



RIO GRANDE WATER FUND **WILDFIRE AND WATER** **SOURCE PROTECTION**

► **ANNUAL REPORT 2021**





► Since launching the RGWF
our numbers add up:

Collectively with all partners

148,905

acres treated to date

\$52.8 Million

in public funding leveraged

\$130 Million

in economic impact

330,310

acres in the
planning pipeline

100 signatories

1,500 jobs supported

5 counties contributing
to RGWF

50+ projects funded

\$5.2 Million

in private dollars invested

► Message from the Executive Committee

The power and value of the work of the Rio Grande Water Fund was just as evident this year as it has been in years past. What is most extraordinary is all that we were able to accomplish together during a year that proved so very challenging to us both personally and professionally.

As the new year began in January 2020, we were collectively working to resolve a lawsuit related to the Mexican Spotted Owl (MSO) and its recovery with the aim of continuing the important restoration work we started in 2014. Who would have imagined a worldwide pandemic was just a few months away from making its way into New Mexico and shuttering our way of life for the foreseeable future?

But, thanks to the organizations and individuals involved in advancing the Rio Grande Water Fund's ambitious agenda forward, we have a lot to celebrate given the obstacles we faced in 2020.

First, in October 2020, the MSO lawsuit was resolved with the U.S. Forest Service signing an agreement to conduct annual monitoring on owl population trends through 2025 and adhere to the MSO recovery plan. This resolution allowed vital forest restoration work to continue in areas that have been identified as high-risk in the Rio Grande Water Fund Comprehensive Plan.

Second, as we write this opening letter, we are all preoccupied with the extreme wildfire events in forests and communities up and down the West Coast. Experts' voices are now being heard about prioritizing prescribed fire and thinning to reduce hazardous fuels, most importantly in our forested watersheds. To that end, the Prescribed Burn Act was passed into state law after two years of effort by diverse partners, helping the state improve forest management and contributing to lessening the risk of catastrophic wildfire and protecting our water supply.

Third, we can continue to point to examples that are proving out our work on-the-ground. Case in point is the 2020 Medio Fire, which had the potential to threaten Santa Fe's municipal watershed and the Santa Fe Ski Basin. Thanks to a 2019 broadcast burn funded by the RGWF that created a robust fuel break in the path of the Medio Fire, firefighters were able to contain the fire before it moved toward significant community assets. Time and time again, the science behind the Rio Grande Water Fund illustrates the importance of proactive forest restoration activities.

Finally, we would be remiss not to highlight that our signatories grew to 100! We welcome the newest members of the group and are grateful for their support of and commitment to our collective mission.

With gratitude,
Executive Committee of the Rio Grande Water Fund

EXECUTIVE COMMITTEE

Diane Agnew, Albuquerque Bernalillo County Water Utility Authority
Jake Caldwell, LOR Foundation
Dr. Janie Chermak, University of New Mexico
Paula Garcia, New Mexico Acequia Association
Martin Haynes, Business Water Task Force
Michiko Martin, USDA Forest Service
Laura McCarthy, New Mexico State Forestry Division
Susan Millsap, The Nature Conservancy



What is the Rio Grande Water Fund?

The Rio Grande Water Fund (RGWF) is a public-private partnership with a goal of generating sustainable funding for a 20-year program of large-scale forest restoration treatments, including: thinning overgrown forests, reforestation, managing fire, restoring wetlands and streams, educating youth, providing research to policy makers and creating forestry and wood products jobs.



► Drones & Community

The RGWF's investments in forest restoration are designed to reduce wildfire risk by restoring forest structure that is resilient to wildfire. Dry-forest stands that are resilient to wildfire have heterogenous structure, so the effects of treatments are visible as homogenous stands are thinned to create patches and openings.

The Water Fund has typically relied on plot-based samples of stand structure and fuel loading to monitor and evaluate investments in forest restoration. Plot data collected by labor intensive field crews provides a detailed inventory of the changes in stand structure but requires many plots to be established in heterogenous sites. Because changes in canopy structure are important to evaluate on the entire project area, a wall-to-wall inventory of the canopy before and after treatment is needed to map the impact of treatments on fire risk.

Drone-based monitoring enables rapid collection of high-resolution canopy structure data. Since 2019, the RGWF has mapped treatment units with drones, enabling an unrivaled mapping of stand structure and the effects of treatments. Funded by a grant from the US Endowment for Forestry & Communities' Healthy Watersheds Consortium, our monitoring program has added the capacity to map every treatment in its entirety.

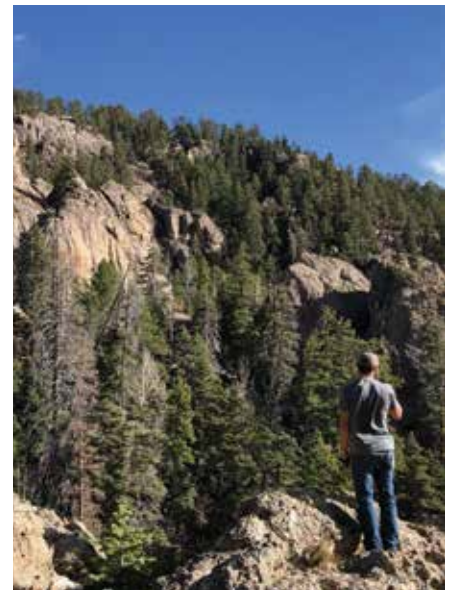
In collaboration with the Chama Peak Land Alliance, the RGWF has developed a protocol for measuring changes to stand structures that can be used to evaluate the outcomes from treatments and investments. Consumer grade drones decrease barriers to adoption of the protocol.

While we have been primarily focused on adaptive management on an annual basis (as required by traditional plot based monitoring), drone imagery collection requires less staff time and resources to conduct, enabling Rapid Adaptive Management with a shorter feedback loop allowing monitoring and evaluation to occur on an hourly and daily timestep rather than months or years.

We have primarily focused our drone-based monitoring on terrestrial forest treatments, though the technology holds promise for monitoring SWARP (Stream, Wetland, Aquatic Restoration Project) projects as well.



DRONE PORTAL



Drone Imagery & Data Access

The imagery collected by the drone program and the data derived from it are unparalleled in their detail and provide a glimpse into the forest rivaled only by a field trip. In the next year, we will create a portal where these resources will be publicly available.

Visit riograndewaterfund.org for a preview of the interactive maps and imagery available soon.

► Next Gen Monitors

Since 2018, crews of high school and college students have been engaged in forestry monitoring as part of multiple restoration projects in Taos County.

These monitoring teams are designed to introduce young people to professionals in natural resources, expose them to the specific forestry protocols used to collect pre- and post-treatment data and establish a career pipeline for those who are interested in pursuing a degree in a natural resources-related field. Faculty from New Mexico Highlands University has provided mentorship to these students and data collected by these crews is being shared with the New Mexico Forest and Watershed Restoration Institute.

As part of their field work analysis, students have been urged to pursue their own research in areas such as wildlife biology, archaeology and the socio-economics of forest restoration work. So far, at least four members of these monitoring crews have gone on to study forestry or related fields at regional universities.

In 2020 and 2021, the Rio Grande Water Fund helped the Taos Soil and Water Conservation District once again field this student monitoring crew as part of the Rio Lucero Watershed Restoration Project in Taos County. Efforts like these help foster the next generation of natural resources professionals who will continue the work of improving watershed health and forest resilience in the decades to come.



NMHU PROFILE



NMHU FORESTRY

New Mexico Highlands University (NMHU) has a long history contributing to forest science and restoration as a partner to the Rio Grande Water Fund. Students interested in pursuing careers in forest management or research can apply for a degree through the Department of Forestry at NMHU. The program is accredited by the Society of American Foresters and is the only accredited program in New Mexico. Forestry graduates work for New Mexico State Forestry, the US Forest Service and other organizations.

Learn more and apply online:
nmhu.edu/departments-of-forestry/

► All Lands Task Team



The last two years have reminded us that we're all connected, reinforcing the importance of working together to solve complex problems. A small group called the All Lands Task Team (ALTT) comprised of federal and state land managers was convened in 2020. The immediate goal was to create opportunities to ensure that restoration work continued and contractors stayed employed through the pandemic and Mexican spotted owl (MSO) injunction.

The ALTT is charged with assisting state and federal land managers with achieving the goals of the RGWF, the 2020 Forest Action Plan and Shared Stewardship. This group includes several RGWF partners who are all working toward similar goals. The

ALTT incorporated many of the lessons learned from the RGWF. At its core, the ALTT seeks to solve problems identified through place-based collaboratives like the Taos Valley Watershed Coalition or the Santa Fe Watershed Coalition. The group highlights challenges statewide and shares solutions with various managers, professionals and non-governmental organizations.

The group serves as a technical advisor to New Mexico State Forestry's Forest and Watershed Coordinating Group, which convenes state and federal agencies' leaders to address policy, science and management challenges across our state. The two groups serve complementary roles by providing platforms for practitioners and decision-makers to share information, lessons learned and identify common challenges. This collaborative, multi-scale problem solving is at the core of the RGWF's success in increasing the pace and scale of forest restoration.

By participating in this level of collaborative problem solving, the RGWF and its partners can nimbly adapt to changing conditions and added challenges, like a global pandemic, and keep moving. In fact, as a result of the RGWF and ALTT collaborations, we are, in many ways, stronger than before the MSO injunction and pandemic. We are proving once again that we benefit by coming together to solve complex challenges.



PROFILE



Susan Rich

In 2021, Susan Rich retired after running New Mexico's Forest and Watershed Health Office for 15 years. As the forest and watershed health coordinator, she organized and hosted quarterly meetings without fail from 2004 to the present, and oversaw the Forest and Watershed Health Coordinating Group's expansion to more than 50 different organizations. Susan was regular contributor to the National Cohesive Wildland Fire Management Strategy Western Regional Group as well as the Post-Fire Workgroup of the Wildland Fire Leadership Council and the Western Governors Association. RGWF partners will miss her work ethic and dedication to our forests. Thank you, Susan!

► Prescribed Fire Legislation



While prescribed burning is commonly used on federal and state lands as an effective tool to reduce dangerous fuels and improve land condition, fire use has been relatively low on private land in New Mexico. The New Mexico State Legislature recognized the importance of prescribed fire for resource management, and in 2019, passed House Memorial 42, establishing a Prescribed Fire Working Group to explore how prescribed fire use could be encouraged.

In 2020, the Energy, Minerals and Natural Resources Department, Forestry Division led the Prescribed Fire Working Group in exploring options and developing a report for

the Legislature. The group found important relationships between liability, insurance, training, certification, permitting and the use of prescribed burning. In response to the report, House Bill 57, the Prescribed Burning Act, was developed and signed by Governor Lujan Grisham on March 18, 2021.

HB 57:

1. Defined a simple negligence statutory liability for private landowners and other private practitioners who plan and use prescribed burning on private lands. Until HB 57, New Mexico's liability status was not defined, which made it difficult for potential insurers to evaluate their risk.
2. Established a voluntary prescribed burning training and certification program for private landowners and contractors to encourage good burning practices and engage more landowners in prescribed burning with the "carrot" of a reduction in the double damages established in 1882 law.



3. Directed the Forestry Division to create a model guideline for counties and municipalities to use when issuing prescribed burning permits if they choose to adopt a permitting ordinance. This will provide more consistency in the local government permitting process.

The Forestry Division is leading the effort with New Mexico State Cooperative Extension and subject matter experts from the New Mexico Prescribed Fire Council to develop a curriculum for the prescribed burning training and certification established in the bill.

PROFILE



GWEN KOLB

For 23 years, Gwen Kolb has been helping private landowners conserve wildlife habitat through the US Fish and Wildlife Service Partners for Fish and Wildlife Program (PFW). In 2016, she became the New Mexico State Coordinator for the PFW. Gwen works across the state, including on private properties that lie within the Rio Grande Water Fund footprint.

"The PFW provides technical and financial assistance to landowners interested in restoring and enhancing wildlife habitat on their land," she said. "Projects are custom-designed to meet landowners' needs."

In the RGWF landscape, the PFW is assisting private landowners to use prescribed fire, restore riparian habitats and implement other projects to improve forest, grassland and stream habitat conditions for migratory species and species of conservation concern. In New Mexico, 53% of the land is in private hands.

"Private landowners play a critical role in maintaining and improving watershed health and wildlife habitat," Gwen said. "Only by including both private and public lands in the Rio Grande Water Fund's work, we will meet our goals of protecting water sources and creating a more resilient landscape."

► Climate Preparedness Bridges Divide



As the Southwest continues to become more arid over the coming decades, our shared work on reforestation and afforestation (planting trees in previously unforested areas) has grown more complex. Our changing temperature and rainfall patterns have created an urgent need to understand what species of trees to plant, where to plant them and how to plant them for the best possible chance of survival. Academic colleagues partnering with the RGWF are at the forefront of these discussions and are putting their ideas into action by developing a roadmap that addresses the systemic challenges of this important conservation work.

The team is working to fill the knowledge gaps and overcome barriers with a systems approach, delving deeply into each step of the life cycle and supply chain. The most current research is informing which species are most adapted to future climatic conditions and where to plant them by using cutting-edge modeling and mapping of optimal micro-site conditions.



Based on this research, we are working with partners to collect seed and grow seedlings that are then planted in specific areas that provide the best chance of long-term survival. It is our aim that these plantings will serve as a natural seed source when these small patches reach maturity and naturally aid reforestation across areas devastated by high-severity wildfire. However, naturally forested landscapes aren't the only places where climate readiness is part of our approach to building resilient communities.

This work also links to our work in cities. Last year, The Nature Conservancy released the Climate-Ready Trees report for the Albuquerque area that provided a list of tree species that will thrive in the projected future climate over their lifespan. After much demand by communities outside our state's largest population center, we are replicating the study to develop lists for communities across the state in five other climate zones. These efforts exemplify progress toward our goals of building both natural and managed forest ecosystems that are resilient to the impact of climate being felt now and into the future.



THIS PAGE TOP TO BOTTOM The RGWF is working with partners to plan ahead for New Mexico's forests to improve resilience from climate change. © Collin Haffey/TNC; The Nature Conservancy is working with local partners to plant climate-ready trees in Albuquerque. © Roberto Rosales; Staff and volunteers have planted more than 700 trees in Albuquerque so far. © Roberto Rosales

► SWARP: Call to Action!

Properly functioning stream, wetlands and riparian areas provide a wealth of ecosystem services, including water purification and provisioning, flood control, pulse attenuation and nutrient cycling. Approximately 80% of vertebrate species in the desert southwest are tied to these wet places for some portion of their lifecycle, making them extraordinarily rich in biodiversity. The interface of aquatic and terrestrial habitats supports a variety of rare and declining species, the fate of which are dependent on the availability of surface water resources. This is why the RGWF aims to expand our Stream, Wetland and Aquatic Restoration Project (SWARP) initiative.

The primary goal is to increase the pace and scale of SWARP actions, working to target 200 miles of stream course annually. We can increase the resilience of these rare and important biodiverse areas by repairing the function of these ecosystems so they have the capacity to adapt to changing climatic conditions, but we need your help.

We aim to broadly replicate the initial conditions that are necessary to support scientifically-sound SWARP actions using what we have learned from scaling the RGWF. By reducing permitting barriers, breaking down silos between forest and aquatic restoration planning and project sequencing, we can streamline workflows and integrate in-stream and riparian work with active forest management to provide a watershed approach to our conservation actions.

We hope that with the help of partners like you, we can amplify this critical work. If you share this goal and want to contribute to this initiative, please email us at RGWaterFund@tnc.org.



► Welcome New Executive Committee Members

Diane Agnew, Dr. Janie Chermak and Michiko Martin were unanimously elected to the Rio Grande Water Fund Executive Committee by signatories in the fall of 2020. As the environmental manager for ABCWUA, Diane leads the implementation of the agency's source water protection program, advocating for timely and rapid response to contamination of source waters, public outreach and education and identification of actions that the Water Authority can undertake to protect its drinking water resources. She also supports the agency's implementation and tracking of its 100-year water resource management plan, Water 2120.

Michiko carries out Forest Service goals to enhance shared stewardship opportunities with partners, meet high-priority restoration goals across critical landscapes, protect communities from wildfire and provide the numerous benefits that flow from healthy forests and grasslands by strengthening all people's connections with the land.

"The goals of the RGWF are fundamentally connected to the mission of the USDA Forest Service and the priorities for the Southwestern Region for restoration, sustainable recreation and improved relationships," Michiko said. "Being an executive member of the RGWF will continue to provide the Forest Service's Southwestern Region the opportunity to experience the benefits of shared stewardship to achieve our common vision of resilient landscapes and watersheds, fire adapted communities and sustaining water supply for all the Southwest."

Janie M. Chermak is a professor of economics at the University of New Mexico and the chair of the Economics Department. As an applied natural resource economist, she specializes in dynamic optimization with an emphasis in interdisciplinary research in the areas of energy, water, climate change, wildfire and invasive species.

We welcome these extraordinary leaders to the RGWF Executive Committee! Their experience and interests will lead us well into the next phase of science, stewardship and action.



► Thanks to RGWF Investors



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- Albuquerque Metropolitan Arroyo Flood Control Authority
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- Bernalillo County
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