

Connecting ecological science and management in forests for scientists, managers and pocket scientists

www.nrfirescience.org/resource/16725

The structures, patterns, and processes of the forests of the world develop from ecological interactions among hugely diverse types of organisms interacting with environmental factors at specific places and times on the Earth's surface. The science of ecology helps us develop frameworks for understanding these structures, patterns...

Author(s): Dan Brinkley, Mark A. Adams, Todd Fredericksen, Jean Paul Laclau, Harri Mäkinen, Cindy E. Prescott

Year Published: 2018

Type: Document

Book or Chapter or Journal Article

Communicator's Guide for Wildland Fire Management: fire education, prevention, and mitigation practices (online version)

www.nrfirescience.org/resource/16196

Communicator's Guide for Wildland Fire Management introduces ways of communicating about wildland fire issues so we have a basic framework to reach mutual objectives of protecting people and natural resources. This Communicator's Guide is designed to help you address the key elements of effective communication: who says what to whom...

Year Published: 2017

Type: Document

Management or Planning Document

Where you stand depends on where you sit: Qualitative inquiry into notions of fire adaptation

www.nrfirescience.org/resource/16190

Wildfire and the threat it poses to society represents an example of the complex, dynamic relationship between social and ecological systems. Increasingly, wildfire adaptation is posited as a pathway to shift the approach to fire from a suppression paradigm that seeks to control fire to a paradigm that focuses on "living with"...

Author(s): Hannah Brenkert-Smith, James R. Meldrum, Patricia A. Champ, Christopher M. Barth

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Is the whole greater than the sum of its parts? Homeowner wildfire risk mitigation, community heterogeneity, and fire adaptedness - Final Report to the Joint Fire Science Program

www.nrfirescience.org/resource/17000

In this project we posed the question "Is the whole greater than the sum of its parts?" We focused on homeowner wildfire risk mitigation, community heterogeneity, and fire adaptedness. One of the unique aspects of this project was that the team was a research and practice collaboration. This collaboration facilitated...

Author(s): Patricia A. Champ, Hannah Brenkert-Smith, James R. Meldrum, Christopher M. Barth, Travis Warziniack

Year Published: 2017

Type: Document

Technical Report or White Paper

Learn from the burn: The High Park Fire 5 years later

www.nrfirescience.org/resource/16520

It has been 5 years since the High Park Fire burned over 85,000 acres in Northern Colorado, causing

extensive property damage, loss of life, and severe impacts to the water quality of the Poudre River. In the fall of 2016, a conference was organized by the USFS Rocky Mountain Research Station and the Coalition for the Poudre River...

Author(s): Charles C. Rhoades, Peter R. Robichaud, Sandra E. Ryan, Jen Kovecses, Carl Chambers, Sara Rathburn, Jared Heath, Stephanie Kampf, Codie Wilson, Dan Brogan, Brad Piehl, Mary Ellen Miller, John Giordanengo, Erin Berryman, Monique E. Rocca

Year Published: 2017

Type: Document

Research Brief or Fact Sheet

Should I stay or should I go now? Or should I wait and see? Influences on wildfire evacuation decisions

www.nrfirescience.org/resource/16390

As climate change has contributed to longer fire seasons and populations living in fire-prone ecosystems increase, wildfires have begun to affect a growing number of people. As a result, interest in understanding the wildfire evacuation decision process has increased. Of particular interest is understanding why some people leave...

Author(s): Sarah M. McCaffrey, Robyn S. Wilson, Avishek Konar

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Policy scenarios for fire-adapted communities: understanding stakeholder risk-perceptions with Fuzzy Cognitive Maps

www.nrfirescience.org/resource/15209

Collaborative groups are most effective when the varied stakeholder groups within them understand the risks of wildfire and take proactive steps to manage these risks. Implementing policies for fire risk mitigation and adaptation, however, remains difficult because risks and policy alternatives are not understood or supported...

Author(s): Antonie Jetter, Steven A. Gray, Lisa M. Ellsworth

Year Published: 2017

Type: Document

Technical Report or White Paper

Montana Climate Assessment: collaboration in Seeley Lake marks the way of the future for public forests

www.nrfirescience.org/resource/15726

This is an article about climate change and political climate for logging in Seeley Lake, Montana.

Year Published: 2017

Type: Document

Research Brief or Fact Sheet

Ecological effects of fire

www.nrfirescience.org/resource/16500

Fire is an enormously influential disturbance over large areas of land in the modern world. Vegetation burns because the Earth's atmosphere contains sufficient oxygen (415%) to support combustion (Pyne, 2001). Oxygen started to accumulate in the atmosphere about 2 billion years ago and, since the appearance of plants in the...

Author(s): William J. Bond, Robert E. Keane

Year Published: 2017

Type: Document

Recreating forests of the past isn't enough to fix our wildfire problems

www.nrfirescience.org/resource/16310

There is general agreement that America's landscapes, certainly its wildlands, are out of whack with their fires. Wildfires are bigger, hotter, more savage and more expensive than in the past. There is wide agreement, too, that America's deeper fire problem is not that malignant megafires are crashing into our communities....

Author(s): Stephen Pyne

Year Published: 2016

Type: Document

Research Brief or Fact Sheet

Understanding the effect of large wildfires on residents' well-being: what factors influence wildfire impact?

www.nrfirescience.org/resource/13937

Existing social science has indicated that wildfires can affect the short- and long-term functioning of social systems. Less work has focused on how wildfire events affect the physical and psychological well-being of individual residents impacted by such events. In this study, we explore the extent to which personal- or community-...

Author(s): Travis B. Paveglio, Chad Kooistra, Troy E. Hall, Michael Pickering

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

Smoke management photographic guide: a visual aid for communicating impacts

www.nrfirescience.org/resource/14538

Communicating emissions impacts to the public can sometimes be difficult because quantitatively conveying smoke concentrations is complicated. Regulators and land managers often refer to particulate-matter concentrations in micrograms per cubic meter, but this may not be intuitive or meaningful to everyone. The primary purpose of...

Author(s): Joshua C. Hyde, Jarod Blades, Troy E. Hall, Roger D. Ottmar, Alistair M. S. Smith

Year Published: 2016

Type: Document

Technical Report or White Paper

Communication under fire: communication efficacy during wildfire incidents

www.nrfirescience.org/resource/14170

In this study, researchers analyzed the influence of pre-incident familiarity, stakeholder affiliation, and primary wildfire response/functional role on communication frequency and efficacy during three western U.S. wildfires ignited on U.S. Forest Service land. All fires occurred in wildland/urban interface areas, and involved a...

Author(s): Northwest Fire Science Consortium

Year Published: 2016

Type: Document

Technical Report or White Paper

ARCBURN: Linking field-based and experimental methods to quantify, predict, and manage fire effects on cultural resources - Final Report to the Joint Fire Science Program

www.nrfirescience.org/resource/17041

Cultural resources are physical features, both natural and anthropogenic, associated with human activity. These unique and non-renewable resources include sites, structures, and objects possessing significance in history, architecture, archaeology, or human development (Fowler 1982). Wildfires can alter cultural resources through...

Author(s): Rachel A. Loehman, Bret W. Butler, Jamie Civitello, Connie Constan, Jennifer Dyer, Zander Evans, Megan Friggens, Rebekah Kneifel, James J. Reardon, Madeline Scheintaub, Anastasia Steffen
Year Published: 2016

Type: Document

Technical Report or White Paper

Facilitating knowledge transfer between researchers and wildfire practitioners about trust: an international case study

www.nrfirescience.org/resource/14605

The importance of knowledge transfer between researchers, policy makers and practitioners is widely recognized. However, barriers to knowledge transfer can make it difficult for practitioners to apply the results of scientific research. This paper describes a project that addressed barriers to knowledge transfer by involving...

Author(s): Tara K. McGee, Allan Curtis, Bonita McFarlane, Bruce A. Shindler, Amy Christianson, Christine Olsen, Sarah M. McCaffrey

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

Local ecological knowledge and fire management: what does the public understand?

www.nrfirescience.org/resource/13415

As fire management agencies seek to implement more flexible fire management strategies, local understanding and support for these strategies become increasingly important. One issue associated with implementing more flexible fire management strategies is educating local populations about fire management and identifying...

Author(s): John M. Diaz, Toddi A. Steelman, Branda Nowell

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Community wildfire preparedness: a global state-of-the-knowledge summary of social science research

www.nrfirescience.org/resource/13274

This article builds on findings from a synthesis of fire social science research that was published from 2000 to 2010 to understand what has been learned more recently about public response to wildfires. Two notable changes were immediately noted in the fairly substantial number of articles published between 2011 and 2014. First,...

Author(s): Sarah M. McCaffrey

Year Published: 2015

Type: Document

Synthesis

Re-envisioning community-wildfire relations in the U.S. West as adaptive governance

www.nrfirescience.org/resource/13725

Prompted by a series of increasingly destructive, expensive, and highly visible wildfire crises in human communities across the globe, a robust body of scholarship has emerged to theorize, conceptualize, and measure community-level resilience to wildfires. To date, however, insufficient consideration has

been given to wildfire...

Author(s): Jesse Abrams, Melanie Knapp, Travis B. Paveglio, Autumn Ellison, Cassandra Moseley, Max W. Nielsen-Pincus, Matthew S. Carroll

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Forecasting integrated lightning and fuels ignition potentials in a system with real-time analysis of fire weather prediction accuracy

www.nrfirescience.org/resource/15557

Weather forecasts can help identify environmental conditions conducive to prescribed burning or to increased fire danger. These conditions are important components of fire management tools such as fire ignition potential maps, fire danger rating systems, fire behavior predictions, and smoke dispersion modeling. Fire managers use...

Author(s): Miriam L. Rorig, Stacy Drury

Year Published: 2015

Type: Document

Technical Report or White Paper

Community experiences with wildfire: actions, effectiveness, impacts, and trends

www.nrfirescience.org/resource/13068

This paper explores community experiences with and perceptions of local wildfire preparedness by summarizing results from two recent surveys. These surveys, one conducted at the county scale and one at the community scale, were completed by wildfire planning participants and community leaders in places...

Author(s): Autumn Ellison, Melanie Knapp, Jesse Abrams, Max W. Nielsen-Pincus, Travis B. Paveglio, Cassandra Moseley

Year Published: 2015

Type: Document

Technical Report or White Paper

First approximations of prescribed fire risks relative to other management techniques used on private lands

www.nrfirescience.org/resource/13593

Fire is widely recognized as a critical ecological and evolutionary driver that needs to be at the forefront of land management actions if conservation targets are to be met. However, the prevailing view is that prescribed fire is riskier than other land management techniques. Perceived risks associated with the application of fire...

Author(s): Dirac Twidwell, Carissa L. Wonkka, Michael T. Sindelar, John R. Weir

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Tribal Engagement roadmap

www.nrfirescience.org/resource/16168

The U.S. Department of Agriculture (USDA), Forest Service is recognized as a leader among Federal land management agencies in partnering collaboratively with American Indian and Alaska Native governments and indigenous communities. The Forest Service Research and Development (R&D) Deputy Area recognizes that working with tribes...

Year Published: 2015

Type: Document

Technical Report or White Paper

The ecological importance of mixed-severity fire: nature's phoenix

www.nrfirescience.org/resource/16303

If you are a curious reader with a knack for the analytical, you may be asking yourself, Why start a book about fire ecology with a mythological figure? And if you are a tried-and-true scientist, like we are, you may also be asking, Isn't it a bit risky to mix myth with science, fact with fiction, observation with mystique, nature...

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

A systematic review of the physical health impacts from non-occupational exposure to wildfire smoke

www.nrfirescience.org/resource/13262

Climate change is likely to increase the threat of wild fires, and little is known about how wild fires affect health in exposed communities. A better understanding of the impacts of the resulting air pollution has important public health implications for the present day and the future. Method: We performed a systematic search to...

Author(s): Jia C. Liu, Gavin Pereira, Sarah A. Uhl, Mercedes Bravo, Michelle L. Bell

Year Published: 2015

Type: Document

Synthesis

American Fire History, 1960-2013

www.nrfirescience.org/resource/15567

With support from the U.S. Forest Service, Department of the Interior, and Joint Fire Science Program, I have written a fire history of America from 1960 to 2013. The project will result in two books. Between Two Fires: A Fire History of Contemporary America relates the basic narrative. To the Last Smoke assembles anthologies of...

Author(s): Stephen Pyne, Heidi Neeley

Year Published: 2015

Type: Document

Technical Report or White Paper

'Put the wet stuff on the hot stuff': the legacy and drivers of conflict surrounding wildfire suppression

www.nrfirescience.org/resource/13584

Existing research demonstrates that wildfire events can lead to conflict among local residents and outside professionals involved in wildfire management or suppression. What has been missing in the wildfire literature is a more explicit understanding of the social dynamics that influence such conflict in rural or agricultural...

Author(s): Travis B. Paveglio, Matthew S. Carroll, Troy E. Hall, Hannah Brenkert-Smith

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

A study of wildfire ignition by rifle bullets

www.nrfirescience.org/resource/15780

Experiments were conducted to examine the potential for rifle bullets to ignite organic matter after

impacting a hard surface. The tests were performed using a variety of common cartridges (7.62 × 51 [.308 Winchester (The use of tradenames is provided for informational purposes only and does not constitute an endorsement by the U.S...

Author(s): Mark A. Finney, Sara S. McAllister, Trevor B. Maynard, Ian J. Grob

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Building trust, establishing credibility, and communicating fire issues with the public

www.nrfirescience.org/resource/12385

With more people than ever living in the vicinity of the wildland-urban interface, communicating wildland fire management activities and building trust with the public is paramount for safety. Although the time and resources it takes to build and maintain the public's trust may seem daunting, it may be one of the most important...

Author(s): Josh McDaniel

Year Published: 2014

Type: Document

Research Brief or Fact Sheet

Trust: a planning guide for wildfire agencies and practitioners - An international collaboration drawing on research and management experience in Australia, Canada, and the United States

www.nrfirescience.org/resource/12551

This planning guide is the outcome of an international collaboration of researchers and practitioners/field managers working in communities at risk of wildfire in three countries. Initially, the team of social scientists from Australia, Canada, and the United States utilized the collective research literature to examine factors that...

Author(s): Bruce A. Shindler, Christine Olsen, Sarah M. McCaffrey, Bonita McFarlane, Amy Christianson, Tara K. McGee, Allan Curtis, Emily Sharp

Year Published: 2014

Type: Document

Technical Report or White Paper

Smoke management of wildland and prescribed fire: understanding public preferences and trade-offs

www.nrfirescience.org/resource/13012

Smoke from forest fires is a serious and increasing land management concern. However, a paucity of information exists that is specific to public perceptions of smoke. This study used conjoint analysis, a multivariate technique, to evaluate how four situational factors (i.e., smoke origin, smoke duration, health impact, and advanced...

Author(s): Jarod Blades, Steven R. Shook, Troy E. Hall

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

Exploring how deliberation on scientific information shapes stakeholder perceptions of forest management and climate change - Final Report to the Joint Fire Science Program

www.nrfirescience.org/resource/12967

Climate change has resulted in rapid biophysical changes in forests of the western US and has prompted the need for an increased understanding of potential impacts and adaption measures. Land managers, policy makers, and community officials lack locally relevant climate change science and are urgently calling for research to inform...

Author(s): Troy E. Hall, Jarod Blades
Year Published: 2014
Type: Document
Technical Report or White Paper

The Bitterroot Valley fires of 2000 - Revisiting experiences and fire effects 13 years later

www.nrfirescience.org/resource/12673

During the Fires of 2000 field trip, held as part of the May 2014 Large Wildland Fires Conference, researchers, managers, residents, and stakeholders shared their experiences around the unprecedented number and size of fires that burned in the Bitterroot Valley in the summer of 2000. Topics discussed included fire history, fire...

Author(s): Corey L. Gucker
Year Published: 2014
Type: Document
Research Brief or Fact Sheet

One-hundred years of wildfire research: a legacy of the Priest River, Deception Creek, and Boise Basin Experimental Forests of Idaho

www.nrfirescience.org/resource/13104

The 1910 fires, which burned more than 1.3 million ha of northern Rocky Mountain forests, provided a mission and management objectives for the newly created Forest Service. By 1911, the Priest River Experimental Station (Forest- PREF) was established in northern Idaho to help meet the needs of the Forest Service. Harry T. Gisborne,...

Author(s): Russell T. Graham, Theresa B. Jain, Kathy L. Graham, Robert Denner, Colin C. Hardy
Year Published: 2014
Type: Document
Book or Chapter or Journal Article

Communicating about smoke from wildland fire: challenges and opportunities for managers

www.nrfirescience.org/resource/12982

Wildland fire and associated management efforts are dominant topics in natural resource fields. Smoke from fires can be a nuisance and pose serious health risks and aggravate pre-existing health conditions. When it results in reduced visibility near roadways, smoke can also pose hazardous driving conditions and reduce the scenic...

Author(s): Christine Olsen, Danielle K. Mazzotta, Eric Toman, A. Paige Fischer
Year Published: 2014
Type: Document
Book or Chapter or Journal Article

Perverse incentives: the case of wildfire smoke regulation

www.nrfirescience.org/resource/14235

Wildfire is on the rise. The United States is witnessing a spectacular increase in acres lost to catastrophic wildfires, a phenomenon fed by the generally hotter and dryer conditions associated with climate change. In addition to losses in lives, property, and natural resources, wildfires contribute thousands of tons of air...

Author(s): Kirsten H. Engel
Year Published: 2014
Type: Document
Book or Chapter or Journal Article

Communicating science in politicized environments

www.nrfirescience.org/resource/12605

Many members of the scientific community attempt to convey information to policymakers and the public. Much of this information is ignored or misinterpreted. This article describes why these outcomes occur and how science communicators can achieve better outcomes. The article focuses on two challenges associated with communicating...

Author(s): Arthur Lupia

Year Published: 2013

Type: Document

Book or Chapter or Journal Article, Synthesis

Yellowstone National Park and the summer of fire

www.nrfirescience.org/resource/11997

Because of their close relationships with fires, western forest ecosystems are considered fire dependent. If we hope to sustain the communities of trees, plants, and animals that characterize these wildland forests, we need to understand the natural role of fire, changes brought about by suppressing fire, and alternatives for...

Author(s): Diane M. Smith

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Assessing social vulnerability to climate change in human communities near public forests and grasslands: a framework for resource managers and planners

www.nrfirescience.org/resource/14673

Public land management agencies have incorporated the concept of vulnerability into protocols for assessing and planning for climate change impacts on public forests and grasslands. However, resource managers and planners have little guidance for how to address the social aspects of vulnerability in these assessments and plans....

Author(s): A. Paige Fischer, Travis B. Paveglio, Matthew S. Carroll, Daniel Murphy, Hannah Brenkert-Smith

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

The rising Great Plains fire campaign: citizens' response to woody plant encroachment

www.nrfirescience.org/resource/12011

Despite years of accumulating scientific evidence that fire is critical for maintaining the structure and function of grassland ecosystems in the US Great Plains, fire has not been restored as a fundamental grassland process across broad landscapes. The result has been widespread juniper encroachment and the degradation of the...

Author(s): Dirac Twidwell, William E. Rogers, Samuel D. Fuhlendorf, Carissa L. Wonkka, David M. Engle, John R. Weir, Urs P. Kreuter, Charles A. Taylor

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Public perceptions and tolerance of smoke from wildland fire - draft

www.nrfirescience.org/resource/13699

Land managers and officials need to understand the diverse public opinions toward smoke from wildland fires; however, a very limited amount of research has been conducted on this topic. Hence,

land and fire managers are largely uncertain about society's willingness to tolerate smoke in the short-term for long-term benefits, and they...

Author(s): Jarod Blades, Troy E. Hall, Sarah M. McCaffrey

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Social amplification of wildfire risk: the role of social interactions and information sources

www.nrfirescience.org/resource/14671

Wildfire is a persistent and growing threat across much of the western United States. Understanding how people living in fire-prone areas perceive this threat is essential to the design of effective risk management policies. Drawing on the social amplification of risk framework, we develop a conceptual model of wildfire risk...

Author(s): Hannah Brenkert-Smith, Katherine L. Dickinson, Patricia A. Champ, Nicholas Flores

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Social and ecological factors influencing attitudes toward the application of high-intensity prescribed burns to restore fire adapted grassland ecosystems

www.nrfirescience.org/resource/12401

Fire suppression in grassland systems that are adapted to episodic fire has contributed to the recruitment of woody species in grasslands worldwide. Even though the ecology of restoring these fire prone systems back to grassland states is becoming clearer, a major hurdle to the reintroduction of historic fires at a landscape scale...

Author(s): David Toledo, Michael G. Sorice, Urs P. Kreuter

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Public perceptions of smoke from wildfire, prescribed fire, and fire use

www.nrfirescience.org/resource/13483

Managers and policy-makers across broad disciplines and organizations are calling for a better understanding of public opinion on natural resource issues. One such issue is that of fire and its role in the management of our forests and rangelands. Public perceptions of fuel reduction techniques, with a particular emphasis on using...

Author(s): Stacey S. Frederick

Year Published: 2013

Type: Document

Dissertation or Thesis

Bridging natural resource communication boundaries: public perceptions of smoke from wildland fires and forest managers' perspectives of climate change science

www.nrfirescience.org/resource/13479

Land managers of the northern Rocky Mountains and south-central U.S. are challenged with numerous social and ecological changes, many of which are linked to climate change. The work presented here focuses on two important research gaps: 1) managers do not understand public opinions toward smoke from prescribed fires (a necessary...

Author(s): Jarod Blades

Year Published: 2013

Type: Document

Trial by fire: Community Wildfire Protection Plans put to the test

www.nrfirescience.org/resource/12430

Research has found that community wildfire protection planning can make significant contributions to wildfire mitigation and preparedness, but can the planning process and resulting Community Wildfire Protection Plans make a difference to wildfire response and recovery? In case studies conducted in four USA communities with...

Author(s): Pamela J. Jakes, Victoria Sturtevant

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Wildfire smoke and health impacts: a closer look at fire attributes and their marginal effects

www.nrfirescience.org/resource/12143

Existing studies on the economic impact of wildfire smoke have focused on single fire events or entire seasons without considering the marginal effect of daily fire progression on downwind communities. In addition, neither approach allows for an examination of the impact of even the most basic fire attributes, such as distance and...

Author(s): K. Moeltner, Man-Kuen Kim, E. Zhu, W. Yang

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

FIRE Up: youth working with communities to adapt to wildfire

www.nrfirescience.org/resource/12008

Around the world, youth are recognized as playing an important role in reducing the risk of disasters and promoting community resilience. Youth are participating in disaster education programs and carrying home what they learn; their families, in turn, are disseminating knowledge into the community. Youth are also collecting data...

Author(s): Victoria Sturtevant, Gwyneth Myer

Year Published: 2013

Type: Document

Research Brief or Fact Sheet

Living in a tinderbox: wildfire risk perceptions and mitigating behaviours

www.nrfirescience.org/resource/14672

The loss of homes to wildfires is an important issue in the USA and other countries. Yet many homeowners living in fire-prone areas do not undertake mitigating actions, such as clearing vegetation, to decrease the risk of losing their home. To better understand the complexity of wildfire risk-mitigation decisions and the role of...

Author(s): Patricia A. Champ, Geoffrey H. Donovan, Christopher M. Barth

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

American voters' views on wildfires

www.nrfirescience.org/resource/12435

Just under half (44%) of U.S. voters say 'uncontrollable wildfires that destroy property and forests' is a serious problem, facing the nation - with one-in-four calling it an 'extremely' or 'very' serious problem.

This is the highest proportion to register this view since 2007.

Author(s): National Forest Foundation

Year Published: 2013

Type: Document

Research Brief or Fact Sheet

Wildfire risk and optimal investments in watershed protection

www.nrfirescience.org/resource/16172

Following what was then one of the most destructive fire years on record, President Bush signed into law the Healthy Forests Restoration Act of 2003. The law requires no less than fifty percent of all funds allocated for hazardous fuels reductions to occur in the wildland-urban interface (WUI), with the aim of enhancing the...

Author(s): Travis Warziniack, Matthew P. Thompson

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

The merits of prescribed fire outweigh potential carbon emission effects

www.nrfirescience.org/resource/12426

While North American ecosystems vary widely in their ecology and natural historical fire regimes, they are unified in benefitting from prescribed fire when judiciously applied with the goal of maintaining and restoring native ecosystem composition, structure, and function. On a modern landscape in which historical fire regimes...

Author(s): Association for Fire Ecology, International Association of Wildland Fire, Tall Timbers

Research Station, The Nature Conservancy

Year Published: 2013

Type: Document

Technical Report or White Paper

Developing standardized strategic response categories for fire management units

www.nrfirescience.org/resource/16165

We undertook an exploration of these data (FMUs) to better understand how fire management objectives and corresponding planned incident responses vary across landscapes and ownerships. By capturing common themes across FMUs, we were able to establish a broad set of four standard response categories for purposes of classification. In...

Author(s): Matthew P. Thompson, Crystal S. Stonesifer, Robert C. Seli, Marlena Hovorka

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Combustion efficiency and emission factors for wildfire-season fires in mixed conifer forests of the northern Rocky Mountains, US

www.nrfirescience.org/resource/13481

In the US, wildfires and prescribed burning present significant challenges to air regulatory agencies attempting to achieve and maintain compliance with air quality regulations. Fire emission factors (EF) are essential input for the emission models used to develop wildland fire emission inventories. Most previous studies quantifying...

Author(s): Shawn P. Urbanski

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

A case for developing place-based fire management strategies from traditional ecological knowledge

www.nrfirescience.org/resource/16101

Sustainability science promotes place-based resource management because natural processes vary among ecosystems. When local science is limited, land managers may be forced to generalize from other ecosystems that function differently. One proposed solution is to draw upon the traditional ecological knowledge that indigenous groups...

Author(s): Lily A. Ray, Crystal A. Kolden, F. Stuart Chapin

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

Wildfire triage: targeting mitigation based on social, economic, and ecological values

www.nrfirescience.org/resource/16178

Evaluating the risks of wildfire relative to the valuable resources found in any managed landscape requires an interdisciplinary approach. Researchers at the Rocky Mountain Research Station and Western Wildland Threat Assessment Center developed such a process, using a combination of techniques rooted in fire modeling and ecology,...

Author(s): Karl Malcolm, Matthew P. Thompson, David E. Calkin, Mark A. Finney, Alan A. Ager

Year Published: 2012

Type: Document

Research Brief or Fact Sheet

The role of experimental forests in science and management

www.nrfirescience.org/resource/12913

Happy 100 years to the Priest River Experimental Forest (PREF)! PREF, which is managed by the Research and Development Branch of the USDA Forest Service, celebrated its centennial in September 2011. It was established in northern Idaho to provide useful information that would improve forest management in the western part of District...

Author(s): Theresa B. Jain

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

The Missoula Fire Sciences Laboratory: a 50-year dedication to understanding wildlands and fire

www.nrfirescience.org/resource/16347

In 1960, the USDA Forest Service established the Northern Forest Fire Laboratory (now the Missoula Fire Sciences Laboratory) to find scientific solutions for better managing the nation's wildland resources and to research ways to improve forest fire prevention and suppression. This new state-of-the-art research facility did not...

Author(s): Diane M. Smith

Year Published: 2012

Type: Document

Technical Report or White Paper

Research perspectives on the public and fire management: a synthesis of current social science on eight essential questions

www.nrfirescience.org/resource/12601

As part of a Joint Fire Science Program project, a team of social scientists reviewed existing fire social science literature to develop a targeted synthesis of scientific knowledge on the following questions: 1. What is the public's understanding of fire's role in the ecosystem? 2. Who are trusted sources of information about fire...

Author(s): Sarah M. McCaffrey, Christine Olsen

Year Published: 2012

Type: Document

Synthesis

Influencing public perceptions of smoke management and prescribed burning programs: an analysis of opportunities existing in communication tactics, community-based partnerships and interagency decision making

www.nrfirescience.org/resource/13507

Historical fire suppression efforts have led to the alteration of forest structure and fuel conditions across the United States. Correspondingly, managers are now faced with higher fuel loads and denser vegetation as well as growing forest communities and wildland-urban interface. While managers recognize the ecological benefits of...

Author(s): Danielle K. Mazzotta

Year Published: 2012

Type: Document

Dissertation or Thesis

A synthesis of current knowledge on forests and carbon storage in the United States

www.nrfirescience.org/resource/12598

Using forests to mitigate climate change has gained much interest in science and policy discussions. We examine the evidence for carbon benefits, environmental and monetary costs, risks and trade-offs for a variety of activities in three general strategies: (1) land use change to increase forest area (afforestation) and avoid...

Author(s): Duncan C. McKinley, Michael G. Ryan, Richard A. Birdsey, Christian P. Giardina, Mark E. Harmon, Linda S. Heath, Richard A. Houghton, Robert B. Jackson, James F. Morrison, Brian C. Murray, Diane E. Pataki, Kenneth E. Skog

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Understanding homeowner preparation and intended actions when threatened by a wildfire

www.nrfirescience.org/resource/11138

As wildland fires affect more houses, increasing attention is being paid to how homeowners in affected areas respond to the wildfire threat. Most research on homeowner responses to wildfire has focused on actions homeowners take before a fire to mitigate their fire risk, particularly vegetation management. Less attention has been...

Author(s): Sarah M. McCaffrey, Greg Winter

Year Published: 2011

Type: Document

Technical Report or White Paper

Outreach programs, peer pressure, and common sense: what motivates homeowners to mitigate wildfire risk?

www.nrfirescience.org/resource/8335

In recent years, altered forest conditions, climate change, and the increasing numbers of homes built in fire prone areas has meant that wildfires are affecting more people. An important part of minimizing the

potential negative impacts of wildfire is engaging homeowners in mitigating the fire hazard on their land. It is therefore...

Author(s): Sarah M. McCaffrey, Melanie Stidham, Eric Toman, Bruce A. Shindler

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Human relationships to fire prone ecosystems: mapping values at risk on contested landscapes

www.nrfirescience.org/resource/13510

A key problem in developing a better understanding of different responses to landscape level management actions, such as fuel treatments, is being able to confidently record and accurately spatially delineate the meanings stakeholders ascribe to the landscape. To more accurately understand these relationships with the Bitterroot...

Author(s): Kari Gunderson, Stephen J. Carver, Brett Davis

Year Published: 2011

Type: Document

Conference Proceedings

Reducing fuels in the wildland-urban interface: community perceptions of agency fuels treatments

www.nrfirescience.org/resource/11452

Wildland fires and resulting effects have increased in recent years. Efforts are under way nationwide to proactively manage vegetative conditions to reduce the threat of wildland fires. Public support is critical to the successful implementation of fuels reduction programs, particularly at the wildland-urban interface. This study...

Author(s): Eric Toman, Melanie Stidham, Bruce A. Shindler, Sarah M. McCaffrey

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Public perceptions and tolerance of smoke from prescribed and wildland fire

www.nrfirescience.org/resource/15554

A literature synthesis on public perceptions and tolerance of smoke. Topics explored include personal values and beliefs about smoke, beliefs about the controllability of fire and smoke, agency trust, individual characteristics related to perceptions and tolerance of smoke, and future research.

Author(s): Jarod Blades, Troy E. Hall

Year Published: 2011

Type: Document

Technical Report or White Paper

The exposure index: developing firefighter safety performance measures

www.nrfirescience.org/resource/16182

A cornerstone of effective institutional learning and accountability is the development, tracking, and analysis of informative performance measures. In a previous issue of Fire Management Today ("A New Look at Risk Management," Winter 2011), a series of articles highlighted the importance of organizational safety and risk management...

Author(s): David E. Calkin, John Phipps, Thomas P. Holmes, Jon D. Rieck, Matthew P. Thompson

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Public engagement in neighbourhood level wildfire mitigation and preparedness: case studies from Canada, the US and Australia

www.nrfirescience.org/resource/12432

This study examined neighbourhood level wildfire mitigation programs being implemented in neighbourhoods in Canada (FireSmart-ForestWise), Australia (Community Fireguard) and the US (Firewise Communities). Semi-structured interviews were completed with 19 residents participating in the programs. A wide range of activities were...

Author(s): Tara K. McGee

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Fire Effects Information System: New engine, remodeled interior, added options

www.nrfirescience.org/resource/16134

Some of today's firefighters weren't even born when the Fire Effects Information System (FEIS) "hit the streets" in 1986. Managers might remember using a dial-up connection in the early 1990s to access information on biology, ecology, and fire offered by FEIS.

Author(s): Jane Kapler Smith

Year Published: 2010

Type: Document

Book or Chapter or Journal Article

Utilization of the Native American talking circle to teach incident command system to tribal community health representatives

www.nrfirescience.org/resource/16106

The public health workforce is diverse and encompasses a wide range of professions. For tribal communities, the Community Health Representative (CHR) is a public health paraprofessional whose role as a community health educator and health advocate has expanded to become an integral part of the health delivery system of most tribes....

Author(s): Brenda Granillo, Ralph Renger, Jessica Wakelee, Jefferey L. Burgess

Year Published: 2010

Type: Document

Book or Chapter or Journal Article

Alternatives to evacuation during wildland fire: exploring adaptive capacity in one Idaho community

www.nrfirescience.org/resource/11993

The use of alternatives to evacuation during wildfire events continues to be an intensely debated strategy in the professional and policy circles of numerous fire-prone countries. The most recent chapter comes in response to the Black Saturday Fires in Australia, which has led to policy changes concerning alternatives to evacuation...

Author(s): Travis B. Paveglio, Matthew S. Carroll, Pamela J. Jakes

Year Published: 2010

Type: Document

Book or Chapter or Journal Article

The economic cost of adverse health effects from wildfire: a review

www.nrfirescience.org/resource/14534

The economic costs of adverse health effects associated with exposure to wildfire smoke should be given serious consideration in determining the optimal wildfire management policy. Unfortunately, the

literature in this research area is thin. In an effort to better understand the nature of these economic costs, we review and...

Author(s): Ikuho Kochi, Geoffrey H. Donovan, Patricia A. Champ, John B. Loomis

Year Published: 2010

Type: Document

Book or Chapter or Journal Article

Field guide for mapping post-fire soil burn severity

www.nrfirescience.org/resource/15310

Following wildfires in the United States, the U.S. Department of Agriculture and U.S. Department of the Interior mobilize Burned Area Emergency Response (BAER) teams to assess immediate post-fire watershed conditions. BAER teams must determine threats from flooding, soil erosion, and instability. Developing a postfire soil burn...

Author(s): Annette Parson, Peter R. Robichaud, Sarah A. Lewis, Carolyn Napper, Jess T. Clark

Year Published: 2010

Type: Document

Book or Chapter or Journal Article

Fire intensity, fire severity and burn severity: a brief review

www.nrfirescience.org/resource/16309

Several recent papers have suggested replacing the terminology of fire intensity and fire severity. Part of the problem with fire intensity is that it is sometimes used incorrectly to describe fire effects, when in fact it is justifiably restricted to measures of energy output. Increasingly, the term has created confusion because...

Author(s): Jon E. Keeley

Year Published: 2009

Type: Document

Book or Chapter or Journal Article

Mapping tradeoffs in values at risk at the interface between wilderness and non-wilderness lands

www.nrfirescience.org/resource/11063

On the Flathead Indian Reservation in Montana, U.S., the Mission Mountains Tribal Wilderness is bordered by a buffer zone. To successfully improve forest health within that buffer zone and restore fire in the wilderness, the managing agency and the public need to work together to find solutions to increasingly threatening fuel...

Author(s): Alan E. Watson, Roian Matt, Tim Waters, Kari Gunderson, Stephen J. Carver, Brett Davis

Year Published: 2009

Type: Document

Conference Proceedings

Willingness-to-pay function for two fuel treatments to reduce wildfire acreage burned: a scope test and comparison of white and hispanic households

www.nrfirescience.org/resource/11065

We estimate a marginal benefit function for using prescribed burning and mechanical fuel reduction programs to reduce acres burned by wildfire in three states. Since each state had different acre reductions, a statistically significant coefficient on the reduction in acres burned is also a split sample scope test frequently used as...

Author(s): John B. Loomis, Le Trong Hung, Armando Gonzalez-Caban

Year Published: 2009

Type: Document

Conference Proceedings, Technical Report or White Paper

The Fire Effects Information System - serving managers since before the Yellowstone fires

www.nrfirescience.org/resource/16133

This presentation will describe the current status of the Fire Effects Information System (FEIS) and explore lessons learned from this 23-yearold project about the application of science to fire management issues. FEIS contains literature reviews covering biology and fire ecology for approximately 1,100 species in North America:...

Author(s): Jane Kapler Smith, Janet L. Fryer, Kristin L. Zouhar

Year Published: 2009

Type: Document

Conference Proceedings

Contingent valuation of fuel hazard reduction treatments

www.nrfirescience.org/resource/11988

This chapter presents a stated preference technique for estimating the public benefits of reducing wildfires to residents of California, Florida, and Montana from two alternative fuel reduction programs: prescribed burning, and mechanical fuels reduction. The two fuel reduction programs under study are quite relevant to people...

Author(s): John B. Loomis, Armando Gonzalez-Caban

Year Published: 2008

Type: Document

Book or Chapter or Journal Article

Wildfire smoke: a guide for public health officials

www.nrfirescience.org/resource/12451

Smoke rolls into town, blanketing the city, turning on streetlights, creating an eerie and choking fog. Switchboards light up as people look for answers. Citizens want to know what they should do to protect themselves. School officials want to know if outdoor events should be cancelled. The news media want to know how dangerous the...

Author(s): Michael Lipsett, Barbara Materna, Susan Lyon Stone, Shannon Therriault, Robert Blaisdell, Jeff Cook

Year Published: 2008

Type: Document

Technical Report or White Paper

The homeowner view of thinning methods for fire hazard reduction: more positive than many think

www.nrfirescience.org/resource/11486

With the focus of the National Fire Plan on decreasing fire risk in the wildland-urban interface, fire managers are increasingly tasked with reducing the fuel load in areas where mixed public and private ownership and a growing number of homes can make most fuel reduction methods problematic at best. In many of these intermix areas...

Author(s): Sarah M. McCaffrey

Year Published: 2008

Type: Document

Conference Proceedings, Technical Report or White Paper

The what, how, and when of social reliance and cooperative risk management

www.nrfirescience.org/resource/132

A study of the relationship between public trust and management actions taken by the US Forest Service. This chapter focuses on an analysis of the definitions 'social reliance' and 'trust,' then applies them to various examples, one of which is the cooperative management of US National Forests.
Author(s): George T. Cvetkovich, Patricia L. Winter
Year Published: 2007
Type: Document
Book or Chapter or Journal Article

Whitebark ecosystem displayed indoors

www.nrfirescience.org/resource/11091

If you had never seen a high-elevation whitebark pine community, if you had never picked up a whitebark cone emptied by nutcrackers, if you had never stepped over (or into) a bear scat full of pine nut shells, how could you appreciate the intricacy of whitebark pine habitat? How could you care about this beautiful, imperiled...

Author(s): Jane Kapler Smith
Year Published: 2007
Type: Document
Research Brief or Fact Sheet

Understanding the influence of local and landscape conditions on the occurrence and abundance of Black-backed Woodpeckers in burned forest patches

www.nrfirescience.org/resource/15635

Wildfire is the predominant disturbance agent in the Northern Rockies. The nearly annual occurrence of wildfire at some point in a larger landscape has served as the environmental backdrop against which our native wildlife species have evolved. A number of native species have, in fact, become dependent on wildfires or wildfire-...

Author(s): Richard L. Hutto, Deborah Austin, Sallie Hejl
Year Published: 2007
Type: Document
Technical Report or White Paper

A look inside the dynamics of trust: a guide for managers

www.nrfirescience.org/resource/12542

In the United States, federal public land managers are tasked with serving as stewards of land, but also as stewards of the relationships that people have with the land. By assessing the public's trust in the actions of land managers, insight can be gained into how good of a job managers are doing. This paper outlines a number of...

Author(s): Adam Liljeblad, Alan E. Watson, William T. Borrie
Year Published: 2007
Type: Document
Conference Proceedings

Northern Inland West land/homeowner perceptions of fire risk and responsibility in the wildland-urban interface

www.nrfirescience.org/resource/8338

The issue of sorting through who should bear responsibility for mitigating wildfire risk in the wildland-urban interface of the northern Inland West was approached using focus groups. The groups were selected to reflect a variety of stakeholders in the study area population for whom interface issues are relevant. Most participants...

Author(s): Brad R. Weisshaupt, Pamela J. Jakes, Matthew S. Carroll, Keith A. Blatner
Year Published: 2007

Type: Document
Book or Chapter or Journal Article

Factors in United States Forest Service district rangers' decision to manage a fire for resource benefit

www.nrfirescience.org/resource/8204

United States wildland fire policy and program reviews in 1995 and 2000 required both the reduction of hazardous fuel and recognition of fire as a natural process. Despite the fact that existing policy permits managing natural ignitions to meet resource benefits, or Wildland Fire Use (WFU), most fuel reduction projects rely on...

Author(s): Martha A. Williamson

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

Big and black sagebrush landscapes

www.nrfirescience.org/resource/15405

Perhaps no plant evokes a common vision of the semi-arid landscapes of western North America as do the sagebrushes. A collective term, sagebrush is applied to shrubby members of the mostly herbaceous genus, *Artemisia* L. More precisely, the moniker is usually restricted to members of subgenus

Tridentatae, a collection of some 20...

Author(s): Stanley G. Kitchen, E. Durant McArthur

Year Published: 2007

Type: Document

Conference Proceedings

A comparison of CVM response rates, protests, and willingness to pay of Native Americans and general population for fuels reduction policies

www.nrfirescience.org/resource/7932

A contingent valuation method (CVM) study was used to compare survey response rates, protest refusals to pay, and median willingness-to-pay (WTP) of Native American communities in Montana compared to Montana's general population for two wildland fire mitigation strategies. Understanding differences in response rates, protest...

Author(s): Armando Gonzalez-Caban, John B. Loomis, Andrea Rodriguez, Hayley Hessel

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

Climate Change: what it means for us, our children, and our grandchildren

www.nrfirescience.org/resource/15711

Most of us are familiar with the terms climate change and global warming, but not too many of us understand the science behind them. We don't really understand how climate change will affect us, and for that reason we might not consider it as pressing a concern as, say, housing prices or the quality of local education. This book...

Author(s): J.F.C. DiMento, P. Doughman

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

Organizational characteristics that contribute to success in engaging the public to accomplish

fuels management at the wilderness/non-wilderness interface

www.nrfirescience.org/resource/10984

In the fall of 2003, the Rocky Mountain Ranger District of the Lewis and Clark National Forest initiated a multi-year, large-scale prescribed burn in the Scapegoat Wilderness. The objectives of this burn were to make the non-wilderness side of the wilderness boundary more defensible from wildfire and to establish conditions that...

Author(s): Katie Knotek, Alan E. Watson

Year Published: 2006

Type: Document

Conference Proceedings

A national study of the consequences of fire and fire surrogate treatments

www.nrfirescience.org/resource/15633

We provide highlights of some of the results thus far for the National Fire and Fire Surrogate study (FFS). Highlights summarize work that has been published within the last four years (2003-2006), primarily in theses, proceedings, general technical reports, and peer-reviewed journals (<http://www.fs.fed.us/ffs/>). In the summary, we...

Author(s): James D. Mclver, Phil Weatherspoon

Year Published: 2006

Type: Document

Technical Report or White Paper

Managing fire-prone forests in the Western United

www.nrfirescience.org/resource/16308

The management of fire-prone forests is one of the most controversial natural resource issues in the US today, particularly in the west of the country. Although vegetation and wildlife in these forests are adapted to fire, the historical range of fire frequency and severity was huge. When fire regimes are altered by human activity,...

Author(s): Reed F. Noss, Jerry F. Franklin, William L. Baker, Tania L. Schoennagel, Peter B. Moyle

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

Trust in wildland fire and fuel management decisions

www.nrfirescience.org/resource/12541

Public land managers are stewards of public lands and of the relationship between the public and these lands. Maintaining one aspect of this relationship, trust in the agency, can be challenging. Lack of trust can influence public response to management decisions, including about wildland fire use. By considering the factors that...

Author(s): Adam Liljeblad, William T. Borrie

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

The roles of natural and human disturbances in forest soil erosion

www.nrfirescience.org/resource/8170

Forests provide numerous benefits for society, including fibre, wildlife and recreation. Forest managers are challenged to balance ecosystem health with maintaining public forest lands for multiple uses. During the first half of the last century, public forest management emphasized the harvesting of forest resources. In recent years...

Author(s): William J. Elliot

Year Published: 2006
Type: Document
Book or Chapter or Journal Article

Trends in public attitudes towards the use of wildland fire

www.nrfirescience.org/resource/10983

This paper summarizes a select set of research studies conducted over the past 40 years, drawing conclusions on trends in public attitudes about the use of wildland fire in federally designated Wilderness. The research includes trend studies conducted with visitors to Wilderness areas in Washington, Oregon, California, Idaho and...

Author(s): Katie Knotek
Year Published: 2006
Type: Document
Conference Proceedings

Prescribed fire: what influences public approval?

www.nrfirescience.org/resource/8440

Except in remote areas, most prescribed fires will have some effect on members of the public. It is therefore important for land managers to work with the public before, during, and after a prescribed burn. To do this effectively, managers need to have an accurate idea of what people do and do not think about prescribed fire and...

Author(s): Sarah M. McCaffrey
Year Published: 2006
Type: Document
Technical Report or White Paper

Using focus groups to involve citizens in resource management - investigating perceptions of smoke as a barrier to prescribed forest burning

www.nrfirescience.org/resource/11214

Participants in a series of focus groups discussed how their tolerance for smoke varied by the source of the smoke and found their opinions changing as they talked with other participants. Even those opposed to smoke from agricultural burning eventually found smoke from prescribed forest burning would be acceptable under appropriate...

Author(s): Brad R. Weissaupt, Matthew S. Carroll, Keith A. Blatner, Pamela J. Jakes
Year Published: 2006
Type: Document
Technical Report or White Paper

Understanding place meanings on the Bitterroot National Forest - A landscape-level assessment of personal and community values

www.nrfirescience.org/resource/7934

Information about human relationships with wilderness is important for wilderness management decisions, including decisions pertaining to the use of wildland fire. In a study about meanings attached to a national forest, local residents were asked to identify places they valued on the forest, why they valued them, and how fuel...

Author(s): Kari Gunderson, Alan E. Watson
Year Published: 2006
Type: Document
Book or Chapter or Journal Article

Understanding social influences on wilderness fire stewardship decisions

www.nrfirescience.org/resource/7954

Federal land managers and the public engage in many decisions about stewardship of wilderness in the United States, including decisions about stewardship of fire. To date, social science research lacks a holistic examination of the decision-making context of managers and the public about stewardship of fire inside wilderness and...

Author(s): Katie Knotek

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

Acceptability of smoke from prescribed forest burning in the northern inland west: a focus group approach

www.nrfirescience.org/resource/8393

Focus groups were used to gauge tolerance of smoke from broadcast prescribed forest burning in the wildland-urban interface of the northern Inland West. Focus group participants worked through issues surrounding prescribed burning as a management tool to determine if the origin of smoke made a difference in the acceptance of that...

Author(s): Brad R. Weisshaupt, Matthew S. Carroll, Keith A. Blatner, William D. Robinson, Pamela J. Jakes

Year Published: 2005

Type: Document

Book or Chapter or Journal Article

Eighth international wildland firefighter safety summit: 10 years later

www.nrfirescience.org/resource/15458

These files contain the proceedings and poster papers from the International Association of Wildland Fire's Wildland Fire Safety Summit™ held in Missoula, Montana April 26-28, 2005. These proceedings contain the papers as submitted by the authors. Except for some editing to try and instill a common format, these papers are as...

Year Published: 2005

Type: Document

Conference Proceedings

Evaluating communication strategies and local partnerships: methods for reducing fuels, sharing responsibility, and building trust - Final Report to the Joint Fire Science Program

www.nrfirescience.org/resource/11398

The purpose of this project is to help identify and prioritize the elements of successful communication strategies so that agency personnel can adapt them to their own situation for meeting management objectives. Preferred outcomes include partnerships with local organizations for reducing fuels, shared responsibility for making...

Author(s): Bruce A. Shindler

Year Published: 2005

Type: Document

Technical Report or White Paper

Wildland fire in ecosystems: effects of fire on soils and water

www.nrfirescience.org/resource/12596

This state-of-knowledge review about the effects of fire on soils and water can assist land and fire managers with information on the physical, chemical, and biological effects of fire needed to successfully conduct ecosystem management, and effectively inform others about the role and impacts

of wildland fire. Chapter topics...

Author(s): Daniel G. Neary, Kevin C. Ryan, Leonard F. DeBano

Year Published: 2005

Type: Document

Technical Report or White Paper

Human aspects of fire and fuels management in the Northern Rockies

www.nrfirescience.org/resource/11499

Humans are a part of forest and grassland ecosystems where we live, recreate, work, obtain timber products, and seek spiritual solace, among many other uses. Therefore, it's important to consider the human aspects of sustainable management of these ecosystems. BEMRP social scientists are working to understand meanings people assign...

Author(s): Katie Knotek

Year Published: 2005

Type: Document

Research Brief or Fact Sheet

Fuels planning: science synthesis and integration; social issues fact sheet 3: developing personal responsibility for fuels reduction: more ways to catch and hold people's attention

www.nrfirescience.org/resource/14950

Other fact sheets discuss the different types of information that are useful in explaining to property owners the importance of taking personal responsibility for fuels management on their land. However, for some property owners, new information is not enough-they may need more information in order to understand that change is...

Author(s): Martha C. Monroe, Lisa Pennisi

Year Published: 2004

Type: Document

Research Brief or Fact Sheet

Fuels planning: science synthesis and integration; social issues fact sheet 1: developing personal responsibility for fuels reduction: building a successful program to engage property owners

www.nrfirescience.org/resource/14948

In the course of work as a land manager, you will no doubt be involved in developing programs to achieve various objectives, including the improvement of fuels management on private lands. This fact sheet describes six steps that will help you plan and conduct a successful program.

Author(s): Martha C. Monroe, Lisa Pennisi

Year Published: 2004

Type: Document

Research Brief or Fact Sheet

Red Lodge, Montana: steps to improve community preparedness for wildfire

www.nrfirescience.org/resource/11104

This is a government publication outlining the steps to wildfire preparedness in Red Lodge, MT. The key features include homeowners' associations, which lead in fuel reduction around properties; USFS recreation residences, which conduct fuel reduction projects; evacuation plans and fuel breaks; regulations; and relationships, which...

Author(s): Victoria Sturtevant, Linda E. Kruger

Year Published: 2004

Type: Document

Research Brief or Fact Sheet

FireWorks educational program and its effectiveness

www.nrfirescience.org/resource/11010

FireWorks is an educational program that provides interactive, hands-on activities for studying fire behavior, fire ecology, and human influences on three fire-dependent forest types-ponderosa pine (*Pinus ponderosa*), interior lodgepole pine (*P. contorta* var. *latifolia*), and whitebark pine (*P. albicaulis*). Wildland fire provides a rich...

Author(s): Jane Kapler Smith, Nancy E. McMurray

Year Published: 2004

Type: Document

Conference Proceedings

Fuels planning: science synthesis and integration; social issues fact sheet 4: three critical topics to cover when talking about hazards

www.nrfirescience.org/resource/14952

The amount of science applicable to the management of wildfire hazards is increasing daily. In addition, the attitudes of landowners and policymakers about fire and fuels management are changing. This fact sheet discusses three critical keys to communicating about wildfire hazards.

Author(s): Dennis Mileti

Year Published: 2004

Type: Document

Research Brief or Fact Sheet

Fuels planning: science synthesis and integration; social issues fact sheet 2: developing personal responsibility for fuels reduction: types of information to encourage proactive behavior

www.nrfirescience.org/resource/14949

Fuels management responsibilities may include providing local property owners with the information for taking responsibility for reducing fuels on their land. This fact sheet discusses three different types of information that may be useful in programs to engage property owners in fuel reduction activities.

Author(s): Martha C. Monroe, Lisa Pennisi

Year Published: 2004

Type: Document

Research Brief or Fact Sheet

Blue mountain nature trail: a fire story

www.nrfirescience.org/resource/12935

In 2003, on Black Mountain just to the northwest, lightning ignited a wildfire that eventually burned across 7,000 acres ending here at the Blue Mountain Nature Trail. Because of this event, we have a unique chance to observe close-up how fire affects a ponderosa pine and Douglas-fir forest...

Author(s): U.S. Department of Agriculture, Forest Service

Year Published: 2004

Type: Document

Research Brief or Fact Sheet

A collaborative fire hazard reduction/ecosystem restoration stewardship project in a Montana mixed ponderosa pine/Douglas-fir/western larch wildland-urban interface

www.nrfirescience.org/resource/11009

Forest Service managers and researchers designed and evaluated alternative disturbance-based fire hazard reduction/ecosystem restoration treatments in a greatly altered low-elevation ponderosa

pine/Douglas-fir/western larch wildland urban interface. Collaboratively planned improvement cutting and prescribed fire treatment...

Author(s): Steve Slaughter, Laura Ward, Michael Hillis, Jimmie D. Chew, Becky McFarlan

Year Published: 2003

Type: Document

Conference Proceedings

The effects of fire on hiking demand: a travel cost study of Colorado and Montana

www.nrfirescience.org/resource/10968

Surveys were conducted on 33 sites within National Forests in Colorado and Montana to test how forest fires affected recreation demand in the two states. Data were collected on the actual number of visits and on the intended number of visits if the area had been subject to a recent high intensity crown fire, a recent prescribed fire...

Author(s): Hayley Hessel, John B. Loomis, Armando Gonzalez-Caban

Year Published: 2003

Type: Document

Conference Proceedings

Keys to community preparedness for wildfire

www.nrfirescience.org/resource/11403

Assessments of a community's vulnerability to wildfires often focus on landscape conditions or ecological factors such as forest type, age distribution, forest health, topography, or hydrology. However, vulnerability is also a function of a variety of social factors. We need to understand both the social and ecological factors that...

Author(s): Linda E. Kruger, Shruti Agrawal, Martha C. Monroe, Erika A. Lang, Kristen C. Nelson, Pamela J. Jakes, Victoria Sturtevant, Sarah M. McCaffrey, Yvonne Everett

Year Published: 2003

Type: Document

Conference Proceedings, Technical Report or White Paper

Microsimulation of neighborhood evacuations in the urban-wildland interface

www.nrfirescience.org/resource/11491

Residential development in fire-prone wildlands is occurring at an unprecedented rate. Community-based evacuation planning in many areas is an emerging need. In this paper we present a method for using microscopic traffic simulation to develop and test neighborhood evacuation plans in the urban - wildland interface. The method...

Author(s): Thomas J. Cova, Justin P. Johnson

Year Published: 2002

Type: Document

Book or Chapter or Journal Article

Are old forests underestimated as global carbon sinks?

www.nrfirescience.org/resource/7916

Old forests are important carbon pools, but are thought to be insignificant as current atmospheric carbon sinks. This perception is based on the assumption that changes in productivity with age in complex, multiaged, multispecies natural forests can be modelled simply as scaled-up versions of individual trees or even-aged stands....

Author(s): Eileen V. Carey, Anna Sala, Robert E. Keane, Ragan M. Callaway

Year Published: 2001

Type: Document

Book or Chapter or Journal Article

The dynamic path of recreational values following a forest fire: a comparative analysis of states in the Intermountain West

www.nrfirescience.org/resource/7924

This analysis examines the dynamic path of recreational values following a forest fire in three different states in the intermountain western United States. The travel cost demand analysis found that annual recreation values after a fire follow a highly nonlinear intertemporal path. The path is S-shaped, providing a range of...

Author(s): Jeffrey Englin, John B. Loomis, Armando Gonzalez-Caban

Year Published: 2001

Type: Document

Book or Chapter or Journal Article

Educational program about wildland fire integrates plant science into curriculum

www.nrfirescience.org/resource/8386

A science fiction story by Edmond Hamilton entitled 'Alien Earth' (Hamilton 1949) describes the experience of a young scientist in a tropical country. The scientist obtains a potion that slows his physiology to a rate at which he can perceive plant growth and interactions between plants in rapid, aggressive, even violent motion. He...

Author(s): Jane Kapler Smith, Nancy E. McMurray, Garon C. Smith

Year Published: 2001

Type: Document

Book or Chapter or Journal Article

Ponderosa pine ecosystems restoration and conservation: steps toward stewardship; April 25-27, 2000; Flagstaff, AZ

www.nrfirescience.org/resource/11888

This volume is divided into three sections: (1) Ecological, Biological, and Physical Science; (2) Social and Cultural; and (3) Economics and Utilization. Effective ecological restoration requires a combination of science and management. The authors of the first section exemplified this integration in the course of addressing a broad...

Author(s): Regina K. Vance, Carleton B. Edminster, W. Wallace Covington, Julie A. Blake

Year Published: 2001

Type: Document

Conference Proceedings

FireWorks curriculum featuring ponderosa, lodgepole, and whitebark pine forests

www.nrfirescience.org/resource/11238

FireWorks is an educational program for students in grades 1-10. The program consists of the curriculum in this report and a trunk of laboratory materials, specimens, and reference materials. It provides interactive, hands-on activities for studying fire ecology, fire behavior, and the influences of people on three fire-dependent...

Author(s): Jane Kapler Smith, Nancy E. McMurray

Year Published: 2000

Type: Document

Technical Report or White Paper

Smoke exposure at western wildfires

www.nrfirescience.org/resource/11193

Smoke exposure measurements among firefighters at wildfires in the Western United States between

1992 and 1995 showed that altogether most exposures were not significant, between 3 and 5 percent of the shift-average exposures exceeded occupational exposure limits for carbon monoxide and respiratory irritants. Exposure to benzene and...

Author(s): Timothy E. Reinhardt, Roger D. Ottmar

Year Published: 2000

Type: Document

Technical Report or White Paper

Agencies within communities, communities within ecosystems

www.nrfirescience.org/resource/8415

Can scientific information and intensive, extensive public involvement through facilitated meetings be expected to lead to agreement on natural resource issues? Communications and research in the Bitterroot Ecosystem Management Research Project indicate that, where people's values differ greatly, consensus is not a realistic goal...

Author(s): Jane Kapler Smith, Kerry McMenus

Year Published: 2000

Type: Document

Conference Proceedings

FireWorks: hands-on learning about fire ecology

www.nrfirescience.org/resource/8149

The perpetuation of fire-dependent forests requires an understanding of fire ecology and fire behavior not only by scientists and managers, but also by the public (U.S. Department of Interior and U.S. Department of Agriculture, 1995). FireWorks is a plastic trunk that contains educational materials and lessons designed to increase...

Author(s): Jane Kapler Smith

Year Published: 2000

Type: Document

Book or Chapter or Journal Article

The Bitterroot Ecosystem Management Research Project: what we have learned, symposium proceedings; May 18-20, 1999; Missoula, MT

www.nrfirescience.org/resource/11890

The varied topics presented in these symposium proceedings represent the diverse nature of the Bitterroot Ecosystem Management Research Project (BEMRP). Separated into six sections, the papers cover the different themes researched by BEMRP collaborators as well as brief overviews of five other ecosystem management projects. The...

Author(s): Helen Y. Smith

Year Published: 2000

Type: Document

Conference Proceedings

Behavioral and cognitive evaluation of FireWorks education trunk

www.nrfirescience.org/resource/8411

This study assessed the effectiveness of FireWorks, an educational trunk about wildland fire, in increasing student understanding, enabling students to apply classroom learning in a field setting, and improving the learning environment. Students who were in classrooms using the FireWorks educational trunk demonstrated more knowledge...

Author(s): Linda R. Thomas, James A. Walsh, Jane Kapler Smith

Year Published: 2000

Type: Document

Building consensus: legitimate hope or seductive paradox?

www.nrfirescience.org/resource/11186

To understand how participants in a natural resource planning situation described the nature of consensus, we interviewed scientists, agency planners and managers, and public representatives in two planning processes on the Bitterroot National Forest in west-central Montana. While most interviewees felt the agency had included...

Author(s): Stephen F. McCool, Kathleen Guthrie, Jane Kapler Smith

Year Published: 2000

Type: Document

Technical Report or White Paper

Effects of fire on the economic value of forest recreation in the Intermountain West: preliminary results

www.nrfirescience.org/resource/11051

Visitors to National Forests in Colorado, Idaho, and Wyoming were asked how their visitation rates would change with the presence of a high-intensity crown fire, prescribed fire, and a 20-year-old high-intensity fire at the area they were visiting. By using pairwise t-tests, visitors to forests in Colorado showed a statistically...

Author(s): John B. Loomis, Jeffrey Englin, Armando Gonzalez-Caban

Year Published: 1999

Type: Document

Conference Proceedings, Technical Report or White Paper

Interim air quality policy on wildland and prescribed fires

www.nrfirescience.org/resource/12446

This policy statement has been prepared in response to plans by some Federal, tribal and State wildland owners/managers to significantly increase the use of wildland and prescribed fires to achieve resource benefits in the wildlands. Many wildland ecosystems are considered to be unhealthy as a result of past management strategies....

Author(s): U.S. Environmental Protection Agency

Year Published: 1998

Type: Document

Technical Report or White Paper

Effects of the Gates Park Fire on recreation choices

www.nrfirescience.org/resource/11094

The 1988 Gates Park Fire, along the North Fork of the Sun River in the Bob Marshall Wilderness, provided an opportunity to explore fire effects on wilderness visitor choices. Recreation visitors along the North and South Fork drainages were interviewed to assess the effects of 1988 fires on their 1989 visits. The Gates Park fire had...

Author(s): Timothy G. Love, Alan E. Watson

Year Published: 1992

Type: Document

Research Brief or Fact Sheet

Yellowstone media myths: print and television coverage of the 1988 fires

www.nrfirescience.org/resource/12422

This paper draws on comments from 89 reporters who covered the fires, on comments from 146 of their

news sources, and on evaluations of network television coverage by four groups of wildfire experts. The research also incorporates a content analysis of stories about the fires that appeared in Yellowstone-area and elite newspapers....

Author(s): Conrad Smith

Year Published: 1991

Type: Document

Conference Proceedings, Technical Report or White Paper

Attitudes toward prescribed fire policies

www.nrfirescience.org/resource/15182

This article discusses social considerations with respect to public wildland forest fire policy. Social attitudes, beliefs and behavioral intentions of wildland fire are described as well as the public's knowledge of the effects of fire. This study details these social issues with regards to the 'let burn' policy and the 1988 fires...

Author(s): Michael J. Manfreda, Martin Fishbein, Glenn E. Haas, Alan E. Watson

Year Published: 1990

Type: Document

Book or Chapter or Journal Article

Protecting people and homes from wildfire in the interior West: proceedings of the symposium and workshop

www.nrfirescience.org/resource/11968

Includes 25 invited papers and panel discussions, 6 workshop reports, and 15 poster papers that focus on the escalating problem of wildfire in wildland residential areas throughout the western United States and Canada.

Author(s): William C. Fischer, Stephen F. Arno

Year Published: 1988

Type: Document

Conference Proceedings, Technical Report or White Paper

Sagebrush over time: A photographic study of rangeland change

www.nrfirescience.org/resource/15404

This publication is not available online. It will have to be ordered from a library.

Author(s): Kendall L. Johnson

Year Published: 1986

Type: Document

Conference Proceedings

Visitor attitudes toward wilderness fire management policy - 1971-84

www.nrfirescience.org/resource/11962

Visitors to the Selway-Bitterroot Wilderness, MT, were asked about their knowledge of fire effects and attitudes toward fire management in wilderness settings. In comparison to a similar 1971 study, visitors were more knowledgeable about fire effects and more supportive of fire management rather than fire suppression. About half the...

Author(s): Stephen F. McCool, George H. Stankey

Year Published: 1985

Type: Document

Technical Report or White Paper

Fire and smoke in Montana forests

www.nrfirescience.org/resource/13133

The concept of forest fire is especially difficult to deal with in an objective manner because fire has deep psychological associations for most animals, especially man. Moreover, attitudes toward forest fires have been greatly conditioned by what has been called the most effective advertising campaign in history...

Author(s): William R. Beaufait

Year Published: 1971

Type: Document

Book or Chapter or Journal Article

Dude Fire Fatality Case Study

www.nrfirescience.org/resource/16007

In June 1990 a fire in Arizona results in six firefighter fatalities.

Type: Media

Video

2014 WFSTAR: Fireline Leadership

www.nrfirescience.org/resource/16073

This 20 minute video covers the most essential element for success in the wildland fire service, which is good leadership. This module focuses on the framework, values, and principles that guide wildland fire leaders now and into the future. A portion of a Ted talk by general Stanley McCrystal is included in this video.

Type: Media

Video

Understanding stakeholder perceptions of fire with mental modelling: a case study from Ashland, OR

www.nrfirescience.org/resource/15110

Many communities see the need to increase the use of beneficial fire, yet they struggle to find effective approaches that all stakeholders agree upon. We use mental modeling with Fuzzy Cognitive Maps to help stakeholders express their worldviews on fire use and share their insights with other stakeholder groups. Using our experience...

Type: Media

Webinar

Rapidly-updating numerical weather prediction for fire weather situational awareness and forecasting: The High-Resolution Rapid Refresh model

www.nrfirescience.org/resource/15804

The 3-km High-Resolution Rapid Refresh (HRRR) numerical weather prediction model, developed at the NOAA Earth System Research Laboratory and operational since September 2014, is a tool for situational weather awareness and short-range forecasting for a variety of end-user applications, ranging from severe weather prediction to...

Type: Media

Seminar

Understanding Human Error Part 4

www.nrfirescience.org/resource/16031

Sidney Dekker helps you understand a new way of dealing with a perceived 'human error' problem in your organization. This module covers why we might revert to the old view.

Type: Media

Video

Wildland fire smoke messaging and perception

www.nrfirescience.org/resource/14140

The NWCG Smoke Committee (SmoC) hosted this webinar on June 28, 2011. Four presentations and a discussion period examined public perception and messaging about smoke and fire. The webinar was a key initial step in developing needed messaging about wildland fire smoke, and it also served as the Smoke Committee's beginning effort at...

Type: Media

Webinar

Cramer Fire Case Study (2013 Refresher)

www.nrfirescience.org/resource/16004

Part 1: Past fires and lessons learned in the Salmon River Breaks of the Salmon-Challis NF. Part 2: Cramer Fire case study of the fire that killed two helitack crew members on July 22, 2003.

Type: Media

Video

Wildland Urban Interface Fires: An Overview for Responders

www.nrfirescience.org/resource/16068

This 58 minute video is produced for fire responders to improve knowledge and safety when fighting fires in the wildland-urban interface

Type: Media

Video

Understanding Human Error Part 2

www.nrfirescience.org/resource/16029

Sidney Dekker helps you understand a new way of dealing with a perceived 'human error' problem in your organization. This module talks about how an investigation of human error with old and new views differs.

Type: Media

Video

Relations among cheatgrass driven fire, climate and sensitive status birds

www.nrfirescience.org/resource/16094

As the distribution and abundance of non-native cheatgrass (*Bromus tectorum*) in the Great Basin has increased, the extent and frequency of fire in the region has increased by as much as 200%. These changes in fire regimes are associated with loss of the sagebrush (*Artemisia tridentata*) and native grasses and forbs in which many...

Type: Media

Webinar

Living (Dangerously) in an era of megafires

www.nrfirescience.org/resource/15593

We have all seen the news--hotter summers, and bigger, badder wildfires. What's going on? How did we get here? Paul tells a fast-paced story of western US forests--unintentionally yet massively changed by a century of management. He relates how these changes, coupled with a seriously hotter climate, have set the stage for this modern...

Type: Media

Video

Wilderness stewardship in response to ecosystem change

www.nrfirescience.org/resource/15800

No description available. This webinar was presented as part of the RMRS Fire Sciences Laboratory's weekly seminar series for 2016-2017.

Type: Media

Seminar

Little Venus Fire Shelter Deployment - Part 1

www.nrfirescience.org/resource/16002

This two-part video reviews the 2006 Venus Fire Shelter Deployment — focusing on communication and situational awareness. It covers the problems encountered with radios and not being able to see the location of the fire as the crew started down a drainage. There were no casualties during this deployment. Part 1 of 2.

Type: Media

Video

Wildfire! Preventing Home Ignitions

www.nrfirescience.org/resource/16061

Wildfire! Preventing Home Ignitions is a 19-minute video available from the Rocky Mountain Research Station. This program tells you how a wildfire can ignite your home. A 'home ignition zone,' the area that includes a home and its immediate surroundings, determines a home's ignition resistance during a severe wildfire. Some of the...

Type: Media

Video

Becoming more fire adapted through better understanding of the community

www.nrfirescience.org/resource/17058

The final video in a three-part series - "Becoming More Fire Adapted through Better Understanding of the Community" - describes WiR?'s unique approach working with communities-at-risk from wildfire in order to tailor efforts to their specific needs; resulting in increased fire adaptation. Working closely with wildfire mitigation...

Type: Media

Video

Just Culture Part 3

www.nrfirescience.org/resource/16027

In Module 3 of this short course, Prof Dekker explains the promise and potential of restorative justice in your organization.

Type: Media

Video

Mid-succession fire effects and reburn potential in model sagebrush ecosystems

www.nrfirescience.org/resource/16090

Sagebrush steppe ecosystems evolved with periodic fire, but this relationship is altered across much of the arid west by invasive species, land use change, overgrazing, and climate change. While understanding the short-term impacts of fire on these systems, little is known about the longer-term trajectory of recovery. To fill this...

Type: Media

Webinar

Christopher O'Connor (for Dave Calkin) - A systems view of wildfire management (Opening Plenary)

www.nrfirescience.org/resource/16192

This 25 minute presentation was delivered for Dave Calkin by Kit O'Connor at the 3rd Southwest Fire Ecology Conference & Applied Fire Science Workshop in Tucson, Arizona, on November 29, 2016. It covers management costs of firefighting, modeling of fuels, structure loss, and much more, from a systems approach.

Type: Media

Video

Global and Western US Smoke Chemistry and Impacts: Recent Progress

www.nrfirescience.org/resource/15797

No description available. This webinar was presented as part of the RMRS Fire Sciences Laboratory's weekly seminar series for 2016-2017.

Type: Media

Seminar

Dude Fire - Ted Putnam with MTDC

www.nrfirescience.org/resource/15999

Ted Putnam with the Missoula Technology and Development Center (MTDC) describes fire shelter and personal protective equipment impacts during an investigation of entrapment and death of 6 firefighters in the June 26, 1990 Dude fire.

Type: Media

Video

Progress in Wilderness Fire Science: Embracing Complexity

www.nrfirescience.org/resource/16057

Carol Miller, Aldo Leopold Wilderness Research Institute; Greg Aplet, The Wilderness Society; and Dave Campbell, Retired Forest Service District Ranger/Society of Wilderness Stewardship Board Chair, presented state-of-knowledge information and select case studies on recent developments in our understanding of the complexity of...

Type: Media

Webinar

An Innovative Approach to Understanding Communities

www.nrfirescience.org/resource/17056

The first of the three videos in the series - "An Innovative Approach to Understanding Communities" - introduces the WiR? Team and explains how they are helping communities adapt to wildfire.

Type: Media

Video

Just Culture Part 2

www.nrfirescience.org/resource/16025

In this module, Prof Dekker explains the problems of a retributive just culture and the protections necessary if you want it to work. He covers definitions, retribution, negligence, decision trees, protections, and difference with restorative justice.

Type: Media

Video

The Story Behind the Yellowstone Fires of 198: retro Report

www.nrfirescience.org/resource/16084

This 11 minute video covers the lessons learned from the summer of 1988 when fires burned nearly one third of Yellowstone National Park. The 1988 fire continue to shape the way we fight wildfires raging across the West today.

Type: Media

Video

Proposed smoke management framework allows larger prescribed fires with fewer health risks

www.nrfirescience.org/resource/15511

Before a single drip torch is lit or blade of grass ignited, fire management staff must consult with state or local air quality control officials to negotiate a fine balance between using fire as a restorative tool on the landscape with concerns about smoke and its impacts on public health. For years, these determinations have been...

Type: Media

Webinar

Temporal Dynamics of Wildfire Risk Assessments: Assessing tradeoffs and asking the hard questions

www.nrfirescience.org/resource/15794

Recent advances in integrating wildfire planning and strategic wildfire response can create more tangible fire outcomes that are better aligned the national cohesive strategy goals of living sustainably with wildfire. By integrating both in-situ and transboundary wildfire risk assessments with potential operations delineations, we...

Type: Media

Seminar

Bridging the Divide - Video 4: The Future of Our Forests

www.nrfirescience.org/resource/15944

This video series is a compilation of post-fire interviews, workshops, and research presentations, highlighting the special conditions of the fire and the unique community outcomes. Through collaboration and partnerships, these mountain communities are learning to live with fire in the landscape. During the summer of 2013 over 1000...

Type: Media

Video

Diane Hutton- Know When to Go Home

www.nrfirescience.org/resource/16045

Diane Hutton tells how she and her crew filled in their knowledge gaps while conducting a multi-year burn plan on the Beaverhead National Forest at the Big Hole National Monument battlefield.

Type: Media

Video

Managing the Unexpected - Part 1

www.nrfirescience.org/resource/16022

Managing the Unexpected - Part 1 - National Advanced Fire and Resource Institute 2005 - - Part 1 -

Overview of High Reliability Organizations.

Type: Media

Video

The Science Behind Forest Fires: How It Happens

www.nrfirescience.org/resource/16082

When heat, oxygen and dry vegetation come together, the result can be a forest fire. Wildfires destroy millions of acres each year in the United States.

Type: Media

Video

Evaluating the Swiss SNOWPACK modeling system across the Northern Rocky Mountains

www.nrfirescience.org/resource/15791

Since late 2015, a one dimensional model of snow pack structure, know as SNOWPACK, has been evaluated by the National Weather Service at Missoula, in collaboration with Montana State University. The model is driven by point-based output from a high-resolution numerical model (WRF-ARW).Hourly forecasts of incoming radiation,...

Type: Media

Seminar

Using Fire and Grazing to Maintain Productive and Ecologically Resilient Grasslands

www.nrfirescience.org/resource/15936

Fire, grazing, and climate are the major forces that maintain ecological health in grasslands. Today's grasslands are increasingly threatened by climate change, habitat loss and fragmentation, and degradation of ecological processes and communities. The effective use of fire and grazing management to conserve remaining grassland...

Type: Media

Webinar

Learning From Experts: Reflecting on a Burn Gone Bad - Riva Duncan

www.nrfirescience.org/resource/16043

Riva Duncan shares her story of being involved in an escaped prescribed fire. Riva explains how, after this event, she changed her methods of writing and implementing prescription burn plans.

Type: Media

Video

Building a More Effective Learning Organization

www.nrfirescience.org/resource/16019

Building a More Effective Learning Organization (Shorter Version) - National Advanced Fire and Resource Institute 2005 - - Organizational learning in wildland fire featuring Learning in Action, author David Garvin 2005.

Type: Media

Video

LCES: Lookouts, Communications, Escape Routes, Safety Zones

www.nrfirescience.org/resource/16080

This 20 minute video covers lookouts, communications, escape routes, and safety zones. It was presented by the National Wildfire Coordinating Group in 2003 - NFES 2898 - Course S-134.

Type: Media

Video

An overview of the USFS National Technology and Development Program

www.nrfirescience.org/resource/15784

In May of 2017 the Missoula, Montana and San Dimas, California Technology and Development Centers emerged from a multi year re-organization effort to form the National Technology and Development Program. Our new organization is guided by the following principles. NTDP Mission: The Forest Service National Technology and Development...

Type: Media

Webinar

Working in Interdisciplinary Teams to Build Social-Ecological Models

www.nrfirescience.org/resource/15922

This webinar is part of a larger series on Social-Ecological-Climate resilience in southwestern Colorado.

Type: Media

Webinar

Learning From The Experts: Margit Bucher - Another Pair of Eyes

www.nrfirescience.org/resource/16040

In this 9 minute video, Margit Bucher explains how she uses her crew as another pair of eyes and the importance of double checking assumptions that you are working on within the burn plan. The goal of the Learning from the Experts video series is to speed up individual and organizational learning. Project personnel have...

Type: Media

Video

Public perceptions of smoke from wildland and prescribed fires

www.nrfirescience.org/resource/14312

This webinar touched on stakeholder values and perceptions of restoration.

Type: Media

Webinar

Little Venus Fire Shelter Deployment - Part 2

www.nrfirescience.org/resource/16012

This two-part video reviews the 2006 Venus Fire Shelter Deployment — focusing on communication and situational awareness. Part 2 of 2.

Type: Media

Video

Fire behaviour: next gen Canadian Forest Fire Danger Rating System

www.nrfirescience.org/resource/16078

Mike Wotton from the Canadian Fire Service discussing the next generation Canadian Forest Fire Danger Rating System at the 2013 Fire Behaviour Symposium.

Type: Media

Video

A century of wildland fire research: contributions to long-term approaches for wildland fire management

www.nrfirescience.org/resource/15915

The costs of wildland fire in the United States are enormous, not only in terms of the financial impacts of fire suppression and post-fire rehabilitation of property and ecosystems, but also in terms of loss of lives, impacts on physical health of nearby communities, effects on local and regional economies from losses of revenue,...

Type: Media

Webinar

Debunking social myths in wildland fire

www.nrfirescience.org/resource/12847

As more people live in high fire hazard areas, the active involvement of the public will be central to many efforts to minimize fire risk and improve forest health. One barrier to effectively engaging the public may be that many of the accepted descriptions related to the public and wildfire are based primarily on conventional...

Type: Media

Webinar

Burn Boss Story: Lessons from the Twin Prescribed Fire Escape

www.nrfirescience.org/resource/16037

This 37-minute video summarizes Twin Prescribed Fire Burn Boss Trainee James Pettit's "lessons learned" presentation to the 2010 Southern Region Burn Boss Workshop.

Type: Media

Video

People and fire

www.nrfirescience.org/resource/14293

The active involvement and support of the public will be central to efforts to restore resilience and foster fire adapted landscapes. One barrier to effectively engaging the public may be that many of the accepted descriptions related to the public and wildfire are based primarily on conventional wisdoms that may or may not hold....

Type: Media

Video

Dude Fire Staff Ride

www.nrfirescience.org/resource/16008

Dude Fire Staff Ride - National Advanced Fire and Resource Institute 1998 - - Re-released in 2005 from 1998 fire behavior analyst workshop that focused on this tragedy in a wildland-urban interface wildfire. This was first use of a Staff Ride for examining wildfire fighting and opportunities for learning from the Dude fire...

Type: Media

Video

2015 WFSTAR: Tools for Communication

www.nrfirescience.org/resource/16074

This 10 minute video covers five communication tools that fire fighters often need to communicate with each other, the public and private sectors, disaster relief victims, co-responders, the media, and others.

Type: Media

Video

Research insights into effective smoke communication with the public

www.nrfirescience.org/resource/15117

On November 6-8, 2014, multiple stakeholders gathered to learn about, share and discuss smoke management issues related to wildland fire. The following video is a presentation that occurred during the event, "Wildland fire smoke in the air- What does it mean to ME?" *Due to videographer limitations during...

Type: Media

Video

These Once (and Future) Conflagrated Prairies

www.nrfirescience.org/resource/15848

A brief reconnaissance of the Great Plains and fire that will place its fire scene within the national narrative. From the onset of European contact, the grasslands were famous for their fires. They stimulated a debate about the relative roles of climate and humans. They prompted one of America's two national traditions of fire...

Type: Media

Webinar

Catching fire: prescribed burning in Northern California

www.nrfirescience.org/resource/205

Catching Fire tells a compelling story of how a small but committed group of local, tribal, state and federal land managers are bringing back the use of prescribed fire as a tool to protect communities and ecosystems across Northern California. It examines the use of fire by the Karuk Tribe of California, and the connection between...

Type: Media

Video

Understanding Human Error Part 5

www.nrfirescience.org/resource/16032

Sidney Dekker helps you understand a new way of dealing with a perceived 'human error' problem in your organization. In this module, Dekker talks about counterfactual reactions to human error, or what people could have or should have done to prevent the outcome.

Type: Media

Video

Cramer Fire Staff Ride

www.nrfirescience.org/resource/16005

This 48-minute video-a tribute to firefighters Shane Heath and Jeff Allen who lost their lives on the 2003 Cramer Fire-tells the story of the learning and healing that occurred on the 2012 Cramer Fire Staff Ride.

Type: Media

Video

Community preparedness: fire safe councils, county resolutions, and firewise practices

www.nrfirescience.org/resource/13318

In this video, discussions focused on fire management in the Wildland Urban Interface, firefighter safety, and homeowner responsibilities and safety. Alan Tresemer, Captain, Painted Rocks Fire and Rescue Company, Sonny Stiger, retired USFS Fire and Fuels Management Specialist, Steve Arno, retired USFS research forester, and Bob...

Type: Media

Video

The Watchout Situations (2013 Refresher)

www.nrfirescience.org/resource/16069

This six minute video covers the history and a story covering the 18 Watchout Situations in wildland firefighting.

Type: Media

Video

Understanding Human Error Part 3

www.nrfirescience.org/resource/16030

Sidney Dekker helps you understand a new way of dealing with a perceived 'human error' problem in your organization . This module covers what new view investigations look at and produce.

Type: Media

Video

Introduction to smoke management

www.nrfirescience.org/resource/14089

A 36-minute video recorded in February 2009 as part of the Effective Communication for Smoke Management in a Changing Air Quality Environment workshops. A presentation describing a progressive approach and overreaching principles of smoke management. Also covers the development of basic and enhanced smoke management programs, and...

Type: Media

Video

Tending the Wild

www.nrfirescience.org/resource/16099

Tending the Wild shines light on the environmental knowledge of indigenous peoples across California by exploring how they have actively shaped and tended the land for millennia, in the process developing a deep understanding of plant and animal life. This documentary examines how humans are necessary to live in balance with nature...

Type: Media

Video

The fire laboratory: forest restoration on the Gila National Forest

www.nrfirescience.org/resource/15596

Vast stands of ponderosa pine stretch across the Gila National Forest, a testament to the role of fire in this corner of the Southwest. For decades, fire managers on the Gila have been reintroducing fire back on to the landscape. This video introduces some of the people behind the story of fire on the Gila National Forest.

Type: Media

Video

Fire and Lightning from Space: Using the new GOES-16 Satellite for Fire and Total Lightning Detection

www.nrfirescience.org/resource/15802

GOES-16 is NOAA's latest earth-observing geostationary satellite, launched Nov 19, 2016. The GOES-16 platform hosts many improved earth-and sun-looking instruments, of which the Advanced Baseline Imager (ABI) and the Geostationary Lightning Mapper (GLM) are the primary earth-pointing instruments. Both instruments take current...

Type: Media

Seminar

Deployment Story: Little Venus Fire

www.nrfirescience.org/resource/16003

Fire shelter deployment on the Little Venus Fire.

Type: Media

Video

Wildland Urban Interface Fires: An Overview for Homeowners

www.nrfirescience.org/resource/16067

This 58 minute video covers what the wildland-urban interface is and what the public and firefighters need to know about fighting fire in it.

Type: Media

Video

100 years of fire research

www.nrfirescience.org/resource/17087

On June 1, 1915, Henry S. Graves established the Branch of Research in the Forest Service to centralize and elevate the pursuit of research throughout the agency. The Branch of Research focused on everything from silvicultural investigations conducted by the experiment stations to industrial studies and wood product improvement at...

Type: Media

Podcast

Understanding Human Error Part 1

www.nrfirescience.org/resource/16028

Sidney Dekker helps you understand a new way of dealing with a perceived 'human error' problem in your organization. This module is an introduction to old view vs. new view ways to approach human error.

Type: Media

Video

Interdisciplinary applications of global terrestrial carbon cycle models

www.nrfirescience.org/resource/13772

Terrestrial carbon cycle models, or dynamic global vegetation models (DGVMs), have long been used to estimate biogeochemical and biophysical feedbacks to climate. At their core, DGVMs represent vegetation and landscape dynamics using process-based representations of photosynthesis, carbon allocation, stand...

Type: Media

Webinar

Fuel control treatments in the sagebrush steppe

www.nrfirescience.org/resource/16091

This presentation aired as part of the Great Basin LCC webinar series on November 29, 2017. The presentation was given by Bruce Roundy of Brigham Young University.

Type: Media

Webinar

David Calkin - What will it take to break the cycle of the wildfire paradox?

www.nrfirescience.org/resource/16193

This 20 minute presentation was given by David Calkin, research forester with the US Forest Service, at 3rd SW Fire Ecology Conference & 1st Applied Fire Science Workshop in Tucson, Arizona.

Type: Media

Video

Predicting Burn Severity Patterns in Yosemite National Park and the Douglas Complex Fires in Oregon

www.nrfirescience.org/resource/15798

Mountainous topography creates fine-scale environmental mosaics that vary in precipitation, temperature, insolation, and slope position. This mosaic in turn influences fuel accumulation, moisture, and forest structure that in turn influence patterns of burn severity. We studied the effects of varying environmental conditions on burn...

Type: Media

Seminar

Dude Fire - Perryville Fire Crew Entrapment

www.nrfirescience.org/resource/16000

Firefighters discuss the entrapment of the Perryville Fire Crew on the 1990 Dude fire. This is raw video footage from News Channel 12.

Type: Media

Video

Firefighter Safety in the Wildland/Urban Interface

www.nrfirescience.org/resource/16060

This presentation is a training video produced by The National Wildland/Urban Interface Fire Protection Program. It covers problems encountered in the wildland-urban interface that complicate the work of firefighters.

Type: Media

Video

Smoke Management Photographic Guide: a visual aid for communicating smoke impacts.

www.nrfirescience.org/resource/14881

Communicating emissions impacts to the public can sometimes be difficult because quantitatively conveying smoke concentrations is complicated. Regulators and land managers often refer to particulate-matter concentrations in micrograms per cubic meter, but this may not be intuitive or meaningful to everyone. The Smoke Management...

Type: Media

Webinar

Applying the WiR? Approach

www.nrfirescience.org/resource/17057

This is the second video in a series of three. "Applying the WiR? Approach" delves into the WiR? Team process of pairing social data from residents living in the wildland urban interface with parcel-level wildfire risk data. Using this community-specific data, the WiR? Team works with local wildfire professionals to understand...

Type: Media

Video

Just Culture Part 4

www.nrfirescience.org/resource/16026

In Module 4 of this short course, Prof Dekker talks about the second victim.

Type: Media

Video

Engaging the public in improving fire outcomes

www.nrfirescience.org/resource/13724

Recording from a presentation during a webinar of the Fire Adapted Communities Learning Network on December 3, 2015. The presentation covered some recent social science research in three areas: general social dynamics shaping public response to fire management—conventional wisdom vs. reality; firewise behaviors; communication...

Type: Media

Webinar

S-110 Basic Wildland Fire Orientation

www.nrfirescience.org/resource/16085

This 14 minute video is an overview of the people and resources needed for wildland firefighting. Video goal is to prepare firefighter for success in their first assignment on a fire.

Type: Media

Video

Elizabeth Reinhardt - Beyond Hazardous Fuels: Restoring Fire (Opening Plenary)

www.nrfirescience.org/resource/16191

This 21 minute presentation was given at the 3rd SW Fire Ecology Conference & Applied Fire Science Workshop in Tucson, Arizona by Elizabeth Reinhardt, Retired US Forest Service.

Type: Media

Video

Fire Ecology 2.0

www.nrfirescience.org/resource/15796

No description available. This webinar was presented as part of the RMRS Fire Sciences Laboratory's weekly seminar series for 2016-2017.

Type: Media

Seminar

Recovery and Adaptation after Wildfire, 2000-2013

www.nrfirescience.org/resource/15957

Becoming a fire-adapted community that can live with wildfire is envisioned as a continuous, iterative process of adaptation. We combined national and case study research to examine how experience with wildfire alters the built environment and community- and government-level wildfire mitigation, planning, and regulations. By...

Type: Media

Webinar

Fire, carbon, and climate: past and future

www.nrfirescience.org/resource/13031

Fire has a short-term impact on the exchange of carbon between the forest and the atmosphere, but over a cycle of a stand-replacing fire and regrowth, the carbon balance is usually carbon neutral. The only ways to permanently lower forest carbon with fire or any other disturbance are if regeneration does not occur and the forest...

Type: Media

Webinar

Learning from the Experts: Buzz Williams - How Do You Anticipate Routine Surprises?

www.nrfirescience.org/resource/16048

Listen to Buzz as he describes how he uses maps to anticipate routine surprises. Buzz's story might help you to think about what processes you can use to anticipate surprise.

Type: Media

Video

Just Culture Part 1

www.nrfirescience.org/resource/16024

In Module 1 of this short course, Prof Dekker introduces Just Culture.

Type: Media

Video

Public and agency perceptions of smoke from wild and prescribed fire

www.nrfirescience.org/resource/13669

Speaker: Christine Olsen, Research Social Scientist, Department of Forest Ecosystems and Society, Oregon State University. Event: Restoring the West Conference 2015 - Restoration and Fire in the Interior West.

Type: Media

Video

ScienceCasts: Taking the Wild out of Wildfire

www.nrfirescience.org/resource/16083

A new NASA-funded tool is taking some of the 'wild' out of wildfires by making it possible for U.S. fire managers to better spot and track direction of dangerous blazes. Visit <http://science.nasa.gov/> for more.

Type: Media

Video

Rangeland Fire Protection Associations in Oregon and Idaho: Implications for Fire Adaptation and Agency-Community Relationships

www.nrfirescience.org/resource/15508

Rangeland Fire Protection Associations are unique partnerships wherein ranchers and the Bureau of Land Management work together to suppress rangeland wildfires. Using four case studies in Oregon and Idaho, we discuss the value and outcomes of this approach, as well as challenges and future implications for fire adaptation on the...

Type: Media

Webinar

Complex Patterns of the Lolo Peak Fire from Carlton Ridge to Bass Creek

www.nrfirescience.org/resource/15792

The recent Lolo Peak Fire and associated burnouts and backburns resulted in both expected and unexpected burn patterns related to differences in forest structure, topography, and weather. It also

illustrates the "perfect storm" of stifling constraints the Forest Service faces in attempting to implement ecologically-based management...

Type: Media

Seminar

Sagebrush Ecosystems in a Changing Climate: Opportunities for Adaptive Management

www.nrfirescience.org/resource/15940

Sagebrush steppe rangelands comprise a large fraction of North America, but they are in decline due to increases in wildfire and invasive plants, factors that relate strongly to climate and weather variability. When intact, plant communities in sagebrush steppe appear well adapted to cold wet winters and hot dry summers along with...

Type: Media

Webinar

Learning from the Experts: Ric Carlson - Burning with Optimism

www.nrfirescience.org/resource/16044

Ric Carlson relates one occurrence when his optimism in a burn plan colored his perspective. The video addresses the question of how to guard against the pitfalls of optimism without paralyzing yourself or your unit into inaction.

Type: Media

Video

Conducting Effective After Action Reviews (AAR) - Part 1

www.nrfirescience.org/resource/16020

Conducting Effective After Action Reviews (AAR) - Part 1 - National Advanced Fire and Resource Institute 2005 - - Part 1 - The After Action Review of the Horse Creek Prescribed Fire. A simulation exercise video. What was planned? What actually happened? Why did it happen? What can we do next time?

Type: Media

Video

Living with Fire - Wildland Fire Science

www.nrfirescience.org/resource/16081

In this 3 minute video released by Oregon State University, fire science experts discuss the impact of fire on wildland as well as society's changing perception of the importance of fire and fire safety. Oregon State is conducting world-class research into all aspects of fire including the immediate and long-term effects of...

Type: Media

Video

High-Resolution Modeling of Environmental Transport Processes in Cities and Complex Terrain

www.nrfirescience.org/resource/15786

Cities are diverse places with heterogeneous landscapes and are home to complex processes occurring over a wide range of length and time scales. Understanding and modeling these process is critical to improved sustainability related to goals of improving urban microclimate, reducing energy and water usage, increasing clean energy...

Type: Media

Seminar

An Assessment of Temperature and RH from a Variety of Weather Meters

www.nrfirescience.org/resource/15934

Do you use belt weather kits or electronic handheld weather meters for measuring temperature and relative humidity in the field? Which device do you trust? Belt weather kits for obtaining weather information on prescribed fires and wildfires have been in use since the 1960's and the use of sling psychrometers from these kits has...

Type: Media

Webinar

Learning from the Experts: Ric Carlson - Building a 'Mac Truck' Burn Plan

www.nrfirescience.org/resource/16042

Ric Carlson describes how he develops the prescription window and uses a process of constant evaluation and updating that helps him avoid the traps always inherent with boundary selection. He addresses the question of how narrowly focused the prescription window in a prescribed burn should be.

Type: Media

Video

Rx Fire and Fire Use Lessons Learned

www.nrfirescience.org/resource/16018

Listen to the experiences and lessons learned from seven veteran fire management officers.

Type: Media

Video

Minimum Impact Suppression Tactics

www.nrfirescience.org/resource/16079

This 22 minute video covers what suppression tactics should be based on, including firefighter and public safety, resource benefits, minimum costs, and resource objectives. Past firefighting protection policy primarily emphasized the need to extinguish all wildland fire ignitions. Today's policy offers a full...

Type: Media

Video

Restoring fires role in fire adapted communities

www.nrfirescience.org/resource/15918

If you find yourself working in or with a community at risk from wildfire, it's because fire is a component of the local ecosystems. This means that your community will be confronted with fire at some time, with the main variables being when, and under what conditions. This 'when not if' scenario begs the following three questions...

Type: Media

Webinar

Smoke management: preparing and informing the public

www.nrfirescience.org/resource/12859

For several months during 2011, wildfires throughout the Southwest Area and Mexico caused air quality impacts on public health across the region, with significant impacts measured hundreds of miles away from individual wildfires. In order to address the emerging issue, a concerted multi-state interagency air quality coordination...

Type: Media

Webinar

Learning from the Experts: Riva Duncan - Got Conversation?

www.nrfirescience.org/resource/16038

Riva Duncan explains the importance of communication on the fireline. She explains the problems with communication on the Cascade Two Burn where she was the ignition specialist and talks about what should be included in burn plans. She recommends talking with others during the planning process and using high reliability organizing...

Type: Media

Video

Myth versus reality: understanding public views of fire management

www.nrfirescience.org/resource/14307

Presentation by Sarah McCaffrey (USDA Forest Service, Northern Research Station) regarding public attitudes towards fire management.

Type: Media

Webinar

The Nature of Americans: Barriers and opportunities to connect the nation with nature

www.nrfirescience.org/resource/16350

What is the state of Americans' connection to nature? How do we overcome disconnection? The Nature of Americans National Report: Disconnection and Recommendations for Reconnection reveals important insights from a study of nearly 12,000 adults, children, and parents, and provides recommendations to open the outdoors for all....

Type: Media

Webinar

Inside the Shelter

www.nrfirescience.org/resource/16011

"Fire Shelter Deployments: Stories and Common Insights" is a program developed by the US Forest Service Missoula Technology and Development Center (MTDC) that will help you understand what you may experience in a fire shelter deployment. The video gives first-hand descriptions of what it was like in the fire shelter during a...

Type: Media

Video

Firewise Virtual Workshop: Understanding How Embers Ignite Roofs in a Wildland Fire

www.nrfirescience.org/resource/16076

Firewise Virtual Workshop: Understanding How Embers Ignite Roofs in a Wildland Fire and How to Make Your Roof More Survivable

Type: Media

Video

Engaging Stakeholders in Developing Adaptation Strategies

www.nrfirescience.org/resource/15856

This webinar was presented by Marcie Bidwell (Mountain Studies Institute) and Betsy Neely (The Nature Conservancy) and was part of the Social-Ecological Resilience and Changing Landscapes Webinar Series sponsored by the USDA Forest Service Rocky Mountain Research Station.

Type: Media

Webinar

Current research on public perceptions of smoke from wildland and prescribed fire to inform communication and outreach

www.nrfirescience.org/resource/12817

This webinar covered two large, multi-region studies of public perceptions of smoke from wildland and prescribed fire funded by the JFSP. A mail/internet survey conducted by the University of Idaho investigated perceptions of urban and rural residents in the northern Rocky Mountains and south-central U.S. Research investigated...

Type: Media

Webinar

Standing Accountable - Cerro Grande Interview

www.nrfirescience.org/resource/16035

In a tv interview, Karen Wade, Reg. Dir., informed the public of Ray Weaver's suspension, covered the next steps in investigation of fire, including a Congressional Senate investigation, and gave a heart-felt message to the people of New Mexico taking responsibility for decisions.

Type: Media

Video