SDIEF@EFCWEST.NET](mailto:SDIEF@EFCWEST.NET)

## BUILDING ALLIANCES FOR CLIMATE ACTION



## BUILDING ALLIANCES FOR CLIMATE ACTION

ADVANCING CLIMATE ACTION THROUGH PARTNERSHIPS



Climate change is here and is affecting all parts of our lives. To become climate resilient requires collective action with a whole-of-government and whole-community approach. The Resilient Nation Partnership Network (RNPN) is working to address this crisis through partnership.

The RNPN, NASA and 36 partners

have announced the release of *Building Alliances for Climate Action*. The publication is the work of many organizations and individuals, including federal representatives, faith leaders, community-based organizations, mayors and many more. At a time when many are searching for direction on how to address the climate crisis, this co-created resource represents a unifying voice, providing partner perspectives, personal stories, insights and resources communities can use. [HTTPS://WWW.FEMA.GOV/PARTNERSHIPS/RESILIENT-NATION-PARTNERSHIP-NETWORK](https://www.fema.gov/partnerships/resilient-nation-partnership-network).

## RECORD HIGH CARBON DIOXIDE LEVELS

The amount of planet-warming carbon dioxide in the atmosphere is now 50 percent higher than before humans began widespread burning of oil, gas and coal, according to the National Oceanic and Atmospheric Administration (NOAA). The agency reports that humans have generated about 1.5 trillion tons, much of which will continue to warm the atmosphere for thousands of years. There is now more atmospheric CO<sub>2</sub> than at any time in at least 4 million years. "The science is irrefutable: humans are altering our climate in ways that our economy and our infrastructure must adapt to," said NOAA Administrator Rick Spinrad, Ph.D. "We can see the impacts of climate change around us every day."

Carbon dioxide levels and average global temperatures are continuing to climb. CO<sub>2</sub> pollution is generated by burning fossil fuels for transportation and electricity generation, by cement manufacturing, deforestation, industrial agriculture and many other practices. Along with other greenhouse gases, CO<sub>2</sub> traps heat radiating from the planet's surface that would otherwise escape into space, causing the atmosphere to warm steadily, unleashing a cascade of impacts, including episodes of extreme heat, drought and wildfire activity, as well as heavier precipitation, flooding and tropical storm activity.



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In support of its goals to unify and mobilize Pueblo people, the PAA has published *Ten Points of Unity* that “encompass the values that Pueblo people have protected since the first colonial contact.” They are:

1. To fight and protect our birthright as Pueblo Indigenous people
2. To heal from cycles of trauma and oppression; to heal the land and waters
3. To create intergenerational spaces to learn and grow
4. To preserve Indigenous languages, traditional teachings and oral stories
5. To dismantle and eradicate oppressive systems and European occupations that have killed, harmed and assimilated Indigenous people
6. To build international solidarity with the Indigenous global struggle
7. To mobilize a united Pueblo front
8. To rematriate land and water
9. To embrace all Pueblo Indigenous identities by rejecting Euro-centric ideologies
10. To restore balance of power among our women, trans, two-spirit and gender non-conforming relatives

PAA’s campaigns include: Protect Greater Chaco; No False Solutions (“Say no to hydrogen”); Community Defense (education and sustainable solutions in defense of lands, lifeways, food sovereignty, people, water, air, plants and animals); Water Back (“removing the commodification of water” and “reclaiming all unsettled Indigenous water claims in the Southwest”); the Pueblo Art Alliance; and advocacy for protection of the Caja del Río, a wildlife and cultural site corridor. The PAA also presents leadership development programs and events for youth, and encourages Pueblo youth to create projects that will benefit their communities. ■

For more information, visit: [HTTPS://WWW.PUEBLOACTIONALLIANCE.ORG](https://www.puebloactionalliance.org)

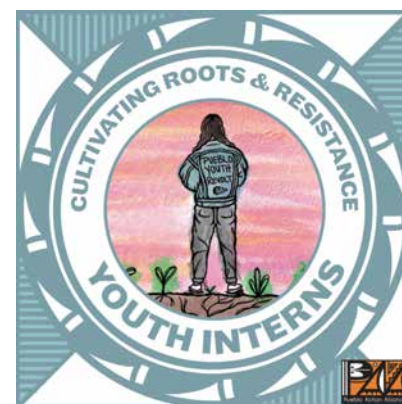
# THE PUEBLO ACTION ALLIANCE

*The Pueblo Revolt Never Ended*

The Pueblo Action Alliance (PAA) was created in the wake of the Standing Rock movement, which came together in 2016 to stop the Dakota Access Pipeline. Upon their return from South Dakota, members of the Pueblo Camp envisioned and built a Pueblo-centric organization to fight white supremacy, imperialism, patriarchy and “extractive colonialism.”

PAA’s website states, in part, that “the alliance is a community-driven grassroots organization that protects Pueblo cultural sustainability and community defense by addressing environmental and social impacts in Indigenous communities. We are the descendants of Pueblo revolutionaries and carry the revolutionary spirit of the 1680 Pueblo Revolt. We have the right to our own Indigenous self-determination, sovereignty and ability to create communities and economies that meet the needs of our Pueblo people. Cultivating ancestral wisdom helps to evolve modern strategies to protect our cultural integrity.” To the PAA, that means “rematriation of everything stolen.”

The alliance’s stated core values are: Respect, Consent, Protection of Sacred Entities, Cultural Sustainability, Community Defense, Indigenous Self-determination and



*Photos courtesy Pueblo Action Alliance*

Photos courtesy Pueblo Action Alliance



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## NDN COLLECTIVE'S COMMUNITY SELF-DETERMINATION GRANTS

### *Creating Sustainable Solutions on Indigenous Terms*

In December 2021, NDN Collective ([HTTPS://NDNCOLLECTIVE.ORG](https://ndncollective.org)), a South Dakota-based Indigenous-led organization “dedicated to building Indigenous power,” announced it had been selected by the Bush Foundation to establish a Community Trust Fund to be used to distribute \$50 million to Indigenous communities.

In June, NDN Collective announced the second year of an open application period for Community Self-Determination Grants, offered to Indigenous communities and Indigenous-led nonprofit organizations throughout Turtle Island (North America). The grants are intended for community-based and community-driven sustainable solutions that support NDN Collective’s core strategies to “Defend, Develop and Decolonize” Indigenous peoples and the planet.

### *Community development based on regenerative principles*

“Community self-determination calls on all of us to think creatively and innovatively, to address root causes of our struggles and design solutions that are shaped by and embraced by our own people, our own communities,” said Gaby Strong, NDN Foundation’s managing director.

Whether it’s protecting land and water, developing sustainable food systems or revitalizing Indigenous languages and lifeways, the grants are intended to support community priorities on community terms. “We were able to visit some of the 2021 grantee partners, and the impact we witnessed in communities was extraordinary,” said Tina Kuckkahn, director of grantmaking. “We visited the Keres Children’s Learning Center at Cochiti Pueblo in May. Elders were teaching children how to plant traditional corn in a prayerful way as a regular part of their school day. Hearing preschoolers speak in their own language, with first-language teachers within their ancestral homelands, affirmed one of NDN’s guiding concepts: ‘What if our best days are ahead of us?’”

Grants of up to \$100,000 per year (up to two years) are available. They can include general operating support, capacity building, and support for comprehensive initiatives, specific programs and community development based on regenerative principles. Applicants must first complete a letter of interest (by Aug. 1), which can be accessed on the NDN Grants & Fellowship page on NDN Collective’s website. Four million dollars in funding is available, and while national organizations are eligible to apply, NDN prioritizes community-based efforts. For more information, visit: [HTTPS://NDNCOLLECTIVE.FLUXX.IO/APPLY/COMMUNITYSELFDETERMINATION](https://ndncollective.fluxx.io/apply/communityselfdetermination).



*Mount Taylor is one of the four sacred mountains marking the cardinal directions. It is sacred to the pueblos of Acoma, Laguna and Zuni and to the Hopi and Navajo.*

## SACRED LAND NEAR MOUNT TAYLOR GAINS PROTECTION

A \$34-million effort by the Trust for Public Land, in partnership with other organizations and foundations, will make possible the purchase of the L Bar Ranch, more than 84 square miles of grasslands, mesas and part of the Mount Taylor Traditional Cultural Property, which is on New Mexico’s state register of historic places. Mount Taylor, a dormant volcano, is considered sacred by the Native American tribes in the region. Before the ranch became privately owned, Native people made pilgrimages there to conduct ceremonies and to find wildlife, plants and timber. Acoma Pueblo officials are hopeful that, once the purchase is completed, an ethnographic study will be conducted to identify culturally significant sites.

The ranch west of Albuquerque will become the largest state-owned recreation property in New Mexico. Part of it will be under the jurisdiction of the New Mexico Game and Fish Department; the rest will be administered by land managers. A management plan will ensure recreational access and will establish special considerations for areas important to the pueblos of Acoma, Laguna and Zuni, as well as Hopi and Navajo people.

Those tribes strongly advocated for the area’s protection, in part because of proposals to restart uranium mining. In a statement, Laguna Pueblo Gov. Martin Kowemy said, “As Native Americans, we are stewards of the land. We maintain this harmony with Mother Earth through culture and prayer. It is our responsibility to protect and preserve our land for future generations.”

The Trust for Public Lands also sought to preserve the land for wildlife, as habitat and as a wildlife corridor, particularly because of the impacts of climate change. The trust’s stated national commitment is to increase green spaces, reduce the risk of wildfires, and to improve access to outdoor recreation.

The Mount Taylor Traditional Cultural Property, 625 square miles in and around Mount Taylor, received its designation as a result of decisions made by the state’s Cultural Review Committee in 2008 and 2009. A legislative appropriation and federal excise tax on firearms and ammunition also helped fund the land’s purchase.

## BILLS INTRODUCED TO ELEVATE THE ROLE OF TRIBAL NATIONS, PROTECT TRIBAL CULTURAL SITES IN PUBLIC LAND MANAGEMENT

On June 16, Natural Resources Committee Chair Raúl M. Grijalva (D-Ariz.) and Sen. Martin Heinrich (D-N.M.) announced the introduction of House and Senate companion bills to advance Tribal management of public lands and improve protection of sacred and cultural sites: the *Advancing Tribal Parity on Public Land Act* and the *Tribal Cultural Areas Protection Act*.

*“A small but important step in giving Tribal nations the respect and authority they deserve.” – NRC Chair Raúl M. Grijalva (D-Ariz.)*

The vast majority of federal public lands are carved out of the ancestral homelands of Tribal nations. Despite forced removal and displacement from these traditional territories, Tribes’ cultural connections to these places have never been extinguished. Tribal nations and their citizens continue to exercise treaty and statutory rights to hunt, fish and gather plants for traditional purposes, and to pray, conduct ceremonies and visit burial sites.

However, public land management laws fail to adequately protect these rights and interests. For example, public land on which a Tribal nation has a treaty right or sacred site may still be sold to private developers who could permanently destroy the site. In other cases, there may not be adequate resources in place to prevent theft or vandalism of cultural items or sacred sites.

*The bills create a Tribal Cultural Areas System specifically tailored to protect Tribal cultural resources. – Sen. Martin Heinrich (D-N.M.)*

The Acts will update public land management laws to improve protections of Indigenous sacred sites and other cultural areas. More specifically, the *Advancing Tribal Parity on Public Land Act* will:

- Prohibit the sale of public land containing a Tribal cultural site where a Tribal Nation retains treaty or other reserved rights, or that contains a former reservation.
- Authorize Tribal governments to acquire public lands for public purposes.
- Increase Tribal consultation in public land use planning.
- Require the consideration of the presence of cultural sites and fulfillment of treaty obligations in federal land acquisition decisions.
- Require existing public land advisory boards to include at least one Tribal representative.

The *Tribal Cultural Areas Protection Act* will:

- Establish a national Tribal Cultural Areas System to designate public lands with culturally significant sites. Tribal cultural areas would be managed to preserve their cultural values while allowing for traditional Tribal cultural use.
- Direct public land management agencies to identify potential Tribal cultural areas.
- Provide authority to Tribal nations in the management of Tribal cultural areas.

“There is no deed that can undo or fully compensate for this country’s historical neglect and desecration of Indigenous Peoples’ culture and places that are sacred to them,” Grijalva said. “But that doesn’t mean that we should simply sit back and let history continue repeating itself. These two bills are a small but important step in giving Tribal Nations the respect and authority they deserve.”

“It is long overdue that we recognize that Tribes across Indian Country have ancestral sites, historical ecological knowledge, and ongoing cultural practices on federal public lands,” said Heinrich. “I’m proud to introduce these bills to create a Tribal Cultural Areas System specifically tailored to protect Tribal cultural resources and to finally correct long-running holes in our federal laws that have put sovereign Tribal Nations on an unequal footing with state and local

governments in acquiring and managing public lands. It’s past time to end the era of land management agencies conducting Tribal consultation just to check a box. The federal government has a responsibility to communicate with and provide Tribal governments with a real seat at the table. These bills help deliver on the promise to respect Tribal sovereignty and increase protections for the culture and traditions in the ancestral homelands of Tribal Nations.”

Combined, the two bills have already gained the support of a dozen Tribal nations, several Tribal organizations, including the National Congress of American Indians and the National Association of Tribal Historic Preservation Officers, and the Wilderness Society.

The full text of the *Advancing Tribal Parity on Public Land Act* is available here and a fact sheet is available at [HTTPS://BIT.LY/3OLTH01](https://bit.ly/3OLTH01). The full text of the *Tribal Cultural Areas Protection Act* is available here and a fact sheet is available at [HTTPS://BIT.LY/3HRZQ8A](https://bit.ly/3HRZQ8A).

## ADVOCATES SEEK CAJA DEL RIO PROTECTION

A rugged volcanic plateau, the Caja del Río, consists of 106,000 acres that lie between the Río Grande and Santa Fe, from La Bajada north to Diablo Canyon. The area is critical to the story of New Mexico and Pueblo and Hispano peoples, whose ancestors called it home for generations. The plateau is part of the Western Wildway Priority Wildlife Corridor and includes a Pueblo footpath that became part of the Camino Real de Tierra Adentro, a Spanish colonial-era trade route that connected Mexico City with Ohkay Owingeh near present-day Española.

In recent times, the Caja has been plagued by off-highway vehicle use, target practice and illegal dumping. Since La Cieneguilla petroglyphs were defaced in January, a diverse coalition has been seeking permanent preservation of the area. Resolutions from the All Pueblo Council of Governors, the Santa Fe County Commission, the Santa Fe City Council, with the support of outdoor recreation and conservation groups such as the Nuestra Tierra Conservation Project, call on New Mexico’s congressional delegation to take action, in consultation with the area’s traditional land users. Santa Fe County Commission’s resolution includes protecting the area from a proposed highway and power line that would serve Los Alamos National Laboratory, a project opposed by many tribes and environmental groups.

About 67,000 acres of the Caja del Río are managed by the Santa Fe National Forest’s Española Ranger District. Most of the remainder of the plateau, including La Cieneguilla, is under the jurisdiction of the Bureau of Land Management’s (BLM) Taos field office. Those agencies lack personnel and resources to patrol, monitor and protect the antiquities within the area. But this year, Santa Fe National Forest is implementing a new forest plan to replace the one that has been in place since 1987. Under the new plan, Española Ranger District staff are to collaborate with tribes, city and county governments to manage the area, which has a new designation: the Caja del Río Wildlife and Cultural Interpretative Management Area.

## SEC. HAALAND LAUNCHES INDIAN YOUTH SERVICE CORPS

On June 10, Secretary of the Interior Deb Haaland joined Tribal leaders, community partners and Indigenous youth to celebrate the launch of the Indian Youth Service Corps (IYSC). The IYSC is a partnership-based program that will provide meaningful education, training and employment opportunities for Indigenous youth through conservation projects. Building on the decade-long success of the Ancestral Lands Conservation Corps in New Mexico and Arizona, the IYSC will support the protection of natural and cultural resources through construction, restoration or rehabilitation of natural, cultural, historic, archaeological, recreational or scenic resources.

“Indigenous people have a strong and abiding connection to the Earth—increasing their access to nature early and often will help lift up the next generation of stewards for this Earth,” said Haaland. “In addition to completing much-needed conservation projects that will enhance landscapes and ecosystems on Tribal and public lands, the IYSC will focus on vocational skills training, career development and economic empowerment.”

The National Park Foundation has committed \$1 million to fund IYSC projects, in addition to its ongoing support of Tribal youth service corps projects. NPF is currently funding more than 10 projects from Maine to New Mexico that engage Tribal youth in conservation and preservation activities, providing skills development and mentoring. The projects also protect Indigenous cultural practices, languages and Traditional Ecological Knowledge (TEK) used for land management. “The imprint of Tribal history and culture is visible across our national

*“Increasing their access to nature early and often will help lift up the next generation of stewards for this Earth.” – Interior Secretary Deb Haaland*

park landscapes,” said NPF President and CEO Will Shafroth. “We have so much to learn from tribal members about these things and how we manage our public lands.”

Tribal leaders, community partners and several current and former Indigenous members of the Conservation Legacy Ancestral Lands Conservation Corps, as well as Rocky Mountain Youth Corps, joined a virtual roundtable with



Haaland and Shafroth to share their experiences in conservation.

IYSC guidelines provide a framework for Tribal and partner organizations’ participation. Goals of the program include creating awareness of Indigenous culture and history, and conserving and protecting landscapes, stories and shared experiences for current and future generations. The guidelines were established in consultation with Indian Tribes, the Bureau of Indian Affairs (BIA) and other stakeholders. They authorize the departments of the Interior, Agriculture and Commerce to implement the program.

IYSC activities can include research projects, oral histories, habitat surveys, climate mitigation, trail restoration, invasive species removal, fire-fuels reduction, watershed restoration, recreational expansion, and the development of educational, informational or communication materials for the public. The projects will promote Indian self-determination and economic development and can take place on Tribal lands, or on federal lands where Tribes have ancestral connections. All projects on Indian lands will be designed and managed collaboratively and in consultation with the Tribal government.

A press release says that the Interior Department is committed to strengthening Tribal sovereignty and governance, fulfilling the federal government’s trust and treaty responsibilities, and engaging in robust consultation with Tribal Nations. This year, the DOI is providing \$2 million to the BIA, \$700,000 to the National Park Service and \$600,000 to the Bureau of Reclamation to establish the IYSC. The U.S. Forest Service is expected to invest up to \$5 million in the program.

### Traditional Native American Farmers Association

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# Indigenous Conservation Practices Embedded in Hopi Dryland Farming

*Enhancing Integration of Indigenous Agricultural Knowledge*

BY MICHAEL KOTUTWA JOHNSON, PH.D.

Despite that their ways of knowing are still called primitive, Indigenous people throughout the globe have solutions to environmental fluctuations. Indigenous agriculturalists' management practices, developed and refined from generation to generation through careful observation, testing and innovation, have enhanced the resilience and sustainability of delicate agroecosystems. By supporting and reinforcing their land- and crop-management systems, we will not have to reinvent the wheel.

For over 3,000 years, Hopi dryland farmers have brought abundance out of the desert Southwest by carefully cooperating with the landscape. Their holistic approach utilizes conservation techniques that comport with their cultural worldview. They integrate a belief system based on oral traditions that instruct them how to practice a sustainable way of life. Their practices stem from a cultural philosophy that emphasizes stewardship of resources and taking only what is needed rather than ownership and profit.

*Hopi farmers' practices engage all things necessary to keep their way of life in balance.*

There is no separation between spirituality and agriculture for the Hopi. Their underlying land ethic is grounded in stewardship and faith that the land will support them if they take care of the land. Hopi people believe

Masaw to be guardian of this Earth and that the lives of traditional Hopi people align with the way of Masaw, a way of humility and simplicity, of forging a sacred bond between themselves and the land that sustains them. The sacred covenant Hopi people have with Masaw directs that they must have faith in all they do, including farming, to survive.

The Hopi perceive the Earth as their mother, from whom they were born and receive sustenance, and to whom they will return after death. The land provides corn, and the corn intertwines with all stages of life until death. Corn is often ground by the women to make homa (prayer meal). Carefully selected ears are used in the baby-naming ceremony, and ground corn is utilized in funeral rites. As a result, Hopi farmers tend to view their fields with reverence and respect, and great care is taken to have minimal impact on the environment.

## HOPI DRYLAND AGRICULTURE

The Hopi reservation consists of 1.6 million acres in northern Arizona. Through time, Hopi farmers learned to grow crops such as corn (*Zea mays L.*), beans (*Phaseolus lunatus*), squash (*Cucurbita moschata*), melons (*Citrullus vulgaris*) and cotton (*Gossypium hopi*) in an area that only receives six to 10 inches of annual precipitation, whereas conventional agriculture recommends 33 inches of irrigation for these crops. Field treatments and locations of modern fields are similar to those observed in the archaeological record. Unique genetic lines in the Hopi seed bank also link modern practitioners to the deep past. The Hopi produce crops in a region where modern hybrids struggle.

Water is a precious natural element for the Hopi, and every song and prayer is dedicated to providing rain and snowfall to their fields. It sustains them because they believe water is life.

Indigenous conservation practices developed through deep time are not unique to the Hopi. The value of these contributions is recognized by federal agencies that currently draw on Traditional Ecological Knowledge (TEK) or Indigenous Ecological Knowledge (IEK) in their conservation management. In 2010, in its *Indigenous Stewardship Methods* and NRCS Conservation Practices guidebook, the National Resource Conservation Service acknowledged the potential benefit of incorporating Indigenous management practices.

Place-based knowledge embodied in Indigenous systems is well suited to addressing NRCS concerns. The practice of what the NRCS labels "Nutrient Management" involves the application of soil supplements by use of mechanization and fertilizer (nitrogen, phosphorus and

potassium), whereas nutrients managed as part of the "Hopi way of Knowing" reach the fields by natural runoff that brings nutrient-rich stream flows.

## PRACTICING INDIGENOUS AGRICULTURAL KNOWLEDGE

When I was a boy, I went on a trip to gather a plant that would be used to help with cataracts. After about an hour we found it. I went to pick it but was stopped by my grandfather. He said, "Leave it, we will find the next one." I asked why we must do this. He replied, "That is for the next generation. If we pick the first one we find, how do we know that we are not picking the last of its kind?" So, we moved on and found another one nearby.

Hopi farmers' practices engage all things necessary to keep their way of life in balance. They approach farming with the underlying philosophy of not taking more than they need and using only what nature gives them. Their agricultural practices are efficient and sustainable because inputs and irrigation are limited, and their techniques are designed to preserve soil moisture to produce sustainable yields. The practice is also environmentally beneficial because it protects soil and water from loss and helps build the ecosystem.



*Dr. Johnson's Hopi melon and squash harvest; young squash plant*  
© Michael Kotutwa Johnson

Michael Kotutwa Johnson, a member of the Hopi Tribe, is an assistant specialist at the University of Arizona's School of Natural Resources and the Environment and is also affiliated with the UofA's Indigenous Resilience Center. He holds a Ph.D. in Natural Resources from that university. Johnson previously served as the Native American Agriculture Fund's program officer and was a Natural Resource District Conservationist assigned to the Hopi Reservation for the Natural Resource Conservation Service (USDA). He is also co-author of the Indigenous chapter of the National Climate Assessment, to be released in 2023.





Top (clockwise, L-R): Hopi school children visit Dr. Johnson's cornfield; Hopi field looking toward the Village of Kykotsmovi; Dr. Johnson's traditional Hopi house; Can helps protect young corn plant from wind but will be removed; Hopi man with hoe (Library of Congress, LC-USZ62-104602); Dr. Johnson, Hopi farmer with hoe; Dr. Johnson's house at sunset; Hopi corn varieties; Dr. Johnson's dog Soya helping during harvest; Center: Hopi corn and bean field in 2015; Dr. Johnson helping his corn plants. Photos © Michael Kotutwa Johnson, except Library of Congress photo; bottom left and top right photos © Seth Roffman

CONTINUED ON P.26

Average Hopi fields are one to five acres. Great care is taken to minimize field size to prevent soil and moisture loss during spring windstorms. Fields are located near rock outcroppings so runoff from monsoon storms can easily be directed by natural and manmade check-dams and channels.

*Their land ethic is grounded in stewardship and faith that the land will support them if they take care of the land.*

Typically, fields are cleared in February when weeds can be easily removed with little disturbance to the soil. Farmers use readily available plants such as brush and wild grasses as windbreaks. Natural vegetation is left on

all sides of the fields, with vegetative strips in-between fields to slow down prevailing winds to protect soil from erosion and act as buffers to trap snowfall, preserving moisture necessary to germinate seeds. Additionally, the landscape around planting areas is left undisturbed, thus preserving natural environmental conditions and foods such as rice grass to feed wildlife.

Hopi farmers use their own heritage seed varieties and plant by hand with occasional use of a tractor and a modified one-row planter. Crops are planted in the sandy soil counter to stream flow and wind direction. Corn is planted three paces or about nine

feet apart using 10 to 20 seeds in a single hole. Corn varieties developed over many generations can be planted at depths from six to 18 inches, depending on the location of moist soil below the surface. The corn is thinned at least three times, leaving four to six plants to harvest. Wide spacing and frequent thinning is done to preserve soil moisture because rainfall from April to late July is rare. After harvest, corn stalks are left on the fields as planting guides for the next season's crop, which is planted in-between the previous year's rows. The stalks also act as natural snow catchments, which concentrate much-needed moisture during spring planting. The remaining stalks also serve as windbreaks that protect emerging seedlings.



*Hopi red corn tassel, Hopi corn roasting pit*  
© Michael Kotutwa Johnson

These techniques were presented in the 2019 Arizona State Museum exhibit *The Resiliency of Hopi Agriculture: 2000 Years of Planting*, for which I was the guest curator. The Hopi Culture Preservation Office and its Cultural Research Advisory Task Team, a committee of Hopi elders with a background in farming, were consulted throughout the preparation of the exhibit, and upon their approval, it was shared with the Hopi community. ■



*Hopi corn and squash field* © Seth Roffman

for policy-makers who seek to incorporate more holistic approaches to resource-development decision-making at the state and federal levels.

Most Indigenous practices are not recognized by Western practitioners because they have not been scientifically validated. Few scientific studies have been initiated to better understand Indigenous natural resource management and its unique, place-based cropping systems. However, environmental benefits are strongly implied by the time scale of these practices. Tribal existence depended on how land was managed. Indigenous land management was a way of life. Indigenous people felt they were part of the process and valued the resources in their totality.

Nearly 99 million acres are currently under Indigenous jurisdiction in the U.S. Native lands are suffering from environmental degradation due to climate change, drought and overgrazing. Many are within regions that are both ecologically sensitive and economically depressed, suggesting that an injection of funds could help support Indigenous conservation. If traditional agriculture and conservation practices were fully recognized, federal dollars could be spent on hiring local labor pools to build and improve agricultural fields using traditional approaches. However, implementation of federal projects on Indigenous lands must embrace the integrated nature of Indigenous conservation practices and incorporate the full value of the tribes' cultural ties to the land in such a way that does not separate them from the way they view their relationship with the land.

## FROM "THE SHIFTING NATURE OF FOOD AND WATER ON THE HOPI INDIAN RESERVATION"

BY TAI ELIZABETH JOHNSON

(*University of Arizona dissertation, 2016*)

"By 1950, over a decade after initial attempts to improve Hopi farming were initiated, federal officials arrived at the conclusion that traditional Hopi farming methods were far more environmentally and technologically appropriate than the Western techniques and technologies with which they sought to replace them. As one Extension agent put it, 'The agricultural practices employed are somewhat primitive in nature, but as such have proven best suitable to the climatic conditions of the area over centuries... Since there is no possibility of developing any practical or large-scale irrigation projects on the reservation, it would not be wise to attempt any drastic or overall reforms in the agricultural practices of the Hopi people at this time.'[1]"

[1] Hopi Indian Agency, "Annual Report of Extension Work, 1950"

## INDIGENOUS KNOWLEDGE GOES TO WASHINGTON

### *Recognition Forwards Indigenous Contributions and Ideas*

In November 2021, the Biden administration pledged to incorporate Indigenous Traditional Ecological Knowledge (ITEK) into federal research and policy-making. The announcement was widely hailed by Native leaders as a milestone in federal-tribal relations and an important validation of the accrued knowledge of Indigenous societies. They also said that guidelines must be written to protect “sacred and sensitive” information.

In a fact sheet released in conjunction with the Tribal Nations Summit, the administration called Traditional Ecological Knowledge “one of the important bodies of knowledge that contributes to the scientific, technical, social and economic advancements of our nation.” It also pledged to develop a plan for the “collection and application of such knowledge” in a way that is “mutually beneficial to Tribes, Native communities and federal agencies.”

“There’s a lot of hope,” said Ann Marie Chischilly (Diné), executive director of the Institute for Tribal Environmental Professionals, based at Northern Arizona University in Flagstaff. “Seeing President Biden’s memo was a long culmination of efforts by all the tribes and tribal experts in the country working on climate change initiatives. It’s been a long process.”

Representatives from at least 25 agencies began meeting with tribal representatives in 2021 to produce guidelines on incorporating Indigenous Traditional Knowledge (ITEK), which the administration’s memo defined as “a body of observations, oral and written knowledge, practices and beliefs that promote environmental sustainability and responsible stewardship of natural resources through relationships between humans and environmental systems.”

The guidelines could have many ramifications, including affecting federally funded research projects among and with tribes. The Office of Science and Technology Policy (OSTP) is co-leading the effort to produce the guidelines, along with the Council on Environmental Quality (CEQ). The agencies are holding consultation sessions with Tribal leaders three times every year. Gretchen Goldman, assistant director of the OSTP, said the guidelines will not be limited to land stewardship. CEQ General Counsel Justin Pidot said, “We intend to elevate ITEK across the federal government to ensure that partnering with knowledge holders becomes integral to agency practices and processes, and we hope that the practices and guidelines we identify will have a lasting positive effect for years to come.”

## INDIGENOUS WISDOM CURRICULUM PROJECT

### *Curriculum Based on Core Pueblo Values and Concepts*

The Indigenous Wisdom Curriculum Project was created to provide teachers with educational plans for K-12 students in New Mexico to learn about Pueblo culture and history. The curriculum is intended to serve as a counter-narrative to the presentation of history in New Mexico’s schools.

At the center of the curriculum are concepts and core values that have operated as vehicles for resistance, emancipation and transformation for Pueblo people as part of maintaining cultural integrity and exercising sovereignty in the face of colonizing measures taken by Spain, Mexico and the United States. This Pueblo-based curriculum aims to strengthen the identity of Native American children in New Mexico by providing comprehensive unit plans on the complex political, social, cultural and economic history of the Pueblo Nations of New Mexico between 1912 and 2012.

The Leadership Institute at the Santa Fe Indian School is the primary source for the timeline work and concept development of this project. Future educational initiatives for the Indigenous Wisdom Curriculum Project include updating the curriculum to meet state STEM (science, technology, engineering and mathematics) standards.

#### Goals of the Curriculum

The curriculum will help K-12 teachers educate their students about the factors and conditions that shaped key relationships: government-to-government; community-to-community; culture-to-culture, and person-to-person, throughout historical periods of turmoil and peaceful coexistence. This resource will guide instruction that enhances self-esteem and identity, encourages guidance by ethical considerations, acknowledges concern for others and incorporates an overall global perspective. Finally, we seek to promote Indigenous students and their teachers to become intellectually aware of the critical roles of Pueblo people in exercising agency as they meet (and continue to meet) the imposition and challenges of federal and state policies upon sovereign tribal entities.

This resource provides the state’s schools and teachers with materials that enhance self-esteem and identity, encourages ethical discussion, acknowledges concern for others, and incorporates a global perspective.

For more information, visit: [HTTPS://INDIANPUEBLO.ORG/INDIGENOUS-WISDOM-CURRICULUM-PROJECT/](https://indianpueblo.org/indigenous-wisdom-curriculum-project/)

## BOOK PROFILE

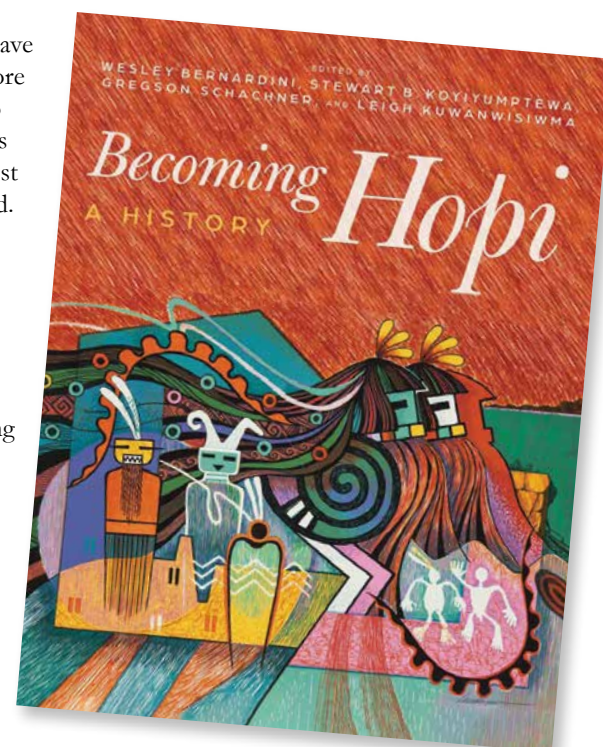
### **BECOMING HOPI A HISTORY**

**EDITED BY WESLEY BERNARDINI,  
STEWART B. KOYIYUMPTAWA,  
GREGORY SCHACHNER AND LEIGH J. KUWANWISIWMA**

THE UNIVERSITY OF ARIZONA PRESS, (HARDCOVER, E-BOOK, \$75.00)

*Becoming Hopi* is a comprehensive look at the history of the people of the Hopi mesas as it has never been told before. The Hopi Tribe is one of the most intensively studied Indigenous groups in the world. Popular accounts of Hopi history romanticize Hopi society as “timeless.” The archaeological record and accounts from Hopi people paint a much more dynamic picture, full of migrations, gatherings and dispersals of people; a search for the center place; and the struggle to reconcile different cultural and religious traditions. *Becoming Hopi* weaves together evidence from archaeology, oral tradition, historical records and ethnography to reconstruct the story of the Hopi mesas, rejecting the colonial divide between “prehistory” and “history.”

The Hopi and their ancestors have lived on the Hopi mesas for more than 2,000 years, a testimony to sustainable agricultural practices that supported one of the largest populations in the Pueblo world. *Becoming Hopi* is a collaborative volume that integrates Indigenous voices with more than 15 years of archaeological and ethnographic fieldwork. Accessible and colorful, this volume presents groundbreaking information about Ancestral Pueblo villages in the greater Hopi mesas region, making it a fascinating resource for anyone who wants to learn about the rich and diverse history of the Hopi people and their enduring connection to the American Southwest.



# Diné Native Plants Program

ARTICLE AND PHOTOS BY **KELSEY JENSEN**

## BACKGROUND

Hundreds of native plant species are culturally significant to the Diné (Navajo), and climate change impacts have led to substantial changes in the abundance, distribution and life history of these plants. The Diné Nation experiences ongoing threats from climate change resulting in loss of vegetation cover and soil erosion, while also experiencing the impacts of mismanagement of natural resources from overgrazing, oil and gas extraction, uranium mining and invasive plant species. These threats have significantly decreased the availability of traditional medicines and food derived from flora and faunal species and have drastically altered ecosystems impacting Diné lifeways through ceremonial and subsistence practices.

In 2017, the Diné Native Plants Program (DNPP) was created with a mission to “serve as a living library of locally sourced native plants for restoration, conservation and research, while providing the Diné people access to culturally important plants for the benefit of the community, culture, wildlife and land.” The DNPP, a sub-department of the Navajo Nation Department of Fish and Wildlife, consists of a team of botanists and horticulturalists who developed a priority plant species list for their collection and restoration strategies.

*Below: Willow and cottonwood collecting in Tsegi Canyon*



## NATIVE SEED COLLECTING AND BANKING

The Diné Nation stretches through Arizona, New Mexico and Utah and encompasses diverse landscapes—from montane conifer forests, to canyon bottoms, to arid deserts. Native plants are naturally adapted to the local precipitation, temperature and soil, and these conditions vary across plant species. Different populations of the same species often adapt to different environmental conditions, and these adaptations can be expressed in the genetics of the plants. Genetically appropriate plants are therefore uniquely suited to grow in the environment where they derive.

The strategy to represent the Diné Nation’s diverse landscapes is to target seed collection from each unique ecoregion to maximize genetic diversity in the seed bank. Since its inception, the DNPP has conducted over 250 native seed collections. The DNPP’s seed bank is located in Fort Defiance, Arizona, on the Navajo Forestry Department grounds. Seed banking helps address the challenge of climate change by ensuring against the loss of plant species in the wild. Seed banking secures access to diverse, locally adapted native plant species for restoring resilient ecosystems.

## RIPARIAN RESTORATION AND REVEGETATION

A goal of the DNPP is to develop and carry out land restoration projects across the nation. In the high desert, riparian areas, springs and wetlands are especially important for people and wildlife. Currently, DNPP seeks to increase groundwater recharge, vegetation and wildlife habitat in two regions of the Navajo Nation—the Chuska Mountains and Tsegi Canyon—through riparian restoration using native plants, livestock exclusion and simple in-stream structures. Restoration also involves conducting stream assessments within treatment areas to determine restoration goals, collecting baseline data and writing detailed revegetation plans for treatment areas. In addition, DNPP staff attend local community meetings, referred to as governance or chapterhouse meetings, that are

located within targeted riparian areas needing revegetation in the Chuska Mountain area. DNPP staff informs the community of the restoration project goals, acquires feedback and gains clearance from grazing leaseholders to fence specific treatment areas. The riparian restoration projects aim to address erosion occurring in stream banks and prevent future erosion by planting and seeding native plant species.



*Established grass seedlings planted in drip-irrigated seed increase field.*

## TSEGI CANYON RESTORATION PROJECT

The Tsegi Canyon Riparian Restoration Project focuses on DNPP’s efforts to continue revegetation (with willow and cottonwood cuttings, native plant seed, and container-grown plants), fence maintenance, livestock removal and building erosion control structures in Dowozhiebito and Keet Seel canyons. The project was started in 2018 by the Bureau of Indian Affairs Western

Agency and a third-party consulting company (Fred Phillips Consulting). The Tsegi Canyon watershed is an essential ecosystem for many species on the Navajo Endangered Species List (NESL). DNPP staff plan to continue the restoration and will work closely with these partners and Navajo grazing permit holders to develop restoration plans for additional regions within the Tsegi Canyon system.

## NATIVE SEED INCREASE FIELDS

A common obstacle to revegetating with native plant species on the Diné Nation is the lack of locally sourced plant material. Most plant materials are acquired from commercial growers in other regions and can threaten the success of restoration projects. In 2018, a partnership between DNPP, Tolani Lake Enterprises and U.S. Geological Survey RAMPS was formed and funded through the BIA Tribal Resilience Program. The main component of this grant was funding to conduct a workshop series to develop and encourage the capacity of Diné natural resource professionals to restore degraded lands using native plants and to teach them how to grow seeds in irrigated fields to increase seed yield from small collections.

In 2020, the partnership’s next objective was to establish the Diné Nation’s first native seed increase field, located at North Leupp Family Farm, while using it as a teaching tool for local farmers and tribal professionals. The project aimed to increase seeds of important restoration grasses and forb species. The goal for the subsequent years is to harvest large amounts of native seeds that will be made available for future restoration projects on the Navajo Nation. This particular seed increase field method addresses the need to expand native seed supplies and serves as a simplified model for converting wild-collected native seed into a crop. This project influences ongoing work to address ecological impacts of climate change on the Diné

Nation's degrading grass, scrubland and riparian ecosystems.



*Willows and cottonwoods growing in the greenhouse*

### MOVING FORWARD

The native plant program created a unique job position, a cultural plants coordinator. The position is funded for two years by the Catena Foundation. The individual will work toward developing a network of Diné herbalists to help advise program operations and conduct community workshops about traditional uses of native flora and fauna. Accessing Diné Traditional Knowledge and receiving traditional perspectives about best practices has been a challenge for the program. The work of the cultural plants coordinator will help revitalize traditional teachings that are at risk of being lost.

The Diné Nation's environmental issues will continue to reduce native plant cover and threaten the Diné people's natural resources, traditional teachings, including cultural and language preservation, and livelihoods. These threats will continue to be exacerbated by climate change. The Diné Native Plants Program preserves highly adapted native plant species through seed banking, plant propagation and land restoration. The creation of the program and its ongoing work is a crucial and primary step in a long-term endeavor to protect native plants for the land and the people they are most culturally meaningful to. ■



*Kelsey Jensen is with the Diné Native Plants Program, Institute for Tribal Environmental Professionals at Northern Arizona University. Program staff assisted in developing this profile. Profiles on the Tribes & Climate Change website ([WWW7.NAU.EDU/ITEP/MAIN/TCC/TRIBES/](http://WWW7.NAU.EDU/ITEP/MAIN/TCC/TRIBES/)) are intended to be a pathway to increasing knowledge among tribal and*

*non-tribal organizations interested in learning about climate change mitigation and adaptation efforts. For more information, contact Nikki Cooley, co-manager: [NIKKI.COOLEY@NAU.EDU](mailto:NIKKI.COOLEY@NAU.EDU) or Karen Cozzetto, co-manager: [KAREN.COZZETTO@NAU.EDU](mailto:KAREN.COZZETTO@NAU.EDU)*

# REKINDLING TRADITIONAL RELATIONSHIPS FOR A SUSTAINABLE FUTURE

BY MALIN ALEGRIA

When most people think of sustainability, we think of sustainable agriculture, local farmers' markets, composting food scraps, mending old clothes, or recycling. These ecologically conscious efforts mimic a natural pattern around us that seeks to preserve a sustainable future.

However, when faced with more significant crises like the effects of global warming, immigration and food scarcity, few of us consider looking to traditional relationships of the past for a solution. Yet, this is what the Traditional Native American Farmers Association (TNAFA) is cultivating. Since 1992, the TNAFA has been promoting sustainable Indigenous communities and strengthening pan-indigeneity across borders, languages and varying degrees of assimilation because it believes this network is key.

"What happens in Central America directly affects us," said Clayton Brascoupe, director of TNAFA. "The summer rains in the American Southwest originate in Central America. Winds pick up moisture as they cross the Caribbean from east to west. They then swing north through the mountains of México into the United States and circle down from the northwest to drop rain on Arizona and New Mexico, and the cycle begins anew. Seeds of corn and many other crops, as well as traditional knowledge, followed this same path."

*"All we've done here is simply stepped back onto our ancient route." – Clayton Brascoupe*

Before European conquest, Indigenous people

regularly exchanged natural resources, culture and knowledge systems. In 1994, Brascoupe traveled to Belize to explore the possibility of rekindling traditional relationships for mutual support—*Pueblo-to-Pueblo Exchanges*. "When I first came down, I met a lot of Mayan farmers who were pressured to adopt industrialized agriculture practices, which rely heavily on spraying with expensive pesticides, chemical fertilizers and corporate-issued hybrid seeds," he said.

This initial journey inspired Brascoupe to sponsor farmers from the highland villages of San Jose Succotz, Barton Creek and San Antonio to come to New Mexico for TNAFA's annual Indigenous Sustainable Food Systems Design Course (ISFSDC) in Santa Cruz. The course exposed them to traditional farming theory, seed-saving, rainwater catchment and other practices. Moreover, it ignited



*TNAFA Bokashi composting workshop with women's group in village of San Antonio, Belize © Clayton Brascoupe*

## Igniting pride in the power of ancestral knowledge

pride in the power of ancestral knowledge. The European

conquest couldn't erase Indigenous cosmovision (a physical, spiritual and environmental worldview), and now, this information could save Indigenous communities. Demand for this knowledge grew so much that TNAFA had to bring the course to Belize.

"All we've done here is simply stepped back onto our ancient route," Brascoupe said. "By helping sustain the people and environment of Belize, the TNAFA participants ensure their well-being. Since coming here, we've seen a massive shift back to traditional agricultural practices being used and promoted."

When the Pueblo-to-Pueblo exchanges started, it was a way to bring farmers together to share seeds and support each other. In recent years, this relationship has spiraled out to meet the growing needs of young couples and women requesting information on reproductive rights and traditional knowledge and resources to become self-sufficient. Brascoupe agrees with development experts worldwide who find empowering women is critical. "Women focus on whole-community development," he said. "They work to meet their children's needs, which means that the effects last into the future. That complements TNAFA's aim, which is youth education."

The demand for more consistent and profound exchanges continues to grow. TNAFA's next step is to build a center in Belize with local communities to support holistic study of sustainable community design, and to have a space for business incubation. Brascoupe sees this evolution as part of a spiraling pattern that's as old as the continents.



TNAFA Director Clayton Brascoupe presents gift bandanas to Santa Elena women's group



TNAFA workshop participants in the village of San Antonio (Oxmul Kaa), Belize

TNAFA is looking for partners to help with this vision. The organization hopes to gather all children of Turtle Island to work, invest and collaborate in the effort. To heal and thrive after colonization and imperialism, Indigenous people must awaken to the systemic ways that keep our communities disconnected from access to self-determination and cultural preservation. We need to act in solidarity and support the branching of communities across borders. I encourage you to get involved, extend a hand of friendship and support to our neighbors to the north and south to thrive on this planet we call home.



To contact the Traditional Native American Farmers Association about its Belize projects or its Indigenous Sustainable Communities Design course, visit [WWW.TNAFA.ORG](http://WWW.TNAFA.ORG). ■

Malin Alegria is an author, educator and urban food producer who lives in California. She has worked with TNAFA since 2006. You can visit her on the web at [HTTPS://MALINALEGRIA.COM/](https://MALINALEGRIA.COM/)

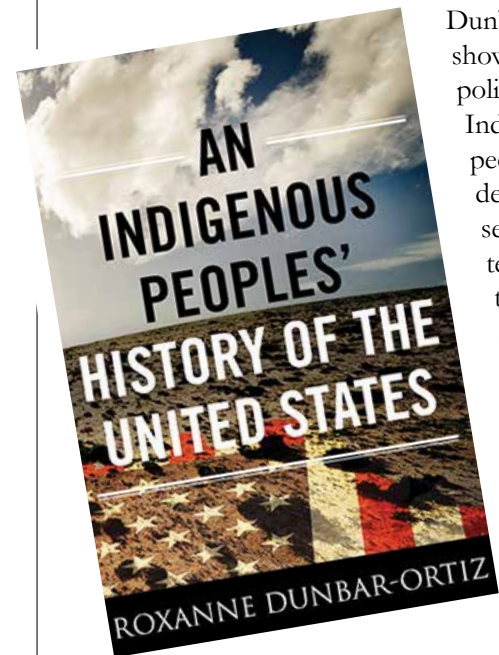
## BOOK PROFILES

### AN INDIGENOUS PEOPLES' HISTORY OF THE U.S.

BY ROXANNE DUNBAR-ORTIZ

BEACON PRESS 2015. PAPERBACK, 312 PAGES, \$16.00

New York Times bestseller and American Book Award recipient: *An Indigenous Peoples' History of the United States*, by Roxanne Dunbar-Ortiz, is the first history of the United States told from the perspective of Indigenous peoples. Spanning more than 400 years, this extensively researched, bottom-up account reframes U.S. history, challenging the founding myth of the United States bolstered in the 19<sup>th</sup> century by *Manifest Destiny* and the *Doctrine of Discovery*, revealing how Native Americans, for centuries, actively resisted the settler-colonialist expansion. In so doing, the book explodes the silences that have haunted our national narrative and provides historical threads for understanding the present.



Dunbar-Ortiz shows how policy against Indigenous peoples was designed to seize the territories of the original inhabitants, displacing or eliminating them. And Dunbar-Ortiz reveals how the *Kill the Indian, Save the Man* movement

was praised in popular culture, through writers like James Fenimore Cooper and Walt Whitman, in D.W. Griffith's enormously popular film, *Birth of a Nation*, and in the highest offices of government and the military. As the genocidal policy reached its zenith under President Andrew Jackson, its ruthlessness was best articulated by U.S. general Thomas S. Jesup, who, in 1836, wrote of the Seminoles: "The country can be rid of them only by exterminating them."

Today in the United States, there are more than 500 federally recognized Indigenous nations comprising nearly three million people, descendants of the 15 million Native people who once inhabited this land.

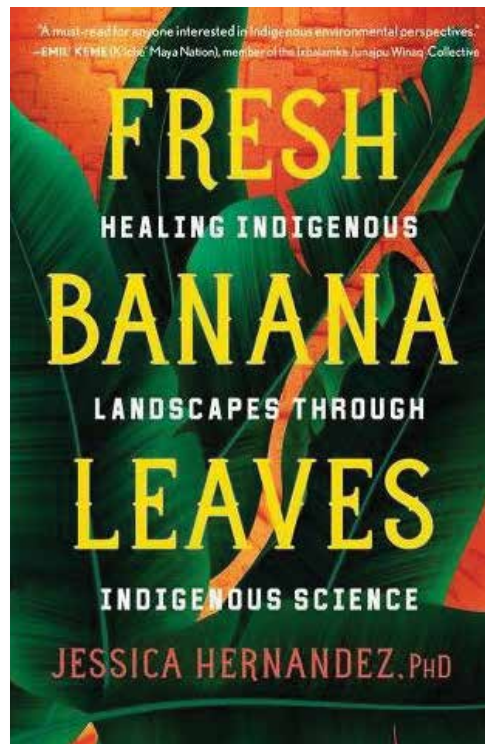
## FRESH BANANA LEAVES: HEALING INDIGENOUS LANDSCAPES THROUGH INDIGENOUS SCIENCE

BY JESSICA HERNÁNDEZ, PH.D.

NORTH ATLANTIC BOOKS, 2022 (PAPERBACK),  
\$17.95

In *Fresh Banana Leaves: Healing Indigenous Landscapes Through Indigenous Science*, Jessica Hernández, an Indigenous environmental scientist and founder of the environmental agency Piña Soul, breaks down why she thinks Western conservationism isn't working, and offers Indigenous models informed by case studies, personal stories and family histories that center the voices of Latin American women and land protectors. In the process, without romanticizing, she provides interesting information about Mayan culture and traditions.

Hernández (Maya Ch'orti'/Zapotec), introduces and contextualizes Indigenous environmental knowledge and proposes a vision of land stewardship that heals rather than displaces, and generates rather than destroys. She cites the restoration work of urban Indigenous people in Seattle; her family's fight against ecoterrorism in Latin America; and holistic land management approaches of Indigenous groups across the continent. She takes on the climate crisis with all its implications, and makes the case that if we're to recover the health of our planet—for everyone—we need to stop the eco-colonialism ravaging Indigenous lands and restore our relationship with Earth to one of harmony and respect.



## WRITING TO HEAL

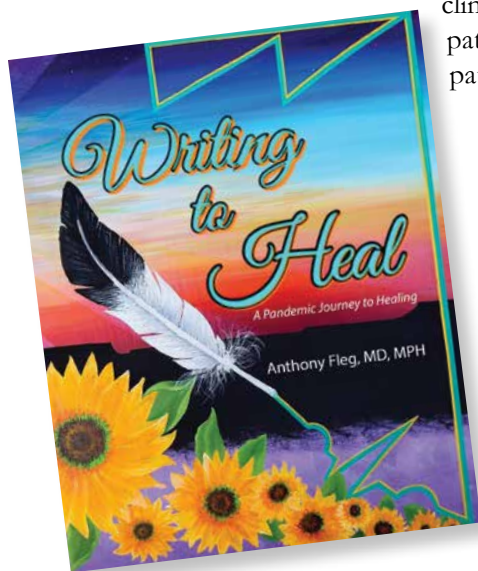
BY ANTHONY FLEG, MD / MPH

COMMUNITY PUBLISHING

COVER ART BY MARY QUETAWKI

[HTTP://WWW.COMMUNITYPUBLISHING.ORG/WRITING-TO-HEAL/](http://www.communitypublishing.org/writing-to-heal/)

Anthony Fleg is a family medicine physician based in Albuquerque, where he lives with his wife, Shannon, a Dine' (Navajo) woman. They have four children and co-direct the Native Health Initiative. Fleg's work is grounded in love, culture and community. He aspires to the ideal of being a healer—"someone who listens, comforts, finds what people do well, and becomes a partner in their wellness and health journey." In his clinical work, Fleg began the Writing to Heal project as part of his patients' treatment plan, and as a form of wellness and self-care for patients and fellow healers.



*A healing journey through  
the first year of the pandemic*

*Writing to Heal* is composed of stories from the first year of the pandemic that inspire healing and action. In the foreword, Dave Rakel, MD, says, "The writings are a beautiful example of connecting to the authentic truth that is all around us, even when it is difficult to see during COVID times. It encourages us to pick up a journal and use our own experiences to write, inviting new life into the world. Disease loves stagnation. Healing requires

movement and flow. When I reflect on what Anthony Fleg has taught, flow and connection ring true. He is an artist in connecting people through his kind heart, infectious positive spirit and beautiful reflections. Through this connection, flow happens."

## DEB HAALAND: FIRST NATIVE AMERICAN CABINET SECRETARY

BY JILL DOERFLER

AND MATTHEW J. MARTINEZ

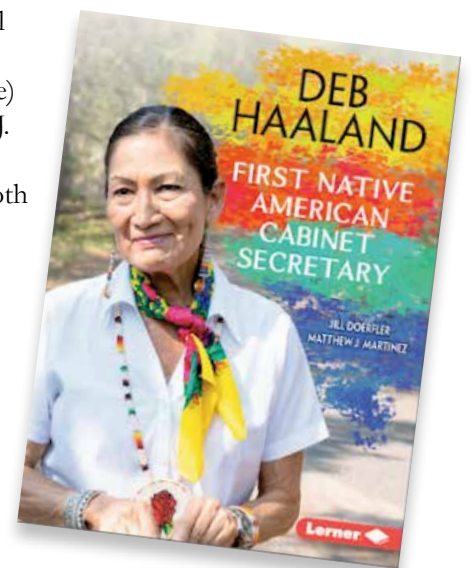
LERNER GATEWAY BIOGRAPHIES (PAPERBACK),  
AUGUST 2022

Deb Haaland, an enrolled member at the Pueblo of Laguna, made history as the first Indigenous cabinet secretary. This book opens on March 18, 2021, with Haaland entering the Eisenhower Executive Office Building in Washington, D.C. to be sworn in as the 45th U.S. Secretary of the Interior. There's a photo of that moment, a description of the ribbon skirt she was wearing, information about who made the skirt and its symbolism.

*Deb Haaland: First Native American Cabinet Secretary* is a biography written for children ages 9 to 12. It chronicles Haaland's early life, her political career and more. It communicates a deep appreciation for Native cultures.

Co-authors Dr. Jill Doerfler (White Earth Anishinaabe) and Dr. Matthew J. Martinez (Ohkay Owingeh) have both taught at colleges and universities. Doerfler is a professor and department head of American Indian Studies at the University of Minnesota.

Martinez has served as First Lieutenant Governor at Ohkay Owingeh and as Deputy Director of the Museum of Indian Arts and Culture in Santa Fe. He recently became Director of Community Engagement for the New Mexico Public Education Department. He is part of a team working to further relations with families, tribes, schools and education stakeholders.



The book has inset blocks that teachers can use as an American Indian Studies 101 course. The first inset block is titled "Sovereign Nations." It says: "Sovereignty is the authority to govern and make laws. Native American nations existed long before the United States. The U.S. Constitution and federal laws still recognize their sovereignty. This means Native Americans have a unique relationship with the U.S. government. Native Americans belong to three polities, or distinct political entities. They are U.S. citizens, members of the state where they live, and citizens of their tribal nation. There are currently 574 Native American nations within the U.S., each with its own distinct governing bodies, language and customs."

# New Mexico's Education Reform Plan Presented to Tribal Leaders

*Education officials deposed as part of the Martínez-Yazzie settlement*

BY SHAUN GRISWOLD, SOURCE NM

The plan is still a draft, but New Mexico leaders say it's one step closer to meeting a judge's order to reform public education across the state. But advocates want a greater balance than the back-and-forth, top-down approach they say goes in creating the education plan. And lawyers representing the plaintiffs in the Martínez-Yazzie lawsuit that prompted reform continue to argue their case by deposing top state leaders.

The plan comes in response to the 2018 Martínez-Yazzie judgment that unveiled a history of failures by state government in providing adequate education for a majority of public school students. The case resulted in the court ordering New Mexico to fix the system.

On June 2, Gov. Michelle Lujan Grisham presented highlights from the proposal to Native American leaders during the 2022 State Tribal Leadership Summit at Sandia Casino, stressing every facet of government must acknowledge failures and have a role in fixing the broken system. "To recognize that we were not investing in educational opportunities that begin in each of your sovereign nations, that if we don't do that, we're discriminating against the very educators who will make a difference," she said. "Not just in the classroom, but in every opportunity for every single student and family member statewide."

*Pecos wants to see investments that bring more Native American teachers into schools with a high population of Native students.*

The state is looking at a substantial overhaul after "decades of neglect and underfunding" that affected young people with disabilities, those learning English, Native Americans and students from families with low incomes, the action report summarizes. While the state's 55-page follow-up outlines several efforts by the state to adhere to the court order, advocates want more voices included, saying this process is an opportunity to bring in more stakeholders to help shape education now and in the future.

Regis Pecos, a former governor of Cochiti Pueblo, is a staunch advocate for tribal education reform. He said he is optimistic about the state's plan and sees it as a positive path forward, but he noticed gaps in the process to create the plan, exacerbating the very problems the state is trying to fix. What sticks out to Pecos is the piecemeal inclusion of the Tribal Remedy Framework, a possible solution to Martínez-Yazzie prepared by the University of New Mexico's Native American Budget and Policy Institute that was authored by Indigenous educators.

"We're still fighting the pushback" from the Public Education Department and the Legislative Finance Committee, he said. "If there was a better alignment, then we shouldn't be having the kind of pushback in the process so that we all are aligned."

How the Tribal Remedy Framework is included in the state's education reform plan is already ongoing, due in part to multiple pieces of legislation pushed by advocates and signed into law.

Judy Robinson, a spokesperson with PED, listed several initiatives in the action plan that are directly from the framework: funding for traditional language preservation, revised social studies standards, curriculum development that is culturally relevant, more money for the Indian Education Fund and tribal libraries.

However, many of those initiatives, especially the funding for programs and libraries, required people like Pecos and Rep. Derrick Lente (D-Sandia Pueblo) to fight for legislation and appropriation at the Roundhouse. During the 2022 legislative session, Lente, another prominent advocate for the framework, sponsored and passed bills like the one that boosted

pay for traditional language teachers. He said he understands the role that the Legislature must have in reforming education but does not understand why commonly accepted norms, such as making school better for children, is still politically contentious.

"It's a long process. It's a much more political process than I thought I was going to get into," he said. "I thought it was gonna be a slam dunk with a Democratic-majority House, Democratic-majority Senate, Democratic governor. But it has been much more of a battle. That's just politics."

No authors of the Tribal Remedy Framework took part in writing the state's plan. "I think more local control is extremely important—local control where we are the creators, we are the authors, we are the founders of the education that's going to help improve our students' outcome," he said. "It's got to be balanced between Western ideas and our traditional teachings, and so I think the only people that are best suited to do that are our own people."

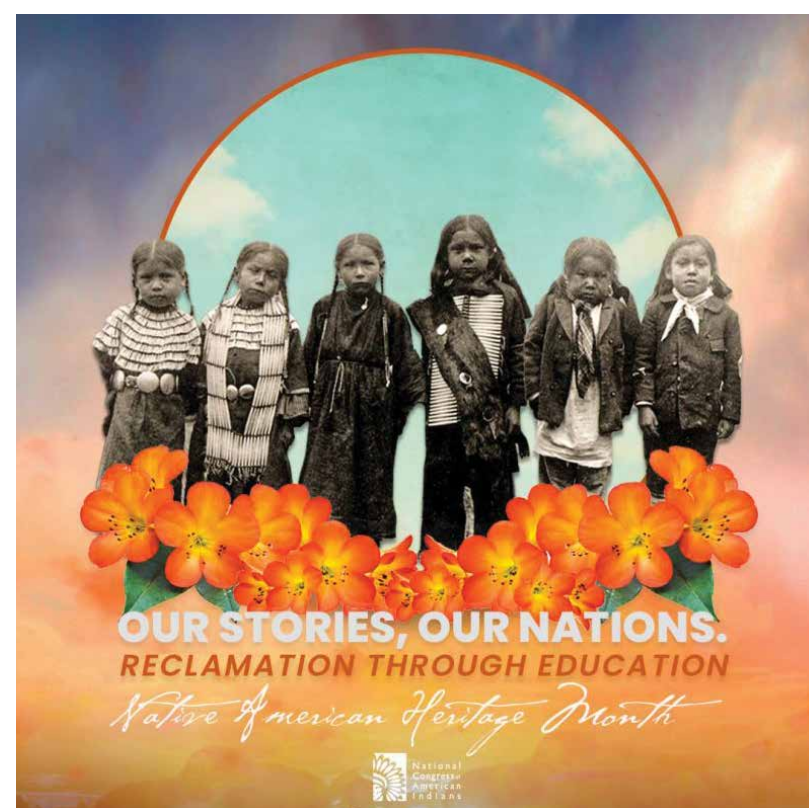
Lujan Grisham's office asserted that tribal viewpoints were brought into crafting the state's plan, saying members of the Indian Affairs Department and the Department of Cultural Affairs took part in the process. "The drafting also came after robust outreach to and input from tribal leaders, educators and communities," said Maddy Hayden, a spokesperson for the governor.

One thing Pecos wants to see included in the state's action plan is hardline investments into teacher programs at UNM and tribal colleges that are creating a pipeline to bring more Native American teachers into schools with a high population of Native students.

"That's where this plan is still not fundamentally connecting," he said, "Navajo, Apache, Mescalero and the 19 pueblos develop very specific recommendations on policy changes, program development, statutory changes, appropriations. And then we've transformed those into what is now the tribal remedy framework."

The state's plan makes it clear why this teacher pipeline is necessary, writing that students perform better when educators have ties to the community where they work and live.

Teacher vacancies doubled in just a year—with over 1,000 last year—according to the Southwest Outreach Academic Research Evaluation and Policy Center at New Mexico State University. Major gaps in teacher diversity mean there's also a push to recruit new teachers who better represent the students they serve.





*The state is looking at a substantial overhaul.*

#### **DEPOSITIONS AND TURNOVER**

Lashawna Tso (Diné) was the assistant secretary of the state's Indian Education Department during the process and oversaw parts of the report, according to PED. Tso recently left her position to be the executive director Navajo Nation's Washington D.C. office. Her departure is significant because the turnover in leadership at PED is a cause of concern, says Melissa Candelaria, a lawyer with the New Mexico Center for Law and Poverty, which represents the Yazzie group in the lawsuit.

Candelaria (San Felipe) said her office has recently deposed six top-level employees at PED as part of the lawsuit; she couldn't share much about the depositions but said many of those individuals have left for other jobs.

Pecos is encouraged by the commitment to stay for the long haul by PED Secretary Kurt Steinhaus, but he expressed concern that the turnover at the department could hamper the reform efforts because it causes leadership to start from step one when new employees take over. "The question now becomes, who's going to lead the effort to implement (the state plan) when all of the top-ranking deputy secretaries are gone? And now, coming into their roles will be a whole new team that is going to result in us going back to the table to try and educate those who replace those who have left," he said. "There's no stable leadership in PED. That's the fundamental problem there."

Steinhaus is pitching the plan to communities. He presented the plan to tribal leaders for the first time and hosted another listening session in June. Public education leaders were also seeking input on the plan from community leaders. ■

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*Shaun Griswold, a citizen of the Pueblo of Laguna, grew up in Albuquerque and Gallup. Most recently, he covered Indigenous affairs for New Mexico In Depth.*

## **NAVAJO WATER RIGHTS AGREEMENT SIGNED**

U.S. Secretary of the Interior Deb Haaland and Navajo Nation President Jonathan Nez signed an agreement on May 27 in Monument Valley that formalizes the Utah Navajo Water Rights Settlement, which became law in 2020 as part of President Biden's bipartisan infrastructure bill. That legislation allocates \$1.7 billion to 16 Tribal water rights settlements. The Navajo settlement calls for the federal government to pay the Navajo Nation \$210 million for drinking water infrastructure in San Juan County, and for Utah to pay \$8 million.

"As we seek to strengthen Indigenous communities and support tribal self-governance, today's action and all of these investments will help provide the Navajo Nation with autonomy and flexibility to design and build appropriate water projects that will address current and future water needs," Haaland said at the signing ceremony.

The settlement gives the tribe the right to 81,500 acre-feet of Utah water and allows it to draw from aquifers, rivers or Lake Powell. Unused water may be leased to entities off the reservation. That clarifies senior claims the tribe had to a portion of the Colorado River, based on a 1908 court decision. The tribe was not included when shares of the Colorado River Compact were claimed by seven states in 1922. Many Navajo homes still lack running water.

## **PUEBLO OF JEMEZ ENERGY INDEPENDENCE STUDY**

The U.S. Department of Commerce's Economic Development Administration (EDA) is awarding a \$536,000 grant to the Pueblo of Jemez for a feasibility study of the tribe's potential energy independence. The study will outline Tribal strategies for economic development and job creation, including analysis of renewable energy generation capacity and workforce development so the pueblo can identify ways in which it can acquire or build the energy infrastructure necessary to become carbon neutral.

The project is funded under EDA's American Rescue Plan Indigenous Communities Program, which has specifically allocated \$100 million for the needs of Tribal governments and Indigenous communities. The program supports partners that develop and execute development projects needed to help Native communities recover from the pandemic and build their economies. Indigenous communities are also encouraged to apply for the EDA's other programs.

## **A REPRIEVE FOR THE SOLAR INDUSTRY**

In June, the White House announced that no new tariffs will be imposed on solar imports for at least two years. The solar industry had been in crisis mode since April, when the U.S. Commerce Department began investigating solar manufacturing operations in some Southeast Asian countries to see if they were circumventing import tariffs by incorporating Chinese components in products that are subject to U.S. trade restrictions. Those countries supply more than 80 percent of the solar modules used in the U.S. More than 98 percent of worldwide solar panel production occurs overseas. The Commerce Department said that new tariffs, if imposed, could be made retroactive to November, 2021.

Because of this, solar manufacturers postponed or canceled hundreds of large-scale projects across the country, including four projects that were scheduled to come online this year to replace the coal-fired San Juan Generating Station, and about 740 MW that was expected to replace energy from the Palo Verde Nuclear Generating Station in Arizona after PNM leases expire next year. PNM raised the specter of rolling blackouts this summer and has extended operations at one of San Juan's two generating units. Many jobs were at risk of being lost. New Mexico's largest installation company, Affordable Solar, laid off many employees, and Array Technologies, a local solar-tracker manufacturer, projected it could lose up to \$250 million this year from the slowdown.

The new White House announcement could rapidly revive the industry. Although the Commerce Department will continue its investigation, if new tariffs are imposed, they won't be implemented until at least mid-2024 and will not be applied retroactively. President Biden's executive order also authorized use of the Defense Production Act to help build more domestic manufacturing capacity for clean energy technologies. Under the order, federal agencies will significantly increase procurement of U.S.-made solar systems.

## THE FUTURE IS INDIGENOUS

*Pathways Indigenous Arts Festival*

*August 19–21, Buffalo Thunder Resort & Casino*

A guiding principle of the Poeh Cultural Center's Pathways Indigenous Arts Festival has been that history can be an active process in which—through conscious choices and actions—we can impact how things can be. “We are asserting our role in creating a future for Native American art and Indigenous entrepreneurship that is defined by Native creatives,” said Karl Duncan, the Poeh Center's executive director. “We've been using ‘The Future is Indigenous’ as our mantra. The festival is one of several projects we have initiated to provide venues for Native creatives.”

“We've been actively promoting Indigenous artists and entrepreneurs since the beginning of our Traditional Arts Program,” Duncan said. “The need became more pressing due to the economic slowdown in the wake of COVID-19.” The Poeh, like many museums and cultural centers, had to close its doors to the public for nearly two years. The staff decided to use that time to plan for growth. Grants awarded by the National Endowment for the Arts (NEA) and the Institute of Museum and Library Services enabled the Poeh to reach out with a sense of optimism.



*Duke Sine at the Poeh Cultural Center's Pathways Indigenous Arts Festival*  
Photo by John Acosta

More than 4,000 people attended. Those organizations have also contributed to this year's festival, along with the Santa Fe Arts & Culture Department, the National Endowment for the Humanities (NEH), and the U.S. Department of Agriculture (USDA).

The Pathways Festival this year features more than 400 Native American artists, as well as food vendors. “We really want to emphasize our sense of Indigenous community; locally, regionally and even nationally,” Duncan said. “We want to claim a new space beyond the commonly known downtown Santa Fe spaces, and bring Indigenous community talent to a new generation.” For more information, call Jacob Shije at 505-455-5061.

## U.S. ASSISTANT SECRETARY OF HEALTH EXPLORES ALBUQUERQUE'S HEAT MITIGATION EFFORTS

*Local project has potential to scale nationally*

In May, city officials were joined by the U.S. Assistant Secretary for Health, Admiral Rachel Levine, M.D., who visited Albuquerque to highlight stories of frontline cities experiencing impacts of climate change and the resulting public health implications.

Levine learned about the city's work to mitigate rising urban heat, its disproportionate impacts, and how federal, community and local partners can work to create change. Albuquerque communities located in the hottest urban heat-island areas are most susceptible to negative health impacts, as documented in the city's 2021 Heat Watch Campaign report. Levine's tour showcased green spaces, community gardens and heat mitigation projects. She toured the city's Emergency Operations Center, Tingley Beach in the bosque, Wilson Middle School's community garden project and the Río Grande Valley State Park.

“Cases of heat exhaustion and heat stroke in New Mexico are becoming more common as the average number of extreme heat days increases,” said Heidi Krapfl, deputy division director of programs for the Epidemiology and Response Division at the New Mexico Department of Health. “We must advance climate adaptation and resilience efforts to reduce or prevent impacts on public health, especially for the most vulnerable.”

“We can see the effects of climate change in the ozone and air quality alerts that make us take our kids inside, in the heat islands in our lowest-income neighborhoods, and in the state's historic catastrophic fires,” said Mayor Tim Keller.

“Strategically increasing shade and tree canopy can go a long way in protecting residents from dangerous summer temperatures, while providing health and environmental benefits,” said Kelsey Rader of the city's Sustainability Office. “Maintaining and increasing this vital urban natural resource will take everyone in our city coming together to create a greener and cooler community,” said Sean O'Neill, the city's assistant forester. “Utilizing multiple data sources is critical to implementing data-driven management decisions and proper stewarding of the city's urban tree canopy.”

The City of Albuquerque has announced a new collaboration with NASA's DEVELOP program to further institute heat-related modeling to assist in strategic tree canopy development this summer. DEVELOP addresses environmental and public policy issues through interdisciplinary research projects that apply NASA Earth observations.

“We engaged artists and the community to find projects to regain momentum. Our first festival celebrated their efforts and created potential for the future,” said Macario Gutiérrez, one of the planners. “We featured artist demonstrations, performers, fashion design, panel discussions funded by the National Museum of the American Indian (NMAI), and short film screenings sponsored by Sundance Film Festival. First Nations Development Institute and the Institute of American Indian Arts (IAIA) also contributed to the festival's success.”

## IMPROVING ACCESS TO HEALTHY FOODS IN UNDERSERVED COMMUNITIES

### *Financing Will Help Grocers, Markets and Other Organizations*

On June 9, USDA Rural Development New Mexico State Director Patricia Domínguez announced that the Department has partnered with Reinvestment Fund to invest \$22.6 million to improve access to healthy foods in underserved communities across the country. The announcement builds on Agriculture Secretary Tom Vilsack's announcement that the USDA is committing an additional \$155 million to the Healthy Food Financing Initiative (HFFI). "USDA Rural Development's commitment to rural communities extends beyond infrastructure, business or even housing," said Domínguez. "Access to healthy food is a key component to ensuring a community is livable and enjoys sustainable living and growth."

The announcement includes investments that will support 134 projects in rural, urban and Tribal communities in 46 states, Puerto Rico and Washington D.C. In New Mexico, the five awarded projects are:

- In Dixon, the **DIXON COOPERATIVE MARKET (DCM)**, a for-profit cooperative, provides fresh food access and sources produce and eggs from local farmers and crafts from local artisans, including many woman-owned and Hispanic-owned small farms and Native American artisans. HFFI will support DCM to expand operations by designing and constructing an addition on the rear of the building to provide storage capacity for both shelf-stable and perishable foods, as well as by adding a ramp and loading dock.
- In Zuni Pueblo, **FIRST NATIONS DEVELOPMENT INSTITUTE**, a national, Native-controlled nonprofit, aims to reduce the "last mile" of food supply chains between Native food producers and Native families. The goals of the "Strengthening the Zuni Tribal Community Food Supply Chain" project are to increase jobs and producers' profits, increase food budget dollars and the amount of locally produced food within the community, and to shorten the food supply chain. With support from HFFI, First Nations will work with prior HFFI grantee **MAJOR MARKET** to increase energy efficiency at the market site, and to source regional and Indigenous food products, including local meat.
- In Albuquerque, **MANUEL'S FOOD MARKET** is a neighborhood grocer that offers healthy, local produce and staple food items, serves as a community hub and acts as a historic landmark to preserve the rich culture and heritage of Martíneztown. The grocer seeks to partner with local farmers to bring fresh, local produce to the store by offering grocery retail, a commercial kitchen to prepare healthy meals, and by providing weekly produce subscription boxes that are subsidized by USDA food assistance programs. HFFI funds will support necessary building renovation and store improvements that will serve the local community better.
- Also in Albuquerque, **THREE SISTERS KITCHEN (TSK)** is a multi-use community food education center, housing a local foods shop and café, commercial test kitchens for food business training and incubation, community dining rooms for meals and events, and demonstration kitchens for community food education in downtown Albuquerque. TSK will leverage HFFI funds to expand the existing local foods shop retail space, providing healthy, local food retail year-round.
- In Taos, **TAOS FOOD CO-OP**, a community-based not-for-profit grocery store and wholesale buying group, seeks to provide healthy foods and fresh organic produce at the lowest possible prices and to provide a wider variety of fresh, wholesome foods that are ready-to-eat. HFFI funds will support the cooperative in expanding its capacity and pilot a new food delivery program that will better serve customers in the community.

For more information, visit [HTTPS://WWW.RD.USDA.GOV/ABOUT-RD/INITIATIVES/HEALTHY-FOOD-FINANCING-INITIATIVE](https://www.rd.usda.gov/about-rd/initiatives/healthy-food-financing-initiative)

## IAD CONTRIBUTES TO NEW MEXICO'S 50-YEAR WATER PLAN

Gov. Michelle Lujan Grisham has called on the Office of the State Engineer (OSE) and the Interstate Stream Commission (ISC) to lead the effort to develop the New Mexico 50-Year Water Plan. The plan is a high-level summary of key strategies to help New Mexico citizens and communities develop mitigation and adaptation measures to deal with the impact of climate change on our water resources. The plan's analysis shows that New Mexico's annual average temperatures could rise between five and seven degrees over the next 50 years if greenhouse gas emissions continue to rise. That could create hotter droughts, lower streamflow and aquifer recharge, and decreasing snowpack.

The OSE and ISC partnered with the New Mexico Indian Affairs Department (IAD) to ensure the inclusion of New Mexico's Tribal Nations in the development of the Plan. IAD developed the Tribal Water Work Group (TWWG) in September 2021. At IAD's request, Tribal leaders sent their designees to serve on the TWWG in an advisory capacity. The TWWG consisted of a diverse group including Tribal Water technical experts, Natural Resource professionals, Tribal Historic Preservation Officers and cultural leaders, who provided guidance and technical expertise. The TWWG provided key recommendations on strategies to increase Tribal water resiliency as New Mexico's climate grows more arid.

The state expects to release a draft of the plan in July and to have it finalized in August or September.

# WHAT'S GOING ON

## ALBUQUERQUE / ONLINE

### THROUGH JULY 10

#### JOURNEY OF AFRICAN AMERICAN HOMESTEADERS IN NM

*Albuquerque Museum*

High-tech exhibit tells the story and honors the legacy. Presented by the African American Museum & Cultural Center on NM and the City of ABQ Dept. of Arts & Culture. [HTTPS://WWW.CABQ.GOV/ARTSCULTURE/ALBUQUERQUE-MUSEUM/](https://www.cabq.gov/artsculture/albuquerque-museum/)

### THROUGH JULY 10

#### TEMPO Y TIEMPO: 4 PHOTOGRAPHERS IN NM

National Hispanic Cultural Center, 1701 Fourth St. SW

Photos by Frank Blazquez, Bobby Gutiérrez, Pico del Hierro-Villa and Ximena Montéz tell stories about what it is to live in NM. Masks required indoors. Tues.–Sun., 10 am–4 pm. 505-246-2613, [HTTPS://WWW.NHCCNM.ORG/](https://www.nhccnm.org/)

### JULY 30, 1–4 PM

#### TEDXABQ

African American Performing Arts Center

New ideas and perspectives to elevate community engagement and enthusiasm for the future. This year's theme is "Connection." [HTTPS://WWW.TEDXABQ.COM/](https://www.tedxabq.com/)

### THROUGH JULY

#### CAMP BIOPARK

Children grades K-9 learn science through hands-on activities, games and art. City of Albuquerque Recreation. [HTTPS://CABQ.ASAPCONNECTED.COM/?ORG=1082](https://cabq.asapconnected.com/?org=1082)

### AUG. 9–10

#### HEALTHY KIDS! HEALTHY FUTURES! CONFERENCE

*Sandia Resort & Casino*

Learn new, exciting ways to enhance Native youth and communities' health and fitness. Tickets start at \$169.57. Some scholarships available. Presented by the NB3 Foundation. [HTTPS://WWW.CLASSY.ORG/EVENT/HEALTHY-KIDS-HEALTHY-FUTURES-CONFERENCE/E406210](https://www.classy.org/event/healthy-kids-healthy-futures-conference/e406210)

### THROUGH SEPT. 3, TUES.–SAT., 12–5 PM; FIRST FRIDAYS, 5–7 PM

#### ART MEETS HISTORY:

#### TECHNOLOGIES OF THE SPIRIT

*516 ARTS, 516 Central Ave. SW*

Project looks at how divergent histories of race, conflict and colonialism in NM inform how we imagine our futures. Exhibitions accompanied by in-person public conversations and activities. 505-242-1445, [516ARTS.ORG](http://516ARTS.ORG), [HTTPS://WWW.KASINIHOUSE.COM/MANY-WORLDS/INDEX.HTML#INDEX](https://www.kasinihouse.com/many-worlds/index.html#index)

### THROUGH SEPT. 3, TUES.–SAT., 12–5 PM; FIRST FRIDAYS, 5–7 PM

#### NATHANIEL TETSURO PAOLINELLI: DOWNTOWN

*516 ARTS, 516 Central Ave. SW*

Portraits of people and places—from nightlife to families to lowrider culture—photographed in and around Albuquerque between 2018 and 2022.

[516ARTS.ORG/EVENTS](http://516ARTS.ORG/EVENTS)

### SEPT. 12–14

#### 50TH ANNUAL NAIWA CONFERENCE

*Indian Pueblo Cultural Center*

North American Indian Women's Association. "Empowering & strengthening the Spirit of Native American Women Past, Present and Future." [WWW.NAIWAM.ORG](http://WWW.NAIWAM.ORG)

### THROUGH DECEMBER

#### FRONTERA DEL FUTURO

*NHCC, 1701 Fourth St. SW*

"Art in NM and Beyond" A transformative look at pop culture, religion, tradition and identity. Intersections of art, science, technologies, cosmic musings, future-oriented visions. \$6/\$5/18 & under free. [NHCC.ORG](http://NHCC.ORG)

### THROUGH JAN. 29, 2023

#### WIT, HUMOR AND SATIRE

*Albuquerque Museum, 2000 Mountain Rd. NW*

More than 50 artists. Photography, prints, painting, ceramics and sculpture from the permanent collection. [ALBUQUERQUEMUSEUM.ORG](http://ALBUQUERQUEMUSEUM.ORG)

### SUNDAYS, 10 AM–2 PM

#### RAIL YARDS MARKET

*777 1st St. SW*

In-person and online shopping, curbside and delivery available. Through Oct. (505) 600-1109, [HTTP://WWW.RAILYARDSMARKET.ORG](http://WWW.RAILYARDSMARKET.ORG)

### MON., WED., 5:45 PM

#### RUNNING MEDICINE

*Various Locations*

Walkers and runners of all ages, speeds and fitness achieve greater mind, body and spirit wellness through movement. Through July 20. [RUNNINGMEDICINEABQ@GMAIL.COM](mailto:RUNNINGMEDICINEABQ@GMAIL.COM), [RUNNINGMEDICINE.ORG](http://RUNNINGMEDICINE.ORG)

### TUESDAY–SUNDAY, 9 AM–4 PM

#### INDIAN PUEBLO CULTURAL CENTER

*2401 12th St. NW*

"Gateway to the 19 Pueblos of N.M." Museum galleries, exhibits, restaurant. Tickets \$10/\$8/\$7. 505-843-7270, [WWW.INDIANPUEBLO.ORG](http://WWW.INDIANPUEBLO.ORG)

### FRIDAYS, 4:30–7:30 PM

#### LA FAMILIA GROWERS' MARKET SOUTH VALLEY

*Dolores Huerta Gateway Park, 100 Isleta Blvd. SW*

Live music, children's activities, food trucks, farmers, arts & crafts vendors. Through Oct. 14. 505-217-2497, [SOUTHVALLEYMAINSTREET@GMAIL.COM](mailto:SOUTHVALLEYMAINSTREET@GMAIL.COM)

## SANTA FE / ONLINE

### JULY 6–10

#### INTERNATIONAL FOLK ART MARKET

*Museum Hill*

More than 150 artisans representing 49 countries. Music, dance, food. 7/5, 6 pm: Parade and community celebration on the Santa Fe Plaza. 7/9: Inaugural Saturday night folk art market. 505-992-7600, [WWW.FOLKARTMARKET.ORG](http://WWW.FOLKARTMARKET.ORG)

### THROUGH JULY 10

#### EXPOSURE: NATIVE ART AND POLITICAL ECOLOGY

*IAlA Museum of Contemporary Native Arts, 108 Cathedral Pl.*

International Indigenous artists' responses to impacts of nuclear testing, accidents and uranium mining on Native peoples and the environment. [HTTPS://IAIA.EDU/EVENT/EXPOSURE-NATIVE-ART-AND-POLITICAL-ECOLGY/](https://iaia.edu/event/exposure-native-art-and-political-ecology/)



Diego Romero, *Apocalypso*, 2011, lithograph on paper, Albuquerque Museum

**JULY 12, 5 PM**

**COMMUNITY SOLAR ORDINANCE PUBLIC HEARING**

County Administrative Building, 102 Grant Ave., 2nd Floor

Board of County Commissioners hearing. Public can listen and participate via WebEx. [HTTPS://WWW.SANTAFECOUNTYNM.GOV/COMMITTEES/BOARD\\_OF\\_COUNTY\\_COMMISSIONERS\\_BCC](https://www.santafecountynm.gov/committees/board_of_county_commissioners_bcc)

**THROUGH JULY 17**

**MOVING SOUTHWEST FESTIVAL**

Festival celebrates cultures of dance in the Southwest. Performances, classes, lectures, workshops, films, mixers. Locations include NM School for the Arts, Jean Cocteau Theater, Violet Crown Theater, SITE Santa Fe and Railyard Park. Info/Tickets: [HTTPS://WWW.MUSEUMDANCE.ORG/MOVING-SOUTHWEST-FESTIVAL-SANTA-FE](https://www.museumdance.org/moving-southwest-festival-santa-fe)

**JULY 20, AUG. 17, SEPT. 21, 5-8 PM**

**INDIGENOUS WAYS FESTIVAL**

Railyard Park and Live-Streamed

Arts, culture, music, food. Native American performers, weavers, drummers and wisdom keepers. [WWW.INDIGENOUSWAYS.ORG](http://www.indigenouways.org)

**JULY 20, 5-8 PM**

**FOODIE FILM NIGHT**

CCA, 1050 Old Pecos Tr.

Screening of East Side Sushi, preceded by Juliana Ciano's presentation on Reunity Resouces' Composting Program. \$10. [CCASANTAFE.ORG](http://ccasantafe.org)

**JULY 25-31**

**VIVA LA CULTURAL CELEBRATIONS**

Studio tours, live music, expert panels, preview events presented by the Spanish Colonial Arts Society. [SPANISHCOLONIAL.ORG/SPANISH-MARKETS](http://spanishcolonial.org/spanish-markets)

**THROUGH JULY 30**

**OCEANS OF POSSIBILITIES**

Santa Fe Public Libraries

Summer reading program for youth of all ages. Programming includes craft workshops, music performances, science and STEM talks and other free hands-on activities. [SANTAFELIBRARY.ORG](http://santafelibrary.org)

**JULY 30-31**

**2022 TRADITIONAL SPANISH MARKET**

Santa Fe Plaza

[SPANISHCOLONIAL.ORG/SPANISH-MARKETS](http://spanishcolonial.org/spanish-markets)

**JULY 30-31**

**CONTEMPORARY HISPANIC MARKET**

Lincoln Avenue

[CONTEMPORARYHISPANICMARKET.ORG](http://contemporaryhispanicmarket.org)

**AUG. 18, 5:30-7:30 PM**

**GIVING GROWTH PROJECT**

Coe Center for the Arts, 1590B Pacheco St.

Collaborative, community-driven project with artists Eliza Naranjo Morse and Jamison Chas Banks. Based on planting, growing, harvesting, disseminating seeds and relationships. Free. [COEARTCENTER.ORG](http://coeartcenter.org)

**AUG. 18-21**

**CENTENNIAL INDIAN MARKET**

Downtown Plaza

505-983-5220, [SWAIA.ORG](http://swaia.org)

**AUG. 19-21**

**PATHWAYS INDIGENOUS ARTS FESTIVAL**

Hilton SF Buffalo Thunder, Pojoaque

400-plus artists. Jewelry, beadwork, pottery, sculpture and apparel. [POEHCENTER.ORG/PATHWAYS](http://poehcenter.org/pathways)

**THROUGH AUGUST 21**

**SPECTRUM - NANI CHACÓN**

SITE Santa Fe, 1606 Paseo de Peralta

Through Diné creation mythology, Diné/Chicana artist Nani Chacón's first



museum solo exhibition explores cultural repair and colonial resistance through vibrant visual storytelling. [SITESANTAFE.ORG](http://sitesantafe.org)

**AUGUST 26-28**

**SANTA FE TRADFEST**

Camp Stonely

Acoustic performers and bands under a big tent. Workshops, youth activities. 3 days: \$65, Fri. evening: \$25, Sat. (8:45 am-10 pm), Sat. after 5: \$25., Sun (8:45 am-3 pm): \$25, 18 & under free. Free camping. No pets. [SANTAFETRADFEST.ORG](http://santafetradfest.org)

**THROUGH SEPT. 1**

**BRICK X BRICK**

Community Gallery, 201 W. Marcy St.

Artwork inspired by the legacy of earthen architecture in N.M.

**SEPT. 23-25**

**11TH INTERNATIONAL CONFERENCE ON EARTHEN ARCHITECTURE & CONSTRUCTION**

Scottish Rite Center/Online

Podium presentations, poster sessions, meet & greet, tours. [WWW.EARTHUSA.ORG](http://www.earthusa.org)

**THROUGH OCT. 2**

**ABEYTA/TO'HAJILEE KÉ**

Wheelwright Museum, 704 Cam. Lejo

Paintings, sculpture and jewelry by Narciso Abeyta (1918-1998), Elizabeth Abeyta (1915-2006), Pablita Abeyta (1953-2007) and Tony Abeyta. 505-982-4636

**OCT. 11**

**INDIGENOUS PEOPLES DAY**

Through Jan. 15, 2023, 10 am-5 pm

#mask: Creative Responses to the Global Pandemic  
Museum of International Folk Art, 706 Museum Hill  
\$7/\$12 505-476-1200, [INTERNATIONALFOLKART.ORG](http://internationalfolkart.org)

**MON., TUES., THURS., 6 PM: SF PLAZA**

**SANTA FE SUMMER SCENE 2022**

Fridays, 7 pm: SF Railyard Plaza

3 Sundays, 6 pm: Swan Park

Free concerts. [AMPCONCERTS.ORG](http://ampconcerts.org)

**MON.-SAT., 8 AM-4 PM**

**RANDALL DAVEY AUDUBON CENTER & SANCTUARY**

1800 Upper Canyon Rd.

Free walks to see birds, Sat., 8:30 am. RSVP for Randall Davey House tours. [RANDALLDAVEY.AUDUBON.ORG](http://randalldavey.audubon.org)

**TUES., 3-6 PM, JULY 5-SEPT.**

**DEL SUR FARMERS' MARKET**

Presbyterian Medical Center Parking Lot, Beckner Rd.  
Fresh local produce, meat, eggs, bread and more.

**TUES.-SAT. AND FIRST FRI. EACH MONTH, 10 AM-5 PM**

**“CURATIVE POWERS: NM’S HOT SPRINGS”**

NM History Museum, 113 Lincoln Ave.

\$7 NM residents; \$12 non-residents. Free to NM residents first Sun. each month;  
Free to NM seniors 60+ Weds. Children 16 & under free. Through Sept. 4. 505-476-5200,  
[NMHISTORYMUSEUM.ORG](http://NMHISTORYMUSEUM.ORG)

**TUES., SAT., 8 AM-1 PM**

**SANTA FE FARMERS’ MARKET**

1607 Paseo de Peralta

505-983-4098, [SANTAFEFARMERSMARKET.COM](http://SANTAFEFARMERSMARKET.COM)

**WEDS.-SAT., 10 AM-6 PM; FRI.-SAT., 10 AM-6:30 PM**

Santa Fe Children’s Museum

Interactive exhibits, play areas, weekly programs. Masks required for ages 2 and older.  
\$10/\$8/\$7/\$3/one & under free. 505-989-8359, [SANTAFECHILDRENSMUSEUM.ORG](http://SANTAFECHILDRENSMUSEUM.ORG)

**THURS.-SAT., 1-4 PM, THROUGH AUG.**

**TRAILS, RAILS AND HIGHWAYS**

Museum of Spanish Colonial Art, 750 Camino Lejo

How trade transformed the art of Spanish New Mexico. \$12/\$5/under 12 free. 505-982-2226,  
[RESERVATIONS@SPANISHCOLONIAL.ORG](mailto:RESERVATIONS@SPANISHCOLONIAL.ORG), [SPANISHCOLONIAL.ORG](http://SPANISHCOLONIAL.ORG)

**FRIDAYS (EXCEPT AUG. 19) 7-10 PM**

**RAILYARD PLAZA CONCERT SERIES**

Free. Presented by AMP Concerts. [AMPCONCERTS.ORG](http://AMPCONCERTS.ORG)

**DOWN PAYMENT ASSISTANCE FOR EDUCATORS**

Local nonprofit Homewise, in partnership with SFPS, is offering up to \$40,000 to eligible district  
educators looking to buy homes in the city. 505-983-9473, [HTTPS://HOMEWISE.ORG](https://HOMEWISE.ORG)

**EL RANCHO DE LAS GOLONDRINAS**

334 Los Pinos Rd., La Ciénega, N.M.

Living history museum. 200 acres, 34 historic buildings. 505-471-2261,  
[GOLONDRINAS.ORG](http://GOLONDRINAS.ORG)

**MUSEUM OF INDIAN ARTS AND CULTURE**

710 Camino Lejo

“Here, Now and Always.” A new, reimagined exhibit. 505-476-1269

**SF HABITAT FOR HUMANITY**

Seeking land, donated or for sale, to build affordable housing. Low-income  
homeowners help build homes and make mortgage payments to the nonprofit  
HFH. Property owners can qualify for 50% Affordable Housing tax credit  
through the NM Mortgage Finance Authority. 505-986-5880, ext. 109

**STATE MUSEUMS**

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](http://NEWMEXICOCULTURE.ORG/VISIT)

**YOUTHBUILD / YOUTHWORKS!**

Paid training for Youth 16-24. Construction, Culinary, GED. 505-989-1855,  
[WWW.SANTAFEYOUTHWORKS.ORG/SANTA-FE-YOUTHBUILD/](http://WWW.SANTAFEYOUTHWORKS.ORG/SANTA-FE-YOUTHBUILD/)

**TAOS / ONLINE**

**JULY 23, 5-7 PM OPENING**

**“CHASING THE LIGHT”**

Farmhouse Café and Bakery, El Prado

Photo exhibition by Gail Russell. Through Sept. 7. 575-758-5683, [HTTPS://WWW.FARMHOUSETAOS.COM](https://WWW.FARMHOUSETAOS.COM)

# IF YOU LOVE IT, KEEP IT FLOWING

NEW MEXICO'S ONLY NEWS-MAGAZINE DEDICATED  
TO SUSTAINABILITY — COMMUNITY, CULTURE,  
ENVIRONMENT AND REGIONAL ECONOMY —  
NEEDS YOUR HELP.

## GREEN FIRE TIMES

*News & Views from the Sustainable Southwest*

Green Fire Times and [GREENFIRETIMES.COM](http://GREENFIRETIMES.COM) serve a diverse,  
loyal readership in north-central New Mexico and beyond. During this particularly  
challenging time for independent publications, GFT is publishing every other month.  
If you value the unique contribution GFT provides to New Mexico’s  
media landscape, please consider a donation, or advertise. GFT is now part of  
Southwest Learning Centers, Inc., a non-profit, educational organization (est. 1973).

[WWW.GREENFIRETIMES.COM](http://WWW.GREENFIRETIMES.COM) • [INFO@GREENFIRETIMES.COM](mailto:INFO@GREENFIRETIMES.COM)

Rio Embudo, Northern New Mexico

## THROUGH JULY 31

### FOLLOWING THE MANITO TRAIL

*Millicent Rogers Museum, El Prado*

Cultural heritage exhibition shares migration experiences, creative practices and stories of Hispanic New Mexican families from Taos County and its surrounding area.

[MILLICENTROGERS.ORG](http://MILLICENTROGERS.ORG)

## AUG. 12-14

### MIDNIGHT MEADOWS RESTORATION

Volunteers needed to help restore important northern NM wetland. Camp out for the weekend. 575-758-3874, [SRMELING@AMIGOSBRAVOS.ORG](mailto:SRMELING@AMIGOSBRAVOS.ORG), [WWW.AMIGOSBRAVOS.ORG](http://WWW.AMIGOSBRAVOS.ORG)

## HERE & THERE / ONLINE

## JUNE 6-JULY 14

### NNMC'S SUMMER BRIDGE PROGRAM

*Northern NM College, Española, NM*

Free intensive college readiness program to help high school sophomores, juniors, seniors, high school equivalency recipients and adults returning to college brush up on their math and writing skills. 505-423-2321, [KRISTY.ALTON@NNMC.EDU](mailto:KRISTY.ALTON@NNMC.EDU)

## JULY 17-29

### INDIGENOUS COMMUNITIES DESIGN COURSE

*Northern NM/Online*

Intensive training for Indigenous people with a focus on Indigenous women's roles in sustainable community. Ecological design, natural farming, seed saving, traditional foods & nutrition, alternative energy, earth building, earth restoration. Camping available. \$200. [TNAFA\\_ORG@YAHOO.COM](mailto:TNAFA_ORG@YAHOO.COM), [WWW.TNAFA.ORG](http://WWW.TNAFA.ORG)

## JULY 24-26

### NATIVE YOUTH GOLF CHAMPIONSHIP

*Santa Ana Golf Club, Santa Ana Pueblo, NM*

Four divisions for both girl and boy categories. Presented by the Notah Begay III Foundation. [WWW.NB3FOUNDATION.ORG/NATIVE-YOUTH-GOLF-CHAMPIONSHIP/](http://WWW.NB3FOUNDATION.ORG/NATIVE-YOUTH-GOLF-CHAMPIONSHIP/)

## JULY 26 APPLICATION DEADLINE

### SANTA FE FILM INSTITUTE GRANTS

For film projects of any length, genre or subject. Open to NM residents and surrounding states. [HTTPS://WWW.SANTAFEFILMINSTITUTE.ORG/GRANTING-PROGRAMS](https://www.santafefilmstitute.org/granting-programs)

## AUG. 4-14

### GALLUP INTERTRIBAL CEREMONIAL - 100 YEARS

*Gallup, NM*

Legacy, tradition, culture, heritage celebration. [GALLUPCEREMONIAL.COM](http://GALLUPCEREMONIAL.COM)

## AUG. 18, 10 AM-12 PM

### KIDS COUNT CONFERENCE

*Online*

Kids at the Heart of Public Policy: Centering Children, Youth & Families for Transformational Change. Presented by NM Voices for Children. [HTTPS://WWW.NMVOICES.ORG](https://www.nmvoices.org)

## AUG. 27

### MOVING HEARTS GALA

*Moving Arts Española*

Annual benefit gala. Dinner, student performance, online auction. Tickets: \$150. [HTTPS://MAE2022.GGO.BID/BIDDING/PACKAGE-BROWSE](https://MAE2022.GGO.BID/BIDDING/PACKAGE-BROWSE)

## AUG. 29-SEPT. 1

### NATIONAL TRIBAL & INDIGENOUS CLIMATE CONFERENCE

*St. Paul, Minn./Online*

Organized by the Institute for Tribal Environmental Professionals. [HTTPS://LINKD.IN/GSK2B5Z3](https://LINKD.IN/GSK2B5Z3)

## SEPT. 11

### 21ST ANNUAL TOUR DE ACOMA

100-, 50- and 25-mile cycling event covering distinct areas on the Acoma Pueblo reservation. Proceeds benefit Haaku Museum Foundation. [TOURDEACOMA.COM](http://TOURDEACOMA.COM)

## OCT. 24-27

### AMERICAN INDIAN TOURISM CONFERENCE

*Harrab's Resort, Fanner, Calif.*

National conference dedicated to growing tourism in America's Indigenous communities.

[HTTPS://WWW.AIANTA.ORG/AITC/](https://www.ainta.org/aitc/)

## NOV. 2-4

### REGENERATE CONFERENCE

*Denver, Colorado*

The Quivira Coalition, Holistic Management International and the American Grassfed Association convene ranchers, farmers, conservationists, land managers and scientists to explore the intersections of ecology and economy through the lenses of agriculture, science, conservation, racial justice, policy and culture. [HTTPS://REGENERATECONFERENCE.COM](https://regenerateconference.com)

## MON.-SAT., 9 AM-4 PM; SUN. CALL FIRST OR AFTER 3 PM

### N.M. WILDLIFE CENTER

*19 Wheat St., Española, NM*

Self-guided tours, 505-753-9505, [JESSICA@NEWMEXICOWILDLIFECENTER.ORG](mailto:JESSICA@NEWMEXICOWILDLIFECENTER.ORG)

## THURS.-SUN, 10 AM-4 PM

### BOSQUE REDONDO MEMORIAL

*Southeast of Fort Sumner, NM*

"A place of suffering, a place of survival." New exhibit examines the history of the Long Walk in the 1860s, when Diné and Mescalero Apache were forcibly marched to barren reservation in eastern NM. Free. 575-355-2573, [WWW.BOSQUEREDONDOMEMORIAL.COM](http://WWW.BOSQUEREDONDOMEMORIAL.COM)

## AGRICULTURAL WORKFORCE DEVELOPMENT PROGRAM

The NM Dept. of Agriculture is accepting applications for internships (occurring through March 2023) that provide hands-on opportunities for students aspiring to careers in agriculture, as well as young or beginning farmers and ranchers. [HTTPS://NMDEPTAG.NMSU.EDU/AGRICULTURAL-WORKFORCE-DEVELOPMENT.HTML](https://nmdeptag.nmsu.edu/agricultural-workforce-development.html)

## ARMED TO FARM

The National Center for Appropriate Technology offers a free program that teaches military veterans about sustainable agriculture and how to run an agricultural business. [ARMEDTOFARM.ORG](http://ARMEDTOFARM.ORG)

## FREE CARPENTRY SKILLS TRAINING CAMPS

*Española and El Rito, NM*

Northern NM College offers hands-on courses. [HTTPS://NNMC.EDU/WP-CONTENT/UPLOADS/2022/03/CARPENTRY-REGISTRATION-FORM\\_2022\\_FILLABLE.PDF](https://nnmc.edu/wp-content/uploads/2022/03/carpentry-registration-form_2022_fillable.pdf)

## CITIZEN SCIENCE VOLUNTEERS

*Río Chama*

Boaters running the Wild and Scenic section of the river are needed to collect insect samples. Training and sampling kits provided. [RHETT@NMWILD.ORG](mailto:RHETT@NMWILD.ORG)

## INDIGIEXCHANGE MARKETPLACE

[WWW.INDIGIEXCHANGE.COM](http://WWW.INDIGIEXCHANGE.COM)

Online marketplace for Indigenous artists and entrepreneurs across Indian Country who have graduated from NM Community Capital's programs.

## NM ACEQUIA ASSOCIATION PRESENTATIONS

*Online or Outside*

Youth educators are available for presentations and coordination of special projects with classroom and community educators on topics such as acequia history, ecology and culture; local farming and ranching traditions, water, land and climate change. 505-995-9644, [EMILY@LASACEQUIAS.ORG](mailto:EMILY@LASACEQUIAS.ORG), [WWW.LASACEQUIAS.ORG/YOUTH-EDUCATION](http://WWW.LASACEQUIAS.ORG/YOUTH-EDUCATION)

## NM 5-ACTIONS PROGRAM

<https://nm5actions.com>

Community training on addressing trauma. A self-guided roadmap for those struggling with addiction. Free. NM Crisis Line: 1-855-662-7474

## APPLICATIONS OPEN IN THE FALL

### TRIBAL AGRICULTURE FELLOWSHIP

Fellowships awarded to Native American students pursuing technical, undergraduate and graduate degrees in agriculture. Rising and current students are eligible to apply. 479-445-5222, [HTTPS://TAFFELLOWS.ORG](https://taffellows.org)

# Meat and Poultry Processing Capacity Technical Assistance Program

The USDA Agricultural Marketing Service (AMS) offers a host of Meat and Poultry Supply Chain programs and initiatives to expand and diversify independent processing capacity. The **Meat and Poultry Processing Capacity-Technical Assistance (MPPTA) Program** ensures that participants in USDA's Meat and Poultry Supply Chain programs and initiatives have access to robust technical assistance (TA) to support their project development and success.

This nationwide network of technical support focuses on four key areas:



Federal Grant Application Management

Business Development & Financial Planning

Meat and Poultry Processing Technical & Operational Support

Supply Chain Development

The following organizations have been selected to serve as TA Providers:

**\*Flower Hill Institute**

**Intertribal Agriculture Council**

**Oregon State University-  
Niche Meat Processor Assistance Network**

**American Association of Meat Processors**

**Agricultural Utilization Research Institute**

**American Meat Science Association**

\*Flower Hill Institute will also serve as the overall Technical Assistance Coordinator for the MPPTA Program. Flower Hill Institute is a New Mexico based Indigenous-led nonprofit that is serving as the national TA coordinator.

*Note: The MPPTA Program does not offer or provide contractor services or financial capital. It does not offer grant writing or project management services, nor does the voluntary use of MPPTA guarantee the success of a grant application or the grant-funded project.*

## To Learn More, or Request Technical Assistance

Please visit [flowerhill.institute/usda-mppta](https://flowerhill.institute/usda-mppta) or use the QR code to go directly to the Technical Assistance request page.



Give Us A Follow!



*"The Meat and Poultry Processing Technical Assistance Program (MPPTA) is supported through cooperative agreements with USDA Agricultural Marketing Service. USDA is an equal opportunity provider, employer, and lender."*