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RMRS-P-29: Fire, fuel treatments, and ecological restoration: Conference proceedings; 2002 16-18 April; Fort Collins, CO

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Omi, Philip N.; Joyce, Linda A., technical editors. 2003. **Fire, fuel treatments, and ecological restoration: Conference proceedings; 2002 16-18 April; Fort Collins, CO.** Proceedings RMRS-P-29. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 475 p.

Recent fires have spawned intense interest in fuel treatment and ecological restoration activities. Scientists and land managers have been advocating these activities for years, and the recent fires have provided incentives for federal, state, and local entities to move ahead with ambitious hazard reduction and restoration projects. Recent fires also have increased public awareness about the risks and hazards of living in wild areas. The scientific basis for ecological restoration and fuel treatment activities is growing, but remains largely unsubstantiated, with isolated exceptions. Over 300 participants from all over the United States convened in Ft. Collins, Colorado, to learn from 90 oral and poster presentations.

Keywords: fire, fuel treatment, ecological restoration, hazard reduction, restoration projects

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Foreword: Conference on Fire, Fuel Treatments, and Ecological Restoration: Proper Place, Appropriate Time
(Approx. 95 K)
Philip N. Omi and Linda A. Joyce, Conference Co-Coordinators

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Fuel Treatment Performance and Fire Hazard Reduction

Fuel Treatments: Opening Remarks
(Approx. 75 K)
Wayne D. Shepperd, Research Forester, Rocky Mountain Research Station; and Sarah Gallup, Fuels/Fire Planner, Arapaho-Roosevelt National Forest

Performance of Fuel Treatments Subjected to Wildfires
(Approx. 475 K)
Erik J. Martinson and Philip N. Omi, Western Forest Fire Research Center, Department of Forest Sciences, Colorado State University

Prescribed Burning and Wildfire Risk in the 1998 Fire Season in Florida
(Approx. 160 K)
John M. Pye, Jeffrey P. Prestemon, David T. Butry, and Karen Lee Abt, Southern Research Station, USDA Forest Service

Fire Hazard and Silvicultural Systems: 25 Years of Experience From the Sierra Nevada
(Approx. 25 K)
Scott Stephens and Jason Moghaddas, Division of Forest Science, Department of Environmental Science, Policy, and Management, University of California

Canopy Fuel Treatment Standards for the Wildland-Urban Interface
(Approx. 110 K)
Joe H. Scott, Systems for Environmental Management

Reducing Crown Fire Hazard in Fire-Adapted Forests of New Mexico
(Approx. 800 K)
Carl E. Fiedler, School of Forestry, University of Montana; and Charles E. Keegan, Bureau of Business and Economic Research, University of Montana

Definition of a Fire Behavior Model Evaluation Protocol: A Case Study Application to Crown Fire Behavior Models
(Approx. 110 K)
Miguel G. Cruz, Associação para o Desenvolvimento da Aerodinâmica Industrial and School of Forestry, University of Montana; Martin E. Alexander, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta, Canada; and Ronald H. Wakimoto, School of Forestry, University of Montana

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In Situ Soil Temperature and Heat Flux Measurements During Controlled Surface Burns at a Southern Colorado Forest Site
(Approx. 1.5 MB)
W.J. Massman, J.M. Frank, and W.D. Shepperd, USDA Forest Service, Rocky Mountain Research Station; and M.J. Platten, USDA Forest Service, Manitou Experimental Forest

Restoration Case Studies and Ecosystem Effects

Ecological Restoration Thinning of Ponderosa Pine Ecosystems: Alternative Treatment Outcomes Vary Widely
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W. Wallace Covington, Ecological Restoration Institute, Northern Arizona University

Aspen Response to Prescribed Fire, Mechanical Treatments, and Ungulate Herbivory
(Approx. 110 K)
Steve Kilpatrick and Dean Clause, Wyoming Game & Fish Department; and Dave Scott, USDA Forest Service, Bridger-Teton National Forest

Experimental Thinning and Burning of Ponderosa Pine Forests in Southwestern Colorado: Effects on Canopy Structure, Understory Composition, and Fuels
(Approx. 25 K)
W.H. Romme, Department of Forest Sciences, Colorado State University; M.L. Floyd-Hanna and D.D. Hanna, Environmental Studies Program, Prescott College; and Phil Kemp, USDA Forest Service, San Juan National Forest

Effects of Fire Interval Restoration on Carbon and Nitrogen in Sedimentary- and Volcanic-Derived Soils of the Mogollon Rim, Arizona
(Approx. 85 K)

Daniel G. Neary and Steven T. Overby, USDA Forest Service, Rocky Mountain Research Station; and Sally M. Haase, USDA Forest Service, Pacific Southwest Research Station

Mt. Trumbull Ponderosa Pine Ecosystem Restoration Project
(Approx. 175 K)
Ken Moore, Bob Davis, and Timothy Duck, Parashant National Monument

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Wildlife Responses to Alternative Fire Management Treatments: The National Fire/Fire Surrogate Study Approach
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Steve Zack and Kerry Farris, Wildlife Conservation Society

Comparing Two Methods of Identifying Ecological Restoration Opportunities
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Jimmie D. Chew, USDA Forest Service, Rocky Mountain Research Station

The Post-Burning Response of Bark Beetles to Prescribed Burning Treatments
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David J. Ganz and Donald L. Dahlsten, Department of Environmental Science, Policy and Management, University of California; and Patrick J. Shea, USDA Forest Service, Pacific Southwest Research Station

Root Pathogens and Fire: Silvicultural Interactions in "Exotic" Ecosystems
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Social Sciences and the Economics of Moderation in Fuels Treatment
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Douglas B. Rideout, Forest Economics, Colorado State University

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Dennis L. Lynch and Kurt Mackes, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University

The Effects of Fire on Hiking Demand: A Travel Cost Study of Colorado and Montana
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Hayley Hesseln, School of Forestry, University of Montana; John B. Loomis, Department of Agricultural and Resource Economics, Colorado State University; and Armando González-Cabán, USDA Forest Service, Forest Fire Lab, Pacific Southwest Research Station

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Linking GIS and Recreation Demand Models to Estimate the Economic Value of Using Fire to Improve Deer Habitat
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John Loomis, Department of Agricultural and Resource Economics, Colorado State University; Armando González-Cabán, Forest Fire Lab, USDA Forest Service, Pacific Southwest Station; and Dana Griffin and Ellen Wu, Department of Agricultural and Resource Economics, Colorado State University

Co-Firing Wood Biomass With Coal at the Cañon City Power Plant
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Daniel Prokupets, Colorado State Forest Service; and Kurt Mackes and Skip Smith, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University

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Antony S. Cheng, Department of Forest Sciences, Colorado State University

People and Fire in Western Colorado: Methods of Engaging Stakeholders
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Sam Burns, Office of Community Services, Fort Lewis College; Chuck Sperry, The Rocky Mountain Center for Economic Democracy; and Ron Hodgson, Fire & Aviation Management, Bureau of Land Management

From Analysis Paralysis to Agency-Community Collaboration in Fuels Reduction for Fire Restoration: A Success Story
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Timothy Ingalsbee, Western Fire Ecology Center, American Lands Alliance

Hazardous Fuel Reduction in the Blue Mountains: Public Attitudes and Opinions

(Approx. 100 K)
Eric Toman , Department of Forest Resources, Oregon State University; and Bruce Shindler, Department of Forest Resources, Oregon State University

Fire, Fuel, and Restoration Priorities of the Forest Conservation Community
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Gregory H. Aplet, The Wilderness Society

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Key Issues in Fire Regime Research for Fuels Management and Ecological Restoration
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Thomas T. Veblen, Department of Geography, University of Colorado

Lessons From the Fires of 2000: Post-Fire Heterogeneity in Ponderosa Pine Forests
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Natasha B. Kotliar and Sandra L. Haire, US Geological Survey, Fort Collins Science Center; and Carl H. Key, US Geological Survey, USGS - Glacier Field Station Science Center, Glacier National Park

Mapping the Cheatgrass-Caused Departure From Historical Natural Fire Regimes in the Great Basin, USA
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James P. Menakis, Fire Effects Unit, Fire Science Laboratory, USDA Forest Service, Rocky Mountain Research Station; Dianne Osborne, National Science and Technology Center, Bureau of Land Management; and Melanie Miller, Bureau of Land Management

Determining the Spatial Extent of Historical Fires With Geostatistics in Northern Lower Michigan
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Ann L. Maclean, School of Forest Resources and Environmental Sciences, Michigan Technological University; and David T. Cleland, USDA Forest Service, North Central Research Station

Scaling Rules and Probability Models for Surface Fire Regimes in Ponderosa Pine Forests
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Donald A. Falk and Thomas W. Swetnam, Laboratory of Tree Ring Research, University of Arizona

Uncertainty in Fire History and Restoration of Ponderosa Pine Forests in the Western United States
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William L. Baker and Donna S. Ehle, Department of Geography and Recreation, University of Wyoming

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William H. Romme, Department of Forest Sciences, Colorado State University; and Lisa Floyd-Hanna and David D. Hanna, Prescott College

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Scheduling Removals for Fuels Management
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Wildland Fire Use: A Wilderness Perspective on Fuel Management
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Modeling the Effects of Fuel Treatments for the Southern Utah Fuel Management Demonstration Project
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Closing Comments: Fire, Fuel Treatments, and Ecological Restoration-Proper Place, Appropriate Time
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G. Thomas Zimmerman, National Park Service, National Interagency Fire Center

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