

4TH SOUTHWEST FIRE ECOLOGY CONFERENCE

The Southwest Fire Science Journey:
Lessons from the Rearview, New and Unfamiliar
Routes, and Promising Horizons



SOUTHWEST
FIRE SCIENCE
CONSORTIUM



NAU NORTHERN ARIZONA
UNIVERSITY

School of Forestry

NOVEMBER 18-22, 2024
LA FONDA ON THE PLAZA
SANTA FE, NEW MEXICO
#SWFECO24



Association for
Fire
Ecology

Week at a Glance

Monday, November 18: Workshops (Pre-registration required)		
8:00am	Morning Workshops	
12:00pm	Lunch (on your own) / Student BBQ Lunch, Santa Fe Railyard Park	
1:30pm	Afternoon Workshops	
5:30pm	Welcome Social, Mezzanine and La Fiesta Lounge	
Tuesday, November 19		
8:30am	Opening Plenary, Lumpkins Ballroom	
10:30am	Morning Break, Mezzanine	
11:00am	Concurrent Sessions	
12:30pm	Lunch (on your own) / Student Lunch, La Terraza	
2:00pm	Concurrent Sessions	
4:00pm	Poster Session and Exhibitor Networking, Lumpkins Ballroom and Mezzanine	
6:30pm	Student and Early Career Mentoring Social, Chomp Food Hall	
Wednesday, November 20		
8:30am	Plenary Panel, Lumpkins Ballroom	
10:30am	Morning Break, Mezzanine	
11:00am	Concurrent Sessions	
12:30pm	Lunch (on your own)	
2:00pm	Concurrent Sessions	
3:30pm	Afternoon Break, Mezzanine	
4:00pm	Concurrent Sessions	
8:00pm	Dance Party! La Terraza	
Thursday, November 21		
8:30am	Plenary Panel, Lumpkins Ballroom	
10:30am	Morning Break, Mezzanine	
11:00am	Concurrent Sessions	
12:30pm	Lunch (on your own)	
2:00pm	Concurrent Sessions	
3:30pm	Afternoon Break, Mezzanine	
4:00pm	Fire Circle Discussion Groups	
Friday, November 22: Field Trips (Pre-registration required)		
<ul style="list-style-type: none"> • Santa Fe Municipal Watershed • East Jemez Mountains • Hermit's Peak-Calf Canyon Fire Region 		
Exhibit Area, Mezzanine	Registration, Mezzanine	Presentation/AV Station, Ballen Boardroom
Tuesday: 8:30am-5:30pm Wednesday: 8:30am-5:30pm Thursday: 8:30am-5:30pm	Monday: 7:00am-7:00pm Tuesday: 7:30am-5:30pm Wednesday: 7:30am-5:30pm Thursday: 7:30am-4:00pm	Monday: 5:00pm-7:00pm Tuesday: 5:00pm-7:00pm Wednesday: 4:00pm-6:00pm Uploads should be completed online by 2:00pm the day before your talk.

4th Southwest Fire Ecology Conference

*Hosted by the Southwest Fire Science Consortium, Arizona
Wildfire Initiative, and the Association for Fire Ecology*



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Conference Planning Committee

Wade Axup, Arizona Wildfire Initiative / Northern Arizona University

Rachel Bean, Forest Stewards Guild

Blanca Cespedes, New Mexico Highlands University

Callum Cintron, Arizona Wildfire Initiative and Institute for Tribal Environmental Professionals

Douglas Cram, New Mexico State University

Catrin Edgeley, Northern Arizona University

Annie Elko, Northern Arizona University

Alexander Evans, Forest Stewards Guild

Micah Grondin, US Forest Service

Hannah Hull, Association for Fire Ecology

Shaula Hedwall, US Fish and Wildlife Service

Rachel Loehman, US Geological Survey

Ellis Margolis, US Geological Survey

Molly McCormick, Southwest Fire Science Consortium and Arizona Wildfire Initiative

Annie Oxarart, Association for Fire Ecology

Lindsey Quam, New Mexico Forestry Division

Michael Remke, New Mexico Highlands University

Andrea Thode, Northern Arizona University



Land Acknowledgement

The landscape surrounding Santa Fe, known as **Oga Po'geh** (*White Shell Water Place*) to the Tewa people, is the ancestral homelands of the Pueblo Nations of Tesuque, Nambe, Pojoaque, San Ildefonso, Santa Clara, Ohkay Owingeh, Cochiti, Santo Domingo, San Felipe, Santa Ana, Zia, and Jemez. We recognize they, along with other Tribes and Pueblos in New Mexico, have stewarded the land since time immemorial and are active stewards of the land in this region today. We are grateful to the Indigenous presenters, session organizers, and attendees who are here with us this week, and AFE recognizes and honors that Traditional Ecological Knowledge is science (<https://fireecology.org/tek>). We hope you take time to learn from one another and invite you to learn more about Indigenous communities in New Mexico at <https://indianartsandculture.org/communities> and <https://apcg.org>.

THANK YOU!

This conference would not be possible without the time, energy, and creative ideas of the dedicated members who serve on Conference Planning Committee. Special thanks to the committee, presenters, session organizers, volunteers, exhibitors, and each attendee for making the 4th anniversary of the Southwest Fire Ecology Conference an amazing event!



Welcome

The Association for Fire Ecology (AFE) and the Southwest Fire Science Consortium (SWFSC) welcome you to the Fourth Southwest Fire Ecology Conference in Santa Fe, New Mexico! This year’s theme, **“The Southwest Fire Science Journey: Lessons from the Rearview, Navigating Unfamiliar Routes, and Reaching for New Horizons,”** invites us to explore both the wisdom of our past and the opportunities that lie ahead.

Over the years, our regional conference has grown into a cornerstone event, thanks to the collaboration and dedication of our partners and committee members. This year’s gathering offers a rich program of events, diverse topics, and networking opportunities that are sure to inspire and energize.

As wildland fire scientists, managers, educators, and students in the southwestern US, we find ourselves in an era of rapid change and in need of new approaches, well-planned investments, and meaningful collaborations. Typical land and fire management strategies no longer suffice in the face of escalating challenges posed by more intense fires and the escalating impacts of climate change on precipitation and temperature patterns. While recent and substantial investments aim to tackle these issues, they often operate on timelines that are misaligned with natural processes and legacy issues. Simultaneously, a cultural shift is imperative—one that recognizes our integral connection to fire-prone lands, embraces the evolving reality of wildfire and ecosystem transition, and equally respects the knowledge held by Indigenous and land grant communities of the Southwest. At this pivotal juncture, we advocate for a reflective pause to better understand the past, present, and future of the fire science journey in the Southwest. It is paramount that we integrate insights of past work with modern approaches as we invest in creating resilient landscapes and human communities of tomorrow.

We are fortunate to have a diverse community of attendees—from fire managers and researchers to educators, students, policy makers, ecologists, and more. This variety of backgrounds and perspectives is essential as we chart new paths together—working toward the shared goal of resilient landscapes and communities. Face-to-face gatherings like this are invaluable in our efforts to meet the evolving challenges of fire research and management. We encourage you to take full advantage of the opportunity to engage with fellow attendees—sharing knowledge, learning from one another, and finding inspiration in the sessions, workshops, and field trips we have planned. Let’s use this time to renew old friendships, build new connections, and strengthen personal and professional networks for the road ahead.

On behalf of the Association for Fire Ecology and the Southwest Fire Science Consortium, we warmly welcome you to Santa Fe. Thank you for joining us on this journey and for your ongoing support of our mission to advance the science and management of wildland fire.

On behalf of the Conference Planning Committee:

Molly McCormick, Southwest Fire Science Consortium Program Manager

Andi Thode, Professor NAU, Southwest Fire Science Consortium Lead

Annie Oxarart, Administrative Director, Association for Fire Ecology

Paul Hessburg, President, Association for Fire Ecology



Conference Information

Whova: Official Event App

Make sure to download Whova so you can easily search the program, find presentation abstracts and session details, presenter bios, maps, connect to social media, post photos, and network with other conference attendees.



How to Download Whova

1. Go to your App store or Google Play, search for Whova, and download the free app.
2. Enter your email and password to log in, or create an account if you have not used Whova before. You should see the conference listed at the top of the home screen under "My Events."
3. If you don't see the conference listed, search the events for "4th Southwest Fire Ecology Conference" and then enter the invitation code: **SWFIRE2024**

Wifi

There is free access to wireless internet throughout the meeting area (select La Fonda Meeting Room; no password required).

Breaks

Morning breaks are at 10:30am on Tuesday, Wednesday, and Thursday, and will include coffee, tea, juice, fruit, bagels, granola bars, and yogurt. Afternoon breaks are at 3:30pm and will include coffee, iced tea, and lemonade.

Lunch

Lunch is on your own. There are many great restaurants in walking distance! Scan this QR code for searchable list.



Nursing Mothers and Family Room

The Ballen Boardroom on the 1st floor is available for nursing mothers and families to use as needed. If you need anything, please visit Registration and let us know.

Parking

You can park at La Fonda's garage for a discounted rate of \$20 (overnight) or \$12-15 (day only). There are also several municipal parking lots located nearby, which charge \$12 per day maximum fees. The Cathedral Basilica offers \$10 public parking in their lot, on the south side of the church on Cathedral Pl.

Diversity Statement

The Association for Fire Ecology respects all aspects of people including race, ethnicity, gender, sexual orientation, socio-economic background, age, religion, and ability. We seek to create a learning environment that embraces differences and diversity, in which all members of the fire community feel welcome, safe, and valued. If you have feedback or want to report a non-urgent matter, you can:

- Visit Registration and speak with AFE staff or a board member.
- Scan the QR code or go to this link to share anonymously: <https://forms.gle/cVj7T7yA2dSzD9Ch7>.



Code of Ethics and Conference Behavior

All attendees are required to follow AFE's Code of Ethics. As a reminder, this means attendees conduct themselves in a civil and dignified manner; act professionally and respectfully toward one another; respect the needs, contributions, and viewpoints of others; and give due credit to others for their methods, ideas, or assistance. AFE prohibits abusive language, harassment, or any form of discrimination against another attendee; actual or threatened violence toward any individual or group; and conduct endangering the life, safety, health or well-being of others.



Evaluation

Please complete the conference evaluation online by scanning this QR code. We value your input and use this information to improve future events. You will also receive an email after the Fire conference with this survey link.



Local Activities

There are many opportunities for sight seeing, fitness, nature exploration, and relaxation. If you'd like company, use the Whova app to create a "meetup" with other conference attendees.

CFEs and CEUs

Visit Registration if you need our assistance applying for continuing education credits.

#SWFECO24

Conference Information

Volunteers

Report directly to your volunteer location. If you have any issues, come to Registration for assistance. Thank you for helping the conference run smoothly!

Poster Presenter Info

The Poster Session will be held in Lumpkins Ballroom from 4:00pm to 5:30pm on Tuesday. Presenters can set up posters during the lunch break (12:30pm to 2:00pm) or between 3:30 and 4:00pm on Tuesday. You will hang your poster in the space that corresponds to your poster number (see pages 16-17). Posters must be removed by 4pm on Thursday.

Exhibitor Info

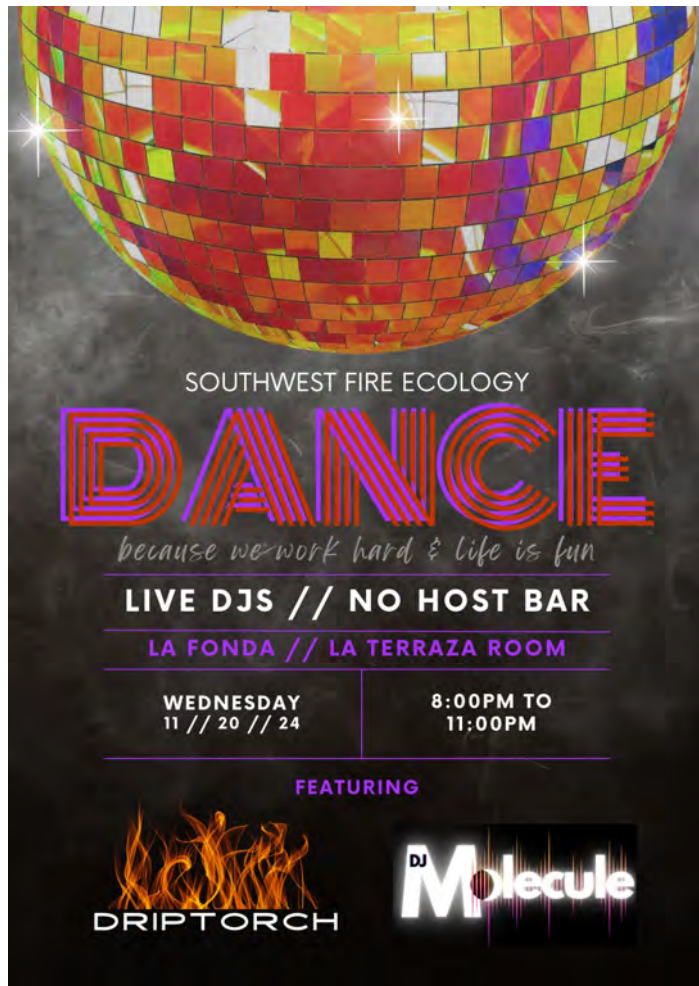
Exhibitor tables will be in the Mezzanine on the 2nd floor. The Exhibit Area will be open from 8:30am – 5:30pm on November 19, 20, and 21. Exhibitors can set up anytime on Monday, and all items should be removed by 6:30pm on Thursday.

Oral Presentation File Upload Information

Presentation slides for oral presentations should be submitted online, with your presentation number as the file name, by **2pm the day before your talk**. If you need assistance, visit the Presentation/AV station (see times on inside front cover). If you are unable to load your presentation by the due date, go directly to your presentation room 15 minutes before the session start time and work with the AV volunteer to load your presentation. Please only use this option for extenuating circumstances!

AFE Merch

We are excited about our new merchandise, including a brand new AFE shirt, designed by Molly McCormick! Come by the AFE Merch table to check it out. We also have more colors and sizes available in our online store.



Dance Party

We can't wait to have fun with you at the Southwest Fire Ecology Dance Party on Wednesday evening. See you there!

Photo Bingo

Log in to Whova to participate in Fire Ecology Photo Bingo! Mark your card after each photo is submitted and you need 3 BINGO's to win. When you are finished, come show us at Registration for a prize. Your bingo card is on the inside back cover of this program.



Questions?

If you have any questions or need any assistance, please visit the registration desk in the Mezzanine. You can also ask questions through Whova.

#SWFECO24

Conference Sponsors and Exhibitors

GOLD SPONSOR

- New Mexico Consortium

EXHIBITORS

- Arizona Wildfire Initiative
- Association for Fire Ecology and the Student Association for Fire Ecology
- Firefighters United for Safety, Ethics, and Ecology (FUSEE)
- Great Plains Fire Science Exchange
- Jacobs Family Insurance @ Allstate
- Northern Arizona University
- SciVista Inc
- Southern Rockies Fire Science Network
- Southwest Fire Science Consortium
- Southwest Ecological Restoration Institutes (SWERI)
- University of Nevada, Reno Extension - Living With Fire Program

Thank you to the organizations, agencies, and others that have generously contributed to the 4th Southwest Fire Ecology Conference!

Visit the Exhibit Hall!

The exhibit area is located in the Mezzanine. You can also connect with sponsors and exhibitors on the Whova app.



Mission Statement:

To become a center of excellence for wildfire related research, workforce development and outreach in the Southwest, prioritizing responsive programs and resource development that focuses on Arizona's needs.

KEY ACCOMPLISHMENTS

To Support Community Resilience



Wildfire Information Short Term Rental Packets

Editable wildfire information packet for short-term rentals that aims to reduce the risk visitors bring to high-risk areas.

Business Continuity Workshop Materials

Workshops are run in partnership with local chambers of commerce to design and implement a wildfire ready business continuity plan, including insurance coverage awareness, and communication recommendations.

Wildfire Mitigation Funding Opportunities Database



A list of possible funding sources available for homeowners, community representatives, Tribes, and other entities for wildfire mitigation-related work.

To Support Tribal Engagement

Indigenous Students in Fire and Forestry Resource Guide



A comprehensive guide to the clubs and organizations, internships, research opportunities, funding, support programs and more offered at Northern Arizona University and beyond for Indigenous students interested in forestry and fire.

Arizona Indigenous Communities Information Guide



A comprehensive guide on Arizona's 22 federally recognized Tribes. Information consists of social and cultural considerations, history, and colonial location.



SOUTHWEST FIRE SCIENCE CONSORTIUM

NAVIGATING THE FUTURE OF WILDLAND FIRE IN THE SOUTHWESTERN U.S.

We facilitate the exchange of knowledge to advance wildland fire science and management. Funded by the Joint Fire Science Program.

What we do for you:



Quarterly SW Fire Research Pubs Newsletter



Fire Science 101 Videos



SW Wildfire Season Overview Since 2013



SW Fire Stories Documentaries



Fire Ecology Learning Lab - Youth Education



Best Available Science Webinars



Science Synthesis



Factsheets



Hot Topics in the SW



Podcasts

Upcoming Events

Partnering to Build Wildfire Resilient Communities

ARIZONA WILDLAND URBAN INTERFACE SUMMIT 2024

Tucson, Arizona
December 4-6, 2024

COMING IN 2025...

Arizona Tribal Fire & Climate Resilience Summit

Building off the success of our 2023 virtual meeting and the October 2024 event on the San Carlos Apache Nation.

Invasive Species & Fire in the Sonoran Desert Summit

Working to develop strategies to reduce fire risk in the WUI and reduce vegetation transition in the Sonoran Desert.

Contact

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SWFIRECONSORTIUM.ORG

STAY INFORMED
SW Fire E-News





Association for
Fire
Ecology

PROMOTING FIRE ECOLOGY RESEARCH, EDUCATION, AND MANAGEMENT

The Association for Fire Ecology is an international organization dedicated to improving the knowledge of fire ecology and uses of fire in resilient landscape management.



FIRE ECOLOGY JOURNAL

AFE's journal, *Fire Ecology*, publishes peer-reviewed articles on all ecological and management aspects relating to wildland fire. *Fire Ecology* articles are available for free online at fireecology.springeropen.com. Also check out our Fire Ecology Chats podcast to hear insight from authors on research results: <https://fireecology.org/chats>.



SAFE AND MENTORING

The Student Association for Fire Ecology (SAFE) provides students with a forum to share research, network with others, and access wildland fire information, training, and funding opportunities. Our Mentoring Futures Program matches mentors and mentees for a one-year period to get to know one another; identify key questions, resources, and professional development opportunities; and determine actions to work toward agreed upon goals.

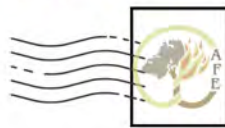


CERTIFICATION PROGRAMS

AFE has a Professional Wildland Fire Certification Program for ecologists, managers, and technicians, as well as an Academic Certification Program. We have multiple certifications to fit diverse career stages and focal areas.

SAVE THE DATE

*For the 11th International
Fire Ecology and
Management Congress*



Sheraton New Orleans Hotel
New Orleans, Louisiana, USA

December 2 - 6, 2025

See you there!



CONFERENCES AND EVENTS

We host conferences, regional events, and international fire congresses to provide opportunities for learning and networking with professionals from a variety of agencies, organizations, universities, regions, and nations.

We hope you can join us for our next Fire Congress, in New Orleans, LA from December 2-6, 2025!

JOIN AFE TODAY

and help shape the growing profession
and field of fire ecology.

Learn more at fireecology.org



SHAPE THE FUTURE OF **FOREST MANAGEMENT**

- Learn from world-class faculty at one of the nation's best forestry schools.
- Benefit from personalized online support from advisors, program staff, and the School of Forestry student support team.
- Opportunities for collaboration with leading forestry experts
- Continue to work with our flexible schedule of online classes



Scan one of the QR codes to learn more about our online degree programs:



Applied Wildland Fire Science



Natural Resource Management



New Mexico Consortium

Center for Applied Fire and Ecosystem Science

Advancing next generation tools, technologies, and science in support of ecosystems, conservation, and cultural resource management.

The Center for Applied Fire and Ecosystem Science and Los Alamos National Laboratory are proud to sponsor the 4th Southwest Fire Ecology Conference.

Come and visit us and some of our partners at the technology tables during the poster session.

We'd love to talk about future collaborations!

Visit Our Website to Learn More



appliedfirescience.org





Firefighters United for Safety, Ethics, and Ecology (FUSEE)

<https://fusee.org>

FUSEE does public education and policy advocacy promoting safe, ethical, ecological fire management. FUSEE members include current, former, and retired wildland firefighters; other fire management specialists; fire researchers, educators, and students; forest conservationists; and other citizens who support FUSEE's vision and mission. As an independent voice in the wildland fire community, FUSEE offers a safe forum for fire professionals to provide information and analysis to the newsmedia, elected officials, government agencies, and nonprofit organizations. Come join FUSEE's growing network of torchbearers for a new fire management paradigm!

Great Plains Fire Science Exchange

<https://gpfirescience.org>

The Great Plains Fire Science Exchange exists to assist land managers and the fire community to make sound decisions based on the best possible information. Through the information sharing process, we hope to strengthen collaboration within the fire community in the region in addition to having information available for policy makers. Those who produce fire science as well as those interested in applying the science are all welcome in the Exchange.



Jacobs Family Insurance @ Allstate

www.jacobsfamilyinsurance.net

Our agency is a leader in wildfire prevention and preparation for homeowners. We are producing wildfire expert panel presentations for the realtor and home builder industry.

We're Santa Fe's Local Leader in Auto, Home, Life and Business Insurance. For more than a decade, the Jacobs Family has been part of the Allstate Family providing top-notch guidance, advice and answers to Santa Fe's questions about its insurance needs. Let us help you with a competitive quote from a team that genuinely cares about you and our community. Currently, we are leaders in fire prevention and preparation for homeowners. We provide guidance to assist with remediation for better home hardening and use the fire department's READY-SET-GO booklet as a guide for our clients. Allstate continues to insure all homes including those in high-risk disaster areas in New Mexico.

**LOVE OUR EXHIBITORS?
LET THEM KNOW!**

#SWFECO24



SciVista, based in Santa Fe, New Mexico, is at the forefront of transforming complex scientific data into accessible visual formats through Virtual Reality (VR). This innovative approach not only enhances collaboration among scientists but also improves knowledge retention and understanding for a wide range of users. By partnering with Los Alamos National Laboratory and the US Forest Service, SciVista is creating specialized tools for visualizing prescribed burns. Those in high-risk disaster areas in New Mexico. These tools, known as Fire Vista, are designed to revolutionize training and simulation analysis, providing invaluable support to professionals in the field of fire management and safety. This collaboration underscores the potential of VR in advancing scientific research and operational preparedness, particularly in critical areas such as wildfire control and environmental management.

Southern Rockies Fire Science Network

www.southernrockiesfirescience.org

Sharing fire knowledge from mesas to mountains, the Southern Rockies Fire Science Network connects people with credible fire science for sound decisions in land management and planning. We support the exchange of wildland fire science and knowledge about fires on private and public lands, rangelands, and impacts on our region's populated areas.



Southwest Ecological Restoration Institutes

<https://sweri.org>

The Southwest Ecological Restoration Institutes (SWERI)



includes three university-based restoration institutes: the New Mexico Forest and Watershed Restoration Institute (NMFWR), the Colorado Forest Restoration Institute (CFRI), and the Ecological Restoration Institute (ERI) in Arizona. These institutes work together to develop a program of applied research and service to help create healthy forests, reduce the impact of wildfires, sustain the resiliency of water supplies, and create jobs.



LIVING WITH FIRE

University of Nevada, Reno Extension—Living With Fire Program

www.livingwithfire.org

Bridging the gap between science and action, we convene communities and stakeholders to address the challenges of wildfire. Through trusted partnerships, we create science-based education and outreach programs that equitably address emerging social and ecological needs.

MONDAY, NOVEMBER 18

PRE-CONFERENCE WORKSHOPS (PRE-REGISTRATION REQUIRED)

Morning Workshops, 8am to 12pm

Introduction to the FFI ecological monitoring application

Organizers: Duncan Lutes and Mary Lata
Location: La Terraza

Establishing a cultural connection to promote collaboration with Tribal Nations

Organizers: Lindsey Quam and Natalia Shaw
Location: New Mexico

Geospatially defining treatments and quantifying costs for fire resilient landscapes using Raster Tools, an open source geospatial and machine learning python package

Organizer: John Hogland and Joseph St. Peter
Location: Santa Fe

Afternoon Workshops, 1:30pm to 5:30pm

Fire Ecology Learning Lab: K–12 fire education & outreach workshop

Organizers: Cole Brant, Mollie Parson, Apple Snider, and Thea Garrett
Location: Santa Fe

Preservation in action: Identifying and mitigating impacts of climate changes on culturally significant landscapes and resources

Organizers: Rachael Loehman and Megan Friggens
Location: New Mexico

Model, understand, and visualize drivers of historical wildfire occurrences to predict and mitigate future ignitions

Organizers: Mojtaba Sadegh and Yavar Pourmohamad
Location: La Terraza

STUDENT BBQ LUNCH

12:00PM TO 1:30PM, SANTA FE RAILYARD PARK

The National SAFE leadership team and the Northern Arizona University SAFE chapter are setting up a casual outdoor barbecue to welcome students to the conference. We know that the start of a big week can feel a little daunting, so we're making space for everyone to meet without any pressure – just good food, good company, and a chance to settle in. The team will be grilling up lunch (including vegan options), and we'll keep things simple: solo cups, paper plates, and plenty of space to relax. We'd love to see you there!



WELCOME SOCIAL

5:30PM TO 7:00PM, MEZZANINE

Join us to meet and socialize with conference attendees and pick up your registration materials. A no-host bar will be available and you can also mingle at La Fiesta Lounge in the lobby and get a bite to eat.

≡ Welcome ≡

TUESDAY, NOVEMBER 19

OPENING PLENARY SESSION
8:30AM-10:30AM, LUMPKINS BALLROOM



Welcome and Opening Blessing

- **Governor Milton Herrera**, Pueblo of Tesuque
- **Laura McCarthy**, State Forester, New Mexico Forestry Division
- **Michiko Martin**, Regional Forester, USFS Region 3

Fuels mitigation effects on the South Fork Fire in Ruidoso, New Mexico

Dick Cooke, Director of Forestry, Village of Ruidoso
This presentation showcases the positive effects of treating green fuels to mitigate the effects of wildfire damage during a wildfire under extreme fire weather conditions.

**Film Premiere:
Restoration of Santa Clara Canyon**

STUDENT EVENTS

STUDENT LUNCH

12:00pm to 1:00pm, La Terraza

The Student Association for Fire Ecology is hosting a lunch to bring together students who are attending the conference. Come enjoy a free boxed lunch, learn more about SAFE, and connect with other students! All students are welcome.

STUDENT AND EARLY CAREER MENTORING SOCIAL

6:30pm to 8:30pm, Chomp Food Hall

Meet in La Fonda lobby at 6:10pm if you want to walk with a group. We invite students and early career professionals to get to know each other, meet and mingle with a diverse set of mentors, and gain exposure to resources that are geared toward the new generation of fire professionals.



Walking Directions to
Chomp

Concurrent Sessions: Tuesday, November 19, 11:00am to 12:30pm

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	
	Community Adaptation to Wildfire in the Southwest: Emerging Research and Practice	Wildland Fire Use for Management Objectives	Forest Ecosystem Response to Frequent Fire and Drought	Modeling of Complex Climate, Disturbance, and Ecosystem Interactions to Address Wicked Problems in Land Management	Incorporating Indigenous Knowledges and Sciences in Forestry Curriculum	
	Organizer: Catrin Edgeley	Moderator: Courtney Schultz	Organizer: Kevin Willson, Matthew Hurteau	Organizer: Rachel Loehman, Sandra L. Haire	Organizer: Callum Cintron	
11:00am	A review of social science research to advance wildfire adaptation in the southwestern United States Catrin Edgeley	Bucking the suppression status quo: Incentives to shift the wildfire management paradigm around natural ignitions Scott Franz	Modern area burned still far below historical norms in forests of the southwestern United States Ellis Margolis	Modeling landscape refugia and reformation as a guide for land management and restoration Rachel Loehman	Incorporating Indigenous Knowledges and sciences in forestry curriculum Callum Cintron and Joan Langat	
11:15am	Connecting forest restoration to tribal firewood needs: The Wood For Life partnership in Northern Arizona Niki vonHedemann	Past, present and future of managed wildfires in the southwestern US Jose Iniguez	Projecting future fire in southwestern dry conifer forests based on historical fire-climate relationships Chris Guiterman	Using physic-based computational fluid dynamics models to better understand forest resiliency to wildland fire Adam Atchley		
11:30am	Rural community preferences for public engagement about forest management on public lands: Insights from a timber sale in Arizona Jack Burnett	Resource objective wildfire leveraged to restore old growth forest structure while stabilizing carbon stocks Jesse D. Young	Post-fire transition zone: Pinyon-ponderosa pine ecotone recovery Camille Stevens-Rumann	Local knowledge, fire behavior modeling, and realized wildfire hazard Nathan Gill	Discussion	
11:45am	Community wildfire resilience in Pinetop-Lakeside, Arizona: Characterizing existing efforts and co-producing next steps Megan Rangel-Lynch	Restoring resilience in frequent-fire forests: Comparing trends in active management with opportunities to leverage wildfire Kristen Shive	Tree regeneration after reburns of high-severity fire patches Larissa Yocom	Generating solutions for complicated landscapes: Creating synergies between analyses and on-the-ground management action Megan Friggens		
12:00pm	Community wildfire adaptation through peer-learning and professional relationship building Gabe Kohler	Resource objective wildfires shifted forest structure towards historical conditions in a remote Arizona Wilderness John Paul Roccaforte	Linking southwestern forests in a global fire context Peter Z. Fulé	A new framework for post-wildfire wildlife habitat monitoring with terrestrial LIDA Nancy E. Karraker		
12:15pm	Discussion	New methods provide a 300-year perspective on modern area burned in the Gila and Saguaro Wilderness Calvin Farris	Managing fire-prone forests in a time of prolonged drought and forest die-back: Challenges and management solutions Marissa Goodwin	Discussion		
12:30pm	Lunch (on your own) Student Lunch, La Terraza					

Concurrent Sessions: Tuesday, November 19, 2:00pm to 3:30pm

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	
	Community Adaptation to Wildfire in the Southwest: Emerging Research and Practice	Decision Support and Data for Planning and Management	Forest Ecosystem Response to Frequent Fire and Drought	Assessing Vulnerability of Vegetation and Wildlife Communities to Post-fire Transformations to Guide Management of Southwestern Forests and Woodlands	Fire Regimes in the Southwest	
	Organizer: Catrin Edgeley	Moderator: Jens Stevens	Organizer: Kevin Willson, Matthew Hurteau	Organizers: Aaron D. Flesch, Miguel Villarreal, Jamie Sanderlin, Jose Iniguez, Alexis Neukirch, Molly McCormick	Moderator: Mark Kaib	
2:00pm	Documenting and preventing the long-term costs of uncharacteristic wildfire in the American West Melanie Colavito	Planscape: The free, open-science, decision-support software for wildfire resilience Rob Lawson	Forest recovery from drought mortality: Treatment impacts on tree regeneration, fuels, carbon, and future wildfires Rebecca Bewley Wayman	Communication strategies for guiding wildlife and fire management of southwestern forests and woodlands Alexis Neukirch	What can we learn by scaling fire regimes in space and time? Don Falk	
2:15pm	Public experiences with the 2019 Museum Fire and 2021 postfire flooding near Flagstaff, Arizona Niki vonHedemann	ReSHAPE: reshaping how we view, interact with, and learn from wildfire and fuel treatment information Aidan Franko	Drone characterization of pre-fire tree structure and drought status and post-Rx burn crown scorch Wade Tinkham	Human and climatic influences on contemporary wildfires of the northern Sierra Madre Occidental, Mexico Raymond Lebeau	Fire regime shift reveals 17th century socio-ecological change in the Rio Grande del Norte National Monument, New Mexico Carolina May	
2:30pm	A framework to accomplish regional wildfire resilience Anne-Marie Parkinson	Forest Resource Index for Decisions in Adaptation (FRIDA), a library of resources for forest stewardship Lauren Kramer	Frequent, low-severity fire regimes moderate reductions in tree growth and stomatal conductance during multi-year droughts Kevin Willson	A satellite-based indicator of post-fire habitat changes for wildlife applications Miguel Villarreal	Reduced fire occurrence coincident with 1680 Pueblo Revolt at multiple sites in northern New Mexico Melanie Wright	
2:45pm	Health and social services in long-term wildfire recovery Christina Greene	Visualizations of Santa Fe Science of Complexity Stephen Guerin	Observed trends and variability in drought and wildfire in the southwestern United States Park Williams	Conifer regeneration in forests and woodlands of the U.S.-Mexico Sky Islands and Mogollon Plateau Aaron D. Flesch	Ancestral Jemez fire management at an ancient wildland-urban interface in northern New Mexico Christopher I. Roos	
3:00pm	Discussion		Discussion	A birds-eye view to methods, data, and models for assessing wildlife communities and fire Ana Miller-ter Kuile	Recent fire severity is unprecedented compared to the previous four centuries in the Jemez Mountains Andreas P. Wion	
3:15pm				Bird responses to fire and climate in southwestern forests of the United States and Mexico Jamie Sanderlin	Quantifying past fire intensities from the Jemez Mountains, New Mexico Vachel Kraklow	
4:00pm	4:00pm to 5:30pm: Poster Session and Exhibitor Networking, Lumpkins Ballroom and Mezzanine - Sponsored by New Mexico Consortium					
6:30pm	6:30pm to 8:30pm: Student and Early Career Mentoring Social at Chomp Food Hall. Meet in La Fonda lobby at 6:10pm if you want to walk with group.					

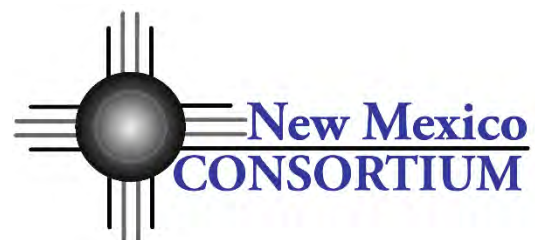
Poster Session, Lumpkins Ballroom, 4:00pm to 5:30pm

Come talk with poster presenters and exhibitors, enjoy appetizers and drinks, and network with other attendees. All abstracts and presenter bios are available on the Whoova conference app.

CLIMATE CHANGE		
1	Faster-growing wildfires burn more severely and undermine forest futures as western North America warms	Jonathan Coop
2	Transitions of semi-arid forests and woodlands in the face of wildfires and climate change	Matt Schmidt
FIRE EFFECTS		
3	Response of Ponderosa pine (<i>Pinus ponderosa</i>) trees to varying fire intensities	Badri Ghimire
4	Black bear resource selection and response to wildfires and forest restoration treatments in the Jemez Mountains	Matt Keeling
5	How does prescribed fire influence yellow pine persistence potential across California?	Tessa Putz
FIRE HISTORY		
6	Exploring methods in fire synchrony analysis with dendrochronology and GIS	Eve Fischer
7	Was Arizona's largest wildfire historically record-breaking?	Chris Guiterman
8	Robust historical forest inventories describe patterns of forest structure, composition, and competition in the Sierra Nevada and Southern Cascades	Connie Ryan
9	Would you like that smothered? Simulating fire history with CHILE	Andreas P. Wion
HYDROLOGY		
10	Comparing evacuation planning for wildfire and post-fire flood risk: Insights from northern Arizona	Amanda Busco
11	Post-wildfire debris flow risk mapping for interbasin water transfers in the Southern and Central Rocky Mountains	Abelino Fernandez Leger
12	Surface water and snowpack modeling with emphasis on post-wildfire hydrologic impacts in a Southwest watershed	Joseph Kuljis
13	Post-wildfire long term monitoring efforts in the Gallinas Creek Watershed	Justin R. Nichols
14	Monitoring the effectiveness of stream restoration structures in the Gallinas Watershed after the 2022 Calf Canyon/Hermits Peak Fire	Tomas Gonzales, Julie Tsatsaros
SOILS AND NUTRIENT CYCLING		
15	Making and using biochar to divert nuisance material from wildfire and build soil health on working lands	Eva Stricker
16	Impacts of prescribed fire on soil nitrogen cycling in subtropical karst ecosystems of southwestern China	Guan Wang
17	The survival of wildfire-associated bacteria after drought and heating	Noah Anderson
COMMUNICATION AND EDUCATION		
18	Wildfire and social media: Examining wildfire visual communication through tweets	Maria Anastacio
19	Flame-fueled learning: The Fire Ecology Learning Lab in numbers	Cole Brant
20	El laboratorio de aprendizaje de la ecología del fuego en español	Max Yusen
21	AZ Tribal Fire and Climate Resilience Summit 2024	Callum Cintron
COMMUNITY RESILIENCE AND RECOVERY		
22	The 2024 Arizona Wildland Urban Interface Summit	Megan Rangel-Lynch
23	Greater Santa Fe Fireshed Coalition: Leveraging cross-boundary relationships for forest and watershed resilience	Maya Hilty
24	Restoring resilience: Social and economic dimensions of forest restoration in the Southwest	Alyssa Mineau

25	Accelerating community resilience to wildfire via the Arizona Wildfire Initiative	Catrin Edgeley
26	Navigating the complexities of federal wildfire recovery assistance: A collaborative database solution	Cara Caruolo
DECISION SUPPORT		
27	ReSHAPE: Reshaping how we view, interact with, and learn from wildfire and fuel treatment information	Aidan Franko
28	The conservation and adaptation resources toolbox (CART): A knowledge-sharing platform for ecosystem restoration	Ariel Léger
29	Fire management risk: Developing a metric to visualize where problematic fire behavior is likely to occur	Andrew Johnson
FUEL TREATMENTS		
30	Treatment impacts on wildfire burn severity in northern Arizona: New insights from TWIG	Anson Call
31	The rest of the forest: Effects of thinning and prescribed fire on small trees and understory vegetation in the Santa Fe Fireshed, New Mexico	Jonathan Grabowski
32	The 2022 Black giga-fire on the Gila National Forest: What made it 'good'?	Gavin M. Jones
33	The effect of thinning on wildfire risk and watershed health in north central New Mexico	Sandesh Karki
REGENERATION AND RESTORATION		
34	Post-winter and post-summer survival of 5 planted conifer species in the 2020 Cameron Peak Fire, CO	Marin Chambers
35	Relating Jeffrey pine post-fire planting success to nurse plants and topography in the arid Eastern Sierra	Rosa Kirk-Davidoff
36	A comparison of natural and planted regeneration in diverse forest types in Colorado	Brad Thompson
MODELING AND MAPPING		
37	Mapping fuels at landscape scales in the southern Sierra Nevada, California	Ellie Broadman
38	Pre- and post-prescribed fire fuel monitoring using Terrestrial Laser Scanning (TLS) in the National Wildlife Refuge System, Southwest Region	Samantha Brodley
39	Scanning for solutions	Meagan Dreher, Samantha Brodley
40	Projecting wildland-urban interface fire risk in southern California	Westin Guthrie
41	Leveraging geospatial datasets to improve forest and woodland old growth estimations in southwestern national forests	Jack Taylor
42	Monitoring fuel treatment effectiveness with TLS in Rocky Mountain National Park	Nate Williamson, Christina Fossum
43	Impact of grassland fire dynamics on particulate emission factors	Alexander Josephson
44	Analyzing Betti numbers in forest LiDAR data: Spatial correlation with voxelized fuel loading	Alex Masarie
45	Los Alamos National Laboratory wildland fire prevention and mitigation efforts	Adrian Porchas
46	Thermally thick fuel modeling in QUIC-Fire	David Robinson
47	Pinyon juniper monitoring at Los Alamos National Laboratory	Karla Sartor
48	Tools and Technologies: Continuing Education for Natural Resource, Forest and Fire Management	Andi Thode, Scott Pokswinski

Make sure to stop by and demonstrations and posters from the researchers with our Gold Sponsor, New Mexico Consortium!



PLENARY PANEL, 8:30AM-10:30AM, LUMPKINS BALLROOM

THE PAST, PRESENT AND FUTURE OF BENEFICIAL FIRE

This plenary will start with talk show-style interviews of the panelists followed by Q&A from the audience. The audience will then have time for small facilitated group discussion about the future of beneficial fire in the Southwest.



Moderators

- **Shaula Hedwall**, Fish and Wildlife Biologist, US Fish and Wildlife Service
- **Jose Iniguez**, Research Ecologist, Rocky Mountain Research Station, USDA Forest Service

Panelists

- **Leon Ben, Jr.**, Superintendent, BIA Fort Apache Agency
- **Zander Evans**, Executive Director, Forest Stewards Guild
- **Stephen Fillmore**, Region 5 Fuels Operations Specialist, USDA Forest Service
- **Aaron Hulburd**, Fire Chief, Prescott National Forest
- **Jeremy Marshall**, Rio Chama CFLRP Team Leader, USDA Forest Service

Beneficial fire has been used since time immemorial by Indigenous land stewards. Beneficial fire was removed from many ecosystems, but its return is crucial for resilient communities and ecosystems. Beneficial fire will need to continue being an important tool despite challenges in terms of smoke, infrastructure and agency support.

Concurrent Sessions: Wednesday, November 20, 11:00am to 12:30pm

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	Changing Fire Regimes in the Sonoran Desert: Climate, Humans, and Introduced Species	Learning from the Hermit's Peak Calf Canyon Wildfire, the Largest Fire in New Mexico: From Erosion to Reforestation and Living in the Continuum of Wildfire Cycles	Fire Management Science and Innovation	Education and Workforce Development	Operationalizing New Fire and Fuel Models	Post-fire Soils and Sediments
	Organizers: Mary Lata, Christopher Jones	Organizers: Blanca Cespedes, Michael Remke, Crystal Medina	Organizer: Kit O'Connor	Moderator: Callum Cintron	Moderator: Julie Oliveto	Moderator: Cody Dems
11:00am	Human influences on fire regimes in the Sonoran Desert Mary Lata	NMHU's Center of Research Excellence in Science and Technology: A hub of forest restoration research Dylin Montoya	Fire management science: Integrating planning, incident response, and recovery into the social, ecological, and policy dimensions of wildland fire Kit O'Connor	Igniting curiosity with the Fire Ecology Learning Lab Cole Brant	Considering plant physiology in simulation of fire behavior and effects L. Turin Dickman	Predicting wildfire ash loads from field and geospatial data Sarah Lewis
11:15am	Decline of a desert ecosystem: Invasive grasses, fire, and a changing climate Jack Triepke	Evaluating the impact of seedling stocktype and planting techniques on ponderosa pine seedling survival and performance Aalap Dixit	De-risking POD boundaries: How and where can treatments be effective? Scott Ritter	Empowering students in fire ecology: Hands-on learning and professional development with NAU's SAFE Conor McBride and Kelsey Carlson	Put on your 3D grasses: Representing heterogeneous vegetation for next-generation fire behavior models Niko Tutland	Expanding our understanding of nitrogen dynamics after fire: effects of severe fire and aridity Maxwell Kay Strain
11:30am	Reflecting on recent changes in variables of the disturbance ecology of the Sonoran Desert Perry Grissom	Fire history and forest composition at the Front Range Forest, near Black Lake at the Southeastern Sangre de Cristo, NM Blanca Cespedes	The evolution and diffusion of innovative tools and processes for fire management: Case studies from the Incident Strategic Alignment Process (ISAP) Tyler Beeton	After the Greenfire Revolution: Reimagining the future ecological fire management workforce Timothy Ingalsbee	QUIC-Fire: Current capabilities of this simulation tool that was designed for prescribed fire applications David Robinson	Where did the sediment come from and where did it go? Mapping watershed dynamics after fire: effects of flooding and debris flows in the Jemez Mountains, NM, USA Anne Tillery
11:45am	When a flashy-system gets more flashy: Post-fire watershed response and recovery in the Sonoran Desert Kelly Mott Lacroix	Beneath the flames: Fire effects on mycorrhizal fungi communities in wildland and prescribed fire Michael Remke	Assessing decision quality with the Incident Strategic Alignment Process (ISAP) Dave Calkin & Brad Pietruszka	Developing and delivering prescribed fire curriculum for New Mexico Doug Cram	Advancing fuels and ecological monitoring with terrestrial LiDAR for fire modeling Scott Pokswinski	Modeling post-wildfire surface soil moisture in coastal California Britt Smith
12:00pm	Quantifying herbaceous fuel trends and critical fuel thresholds in the Sonoran Desert Matthew C. Reeves	Post-wildfire restoration and biochar production: Identifying actions to reduce wildfire risk and bolster rural economies Tomasz Falkowski	Assessing the Risk Management Assessment (RMA) Dashboard use in wildfire response Melanie Colavito	Increasing fire science knowledge and workforce development through technical education in Nevada Christina Restaino	Spatial inventory distribution in FastFuels with semantic segmentation and imputation Anthony Marcozzi	Pre-fire assessment of post-fire debris-flow hazards in the Santa Fe Municipal Watershed Manuel Lopez
12:15pm	Desert ecosystem resilience to invasion, climate change and altered fire regimes Sam St Clair	Burn severity analysis of treated and untreated forest stands Nathan Tomczyk	Flexibility to feasibility: Policy conditions that support managing wildfire for objectives other than full suppression Scott Franz		Fuel treatment effects in Rendija Canyon explored using QUIC-Fire simulations Julia Oliveto	
12:30pm	Lunch (on your own)					

Concurrent Sessions: Wednesday, November 20, 2:00pm to 3:30pm

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	Changing Fire Regimes in the Sonoran Desert: Climate, Humans, and Introduced Species	Learning from the Hermit's Peak Calf Canyon Wildfire, the Largest Fire in New Mexico: From Erosion to Reforestation and Living in the Continuum of Wildfire Cycles	Fire Management Science and Innovation	Fire Effects	Fuels Estimation and Modeling	Fire Circle Discussion
	Organizers: Mary Lata, Christopher Jones	Organizers: Blanca Cespedes, Michael Remke, Crystal Medina	Organizer: Kit O'Connor	Moderator: Rut Domènech	Moderator: Sharon Hood	Organizer: Alice Lincoln-Cook
2:00pm	Saguaro microbial growth response in burned and unburned soils Danika Celeste Thiele	<p>Panel Discussion</p> <p>How do we restore the culture of fire among communities impacted by catastrophic wildfire?</p> <p>This session will consist of facilitated discussions among panelists and audience members to explore topics related to indigenous and traditional community fire practices in New Mexico, fire education tools and leaders for K-12 youth and academia, as well as communications related to prescribed fires.</p> <p>Panelists</p> <p>Shannon Atencio Sam Berry Blanca Cespedes Erika Derkas George Ducker Edmund Gorman J.R. Logan Crystal Medina Dylin Montoya David Pan Michael Remke Eric Romero Amina Sena Ryan Swazo-Hinds</p>	Modeling the dynamic fire management environment: A case study from the 2023 Six Rivers Lightning Complex Rahul Wadhvani	Impacts of prescribed fire on tick density in coastal southern Texas rangelands Rachel Walters	Estimating masticated and cone fuel loads using the Photoload method Sharon Hood	Cultural Fire, Traditions and Life Way Seen through Basketweaver's Eyes
2:15pm	Stop, drop, and roll out the biocrust sods: Breaking the grass-fire cycle through soil-surface rehabilitation Keven Griffen		Innovative fire management, case studies and new frontiers in the Rocky Mountain Region Michael Caggiano	Mexican spotted owls responses to fire and fuels reduction in Arizona and New Mexico Gavin M. Jones	Auto-photoload: Automating fine woody fuel load estimation using computer vision Yunqian Cheng	
2:30pm	Postfire effects on saguaros within Maricopa County's Sonoran Desert upland habitat Juanita Armstrong-Ullberg		Indigenous fire futures John Waconda	Amphibian community living with disease in a fire affected landscape of Northern New Mexico Anabella Miller	Leveraging the MaxEnt Model: Predicting vegetation risk to mitigate wildfire hazards in transmission lines Rajen Bajgain	
2:45pm	A floristic inventory of the 2021 Telegraph Wildfire in the Sonoran Desert Brittany Burgard		Smoke as a dispersal agent for fungal pathogens Krista Bonfantine	DUET: Distribution of Understory using Elliptical Transport Jenna Sjunneson McDanold		
3:00pm	Effects of Uncharacteristic Wildfires on the Sonoran Desert seed bank Kristen Countryman		Panel Discussion	Burning down the mouse: Fire effects on deer mouse abundance and carriage of Sin Nombre Virus Carleen N. Silva	Use of separate woody and herbaceous fuel loads to understand fire dynamics in the states of Arizona and New Mexico Njoki Kahiu	
3:15pm	Effects of fire on wildlife in arid lands: Implications for the Sonoran Desert Jesse S Lewis		Restoration efforts post fire within Gila River Indian Community Ashton Lynch	Ladder fuels from GEDI space-borne lidar predict wildfire severity across topographic-weather gradients Chris Hakkenberg		
3:30pm	Afternoon Break					

Concurrent Sessions: Wednesday, November 20, 4:00pm to 5:30pm

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	Managing Fire in the Sonoran Desert	Reducing Human-Caused Large Wildfires in the Southwest: Insights from a Science Management Partnership	New Horizons in Strategic Pre-Fire Planning	New Mexico Pueblos and Tribal Fire Management, Revitalizing the Land Through Traditional Stewardship and Knowledge	Fuel Moisture and Flammability	Tools and Models
	Organizers: Christopher Jones, Mary Lata	Organizers: Wills DeGrandpre, Catrin Edgeley, Sarah E. Devenport	Organizer: Kit O'Connor	Organizer: Sam Berry	Moderator: Sharon Hood	Moderator: Paul Hessburg
4:00pm	Decision making with incomplete information on the management of fire in the Sonoran Desert Adam Bromley	Geography of unplanned human ignitions in the Southwest Zander Evans	A causal assessment of pre-fire mitigation and wildfire response Jesse D. Young	Picuris Pueblo Management of fire and fuels through biomass utilization and wildfire response Luther Martinez	Live Fuel Moisture Content prediction from satellite data Patrick Johnson	PROJECT HALO: Fire alarm from space Gregory Sullivan
4:15pm	Initial attack in a changing ecosystem Nick Castro	Current challenges and opportunities for the fire prevention workforce: Insights from interviews with specialists in the Southwest Gabe Kohler	Spatial workflow for POD network fuel treatment prioritization Joseph St. Peter	Fire is a tool: Taos Pueblo Fire Management George M. Track	Spatiotemporal fine fuel moisture dynamics in a Colorado ponderosa pine forest Gunnar Ohlson	Estimating wildfire rates of spread from observed perimeters using raster-based interpolation methods Mariam Sufi
4:30pm	Enhancing the natural patchiness of the Sonoran Desert as a fire/fuel break option Alan Sinclair	Navigating wildfire impacts: Investigating how risks and losses influence local businesses' involvement in fire prevention Sarah E. Devenport	Using strategic pre-fire planning to avoid wildfire-caused loss of irrecoverable carbon Jamie Peeler	Pueblo of Tesuque's reintroduction of fire to it's ancestral lands Chris Tafoya	Leaf area predicts ignitability better than fuel moisture content in live herbaceous fuels Ethan M. Taber	Tuning wildfire plume models from calibrated imagery Gene Goh Huntley
4:45pm	Firewise landscape principles in the Sonoran Desert Christopher Jones	Characterizing perceptions of wildfire ignition risks from diverse user groups in Flagstaff, Arizona Wills DeGrandpre	Wildfire risk assessment: Applications, limitations, and opportunities Gaby Ayres	Panel Discussion John Galvan Jonathan Martin Rene Romero John Waconda	Change in the seasonality and frequency of low live-fuel-moisture in Northern New Mexico Zachary J. Robbins	
5:00pm	A national perspective on wildland fire and invasive species Stanley W. Burgiel	Support for forest closures and other regulations on public lands during periods of high wildfire risk Catrin Edgeley	A process for modeling dynamic wildfire risk: Lessons from the Colorado Front Range Jilmarie Stephens		Snowpack decline kindles early fire seasons with more severe fire in the western USA Jared Balik	
5:15pm	Discussion	Discussion	Advances in wildfire simulation for dynamic, actionable risk analysis Matthew P Thompson			
Evening	8pm to 11pm, Dance Party!, La Terraza					

PLENARY PANEL, 8:30AM-10:30AM, LUMPKINS BALLROOM

THE PAST, PRESENT AND FUTURE OF WORKFORCE DEVELOPMENT AND EDUCATION

This plenary will feature short talks from the panelists followed by Q&A from the audience. The audience will then have time for small facilitated group discussion about the future of workforce development and education.



Moderator

- **Eytan Krasilovsky**, Deputy Director, Forest Stewards Guild

Panelists

- **Phil Graeve**, Deputy Director, Prescribed Fire Training Center
- **Heather Heward**, Senior Fire Ecology & Management Instructor, Department of Forest, Rangeland and Fire Sciences, University of Idaho
- **Tami Parkinson**, Retired, Wildland Fire Management Research Development and Application Group, USDA Forest Service
- **Chas Robles**, Executive Director, Ancestral Lands Conservation Corps
- **Andrea Thode**, Professor Fire Ecology and Management, School of Forestry, Northern Arizona University

The federal wildland firefighting workforce comprises approximately 11,300 firefighters in the Forest Service and 5,750 employed by four Department of the Interior agencies. Continued investment and innovation in workforce development will be crucial to addressing the evolving demands of wildfire management and ensuring long-term community and environmental resilience.

Concurrent Sessions: Thursday, November 21, 11:00am to 12:30pm

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	Case Studies to Advance Fire and Climate Adaptation	Fuel Treatment Effectiveness	Fire Management in Policy and Practice	Indigenous Fire Stewardship: Identifying Pathways to Restoring Lifeways and Self-Determination	Forest Restoration and Recovery	Fire Circle Discussion
	Organizer: Ariel Léger	Moderator: Sharon Hood	Moderator: Catrin Edgeley	Organizers: Courtney Schultz, Paul Hessburg, Don Hankins	Moderator: Melissa McLamb	Organizers: Heather Heward, Timothy Yurkiewicz
11:00am	Case studies accelerate the pace and scale of fire and climate adaptation Ariel Léger	Extreme Colorado 2020 fires: Treatments altered fire severity across forest types and days of burning Stephanie Mueller	Policy tools and innovations in implementation of the Wildfire Crisis Strategy Jesse Abrams	Research supporting Tribal Fire Stewardship priorities in wildfire crisis landscapes Michelle Baumflek	A convergent research agenda for post-wildfire restoration and recovery in the western US Daniel Cadol	<p>Academic Industrial Alignment: Discussing How to Build Fire Professionals through Collaboration across Agencies and Universities</p> <p>The world needs more wildland fire professionals with the ability to work hard, communicate clearly, and solve evolving problems. These budding professionals need training, education, and experience to get there. Join us to explore ways that academia and industry can align to provide the ideal growing environment for the current and future generations of wildland fire professionals. Bring lessons learned and ideas you want to see turn into realities. Let's work together to maximize the strengths of academia and industry.</p>
11:15am	Examining Invasive Species Control, Fire, and Climate Adaptation at Saguaro National Park, AZ Perry Grissom	Evaluating the impacts of fuel treatments on burn severity across the Front Range Sarah Hetteema	Wildfire policy update: Legislative efforts and the role of the Wildfire Resilience Coalition Esmé Cadiente	Postfire policy and rehabilitation in Washoe country Rhiana Jones	Wildfire recovery planning for Bastrop State Park, Texas Parks & Wildlife Department Alan Warren Wolfson	
11:30am	Incorporating climate adaptation strategies in dry mixed conifer forests of Colorado Mike Battaglia	How differing fuel treatments in forests impact fire severity and greenhouse gas emissions Christopher A. Dicus	Connecting the emerging old-growth forest policy and fire Zander Evans	Postfire Policy and Rehabilitation of the Santa Clara Canyon Caitlyn Cruz, Daniel Denipah	Advocacy for a private lands Burned Area Emergency Response protocol and implementation Daniel M. Leavell	
11:45am	Cerro Negro Forest Council: Collaborative forest management increases restoration capacity, community stewardship, and forest resilience J.R. Logan	Monitoring 26 years of fuels treatments surrounding Flagstaff, AZ and two wildfire interaction case studies Victor Morfin, Alexander Spannuth	(De)constructing hazard: The making of meaning and value in Oregon's fireescapes Alexandra Casey	Understanding forest recovery priorities, management options, and policy needs for Tribes in post-fire landscapes: Finding from a case study with the Karuk Tribe Caitlyn Cruz, Shay Borque, Kathy Mccovey	Evaluating tradeoffs between ecological restoration and fuel reduction in Navajo Nation pinyon woodlands Lionel Whitehair	
12:00pm	Discussion	Do fuel treatments improve wildfire containment line effectiveness? Leo O'Neill	The 2-3-2 can do: A landscape-scale (5 million acre) collaboration Cody Dems	Discussion	Understory plant expansion and recruitment following restoration treatments in Colorado dry conifer forests Paula Fornwalt	
12:15pm		Quantifying the effects of fuel treatments on infrastructure loss during wildfires Betsy Black	Attained confidence level as a measure of success in meeting natural resources management goals Calvin Farris		Effects of fuel treatments, wildfire, and climate change on the understory of piñon-juniper woodlands in Bandelier National Monument, New Mexico Kara M. Fox	
12:30pm	Lunch (on your own)					

Concurrent Sessions: Thursday, November 21, 2:00pm to 3:30pm

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	Climate, Wildfire, and Resilience in the Southwest	Prescribed Fire	Post-fire Regeneration and Vegetation Response	Indigenous Fire Stewardship: Identifying Pathways to Restoring Lifeways and Self-Determination	Collaboration and Inclusion for Fire Adaptation	Workshop and Discussion
	Organizers: Cara Caruolo, Ann Youberg, Zander Evans, Lara Prihodko	Moderator: Lindsey Quam	Moderator: Rachel Bean	Organizers: Courtney Schultz, Paul Hessburg, Don Hankins	Moderator: Melissa McLamb	Organizer: Ariel Léger
2:00pm	Exploring the influence of uncertainty on relationships between recovery and resilience after six southwestern wildfires Cara Caruolo	Prescribed burning restores historical fire regime in the Santa Fe Watershed Hope A Nowak	Green is the new black: Outcomes of post-fire tree planting across the US Interior West Kyle Rodman	Untrammeling the wilderness: Restoring natural conditions through the return of human-ignited fire Clare Boerigter	How to empower public water systems to become more resilient to wildfire and postfire impacts Michael Roberts	<p>Improving the Utility of Case Studies for Fire and Climate Adaptation in the Southwest</p> <p>Over the past year, the Conservation and Adaptation Resources Toolbox (CART) has produced several case studies that aim to efficiently share lessons-learned and resources that managers need to advance the pace and scale of fire and climate adaptation in the Southwest. The workshop will feature a brief presentation followed by break-out activities and facilitated discussion about CART case studies. Participants are encouraged to bring their laptops to browse online case studies. Printed handouts of case studies will also be available.</p>
2:15pm	Metrics and indicators of ecological resilience after fire: A systematic review and meta-analysis Scott Gilb	Effects of prescribed fire in South Texas' coastal prairies Forrest Fay	Post-fire forest regeneration and understory development in eastside Sierra Nevada Jeffrey pine forests Stephanie Yelenik	Integrating Indigenous knowledge and western science for wildfire resilience: Insights from the Climate & Wildfire Institute Sarah Caldwell	Establishing a framework using focus groups to meaningfully assist disadvantaged communities in preparing for wildfire Anne-Marie Parkinson	
2:30pm	Postfire soil hydrologic trajectories: Trending towards resilience or tipping points? Ann Youberg	Do we need to increase the intensity of prescribed fires to effectively modify the forest structure? Rut Domènech	Seed source elevation influences survival in plantings after fire across tree species Laura A.E. Marshall	Indigenous stewardship rights and opportunities to recenter Indigenous fire Don Hankins	Protect your community against wildfires by incentivizing homeowners to create wildfire-resilient communities Veronica Portelli	
2:45pm	Climate adaptive strategies for forest resilience Zander Evans	Prescribed burning risk quantification: A step towards safe rangeland management in the Great Plains Izchukwu Okafor	Quantifying postfire woody fuel loading and vegetation succession following the 2022 Hermit's Peak-Calf Canyon Wildfire Morris Johnson	Realignment of federal environmental policies to recognize fire's role Scott Stephens	Analyzing the spatial distribution of human-caused wildfires in Texas: A comparison of small fires and big ones Hari Katuwal	
3:00pm	Complex drivers of fire activity across the Southwest U.S. in a changing climate Lara Prihodko	Fire risk index for grassland prescribed burning in the Great Plain areas Mayowa George	Edge effects: Regeneration dynamics in Colorado's pinyon-juniper woodlands post-fire Jamie Woollet	Discussion	Seen through basketweavers eyes Alice Lincoln-Cook	
3:15pm	Panel Discussion	Fatal assumptions, the Cerro Grande and Hermit's Peak prescribed fire escapes Tom Ribe	Rooting for the little guys: Understory vegetation responses to fuels reduction treatments in the Jemez Mountains, NM Meagan Dreher			
3:30pm	Afternoon Break					

Concurrent Sessions: Thursday, November 21, 4:00pm to 5:30pm

Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
Fire Circle Discussion	Fire Circle Discussion		Fire Circle Discussion	Fire Circle Discussion	Fire Circle Discussion
Organizers: Maura Sullivan, Carlie Domingues, Teresa Romero	Organizers: Gloria J Edwards, Lori Bammerlin		Organizers: Christopher Jones, Mary Lata	Organizers: Emily Huff, Kristin Floress	Organizers: Gabe Kohler, Jan-Willem Jansens
<p>Starting Good Fire: Coastal Chumash Fire Stewards Knowledge Share on Beginning a Good Fire Revitalization Group</p> <p>This will be a knowledge share, with the flow of information going from panelists, to community, and back again. We hope to hold space on how to start good fire groups. We are in the process of getting our permits and having discussions about what good fire means for us.</p>	<p>Prescribed Fire Organizations from Peaks to Plains: One Size Does Not Fit All</p> <p>Fire Science Exchanges present a regional Rx Council Fire Circle bringing both new and previous groups together to facilitate discussion, identify issues and local challenges, and develop successful partnerships promoting understanding and beneficial use of prescribed fire in adjoining regions.</p>	<p>Space will be open and can be used for small meetings</p>	<p>Fire in the Sonoran Desert</p> <p>Using a World Café format, participants will discuss the implications of wildfire in the Sonoran Desert. Topics include fuel treatments and reducing fire risk, post-fire actions and concerns, and research gaps. The session will inform developing a science synthesis on fire & nonnative plant invasion in the Sonoran Desert.</p>	<p>Social Acceptability and Social Science Synthesis for Wildfire Management</p> <p>A team of US Forest Service and social science researchers would like to host a discussion with multiple stakeholders on current and potential social science data sources and indicators, and how this evidence can be used to support wildfire crisis strategy implementation. We will discuss a current research mapping tool, social science research briefs, and learn from participants what evidence is most useful for supporting wildfire management in their communities and organizations.</p>	<p>Piñon-Juniper Ecosystems in the WUI: Reconciling Tensions and Tradeoffs</p> <p>Balancing the need for fire risk reduction treatments with forest ecology considerations requires dialogue amongst fire service professionals and forest ecologists. This need is particularly prevalent in piñon-juniper ecosystems. We propose a “Fire Circle Discussion” to identify (a) the different viewpoints and values that need to be balanced and (b) options for reconciling these differences.</p>

Friday, November 22: Field Trips (pre-registration required)

Field Trips, Off Site

- 8am to 1pm: Santa Fe Municipal Watershed
- 8am to 4pm: East Jemez Mountains
- 8am to 5pm: Hermit’s Peak-Calf Canyon Fire Region

FRIDAY, NOVEMBER 22

FIELD TRIPS (PRE-REGISTRATION REQUIRED)

Many thanks to our field trip planning team for working through all the details to plan these excellent trips and the presenters and partners for helping make these trips happen! We appreciate you Rachel Bean, Erin McElroy, Michael Remke, Annie Elko, Ellis Margolis, Gabe Kohler, Sadie Wiese, and Pepe Iniguez.

Field Trip 1: Santa Fe Municipal Watershed, 8:00am to 1:00pm

The Santa Fe municipal watershed, which provides up to 40% of potable water for the greater Santa Fe area, is located in a narrow and high fire-risk forested canyon just a few miles from downtown Santa Fe. Three decades of collaborative planning, forest resiliency treatments (thinning and prescribed fire), and post-fire debris flow modeling and associated infrastructure upgrades have sought to reduce the watershed’s fire hazard and restore the historical fire regime to protect this vital water source. Learn about the progressive fire management that includes repeated spring and fall broadcast burning; the research on the watershed’s multi-century fire history, changing forest structure and composition, and post-fire debris flow susceptibility; and the lessons that can be learned from a nearby success story of a wildfire that was contained, in part, because of collaborative prescribed burning.

Field Trip 2: East Jemez Mountains, 8:00am to 4:00pm

Many parts of the Jemez Mountains in north-central New Mexico have been impacted by a series of overlapping high-severity fires over the past 30 years, most notably the 2000 Cerro Grande (an escaped prescribed burn), the 2011 Las Conchas that threatened the town and nuclear National Lab of Los Alamos, and the 2022 Cerro Pelado (a pile burn that re-ignited after months under the snow). These fires threatened communities, impacted rural water systems, converted forests to shrub and grasslands, and drastically changed key watersheds, leading to long-lasting, expensive, and culturally impactful erosion and other post-fire water and ecological impacts. They also now offer lessons about high-severity reburns in former frequent-fire forests, the success and limits of forest resilience work in moderating fire severity during wind-driven events in a warming climate, community resiliency, restoration costs, and mosaic fire ecology.

Field Trip 3: Hermit’s Peak-Calf Canyon Fire Region, 8:00am to 5:00pm

The 2022 Hermit’s Peak-Calf Canyon Fire Complex was a devastating event for communities and ecosystems in northern New Mexico. While this fire was unique in its size, severity, driving mechanisms, and causes (an escaped broadcast burn that merged with a re-ignited winter pile burn), climate change and the effects of a century of fire exclusion mean that fires like this one are increasingly likely. Understanding what happened before, during, and after Hermit’s Peak-Calf Canyon can in turn inform our understanding of how to create more resilient communities and forests in the future. Learn about operational decisions made during the fire, pre-planning and forest resiliency treatments which allowed for strategic suppression, lessons learned by local leadership, the ongoing impacts of the fire on communities and watersheds, reforestation as a part of rehabilitation, and a suite of post-fire restoration efforts including debris capture, erosion control, slope stabilization, and more.

Where should I go to eat in Santa Fe?

Cafe Pascals
 Mexican fare from local & organic ingredients along with a community table in a historic adobe. 2 minute walk from La Fonda.
 Open 8am-3pm, 5:30pm-9:30pm but closed Tuesdays.
 📍 121 Don Gaspar Ave, Santa Fe \$\$ ⭐⭐⭐⭐⭐ 4.5

Plaza Cafe Downtown
 Retro spot for classic diner fare along with Southwestern comfort food in a family-friendly setting. 2 minute walk from La Fonda.
 Open everyday 7am-9pm.
 📍 54 Lincoln Ave, Santa Fe \$ ⭐⭐⭐⭐⭐ 4.5

Tia Sophia's
 No-frills, diner-style eatery serving regional favorites, breakfast specials & famously hot chile. 4 minute walk from La Fonda.
 Open everyday 7am-2pm, Sundays 8am-1pm.
 📍 210 W San Francisco St, Santa Fe \$ ⭐⭐⭐⭐⭐ 4.6

La Boca
 Spanish small plates are paired with Mediterranean & South American wines at this refined venue. 5 minute walk from La Fonda. Open 11:30am-9pm, but closed Mondays and Tuesdays.
 📍 72 W Marcy St, Santa Fe \$\$\$ ⭐⭐⭐⭐⭐ 4.5



Did You Know?

Santa Fe was the first UNESCO-designated Creative City in the U.S.

In 2005, Santa Fe made U.S. history by being the first city to earn a UNESCO Creative City designation.

See this title in action by visiting Meow Wolf, where you can explore more than 70 connected rooms of portals, secret passageways, and surrealist creations.

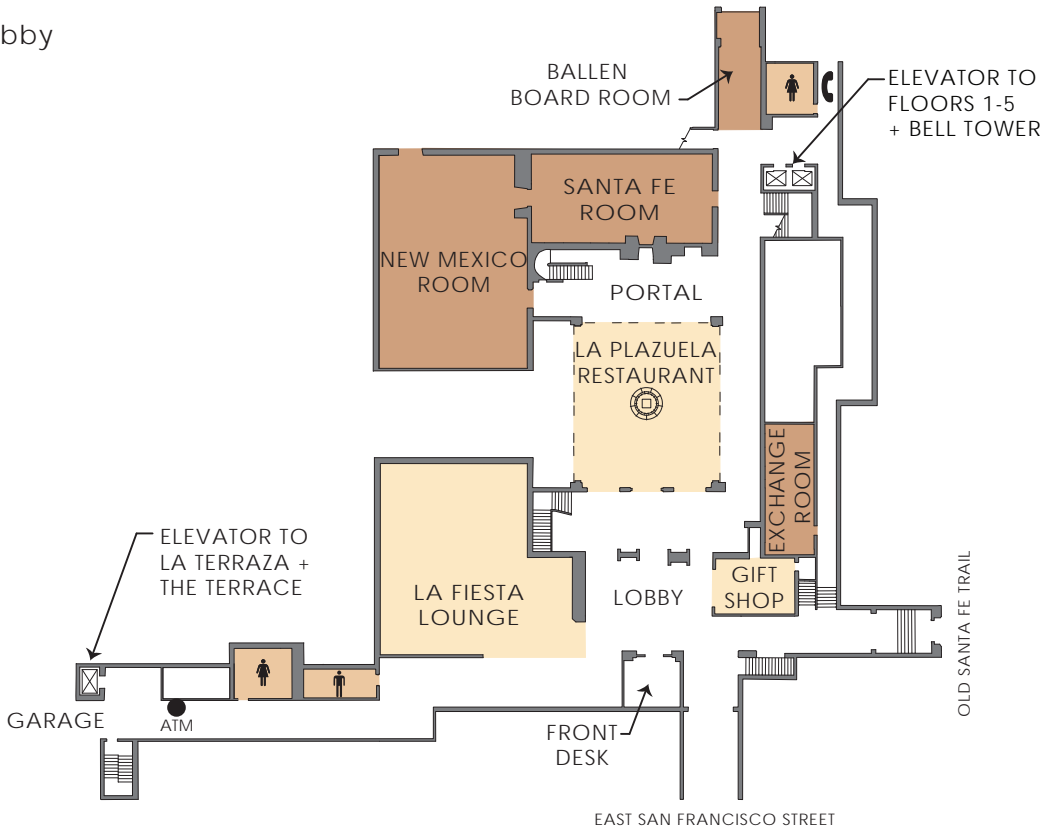
First Floor



La Fonda
On the Plaza™

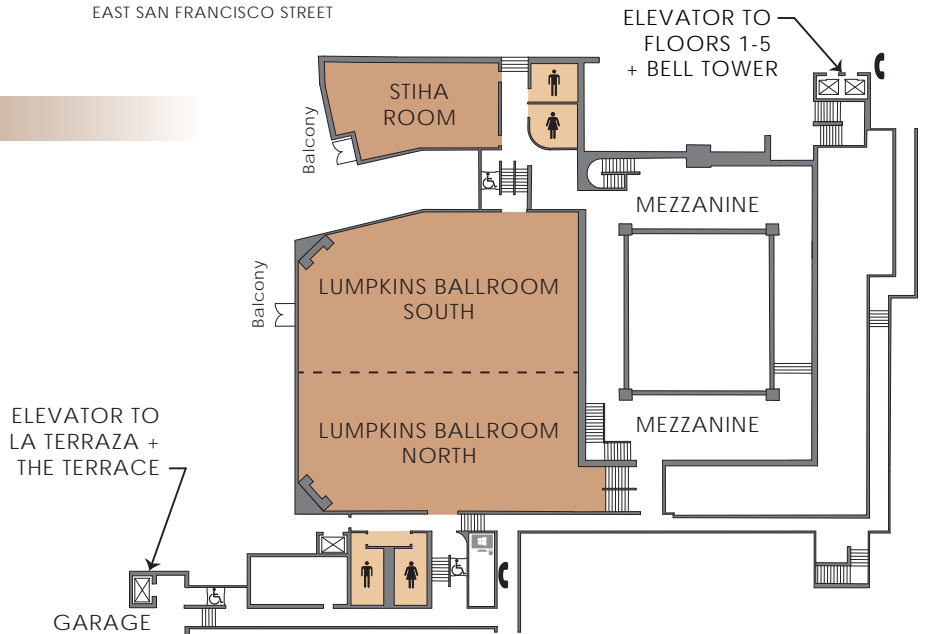
100 E. San Francisco Street
Santa Fe, New Mexico 87501

Lobby



Second Floor

Mezzanine & Ballroom



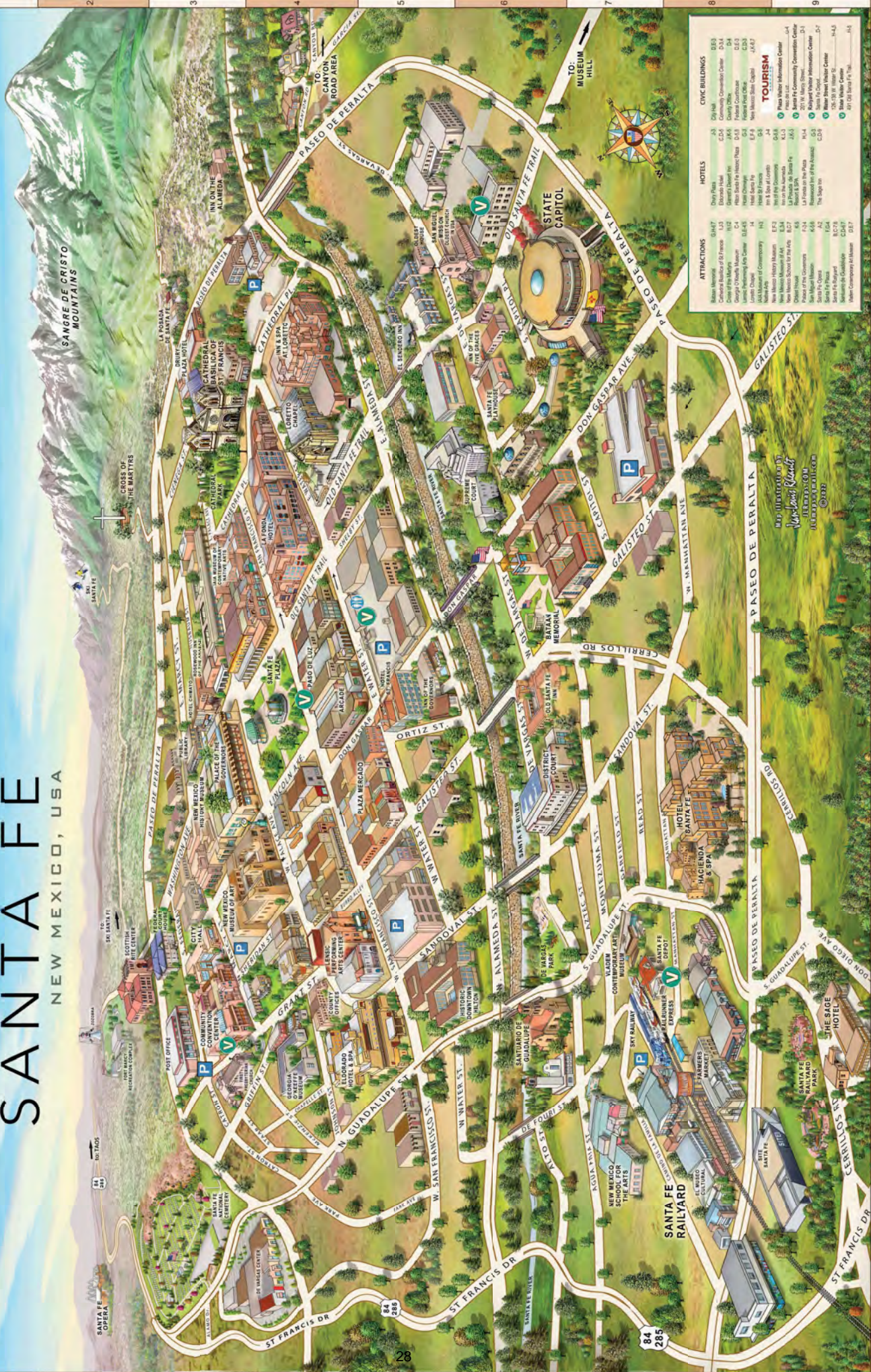
Third Floor

La Terraza



Elevator |
 Stairs |
 Lift |
 Restrooms |
 House Phone

HISTORIC SANTA FE NEW MEXICO, USA



ATTRACTIONS	HOTELS	CIVIC BUILDINGS	TOURISM
Bacon Museum	Cherry Place	City Hall	State Historic Administration Center
Central Bank of NM Branch	Eldorado Hotel	Community Convention Center	State Historic Information Center
Chapel of the Holy Cross	Galisteo Hotel	Dowd Office	State Park
Chimé Museum	Garden of the Sun	Health Center	State Park Visitor Center
Cross of the Martyrs	Historic Hotel	Hospital	State Park
De Wette House	Hotel El Alamo	Health Center	State Park
Dr. William W. Cook	Hotel Santa Fe	Historic Hotel	State Park
Elaborado Hotel	Hotel Santa Fe	Historic Hotel	State Park
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Elaborado Hotel	Hotel Santa Fe	Historic Hotel	State Park

Photo Bingo

Submit your photos through the Whova app and mark your card after each photo is submitted. You need 3 BINGO's to win. Come to registration when you're done to win a prize!

People enjoying some food at La Fonda

Picture of your favorite plenary

Two people looking at and/or pointing at a poster on display

Someone looking engaged at an exhibitor table

Someone wearing AFE shirt or hat purchased from the merch table

Picture of your favorite workshop or session

Get a photo with the best-dressed conference attendee

Selfie with a student! Students-selfie with a potential mentor!

Group of people engaged in conversation during a workshop or session

Close up shot of someone taking notes

Picture of your favorite conference freebie

The Santa Fe sunset or sunrise



Presenter standing in front of a slide with a cool/useful visual

Steaming cup of coffee on a conference agenda - be creative!

Selfie with your conference nametag

Photo of something new you've learned

DJ Molecule or DJ Driptorch at the dance party

People enjoying a beverage at cocktail hour

A couple people thinking deeply about what is being presented

A plant or animal native to Santa Fe

People dancing

Something beautiful about Santa Fe, outside of the conference

An artsy photo of your lunch

A group laughing together



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**LIVING
WITH FIRE**

