CONTENTS

ROCKY MOUNTAIN RESEARCH STATION ..................................................... 2

NEW SERIES PUBLICATIONS
RMRS-GTR-431: Pivoting during the pandemic: How COVID-19 and the
2020 wildland fire year created a novel learning opportunity for
USDA Forest Service wildland fire management .............................. 3
RMRS-GTR-435: Climate change research strategy–Rocky Mountain
Research Station .............................................................................. 4
RMRS-P-80: Foundational concepts in silviculture with emphasis on
reforestation and early stand improvement - 2022 National
Silviculture Workshop ....................................................................... 5
RMRS-RN-94: Living with wildfire in Grand County, Colorado:
2021 data report .............................................................................. 6
RMRS-RN-95: SRRT: A decision support tool to inform postfire
reforestation of ponderosa pine and Douglas-fir in the southern
Rocky Mountains ........................................................................... 7

JOURNALS AND OTHER PUBLICATIONS ............................................. 8
Fire, Fuel and Smoke ........................................................................ 8
Forest and Woodland Ecosystems ....................................................... 9
Human Dimensions ........................................................................... 11
Maintaining Resilient Dryland Ecosystems ....................................... 12
RMRS-FIA (Forest Inventory and Analysis) ........................................ 14
Water and Watersheds .................................................................... 15
Wilderness (Aldo Leopold Wilderness Research Institute) ............... 15
Wildlife and Terrestrial Ecosystems .................................................... 16

PUBLICATION ORDERS AND CONTACT INFORMATION .................. 17
The Rocky Mountain Research Station is one of seven regional units that make up the U.S. Forest Service Research and Development organization.

We maintain 14 research locations throughout a 12-State territory encompassing the Great Basin, Southwest, Rocky Mountains, and parts of the Great Plains. The station employs more than 400 permanent full-time employees, including about 100 research scientists.

Scientists conduct research that spans an area containing 52 percent of the nation’s National Forest System lands (54 national forests and grasslands). In the lower 48 States, our territory also includes 55 percent of the nation’s Bureau of Land Management lands; 48 percent of the designated wildernesses; 37 percent of National Park Service lands; numerous other public and tribal lands; and 41 percent of the non-urban/rural private lands.

We administer and conduct ecological research on 14 experimental forests, ranges, and watersheds over the long term, even centuries, enabling us to learn how forests change as climate and other factors change over time.

We also oversee activities on several hundred research natural areas, a network of ecosystems set aside to conserve biological diversity. These areas represent a wide variety of habitats and ecosystems from alpine ecosystems to lowlands and from coniferous forests of the Northern Rockies to semiarid deserts of the Southwest and prairie ecosystems of the Great Plains.

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The USDA Forest Service anticipated that COVID-19 outbreaks among fire management personnel would potentially impact the agency’s ability to maintain the readiness of the wildland fire system and to respond to large complex wildfires across the country. In response, the agency implemented emergency action plans across the United States in March 2020 to reduce spread of COVID-19. When pandemic conditions were first emerging and information about how to mitigate risk of the virus was highly uncertain, fire personnel were learning to adapt their everyday work practices and to navigate an overwhelming amount of conflicting information regarding virus mitigation, transmission, and spread. Forest Service field personnel provided hundreds of everyday lessons learned and corresponding suggested tactics across the 194 focus groups administered during this project. To organize the large amount of data and facilitate future application of on-the-ground lessons, we situate each lesson within one of three overarching categories: communication, organizational culture, and organizational learning. We anticipate that decision uncertainty arising from the pandemic such as tensions between policies and procedures, decision space, and personal life will have wide and lasting impacts for wildland firefighters at all levels.

Keywords: fire management; pandemic; uncertainty; risk; organizational learning; organizational culture; communication; focus groups

Online: https://www.fs.usda.gov/research/treesearch/65311

This report presents the strategic direction for research at the Rocky Mountain Research Station to address climate change challenges in the context of resilience, disturbance, and recovery. It describes how current and future RMRS research programs could be enhanced and applied to address emerging challenges.

**Keywords:** carbon sequestration; climate change; Interior West; land and resource management; resilience

**Online:** https://www.fs.usda.gov/research/treesearch/64687

Beginning in 1973, the National Silviculture Workshop (NSW) purposely brought together USDA Forest Service scientists from Research and Development and forest managers from the National Forest System to meet face-to-face to build a science and management partnership in silviculture. Recently, scientists from universities and other partners have joined this annual gathering. The 2022 NSW theme is “Foundational Concepts in Silviculture: Emphasis on Reforestation and Early Stand Improvement.” In 2022, the workshop is scheduled to take place in Kellogg, Idaho and is being jointly hosted by the National Forest System (NFS) and Research and Development (R&D) and sponsored by the Forest Management, Rangeland Management and Vegetation Ecology (NFS) and Sustainable Forest Management Research (R&D) staff areas. In addition, regional hosts will be the Forest Service Northern Region and the Rocky Mountain Research Station. Unique to this workshop was the occurrence of COVID-19, which resulted in the postponement of the workshop scheduled for 2021 when the workshop participants could meet in person. The intent of the workshop is to provide face-to-face interactions among the attendees to build a community of scientists and managers in the field of silviculture to better manage our national forests. Critical to this effort are field tours where scientists and managers can see firsthand how treatments have been implemented and share different perspectives where everyone can be heard. Each paper in this proceedings follows a designed template that includes an overview, summary, silvicultural concepts, and management applications, or in some cases, highlighted management opportunities.

**Keywords:** silviculture; stand improvement; artificial and natural regeneration; forest thinning; forest management; restoration; stand tending reforestation

**Online:** https://www.fs.usda.gov/research/treesearch/64530  
*Also includes links to individual papers.*

Wildfire affects hundreds of wildland-urban interface communities each year, and yet most communities lack data reflecting the conditions before an event. This study was conducted before the devastating 2020 East Troublesome Fire, which spread across 193,812 acres and resulted in two lives lost and 366 homes and 214 other structures burned. The fire’s dramatic run threatened over 7,000 structures and led to a mandatory evacuation of over 35,000 people in Grand and Larimer Counties. The data reported here serve as baseline data to aid in understanding the parcel and social conditions before the fire. This report presents results from WiRē Rapid Wildfire Risk Assessment (WiRē RA) data, collected from 1,162 private residential properties in six communities in five fire protection districts (FPDs), the majority (72%) of which were characterized as high, very high, or extreme risk.

This report also presents results from household surveys sent to homeowners in the study area. Household survey respondents underestimated their risk compared to the conditions observed through the professional risk assessment. Respondents consistently overestimated the amount of defensible space and the distance from their homes to nonvegetative combustibles. Respondents also overestimated the availability of driveway clearance that would enable access for response vehicles and for safe passing of residents evacuating and responders arriving to their homes.

**Keywords:** WiRē (Wildfire Research Center); partner; risk assessment; survey data; wildland-urban interface; social science; mitigation; wildfire risk; community; homeowner

**Online:** [https://www.fs.usda.gov/research/treesearch/64675](https://www.fs.usda.gov/research/treesearch/64675)

Recent increases in area burned, combined with poor natural regeneration in some areas, have promoted concerns about widespread forest losses throughout the western U.S. Postfire reforestation is one strategy commonly employed by land managers and land owners to facilitate forest recovery, but the area in need of planting only becomes larger each year. The Southern Rockies Reforestation Tool (SRRT) is a simple web-mapping tool that was developed to help prioritize sites for postfire reforestation. This tool can be used to develop maps of fire severity and seedling suitability for ponderosa pine (*Pinus ponderosa*) and Douglas-fir (*Pseudotsuga menziesii*), two abundant conifer species in the Southern Rocky Mountains. The seedling suitability map identifies areas that (1) are distant from live seed sources, but (2) have high topoclimatic suitability for the species of interest. In combination, these factors may help to locate sites where natural regeneration is unlikely to occur quickly, but relatively cool and wet conditions may enhance planting success. Finally, these maps can be restricted based on operational constraints such as slope angle or distance to road, and exported for use in external GIS software.

**Keywords:** climate adaptation; climate suitability; decision support tool; fire severity; post-fire reforestation; USFS Region 2; USFS Region 3; wildfire

**Online:** [https://www.fs.usda.gov/research/treesearch/64517](https://www.fs.usda.gov/research/treesearch/64517)
Journals and Other Publications

External publications written by RMRS scientists, available on Treesearch and grouped by Science Program Areas. For more information on our Science Program Areas, please visit our web site: www.fs.usda.gov/rmrs/science-program-areas/.

Fire, Fuel and Smoke


Forest and Woodland Ecosystems


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**Wilderness (Aldo Leopold Wilderness Research Institute)**


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Wildlife and Terrestrial Ecosystems

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