



# MAIN STREAM MAGAZINE

**Brought to you by the New Mexico  
Interstate Stream Commission**

## FEATURING

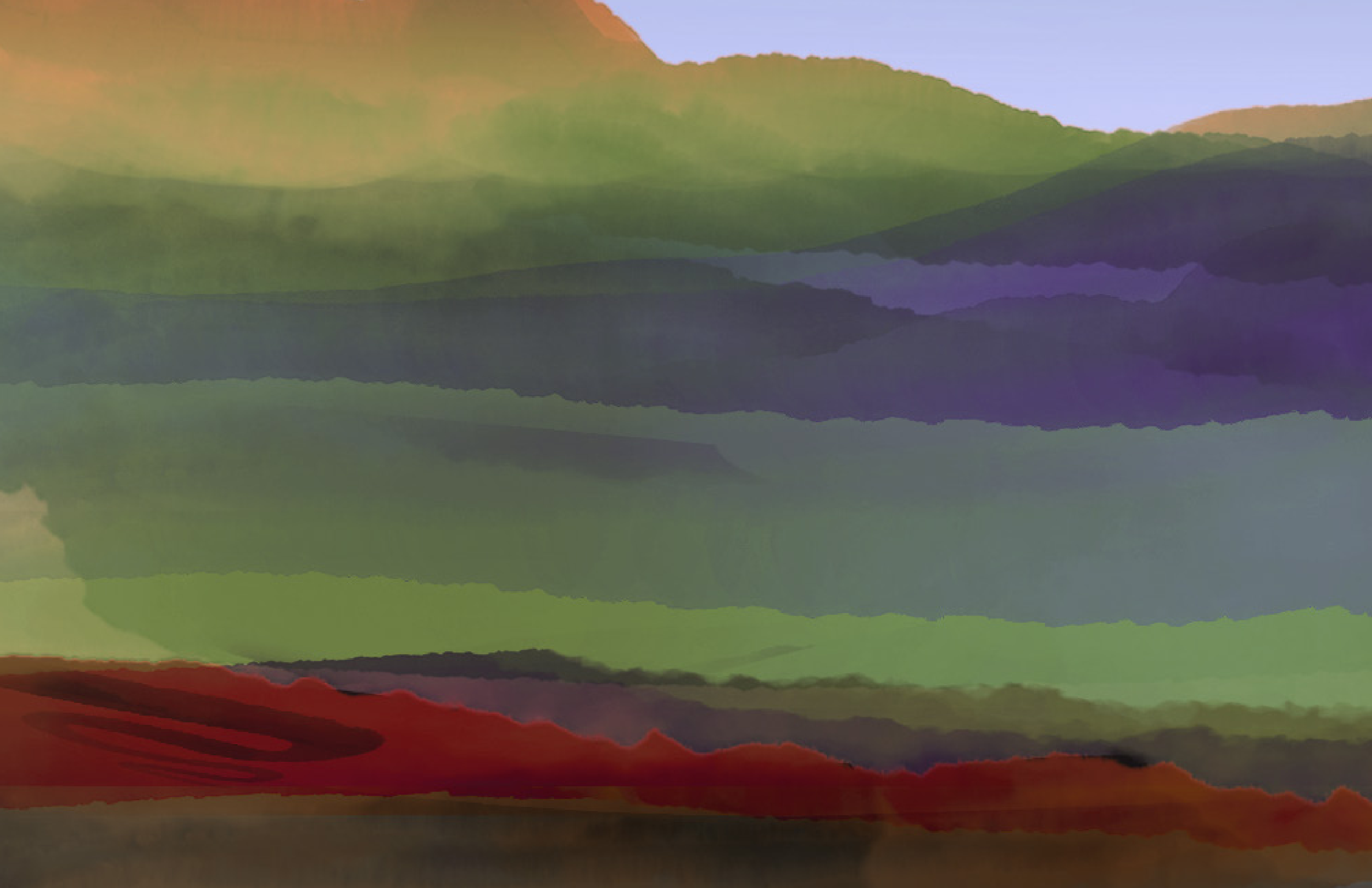
The Future  
of Fly Fishing

Water  
Conservation 101

Supporting  
Acequia  
Resilience

**VOLUME 2**









# MAIN STREAM MAGAZINE

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**Welcome to the second edition of Main Stream Magazine, brought to you by the Office of the State Engineer and the New Mexico Interstate Stream Commission.**

Main Stream Magazine features articles and interviews with water leaders. We hope the insights and solutions in these pages inspire possibilities and shed light on our shared water future.

New Mexico's water needs you.  
Thank you for reading.

To learn more visit [MainStreamNM.org](http://MainStreamNM.org)

**MAIN  
STREAM  
NEW MEXICO**





## LETTER FROM HANNAH RISELEY-WHITE, New Mexico Interstate Stream Commission Director

The past year has reaffirmed a truth for me: in times of scarcity, New Mexico's strength shows. As climate change intensifies and as our state continues to endure a decades-long drought, New Mexicans rise to the challenges with insight, creativity, and collaboration.

When we look ahead into an unknown future, there is something that's certain: New Mexicans, like the ones featured in these pages, will advance the solutions we need to collectively shape a resilient water future.

This second volume of Main Stream Magazine highlights dedicated water leaders whose work reflects

the progress we're making as a state. Carefully laid plans are moving into action, across regions. Alongside interviews, we also share data, conservation techniques, and tools that will promote a sustainable future.

As we continue statewide implementation of Governor Michelle Lujan Grisham's 50-Year Water Action Plan and the Water Security Planning Act of 2023, we are grateful to you for being part of this effort to protect the lifeblood of our state.

It is an honor to work for you,

Hannah Riseley-White

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## Brought to you by the New Mexico Interstate Stream Commission

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Norm Maktima in Jemez, New Mexico

Photography by LeRoy Grafe

# THE FUTURE OF FLY FISHING IN NEW MEXICO

## Conservation at the Confluence of Science, Sport, and Culture

Fly fishing and conservation have always gone hand in hand — at least for as long as world-renowned New Mexico fly fisherman Norm Maktima can remember.

### Fly fishing and conservation have always gone hand in hand

As a child, when he wasn't walking with his father along a lonely stretch of stream near his home in Pecos, N.M., or wrangling a fresh catch on a mountain lake, Maktima was working with his local fly fishing club to plant willow trees that stabilize streambanks, to clean up rivers, and to learn about freshwater ecosystems.

Nature and nurture, ecology and recreation are what drew Maktima, a Pecos resident and former competitor for Fly Fishing Team U.S.A., to the sport in the first place. And it's an ethos he's hoping to pass along

to the next generation of anglers as climate change intensifies and as New Mexico endures a decades-long drought.

"It's up to us, the ones that have been in this industry, that have been fly fishing for a long time, to really teach the next generation how to be more responsible with the water we have," says Maktima.

### A CULTURE OF CONSERVATION

It wasn't until the mid-1800s that fly fishing emerged in the American Southwest, but Native Americans — including Maktima's Puebloan ancestors — have fished New Mexico's waters for hundreds of years.

Maktima learned the sport at the age of 7 from his father, who is from the Hopi Tribe and Laguna Pueblo. Alongside practical instruction — like learning to tie intricate flies that mimic fish's natural food source — Maktima's father imparted cultural knowledge in the form of storytelling. He learned about the interconnectedness of the natural world and deepened his respect for all living things.

"There's a lot more to fly fishing than just catching fish," Maktima says. "It's understanding how insects live,



**“It’s up to us, the ones that have been in this industry, that have been fly fishing for a long time, to really teach the next generation how to be more responsible with the water we have,” says Maktima.**



thinking about the trout’s food source rather than just the trout. It’s understanding water temperature and oxygenation. The pH balance and the nutrient content have to be optimal.

“That was what I recognized as a kid, how I could meld and marry fly fishing, culture, science. It all came into play.”

**Maktima’s father imparted cultural knowledge in the form of storytelling. He learned about the interconnectedness of the natural world and deepened his respect for all living things.**

As a teenager, he became skilled at tying flies — an art form unto itself — and began competing in youth fly fishing tournaments. In 1998, he represented the U.S. Youth Fly Fishing Team at the world championships in Wales, taking home the individual gold medal and helping his team secure second place.

Today, Maktima is a legend in his sport. An experienced guide, he puts his deep knowledge of the flora, fauna, and flows of New Mexico’s waterways to use, leading clients on fly fishing expeditions. He designs and sells flies and fly fishing goods inspired by his Puebloan culture. He coaches the world champion USA Fly Fishing Women’s Team, and he advocates alongside his peers for sustainability in his sport.

### **‘EVERY YEAR, WE’RE CROSSING OUR FINGERS’**

The fishing industry is a significant contributor to New Mexico’s economy as tourists flock to the state’s waters. In 2023 fishing and boating generated nearly \$93 million in profit for the state.

Maktima says the industry’s fortunes have always ebbed and flowed with the rise and fall of New Mexico’s rivers and streams. Snowy winters yield strong, frigid





spring flows that make ideal spawning habitat for species like trout and native Rio Grande Cutthroat. In recent years, however, warmer, drier winters have led to fewer fish.

## In recent years, however, warmer, drier winters have led to fewer fish.

Some of the ebb and flow is to be expected — a natural consequence for an industry so tied to the land. But Maktima says inconsistency in precipitation and weather patterns over the past quarter-century has introduced extra uncertainty.

“It seems like every year we’re crossing our fingers,” he says.

As New Mexico heats up and aridification intensifies, scientists anticipate about 25% less water in New Mexico’s rivers, streams, and recharging aquifers over the next 50 years. A hotter, drier high desert also means more frequent, more severe forest fires, which can pollute streams, lakes, and rivers, killing off fish.

## “It seems like every year we’re crossing our fingers.”

Maktima says the fly fishing industry has stepped up its conservation game in recent years, with organizations like New Mexico Trout, Trout Unlimited, and others coming together to care for the state’s riparian ecosystems, to promote the fishing of hardier, warmer-water species, and to prevent mining operations from polluting and stripping water from underground aquifers.

It’s efforts like these that keep Maktima feeling optimistic about the future of his sport.

“With more of us out here learning and understanding our impact, I’m hopeful that our fly fishing community can help shape the industry going forward,” he says.







Photography by LeRoy Grafe

# CONSERVATION, MODERNIZATION, AND ACTION

**An Interview with State Engineer Liz Anderson**

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In other Western states, the old maxim may ring true: “Whisky is for drinking, water is for fighting over.” It’s not surprising, perhaps, that it occasionally raises the temperature of public discourse, given water’s scarcity in the arid Southwest. But in New Mexico, where we’re facing an increasingly dry future, water managers have been leaning into planning and collaboration instead, with exciting results to show for it — and more progress on the way.

“We are way ahead of the game compared to a lot of places,” says Liz Anderson, who leads New Mexico’s Office of the State Engineer and serves as Secretary of New Mexico’s Interstate Stream Commission, the two state agencies that jointly manage and administer all of New Mexico’s surface and groundwater.

**We already have  
structures in place to  
help us share the water.  
And we have people  
working together.**

“Everybody in the Western United States is facing these same challenges, but we already have structures in place to help us share the water. And we have people working together.”

Take the state’s Active Water Resources Management statute. Passed in 2004, a few years into the state’s ongoing multi-decade drought, the act helps water users outline how they’ll share water in the case of scarcity.

Then there’s Gov. Michelle Lujan Grisham’s 50-Year Water Action Plan, a comprehensive roadmap that lays out New Mexico’s water use and conservation work for the next half-century while ensuring there’s enough water available for economic development, too.

These structures are especially critical today, as climate scientists predict that the state will have 25% less water in its rivers, reservoirs and recharging groundwater reserves over the next 50 years.

“Everything we’re doing here [at OSE and ISC] is to provide a prosperous future for the state,” Anderson says. “New Mexico is open for business, and we’re prioritizing all the things we need to be a thriving community.”







# Everything we’re doing here [at OSE and ISC] is to provide a prosperous future for the state.

Anderson stepped into the State Engineer role in 2024 when her predecessor, Mike Hamman, retired. She brings more than 20 years of water experience to the role — first as an environmental engineering consultant, and then as Chief Planning Officer for the Albuquerque Bernalillo County Water Utility Authority.

In 2023, Anderson signed on to advise Hamman after the two met while collaborating on the Governor’s Water Policy and Infrastructure Task Force. As State Engineer, she’s now working to modernize the agencies.

That modernization work will allow current in-person tasks like permitting to take place online while also improving the efficiency of water administration tasks within the agency. And it will allow water managers and users more visibility into the state’s water data and resources, and how they’re being used.



“If you don’t have a way of measuring how much water is being used in different parts of the system, then you can’t figure out how to share that water,” Anderson says. “You can’t get people to take less when they need to. We need more tools that actually get that data into the hands of the people who are using the water day-to-day.”

## If you don’t have a way of measuring how much water is being used in different parts of the system, then you can’t figure out how to share that water.

Anderson is also prioritizing Indian water rights settlements. Six have already been signed by Gov. Michelle Lujan Grisham and are awaiting approval by Congress — marking the most ever completed by a single administration. If approved as drafted, the settlements would bring about \$3.2 billion of federal funding into the state to support not only tribal entities but also surrounding communities.

More work remains, including completing the water rights settlement with the six Middle Rio Grande pueblos, an undertaking that Anderson describes as “challenging and critical.”

“All of the settlements are incredibly important, and it’s exciting to note the progress that has been made,” she says.

Native American communities have been conserving and sharing water in New Mexico for generations — an ethos that residents, policymakers, and water planners throughout the state have increasingly adopted. As an example, over the past 30 years, residents of Albuquerque and Santa Fe have cut per-capita water use in half.

Anderson hopes the state’s regional planning efforts will spur on that ethos while helping policymakers identify and fund priority projects. Under the Water Security Planning Act’s proposed rule, which recommends nine distinct regions, local stakeholders will have more power than ever to identify their regions’



### New Mexico’s Accomplishments

- A strong system of water-sharing agreements
- Regional planning is underway
- 50-Year Water Action Plan
- Indian water rights settlements are awaiting Congressional approval

### Where the Office of the State Engineer is Headed

- Modernizing measurement and administration systems
- Enhanced data tracking systems
- Continued Indian water rights settlement work
- Resolution of Texas v. New Mexico is around the corner

needs and prioritize projects based on local values — and our shared desire for a strong and sustainable water future.

Additionally, last year the legislature allocated \$5 million to fund 41 pilot projects investigating innovations in agriculture throughout the state, supporting farmers and ranchers to implement techniques that increase resiliency, protect livelihoods, and reduce water use.

“New Mexico has been dealing with drought for a long time,” Anderson says. “In some places, people really take water for granted. Here in New Mexico, we cherish it, and we’re already working on critical, long-term solutions to prepare for a hotter, drier future.”



# HOW DATA CAN INSPIRE ACTION

## A Closer Look at the Water Use by Categories Report

A wise water leader once said, “You can’t manage what you don’t measure.” When the future developers of New Mexico’s regional water plans begin their work, they’ll have a treasure trove of data to draw upon — and some knowledge gaps to fill in.

**“You can’t manage what you don’t measure.”**

In November 2024, the Office of the State Engineer’s Water Use and Conservation Bureau released its twice-a-decade water-data snapshot, the Water Use by Categories Report, which summarizes water data from 2020. The title alone may bring up visions of spreadsheets analyzed beneath fluorescent light in drab government buildings, but contained within its pages are valuable insights into where and how New Mexico’s scant water resources are used.

Ever wonder how much water evaporates from the surface of New Mexico’s reservoirs each year? Or whether the majority of our water comes from above or below the surface? Curious to know how much water we use now compared to 1975? Or how farmers water their crops these days?



The report provides an oft-fascinating glimpse into the state’s water use — and helps us as we plan for a water-scarce future.

“Understanding how each sector uses water is the key to effective water management,” said the report’s lead author, Julie Valdez, who heads up the state’s Water Use and Conservation Bureau. “Knowing where we use water also helps us design more effective water conservation programs.”

### CONSERVATION: VOLUNTARY AND INVOLUNTARY

Valdez has worked for the bureau for more than 20 years — during which time she’s seen signs that the state’s conservation efforts are paying off. In 2020, New Mexico used 3.8 million acre-feet of water, or about enough to cover all of San Juan County in one

foot of water. Despite a growing population, that’s a decrease from 2000, when the state used 4.2 million acre-feet of water, and it’s a sign, Valdez says, that New Mexicans are working hard to be good stewards of the state’s resources.

Of those 3.8 million acre-feet, municipalities and residential users used about 300,000 acre-feet, or just under 10%. Most of the rest was used by commercial, agricultural, mining, ranching, and industrial users. Perhaps unsurprisingly, the agricultural sector is by far the biggest consumer in the state, accounting for 78% of diversions — although a portion of that is returned to streams and rivers.

New Mexico’s farmers have made the most of scant resources for thousands of years. And since 2000, farmers have flexed their conservation muscles, reducing their use from 3.2 million acre-feet to 3 million acre-feet.

Some of that reduction has not been voluntary.

“New Mexico is working hard to find ways to compensate farmers for doing things like fallowing their fields, for example, but most of the reduction in use comes from involuntary conservation,” says Paul Harms, a water resources specialist who works with Valdez at the Water Use and Conservation Bureau. “When there’s less water coming in, districts have less water to send to farmers. And we’ll probably see more and more of that in the future.”

**“When there’s less water coming in, districts have less water to send to farmers. And we’ll probably see more and more of that in the future.”**

Scientists predict 25 percent less available water in New Mexico over the next 50 years, thanks in large part to human-caused climate change. That is why it is so important for us to do our part and only take what we need - no more.

Still, advances in farming practices combined with fallowing programs and other incentives, have helped make it easier for farmers to conserve, Valdez says.



Scientists predict 25 percent less available water in New Mexico over the next 50 years, thanks in large part to human-caused climate change. That is why it is so important for us to do our part and only take what we need.

Farmers are laser leveling their fields and using more efficient irrigation. (Just 0.74 percent of acreage was drip irrigated in 2000. Twenty years later, that number has jumped to 2.1 percent.)

Here are a few other insights from this year's report:

Nearly 7.5% of New Mexico's total water use in 2020, or 283,000 acre-feet (1 acre-foot is enough water for around 3-4 households for a year), can be attributed to evaporation from the surface of the state's largest reservoirs. This is likely to increase as temperatures rise statewide.

New Mexico used about the same amount of groundwater as surface water in 2020. That's a change from 2000, when about 55% of our water came from surface water. That extra groundwater use puts a strain on aquifers, which can be slow to recharge.

The commercial, industrial, mining, power, and livestock industries together used 6% of the state's water in 2025, or about 226,000 acre-feet.

#### WHY IT MATTERS

Apart from inspiring a bit of fascination, the Water Use by Categories Report is a treasure trove of information

for regional water planners, whose work is about to kick off in earnest in New Mexico.

The passage of the Water Security Planning Act of 2023 triggered a flurry of work at the Interstate Stream Commission to prepare the state for regional water planning. Now that the law is fully enacted, water stakeholders, empowered through Regional Water Planning Councils, across New Mexico will get to work planning for a drier future. And they'll use the report's water usage and population data to help prioritize projects.

They'll also likely use the New Mexico Water Data Initiative, a collaboration of several state agencies, including ISC, that have a stake in water planning. The site consolidates water data into a centralized repository. Wondering how many wells have been drilled in New Mexico? Or which of our wells are increasing or decreasing in capacity? There's a map for that on New Mexico Water Data Initiative website.

The more we can visualize and track our water resources, the better we can plan to use them responsibly, together. To learn how you can contribute to regional water planning in New Mexico, visit the Get Involved page ([mainstreamnm.org/get-involved](https://mainstreamnm.org/get-involved)).





Water runs through everything, and right now, water is one of the biggest challenges we face in New Mexico.

Our water supplies are declining. Competition between uses is growing. And rather than wait, in New Mexico we're learning from each other, getting more creative, and connecting through the challenge. Now is our moment to find solutions together.





Sam Fernald in Valdez, New Mexico

Photography by LeRoy Grafe

# INVESTING IN FARM- AND RANCH-LED DROUGHT SOLUTIONS

An interview with Sam Fernald of  
New Mexico State University

The image of a multi-million-dollar water treatment facility sitting abandoned and inoperable in the Dominican Republic is still fresh in Sam Fernald's mind.

A professor of watershed management at New Mexico State University and the director of the state's Water Resources Research Institute (WRI), Fernald visited the site in the 1990s while working on an environmental project for the United Nations. The facility was high-tech and modern, the result of decades of academic research and expert engineering. And yet there it stood, its solar panels and other infrastructure scavenged, waiting for local funding and qualified technicians to operate it.

That, Fernald learned, was what happened when well-meaning academics and policymakers instituted solutions from the top down — without considering the interests, needs, resources, or proposed solutions of local communities.

"In the past, they'd go out to communities and give them technology that was completely impossible for them to implement economically and technologically," Fernald says. "We know now that stakeholders' perspectives are so important."

In the 30 years since, Fernald says he's seen a sea change in how water professionals involve

**"We know now  
that stakeholders'  
perspectives are  
so important."**

communities in the work of change. And here in New Mexico, community involvement is not only leading to more tenable solutions, it's also fueling practical and forward-thinking innovations and helping the state — and our farming and ranching industries — prepare for a water-scarce future before it's too late.

## ADVANCING SOLUTIONS WITH FARMERS AND RANCHERS

Fernald signed onto the WRI in 2011. The organization — founded in the 1960s — was the first of its kind, a statewide research group devoted entirely to solving problems related to water supply, drought, and how we can share what we have. A few decades after its founding, New Mexico's WRI would become the U.S.



government's model for organizing institutes in all 50 states, Washington, D.C., and three U.S. territories. Today, much of WRRI's work in New Mexico is focused on building real solutions that work for real people. Considering the scientific consensus (that New Mexico will see a 25% reduction in available water over the next 50 years) and the fact that agriculture regularly

accounts for about three-quarters of the state's water consumption diversions with a portion of that water returned to streams and rivers, Fernald and his team are researching and putting ideas into practice with farmers and ranchers, all aimed at preventing New Mexico's agriculture industry (and the livelihoods that rely on it) from drying out in the decades ahead.

Profit margins are often slim for farmers, which makes it hard to invest in new technologies, equipment, or crops. But that doesn't mean the desire to innovate and respond to changing conditions isn't there. Farmers, he says, just need support to do it. And that's where the State of New Mexico is coming in.

**Profit margins are often slim for farmers, which makes it hard to invest in new technologies, equipment, or crops. But that doesn't mean the desire to innovate and respond to changing conditions isn't there.**

In early 2025, the New Mexico Legislature authorized the WRRI and the New Mexico Department of Agriculture to distribute \$5 million in grants to farmers to study water resiliency in agriculture. Interest in the project among farmers, Fernald says, was massive - and it's already paying off. "There's a huge pent-up demand for it," he says. "We had requests for more than double the amount of funding we had available, and that was just in this first year."

The program, officially titled the Agricultural Water Resiliency Program, has proved to be the antithesis of that empty, expensive water-treatment facility in the Dominican Republic.

The 41 projects funded so far are wide-ranging, but they share a common goal: to make more efficient use of our scant water resources. Some highlights include:

**Modernizing irrigation methods:** Traditional irrigation relies heavily on gravity. When farmers open their headgates, it can take days for water to make its way across their fields. A series of research projects is investigating more modern irrigation methods. "If you put on some pipes with gates and valves, you can cover your whole field in a few hours," Fernald says.



"It's more efficient, and the same water goes farther, and you're not impacting your agricultural capability."

Another set of projects is investigating drip and sprinkler systems. Instead of flood irrigation, which has its own benefits for recharging aquifers, these systems use less groundwater to get the same amount of crop yield.

**Evaporation reduction from livestock watering:** In our arid state, evaporation is a huge water consumer in its own right. (More than 7% of the state's water use can be attributed to evaporation from reservoirs alone.) A series of research projects is investigating how ranchers can reduce evaporation from stock tanks, from which ranch animals and wildlife drink. "It's just constantly evaporating," Fernald says. "And in some cases, it'll actually dry up, and the livestock and

**These projects will give farmers, planners, and researchers hard data about what works.**



any other wildlife that use it don't have water." Shade balls, which are small, black plastic balls that cover the surface of the water, reduce evaporation while still allowing animals to stick their heads in and drink.

Other studies investigate the use of renewables, like solar pumps, that more efficiently manage water supplies with targeted pumping and delivery.

Overall, these projects will give farmers, planners, and researchers hard data about what works — and ultimately, they will inform the state's regional planners and legislators about which technologies or approaches are most feasible, cost-effective, and save the most water.

Fernald says he hopes legislators will fund the project anew this year. In the meantime, the WRRRI has a handful of other research grants in the works as well.

Some investigate water-wise crops like saffron, truffles, pistachios, and Christmas trees as potential alternatives to thirstier mainstays like pecans. Other studies examine ways to retain more water in watersheds and fallow fields without impacting industry.

All of them, Fernald says, involve stakeholders in envisioning a waterwise future in New Mexico.

"We're moving toward a system where there's more of a voice for the regional water users," he says. "This is more than buy-in. It's the actual ideas, the creativity, the needs of the people who are actually managing the water."

**"We're moving toward a system where there's more of a voice for the regional water users."**







Ricci Family in Albuquerque, New Mexico

Photography by LeRoy Grafe

# WATER CONSERVATION 101

Simple Hacks for a Water-Wise Home

Every day, it seems, headlines warn of hotter summers, more intense fire seasons, lower snowpack, and less water to go around.

It can feel overwhelming, and it begs the question: “What is a concerned New Mexican to do?”

As grim as the predictions can be, remember: You can be a part of the solution. Even making a few small changes at home can help. Over time and alongside your neighbors, these changes can lead to big impacts — like what people accomplished in Santa Fe. We wrote a whole blog about it on [mainstreamnm.org](https://mainstreamnm.org), but TLDR: Since 1995, Santa Fe has reduced its water use by 40%, despite population growth and largely due to residential water conservation. It’s an excellent example of the power of people.



**You can be a part of the solution. Even making a few small changes at home can help.**

Christine Chavez is the city of Santa Fe’s water conservation manager. She implements programs that make it easier and less expensive for residents to save water. Here are a few hacks that Chavez and other experts recommend:



### INSTALL EFFICIENT APPLIANCES:

In the early 2000's, after a devastating drought, the City of Santa Fe gave away 10,000 free toilets. These weren't just any toilets. They were high-efficiency low-flow toilets, and their implementation helped save the city millions of gallons of water each year. Installing efficient appliances is one of the most effective ways to reduce your household water use. According to the Environmental Protection Agency, using EnergyStar-certified appliances and WaterSense-labeled fixtures can help reduce water use by 20%, saving the average household \$380 a year. That's a big win-win, saving shared water resources and your money.



### TURN OFF THE TAP:

It takes two minutes — and, if you don't turn off the tap, up to 4 gallons of water — to brush your teeth. This may seem like minimal waste, but consider this: If every New Mexican reduced their use by 4 gallons of water twice a day, we could save as much water each year as the entire city of Las Cruces uses annually.



### FIX LEAKS:

That drip-drip-drip from your outdoor hose bib? It's not insignificant. The EPA estimates that faucet leaks contribute to about 900 billion gallons of wasted water every year in the United States. That's equivalent to the annual water use of 11 million households.



### PLANT WATER-WISE GARDENS:

A properly installed, well-maintained drip irrigation system can reduce outdoor water use by up to 15%. And in New Mexico, gardeners don't have to sacrifice beauty for water savings. A host of showy plants grow well in our arid climate. Choose your species wisely, install drip irrigation, mulch well, and watch your garden flourish. It may take a couple years for new plants to establish and thrive with less water, but eventually your investment will pay off. The New Mexico Office of the State Engineer has a handy guidebook to help you get started.



### REPLACE NON-FUNCTIONAL TURF:

If it's for show, let it go. If it's for play, let it stay. We all know grass is thirsty, but that doesn't mean it's never appropriate in New Mexico landscapes. Expansive lawns in shady parks offer a verdant refuge for city dwellers while giving young ones — and the young at heart — a place to play. But if you have grass on your property that's purely decorative, consider replacing it with a more water-wise alternative.



Undertaking these changes as a community will not only lead to water savings, it will also build hope. Chavez says she's optimistic, especially when she talks to young people.

"It may not happen for us or for the older generations, but these younger generations are taking in this information, and they understand, and they're learning,

and they're wanting to play bigger roles," she says. "I think they're gonna change the way the environment is considered at a national level. So I do have a lot of optimism."







# NEW MEXICO'S WATER DATA

## Now an Interactive Journey

Data is at its best when it reveals hidden patterns and possibilities. When it helps us connect the dots, identify or anticipate problems, and find solutions. It is at its worst when it's confusing, hard to understand, locked in a white paper on a shelf, or inaccessible to the people who can harness it.

**Data is at its best  
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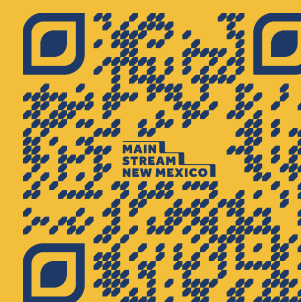
When it comes to planning and taking action around New Mexico's water future, there is a new tool that makes data not only more accessible, but richer and more insightful. Thanks to a collaboration between the New Mexico Interstate Stream Commission (NMISC) and RS21, a New Mexico-based data science company, we've launched a new data map that is visual, interactive, full of stories of real people across the state, and, best of all, requires essentially zero training to use.

"This was originally thought up as a one stop shop to inform water planning across communities in New Mexico" says Sara Fox, Senior Water Planner at NMISC. "These data sets provide a picture of how people and water interact — all in a seamless, visual, and accurate way."

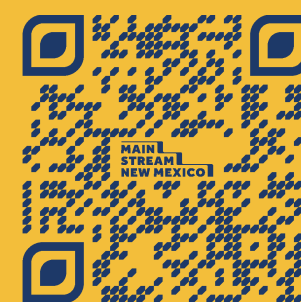
The data map provides an introduction to water data which incorporates various tried-and-true data sets. It pairs population data from the Census with water data from the New Mexico Water Data Act, and overlays those with Water Use by Categories reports from both 2015 and 2020 (among other data sets). What results is a choose-your-own-adventure exploration of water availability and uses throughout New Mexico.

"It is really important, when we're thinking about water planning, to understand who is using water and where it is being used," said Sara. This "easy-button" mapping tool visualizes that interaction, surfacing important insights about where populations are distributed, how water is being used, and the interface between groundwater and surface water across regions.

But enough talking about the map, the best way to understand it is to experience it. Explore the map now to see what new insights and creative solutions you might discover.



**EXPLORE THE MAP  
TO DISCOVER  
MORE ABOUT  
NEW MEXICO  
WATER USE**



Don't know where to start? Watch this video showcasing some of the easy-to-use functionalities of the map.





Paula Garcia in Mora, New Mexico

Photography by LeRoy Grafe

# SUPPORTING ACEQUIA RESILIENCE

**An interview with Paula Garcia, executive director  
of the New Mexico Acequia Association**

There is perhaps no better place in New Mexico to experience the joys — and challenges — of community than on the banks of an acequia in early spring.

As days get longer and snowmelt collects in streams and rivers, communities gather on the banks of these centuries-old irrigation canals. The spring reconnects neighbors through the seasonal work of cleaning and repairing this shared waterway, preparing for snow melt to flow through the channels, where parciantes (or “water users”) open headgates on their designated days, diverting water to trees, fields, and gardens. “Seeing water flow from the acequia into a field is a beautiful experience,” says Paula Garcia, executive director of the nonprofit New Mexico Acequia Association and a parciante of several acequias near Mora.

Acequias are where the delicate dance of self-advocacy and compromise ensures that everyone gets their fair share of our most precious resource. But as climate change heats up our corner of the world making water less available, New Mexico’s acequias are getting more and more strained. “Our communities have survived hundreds of years based on customs to share water during times of drought,” says Garcia. However, decades-long drought, climate change, and

wildfire damage have presented acequias with multiple challenges at once. “It isn’t enough to keep our water sharing customs alive. We have to adapt to climate disruption and develop greater resilience.”

**“Our communities have survived hundreds of years based on customs to share water during times of drought”**

## **‘A HUGE UNDERTAKING’**

The system that exists today in New Mexico is a melding of long-held cultural traditions. Acequias are often attributed to Spanish settlement in the 1600s, but the technology has deep roots in Native American methods of agriculture and irrigation, as well as blended techniques and traditions from the mestizo (mixed-blood) settlers from present-day Mexico.





Today, there are an estimated 700+ acequias in New Mexico. Some, like Santa Fe's Acequia Madre, have rich, well-documented histories. Many are studied and well documented by experts through the adjudication process, which are court proceedings that quantify water rights. Others have never been studied, mapped, or adjudicated and are known mostly to their parciantes.

The New Mexico Acequia Association has been providing education, outreach, and technical assistance to acequias for over three decades. As the threat of drought, wildfires, and flash floods increases, this work is increasingly important. In 2022, the largest fire in the state's history, the Calf Canyon-Hermit's Peak fire, raged through San Miguel and Mora counties, devastating homes, farms, and centuries-old acequia systems. Since then, the NM Acequia Association has worked collaboratively with state and federal agencies on disaster recovery.

Natural disasters can devastate these historic waterways and imperil the livelihoods and long-held cultural traditions of their users.

Just after the fires, Garcia says at over 90 acequias, including one that flows through her property, were damaged as burn scar flooding washed ash, sediment, and fire debris downstream. It took three years for Garcia's acequia to be repaired and the work is ongoing due to recurring flooding. "It takes tremendous resources to restore acequias after a disaster" says Garcia. It requires not just funding and labor, but also technical and legal support to navigate complex state and federal programs like FEMA.

Garcia says she's hoping the state's regional water planning process will help stakeholders statewide create resiliency before disaster strikes by identifying

and planning for infrastructure needs, and by building a common set of data that everyone can utilize to protect acequia systems.

## **Natural disasters can devastate these historic waterways and imperil the livelihoods and long-held cultural traditions of their users.**

Despite the risks, Garcia says she's hopeful about the future. Acequias have survived over the generations, through shifts in farming practices and technologies, through outmigration and intensifying climate change. Perhaps, she wonders, that's because they're about more than just water.

"Having a sense of place and a sense of purpose is extremely important for our well-being," Garcia says. "Acequias can be a big part of that. They foster community at a time when we need community more than ever."

**"It isn't enough to keep our water sharing customs alive. We have to adapt to climate disruption and develop greater resilience."**







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