

# 4<sup>TH</sup> SOUTHWEST FIRE ECOLOGY CONFERENCE

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

November 18-22, 2024 Santa Fe, New Mexico



## Conference Schedule (10-11-24 draft, subject to minor changes)

### Monday, November 18: Workshops (pre-registration required)

8:00am	<b>Workshop</b> Introduction to the FFI ecological monitoring application	<b>Workshop</b> Establishing a Cultural Connection to Promote Collaboration with Tribal Nations	<b>Workshop</b> Geospatially defining treatments and quantifying costs for fire resilient landscapes using Raster Tools			
12:00pm	Lunch (on your own)					
1:30pm	<b>Workshop</b> Model, understand, and visualize drivers of historical wildfire occurrences to predict and mitigate future ignitions	<b>Workshop</b> Preservation in Action: Identifying and mitigating impacts of climate changes on culturally significant landscapes and resources	<b>Workshop</b> Fire Ecology Learning Lab: K – 12 fire education & outreach workshop	SWFSC Board Meeting		
5:30pm	Welcome Social					

### Tuesday, November 19: Conference

8:30am	<p><b>Opening Plenary, 8:30am to 10:30am, Lumpkins Ballroom</b></p> <ul style="list-style-type: none"> <li>- Opening blessing from Governor Milton Herrera, Pueblo of Tesuque</li> <li>- Welcome from Laura McCarthy, State Forester, New Mexico Forestry Division</li> <li>- Welcome from Michiko Martin, Regional Forester, USFS Region 3</li> <li>- Presentation by Dick Cooke, Director of Forestry, Village of Ruidoso</li> <li>- Film premiere of the Restoration of Santa Clara Canyon</li> </ul> <div style="text-align: center;"> </div>
10:30am	Morning Break

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

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	<b>Community Adaptation to Wildfire in the Southwest: Emerging Research and Practice</b>	<b>Wildland Fire Use for Management Objectives</b>	<b>Forest Ecosystem Response to Frequent Fire and Drought</b>	<b>Modeling of Complex Climate, Disturbance, and Ecosystem Interactions to Address Wicked Problems in Land Management</b>		<b>Workshop</b>
	Organizer: Catrin Edgeley	Moderator:	Organizer: Kevin Willson, Matthew Hurteau	Organizer: Rachel Loehman, Sandra L. Haire		Organizer: Callum Cintron
<b>11:00am</b>	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		2024 Southwest Region Tribal Fire Summits
<b>11:15am</b>	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		
<b>11:30am</b>	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		
<b>11:45am</b>	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		
<b>12:00pm</b>	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 LiDAR Nancy E. Karraker		
<b>12:15pm</b>	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		
<b>12:30pm</b>	Lunch (on your own)					

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

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	<b>Community Adaptation to Wildfire in the Southwest: Emerging Research and Practice</b>	<b>Decision Support and Data for Planning and Management</b>	<b>Forest Ecosystem Response to Frequent Fire and Drought</b>	<b>Assessing Vulnerability of Vegetation and Wildlife Communities to Post-fire Transformations to Guide Management of Southwestern Forests and Woodlands</b>	<b>Fire Regimes in the Southwest</b>	<b>Workshop</b>
	Organizer: Catrin Edgeley	Moderator:	Organizer: Kevin Willson, Matthew Hurteau	Organizers: Aaron Flesch, Miguel Villarreal, Jamie Sanderlin, Jose Iniguez, Alexis Neukirch, Molly McCormick	Moderator:	Organizer: Callum Cintron
<b>2:00pm</b>	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	2024 Southwest Region Tribal Fire Summits
<b>2:15pm</b>	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	
<b>2:30pm</b>	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	
<b>2:45pm</b>	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	
<b>3:00pm</b>	Discussion	A causal assessment of pre-fire mitigation and wildfire response Jesse D. Young	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	
<b>3:15pm</b>		Open		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	
<b>4:00pm</b>	Poster Session and Networking Student and Early Career Mentoring Social at Chomp Food Hall					

# Poster Session

## Tuesday, November 19, 4:00pm to 5:30pm

Come talk with poster presenters, enjoy appetizers, and network with other attendees. All abstracts and presenter bios are available on the Whova mobile 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
SOILS AND NUTRIENT CYCLING		
14	Making and using biochar to divert nuisance material from wildfire and build soil health on working lands	Eva Stricker
15	Impacts of prescribed fire on soil nitrogen cycling in subtropical karst ecosystems of southwestern China	Guan Wang
COMMUNICATION AND EDUCATION		
16	Wildfire and social media: Examining wildfire visual communication through tweets	Maria Anastacio
17	Flame-fueled learning: The Fire Ecology Learning Lab in numbers	Cole Brant
18	El laboratorio de aprendizaje de la ecología del fuego en español	Max Yusen
COMMUNITY RESILIENCE AND RECOVERY		
19	The 2024 Arizona Wildland Urban Interface Summit	Megan Rangel-Lynch
20	Greater Santa Fe Fireshed Coalition: Leveraging cross-boundary relationships for forest and watershed resilience	Maya Hilty
21	Restoring resilience: Social and economic dimensions of forest restoration in the Southwest	Alyssa Mineau
22	Accelerating community resilience to wildfire via the Arizona Wildfire Initiative	Catrin Edgeley
23	Navigating the complexities of federal wildfire recovery assistance: A collaborative database solution	Cara Caruolo

<b>DECISION SUPPORT</b>		
24	ReSHAPE: Reshaping how we view, interact with, and learn from wildfire and fuel treatment information	Aidan Franko
25	The conservation and adaptation resources toolbox (CART): A knowledge-sharing platform for ecosystem restoration	Ariel Léger
26	Leveraging an open-ended questionnaire to create an exploratory decision-making framework for managers using fuel breaks in California	Andrew Johnson
<b>FUEL TREATMENTS</b>		
27	Treatment impacts on wildfire burn severity in northern Arizona: New insights from TWIG	Anson Call
28	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
29	The 2022 Black giga-fire on the Gila National Forest: What made it 'good'?	Gavin M. Jones
30	The effect of thinning on wildfire risk and watershed health in north central New Mexico	Sandesh Karki
<b>REGENERATION AND RESTORATION</b>		
31	Post-winter and post-summer survival of 5 planted conifer species in the 2020 Cameron Peak Fire, CO	Marin Chambers
32	Relating Jeffrey pine post-fire planting success to nurse plants and topography in the arid Eastern Sierra	Rosa Kirk-Davidoff
33	A comparison of natural and planted regeneration in diverse forest types in Colorado	Brad Thompson
<b>MODELING AND MAPPING</b>		
34	Mapping fuels at landscape scales in the southern Sierra Nevada, California	Ellie Broadman
35	Pre- and post-prescribed fire fuel monitoring using Terrestrial Laser Scanning (TLS) in the National Wildlife Refuge System, Southwest Region	Samantha Brodley
36	Scanning for solutions	Meagan Dreher, Samantha Brodley
37	Projecting wildland-urban interface fire risk in southern California	Westin Guthrie
38	Leveraging geospatial datasets to improve forest and woodland old growth estimations in southwestern national forests	Jack Taylor
39	Monitoring fuel treatment effectiveness with TLS in Rocky Mountain National Park	Nate Williamson, Christina Fossum
40	Impact of grassland fire dynamics on particulate emission factors	Alexander Josephson
41	Analyzing Betti numbers in forest LiDAR data: Spatial correlation with voxelized fuel loading	Alex Masarie
42	Los Alamos National Laboratory wildland fire prevention and mitigation efforts	Adrian Porchas
43	Thermally thick fuel modeling in QUIC-Fire	David Robinson
44	Pinyon juniper monitoring at Los Alamos National Laboratory	Karla Sartor

## Wednesday, November 20: Conference

### Plenary Panel, 8:30am to 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, Acting Deputy Regional Director, Trust Services, USDI Bureau of Indian Affairs
- 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. Currently, beneficial fire can be in the form of cultural burning, prescribed fire, and managed wildfire. In the Southwest, fire management has changed drastically over the last 40 years. In 2009, new policy guidance provided greater flexibility to use managed wildfires and although the number of managed fires increased, the total area generally remained the same. Similarly, after 2009, managed fires still burned primarily within or close to wilderness areas and away from WUI. In recent years however, the majority of the area burned in the Southwest has been a result of beneficial fires that typically burn in the shoulder season and at low severity. In order to minimize large severe wildfires and restore resilient forests, beneficial fire will need to continue being an important tool despite challenges in terms of smoke, infrastructure and agency support.



8:30am  
10:30am

Morning Break

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

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	<b>Changing Fire Regimes in the Sonoran Desert: Climate, Humans, and Introduced Species</b>	<b>Education and Workforce Development</b>	<b>Fire Management Science and Innovation</b>	<b>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</b>	<b>Fire and Fuels Modeling</b>	<b>Post-fire Soils and Sediments</b>
	Organizers: Mary Lata, Christopher Jones	Moderator:	Organizer: Kit O'Connor	Organizers: Blanca Cespedes, Michael Remke, Crystal Medina	Moderator:	Moderator:
<b>11:00am</b>	Human influences on fire regimes in the Sonoran Desert Mary Lata	Igniting curiosity with the Fire Ecology Learning Lab Cole Brant	Fire management science: Integrating planning, incident response, and recovery into the social, ecological, and policy dimensions of wildland fire Kit O'Connor	NMHU's Center of Research Excellence in Science and Technology: A hub of forest restoration research Joshua L. Sloan	Considering plant physiology in simulation of fire behavior and effects L. Turin Dickman	Predicting wildfire ash loads from field and geospatial data Sarah Lewis
<b>11:15am</b>	Decline of a desert ecosystem: Invasive grasses, fire, and a changing climate Jack Triepke	Empowering students in fire ecology: Hands-on learning and professional development with NAU's SAFE Conor McBride and Kelsey Carlson	De-risking POD boundaries: How and where can treatments be effective? Scott Ritter	Evaluating the impact of seedling stocktype and planting techniques on ponderosa pine seedling survival and performance Aalap Dixit	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
<b>11:30am</b>	Reflecting on recent changes in variables of the disturbance ecology of the Sonoran Desert Perry Grissom	After the Greenfire Revolution: Reimagining the future ecological fire management workforce Timothy Ingalsbee	The evolution and diffusion of innovative tools and processes for fire management: Case studies from the Incident Strategic Alignment Process (ISAP) Tyler Beeton	Fire history and forest composition at the Front Range Forest, near Black Lake at the Southeastern Sangre de Cristo, NM Blanca Cespedes	QUIC-Fire: Current capabilities of this simulation tool that was designed for prescribed fire applications Rod Linn	Where did the sediment come from and where did it go? Mapping watershed response to post-wildfire flooding and debris flows in the Jemez Mountains, NM, USA Anne Tillery
<b>11:45am</b>	When a flashy-system gets more flashy: Post-fire watershed response and recovery in the Sonoran Desert Kelly Mott Lacroix	Developing and delivering prescribed fire curriculum for New Mexico Doug Cram	Assessing decision quality with the Incident Strategic Alignment Process (ISAP) Dave Calkin & Brad Pietruszka	Beneath the flames: Fire effects on mycorrhizal fungi communities in wildland and prescribed fire Michael Remke	Advancing fuels and ecological monitoring with terrestrial LiDAR for fire modeling Scott Pokswinski	Modeling post-wildfire surface soil moisture in coastal California Britt Smith
<b>12:00pm</b>	Quantifying herbaceous fuel trends and critical fuel thresholds in the Sonoran Desert Matthew C. Reeves	Increasing fire science knowledge and workforce development through technical education in Nevada Christina Restaino	Assessing the Risk Management Assessment (RMA) Dashboard use in wildfire response Melanie Colavito	Post-wildfire restoration and biochar production: Identifying actions to reduce wildfire risk and bolster rural economies Tomasz Falkowski	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
<b>12:15pm</b>	Desert ecosystem resilience to invasion, climate change and altered fire regimes Sam St Clair	Open	Flexibility to feasibility: Policy conditions that support managing wildfire for objectives other than full suppression Scott Franz	Burn severity analysis of treated and untreated forest stands James Biggs	Fuel treatment effects in Rendija Canyon explored using QUIC-Fire simulations Julia Oliveto	Open
<b>12:30pm</b>	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
	<b>Changing Fire Regimes in the Sonoran Desert: Climate, Humans, and Introduced Species</b>	<b>Fire Effects</b>	<b>Fire Management Science and Innovation</b>	<b>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</b>	<b>Fuels Estimation and Modeling</b>	<b>Fire Circle Discussion</b>
	Organizers: Mary Lata, Christopher Jones	Moderator:	Organizer: Kit O'Connor	Organizers: Blanca Cespedes, Michael Remke, Crystal Medina	Moderator:	Organizer: Alice Lincoln-Cook
<b>2:00pm</b>	Saguaro microbial growth response in burned and unburned soils Danika Celeste Thiele	Impacts of prescribed fire on tick density in coastal southern Texas rangelands Rachel Walters	Modeling the dynamic fire management environment: A case study from the 2023 Six Rivers Lightning Complex Rahul Wadhvani	<b>Panel Discussion</b>  <b>How do we restore the culture of fire among communities impacted by catastrophic wildfire?</b>  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.  <b>Panelists</b> Crystal Medina Amina Sena Shannon Atencio George Ducker Ryan Swazo-Hinds J.R. Logan Sam Berry Edmund Gorman David Pan Erika Derkas Dylin Montoya Michael Remke Blanca Cespedes	Estimating masticated and cone fuel loads using the Photoload method Sharon Hood	Cultural Fire, Traditions and Life Way Seen through Basketweaver's Eyes
<b>2:15pm</b>	Stop, drop, and roll out the biocrust sods: Breaking the grass-fire cycle through soil-surface rehabilitation Keven Griffen	Mexican spotted owls responses to fire and fuels reduction in Arizona and New Mexico Gavin M. Jones	Innovative fire management, case studies and new frontiers in the Rocky Mountain Region Michael Caggiano		Auto-photoload: Automating fine woody fuel load estimation using computer vision Patrick Johnson	
<b>2:30pm</b>	Postfire effects on saguaros within Maricopa County's Sonoran Desert upland habitat Juanita Armstrong-Ullberg	Amphibian community living with disease in a fire affected landscape of Northern New Mexico Anabella Miller	Indigenous fire futures John Waconda		Leveraging the MaxEnt Model: Predicting vegetation risk to mitigate wildfire hazards in transmission lines Rajen Bajgain	
<b>2:45pm</b>	A floristic inventory of the 2021 Telegraph Wildfire in the Sonoran Desert Brittany Burgard	Smoke as a dispersal agent for fungal pathogens Krista Bonfantine	Panel Discussion		DUET: Distribution of Understory using Elliptical Transport Jenna Sjunneson McDanold	
<b>3:00pm</b>	Effects of Uncharacteristic Wildfires on the Sonoran Desert seed bank Kristen Countryman	Open			Use of separate woody and herbaceous fuel loads to understand fire dynamics in the states of Arizona and New Mexico Njoki Kahiu	
<b>3:15pm</b>	Effects of fire on wildlife in arid lands: Implications for the Sonoran Desert Jesse S Lewis				Ladder fuels from GEDI space-borne lidar predict wildfire severity across topographic-weather gradients Chris Hakkenberg	
<b>3:30pm</b>	Afternoon Break					



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

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	<b>Managing Fire in the Sonoran Desert</b>	<b>Reducing Human-Caused Large Wildfires in the Southwest: Insights from a Science Management Partnership</b>	<b>New Horizons in Strategic Pre-Fire Planning</b>	<b>New Mexico Pueblos and Tribal Fire Management, Revitalizing the Land Through Traditional Stewardship and Knowledge</b>	<b>Fuel Moisture and Flammability</b>	<b>Tools and Models</b>
	Organizers: Christopher Jones, Mary Lata	Organizers: Wills DeGrandpre, Catrin Edgeley, Sarah Devenport	Organizer: Kit O'Connor	Organizer: Sam Berry	Moderator:	Moderator:
<b>4:00pm</b>	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	Strategic fire planning in the West: Major milestones and the need for next steps Kit O'Connor	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
<b>4:15pm</b>	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
<b>4:30pm</b>	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
<b>4:45pm</b>	Firewise landscape principles in the Sonoran Desert Christopher Jones	Exploring human-caused wildfire risk perceptions in Flagstaff, Arizona Wills DeGrandpre	Wildfire risk assessment: Applications, limitations, and opportunities Gaby Ayres	<b>Panel Discussion</b>  John Galvan Jonathan Martin Rene Romero Jon Waconda	Change in the seasonality and frequency of low live-fuel-moisture in Northern New Mexico Zachary J. Robbins	Open
<b>5:00pm</b>	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	Open
<b>5:15pm</b>	Discussion	Discussion	Advances in wildfire simulation for dynamic, actionable risk analysis Matthew P Thompson		Open	Open
<b>Evening</b>	8pm, Dance Party!					

## Thursday, November 21: Conference

### Plenary Panel, 8:30am to 10:30am, Lumpkins Ballroom

#### 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 beneficial fire in the Southwest.

#### Moderator

- Eytan Krasilovsky, Deputy Director, Forest Stewards Guild

#### Panelists

- Phil Graeve, Deputy Director, Prescribed Fire Training Center
- Heather Heward, Senior Fire Ecology & Management Instructor, 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
- Andi Thode, Professor Fire Ecology and Management, 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. Notably, half of this workforce is seasonal, with employment limited to a maximum of six months. The recent national Wildfire Commission report underscored that “the scope and size of the existing workforce is not sufficient for the scale of wildfire risk reduction, response, and post-fire recovery work required now, let alone into the future... Federal investment is urgently needed to create new and expanded workforce capacity that is focused on, and tailored to, mitigation, planning, and post-fire response and recovery for communities and landscapes.” A report indicated that 20% of USFS permanent firefighter positions are vacant, with recruitment and retention challenges exacerbated in areas with limited labor pools or non-competitive wages. Many of the unfilled positions are senior fireline leadership roles or those requiring higher qualifications.

In addition to workforce size, wildland fire managers confront complex decisions with ecological, social, and political implications. Positions such as fuels specialists, fire ecologists, and fire planners need not only NWCG qualifications but also a deep understanding of the science behind fuels treatments and wildland fire management. Acquiring and maintaining this combination of skills and knowledge is challenging. Changes in job series codes—from 462, 401, to 456—have altered educational requirements for wildland firefighters over time, complicating promotional tracks, access to education, and contributing to pay inequities. Despite these challenges, progress has been made. Growth in both academic and on-the-job training has improved wildfire management and resilience planning. For instance, the JFSP Knowledge Exchanges have enhanced fire knowledge nationwide for over a decade. 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.



8:30am

10:30am

Morning Break

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

	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:	Moderator:	Organizers: Courtney Schultz, Paul Hessburg, Don Hankins	Moderator:	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	<b>Academic Industrial Alignment: Discussing How to Build Fire Professionals through Collaboration across Agencies and Universities</b>  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.
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 Hettema	Wildfire policy update: Legislative efforts and the role of the Wildfire Resilience Coalition Esmé Cadiente	Postfire policy and rehabilitation in Washoe country Gregory Russell and 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 firescapes 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 McCove	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 Ken Gerow		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					

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

	Lumpkins North	Lumpkins South	La Terraza	New Mexico	Santa Fe	Stiha
	<b>Climate, Wildfire, and Resilience in the Southwest</b>	<b>Prescribed Fire</b>	<b>Post-fire Regeneration and Vegetation Response</b>	<b>Indigenous Fire Stewardship: Identifying Pathways to Restoring Lifeways and Self-Determination</b>	<b>Collaboration and Inclusion for Fire Adaptation</b>	<b>Workshop and Discussion</b>
	Organizers: Cara Caruolo, Clare Aslan, Ann Youberg, Zander Evans, Lara Pihodko	Moderator:	Moderator:	Organizers: Courtney Schultz, Paul Hessburg, Don Hankins	Moderator:	Organizer: Ariel Léger
<b>2:00pm</b>	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	<b>Improving the Utility of Case Studies for Fire and Climate Adaptation in the Southwest</b>  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.
<b>2:15pm</b>	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	
<b>2:30pm</b>	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 Domenech	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	
<b>2:45pm</b>	Climate adaptive strategies for forest resilience Zander Evans	Prescribed burning risk quantification: A step towards safe rangeland management in the Great Plains Izuchukwu 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	
<b>3:00pm</b>	Complex drivers of fire activity across the Southwest U.S. in a changing climate Lara Pihodko	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 Woolet	Discussion	Open	
<b>3:15pm</b>	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		Open	
<b>3:30pm</b>	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	Organizer: Gloria J Edwards, Lori Bammerlin, Eugénie MontBlanc		Organizers: Christopher Jones, Mary Lata	Organizers: Emily Huff, Kristin Floress, Michelle Baumflek, Cherie Fischer, Amanda Curton	Organizers: Gabe Kohler, Jan-Willem Jansens
	<p><b>Starting Good Fire: Coastal Chumash Fire Stewards Knowledge Share on Beginning a Good Fire Revitalization Group</b></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><b>Prescribed Fire Councils of the Rockies and Southwest Regions: Status, Progress, and Shared Future</b></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><b>Fire in the Sonoran Desert</b></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 &amp; nonnative plant invasion in the Sonoran Desert.</p>	<p><b>Social Acceptability and Social Science Synthesis for Wildfire Management</b></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><b>Piñon-Juniper Ecosystems in the WUI: Reconciling Tensions and Tradeoffs</b></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>

**Evening** Networking Activity, TBD

## 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