

## **Wildfire risk reduction in the United States: Leadership staff perceptions of local fire department roles and responsibilities**

[www.nrfirescience.org/resource/16481](http://www.nrfirescience.org/resource/16481)

As wildland fires have had increasing negative impacts on a range of human values, in many parts of the United States (U.S.) and around the world, collaborative risk reduction efforts among agencies, homeowners, and fire departments are needed to improve wildfire safety and mitigate risk. Using interview data from 46 senior officers...

Author(s): Rachel S. Madsen, Hylton J. G. Haynes, Sarah M. McCaffrey

Year Published: 2018

Type: Document

Book or Chapter or Journal Article

## **Examining the influence of biophysical conditions on wildland-urban interface homeowners' wildfire risk mitigation activities in fire-prone landscapes**

[www.nrfirescience.org/resource/16539](http://www.nrfirescience.org/resource/16539)

Expansion of the wildland–urban interface (WUI) and the increasing size and number of wildfires has policy-makers and wildfire managers seeking ways to reduce wildfire risk in communities located near fire-prone forests. It is widely acknowledged that homeowners can reduce their exposure to wildfire risk by using nonflammable...

Author(s): Christine Olsen, Jeffrey D. Kline, Alan A. Ager, Keith A. Olsen, Karen C. Short

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

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

[www.nrfirescience.org/resource/16520](http://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

## **Surface fuel characteristics, temporal dynamics, and fire behavior of masticated mixed-conifer fuelbeds of the U.S. Southeast and Rocky Mountains**

[www.nrfirescience.org/resource/15582](http://www.nrfirescience.org/resource/15582)

Mastication is a wildland fuel treatment technique that is rapidly becoming popular with fire managers for fire hazard reduction projects, especially in areas where reducing fuels with prescribed fire is particularly challenging. Mastication is the process of mechanically modifying the live and dead surface and canopy biomass by...

Author(s): Robert E. Keane, Pamela G. Sikkink, Theresa B. Jain, James J. Reardon

Year Published: 2017

Type: Document

Technical Report or White Paper

## **Human presence diminishes the importance of climate in driving fire activity across the United States**

[www.nrfirescience.org/resource/16345](http://www.nrfirescience.org/resource/16345)

Growing human and ecological costs due to increasing wildfire are an urgent concern in policy and management, particularly given projections of worsening fire conditions under climate change. Thus, understanding the relationship between climatic variation and fire activity is a critically important scientific question. Different...

Author(s): Alexandra D. Syphard, Jon E. Keeley, Anne H. Pfaff, Ken Ferschweiler

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

### **Spatially varying constraints of human-caused fire occurrence in British Columbia, Canada**

[www.nrfirescience.org/resource/15088](http://www.nrfirescience.org/resource/15088)

Human-caused wildfires are controlled by human and natural influences, and determining their key drivers is critical for understanding spatial patterns of wildfire and implementing effective fire management. We examined an array of explanatory variables that account for spatial controls of human-caused fire occurrence from 1990 to...

Author(s): Philip E. Camp, Meg A. Krawchuk

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

### **Adapting to wildfire: Moving beyond homeowner risk perceptions to taking action**

[www.nrfirescience.org/resource/16524](http://www.nrfirescience.org/resource/16524)

Champ's presentation focused on how to get homeowners to take action to protect their properties from fire. She framed this challenge as a last-mile problem, which is a concept from the literature on supply chain. The last mile is the end of the supply chain where a product is transferred to the customer. The last mile is often...

Author(s): Patricia A. Champ

Year Published: 2017

Type: Document

Conference Proceedings

### **Network analysis of wildfire transmission and implications for risk governance**

[www.nrfirescience.org/resource/16507](http://www.nrfirescience.org/resource/16507)

We characterized wildfire transmission and exposure within a matrix of large land tenures (federal, state, and private) surrounding 56 communities within a 3.3 million ha fire prone region of central Oregon US. Wildfire simulation and network analysis were used to quantify the exchange of fire among land tenures and communities and...

Author(s): Alan A. Ager, Cody Evers, Michelle A. Day, Haiganoush K. Preisler, Ana M. G. Barros, Max W. Nielsen-Pincus

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

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

[www.nrfirescience.org/resource/16390](http://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

### **Wildland urban interface wildfire mitigation desk reference guide**

[www.nrfirescience.org/resource/15251](http://www.nrfirescience.org/resource/15251)

The Wildland Urban Interface Wildfire Mitigation Desk Reference Guide is designed to provide basic background information on relevant programs and terminology for those, whether community members or agency personnel, who are seeking to enhance their community's wildfire mitigation efforts. The four primary objectives of this...

Author(s): National Wildfire Coordinating Group (NWCG)

Year Published: 2017

Type: Document

Management or Planning Document

### **Planning for wildfire in the wildland-urban interface: a resource guide for Idaho communities**

[www.nrfirescience.org/resource/14856](http://www.nrfirescience.org/resource/14856)

The price of wildfire has never been higher. Why? And what can local communities do about it? One way to measure the price of wildfire is the dollars spent on suppression alone. In 1995, fire made up 16 percent of the U.S. Forest Service's annual appropriation budget; in 2015, wildfire consumed more than 50 percent of the...

Author(s): Stephen R. Miller, Thomas Wuerzer, Jaap Vos, Eric Lindquist, Molly Mowery, Tyre Holfeltz, Brian Stephens, Alexander Grad

Year Published: 2016

Type: Document

Management or Planning Document

### **Do insurance policies and rates influence home development on fire-prone lands?**

[www.nrfirescience.org/resource/14811](http://www.nrfirescience.org/resource/14811)

The dangers and costs associated with wildfires are rising and predicted to escalate rapidly in decades to come, primarily because of continued home development on fire-prone lands and the effects of climate change. Those interested in reducing wildfire risk have asked whether insurance can play a role in making new and existing...

Author(s): Ray Rasker

Year Published: 2016

Type: Document

Technical Report or White Paper

### **Places where wildfire potential and social vulnerability coincide in the coterminous United States**

[www.nrfirescience.org/resource/14522](http://www.nrfirescience.org/resource/14522)

The hazards-of-place model posits that vulnerability to environmental hazards depends on both biophysical and social factors. Biophysical factors determine where wildfire potential is elevated, whereas social factors determine where and how people are affected by wildfire. We evaluated place vulnerability to wildfire hazards in the...

Author(s): Gabriel Wigtil, Roger B. Hammer, Jeffrey D. Kline, Miranda H. Mockrin, Susan I. Stewart, Daniel Roper, Volker C. Radeloff

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Evaluating the characteristics of social vulnerability to wildfire: demographics, perceptions, and parcel characteristics**

[www.nrfirescience.org/resource/14804](http://www.nrfirescience.org/resource/14804)

A large body of research focuses on identifying patterns of human populations most at risk from hazards and the factors that help explain performance of mitigations that can help reduce that risk. One common concept in such studies is social vulnerability-human populations' potential exposure to, sensitivity from and ability to...

Author(s): Travis B. Paveglio, Tony Prato, Catrin Edgeley, Derek J. Nalle

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Using community archetypes to better understand differential community adaptation to wildfire risk**

[www.nrfirescience.org/resource/14469](http://www.nrfirescience.org/resource/14469)

One of the immediate challenges of wildfire management concerns threats to human safety and property in residential areas adjacent to non-cultivated vegetation. One approach for relieving this problem is to increase human community 'adaptiveness' to deal with the risk and reality of fire in a variety of landscapes. The challenge...

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

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **The affluence-vulnerability interface: intersecting scales of risk, privilege, and disaster**

[www.nrfirescience.org/resource/14766](http://www.nrfirescience.org/resource/14766)

This paper examines vulnerability in the context of affluence and privilege. It focuses on the 1991 Oakland Hills Firestorm in California, USA to examine long-term lived experiences of the disaster. Vulnerability is typically understood as a condition besetting poor and marginalized communities. Frequently ignored in these...

Author(s): Christine Eriksen, Gregory Simon

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Examining alternative fuel management strategies and the relative contribution of National Forest System land to wildfire risk to adjacent homes - a pilot assessment on the Sierra National Forest, California, USA**

[www.nrfirescience.org/resource/14352](http://www.nrfirescience.org/resource/14352)

Determining the degree of risk that wildfires pose to homes, where across the landscape the risk originates, and who can best mitigate risk are integral elements of effective co-management of wildfire risk. Developing assessments and tools to help provide this information is a high priority for federal land management agencies such...

Author(s): Joe H. Scott, Matthew P. Thompson, Julie W. Gilbertson-Day

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Recovery and adaptation after wildfire on the Colorado Front Range (2010-12)**

[www.nrfirescience.org/resource/14703](http://www.nrfirescience.org/resource/14703)

Following the loss of homes to wildfire, when risk has been made apparent, homeowners must decide whether to rebuild, and choose materials and vegetation, while local governments guide recovery and rebuilding. As wildfires are smaller and more localised than other disasters, it is unclear if recovery after wildfire results in policy...

Author(s): Miranda H. Mockrin, Susan I. Stewart, Volker C. Radeloff, Roger B. Hammer

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Wildfire risk to residential structures in the Island Park Sustainable Fire Community: Caribou-Targhee National Forest**

[www.nrfirescience.org/resource/14695](http://www.nrfirescience.org/resource/14695)

The Island Park Sustainable Fire Community (IPSFC) Project is a collaborative working group of citizens, businesses, non-profit organizations, and local, state, and federal government agencies ([www.islandparkfirecommunity.com](http://www.islandparkfirecommunity.com)) working to create fire-resilient ecosystems in and around the human communities of West Yellowstone,...

Author(s): Don Helmbrecht, Julie W. Gilbertson-Day, Joe H. Scott, LaWen Hollingsworth

Year Published: 2016

Type: Document

Technical Report or White Paper

### **Resolving future fire management conflicts using multicriteria decision making**

[www.nrfirescience.org/resource/13893](http://www.nrfirescience.org/resource/13893)

Management strategies to reduce the risks to human life and property from wildfire commonly involve burning native vegetation. However, planned burning can conflict with other societal objectives such as human health and biodiversity conservation. These conflicts are likely to intensify as fire regimes change under future climates...

Author(s): Don A. Driscoll, Michael Bode, Ross A. Bradstock, David A. Keith, Trent D. Penman, Owen F. Price

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Setting priorities for private land conservation in fire-prone landscapes: Are fire risk reduction and biodiversity conservation competing or compatible objectives?**

[www.nrfirescience.org/resource/14588](http://www.nrfirescience.org/resource/14588)

Although wildfire plays an important role in maintaining biodiversity in many ecosystems, fire management to protect human assets is often carried out by different agencies than those tasked for conserving biodiversity. In fact, fire risk reduction and biodiversity conservation are often viewed as competing objectives. Here we...

Author(s): Alexandra D. Syphard, Van Butsic, Avi Bar-Massada, Jon E. Keeley, Jeff A. Tracey, Robert N. Fisher

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **High resolution mapping of development in the wildland-urban interface using object based image extraction**

[www.nrfirescience.org/resource/14808](http://www.nrfirescience.org/resource/14808)

The wildland-urban interface (WUI), the area where human development encroaches on undeveloped

land, is expanding throughout the western United States resulting in increased wildfire risk to homes and communities. Although census based mapping efforts have provided insights into the pattern of development and expansion of the WUI at...

Author(s): Michael D. Caggiano, Wade T. Tinkham, Chad M. Hoffman, Anthony S. Cheng, Todd J. Hawbaker

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Fuel size impacts on carbon residuals and combustion dynamics in masticated woody debris**

[www.nrfirescience.org/resource/14488](http://www.nrfirescience.org/resource/14488)

Mastication of standing trees to reduce crown fuel loading is an increasingly popular method of reducing wildfire hazard in the wildland-urban interface of Canada. Previous research has shown that masticated fuel beds can leave considerable pyrogenic and black carbon residuals after burning, though the impact of fuel particle size...

Author(s): Dan K. Thompson, Tom J. Schiks, B. Mike Wotton

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Forest density preferences of homebuyers in the wildland-urban interface**

[www.nrfirescience.org/resource/14795](http://www.nrfirescience.org/resource/14795)

In the fire-prone Western U.S., the scale of surrounding forest density can be realized by homebuyers as an amenity for aesthetics and cooling effects, or as a disamenity in terms of wildfire risk. There has been a lack of academic attention to understanding this duality of forest density preferences for homebuyers in at-risk...

Author(s): Evan Hjerpe, Yeon-Su Kim, Leah Dunn

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Living with fire: how social scientists are helping wildland-urban interface communities reduce wildfire risk**

[www.nrfirescience.org/resource/14451](http://www.nrfirescience.org/resource/14451)

Reducing wildfire risk to lives and property is a critical issue for policy makers, land managers, and citizens who reside in high-risk fire areas of the United States - this is especially the case in the Rocky Mountain region and other western states. In order for a wildfire risk reduction effort to be effective in a U.S. wildland-...

Author(s): Brian Cooke

Year Published: 2016

Type: Document

Research Brief or Fact Sheet

### **Anthropogenic influence on wildfire activity in Alberta, Canada**

[www.nrfirescience.org/resource/14702](http://www.nrfirescience.org/resource/14702)

The boreal forest of Alberta, Canada, is under pressure from a rapid expansion of the wildland-human interface driven by natural resources exploitation. The specific impact of these changes on area burned remains poorly understood. We addressed this issue by modelling area burned for the 1980-2010 period using variables...

Author(s): Francois-Nicolas Robinne, Marc-Andre Parisien, Michael D. Flannigan

Year Published: 2016



Type: Document  
Book or Chapter or Journal Article

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

[www.nrfirescience.org/resource/13937](http://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

### **Factors related to building loss due to wildfires in the conterminous United States**

[www.nrfirescience.org/resource/14691](http://www.nrfirescience.org/resource/14691)

Wildfire is globally an important ecological disturbance affecting biochemical cycles and vegetation composition, but also puts people and their homes at risk. Suppressing wildfires has detrimental ecological effects and can promote larger and more intense wildfires when fuels accumulate, which increases the threat to buildings in...

Author(s): Patricia M. Alexandre, Susan I. Stewart, Nicholas S. Keuler, Murray K. Clayton, Miranda H. Mockrin, Avi Bar-Massada, Alexandra D. Syphard, Volker C. Radeloff

Year Published: 2016

Type: Document  
Book or Chapter or Journal Article

### **The relative impacts of vegetation, topography, and spatial arrangement on building loss to wildfires in case studies of California and Colorado**

[www.nrfirescience.org/resource/13886](http://www.nrfirescience.org/resource/13886)

Context: Wildfires destroy thousands of buildings every year in the wildland urban interface. However, fire typically only destroys a fraction of the buildings within a given fire perimeter, suggesting more could be done to mitigate risk if we understood how to configure residential landscapes so that both people and buildings could...

Author(s): Patricia M. Alexandre, Susan I. Stewart, Miranda H. Mockrin, Nicholas S. Keuler, Alexandra D. Syphard, Avi Bar-Massada, Murray K. Clayton, Volker C. Radeloff

Year Published: 2016

Type: Document  
Book or Chapter or Journal Article

### **Rebuilding and new housing development after wildfire**

[www.nrfirescience.org/resource/13201](http://www.nrfirescience.org/resource/13201)

The number of wildland-urban interface communities affected by wildfire is increasing, and both wildfire suppression and losses are costly. However, little is known about post-wildfire response by homeowners and communities after buildings are lost. Our goal was to characterise rebuilding and new development after wildfires across...

Author(s): Patricia M. Alexandre, Miranda H. Mockrin, Susan I. Stewart, Roger B. Hammer, Volker C. Radeloff

Year Published: 2015

Type: Document  
Book or Chapter or Journal Article

### **Prioritization of forest restoration projects: tradeoffs between wildfire protection, ecological restoration, and economic objectives**

[www.nrfirescience.org/resource/13729](http://www.nrfirescience.org/resource/13729)

The implementation of US federal forest restoration programs on national forests is a complex process that requires balancing diverse socioecological goals with project economics. Despite both the large geographic scope and substantial investments in restoration projects, a quantitative decision support framework to locate optimal...

Author(s): Kevin C. Vogler, Alan A. Ager, Michelle A. Day, Michael Jennings, John D. Bailey

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

### **Understanding gaps between the risk perceptions of wildland-urban interface (WUI) residents and wildfire professionals**

[www.nrfirescience.org/resource/13447](http://www.nrfirescience.org/resource/13447)

Research across a variety of risk domains finds that the risk perceptions of professionals and the public differ. Such risk perception gaps occur if professionals and the public understand individual risk factors differently or if they aggregate risk factors into overall risk differently. The nature of such divergences, whether...

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

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

### **Evaluating the effectiveness of wildfire mitigation activities in the wildland-urban interface**

[www.nrfirescience.org/resource/14047](http://www.nrfirescience.org/resource/14047)

Each year wildfires damage homes, businesses, communities, watersheds, and forests on millions of acres across the U.S. However there are effective ways to reduce the impact of wildfire. A new report, Evaluating the Effectiveness of Wildfire Mitigation Activities in the Wildland-Urban Interface, shares lessons learned from...

Author(s): Alexander M. Evans, Sarah Auerbach, Lara Wood Miller, Rachel Wood, Krys Nystrom, Jonathan Loevner, Amanda Aragon, Matthew Piccarello, Eytan Krasilovsky

Year Published: 2015

Type: Document

Technical Report or White Paper

### **The 2010 wildland-urban interface of the conterminous United States**

[www.nrfirescience.org/resource/13412](http://www.nrfirescience.org/resource/13412)

The wildland-urban interface (WUI) is the area where structures and other human development meet or intermingle with undeveloped wildland, and it is where wildfires have their greatest impacts on people. Hence the WUI is important for wildfire management. This document and associated maps summarize the extent of the WUI in the...

Author(s): Sebastian Martinuzzi, Susan I. Stewart, Miranda H. Mockrin, Roger B. Hammer, Volker C. Radeloff, David P. Helmers

Year Published: 2015

Type: Document

Technical Report or White Paper



### **Exploring how alternative mapping approaches influence fire assessment and human community exposure to wildfire**

[www.nrfirescience.org/resource/13949](http://www.nrfirescience.org/resource/13949)

Attaining fire-adapted human communities has become a key focus of collaborative planning on landscapes across the western United States and elsewhere. The coupling of fire simulation with GIS has expanded the analytical base to support such planning efforts, particularly through the "fireside" concept that identifies areas where...

Author(s): Joe H. Scott, Matthew P. Thompson, Julie W. Gilbertson-Day

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](http://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

### **Climate change and wildfire risk in an expanding wildland-urban interface: a case study from the Colorado Front Range corridor**

[www.nrfirescience.org/resource/13861](http://www.nrfirescience.org/resource/13861)

Context: Wildfire is a particular concern in the wildland-urban interface (WUI) of the western United States where human development occurs close to flammable natural vegetation. Objectives: (1) Assess the relative influences of WUI expansion versus climate-driven fire regime change on spatial and temporal patterns of burned WUI,...

Author(s): Zhihua Liu, Michael C. Wimberly, Aashis Lamsal, Terry L. Sohl, Todd J. Hawbaker

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

### **Categorizing the social context of the wildland urban interface: Adaptive capacity for wildfire and community "archetypes"**

[www.nrfirescience.org/resource/13186](http://www.nrfirescience.org/resource/13186)

Understanding the local context that shapes collective response to wildfire risk continues to be a challenge for scientists and policymakers. This study utilizes and expands on a conceptual approach for understanding adaptive capacity to wildfire in a comparison of 18 past case studies. The intent is to determine whether comparison...

Author(s): Travis B. Paveglio, Cassandra Moseley, Matthew S. Carroll, Daniel R. Williams, Emily Jane Davis, A. Paige Fischer

Year Published: 2015

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](http://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

### **Climate change beliefs and hazard mitigation behaviors: homeowners and wildfire risk**

[www.nrfirescience.org/resource/14535](http://www.nrfirescience.org/resource/14535)

Downscaled climate models provide projections of how climate change may exacerbate the local impacts of natural hazards. The extent to which people facing exacerbated hazard conditions understand or respond to climate-related changes to local hazards has been largely overlooked. In this article, we examine the relationships among...

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

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

### **Community Mitigation Assistance Team: National pilot highlights**

[www.nrfirescience.org/resource/13555](http://www.nrfirescience.org/resource/13555)

Scores of communities nationwide experience the impacts of wildfire every year; thousands of residents evacuate; infrastructure is threatened; many communities, especially those dependent on tourism or natural resources, are economically devastated; and wildfire response costs billions. But the wildfire itself...

Author(s): Pam Leschak

Year Published: 2015

Type: Document

Research Brief or Fact Sheet

### **Wildland fire management: insights from a foresight panel**

[www.nrfirescience.org/resource/13440](http://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

### **Understanding evacuation preferences and wildfire mitigations among northwest Montana residents**

[www.nrfirescience.org/resource/12955](http://www.nrfirescience.org/resource/12955)

There is currently insufficient information in the United States about residents' planned evacuation actions during wildfire events, including any intent to remain at or near home during fire events. This is incompatible with growing evidence that select populations at risk from wildfire are considering alternatives to evacuation....

Author(s): Travis B. Paveglio, Tony Prato, Douglas Dalenberg, Tyron J. Venn

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](http://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

### **Are wildfire management resources in the United States efficiently allocated to protect resources at risk? A case study from Montana**

[www.nrfirescience.org/resource/12909](http://www.nrfirescience.org/resource/12909)

Federal wildfire management agencies in the United States are under substantial pressure to reduce and economically justify their expenditures. To support economically efficient management of wildfires, managers need better estimates of the resource benefits and avoided damage costs associated with alternative wildfire management...

Author(s): Derek T. O'Donnell, Tyron J. Venn, David E. Calkin

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

### **The role of defensible space for residential structure protection during wildfires**

[www.nrfirescience.org/resource/12775](http://www.nrfirescience.org/resource/12775)

With the potential for worsening fire conditions, discussion is escalating over how to best reduce effects on urban communities. A widely supported strategy is the creation of defensible space immediately surrounding homes and other structures. Although state and local governments publish specific guidelines and requirements, there...

Author(s): Alexandra D. Syphard, Teresa J. Brennan, Jon E. Keeley

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

### **Learning to coexist with wildfire**

[www.nrfirescience.org/resource/15326](http://www.nrfirescience.org/resource/15326)

The impacts of escalating wildfire in many regions — the lives and homes lost, the expense of suppression and the damage to ecosystem services — necessitate a more sustainable coexistence with wildfire. Climate change and continued development on fire-prone landscapes will only compound current problems. Emerging strategies for...

Author(s): Max A. Moritz, E. Batllori, Ross A. Bradstock, A. Malcolm Gill, J. Handmer, Paul F. Hessburg, J. Leonard, Sarah M. McCaffrey, Dennis C. Odion, Tania L. Schoennagel, Alexandra D. Syphard

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

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

[www.nrfirescience.org/resource/12385](http://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

### **Optimising fuel treatments over time and space**

[www.nrfirescience.org/resource/12039](http://www.nrfirescience.org/resource/12039)

Fuel treatments have been widely used as a tool to reduce catastrophic wildland fire risks in many forests around the world. However, it is a challenging task for forest managers to prioritise where, when, and how to implement fuel treatments across a large forest landscape. In this study, an optimisation model was developed for...

Author(s): Woodam Chung, J. Greg Jones, Kurt Krueger, Jody Bramel, Marco A. Contreras

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

### **How risk management can prevent future wildfire disasters in the wildland-urban interface**

[www.nrfirescience.org/resource/12757](http://www.nrfirescience.org/resource/12757)

Recent fire seasons in the western United States are some of the most damaging and costly on record. Wildfires in the wildland-urban interface on the Colorado Front Range, resulting in thousands of homes burned and civilian fatalities, although devastating, are not without historical reference. These fires are consistent with the...

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

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](http://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

### **Brush, grass, and forest fires**

[www.nrfirescience.org/resource/12408](http://www.nrfirescience.org/resource/12408)

Based on data from the U.S. Fire Administration's (USFA's) National Fire Incident Reporting System

(NFIRS) and the National Fire Protection Association's (NFPA's) annual fire department experience survey, NFPA estimates that during 2007-2011, local fire departments responded to an average of 334,200 brush, grass or forest fires per...

Author(s): Marty Ahrens

Year Published: 2013

Type: Document

Technical Report or White Paper

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

[www.nrfirescience.org/resource/14671](http://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

### **Simulating effects of land use policies on extent of the wildland urban interface and wildfire risk in Flathead County, Montana**

[www.nrfirescience.org/resource/12036](http://www.nrfirescience.org/resource/12036)

This study used a wildfire loss simulation model to evaluate how different land use policies are likely to influence wildfire risk in the wildland urban interface (WUI) for Flathead County, Montana. The model accounts for the complex socio-ecological interactions among climate change, economic growth, land use change and policy,...

Author(s): Travis B. Paveglio, Tony Prato, Michael Hardy

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

### **Wildfire risk and optimal investments in watershed protection**

[www.nrfirescience.org/resource/16172](http://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 rising cost of wildfire protection**

[www.nrfirescience.org/resource/12409](http://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

**Living in a tinderbox: wildfire risk perceptions and mitigating behaviours**

[www.nrfirescience.org/resource/14672](http://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

**Bark beetle outbreaks, wildfires and defensible space: how much area do we need to treat to protect homes and communities?**

[www.nrfirescience.org/resource/8340](http://www.nrfirescience.org/resource/8340)

Extensive beetle outbreaks across western North American forests have spurred debates about how to best protect communities from wildfire. Previous work has found that fuels in the wildland-urban interface and especially in the defensible space (40-m radius) around structures are the most important determinants of the flammability...

Author(s): Glen Aronson, Dominik Kulakowski, Glen Aronson, Dominik Kulakowski

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

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

[www.nrfirescience.org/resource/12601](http://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

**The Waldo Canyon Fire: Fires on the Colorado Front Range and Home Destruction - A Report to the Pike and San Isabel National Forests**

[www.nrfirescience.org/resource/11266](http://www.nrfirescience.org/resource/11266)

The purpose of this white paper is to discuss fires on the Colorado Front Range and to share initial observations of fire behavior and home destruction during the Waldo Canyon Fire. It is my hope that these lessons and observations will be beneficial to agencies and especially the public. I want to share this information early when...

Author(s): Richard D. Stratton

Year Published: 2012

Type: Document

Technical Report or White Paper

**Quantifying the threat of unsuppressed wildfires reaching the adjacent wildland-urban interface**



### **on the Bridger-Teton National Forest, Wyoming, USA**

[www.nrfirescience.org/resource/8349](http://www.nrfirescience.org/resource/8349)

An important objective for many federal land management agencies is to restore fire to ecosystems that have experienced fire suppression or exclusion over the last century. Managing wildfires for resource objectives (i.e., allowing wildfires to burn in the absence of suppression) is an important tool for restoring such fire-adapted...

Author(s): Joe H. Scott, Don Helmbrecht, Sean A. Parks, Carol Miller

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

### **Burning questions for managers: fuels management practices in riparian areas**

[www.nrfirescience.org/resource/8354](http://www.nrfirescience.org/resource/8354)

Vegetation treatment projects for fuel reduction in riparian areas can pose distinct challenges to resource managers. Riparian areas are protected by administrative regulations, many of which are largely custodial and restrict active management. Like uplands, however, riparian areas have been affected by fire suppression, land use,...

Author(s): Kristen E. Meyer, Kathleen A. Dwire, Patricia A. Champ, Sandra E. Ryan, Gregg M. Riegel, Timothy A. Burton

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

### **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](http://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

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

[www.nrfirescience.org/resource/13510](http://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

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

[www.nrfirescience.org/resource/8335](http://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

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

[www.nrfirescience.org/resource/11452](http://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 engagement in neighbourhood level wildfire mitigation and preparedness: case studies from Canada, the US and Australia**

[www.nrfirescience.org/resource/12432](http://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

### **Understanding homeowner preparation and intended actions when threatened by a wildfire**

[www.nrfirescience.org/resource/11138](http://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

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

[www.nrfirescience.org/resource/8226](http://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](http://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

### **A comparison of landscape fuel treatment strategies to mitigate wildland fire risk in the urban interface and preserve old forest structure**

[www.nrfirescience.org/resource/12725](http://www.nrfirescience.org/resource/12725)

We simulated fuel reduction treatments on a 16,000 ha study area in Oregon, US, to examine tradeoffs between placing fuel treatments near residential structures within an urban interface, versus treating stands in the adjacent wildlands to meet forest health and ecological restoration goals. The treatment strategies were evaluated...

Author(s): Alan A. Ager, Nicole M. Vaillant, Mark A. Finney

Year Published: 2010

Type: Document

Book or Chapter or Journal Article

### **Bark beetle responses to vegetation management treatments**

[www.nrfirescience.org/resource/11070](http://www.nrfirescience.org/resource/11070)

Native tree-killing bark beetles (Coleoptera: Curculionidae, Scolytinae) are a natural component of forest ecosystems. Eradication is neither possible nor desirable and periodic outbreaks will occur as long as susceptible forests and favorable climatic conditions co-exist. Recent changes in forest structure and tree composition by...

Author(s): Joel D. McMillin, Christopher J. Fettig

Year Published: 2009

Type: Document

Conference Proceedings, Technical Report or White Paper

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

[www.nrfirescience.org/resource/8351](http://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

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

[www.nrfirescience.org/resource/8225](http://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

## **Fuel treatments, fire suppression, and their interaction with wildfire and its impacts: the Warm Lake experience during the Cascade Complex of wildfires in central Idaho, 2007**

[www.nrfirescience.org/resource/11435](http://www.nrfirescience.org/resource/11435)

Wildfires during the summer of 2007 burned over 500,000 acres within central Idaho. These fires burned around and through over 8,000 acres of fuel treatments designed to offer protection from wildfire to over 70 summer homes and other buildings located near Warm Lake. This area east of Cascade, Idaho, exemplifies the difficulty of...

Author(s): Russell T. Graham, Theresa B. Jain, Mark Loseke

Year Published: 2009

Type: Document

Technical Report or White Paper

## **Contingent valuation of fuel hazard reduction treatments**

[www.nrfirescience.org/resource/11988](http://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

## **Potential for future development on fire-prone lands**

[www.nrfirescience.org/resource/12009](http://www.nrfirescience.org/resource/12009)

Most studies of wildland fire and residential development have focused on the cost of firefighting and solutions such as fuel reduction and fire-safe home building. Although some studies quantify the number of homes being built near forests, little research has indicated the potential magnitude of the problem in the future. This...

Author(s): Patricia Gude, Ray Rasker, Jeff van den Noort

Year Published: 2008

Type: Document

Book or Chapter or Journal Article

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

[www.nrfirescience.org/resource/11486](http://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

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

[www.nrfirescience.org/resource/8338](http://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

### **A report on conceptual advances in roll on/off technology in forestry**

[www.nrfirescience.org/resource/8173](http://www.nrfirescience.org/resource/8173)

ANNOTATION: This study looks into increasingly severe fire seasons over the last two decades that have led policymakers to recognize the need for thinning overgrown stands of trees. Thinning presents a financial challenge and the problem is that hazardous fuel reduction projects-especially projects in the Wildland/Urban Interface-...

Author(s): Dave Atkins, Robert B. Rummer, Beth Dodson, Craig E. Thomas, Andy Horcher, Ed Messerlie, Craig Rawlings, David Haston

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

### **Broad-scale assessment of fuel treatment opportunities**

[www.nrfirescience.org/resource/10992](http://www.nrfirescience.org/resource/10992)

The Forest Inventory and Analysis (FIA) program has produced estimates of the extent and composition of the Nation's forests for several decades. FIA data have been used with a flexible silvicultural thinning option, a fire hazard model for preharvest and postharvest fire hazard assessment, a harvest economics model, and geospatial...

Author(s): Patrick D. Miles, Kenneth E. Skog, Wayne D. Shepperd, Elizabeth D. Reinhardt, Roger D. Fight

Year Published: 2006

Type: Document

Conference Proceedings, Technical Report or White Paper

### **Timber markets and fuel treatments in the western U.S.**

[www.nrfirescience.org/resource/7905](http://www.nrfirescience.org/resource/7905)

ANNOTATION: This paper presents a model of interrelated timber markets in the U.S. West to assess the impacts of large-scale fuel reduction programs on these markets, and concomitant effects of the market on the fuel reduction programs. The model maximizes area treated, given fire regime-condition class priorities, maximum increases...

Author(s): Karen L. Abt, Jeffrey P. Prestemon  
Year Published: 2006  
Type: Document  
Book or Chapter or Journal Article, Synthesis

### **Managing for fire in the interface: challenges and opportunities**

[www.nrfirescience.org/resource/157](http://www.nrfirescience.org/resource/157)

Fire managers define the wildland-urban interface as all areas where flammable wildland fuels are adjacent to homes and communities. With this definition, the wild-land-urban interface may encompass a much broader landscape than traditionally perceived. For example, the Tunnel Fire in the Oakland hills in 1991 included a large area...

Author(s): Alan J. Long, Dale D. Wade, Frank C. Beall  
Year Published: 2005  
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](http://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

### **Application of free selection in mixed forests of the inland northwestern United States**

[www.nrfirescience.org/resource/7933](http://www.nrfirescience.org/resource/7933)

Forest management objectives continue to evolve as the desires and needs of society change. The practice of silviculture has risen to the challenge by supplying silvicultural methods and systems to produce desired stand and forest structures and compositions to meet these changing objectives. For the most part, the practice of...

Author(s): Russell T. Graham, Theresa B. Jain  
Year Published: 2005  
Type: Document  
Book or Chapter or Journal Article

### **New technology for fuel breaks and green strips in urban interface and wildland areas**

[www.nrfirescience.org/resource/11039](http://www.nrfirescience.org/resource/11039)

Threat from wildfire can be greatly minimized through proactive efforts that reduce and slow spread through use of green strips or fuel breaks, and decrease fire volatility by reducing fuel load. This results in greater safety to fire fighters and protection to key urban interface areas or wildlife habitat. The fight against western...

Author(s): Jennifer L. Vollmer  
Year Published: 2005  
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](http://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

### **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](http://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

### **Keys to community preparedness for wildfire**

[www.nrfirescience.org/resource/11403](http://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](http://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

### **Preventing disaster: home ignitability in the wildland-urban interface**

[www.nrfirescience.org/resource/159](http://www.nrfirescience.org/resource/159)

Wildland-urban interface (W-UI) fires are a significant concern for federal, state, and local land management and fire agencies. Research using modeling, experiments, and W-UI case studies

indicates that home ignitability during wildland fires depends on the characteristics of the home and its immediate surroundings. These findings...

Author(s): Jack D. Cohen

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](http://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

### **Dealing with public concerns in restoring fire to the forest**

[www.nrfirescience.org/resource/11253](http://www.nrfirescience.org/resource/11253)

Public support is important to all restoration efforts on public lands. Some types of restoration activities are easier for the public to support than others. Restoring wetlands, habitat restoration for salmon or burrowing owls, and vegetative rehabilitation are generally acceptable practices. Most restoration projects and...

Author(s): Leslie A. C. Weldon

Year Published: 1996

Type: Document

Technical Report or White Paper

### **A site-specific approach for assessing the fire risk to structures at the wildland/urban interface**

[www.nrfirescience.org/resource/12423](http://www.nrfirescience.org/resource/12423)

The essence of the wildland/urban interface fire problem is the loss of homes. The problem is not new, but is becoming increasingly important as more homes with inadequate adherence to safety codes are built at the wildland/urban interface. Current regulatory codes are inflexible. Specifications for building and site characteristics...

Author(s): Jack D. Cohen

Year Published: 1991

Type: Document

Conference Proceedings, Technical Report or White Paper

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

[www.nrfirescience.org/resource/11968](http://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

### **Characteristics of people who start fires...some preliminary findings**

[www.nrfirescience.org/resource/11473](http://www.nrfirescience.org/resource/11473)

Recreationists or city dwellers are usually most often thought of as being responsible for starting forest fires. But a limited study showed that fire starters were more apt to be people who lived near and worked on the National Forests. They were relatively young and undereducated, and had "good reputations" in their communities....

Author(s): John R. Christiansen

Year Published: 1971

Type: Document

Research Brief or Fact Sheet

### **Assessing hazard and risk in the interface: cautions and confessions from a statewide mapping effort**

[www.nrfirescience.org/resource/14124](http://www.nrfirescience.org/resource/14124)

This webinar focused on elements required for statewide or regional scale mapping efforts designed to describe and classify ignition exposure to buildings that are associated with wildland (vegetation) fires, and their potential spread into urbanized areas. In addition to covering input data and spatial processing rules, the talk...

Type: Media

Webinar

### **Computer models for wildland and wildland-urban interface fires**

[www.nrfirescience.org/resource/13808](http://www.nrfirescience.org/resource/13808)

Hosted by the Northwest Fire Science Consortium. Ruddy Mell from the USFS Pacific Wildland Fire Sciences Lab in Seattle, WA provides an overview of the current state, limitations, and future developments in wildland and wildland-urban interface fire behavior models.

Type: Media

Webinar

### **Expert spotlight: Jack D. Cohen**

[www.nrfirescience.org/resource/14665](http://www.nrfirescience.org/resource/14665)

No one has done more to define the wildland-urban interface problem and empower homeowners to reduce their risk of wildfire than Jack Cohen. His post-fire field examinations and laboratory-based research on fire dynamics led to the concept of the home ignition zone, a phrase he coined. Cohen also co-developed the U.S. National Fire...

Type: Media

Video

### **Living with Fire - Wildland Fire Science**

[www.nrfirescience.org/resource/16081](http://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

### **Community wildfire protection plans and fire-adapted human communities: trial by fire**

[www.nrfirescience.org/resource/14082](http://www.nrfirescience.org/resource/14082)

Community wildfire protection plans have been described as 'one of the most successful tools' for addressing wildland fire management in the WUI. Jakes shares findings from two recently completed studies of CWPPs, one identifying best management practices for developing a CWPP, and the second investigating whether CWPPs...

Type: Media

Webinar

### **Social motivation in the WUI: effectively engage the public**

[www.nrfirescience.org/resource/13025](http://www.nrfirescience.org/resource/13025)

This webinar provides an overview of what has been learned to date in relation to different aspects of public response to wildfire management including risk perception, social acceptance of prescribed fire and thinning, what makes homeowners more or less willing to create defensible space, and communication dynamics. Developing an...

Type: Media

Webinar

### **Land use planning to reduce wildfire risk: lessons from 5 western cities**

[www.nrfirescience.org/resource/14542](http://www.nrfirescience.org/resource/14542)

In the American West, wildfire risk to life and property is accelerating as a result of development trends favoring the region's Wildland-Urban Interface (WUI). Moreover, extended droughts, unseasonably warm temperatures, and other climate-induced impacts are influencing the frequency and size of wildfires. In response, a number...

Type: Media

Webinar

### **Wildland Urban Interface Fires: An Overview for Responders**

[www.nrfirescience.org/resource/16068](http://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

### **Experimentally simulating wind-driven firebrand showers in wildland-urban interface (WUI) fires**

[www.nrfirescience.org/resource/14076](http://www.nrfirescience.org/resource/14076)

Wind-driven firebrand showers are a major cause of structural ignition in Wildland-Urban Interface (WUI) fires. To address this problem, a new firebrand research area targeted on quantifying structure vulnerabilities to wind-driven firebrand showers has been developed. This type of firebrand research was never possible prior to the...

Type: Media

Webinar

### **Community wildfire protection planning**

[www.nrfirescience.org/resource/13662](http://www.nrfirescience.org/resource/13662)

Wildfires have become more intense and frequent as forests thicken with unburned fuels and changes in climate increase uncertainty in future conditions. How can communities in our growing wildland-urban interface prepare for this growing threat? This session will discuss what planners and communities need to know to reduce risks of...

Type: Media

Webinar

### **Wildfire! Preventing Home Ignitions**

[www.nrfirescience.org/resource/16061](http://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

### **A holistic framework to sustainably manage the wildland-urban interface**

[www.nrfirescience.org/resource/14071](http://www.nrfirescience.org/resource/14071)

NOTE: Technical difficulties during this webinar. Skip to 11:50 to start. Chris Dicus provides an introduction to the common problems encountered in managing WUI landscapes, and provides a framework for how to address some of these problems.

Type: Media

Webinar

### **Evacuation planning in the wildland-urban interface**

[www.nrfirescience.org/resource/12818](http://www.nrfirescience.org/resource/12818)

The 2012 fire season has already resulted in more fire-caused evacuations than many recent years. This webinar will review traditional and contemporary aspects of evacuation planning. Traditional topics to be covered include warning and response, traffic management, contingency planning, and vulnerable populations....

Type: Media

Webinar

### **Rx Fire and Fire Use Lessons Learned**

[www.nrfirescience.org/resource/16018](http://www.nrfirescience.org/resource/16018)

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

Type: Media

Video

### **2012 Waldo fire wildland urban interface case study**

[www.nrfirescience.org/resource/14052](http://www.nrfirescience.org/resource/14052)

The National Institute of Standards and Technology (NIST) has a suite of research projects addressing risk reduction in Wildland Urban Interface (WUI) communities. The NIST WUI Team and the United States Forest Service, Fire and Environmental Research Applications Team (USFS FERA) were invited by the Colorado Springs Fire...

Type: Media

Webinar

### **Restoring fires role in fire adapted communities**

[www.nrfirescience.org/resource/15918](http://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

### **How effective were fuel treatments in the 2011 Wallow fire?**

[www.nrfirescience.org/resource/14301](http://www.nrfirescience.org/resource/14301)

This webinar presents results of an opportunistic study to quantify the performance of thinning and surface fuel treatment in migrating wildfire behavior and severity, as represented by bole char, crown scorch proportion, tree burn severity index, on the largest wildfire in southwest USA history: 2011 Wallow fire. The results...

Type: Media

Webinar

### **WUI fire: managing the response**

[www.nrfirescience.org/resource/14191](http://www.nrfirescience.org/resource/14191)

In this webinar Dan Turner discusses fire jurisdictions, mutual aid agreements, pre-attack planning, deployment and mobilization plans, agency differences in strategy and tactics, resource prioritization, evacuations and Emergency Operations Center (EOC) coordination. It is geared toward public and private sector individuals...

Type: Media

Webinar

### **Recovery and adaptation after wildfire across the United States, 2009-2011**

[www.nrfirescience.org/resource/15292](http://www.nrfirescience.org/resource/15292)

Becoming a fire-adapted community that can live with wildfire is envisioned as a continuous, iterative process of adaptation. In eight case study sites across the United States we examined how destructive wildfire affected altered progress towards becoming fire-adapted, focusing on the role of planning and WUI regulations (building...

Type: Media

Webinar

### **Material and design considerations for building in wildfire prone areas**

[www.nrfirescience.org/resource/14127](http://www.nrfirescience.org/resource/14127)

Home survival in wildfire prone areas depends on a combination of adequate vegetation management in the area surrounding your home (i.e., your 'defensible space') and choices regarding building materials and design decisions for the home or building. Steve Quarles has been actively involved in wildfire research and education...

Type: Media

Webinar

### **Landscaping and home design for fire defense**

[www.nrfirescience.org/resource/13240](http://www.nrfirescience.org/resource/13240)

Yana Valachovic will discuss the types, placement, and maintenance of landscape plants to reduce risk of home ignition. She will discuss various elements of home design that mitigates home loss during a wildfire.

Type: Media

Webinar

### **Firewise communities: a tool for WUI residents**

[www.nrfirescience.org/resource/14083](http://www.nrfirescience.org/resource/14083)

This webinar provides an overview of the Firewise Communities/USA Recognition Program



administered by the National Fire Protection Association (NFPA) in partnership with the USDA Forest Service, US Department of the Interior, the California Fire Safe Council, CAL FIRE, and state forestry agencies across the U.S. This program is...

Type: Media

Webinar

### **Wildland urban legends**

[www.nrfirescience.org/resource/14859](http://www.nrfirescience.org/resource/14859)

Wildfire and home safety myths and beliefs are put to the test. Wildfire expert Pat Durland determines truth or bunk to questions we all have, drawing upon his long career as a smoke jumper, wildland firefighter, policy maker, insurance consultant, and wildland fire educator.

Type: Media

Webinar

### **Wildland fire ignition pathway**

[www.nrfirescience.org/resource/13762](http://www.nrfirescience.org/resource/13762)

There are many potential pathways for wildland fires to ignite buildings within the WUI. These pathways (including both fire and ember exposure) depend on the characteristics of the wildland (e.g., fuels, terrain, weather, etc.), the characteristics of the community (e.g., construction materials, building designs, housing density,...

Type: Media

Webinar

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

[www.nrfirescience.org/resource/16076](http://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

### **Fire operations in the wildland-urban interface**

[www.nrfirescience.org/resource/14078](http://www.nrfirescience.org/resource/14078)

During this presentation, Chief Veneris discusses firefighting operations in the wildland-urban interface from a California perspective. He uses information and products from both his department, the California Department of Forestry and Fire Protection (CAL FIRE) as well as the latest publications from Firefighting Resources of...

Type: Media

Webinar

### **Creating fire adapted communities:an interactional approach**

[www.nrfirescience.org/resource/14836](http://www.nrfirescience.org/resource/14836)

A growing body of wildfire research indicates that populations will support or enact different programs, policies and planning approaches to better "live with wildfire." This presentation builds on one existing conceptual approach for characterizing local socio-ecological conditions that influence how and why populations might...

Type: Media

Webinar

### **Wildland Urban Interface Fires: An Overview for Homeowners**

[www.nrfirescience.org/resource/16067](http://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

### **Changing risk in three differing SoCal communities: a GIS-based approach**

[www.nrfirescience.org/resource/14073](http://www.nrfirescience.org/resource/14073)

This webinar examines how multiple GIS strategies were employed to analyze changes to fire risk in 3 nearby, but demographically different communities in San Diego County. This research simultaneously (1) quantifies expansion of the WUI over time in multiple, dissimilar communities, (2) analyzes temporal changes to risk based on...

Type: Media

Webinar

### **Firefighter Safety in the Wildland/Urban Interface**

[www.nrfirescience.org/resource/16060](http://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

### **Mapping evidence of historical and potential wildfire for climate change and fuels mitigation in the montane forests of the Colorado Front Range**

[www.nrfirescience.org/resource/14067](http://www.nrfirescience.org/resource/14067)

Mapping evidence of historical and potential wildfire for climate change and fuels mitigation in the montane forests of the Colorado Front Range. Rosemary Sherriff, Associate Professor, Humboldt State University. Recorded talk from 2013 Restoring the West Conference at Utah State University. The conference focused on forest...

Type: Media

Video

### **Recovery and Adaptation after Wildfire, 2000-2013**

[www.nrfirescience.org/resource/15957](http://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

### **Effectiveness of wildfire mitigation activities in the wildland-urban interface (WUI)**

[www.nrfirescience.org/resource/14048](http://www.nrfirescience.org/resource/14048)

Each year wildfires damage homes, businesses, communities, watersheds, and forests on millions of acres across the U.S. However there are effective ways to reduce the impact of wildfire. A new report, Evaluating the Effectiveness of Wildfire Mitigation Activities in the Wildland-Urban Interface, shares lessons learned from...

Type: Media

Webinar

### **Community risk reduction success stories - Firewise virtual workshop**

[www.nrfirescience.org/resource/14743](http://www.nrfirescience.org/resource/14743)

This Firewise webinar features three stories of successful community wildfire risk reduction. The stories come from Colorado, Idaho and Washington (featuring FAC Net member Jerry McAdams from Boise Fire Department and affiliate member Patrick Haggerty from the Cascadia Conservation District).

Type: Media

Webinar

### **Fuel particle heat exchange**

[www.nrfirescience.org/resource/14336](http://www.nrfirescience.org/resource/14336)

This seminar was recorded by the RMRS Fire Sciences Laboratory.

Type: Media

Seminar

### **A Four-Step Approach to Planning for Wildfire in the Wildland-Urban Interface**

[www.nrfirescience.org/resource/15849](http://www.nrfirescience.org/resource/15849)

This talk will focus on a four-step approach to integrating wildfire planning for the wildland-urban interface (WUI) through a variety of planning and implementation processes that work across departments within local governments. Attendees may wish to review the guide on which the talk will be based prior to the session. The talk...

Type: Media

Webinar

### **Fire behavior in the wildland/urban interface**

[www.nrfirescience.org/resource/14009](http://www.nrfirescience.org/resource/14009)

The National Wildland/Urban Interface Fire Protection Program ([www.firewise.org](http://www.firewise.org)) Firefighter Safety Series FWC-602-03-DVD. Part 1: Fire Behavior in the Wildland/Urban Interface. The Fire Fighter Safety Series is a multipart instructional package developed for small community fire departments to address the...

Type: Media

Video

### **Planning to live with fire: designing and retrofitting communities with fire in mind**

[www.nrfirescience.org/resource/14192](http://www.nrfirescience.org/resource/14192)

Carol Rice, coauthor of the book 'Managing Fire in the Urban Wildland Interface,' discusses appropriate land use policy, community layout, infrastructure, building requirements, and vegetation management in the WUI. This webinar is targeted for local planners, resource managers, property owners, homeowner associations, developers,...

Type: Media

Webinar

### **Improving access for wildland firefighters**

[www.nrfirescience.org/resource/13338](http://www.nrfirescience.org/resource/13338)

Join wildland fire stakeholders and residents in this informational workshop and discover how modifications can be made to increase driveway accessibility, improve address visibility and hear what fire personnel look for when making decisions about which homes may be defensible; and receive simple tips on how homeowners can help...

Type: Media

Webinar

**How to survive and leverage your wildland fire prevention efforts during a fire using Ready, Set, Go!**

[www.nrfirescience.org/resource/14189](http://www.nrfirescience.org/resource/14189)

This webinar will give you the basic history of the READY, SET, GO! (RSG) and how the program is rapidly being adopted across the United States. RSG provides concepts to build fire adapted communities and then how to leverage these tenets for your personal safety and the survivability of your structure. Chief Roper will provide you...

Type: Media

Webinar

**Fire adapted communities: moving from policy to action**

[www.nrfirescience.org/resource/13245](http://www.nrfirescience.org/resource/13245)

This webinar discusses tangible and innovative methods in which national Fire Adapted Communities (FAC's) are moving forward. Over the last few years, many have been introduced to the term Fire Adapted Communities through national policy and programs. Many communities have embraced FAC concepts and are displaying positive results on...

Type: Media

Webinar

**Drought Tolerance in Trees- Improving Tree Selection for Challenging Urban Sites**

[www.nrfirescience.org/resource/16341](http://www.nrfirescience.org/resource/16341)

Looking for trees that can establish and survive in challenging urban environments? Of course you are! In this webinar, Dr. Andrew Hiron will explain how drought tolerance is one of the most important determinants of a tree's ability to survive in the urban forest. You will gain an understanding of the basic mechanisms of drought...

Type: Media

Webinar