

Tuesday, 19 November

10:30 AM to 12:10 PM, Concurrent Sessions

	Salon D	Salon E	Salon F	Salon G	Salon H
	Human Dimensions and Social Systems 1	Fire in the Last Frontier: 21st Century Fire Patterns, Behavior, and Pyroecology of North American Boreal Forests and Tundra	Fire Severity and Ecosystem Response	ForBio Southwest: Engineering, Economics, and Ecology to Guide Forest Restoration in the Southern Rocky Mountains	Fuel and Wind as Determinants of Fire Spread: Externalities versus Complex Feedback – When and Where?
	Moderator: Laura Gannon	Special Session Organizer: Rachel Loehman	Special Session Organizers: Matthew Hurteau and Joseph Crockett	Special Session Organizers: Mike Battaglia and Nathaniel Anderson	Special Session Organizers: Jon E. Keeley and Ross Bradstock
10:30 AM	Fostering knowledge diversity to manage wildfire in a dynamic ecocultural landscape Kelsey Copes-Gerbitz	Sensitivity of boreal forest fire regimes to climate and vegetation variability in North America Adam M. Young	Why the term “mixed-severity” is not helpful for describing fires or fire regimes Brandon Collins	ForBio Southwest: bioenergy and biofuels integration to support sustainable forest restoration Nathaniel Anderson	21st century California wildfires: fuel-dominated vs. wind-dominated fires Jon E. Keeley
10:50 AM	Science, management, and implementation of forest restoration concepts: what works? Hannah Brown	Changing patterns of wildfire activity in the northwestern Canadian boreal forest Ellen Whitman	What does severity mean for the below-ground ecosystem? Investigating patterns in soil nutrient pools and dynamics across gradients of burn severity Jessica Miesel	Marginal costs for biomass utilization as compared to other treatments of small-diameter stems Beth Dodson	Global thresholds in dryness and area burned: what do they tell us about top down and bottom up determinants of fire regimes? Ross Bradstock
11:10 AM	Does engagement with a boundary organization improve interactions and foster knowledge coproduction between scientists and managers? A case study of the Southwest Fire Science Consortium Kerry E. Grimm	Using paleoecology to highlight causes and consequences of fires in boreal ecosystems Cecile Remy	Quantifying the physical controls on post-wildfire vegetation establishment in the southwestern US Joseph Crockett	Quantifying economic benefits of human health from using woody biomass harvested in restoration treatments to generate electricity McKenna Hedgepeth	Patterns and drivers of fire progression in California's recent fire storms Yufang Jin
11:30 AM	Teaching wildland fire science to students, educators, and the public Ilana Abrahamson	Short-interval repeat fires alter successional pathways within Alaskan boreal forests Rachel Loehman	Effects of large, severe fires on spotted owls in the Sierra Nevada Gavin M. Jones	Effects of woody biomass harvest from forest restoration treatments on fuels and potential fire behavior in the Southwest Graham Worley-Hood	Meteorological analysis and observations associated with extreme fire behavior during the 2018 Camp Fire Craig B. Clements
11:50 AM	Impact assessment tools for fire outreach programs Melissa M. Kreye	Impacts of increasing wildfire severity on the long-term carbon dynamics of Alaskan boreal forests Michelle C. Mack	Effects of compound disturbances on vegetation patterns in a ponderosa pine forest Sharon M. Hood	ForBio Southwest: summary of key findings and next steps Mike Battaglia	The role of antecedent climate in large fuel-driven and wind-driven wildfire in California Dan Cayan
12:10 PM	Lunch				

Tuesday, 19 November

10:30 AM to 12:10 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	Towards a Mechanistic Understanding of Interactions between Fire and Previous Disturbances: Recent Advances and New Surprises	Resilience and Conservation 1	Landscape-Level Fire Management 1	Ecology 1
	Special Session Organizers: Brian Buma and Jeffrey Cannon	Moderator: Tyler Refsland	Moderator: Kea Rutherford	Moderator: Brian Oswald
10:30 AM	Propagule delivery into burned patches following short-interval fires: a synthesis across taxon, system, and dispersal mode Nathan S. Gill	Rethinking resilience to wildfire David McWethy	Assessing scarcity to inform acquisition decisions for national suppression resources Crystal Stonesifer	Recent bark beetle outbreaks and subsequent wildfire severity in mixed-conifer forests of the Sierra Nevada, California, USA Rebecca B. Wayman
10:50 AM	Continued repeat burning in the boreal causes continued ecosystem transformation Katherine Hayes	Vegetation-mediated feedbacks on forest fire regime promote resilience to high fire frequencies in a fire-sensitive landscape of the interior Rockies Cameron E. Naficy	Prescribed fire force multiplier: increasing capacity for fire on the land Sam Berry	The ecological effects of bark beetles, wildfires, and their interactions in Rocky Mountain subalpine forests Zoe Schapira
11:10 AM	The role of buffering effects in compounded disturbances from wind and prescribed fire Jeffery B. Cannon	Restoration treatment effects on post-fire vegetation recovery and diversity in north-central Washington, USA David W. Peterson	Implementing collaborative planning programs to generate fire-adapted communities in the western US Fermin J. Alcasena Urdiroz	Spruce–fir recruitment and growth following high-severity fires and insect outbreaks in southern Arizona Ann Lynch
11:30 AM	Quantifying interactions between wildfire, prior mountain pine beetle outbreak and harvest on forest aboveground biomass from bi-temporal LiDAR Ryan McCarley	Are forests dominated by epicormic resprouters resilient to repeated high-severity fires? Luke Collins	Fire awareness, prevention, and preparation: fire in your future Daniel M. Leavell	Different fire severities result in distinct soil microbial community trajectories Sam Fox
11:50 AM	Fire following fire: can wildfire make forests more resilient to another fire? Carolyn H. Sieg	Modeling fire behavior, fuel consumption, and smoke emissions across a range of fuels treatments Stacy A. Drury	Rethinking our wildland fire management focus on forested lands Michele Crist	Does fire severity matter? Post-fire vegetation and fungal community regeneration in a fire-prone landscape Hannah Etechells
12:10 PM	Lunch			

	Salon D	Salon E	Salon F	Salon G	Salon H
	Cultivating Pyrodiversity through Outreach and Education: Partnerships with Cooperative Extension	Fire in the Last Frontier: 21st Century Fire Patterns, Behavior, and Pyroecology of North American Boreal Forests and Tundra	Fire Severity and Ecosystem Response	Restor(y)ing Indigenous Fires: Modern Applications and Practices	Fuel and Wind as Determinants of Fire Spread: Externalities versus Complex Feedback – When and Where?
	Organizer: Susie Kocher	Special Session Organizer: Rachel Loehman	Special Session Organizers: Matthew Hurteau and Joseph Crockett	Special Session Organizer: Don L. Hankins	Special Session Organizers: Jon E. Keeley and Ross Bradstock
1:30 PM	The expanding role of cooperative extension in wildland fire: the National Extension Wildland Fire Initiative Jennifer E. Fawcett	The footprint of fire in the Alaskan boreal forest: a GIS analysis of “repeat” fire patterns Jennifer L. Hrobak	Quantifying the influence of fire probability on post-fire vegetation development in the southwestern US Alisa Keyser	Since time immemorial: living with fire as the law of the land Don Hankins	Factors affecting structure loss during recent California wildfires Alexandra D. Syphard
1:50 PM	Cooperative extension fire programs and partnerships in the Southeast United States Laurel Kays	Disturbance-driven shifts on the Kenai Peninsula, 1974–2016 Carson A. Baughman	Changes in forest dynamics 15 years after a wildfire in a mountainous ecotone, Arizona, USA Mike Stoddard	Indigenous burning enhances basketry material and supports cultural revitalization in northwest California Tony Marks-Block	Fire, wind, water: fire patterns in south-eastern Australia Trent Penman
2:10 PM	Best practices for engaging partners and increasing capacity: lessons learned from the JFSP Northwest Fire Science Consortium and Oregon State University extension partnership Janean Creighton	The good, the bad, and the ugly: re-evaluating satellite-derived fire severity metrics in boreal ecosystems Sean Parks	Active and passive post-fire restoration under changing environmental conditions in California, USA Derek Young	Fire and feathers: cultural considerations of birds for season of burn in the Klamath–Siskiyou Bioregion, USA Frank K. Lake	Patterns and trends in the factors that influence fire behavior in Sierra Nevada forests John Williams
2:30 PM	Fire Adapted Community Learning Network: opportunities for extension educators Christopher Jones	Multi-decadal patterns of vegetation succession after tundra fire on the Yukon–Kuskokwim Delta, Alaska Lisa Saperstein	Forest composition shifts following large wildfires in the Northern Rockies Camille S. Stevens-Rumann	Learning from each other: integrating indigenous knowledge and practices with scientific research in Venezuela, Brazil, and Guyana Bibiana Alejandra Bilbao	The role of atmospheric stability indices on extreme wildfire growth events in western Canada Mike Flannigan
2:50 PM	Using strategic communications to enhance demand for prescribed fire on private forestlands Jesse Kreye	Effects of fire in southern boreal and northern temperate forests of British Columbia, Canada Sybille Haeussler	Future vegetation trajectories driven by climate change and fire in the upper Rio Grande watershed Cecile Remy	Discussion	The role of atmospheric and local wildfire dynamics in extreme wildfire development Jason Sharples
3:10 PM	Break				

Tuesday, 19 November

1:30 to 3:10 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	Towards a Mechanistic Understanding of Interactions between Fire and Previous Disturbances: Recent Advances and New Surprises	Resilience and Conservation 2	Landscape-Level Fire Management 2	Ecology 2
	Special Session Organizers: Brian Buma and Jeffrey Cannon	Moderator: Alina Cansler	Moderator: James Johnson	Moderator: Anne Ganteaume
1:30 PM	Rates of short-interval fires increasing across the US West Brian Buma	Complex and variable avian responses to post-fire salvage logging support the conclusion that salvage is largely detrimental to biodiversity Brent Campos	Fire severity and forest management alters reburn potential in mesic mixed conifer forests Lisa M. Ellsworth	Pyrodiversity: impacts of a megafire on woody plant diversity in an Arizona Sky Island Andrew M. Barton
1:50 PM	Forest management under uncertainty: the influence of management versus climate change and disturbance in the Lake Tahoe Basin Charles Maxwell	Community-based fire effects monitoring: a case study from Payne’s Creek National Park, Belize Rick Anderson	Past forest change, patterns of post-fire tree regeneration and potential for fire-initiated forest loss at a dry forest ecotone Lucas Harris	Seasonality of fire behavior and plant community response in the southern Appalachian Mountains Matthew C. Vaughan
2:10 PM	Negative feedbacks among multiple disturbances in north-central Minnesota Melissa Lucash	Impacts of forest restoration treatments on pollinator communities within the Colorado Front Range Ryleigh Gelles	Variable trajectories of Southwest ponderosa pine forests following high-severity fire Jose Iniguez	Effects of burning and thinning treatments on oak and maple stem density Emily M. Booth
2:30 PM	Exploring complex interactions among humans and fire regimes in US forested landscapes using the spatial ecosystem model FireBGCv2 Robert E. Keane	Evaluating change in bird communities from wildfire in the Arizona Sky Islands Jamie S. Sanderlin	Comparing the long-term effects of amplified fire and fuel management disturbance on a mixed-owner landscape in central Oregon Ana Barros	Big idea fire effects research in large experimental fires: balancing challenges with opportunities J. Morgan Varner
2:50 PM	Discussion	If pyrodiversity begets biodiversity, then why aren’t we managing for it? Dominick A. DellaSala	Multiple wildfires with minimal consequences: low-severity wildfire effects on West Texas piñon–juniper woodlands Helen M. Poulos	Strengthening fire effects perspectives: a role for plant–soil feedbacks Katherine E. A. Wood
3:10 PM	Break			

Wednesday, 20 November

10:30 AM to 12:10 PM, Concurrent Sessions

	Salon D	Salon E	Salon F	Salon G	Salon H
	The Policy Landscape of Wildfire and Fuels Management in the United States	Fire in the Last Frontier: 21st Century Fire Patterns, Behavior, and Pyroecology of North American Boreal Forests and Tundra	Burned Area Rehabilitation and Restoration 1	Fire Regimes and Species Diversity in the American Southwest and Adjacent Regions of Mexico	Fire Behavior
	Special Session Organizer: Lauren McCain	Special Session Organizer: Rachel Loehman	Moderator: Kerry Metlen	Special Session Organizer: Hugh D. Safford	Moderator: Qingqing Xu
10:30 AM	A view across the US wildfire and fuels management policy landscape: framing the context, trends, and diverse interests Peter Nelson	Why is Alaska’s “firescape” so sensitive to warming climate and what are possible management strategies to cope with the changing fire regime? Randi Jandt	Interpreting nuanced outcomes of a spring prescribed burn in a Sierra Nevada mixed conifer ecosystem in the Southern Cascades of California Don Hankins	Introduction Hugh D. Safford	Test of a moisture extinction model under conditions of no slope and calm wind Carmen Awad
10:50 AM	The Trump Administration on forest health and wildfire Lauren McCain	Keep it in the ground: managing fire for climate mitigation Carly Phillips	Effects of fire intensity on resprouting woody species Heath D. Starns	Mexican forest species and fire regimes are of increasing relevance to the southwestern US as climate warms Peter Fulé	Modeling shrub consumption in prescribed fire Melissa Jaffe
11:10 AM	Finally fixing wildfire funding: the end of fire borrowing and potential gains for forest resilience and community security Ryan Richards	Fire deficit increases the wildfire risk around communities in the Canadian boreal forest Marc Parisien	Comparing re-introducing fire with cutting an encroaching conifer for conservation of an imperiled shrub–steppe over extended time periods Jon Bates	The fire severity × plant species diversity relationship is hump-shaped in Sierra Nevada yellow pine and mixed conifer forests JonahMaria Weeks	Comprehensive open-source development of next-generation wildfire models for grid resiliency David Saah
11:30 AM	Conflict and coherence in Forest Service fire and land management policy Courtney Schultz	Fire self-regulation in the North American boreal forest and the implications for fire management in Alaska Xanthe Walker	High-severity wildfire reduces richness and alters composition of ectomycorrhizal fungi in ponderosa pine forest M. Fabiola Pulido-Chavez	Understory plant species diversity is not degraded by high-severity burning in Colorado dry conifer forests Paula Fornwalt	Whys and hows of large wildfires: wind-driven, plume-driven, and fire phenomena Janice L. Coen
11:50 AM	Trends in state–federal partnerships: good neighbor authority and shared stewardship Tyson Bertone-Riggs	Discussion		High-severity fire accelerates shifts towards a southern-xeric understory community: evidence from dry mixed-conifer forests in California and Colorado Jens Stevens	
12:10 PM	Lunch				

Wednesday, 20 November

10:30 AM to 12:10 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	Understanding the Use of Fire Disturbance in Ecosystem Process Modeling and Forest Change Predictions	Restoring Structure and Pattern to Frequent Fire Forests in the Western US: Moving from Historical Data to Implementation and Outcomes	Manipulation of Vegetation for Livestock and Wildlife Using Prescribed Fires in Texas and Northern Mexico	A Global Synthesis of Pyrodiversity and Biodiversity Relationships: Implications for Effective Fire Management
	Special Session Organizers: Tirtha Banerjee, Rod Linn, and Kevin Hiers	Special Session Organizers: Eric Knapp and Mike Battaglia	Special Session Organizer: Silverio Ávila	Special Session Organizers: Katherine Giljohann, Luke Kelly, Trent Penman, and Alan York
10:30 AM	The role of stand age and pre-treatments on prescribed fires' influence on species composition in Sierra Nevada mixed conifer forests Robert York	Session Introduction Eric Knapp and Mike Battaglia	Using prescribed fire to maximize above- and belowground diversity for livestock and wildlife Morgan Treadwell	Towards a global synthesis of pyrodiversity and biodiversity relationships Luke Kelly
10:50 AM	Characterizing the coupled carbon–water–energy relations for Coastal Plains forests during and after fire disturbances in the southeast US Lauren E. L. Lowman	The principles and silvicultural challenges to restoring heterogeneity in fire-dependent forests Malcolm North	Season of burn effects on forage production and composition of gulf cordgrass communities J. Silverio Avila-Sanchez	Interaction flexibility and pyrodiversity increase pollinator population resistance Lauren C. Ponisio
11:10 AM	Statistical fire modeling and multi-scale scenario analysis and assessment LeRoy Westerling	Using reference conditions to restore ecological function in frequent-fire forests of Oregon and Washington. Lessons learned and forward progress Derek Churchill	Patch burn–grazing in South Texas coastal gulf cordgrass communities Rebecca Zerlin	Interpreting contrasting pyrodiversity effects under a common framework: functional heterogeneity and global patterns of land use change impacts on biodiversity Lluís Brotons
11:30 AM	Scaling ecological resilience Donald Falk	Concepts and foundation of free selection Theresa Jain	Fire as a tool to improve Mexican and USA grasslands for wildlife and livestock production Carlos Villalobos	Pyric herbivory: the role of the fire–grazing interaction in pyrodiversity Samuel D. Fuhlendorf
11:50 AM	Impacts of fuel moisture and fuel treatment on wildland fire behavior Tirtha Banerjee	Using digital prescriptions to create variable structure and pattern in designation by prescription project areas Neil Chapman	Fuel: grazing or burning? A rancher's perspective Brian Treadwell	You can't always get what you want, but if you try sometimes you get what you need Trent Penman
12:10 PM	Lunch			

	Salon D	Salon E	Salon F	Salon G	Salon H
	Human Dimensions and Social Systems 2	Climate Change 1	Burned Area Rehabilitation and Restoration 2	Fire Regimes and Species Diversity in the American Southwest and Adjacent Regions of Mexico	Fuels Management 1
	Moderator: Morgan Treadwell	Moderator: Andrew Barton	Moderator: Helen Poulos	Special Session Organizer: Hugh D. Safford	Moderator: Birgit Peterson
1:30 PM	Is Forest Service roadless management creating divergent fire regimes? James Johnston	Understanding components to establish framework for convergent approach to wildfire mitigation Moji Sadegh	Effects of landscape-scale forest restoration on landscape-scale wildfire behavior in the Jemez Mountains of New Mexico Steve Bassett	Patterns of post-fire diversity and regeneration in subalpine forests of California Emily Brodie	Prescribed fire and the Green New Deal: capitalizing the restoration economy Daniel Godwin
1:50 PM	Addressing the personnel, public, and organizational risks of smoke Peter Lahm	Climate relationships with increasing wildfire in the southwestern US from 1984 to 2015 Stephanie Mueller	The importance of long-term studies for quantifying forest restoration effects and temporal dynamics: an example from warm/dry mixed-conifer in southwestern Colorado Julie Korb	Compound disturbance effects on species richness, beta-diversity, and compositional turnover in an early seral landscape Matthew Reilly	A missing link? Fuel moisture–soil moisture interaction Ekaterina Rakhmatulina
2:10 PM	Smoke impacts on communities and HEPA Filter Loan Program Sam Berry	Examining southern California wildfire using a stochastic large-fire simulation model Alex W. Dye	Are managed wildfires moving forest structure towards the historic range of variability? A comparison of landscape metrics across northern Arizona Jonathon Donager	Repeated fires reduce plant diversity in low-elevation Wyoming big sagebrush ecosystems (1984–2014) Adam L. Mahood	Living with fire—lessons learned from a grassland savanna in central Africa and how it relates to fire management in the United States James Menakis
2:30 PM		Large-scale forest restoration stabilizes carbon under climate change in southwest United States Marcos Robles	Time to burn: phenology products and tools are a piece of the pyrodiversity puzzle Theresa Crimmins	Nexus between biodiversity and ecosystem resilience in fire-prone shrublands Jon E. Keeley	Can landscape fuel treatments enhance both protection and resource management objectives? Joe H. Scott
2:50 PM		Assessment of methods and results of carbon emissions from three North Carolina peat wildfires Robert A. Mickler	Pyrotopia Cecil Frost	Altered fire regimes cause lichen diversity losses Jesse Miller	Selecting important fuels for biomass emissions research Adam Watts
3:10 PM	Break				

Wednesday, 20 November

1:30 to 3:10 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	<p>Understanding the Use of Fire Disturbance in Ecosystem Process Modeling and Forest Change Predictions</p> <p>Special Session Organizers: Tirtha Banerjee, Rod Linn, and Kevin Hiers</p>	<p>Restoring Structure and Pattern to Frequent Fire Forests in the Western US: Moving from Historical Data to Implementation and Outcomes</p> <p>Special Session Organizers: Eric Knapp and Mike Battaglia</p>	<p>The Evolving Wildfire Risk Governance System</p> <p>Special Session Organizers: Maureen Essen and Benjamin Gray</p>	<p>A Global Synthesis of Pyrodiversity and Biodiversity Relationships: Implications for Effective Fire Management</p> <p>Special Session Organizers: Katherine Giljohann, Luke Kelly, Trent Penman, and Alan York</p>
1:30 PM	<p>Wildfire impacts on water and carbon cycles in California's Sierra Nevada Qin Ma</p>	<p>Restoring stand-level pattern and structure with the ICO app: improving effectiveness and efficiency Sean Jeronimo</p>	<p>Fostering collective action to manage wildfire risk across property boundaries in the western USA Susan Charnley</p>	<p>Multiple mechanisms underlie the pyrodiversity–biodiversity relationship in California birds Morgan Tingley</p>
1:50 PM	<p>Using numerical modeling to investigate the influences of disturbances of fire behavior Rodman Linn</p>	<p>First-entry low and moderate burn severity wildfires create resilient heterogenous forest structures Van R. Kane</p>	<p>Fire modeling and analytics: from research to decision Kit O'Connor</p>	<p>Global novel fire regimes in the Anthropocene Andrea Duane</p>
2:10 PM	<p>Incorporating effects of small-scale topography and vegetation heterogeneity on wildland fire in Earth System Models Alex Jonko</p>	<p>Historical and modern pyric mediation of fine-scale structure in a Sierran mixed-conifer forest Justin Ziegler</p>	<p>Wildfire risk governance across different political and ecological contexts Benjamin J. Gray</p>	<p>Using simulated HRV as a means to promote biodiversity in natural resource management using landscape modeling Robert E. Keane</p>
2:30 PM	<p>Increasing concurrence of wildfire drivers doubles megafire critical danger days in southern California Moji Sadegh</p>	<p>Variable thinning to restore fire-created pattern in the Sierra Nevada: implementation and initial outcomes Eric Knapp</p>	<p>Collective action to address wildfire at the county level: a case study of the Kittitas County Fire Adapted Communities Coalition Catrin Edgeley</p>	<p>Fire refuges in Mediterranean landscapes: understanding their role for animal populations and protecting them from salvage logging Pere Pons</p>
2:50 PM	<p>Quaking aspen regeneration: assessing individual and synergistic effects between conifer thinning intensity and burning Chad M. Hoffman</p>	<p>Restoring heterogeneity: a comparison of variable density thinning and historical reference conditions in the central Sierra Nevada Alexis Bernal</p>	<p>Discussion</p>	<p>Panel Discussion Alan York and Kate Giljohann</p>
3:10 PM	<p>Break</p>			

Wednesday, 20 November

3:40 to 5:20 PM, Concurrent Sessions

	Salon D	Salon E	Salon F	Salon G	Salon H
	Bridging the Gap: Lessons from the First Ten Years of the JFSP Fire Science Exchange Network	Climate Change 2	Burned Area Rehabilitation and Restoration 3	Fire Regimes and Species Diversity in the American Southwest and Adjacent Regions of Mexico	Fuels Management 2
	Special Session Organizer: David R. Godwin	Moderator: Andrew Barton	Moderator: Michelle Mack	Special Session Organizer: Hugh D. Safford	Moderator: Liz van Wagtenonk
3:40 PM	Introduction and history of the Fire Science Exchange Network Ed Brunson	Evaluating ecological resilience across wildfire suppression levels under climate and fuel treatment scenarios using landscape simulation modeling Robert E. Keane	Spatial and temporal dynamics of seeded plant communities after wildfire in sagebrush steppe Beth Newingham	Sierra Nevada wildfire and flying vertebrates: implications for changing fire regimes on bat and bird communities Brent Campos	Potential changes in fuels and shrub cover at Great Smoky Mountains National Park from 2003 to 2019 Adam Coates
4 PM	Models and examples of FSEN science co-production Andrea Thode	Quantifying avoided wildfire emissions from significant wildfires Thomas Buchholz	Patterns of seed dispersal from remnant sagebrush islands post fire Cara Applestein	Do changing fire regimes influence small mammal diversity in Sierra Nevada forests? Susan Roberts	Historical requests and occurrence of weather conditions for prescribed fires in Chelan County, Washington State, USA: an analysis to support increased fire use Colton Miller
4:20 PM	Bridging the gap takes a long-term perspective: lessons from climate change in Alaska Sarah F. Trainor and Alison D. York	Streamflow is resilient to landscape-scale wildfires in the Lower Colorado River Basin Marcos Robles	Postfire moss colonization in severely burned forests of the western United States Henry S. Grover	The effects of fire diversity on plant and pollinator communities Lauren C. Ponisio	Forest stand and site characteristics influence fuel consumption in repeat prescribed burns Jacob Levine
4:40 PM	Success stories from investments in fire science and communication David Godwin		Post-fire vegetation monitoring system using Google Earth Engine John Dilger	"It depends": the importance of a nuanced understanding of fire effects on wildlife species Sarah Sawyer	Vegetation recovery after seasonal burning of juniper slash Jon Bates
5 PM	Strategies and new ideas for connecting fire science and natural resource management Panel Discussion		Post-fire resistance to increasing vapor pressure deficits in Western montane conifers Emma Williams	Discussion	Effects of postfire management on dead woody fuel dynamics and stand structure in a severely burned mixed-conifer forest, in eastern Washington State, USA Morris C. Johnson
6 PM	Evening Activities: Awards Dinner in Kiva Ballroom				

Wednesday, 20 November

3:40 to 5:20 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	<p>Understanding the Use of Fire Disturbance in Ecosystem Process Modeling and Forest Change Predictions</p> <p>Special Session Organizers: Tirtha Banerjee, Rod Linn, and Kevin Hiers</p>	<p>Restoring Structure and Pattern to Frequent Fire Forests in the Western US: Moving from Historical Data to Implementation and Outcomes</p> <p>Special Session Organizers: Eric Knapp and Mike Battaglia</p>	<p>The Evolving Wildfire Risk Governance System</p> <p>Special Session Organizers: Maureen Essen and Benjamin Gray</p>	<p>Managing Fire for Multiple Objectives and Risk Management 1</p> <p>Moderator: Kelsey Copes-Gerbitz</p>
3:40 PM	<p>Fuel structure's impact on wild land fire entrainment—a computational study Marlin J. Holmes</p>	<p>Fine-scale fire patterns mediate forest structure in frequent-fire ecosystems Scott Ritter</p>	<p>Boundary-spanning for collective action: managing wildfire risk to watersheds Emily-Jane Davis</p>	<p>Suffering resource benefit: a review of Wildland Fire Decision Support System (WFDSS) content Mike Beasley</p>
4 PM	<p>Effects of fuel type on pyrogenic terpenoid emissions and air quality predictions Christos Stamatis</p>	<p>Comparing the tree spatial patterns derived from various treatments in Black Hills ponderosa pine forests Mike Battaglia</p>	<p>Governing firesheds: co-managing the new era of wildfire in the US Branda L. Nowell</p>	<p>Management applications of resource objective wildfires in forests of Grand Canyon National Park, USA John Paul Roccaforte</p>
4:20 PM	<p>A landscape model of variable social–ecological fire regimes Robert Scheller</p>	<p>Variability in mixed conifer forest structure changes understory light environments Jeffery B. Cannon</p>	<p>When and how is fire risk mitigation a collective action problem? And what are the implications? Sarah McCaffrey</p>	<p>Where wildfire and active fuels management meet: the Riggs and Lonely fires Doug Sproue</p>
4:40 PM	<p>Modeling repeated prescribed fire disturbances in a longleaf pine ecosystem using the mechanistic Fire Disturbance and Response Model Adam Atchley</p>	<p>Neighborhood effects on individual tree growth and understory production in ponderosa pine forests of the Southwest Andrew Sánchez Meador</p>	<p>Discussion Maureen Essen</p>	<p>Effects of policy change on wildland fire management strategies: evidence for a paradigm shift in the western US? Jesse Young</p>
5 PM	<p>Understanding management relevance of fire disturbance in ecosystem process models J. Kevin Hiers</p>	<p>Panel Discussion</p>	<p>Questions and Discussion</p>	<p>Ecological fire management: bridging the fire science/management gap in philosophy and practice Timothy Ingalsbee</p>
6 PM	<p>Evening Activities: Awards Dinner in Kiva Ballroom</p>			

Thursday, 21 November

10:30 AM to 12:10 PM, Concurrent Sessions

	Salon D	Salon E	Salon F	Salon G	Salon H
	Technological Innovations	Historical and Contemporary Pyrodiversity in Fire-prone Forest Ecosystems: Relevance to Future Climate and Wildfire Adaptation	Burned Area Emergency Response	Fire Regimes 1	Effectiveness of Fire and Fuel Treatments to Promote Resilience to Drought
	Moderator: Carly Phillips	Special Session Organizer: Keala Hagmann	Special Session Organizer: Richard Schwab	Moderator: Kevin Robertson	Special Session Organizers: Jeffrey Kane and Sharon Hood
10:30 AM	FASMEE Western Wildfire Campaign: modeled, ground, and LiDAR based estimates of fuel consumption Andrew T. Hudak	Importance of nonforest and preforest to regional landscape resilience and resistance in the Intermountain West Paul Hessburg	Beyond the horizon: WEPPcloud—PEP, Postfire Erosion Prediction management tool Peter Robichaud	Upside down fire: learning the lessons of cooperative fire management in Australia Cuong Tran	Management can mitigate the risk from extreme fire weather in an upland pine–wetland forest matrix in the southeastern US Matthew Hurteau
10:50 AM	Integrating vegetation structure metrics into burn severity mapping Birgit Peterson	Drivers of historical landscape variability in mixed-conifer forest structure under pre-suppression fire regimes Jens Stevens	Burn severity mapping to support emergency response efforts Kurtis Nelson	Fire activity on the Colombian tropical dry forest: an environmental and social perspective Marcelo Villa-Piñeros	Resilience of Sandhills grassland to wildfire during drought Jack Arterburn
11:10 AM	Mapping the large fires perimeter from aggregation of MODIS and VIIRS active fires in Mexico Carlos Ivan Briones-Herrera	Resilience mechanisms and variability of fire regime space in historical dry mixed-conifer forests Cameron E. Naficy	Effects of post-fire salvage logging on runoff and erosion Joe Wagenbrenner	Hyperfrequent fire: do we know how low fire intervals can go? Michael Stambaugh	Fuel treatments as a means for mitigating fire-catalyzed forest change Kimberley Davis
11:30 AM	Using Landsat images to assess the burn severity of reburned areas within Grand Canyon National Park Josh Picotte	The untold story of frequent mixed-severity fire in Pacific Douglas-fir forests Andrew Gregory Merschel	Facilitating the use of process based hydrology models for burned area rehabilitation and fuels management using the Rapid Response Erosion Database Mary Ellen Miller	Projecting future fire regimes and watershed dynamics requires coupling fire spread with ecohydrology Maureen C. Kennedy	Competition amplifies drought stress in forests across broad climatic and compositional gradients Mike Battaglia
11:50 AM	Evaluating the temporal change in ash cover after the 2018 Mesa Fire, Idaho Sarah A. Lewis	Multi-proxy records document substantially altered ecosystems in central and southcentral Oregon Keala Hagmann	Improving local post-fire debris-flow preparedness: three timescales for reducing public risk Dennis Staley	The missing fire: quantifying human exclusion of wildfire in Pacific Northwest forests, USA Ryan Haugo	
12:10 PM	Lunch				

Thursday, 21 November

10:30 AM to 12:10 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	<p>Southwest FireCLIME: A Research Partnership Evaluating Fire–Climate Change Dynamics and Management Implications in the Southwest</p> <p>Special Session Organizer: Andrea Thode</p>	<p>The Unique Considerations for Prescribed Fire Research and Application</p> <p>Special Session Organizer: Courtney Schultz</p>	<p>Ecology 3</p> <p>Moderator: Max Odland</p>	<p>Managing Fire for Multiple Objectives and Risk Management 2</p> <p>Moderator: Jay Lininger</p>
10:30 AM	<p>Southwest FireCLIME project overview Andrea Thode</p>	<p>Policy approaches for increasing application of prescribed fire on federal lands Courtney Schultz</p>	<p>Pine species distributions and adaptations to fire regimes in the Madrean Sky Islands of the US and Mexico Sandra L. Haire</p>	<p>Complex multi-jurisdictional fires: understanding and mitigating perceptions of risk transfer Branda L. Nowell</p>
10:50 AM	<p>Drivers of fire and vegetation in the southwestern United States Larissa Yocom</p>	<p>Line officer views of barriers to increased use of fire on Forest Service lands Sarah McCaffrey</p>	<p>Aspect preferences of pyrogenic pine stands and their implications for understanding fire regimes in the southern Appalachian Mountains Charles Lafon</p>	<p>Landscape risk mitigation in an era of big change Daniel M. Leavell</p>
11:10 AM	<p>The FireCLIME VA: applying a rapid and flexible system for assessing ecosystem vulnerability to climate–fire interactions to national forests Megan M. Friggins</p>	<p>Prescribed fire: how does it span boundaries for more effective co-management of wildfire risk? Emily-Jane Davis</p>	<p>How fire type and season influence tree and understory structure and composition Joe Fontaine</p>	<p>Our new reality: wildfire prevention and mitigation, suppression, and hazardous fuel reduction in the wake of Hurricane Michael Brian J. Camposano</p>
11:30 AM	<p>Using landscape simulation models to inform management in an uncertain future Will Flatley</p>	<p>Building a prescribed fire program on the Colorado Front Range: the role of landowner engagement Katie McGrath</p>	<p>Shifts in recruitment in forests with changing disturbance regimes and climate reveal trends in community functional tolerance Laura Marshall</p>	<p>New developments for the Forest Fire Danger System of Mexico Daniel Vega-Nieva</p>
11:50 AM	<p>Adaptation strategies for climate and fire in the Southwest Martha Sample</p>	<p>Interagency collaboration and tribal leadership support prescribed fire expansion while understaffing constrains burning in northern California Tony Marks-Block</p>	<p>Can recurring wildfires provoke type conversion in mixed-conifer forests? Deborah G. Nemens</p>	<p>How much does it cost to save a life or a house: the comparative cost-effectiveness of using alternative prescribed burning strategies for risk mitigation? Ross Bradstock</p>
12:10 PM	<p>Lunch</p>			

	Salon D	Salon E	Salon F	Salon G	Salon H
	Unmanned Aircraft in Fire Research and Management	Historical and Contemporary Pyrodiversity in Fire-Prone Forest Ecosystems: Relevance to Future Climate and Wildfire Adaptation	Resilience and Conservation 3	Fire Regimes 2	Effectiveness of Fire and Fuel Treatments to Promote Resilience to Drought
	Special Session Organizer: Adam Watts	Special Session Organizer: Keala Hagmann	Moderator: Jimmy Dodson	Moderator: Robert E. Keane	Special Session Organizers: Jeffrey Kane and Sharon Hood
1:30 PM	Unmanned aircraft systems (UAS) for data collection at the Fire and Smoke Model Evaluation Experiment (FASMEE) Adam Watts	Forest structure and pattern vary by climate and landform across active-fire landscapes in the montane Sierra Nevada Sean Jeronimo	Disjunct and decoupled? The persistence of a locally endemic, fire-sensitive conifer species in a historically frequent-fire landscape Will Downing	Tree-ring fire history in a sagebrush landscape: Rio Grande del Norte National Monument, New Mexico Manuel Lopez	Sixty years of fire manipulation in the Missouri Ozarks reveals climate-dependent effects of repeat burns on forest growth Tyler Refsland
1:50 PM	Accessing the life of smoke: using unmanned aircraft systems (sUAS) to sample viable microorganisms and environmental covariates during wildland fires Leda N. Kobziar	Do past burn mosaics contribute to resilient landscapes? Lessons from recent large wildfires and simulation studies in the interior Pacific Northwest Susan Prichard	Patch fires promote regeneration of longleaf pine in pine savannas Kevin M. Robertson	Diverse human fingerprints on fire histories from northern New Mexico montane forests: time- and place-specific patterns since 1600 CE Craig D. Allen	An assessment of how competition has modified drought stress across ponderosa pine forests Steve Voelker
2:10 PM	Small UAS for fire weather and fire behavior monitoring in the wildland fire environment Matthew Brewer	Are wildfires restoring landscapes? Derek Churchill	Contingent resistance in longleaf pine (<i>Pinus palustris</i>) growth and defense 10 years following smoldering fires Andrew Slack	Modern area burned in a historical perspective in two Southwest wilderness areas Calvin Farris	Does prescribed fire promote resistance to extended drought in low-elevation forests of the Sierra Nevada, California? Phil van Mantgem
2:30 PM	Deriving fire behavior metrics from UAS imagery Russ Parsons	An evaluation of landscape-scale fire-induced change in Washington State, USA Liz van Wagtenonk	Fire-dependent longleaf pine forests are resilient to hurricane-induced flooding Charlotte Reemts	Modern area burned in a historical context in the Jemez Mountains, New Mexico Ellis Margolis	Effects of thinning on tree resistance to drought- and bark beetle-associated mortality in a Sierra Nevada mixed-conifer forest Alexis Bernal
2:50 PM	Connecting fuels, fire behavior, and fire effects at the Sycan Marsh, Oregon Russ Parsons	Expansive high-severity and rapidly repeated wildfires limit forest recovery in the central Cascade Range Sebastian Busby		A synthesis of historical fire regimes in the southwestern United States Chris Guiterman	Long-term effectiveness of prescribed fire season on tree resistance in a western US pine Jeff Kane
3:10 PM	Break				

Thursday, 21 November

1:30 to 3:10 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	The Many Dimensions of Transboundary Wildfire	The Unique Considerations for Prescribed Fire Research and Application	Ecology 4	Landscape-Level Fire Management 3
	Special Session Organizers: Kit O'Connor and Christopher J. Dunn	Special Session Organizer: Courtney Schultz	Moderator: Cara Applestein	Moderator: Marcelo Villa-Piñeros
1:30 PM	Quantifying fire management complexity based on biophysical setting, fire potential, and jurisdictional diversity in the American West Christopher J. Dunn	Optimizing treatment placement and expanding prescribed fire use minimizes ecosystem carbon losses and high-severity fire risk Matthew Hurteau	Relative importance of drivers of burn severity in eastern Washington Jonathan Kane	Modeling and mapping fire density with geographically weighted regression in Mexico Norma Angélica Monjarás-Vega
1:50 PM	Tripped by the simplest thing: how the way we talk can divide or unite Anne Black	Capturing prescribed fire behavior with fire-atmosphere models Rodman Linn	A novel niche: the invasive annual grass <i>Ventenata dubia</i> and relationships to wildfire, environment, and community factors in the Inland Northwest Claire Tortorelli	Using Climate Landscape Response (CLaRe) metrics to inform fire risk in semiarid forests Cynthia S. A. Wallace
2:10 PM	Approaches to cross-boundary wildfire risk governance Maureen Essen	Myths to mechanisms: how co-production can move fire management from folktales to fact based Joseph J. O'Brien	Landscape position amplifies effects of novel short-interval stand-replacing fires on postfire tree establishment in subalpine conifer forests Tyler Hoecker	A regional perspective on land use, climate, and recent wildfire trends in the Madrean Sky Islands of United States and Mexico Miguel Villarreal
2:30 PM	Getting on the same page: wildfire risk assessment on multi-ownership, multi-priority landscapes Jessica R. Haas	The Prescribed Fire Science Consortium: a model for coproduction J. Kevin Hiers	Beyond time since fire: spatial measures of fire regime drive mammal distributions in a fire-prone ecosystem Katharine Senior	LANDFIRE Remap: vegetation mapping methods and products Daryn Dockter
2:50 PM	Discussion	Discussion	Can fire affect carbon exchange at the ecosystem level (NEE) in a tropical savanna? Juliana Teixeira	LANDFIRE Remap: Landsat image processing improvements and innovations Brian Tolk
3:10 PM	Break			

	Salon D	Salon E	Salon F	Salon G	Salon H
	Wildland–Urban Interface	Historical and Contemporary Pyrodiversity in Fire-Prone Forest Ecosystems: Relevance to Future Climate and Wildfire Adaptation	Adaptive Management	Fire Regimes 3	Effectiveness of Fire and Fuel Treatments to Promote Resilience to Drought
	Moderator: Heath Starns	Special Session Organizer: Keala Hagmann	Moderator: Charlotte Reemts	Moderator: Matthew Vaughan	Special Session Organizers: Jeffrey Kane and Sharon Hood
3:40 PM	Patterns of home loss, land use, urban penetration in wildfire disasters: is it time to rethink the definition of the wildland–urban interface? Michael Caggiano	Contemporary wildfire effects on structural variation and landscape diversity in the Pacific Northwest: uncertainties and trade-offs for restoring resistance and resilience Matthew Reilly	Volunteer fire departments in times of change Daniel M. Leavell	Controls on severity of large wildfires in California Qingqing Xu	Stand- and tree-level effects of thinning and prescribed burning on tree growth responses to extreme drought in a Sierra Nevada mixed-conifer forest, California, USA Harold S. J. Zald
4 PM	Does plant flammability vary according to terpene content throughout the year? Anne Ganteaume	Does drought increase tree mortality independent of fire intensity? C. Alina Cansler	With increasing abundance of nonnative graminoids along a resource and disturbance gradient, native species diversity declines in a semidesert grassland in southern Arizona, USA Emily Yurcich	Spatial variability of historical fires across a red pine–oak landscape, Pennsylvania, USA Joseph M. Marschall	Forest density-reduction treatments, stand structural characteristics, and climate mediate drought-induced tree mortality in forests of the Sierra Nevada, USA Becky Estes
4:20 PM	A spatial analysis of factors influencing structure loss and survival resulting from the 2018 Camp Fire in Paradise, California Austin Troy	Clarifying the short-versus long-term impact of climate change on fire Sean Parks	Adaptive management in action: evaluating fuel treatment effectiveness with field-based monitoring and fire modeling Kat Morici	Risks to obligate seeder forests under climate change and future fire regimes Sarah McColl-Gausden	Thinning and prescribed fire enhance carbon fixation and growth under climatic stress Sharon M. Hood
4:40 PM	Housing-unit exposure to wildfire in the South Coast of California Joe H. Scott	Summary and Panel Discussion		Fire regimes of ponderosa pine ecosystems in Colorado: a systematic review and meta-analysis Shawn T. McKinney	Panel Discussion
5 PM	A holistic framework to sustainably manage the wildland–urban interface Christopher A. Dicus	Summary and Panel Discussion		Contrasting fire regimes within a semi-arid landscape in southwest Australia Eddie Van Etten	Panel Discussion
7:30 PM	Evening Activities: <i>The Beauty of Blackened Spaces</i> with Filmmaker Rick Anderson, Kiva Ballroom				

Thursday, 21 November

3:40 to 5:20 PM, Concurrent Sessions

	Salon I	Salon J	Salon K	Salon L
	The Many Dimensions of Transboundary Wildfire	The Burning Fire within: Local Prescribed Fire Initiatives for Landscape-Level Change	Ecology 5	Landscape-Level Fire Management 4
	Special Session Organizers: Kit O'Connor and Christopher J. Dunn	Special Session Organizer: Ryan Wilbur	Moderator: Emily M. Booth	Moderator: Alison York
3:40 PM	Predicting fire line effectiveness with machine learning Dennis W. Hallema	Embers at the community campfire: participant aspirations and motivations towards forming the Wyoming Prescribed Fire Council Ryan Wilbur	Post-fire tree establishment in tropical montane mixed-conifer forests in central Mexico Jesús Eduardo Sáenz-Ceja	Sustainable fire management and carbon sequestration in Kafue National Park, Zambia, through collaborative fire management exchanges: a case study McRee Anderson
4 PM	Community wildfire exposure from national forests of the western US: archetypes of cross-boundary wildfire risk Max Nielsen-Pincus	Heuristics and fire: decision-making processes and prescribed fire implementation in the Southern Great Plains J. Kelly Hoffman	Dozer line post-fire plant community recovery Hannah Weinberger	50 years of fire-moderated vegetation change: long-term monitoring of prescribed fire in the Sierra Nevada, Kings Canyon National Park Anthony C. Caprio
4:20 PM	Integrating forest management for greater fire suppression effectiveness and better ecological outcomes: Rogue Basin, Oregon Kerry Metlen	Establishing acceptance and utilization of prescribed fire in Texas Morgan Treadwell	Site and climate influences on annual height growth of natural ponderosa pine regeneration following three wildfires Darcy H. Hammond	Land tenure and wildfire in the Pacific Northwest Ana Barros
4:40 PM	Thinking outside the ownership box: pyrome-scale strategic wildfire risk planning Kit O'Connor	Goals for and barriers to the use of prescribed fire by private landowners in California Susie Kocher	Rethinking fire-adapted species in an altered fire regime Carmen Tubbesing	
5 PM	Policy processes for improving strategic fire risk management on federal forestlands Courtney Schultz and Michelle Ferguson	Discussion	Modelling post-fire tree mortality: can Random Forest improve discrimination of imbalanced data? Tim M. Shearman	
7:30 PM	Evening Activities: <i>The Beauty of Blackened Spaces</i> with Filmmaker Rick Anderson, Kiva Ballroom			