MEETING THE MOMENT: Harnessing Opportunity for Our Water & Forests Welcome to the 2023 RGWF Signatories Event April 27th, 2023





We would like to acknowledge that this meeting and the work we are discussing today is occurring on the ancestral homelands of the Indigenous peoples of the US Southwest that now comprise 19 Pueblo communities, 3 Apache Nations, Navajo Peoples, and 2 Ute Nations. We pay respect to the traditional stewards, past, present and emerging, who have been the custodians of these lands and waters since time immemorial. We are grateful for our tribal partnerships, we look forward to continuing to support indigenous-led conservation, and the possibilities of our work together.

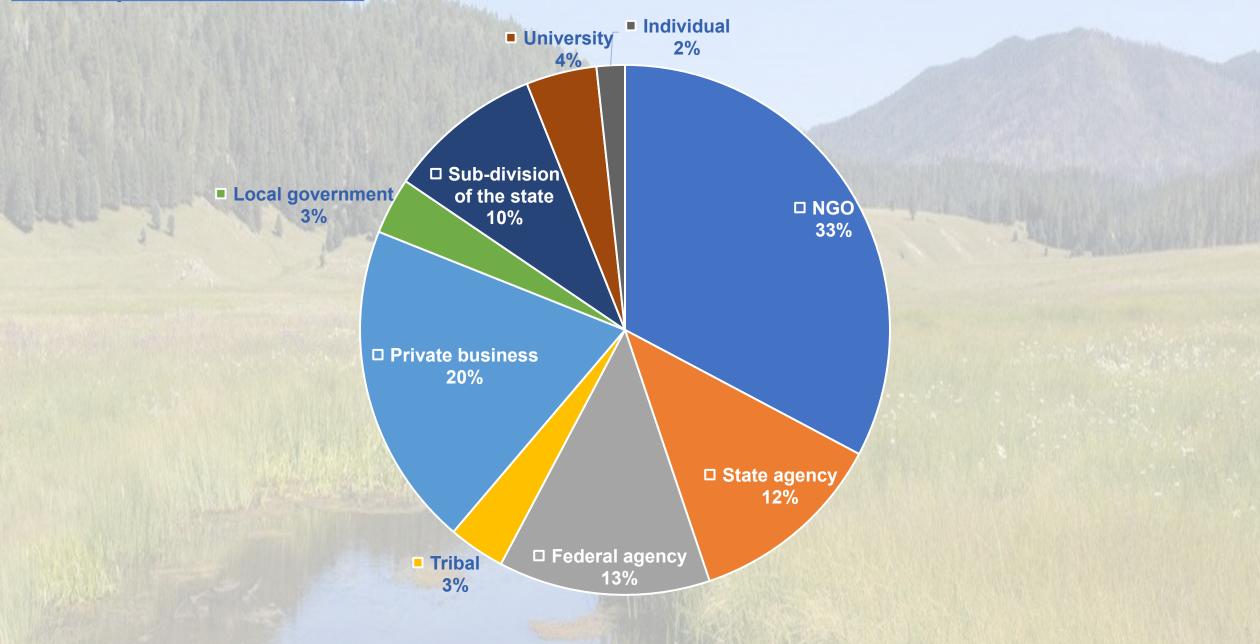
MEETING THE MOMENT: Harnessing Opportunity for Our Water & Forests Welcome to the 2023 RGWF Signatories Event April 27th, 2023





Time	Activity
9:30 AM	Welcome & Introductions
9:45 AM	Keynote Presentation
10:10 AM	The State of the RGWF
10:35 AM	Stories from the Field
11:20 AM	BREAK
11:30 AM	Panel Conversation - Meeting the Moment: Challenges and Opportunities to Increase the Pace and Scale of Forest Restoration
12:30 PM	LUNCH
1:20 PM	Focal Area Discussion Groups – Overview in the Main Room
1:30 PM	Focal Area Discussion Group Breakout Sessions
2:30 PM	Focal Area Discussion Groups: Share outcomes in the Main Room
2:40 PM	BREAK
3:10 PM	Closing & Thank you!
3:30 PM	Adjourn

Participant affiliations



Is this your first RGWF Signatories meeting?

https://www.polleverywhere.com/multiple_choice_polls/KWfauye4 La392rfp0RDkU

RIO GRANDE WATER FUND

Phoebe K. Suina (Cochiti Pueblo and San Felipe Pueblo) April, 2023

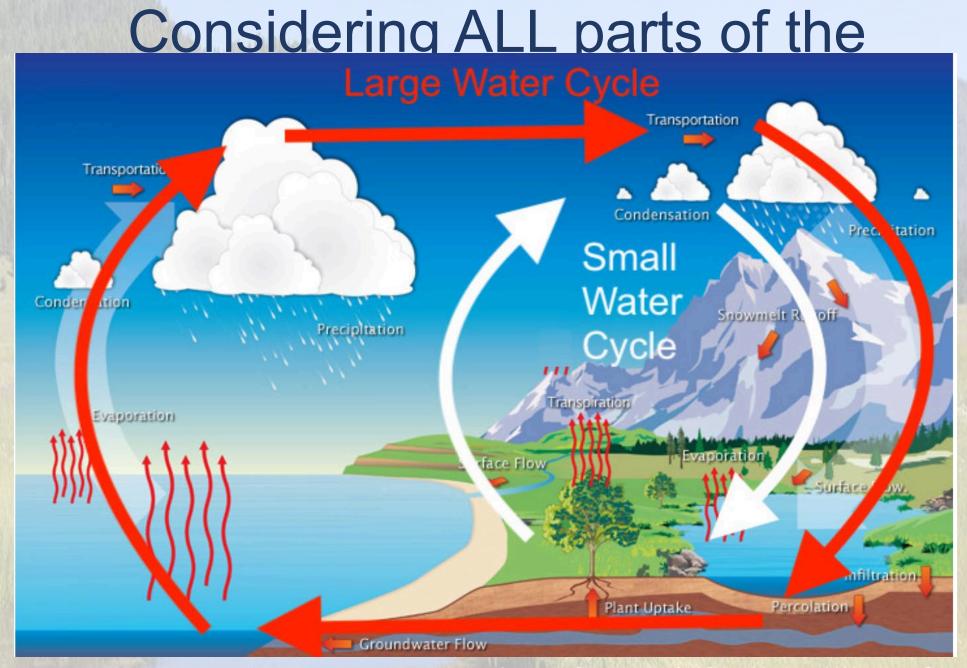
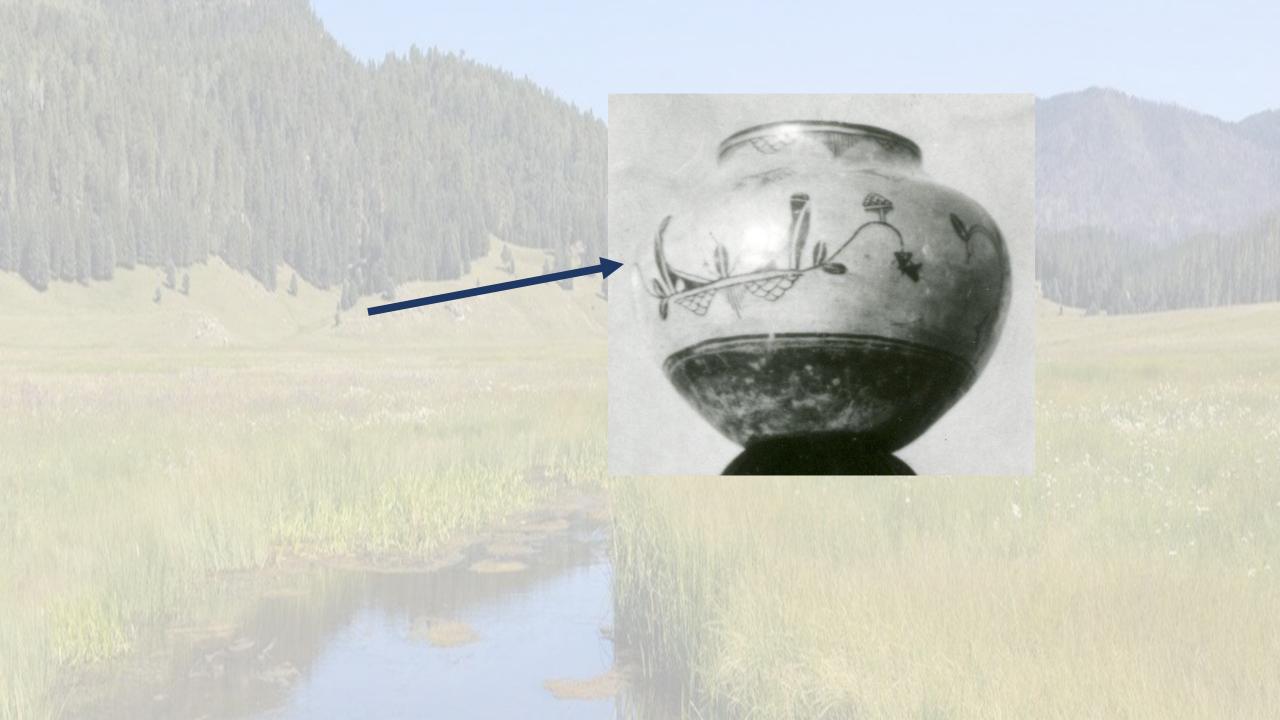


Image: Courtesy of NOAA National Weather Service



Water and land stewardship and our responsibility

From the past to the present...







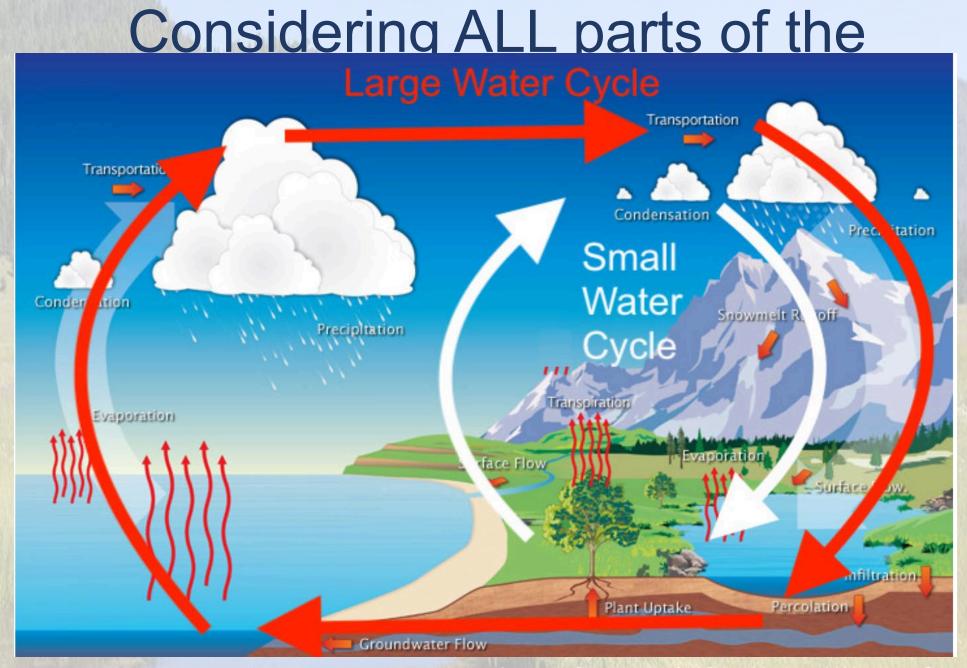


Image: Courtesy of NOAA National Weather Service

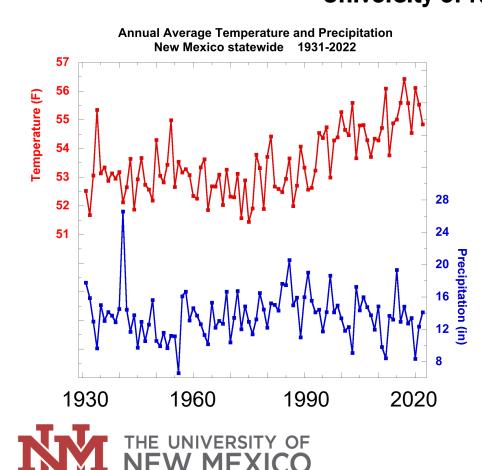
THANK YOU FOR LISTENING

"Continue to learn from Indigenous peoples around you, because we are carrying some of the most advanced wisdom on the planet in our knowledge systems." – Lyla June

Hotter and Drier:

What it Means for Water and Forests in New Mexico

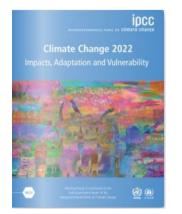
David S. Gutzler Earth & Planetary Sciences Dept (Emeritus) University of New Mexico

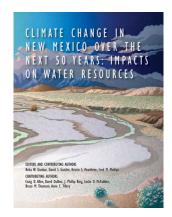


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- * Observed & projected climate change
- * The future of New Mexico forests

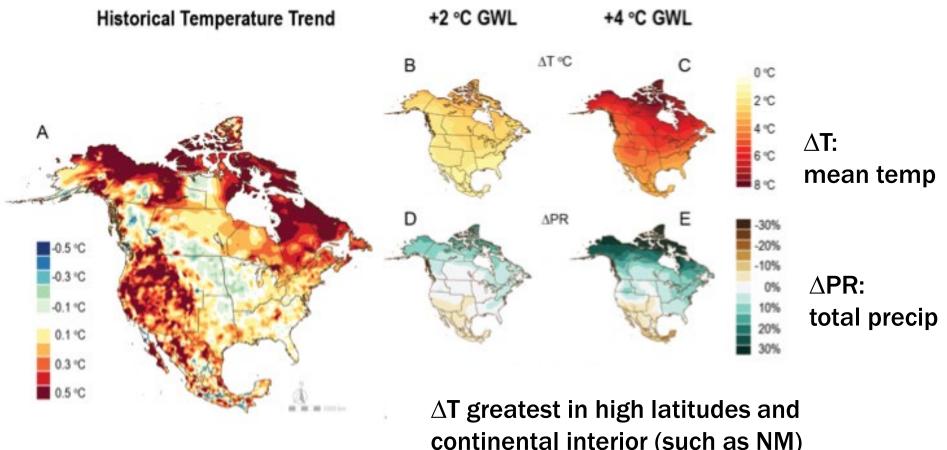
 Sources of information: IPCC AR6 NM 50-year water sector outlook





RGWF Meeting April 27, 2023

Warming Climate Across North America



Daymet 1980-2015 Observations Mean Temp.Trend (°C decade-1)

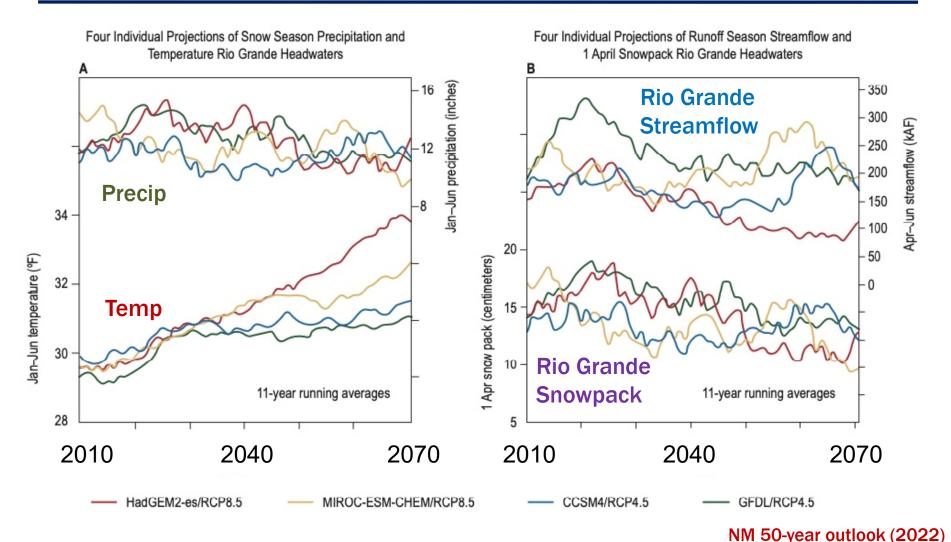
continental interior (such as NM)

 Δ PR much less confidently projected \rightarrow reduced precip in Spring season

2/11

IPCC AR6 WGII Ch 14 (2022)

Rio Grande hydroclimatic projections



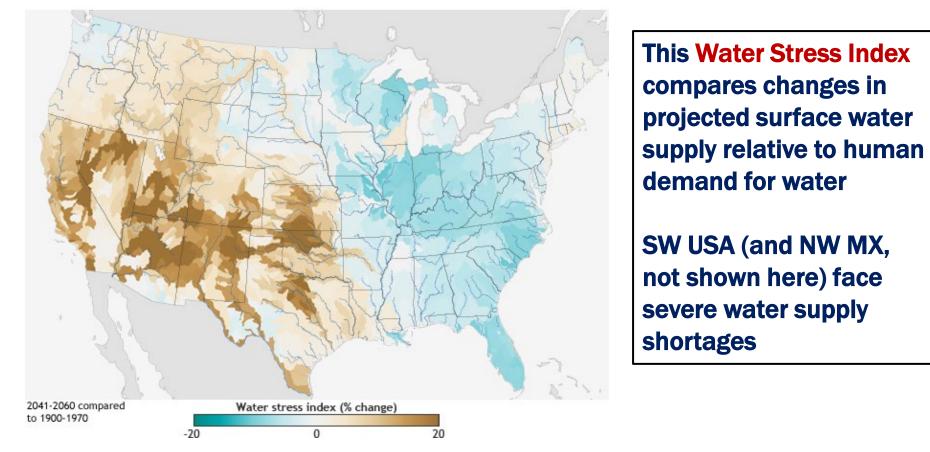
Higher temperature, reduced snowpack

Considerable variation between precip projections

3/11



Projected shortage of surface water supplies across the Southwest

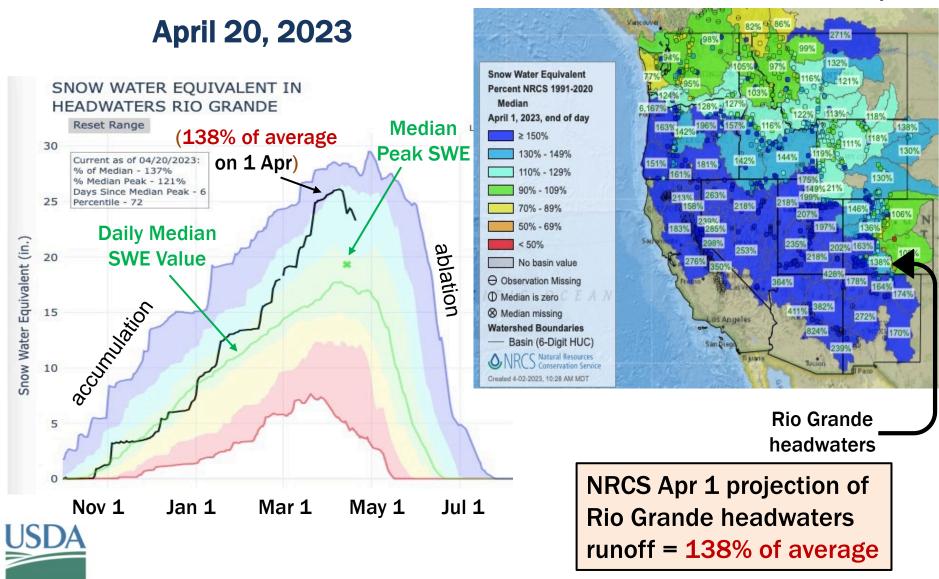


NM 50-year outlook (2022)

5/11

This year: Heavy snowpack across the western US

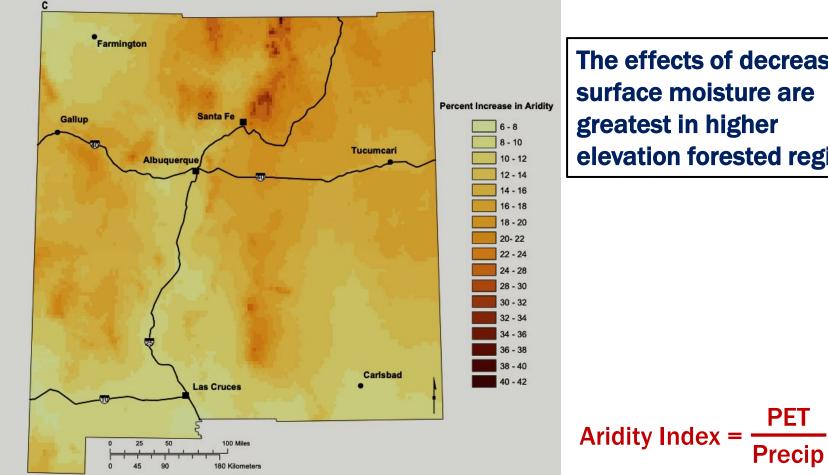
Basin SWE anomalies Apr 1





Aridification of the Southwest



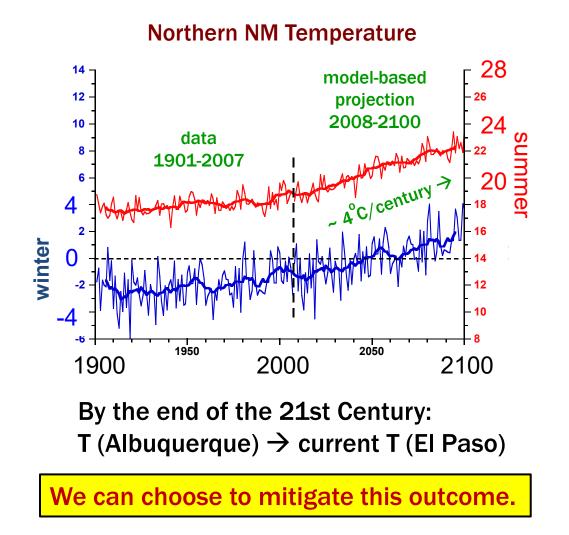


The effects of decreased surface moisture are greatest in higher elevation forested regions

Figure 3.2. Aridity index over New Mexico. (A) Average aridity index from 1970-2000 data. (B) Average aridity index from 2040-2069 projections, generated from 20-model ensemble RCP 8.5. (C) Percent increase between 2040-2069 and 1970-2000 aridity indexes. Aridity index is defined as the ratio of average potential evapotranspiration to average precipitation.

NM 50-year outlook (2022)

Projected climate change: Albuquerque \rightarrow El Paso





Sandia Mountains



Franklin Mountains (outskirts of El Paso TX)

7/11



Increasingly Severe Wildfire

Las Conchas Fire and its aftermath





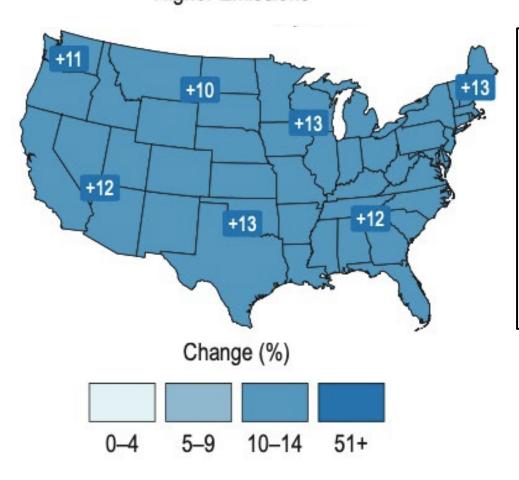
Aridification is associated with more frequent and more severe fire weather and dry fuel conditions

NM 50-year outlook (2022)



More intense extreme precipitation events

Mid 21st Century Higher Emissions



More precipitation falls in short, intense events across the continent ... regardless of the projected change in total precip

The model projection shown here is consistent with observed trends in extreme precipitation in recent historical data



Increased Erosion, Debris Flows



Severe wildfires and extreme precipitation tend to destabilize hillslopes and promote erosion

Flashier runoff, warmer temperatures act to decrease groundwater recharge

NM 50-year outlook (2022)

Summary

* Temperature: warmer, as we see already unambiguously

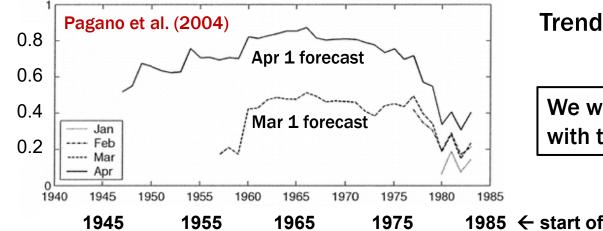
- * Precipitation: Maybe less, very likely more variable
- Less snow, earlier and diminished snowmelt runoff
 ... reduced flows in major snow-fed rivers
 (but 2023 looks to be a respite from drought)
 Drier soils, more severe droughts
 Extreme fire danger and threats to forests



More extreme precipitation events Intensification of floods and debris flows

11/11

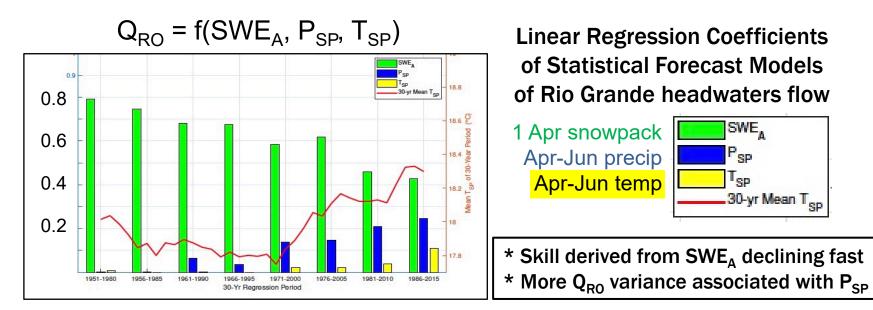
Seasonal Prediction of Snowmelt Runoff



Trend in Seasonal Forecast Skill Upper Pecos River

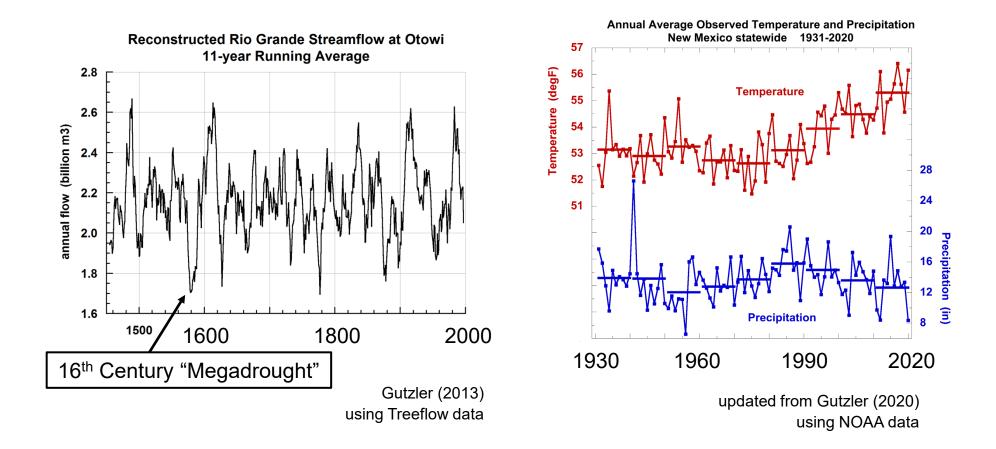
We want forecast skill to *improve* with time, not *get worse*!

1985 🗲 start of 20-year validation window



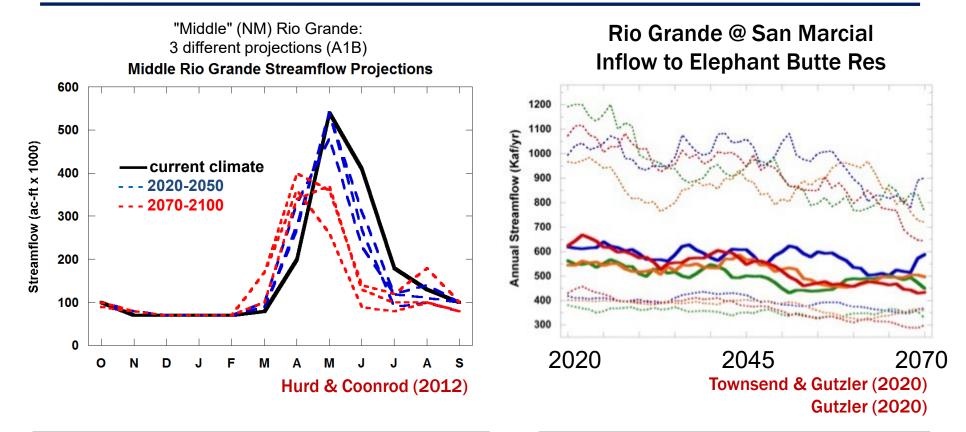
Bjarke & Gutzler (2023)

Climate Variability in New Mexico



Ongoing drought rivals historical "megadroughts"

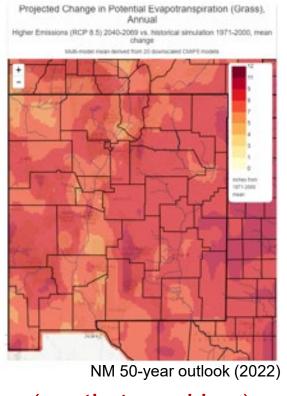
Projections of Diminished Flow in the Upper Rio Grande



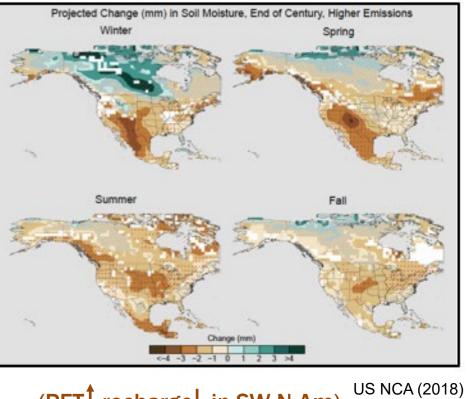
Warmer temperature, reduced snowpack, maybe less precip, suggest lower average flow and much-reduced Spring peak flow Newer projections simulate a huge range of future flows (due mostly to widely varying precip projections) but consensus is for lower flows

Projected PET and Soil Moisture Change

Projected change in Potential Evapotranspiration



Projected change in Seasonal Soil Moisture



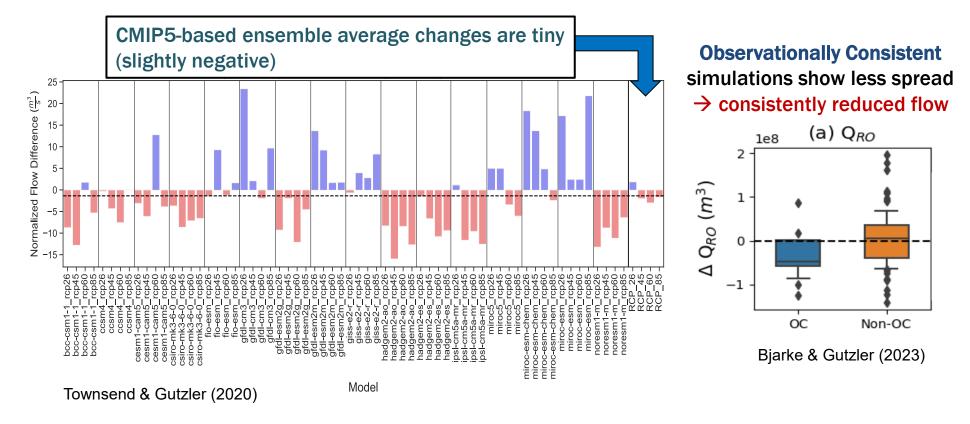
(mostly temp-driven)

(PET recharge in SW N Am)

SW North America is projected to become <u>more arid</u> in general Droughts, when they occur, will be <u>more severe</u> <u>Evaporation rate</u> off moist surfaces will increase

Projected changes in Elephant Butte inflow

Change in flow at San Marcial (inflow to Elephant Butte) over next 50 yr



Can we reduce the **huge** range of uncertainty in model-based projections of future Rio Grande streamflow?

The State of the RGWF: Adapting to meet the moment

Matt Piccarello, Forest and Watershed Health Manager The Nature Conservancy



Where we started

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Las Conchas Wildfire 2011 – 156,000ac



Hermits Peak/Calf Canyon Wildfire 2022 – 341,471ac



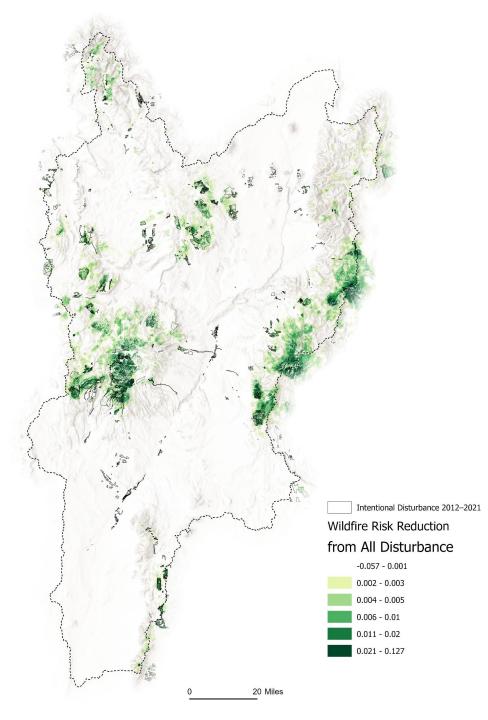


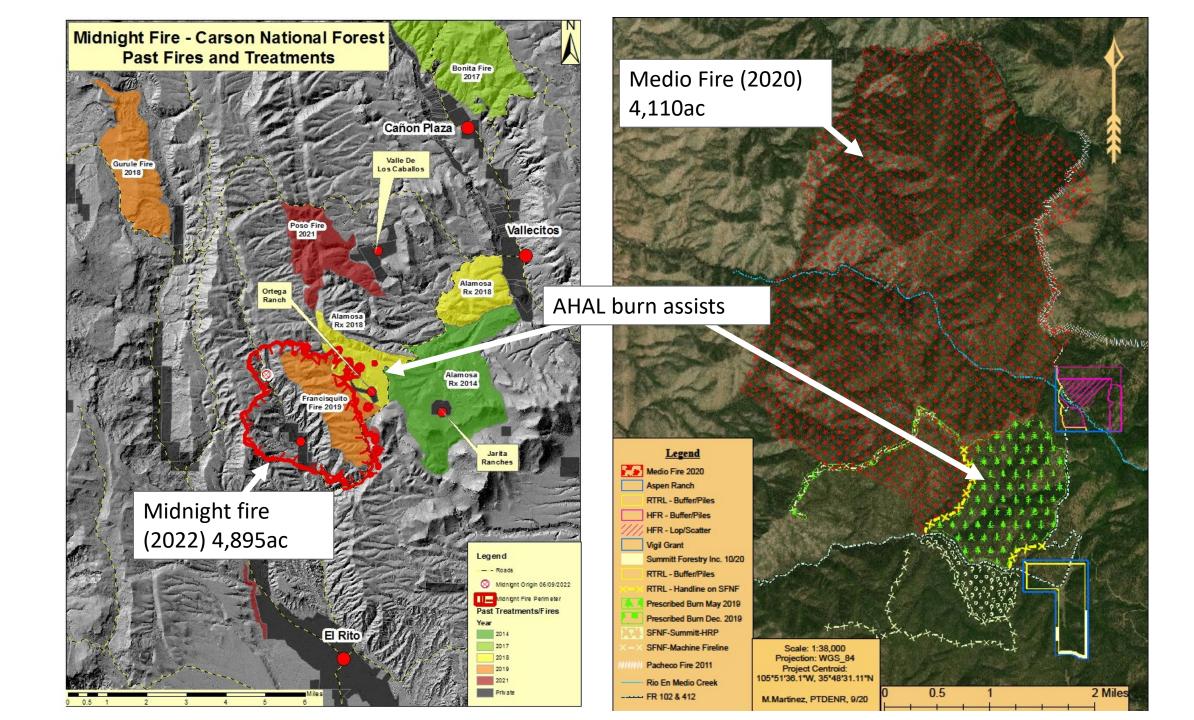
"The Rio Grande Water Fund invests in the restoration of forested lands upstream so we can secure pure fresh water. Our goal is to generate sustainable funding over the next 20 years to proactively increase the pace and scale of forest restoration, including the most highrisk areas in the Rio Grande watershed. This innovative project offers a solution that can bring clean water and outdoor opportunities to New Mexicans for generations to come."

How we're doing

- Over **100** signatories
- 251k acres of forest restoration activities (includes multiple entries, e.g. thinning + fire). 159k of "unique" acres treated (firstentry only).
- \$6.4 million dollars invested via the RGWF
- \$52.8 million in public funding leveraged
- >10 place-based collaboratives convened or supported
- **13,515** acres of Rx fire supported by All Hands All Lands burn team to date
- New and potential funding and agreements
 - \$2M 2022-2034 agreement with ABCWUA
 - \circ $\hfill New agreement with MRGCD in the works$
 - o Expanding the RX fire workforce with our federal and tribal partners
 - Private donations, foundations support, etc.

We **ARE** having an impact at a landscape scale





The Moment

Inflation Reduction Act

- •\$2.1B for NFS (\$1.8B for haz fuels)
- •\$1.5B for urban & community forestry

Infrastructure Investment and Jobs Act (IIJA/BIL)

•\$3.5B for wildfire risk reduction

•\$2B for ecosystem restoration (fish passage, invasive species, mined lands, revegetation, etc)

<u>Context</u>

- **\$12M** invested in haz fuels on NFS Lands 2014 Comprehensive plan
 - **\$11.8M** year one/five of Community Wildfire Defense Grant funds in NM (non-federal lands)
 - **\$11.3M** FY22-24 investments in Enchanted Circle Priority Lanscape Alone

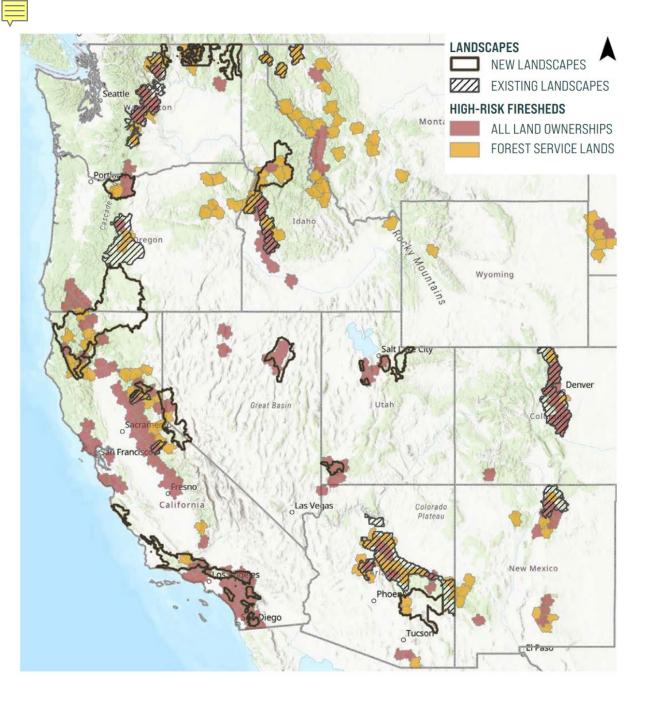
Forest and Watershed Restoration Act (FAWRA)

- •**\$2M** in 2019
- •\$3.2M in FY25

Land of Enchantment Legacy Fund

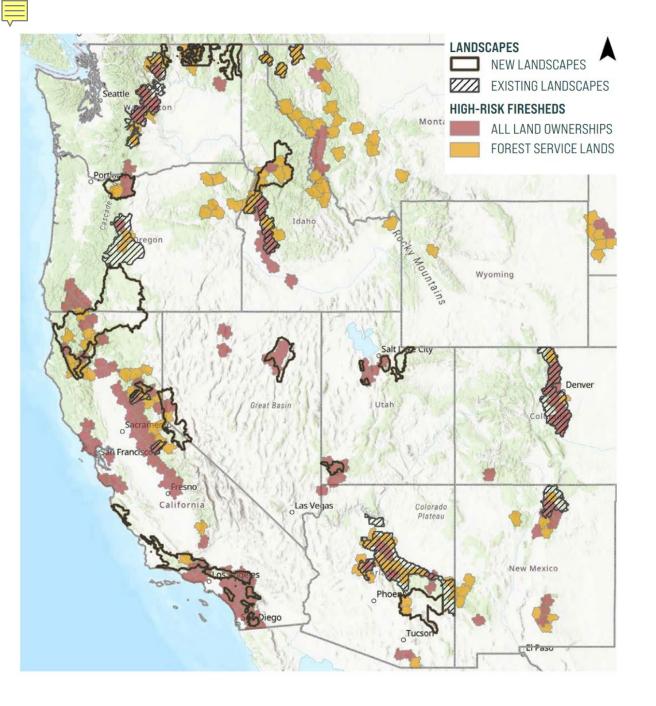
•\$50M initial investment

https://iratracker.org; https://www.tenstrategies.net/newfederalfunding



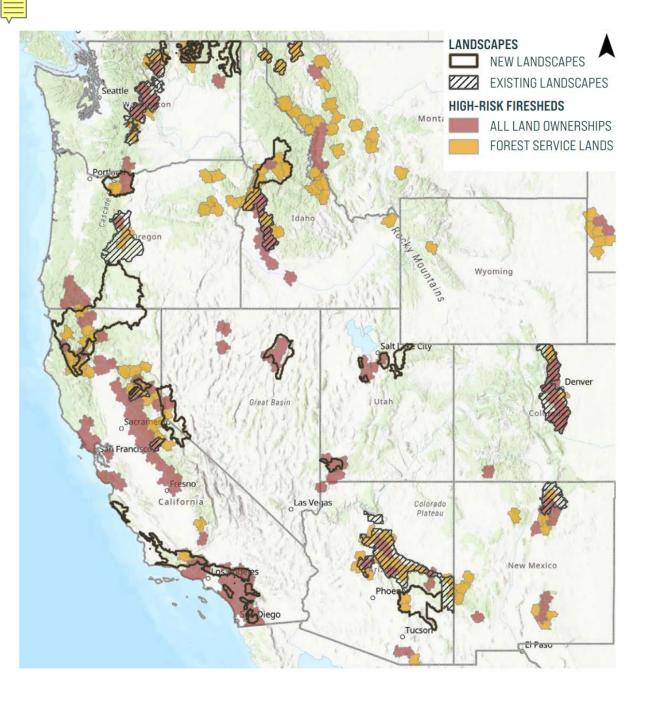
Wildfire Crisis Strategy

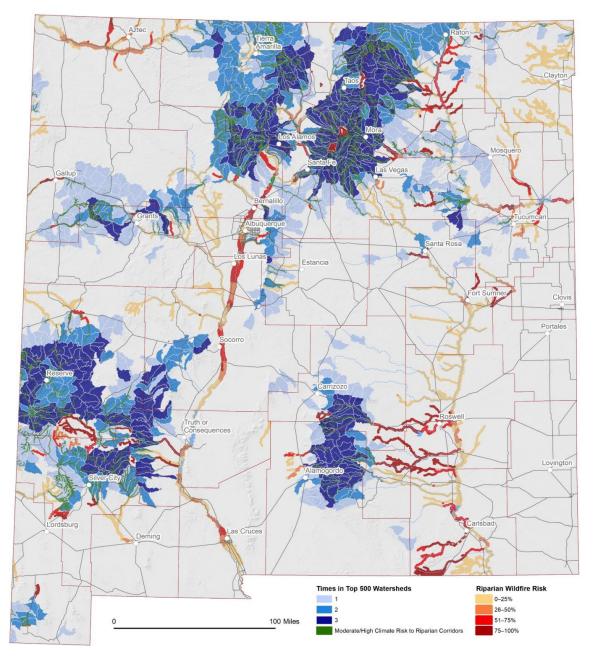
- Jan 2022, Forest Service launched 10-year strategy to address wildfire crisis where it poses most immediate threats to communities
- Initial 10 landscapes announced in 2022, additional 11 landscapes announced in 2023 – 134 of 250 high risk firesheds in West
- Leverages suite of provisions to move quickly and effectively
- <u>https://www.fs.usda.gov/managing-</u> <u>land/wildfire-crisis</u>



Wildfire Crisis Strategy

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NM Forest Action Plan

What's next?

Updates to Executive Committee Bylaws and Signatory Charter

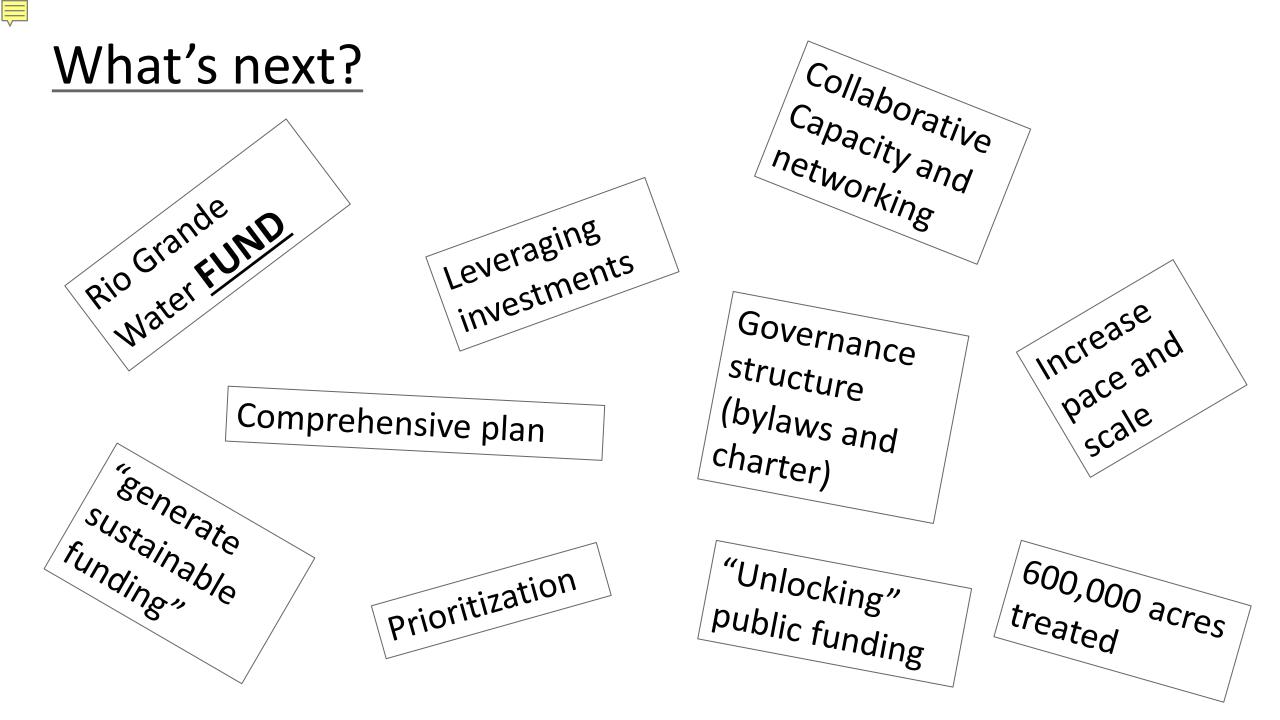
- Bylaws: Current language states that we need two-thirds of all Signatories to affirm changes
- Signatory charter: Current language states no changes unless by a "written instrument" from *each* of the signatories.

– New process:

- \circ 21-day comment period
- \circ 10-day voting period
- Changes pass unless a majority of all Signatories dissent

Executive Committee

– Accepting nominations for a 9th member









RIO GRANDE WATER FUND COMPREHENSIVE PLAN FOR WILDFIRE AND WATER SOURCE PROTECTION > JULY 2014 4









At the edge of chaos, complex dynamic systems are at their most creative – Stuart Kauffman



CHARTER SIGNATORIES For more information, visit us online at nature.org/riogrande



MEETING THE MOMENT: Harnessing Opportunity for Our Water & Forests April 27th, 2023 BREAK





ALL HANDS ALL LANDS APPROACHTO SUPPORTING **PRESCRIBED FIRE IN** NEW MEXICO

Sam Berry sam@forestguild.org



All Hands All Lands Burn Team

- Inspired by collaborative burn approaches in Southeast
- Builds on Guild's history with RX fire from 2013- RVCC Case Study
- Increase capacity for **prescribed fire**
- Lead burns on private or state lands, support burns on federal lands
- Ongoing process of improvement

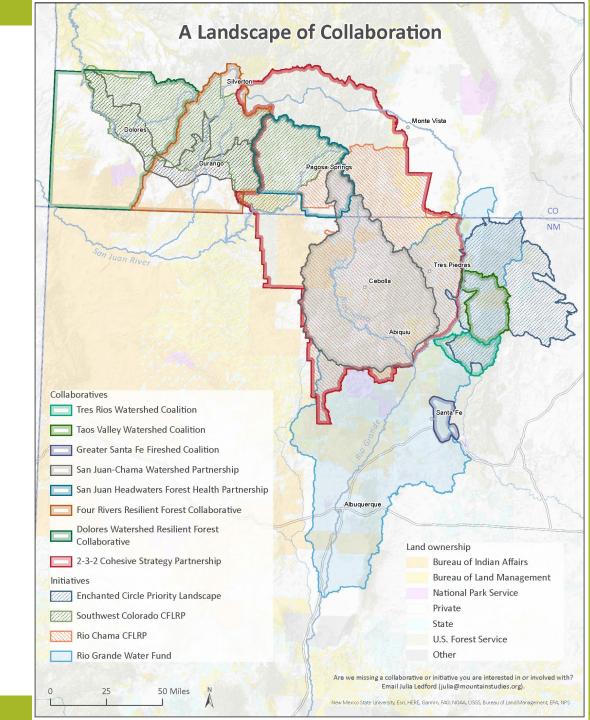
How we do it:

- Coordination
- Planning
- Operations and Training
- Standards and Liability
- Agreements with Partners



Stacking of Initiatives

- AHAL funded by TNC in the Rio Grande Water Fund.
- Pursue projects where efforts and funding overlap for most impact.
- Have supported federal burns within CFLRPS and completed private land burns within CFLRP foot prints.
 - Pile burns in Jemez, Coyote, and Tierra Amarilla



Operations and Planning

- Support Partner Burns as requested
- Supply fire fighters through partners and Call When Needed employees
- Standing Winter Crew in 2021 and 2022
- Lead private land pile burning
- Write and revise burn plans
 - Mostly pile burn plans
- Lead Burn Operations
 - Planning, Permitting, Prep, Operations

Accomplishments since 2018	Amount
Different people participating:	100+
Jurisdictions worked on:	9
Different agencies participated:	20
Operational shifts worked:	835
Acres Treated	13565
Trainee assignments (since 2021)	21



Coordination

- The Nature Conservancy of NM
- TNC North American Fire Team
- Rio Grande Water Fund
- US Forest Service Carson, Cibola, Santa Fe
- Bureau of Land Management NM
- NM Prescribed Fire Council
- Santa Clara Pueblo
- Tesuque Pueblo
- Picuris Pueblo
- NM State Forestry
- Taos Ski Valley
- NM State Land Office
- Rocky Mountain Youth Corps
- NM Youth Conservation Corps
- And More!



Training

- Basic NWCG Training
 - Two S-130 Field days and pack tests for local participants
 - 6+ trainings for Youth Crews
- On the ground training for Glorieta Camps and others
- Task Books and Trainee assignments
- Workforce Development
- Looking to integrate New Mexico State Certifications when that happens



Forest Stewards Youth Corps

- 20+ years of high school aged youth crews stationed at USFS Ranger Districts
 - Crews complete hands-on conservation projects for most disciplines (range, forestry, fire, wildlife, archaeology, recreation) across a 9-week summer program.
- 3 years of 18-25 year old Fire and Fuels youth corps crews stationed at USFS Ranger Districts.
 - 12-weeks from late summer through the fall.
 - Crews have diverse work plans, but a priority is to gain prescribed fire experience.
 - Regional Master Participating Agreement
 - Multiple funding streams (state, federal, NGO, private)
 - Crews are red carded and chainsaw trained



Challenges

- Need strong long term coordinator with ability to form partnerships and navigate agreements
- Navigating insurance and certifications as a non-agency
 - Red-cards outside of federal agency
 - Private burn insurance is VERY difficult to secure
- Agency buy-in to AHAL differences
- Funding
 - Flexibility required is difficult to get Grants and Agreements to fund
 - Trying to continue to fund this work with SPAs
- Collaborative burning
 - Mix of partners in high-risk situations
- Capacity to be in multiple places at once and sustain partnership building
- Timing, getting resources to the right place at the right time



Future Directions

- Sustaining and adding partnerships
 - Agreements! Especially ones that allow resources to come off federal lands.
- Adding internal staff capacity to assist with coordination
- State-wide expansion
- More private burning, especially broadcast
- Growing and sustaining the CWN roster and adding more partners
- Navigating NWCG vs State Certifications
- Pile Squad (winter burn crew)
- Integrate private, federal, and state resources into other burns more



Discussion

New Mexico Tribal Fire Working Group

Rio Grande Water Fund April 27, 2023 Ryan Swazo-Hinds

Purpose

This group will work towards solutions for important issues related to wildfire and prescribed fire that impact tribes, pueblos, and tribal nations in New Mexico. Fire has been a key part of Indigenous land stewardship in New Mexico for millennia, and by coming together now we can make a greater progress than our own individual efforts alone. We will share solutions and establish a process for working together on shared challenges. We will learn from and build on the experience and skills of each participant.

Goals

- Taking care of land on tribal reservations and ancestral territories.
- Relationship building within the group and partners.
- Build a Tribal Workforce Network (equipment, qualifications, training, share fire resources for crews).

Trainings/workshops

- Burn planning writing burn plans
- Air quality monitoring
- Reforestation
- Silviculture prescription
- Shared Stewardship

MOA'sMOU's

Cooperative Agreements

• Contracts

Next Steps

- Hold another working group meeting in late summer/fall 2023
- Organize another field day prior to the next meeting.
- Hold workshops on prioritized training topics over the winter 2023/2

Please contact Sam Berry, Forest Stewards Guild for more information. sam@forestguild.org NEW MEXICO

The New Mexico Youth Conservation Corps Program: Developing the Next Generation of Outside Workers

> https://www.emnrd.nm.gov/about-ycc/ sarah.wood@state.nm.us 505 470.3710

What is NMYCC?

A job training program of the State of New Mexico that provides funds to government agencies, schools, tribes and non-profits who hire and train youth to carry out projects that improve natural, cultural, agricultural, community, and recreational resources.

Who can apply and what can be done

- Eligible entities are local units of state government (including charter and public schools, SWCDs, and land grants), tribes, and non-profits.
- The project must result in a specific, identifiable project(s) or service(s) that would otherwise not be accomplished with existing funds and does not duplicate routine services or functions.
- Projects must be consistent with the YCC program and include, but are not limited to, projects that:
 - Protect, conserve, rehabilitate or increase resiliency of terrestrial and aquatic species, forests, refuges, rangelands and waters of the state;
 - Improve use and access to public parks, greenways, historic sites, libraries, museums, zoos;
 - Improve or enhance recreational areas and associated facilities;
 - Reinforce the "Keep New Mexico True" campaign;
 - Improve community disaster preparedness;
 - Provide emergency assistance, disaster relief or recovery at the Applicant's discretion;
 - Increase energy efficiency;
 - Beautify, improve and restore urban areas;
 - Renovate or improve community facilities, including those for the elderly or indigent.





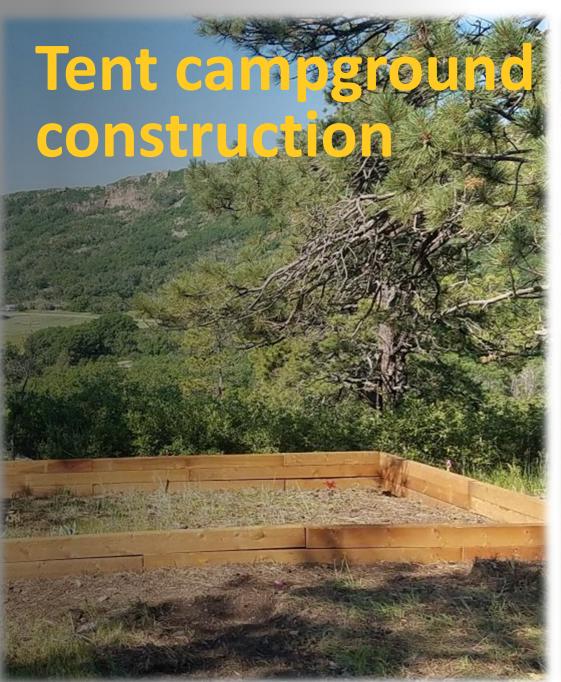












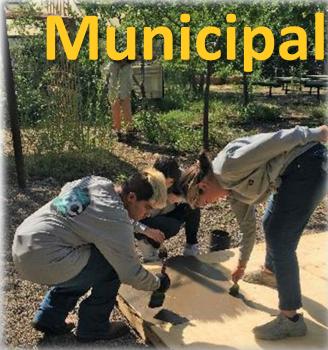






















Program Specifics

AWARD CAP:

- \$200,000 per project.
- 70% of the grant must go towards corps member wages. This includes FICA, unemployment insurance, & workers' comp.
- 30% of the grant may be used for all other costs (training, staff time, materials).

CORPS MEMBERS:

- New Mexico residents ages 14-25 are eligible to be hired as corps members
- At least 5 corps members per project.
- Corps members are your employees.

LENGTH: No longer than 26 weeks.

TRAINING: 10% of the project time.

MATCH: 20% of funds spent. Match may be cash, in-kind contributions, other grants. BUDGET AVAILABLE:

- Budget is a distribution from Governmental Gross Receipts Tax.
- About 40 50 projects may be funded each year.

The Training Difference



Mental health first aid Decision making Conflict management Financial literacy Projects must provide a variety of training designed to increase awareness of the state's resources and variety of careers. Training DOES NOT have to be directly relevant to the project.







Considerations

Capacity

- plan daily logistics
- provide crew oversight and supervision
- prepare detailed reimbursement packets and track the budget

Additional budget to cover the costs of materials and supplies, staff time.

Training specific to job and community.

In-house, by volunteers, or a contractor?
Subcontractors needed?

Alternate plans if something falls through (land access, materials acquisition).



Corps Member Benefits

Corps members who work on a YCC project for 48 weeks within a 48 month period, are offered a \$1,500 educational tuition voucher good at New Mexico vocational and educational institutions OR a \$500 cash compensation.

The YCC may offer a prorated amount based on a minimum of 32 weeks worked.

What Corps Members Say

It was my first job and I feel I have more of an understanding of the real world.

I learned a lot about managing people and I would like to work more with forest, soil and water conservation in my future career. The YCC is hands down one of the best programs that I've been able to work with and it really helped me a lot and they gave me the knowledge and the motivation to push myself even further and start a career for myself.

> It got to a point where the paycheck was just a bonus. This program is also a reason I managed to keep up my grades

I watched as each crew member grew and found a connection with the community and outdoors.

> The YCC grant was a steppingstone and definitely, an eye opener showing me that there's a lot of options this program provides from fire, to project work, and a whole lot of training opportunities that younger individuals have at their disposal to be able to kick off their career.

Which focal area breakout would you like to participate in?

When poll is active, respond at PollEv.com/tncnm095
 Text TNCNM095 to 22333 once to join

A. San Juan and Chama Watersheds
B. Sangre de Cristo Mountains – Taos
C. Sangre de Cristo Mountains – Santa Fe
D. Jemez Mountains
E. Sandia and Manzano Mountains



Thank you to our meeting sponsor!

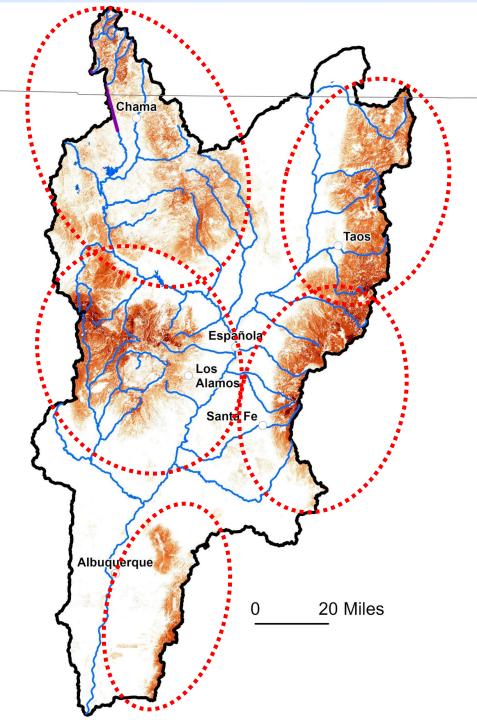


Business Water Task Force

Focal area breakout groups

Please work in the group that makes sense for you and your work

- San Juan and Chama Watersheds
- Jemez Mountains
- Sangre de Cristo Mountains Taos
- Sangre de Cristo Mountains Santa Fe
- Sandia and Manzano Mountains



Goals of focal area breakouts

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- Knowledge exchange of active and planned projects in focal areas.
- Identify capacity gaps, bottlenecks, and challenges that are slowing the pace and inhibiting the scale of forest and watershed restoration treatments, i.e. fuels reduction, prescribed burning, stream and wetland restoration, planning projects etc.
- Knowledge exchange of resources (funding, businesses, etc.) available to help address capacity gaps and bottlenecks.
- Networking amongst participants that may lead to proposal development and/or problem solving
- Provide insight for where the RGWF goes from here by identifying common themes and needs. We will provide a summary after the meeting.

Mechanics of facilitation

- Two facilitators per group
- Work in small groups within the larger group
- Place sticky notes on sheet and work in rows
- Share back questions for facilitators:
 - 1. What were the most common capacity gaps and bottlenecks?
 - 2. What were some of the solutions that were identified?
 - 3. Top priority action/takeaway?
 - 4. Were any connections made in your session between someone with a challenge and someone that could address it?

MEETING THE MOMENT: Harnessing Opportunity for Our Water & Forests April 27th, 2023





THANK YOU!

Join us for the AFTERGLOW!* Bosque Brewing, Heights Public House 5210 Eubank Blvd. NE, Albuquerque, NM 87111. 5 min drive from CNM Montoya Campus.

*Afterglow: a strip of rose-colored light in the sky that you sometimes see after the sun goes down. You should look for the afterglow after you watch the sunset.