

Economic and policy factors driving adoption of institutional woody biomass heating systems in the United States

www.nrfirescience.org/resource/16492

Abundant stocks of woody biomass that are associated with active forest management can be used as fuel for bioenergy in many applications. Though factors driving large-scale biomass use in industrial settings have been studied extensively, small-scale biomass combustion systems commonly used by institutions for heating have received...

Author(s): Jesse Young, Nathaniel Anderson, Helen T. Naughton, Katrina Mullan

Year Published: 2018

Type: Document

Book or Chapter or Journal Article

Sustainability and wildland fire: The origins of Forest Service Wildland Fire Research

www.nrfirescience.org/resource/15768

On June 1, 2015, the Forest Service, an agency of the U.S. Department of Agriculture (USDA), celebrated the 100th anniversary of the Branch of Research. Established in 1915 to centralize and elevate the pursuit of research throughout the agency, the Branch of Research focused on everything from silvicultural investigations conducted...

Author(s): Diane M. Smith

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

You own the fuel, but who owns the fire?

www.nrfirescience.org/resource/16404

In this paper, we argue that the statement 'Whoever owns the fuel owns the fire' implies a duty on landowners to manage fuel on their land to reduce the likelihood of bushfires, however started, from spreading to neighbouring properties. However, the notion 'Whoever owns the fuel owns the fire' has not been analysed from a...

Author(s): Michael Eburn, Geoffrey J. Cary

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Employing resilience in the United States Forest Service

www.nrfirescience.org/resource/13901

The concept of resilience has permeated the discourse of many land use and environmental agencies in an attempt to articulate how to develop and implement policies concerned with the social and ecological dimensions of natural disturbances. Several distinct definitions of resilience exist, each with

its own concepts, focus and...

Author(s): Cassandra Moseley, R. Patrick Bixler, Christopher Bone, Kirsten Vinyeta

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

Insights from wildfire science: a resource for fire policy discussions

www.nrfirescience.org/resource/13863

Record blazes swept across parts of the US in 2015, burning more than 10 million acres. The four biggest fire seasons since 1960 have all occurred in the last 10 years, leading to fears of a 'new normal' for wildfire. Fire fighters and forest managers are overwhelmed, and it is clear that the policy and management approaches of...

Author(s): Tania L. Schoennagel, Penelope Morgan, Jennifer Balch, Philip E. Dennison, Brian J. Harvey, Richard L. Hutto, Meg A. Krawchuk, Max A. Moritz, Ray Rasker, Cathy L. Whitlock

Year Published: 2016

Type: Document

Technical Report or White Paper

U.S. federal fire and forest policy: emphasizing resilience in dry forests

www.nrfirescience.org/resource/14844

Current U.S. forest fire policy emphasizes short-term outcomes versus long-term goals. This perspective drives managers to focus on the protection of high-valued resources, whether ecosystem-based or developed infrastructure, at the expense of forest resilience. Given these current and future challenges posed by wildland fire and...

Author(s): Scott L. Stephens, Brandon M. Collins, Eric Biber, Peter Z. Fule

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

Forest fire policy: change conventional thinking of smoke management to prioritize long-term air quality and public health

www.nrfirescience.org/resource/14467

Wildland fire smoke is inevitable. Size and intensity of wildland fires are increasing in the western USA. Smoke-free skies and public exposure to wildland fire smoke have effectively been postponed through suppression. The historic policy of suppression has systematically both instilled a public expectation of a smoke-free...

Author(s): D.W. Schweizer, Richard Cisneros

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

Wildfires in the United States: a primer

www.nrfirescience.org/resource/14226

This report examines recent wildfires in the United States, summarizing their frequency, trends, and costs. It documents the increase in large wildfires and shows their concentration in western states. Cost and budget issues linked to wildfires are also examined. The report recommends ways to reduce the frequency and costs of...

Author(s): Vera Brusentsev, Wayne Vroman

Year Published: 2016

Type: Document

Technical Report or White Paper

The science of firescapes: achieving fire-resilient communities

www.nrfirescience.org/resource/13924

Wildland fire management has reached a crossroads. Current perspectives are not capable of answering interdisciplinary adaptation and mitigation challenges posed by increases in wildfire risk to human populations and the need to reintegrate fire as a vital landscape process. Fire science has been, and continues to be, performed in...

Author(s): Alistair M. S. Smith, Crystal A. Kolden, Travis B. Paveglio, Mark A. Cochrane, David M. J. S. Bowman, Max A. Moritz, Andrew D. Kliskey, Lilian Alessa, Andrew T. Hudak, Chad M. Hoffman, James A. Lutz, Lloyd P. Queen, Scott J. Goetz, Philip E. Higuera, Luigi Boschetti, Michael D. Flannigan, Kara M. Yedinak, Adam C. Watts, Eva K. Strand, Jan W. van Wagendonk, John Anderson, Brian J. Stocks, John T. Abatzoglou

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States?

www.nrfirescience.org/resource/14718

There is a widespread view among land managers and others that the protected status of many forestlands in the western United States corresponds with higher fire severity levels due to historical restrictions on logging that contribute to greater amounts of biomass and fuel loading in less intensively managed areas, particularly...

Author(s): Curtis M. Bradley, Chad T. Hanson, Dominick A. DellaSala

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

The passing of the Lolo Trail, with an introduction by Andrew J. Larson

www.nrfirescience.org/resource/14325

In 1935, Elers Koch argued in a Journal of Forestry article that a minimum fire protection model should be implemented in the backcountry areas of national forests in Idaho, USA. As a USDA Forest Service Supervisor and Assistant Regional Forester, Koch had led many major fire-fighting campaigns in the region, beginning with...

Author(s): Elers Koch

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

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

Wildfires burn science capacity

www.nrfirescience.org/resource/13500

With just over 3 months remaining, it looks like 2015 could be a record-breaking year for wildfires in the United States. So far this year, more than 8.5 million acres have burned and severe fires often happen in October. For the first time, the U.S. Forest Service will spend over 50% of its budget on fire management. Ironically,...

Author(s): Christopher Topik

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Principles of effective USA federal fire management plans

www.nrfirescience.org/resource/13454

Federal fire management plans are essential implementation guides for the management of wildland fire on federal lands. Recent changes in federal fire policy implementation guidance and fire science information suggest the need for substantial changes in federal fire management plans of the United States. Federal land management...

Author(s): Marc D. Meyer, Susan L. Roberts, Robin Wills, Matthew L. Brooks, Eric M. Winford

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Reduce wildfire risks or we'll continue to pay more for fire disasters

www.nrfirescience.org/resource/13048

This is a position paper on the true costs of wildfire, collectively published by the Association for Fire Ecology, the International Association of Wildland Fire, and The Nature Conservancy. The goal was to raise awareness of the often unreported total costs of wildfire, and to present a united perspective regarding the...

Author(s): Association for Fire Ecology, International Association of Wildland Fire, The Nature Conservancy

Year Published: 2015

Type: Document

Technical Report or White Paper

Wildland fire science and technology task force final report

www.nrfirescience.org/resource/13746

Large, intense wildland fires have become more frequent across the United States in recent decades. Risks to responders and citizens, property losses, response and recovery costs, and threats to communities and landscapes have increased significantly as a result. In order to address these formidable challenges, more-...

Author(s): National Science and Technology Council

Year Published: 2015

Type: Document

Technical Report or White Paper

Keeping it wild 2: an updated interagency strategy to monitor trends in wilderness character across the National Wilderness Preservation System

www.nrfirescience.org/resource/13591

Keeping It Wild 2 is an interagency strategy to monitor trends in selected attributes of wilderness character based on lessons learned from 15 years of developing and implementing wilderness

character monitoring across the National Wilderness Preservation System. This document updates and replaces Keeping It Wild: An Interagency...

Author(s): Peter Landres, Chris Barns, Steve Boutcher, Tim Devine, Peter Dratch, Adrienne Lindholm, Linda Merigliano, Nancy Roeper, Emily Simpson

Year Published: 2015

Type: Document

Technical Report or White Paper

Reform forest fire management

www.nrfirescience.org/resource/13498

Globally, wildfire size, severity, and frequency have been increasing, as have related fatalities and taxpayer-funded firefighting costs (1). In most accessible forests, wildfire response prioritizes suppression because fires are easier and cheaper to contain when small (2). In the United States, for example, 98% of wildfires are...

Author(s): Malcolm P. North, Scott L. Stephens, Brandon M. Collins, James K. Agee, Gregory H. Aplet, Jerry F. Franklin, Peter Z. Fule

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Wildland fire management: insights from a foresight panel

www.nrfirescience.org/resource/13440

Wildland fire management faces unprecedented challenges in the 21st century: the increasingly apparent effects of climate change, more people and structures in the wildland-urban interface, growing costs associated with wildfire management, and the rise of high-impact fires, to name a few. Given these significant and growing...

Author(s): Robert L. Olson, David N. Bengston, Leif A. DeVaney, Trevor A.C. Thompson

Year Published: 2015

Type: Document

Technical Report or White Paper

National Interagency Fire Center: Quadrennial Fire Review 2014

www.nrfirescience.org/resource/16199

The Quadrennial Fire Review (QFR) is a strategic assessment process conducted every four years to evaluate current wildland fire management community strategies and capabilities against best estimates of the future environment. This report is the third iteration of the QFR, which began in 2005. It is not a formal policy or decision...

Author(s): Booz Allen Hamilton

Year Published: 2015

Type: Document

Technical Report or White Paper

Negative consequences of positive feedbacks in US wildfire management

www.nrfirescience.org/resource/13202

Over the last two decades wildfire activity, damage, and management cost within the US have increased substantially. These increases have been associated with a number of factors including climate change and fuel accumulation due to a century of active fire suppression. The increased fire activity has occurred during a time of...

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

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

US strategy for forest management adaption to climate change: building a framework for decision making

www.nrfirescience.org/resource/12443

Recent policy changes in the USA direct agencies managing federal forests to analyze the potential effects of climate change on forest productivity, water resource protection, wildlife habitat, biodiversity, and other values. This paper describes methods developed to (1) assess current risks, vulnerabilities, and gaps in knowledge...

Author(s): V. Alaric Sample, Jessica E. Halofsky, David L. Peterson

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

Interagency prescribed fire planning and procedures guide

www.nrfirescience.org/resource/12453

Fire is an essential ecological process in many fire-dependent ecosystems. In large areas of the country, fire exclusion from these ecosystems has led to unhealthy forest, woodland and rangeland conditions. These areas are at risk of intense, severe wildfires that threaten communities and cause significant damage to key ecological...

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

Year Published: 2014

Type: Document

Management or Planning Document, Technical Report or White Paper

Reburns and their impact on carbon pools, site productivity, and recovery

www.nrfirescience.org/resource/14531

Prior to fire suppression and exclusion, wildfires and other disturbances (e.g., insects, disease, and weather) sustained ecosystem processes in many landscapes of the Western United States. However, wildfires have been increasing in size, frequency, and intensity in recent years (Kellogg and others 2008). Recognizing the value of...

Author(s): Deborah S. Page-Dumroese, Theresa B. Jain, Jonathan Sandquist, Joanne M. Tirocke, John Errecart, Martin F. Jurgensen

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

Playing with fire: how climate change and development patterns are contributing to the soaring costs of western wildfires

www.nrfirescience.org/resource/12974

Strong scientific evidence shows that climate change is producing hotter, drier conditions that contribute to larger fires and longer fire seasons in the American West today. The annual number of large wildfires on federally managed lands in the 11 western states has increased by more than 75 percent: from approximately 140 during...

Author(s): Rachel Cleetus, Kranti Mulik

Year Published: 2014

Type: Document

Technical Report or White Paper

Trial by fire

www.nrfirescience.org/resource/12135

1) Conservation partners across 11 western states are rallying in unprecedented fashion to reduce threats to sage-grouse and the sagebrush ecosystem they occupy. 2) Improvements made in the Bureau of Land Management's (BLM) wildfire policy are a tremendous step forward but the 2012 wildfire season is a harsh reminder that more...

Author(s): Tim Murphy, David E. Naugle, Randall Eardley, Jeremy D. Maestas, Tim Griffiths, Michael L. Pellant, San J. Stiver

Year Published: 2013

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

The rising cost of wildfire protection

www.nrfirescience.org/resource/12409

Headwaters Economics produced this report to better understand and address why wildfires are becoming more severe and expensive. The report also describes how the protection of homes in the Wildland-Urban Interface has added to these costs and concludes with a brief discussion of solutions that may help control escalating costs....

Author(s): Ross Gorte

Year Published: 2013

Type: Document

Technical Report or White Paper

Perspectives on disconnects between scientific information and management decisions on post-fire recovery in western US

www.nrfirescience.org/resource/12035

Environmental regulations frequently mandate the use of 'best available' science, but ensuring that it is used in decisions around the use and protection of natural resources is often challenging. In the Western US, this relationship between science and management is at the forefront of post-fire land management decisions. Recent...

Author(s): Xiaoli Chen, Nathan Emery, Elizabeth S. Garcia, Erin J. Hanan, Heather E. Hodges, Tyronne Martin, Matthew A. Meyers, Lindsey E. Peavey, Hui Peng, Jaime Sainz Santamaria, Kellie A. Uyeda, Sarah E. Anderson, Christina Tague

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

The national cohesive wildland fire management strategy: phase III western regional action plan

www.nrfirescience.org/resource/11971

The Western Regional Action Plan is part of the culmination of a three-year effort put into motion by the Federal Land Assistance, Management and Enhancement Act of 2009 (FLAME Act). Representatives

of federal, state, local, and tribal governments, scientists, interested governmental and nongovernmental organizations, businesses and...

Author(s): Wildland Fire Executive Council

Year Published: 2013

Type: Document

Management or Planning Document

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

Using fire to increase the scale, benefits, and future maintenance of fuels treatments

www.nrfirescience.org/resource/11493

The USDA Forest Service is implementing a new planning rule and starting to revise forest plans for many of the 155 National Forests. In forests that historically had frequent fire regimes, the scale of current fuels reduction treatments has often been too limited to affect fire severity and the Forest Service has predominantly...

Author(s): Malcolm P. North, Brandon M. Collins, Scott L. Stephens

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

Community wildfire protection planning: is the Healthy Forests Restoration Act's vagueness genius?

www.nrfirescience.org/resource/8273

The Healthy Forests Restoration Act of 2003 (HFRA) encourages communities to develop community wildfire protection plans (CWPPs) to reduce their wildland fire risk and promote healthier forested ecosystems. Communities who have developed CWPPs have done so using many different processes, resulting in plans with varied form and...

Author(s): Pamela J. Jakes, Kristen C. Nelson, Sherry A. Enzler, Sam Burns, Anthony S. Cheng, Victoria Sturtevant, Daniel R. Williams, Alexander N. Bujak, Rachel F. Brummel, Stephanie A. Grayzeck-Souter, Emily Staychock

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Progress towards and barriers to implementation of a risk framework for US federal wildland fire policy and decision making

www.nrfirescience.org/resource/16180

In this paper we review progress towards the implementation of a riskmanagement framework for US federal wildland fire policy and operations. We first describe new developments in wildfire simulation technology that catalyzed the development of risk-based decision support systems for strategic wildfire management. These systems...

Author(s): David E. Calkin, Mark A. Finney, Alan A. Ager, Matthew P. Thompson, Krista M. Gebert

Year Published: 2011
Type: Document
Book or Chapter or Journal Article

Working with American Indian tribes on wildland fires: protecting cultural heritage sites in northwestern California

www.nrfirescience.org/resource/16098

The Federal Land Policy and Management Act (1976: Public Law 94-579) requires coordination with approved tribal management plans for the purposes of development and revisions of such plans and is inclusive of programs or projects. Federal Government consultation, such as government-to-government protocol agreements with federally...

Author(s): Frank K. Lake
Year Published: 2011
Type: Document
Book or Chapter or Journal Article

Restoration relevance of recent National Fire Plan treatments in forests of the western United States

www.nrfirescience.org/resource/8226

The US National Fire Plan (NFP) is among the largest forest-restoration initiatives worldwide, removing wildland fuels on about 11 million hectares and costing over \$6 billion. We evaluated the extent to which areas treated under the NFP-from 2004 to 2008, in forest ecosystems outside the wildland-urban interface in 11 western...

Author(s): Tania L. Schoennagel, Cara R. Nelson
Year Published: 2011
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

Integrating fuel treatment into ecosystem management: a proposed project planning process

www.nrfirescience.org/resource/8206

Concern over increased wildland fire threats on public lands throughout the western United States makes fuel reduction activities the primary driver of many management projects. This single-issue focus recalls a management planning process practiced frequently in recent decades - a least-harm approach where the primary objective is...

Author(s): Keith Stockmann, Kevin D. Hyde, J. Greg Jones, Dan R. Loeffler, Robin P. Silverstein
Year Published: 2010
Type: Document
Book or Chapter or Journal Article, Management or Planning Document

National Fire Plan fuels treatments target the wildland-urban interface in the western United States

www.nrfirescience.org/resource/8351

The article 'Implementation of National Fire Plan treatments in the wildland-urban interface in the western United States' (1) is misleading because it is based on wildland-urban interface (WUI) designations not used by federal agencies or their state and local partners. Moreover, by omitting any examination of the allotment of...

Author(s): Allan Fitzsimmons

Year Published: 2009

Type: Document

Book or Chapter or Journal Article

Guidance for Implementation of Federal Wildland Fire Management Policy

www.nrfirescience.org/resource/16197

The Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001) remains sound and presents a single cohesive federal fire policy for the Departments of the Interior and Agriculture. However, some issues associated with implementation of this policy need closer attention and clarification to fully achieve the...

Year Published: 2009

Type: Document

Technical Report or White Paper

Implementation of National Fire Plan fuel treatments near the wildland-urban interface in the western United States

www.nrfirescience.org/resource/8225

Because of increasing concern about the effects of catastrophic wildland fires throughout the western United States, federal land managers have been engaged in efforts to restore historical fire behavior and mitigate wildfire risk. During the last 5 years (2004-2008), 44,000 fuels treatments were implemented across the western...

Author(s): Tania L. Schoennagel, Cara R. Nelson, David M. Theobald, Gunnar C. Carnwath, Teresa B. Chapman

Year Published: 2009

Type: Document

Book or Chapter or Journal Article

Technical guide for monitoring selected conditions related to wilderness character

www.nrfirescience.org/resource/12437

The purpose of monitoring wilderness character is to improve wilderness stewardship by providing managers a tool to assess how selected actions and conditions related to wilderness character are changing over time. Wilderness character monitoring provides information to help answer two key questions about wilderness character and...

Author(s): Peter Landres, Steve Boutcher, Liese Dean, Troy E. Hall, Tamara Blett, Terry Carlson, Ann Mebane, Carol Hardy, Susan Rinehart, Linda Merigiano, David N. Cole, Andy Leach, Pam Wright, Deb Bumpus

Year Published: 2009

Type: Document

Technical Report or White Paper

Is wildfire policy in the United States sustainable?

www.nrfirescience.org/resource/16882

Beginning in 2000, wildfire policy in the United States shifted from focusing almost exclusively on suppression to embracing multiple goals, including hazardous fuels reduction, ecosystem restoration, and community assistance. Mutually reinforcing, these policy goals have the potential to result in an ecologically, socially, and...

Author(s): Toddi A. Steelman, Caitlin A. Burke

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

Simulation of the consequences of different fire regimes to support wildland fire use decisions

www.nrfirescience.org/resource/11429

The strategy known as wildland fire use, in which lightning-ignited fires are allowed to burn, is rapidly gaining momentum in the fire management community. Managers need to know the consequences of an increase in area burned that might result from an increase in wildland fire use. One concern of land managers as they consider...

Author(s): Carol Miller

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

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

Treatment of data influenced by exceptional events; final rule

www.nrfirescience.org/resource/12454

This action finalizes a rule to govern the review and handling of air quality monitoring data influenced by exceptional events. Exceptional events are events for which the normal planning and regulatory process established by the Clean Air Act (CAA) is not appropriate. In this rulemaking action, EPA is finalizing the proposal to:...

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

Year Published: 2007

Type: Document

Management or Planning Document, Technical Report or White Paper

Guide to fuel treatments in dry forests of the Western United States: assessing forest structure and fire hazard

www.nrfirescience.org/resource/11166

Guide to Fuel Treatments analyzes a range of fuel treatments for representative dry forest stands in the Western United States with overstories dominated by ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), and pinyon pine (*Pinus edulis*). Six silvicultural options (no thinning; thinning from below to 50 trees...

Author(s): Morris C. Johnson, David L. Peterson, Crystal L. Raymond

Year Published: 2007

Type: Document

Technical Report or White Paper

The next catastrophe: reducing our vulnerabilities to natural, industrial, and terrorist disasters

www.nrfirescience.org/resource/15885

Perrow, developer of normal accident theory, argues here that we must reduce the size of targets that are vulnerable to disasters because organizations, including political ones, cannot completely prevent all the risks associated with the potential disasters that a society might face. A basic tenant of Perrow's argument is that...

Author(s): Charles Perrow

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

Ecological science relevant to management policies for fire-prone forests of the western United States, Society for Conservation Biology scientific panel of fire in western U.S. forests

www.nrfirescience.org/resource/11190

Fire is a primary natural disturbance in most forests of western North America and has shaped their plant and animal communities for millions of years. Native species and fundamental ecological processes are dependent on conditions created by fire. However, many western forests have experienced shifts in wildfire regimes and forest...

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

Year Published: 2006

Type: Document

Technical Report or White Paper

Development of initial Wildland Fire Use documentation for Charles M. Russell National Wildlife Refuge

www.nrfirescience.org/resource/11077

The Charles M. Russell National Wildlife Refuge manages ecosystems that depend on fire for their maintenance. Fire is abundant in and adjacent to the refuge where lightning and human ignitions can rapidly spread in grass and shrub fuels. Farm and ranch land which would be adversely impacted by fire, pose a significant logistical...

Author(s): Bill Clark, Doug Stephen, Pat Stephen, Laurie L. Kurth, Ken Kerr

Year Published: 2006

Type: Document

Management or Planning Document

Wilderness fire management in a changing world

www.nrfirescience.org/resource/7963

Several strategies are available for reducing accumulated forest fuels and their associated risks, including naturally or accidentally ignited wildland fires, management ignited prescribed fires, and a variety of mechanical and chemical methods (Omi 1996). However, a combination of policy, law, philosophy, and logistics suggest...

Author(s): Carol Miller

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

Forest structure and fire hazard in dry forests of the Western United States

www.nrfirescience.org/resource/11163

ANNOTATION: This document synthesizes the relevant scientific knowledge that can assist fuel-treatment projects on national forests and other public lands and contribute to National Environmental Policy Act (NEPA) analyses and other assessments. It is intended to support science-based decision making for fuel management in dry...

Author(s): David L. Peterson, Morris C. Johnson, James K. Agee, Theresa B. Jain, Donald McKenzie, Elizabeth D. Reinhardt

Year Published: 2005

Type: Document

Synthesis, Technical Report or White Paper

Federal Implementation Plans Under the Clean Air Act for Indian Reservations in Idaho, Oregon and Washington; Final Rule

www.nrfirescience.org/resource/12014

The Environmental Protection Agency (EPA) is taking final action on these Federal Implementation Plans (FIPs) under the Clean Air Act (CAA) for Indian reservations in Idaho, Oregon, and Washington. The FIPs put in place basic air quality regulations to protect health and welfare on Indian reservations located in the Pacific...

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

Year Published: 2005

Type: Document

Management or Planning Document

Effectiveness of thinning and prescribed fire in reducing wildfire severity

www.nrfirescience.org/resource/11072

The severity of recent fire seasons in the US has provided dramatic evidence for the increasing complexity of wildfire problems. A wide variety of indicators suggest worsening dilemmas: area burned, funds expended, homes destroyed or evacuated, ecosystems at risk, and human fatalities/injuries all seem to be on the increase or have...

Author(s): Philip N. Omi, Erik J. Martinson

Year Published: 2004

Type: Document

Conference Proceedings, Synthesis, Technical Report or White Paper

Wildland fire in ecosystems: effects of fire on air

www.nrfirescience.org/resource/12587

This state-of-knowledge review about the effects of fire on air quality can assist land, fire, and air resource managers with fire and smoke planning, and their efforts to explain to others the science behind fire-related program policies and practices to improve air quality. Chapter topics include air quality regulations and fire;...

Author(s): David V. Sandberg, Roger D. Ottmar, Janice L. Peterson, John Core
Year Published: 2002
Type: Document
Technical Report or White Paper

Protecting people and sustaining resources in fire-adapted ecosystems: a cohesive strategy

www.nrfirescience.org/resource/11223

This strategy is based on the premise that sustainable resources are predicated on healthy, resilient ecosystems. In fire-adapted ecosystems, some measure of fire use-at appropriate intensity, frequency, and time of year-should be included in management strategies intended to protect and sustain watersheds, species, and other...

Author(s): Lyle Laverty, Gerald W. Williams

Year Published: 2000

Type: Document

Technical Report or White Paper

Western national forests: a cohesive strategy is needed to address catastrophic wildfire threats

www.nrfirescience.org/resource/11224

National forests of the dry, interior portion of the western United States that are managed by the Department of Agriculture's Forest Service have undergone significant changes over the last century and a half, becoming much denser, with fewer large trees and many more small, tightly spaced trees and underbrush. These changes have...

Author(s): United States General Accounting Office

Year Published: 1999

Type: Document

Technical Report or White Paper

Appropriate management responses to wildland fire: options and costs

www.nrfirescience.org/resource/11068

The Federal Wildland Fire Management Policy and Program Review, chartered and completed in 1995, represents the latest stage in the evolution of wildland fire management. The concept of appropriate management response is central to this policy. Through this approach, management responses are developed to reflect resource management...

Author(s): G. Thomas Zimmerman

Year Published: 1999

Type: Document

Conference Proceedings, Technical Report or White Paper

The ecological implications of fire in Greater Yellowstone, proceedings of the second biennial conference on the Greater Yellowstone Ecosystem

www.nrfirescience.org/resource/11989

Proceedings of the second biennial conference on the Greater Yellowstone Ecosystem.

Author(s): Jason Greenlee

Year Published: 1996

Type: Document

Conference Proceedings

The evolution of National Park Service fire policy

www.nrfirescience.org/resource/12421

National Park Service policies concerning fire have changed over the years from no policy at all in the

early years, through years of absolute fire suppression, to a period of experimentation and refinement with a full spectrum of integrated fire management strategies. During much of this time, the Service was influenced by other...

Author(s): Jan W. van Wagtendonk

Year Published: 1991

Type: Document

Conference Proceedings, Technical Report or White Paper

Some thoughts on prescribed natural fires

www.nrfirescience.org/resource/12420

Wildland fire is a significant component of nearly all North American ecosystems. High intensity, stand-replacement fires are normal in certain ecosystems, especially in the northern Rocky Mountains.

Wilderness fire managers are obligated to let fire operate as a natural influence to the extent that this is possible. Where...

Author(s): Jack D. Cohen

Year Published: 1991

Type: Document

Technical Report or White Paper

The history and politics of disaster management in the United States

www.nrfirescience.org/resource/15870

This chapter overviews the history of hazard management in the United States, and defines what constitutes a "disaster" by federal standards. Popkin provides a history of federal and state policies and programs established and maintained in the United States since 1803. Despite historic moves to ensure federally funded hazard...

Author(s): Roy S. Popkin

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

Wildland fires: predicting the behavior of wildland fires-among nature's most potent forces-can save lives, money, and natural resources

www.nrfirescience.org/resource/8315

During a period of three days in mid-February 1983, bushfires swept over 400,000 ha in southern Australia, killing 74 people, destroying more than 2,000 homes, and burning out 7 towns. This tragic repetition of the fires of January 1939, in which 71 people perished, was foretold by Noble (1977), whose monograph on the 1939 fires...

Author(s): Frank A. Albin

Year Published: 1984

Type: Document

Book or Chapter or Journal Article

Smoke Management and Air Quality for Land Managers: An Online Training Resource

www.nrfirescience.org/resource/57

Smoke Management and Air Quality for Land Managers is meant for those who are looking for a tutorial on smoke management and air quality. The refresher is comprised of four lessons, each of which can be completed in about half an hour; however, links and interactions allow further investigation of several topics.

Type: Website

Online Course

Wildfire as a socio-ecological problem

www.nrfirescience.org/resource/14497

This 1-hour webinar discussed US fire policy as a complex problem that exists at the intersection of social and ecological realms and involves multiple temporal and spatial scales. Dr. Steelman uniquely describes the problem in this context and presents various response scenarios based on her research.

Type: Media

Webinar

Burned area recovery project: a stakeholder perspective

www.nrfirescience.org/resource/13320

In this video, Larry Campbell, member of Friends of the Bitterroot, spoke about his organization's opposition to the salvage logging component of the BNF's Burned Area Recovery project following the Fires of 2000. This was filmed along Rye Creek, which was one of the stops during the Fires of 2000 field trip that was part of...

Type: Media

Video

Interview with Tom Harbour - Part three of three

www.nrfirescience.org/resource/13868

Tom Harbour, National Director of Fire and Aviation Management for the U.S. Forest Service, was interviewed by Bill Gabbert for Wildfire Today, December 14, 2015. In this final installment of the three part series, Mr. Harbour talked about the Cantwell-Hastings Bill that requires a criminal investigation of firefighter...

Type: Media

Video

Managing wildfire: blazing the trail in the Southwest

www.nrfirescience.org/resource/15595

Recent changes in federal fire management policy have given fire managers increased flexibility to manage wildfires for multiple objectives. Fire managers can allow one flank of a fire to continue burning through remote backcountry, while actively suppressing another flank that threatens homes, infrastructure, or other values. Fire...

Type: Media

Video

Understanding the views of decision-makers on climate adaptation

www.nrfirescience.org/resource/15114

This webinar was part of the US Forest Service, Rocky Mountain Research Station's Social-Ecological

Resilience and Changing Landscapes webinar series.

Type: Media

Webinar

Occupy wildfires: the story of the 1%

www.nrfirescience.org/resource/14518

Jessica Hass discusses how the confluence of society and nature leads to catastrophic wildfires and what we can do to combat them. Wildfires are naturally occurring events with many ecological benefits. However, with more and more people moving into the lands adjacent to fire adapted ecosystems, the probability of catastrophic...

Type: Media

Video

California between two fires

www.nrfirescience.org/resource/14496

Beginning in the 1960s the U.S. experienced a revolution in fire policy, science, and practice. The contours of that reformation on a national scale are becoming sharper with time. But America is also a confederation of regions, of which three, Florida, California, and the Northern Rockies, are most relevant. The national narrative...

Type: Media

Webinar

Tim Sexton - Terminology: PNF to WFU to WTF

www.nrfirescience.org/resource/16195

This 20 minute presentation was given by Tim Sexton at the 3rd SW Fire Ecology Conference & 1st Applied Fire Science Workshop in Tucson, Arizona. It covers wildland fire terminology from the perspective of description, labels, and a 2009 update.

Type: Media

Video

Introduction to air quality regulations

www.nrfirescience.org/resource/14095

A 42-minute presentation recorded in February 2009 as part of Effective Communication for Smoke Management in a Changing Air Quality Environment. It provides an Introduction to federal regulations which address smoke management in the context of wildland fire.

Type: Media

Video