

### **Restoration of the iconic Pando aspen clone: emerging evidence of recovery**

[www.nrfirescience.org/resource/14933](http://www.nrfirescience.org/resource/14933)

Quaking aspen (*Populus tremuloides* Michx.) is being stressed across the America West from a variety of sources including drought, herbivory, fire suppression, development, and past management practices. Rich assemblages of plants and animals that utilize aspen forests, as well as economic values of tourism, grazing, hunting,...

Author(s): Paul C. Rogers, Jody A. Gale

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

### **Quaking aspen in the Northern Rockies: retention and restoration**

[www.nrfirescience.org/resource/15373](http://www.nrfirescience.org/resource/15373)

Specific objectives of this review are to address the current status and future outlook of aspen across a range of ecosystems in the US Northern Rockies. Specifically, we aim to answer the following questions: Is aspen declining in the Northern Rockies, and if so what are the underlying causes? Where should aspen...

Author(s): Camille Stevens-Rumann, Penelope Morgan, Eva K. Strand, Diane Abendroth

Year Published: 2017

Type: Document

Synthesis

### **Climate variability and fire effects on quaking aspen in the central Rocky Mountains, USA**

[www.nrfirescience.org/resource/14978](http://www.nrfirescience.org/resource/14978)

Our understanding of how climate and fire have impacted quaking aspen (*Populus tremuloides* Michx.) communities prior to the 20th century is fairly limited. This study analysed the period between 4500 and 2000 cal. yr BP to assess the pre-historic role of climate and fire on an aspen community during an aspen-dominated period.

Author(s): Vachel A. Carter, Andrea R. Brunelle, John D. Shaw, Thomas A. Minckley, R. Justin DeRose, Simon C. Brewer

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

### **Quaking aspen in Utah: integrating recent science with management**

[www.nrfirescience.org/resource/15175](http://www.nrfirescience.org/resource/15175)

Quaking aspen is widely regarded as a key resource for humans, livestock, and wildlife with these values often competing with each other, leading to overuse of aspen in some locations and declines. We review trends in aspen science and management, particularly in Utah. Historically, research conducted here holds a prestigious place...

Author(s): Paul C. Rogers, Sam St. Clair

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Elevated Rocky Mountain elk numbers prevent positive effects of fire on quaking aspen (*Populus tremuloides*) recruitment**

[www.nrfirescience.org/resource/14027](http://www.nrfirescience.org/resource/14027)

Quaking aspen (*Populus tremuloides*) is the most widespread tree species in North America and has supported a unique ecosystem for tens of thousands of years, yet is currently threatened by dramatic loss and possible local extinctions. While multiple factors such as climate change and fire suppression

are thought to contribute to...

Author(s): David Solance Smith, Stephen M. Fettig, Matthew A. Bowker

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Burn me twice, shame on who? Interactions between successive forest fires across a temperate mountain region**

[www.nrfirescience.org/resource/14793](http://www.nrfirescience.org/resource/14793)

Increasing rates of natural disturbances under a warming climate raise important questions about how multiple disturbances interact. Escalating wildfire activity in recent decades has resulted in some forests re-burning in short succession, but how the severity of one wildfire affects that of a subsequent wildfire is not fully...

Author(s): Brian J. Harvey, Daniel C. Donato, Monica G. Turner

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Shifting ecological filters mediate postfire expansion of seedling aspen (*Populus tremuloides*) in Yellowstone**

[www.nrfirescience.org/resource/13896](http://www.nrfirescience.org/resource/13896)

Determining how ecological filters (e.g., climate, soils, biotic interactions) influence where species succeed in heterogeneous landscapes is challenging for long-lived species (e.g., trees), because filters can vary over space and change slowly through time. Stand-replacing wildfires create opportunities for establishment of tree-...

Author(s): Winslow D. Hansen, William H. Romme, Aisha Ba, Monica G. Turner

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

### **Paths of recovery: landscape variability in forest structure, function, and fuels after the 1988 Yellowstone Fires**

[www.nrfirescience.org/resource/13720](http://www.nrfirescience.org/resource/13720)

Understanding the rates, trajectories, and spatial variability in succession following severe wildfire is increasingly important for forest managers in western North America and critical for anticipating the resilience or vulnerability of forested landscapes to changing environmental conditions. However, few long-term...

Author(s): Monica G. Turner, William H. Romme, Daniel B. Tinker, Daniel C. Donato, Brian J. Harvey

Year Published: 2015

Type: Document

Technical Report or White Paper

### **Influence of wildland fire along a successional gradient in sagebrush steppe and western juniper woodlands**

[www.nrfirescience.org/resource/12149](http://www.nrfirescience.org/resource/12149)

Western juniper (*Juniperus occidentalis* Hook. var. *occidentalis*) has been expanding into sagebrush (*Artemisia* L. spp.) steppe over the past 130 years in Idaho, Oregon, and California. Fuel characteristics and expected fire behavior and effects change as sagebrush steppe transitions into juniper woodlands. Little is currently known...

Author(s): Eva K. Strand, Stephen C. Bunting, Robert F. Keefe

Year Published: 2013

Type: Document  
Book or Chapter or Journal Article

### **Modelling conditional burn probability patterns for large wildland fires**

[www.nrfirescience.org/resource/12005](http://www.nrfirescience.org/resource/12005)

We present a technique for modelling conditional burn probability patterns in two dimensions for large wildland fires. The intended use for the model is strategic program planning when information about future fire weather and event durations is unavailable and estimates of the average probabilistic shape and extent of large fires...

Author(s): Pamela S. Ziesler, Douglas B. Rideout, Robin Reich

Year Published: 2013

Type: Document  
Book or Chapter or Journal Article

### **Fire regimes of quaking aspen in the mountain west**

[www.nrfirescience.org/resource/11975](http://www.nrfirescience.org/resource/11975)

Quaking aspen (*Populus tremuloides* Michx.) is the most widespread tree species in North America, and it is found throughout much of the Mountain West (MW) across a broad range of bioclimatic regions. Aspen typically regenerates asexually and prolifically after fire, and due to its seral status in many western conifer forests, aspen...

Author(s): Douglas J. Shinneman, William L. Baker, Paul C. Rogers, Dominik Kulakowski

Year Published: 2013

Type: Document  
Book or Chapter or Journal Article

### **Effects of climatic variability and change on forest ecosystems: a comprehensive science synthesis for the U.S. forest sector**

[www.nrfirescience.org/resource/12567](http://www.nrfirescience.org/resource/12567)

This report is a scientific assessment of the current condition and likely future condition of forest resources in the United States relative to climatic variability and change. It serves as the U.S. Forest Service forest sector technical report for the National Climate Assessment and includes descriptions of key regional issues and...

Year Published: 2012

Type: Document  
Synthesis, 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

### **Landscape composition in aspen woodlands under various modeled fire regimes**

[www.nrfirescience.org/resource/12114](http://www.nrfirescience.org/resource/12114)

Quaking aspen (*Populus tremuloides*) is declining across the western United States. Aspen habitats are diverse plant communities in this region and loss of these habitats can cause shifts in biodiversity, productivity, and hydrology across spatial scales. Western aspen occurs on the majority of sites seral to conifer species, and...

Author(s): Eva K. Strand, Stephen C. Bunting, Lee A. Vierling

Year Published: 2012

Type: Document

Conference Proceedings

### **Effects of ungulate herbivory on aspen, cottonwood, and willow development under forest fuels treatment regimes**

[www.nrfirescience.org/resource/8337](http://www.nrfirescience.org/resource/8337)

Herbivory by domestic and wild ungulates can dramatically affect vegetation structure, composition and dynamics in nearly every terrestrial ecosystem of the world. These effects are of particular concern in forests of western North America, where intensive herbivory by native and domestic ungulates has the potential to substantially...

Author(s): Bryan A. Endress, Michael J. Wisdom, Martin Vavra, Catherine G. Parks, Brian L. Dick, Bridgett J. Naylor, Jennifer M. Boyd

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

### **Fire-induced shifts in overstory tree species composition and associated understory plant composition in Glacier National Park, Montana**

[www.nrfirescience.org/resource/11980](http://www.nrfirescience.org/resource/11980)

In Rocky Mountain forests, fire can act as a mechanism of change in plant community composition if postfire conditions favor establishment of species other than those that dominated prefire tree communities. We sampled pre and postfire overstory and postfire understory species following recent (1988-2006) stand-replacing fires in...

Author(s): David A. McKenzie, Daniel B. Tinker

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

### **Comprehensive fuels treatment practices guide for mixed conifer forests: California, central and southern Rockies, and the Southwest**

[www.nrfirescience.org/resource/12630](http://www.nrfirescience.org/resource/12630)

The goal of this guide is to provide a resource for managers of mixed conifer forests of the Southwestern plateaus and uplands, the Central and Southern Rocky Mountains, the Sierra Nevada, and the Transverse and Peninsular Ranges in Southern California. Mixed conifer forests have different species, structures, and spatial patterns...

Author(s): Alexander M. Evans, Rick G. Everett, Scott L. Stephens, James A. Youtz

Year Published: 2011

Type: Document

Synthesis, Technical Report or White Paper

### **Melilotus alba, Melilotus officinalis (white sweetclover, yellow sweetclover)**

[www.nrfirescience.org/resource/10456](http://www.nrfirescience.org/resource/10456)

This FEIS species review synthesizes information on the relationship of *Melilotus alba*, *Melilotus officinalis* (white sweetclover, yellow sweetclover) to fire--how fire affects the species and its habitat, invasiveness of the species, effects of the species on fuels and fire regimes, and fire management

considerations. Information is...

Author(s): Corey L. Gucker

Year Published: 2010

Type: Document

Synthesis

### **Equations to convert compacted crown ratio to uncompacted crown ratio for trees in the Interior West**

[www.nrfirescience.org/resource/8368](http://www.nrfirescience.org/resource/8368)

Crown ratio is the proportion of total tree length supporting live foliage. Inventory programs of the US Forest Service generally define crown ratio in terms of compacted or uncompacted measurements. Measurement of compacted crown ratio (CCR) involves envisioning the transfer of lower branches of trees with asymmetric crowns to fill...

Author(s): Chris Toney, Matthew C. Reeves

Year Published: 2009

Type: Document

Book or Chapter or Journal Article

### **From the ground up, way up: measuring live fuel moisture with satellite imagery to fine-tune fire modeling in western ecosystems**

[www.nrfirescience.org/resource/11431](http://www.nrfirescience.org/resource/11431)

Remote sensing from space may well become one of the world's most effective, accurate, and efficient ways to assess fire risk and thus manage large landscapes. The technology is evolving quickly, and researchers are busy keeping up. Some major western U.S. landscapes are just now being assessed for integrating remote sensing data...

Author(s): Rachel Clark

Year Published: 2009

Type: Document

Research Brief or Fact Sheet

### **Indirect effects of fire severity on avian communities in ponderosa pine and aspen forests in western North America: a review**

[www.nrfirescience.org/resource/8365](http://www.nrfirescience.org/resource/8365)

description

Author(s): Kerri T. Vierling, Leigh B. Lentile

Year Published: 2008

Type: Document

Book or Chapter or Journal Article

### **Recoupling fire and aspen recruitment after wolf reintroduction in Yellowstone National Park, USA**

[www.nrfirescience.org/resource/8232](http://www.nrfirescience.org/resource/8232)

We report on the recent growth of upland aspen (*Populus tremuloides* Michx.) thickets in northwestern Yellowstone National Park, USA following wolf (*Canis lupus* L.) reintroduction in 1995. We compared aspen growth patterns in an area burned by the 1988 fires to aspen growth patterns in an adjacent unburned area. Elk (*Cervus elaphus* L...

Author(s): Joshua S. Halofsky, William J. Ripple, Robert L. Beschta

Year Published: 2008

Type: Document

Book or Chapter or Journal Article

### **Do high-density patches of coarse wood and regenerating saplings create browsing refugia for aspen (*Populus tremuloides*) in Yellowstone National Park (USA)?**

[www.nrfirescience.org/resource/13546](http://www.nrfirescience.org/resource/13546)

Following the extensive 1988 fires in Yellowstone, a mosaic of high-density patches of fallen logs and regenerating lodgepole pine (*Pinus contorta* var. *latifolia* Engelm. ex Wats.) saplings developed in the landscape. Such patches could potentially provide browsing refugia for post-fire aspen (*Populus tremuloides* Michx.)...

Author(s): James D. Forester, Dean P. Anderson, Monica G. Turner

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

### **Complex interactions shaping aspen dynamics in the Greater Yellowstone Ecosystem**

[www.nrfirescience.org/resource/7906](http://www.nrfirescience.org/resource/7906)

Loss of aspen (*Populus tremuloides*) has generated concern for aspen persistence across much of the western United States. However, most studies of aspen change have been at local scales and our understanding of aspen dynamics at broader scales is limited. At local scales, aspen loss has been attributed to fire exclusion, ungulate...

Author(s): K. Brown, Andrew J. Hansen, Robert E. Keane, Lisa Graumlich

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

### **Snow accumulation in thinned lodgepole pine stands, Montana, USA**

[www.nrfirescience.org/resource/8192](http://www.nrfirescience.org/resource/8192)

Alternative silvicultural treatments such as thinning can be used to restore forested watersheds and reduce wildfire hazards, but the hydrologic effects of these treatments are not well defined. We evaluated the effect of two shelterwood-with-reserve silvicultural prescriptions, one leaving residual trees evenly distributed (SE) and...

Author(s): Scott W. Woods, Robert S. Ahl, Jason Sappington, Ward W. McCaughey

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

### **Quantitative comparison of spectral indices and transformations of multi-resolution remotely sensed data using ground measurements: implications for fire severity modeling - Final Report to the Joint Fire Science Program**

[www.nrfirescience.org/resource/11156](http://www.nrfirescience.org/resource/11156)

The primary factor in estimating fire danger is fuel moisture. Fuel moisture varies seasonally and should be measured over an entire fire season using remote sensing technologies and verified using ground measurements. Recent advances in spaceborne and airborne imaging systems can potentially significantly improve the ability to...

Author(s): Jennifer L. Rechel, Dar A. Roberts

Year Published: 2005

Type: Document

Technical Report or White Paper

### **Establishment, persistence, and growth of aspen (*Populus tremuloides*) seedlings in Yellowstone National Park**

[www.nrfirescience.org/resource/13543](http://www.nrfirescience.org/resource/13543)

Quaking aspen (*Populus tremuloides* Michx.) is a long-lived clonal species in which many genetically identical stems (ramets) arise from a common root system. Establishment by seed is extremely rare in the Rocky Mountain region, where most clones that exist today are thought to have established hundreds or thousands of...

Author(s): William H. Romme, Monica G. Turner, Gerald A. Tuskan, Rebecca A. Reed

Year Published: 2005

Type: Document

Book or Chapter or Journal Article

### **Testing transferability of willingness to pay for forest fire prevention among three states of California, Florida, and Montana**

[www.nrfirescience.org/resource/7960](http://www.nrfirescience.org/resource/7960)

The equivalency of willingness to pay between the states of California, Florida and Montana is tested. Residents in California, Florida and Montana have an average willingness to pay of \$417, \$305, and \$382 for prescribed burning program, and \$403, \$230, and \$208 for mechanical fire fuel reduction program, respectively. Due to wide...

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

Year Published: 2005

Type: Document

Book or Chapter or Journal Article

### **Effects of prescribed fire on the invasion of northern mixed-grass prairie by non-native plant species - Final Report to the Joint Fire Science Program**

[www.nrfirescience.org/resource/11162](http://www.nrfirescience.org/resource/11162)

We seek to measure the effects of fire and grazing on weeds of the northern mixed grass prairie. To accomplish this we are interpreting measurements from two management experiments, one at Lostwood National Wildlife Refuge (NWR) and one at Des Lacs NWR. At Lostwood we found a nearly balanced 2x7 treatment experiment with seven...

Author(s): Jennifer S. Hartz-Rubin, Tad Weaver, Cory S. Rubin, Jack Plaggemeyer

Year Published: 2005

Type: Document

Technical Report or White Paper

### **Incorporating wildlife habitat needs into restoration and rehabilitation projects**

[www.nrfirescience.org/resource/11119](http://www.nrfirescience.org/resource/11119)

Description not entered

Author(s): Richard Stevens

Year Published: 2004

Type: Document

Technical Report or White Paper

### **Temperature-dependent rate models of vascular cambium cell mortality**

[www.nrfirescience.org/resource/7922](http://www.nrfirescience.org/resource/7922)

We use two rate-process models to describe cell mortality at elevated temperatures as a means of understanding vascular cambium cell death during surface fires. In the models, cell death is caused by irreversible damage to cellular molecules that occurs at rates that increase exponentially with temperature. The models differ in...

Author(s): Matthew B. Dickinson, Edward A. Johnson

Year Published: 2004

Type: Document

Book or Chapter or Journal Article

### **Guidelines for restoration and rehabilitation of principal plant communities**

[www.nrfirescience.org/resource/11121](http://www.nrfirescience.org/resource/11121)

Range and wildland improvement projects conducted throughout the Intermountain region normally occur within specific plant communities. Each plant community has unique features that require different equipment, planting techniques, and plant materials to conduct improvement projects. Plant communities or associations discussed in...

Author(s): Richard Stevens, Stephen B. Monsen

Year Published: 2004

Type: Document

Technical Report or White Paper

### **Lewis's Woodpecker (*Melanerpes lewis*): a technical conservation assessment**

[www.nrfirescience.org/resource/11498](http://www.nrfirescience.org/resource/11498)

Lewis's woodpecker (*Melanerpes lewis*) is a locally common but patchily distributed woodpecker species usually seen in open forests of western North America. The combination of its sporadic distribution, its diet of adult-stage free-living insects (primarily aerial), its preference to nest in burned landscapes, and its variable...

Author(s): Stephen C. Abele, Victoria A. Saab, Edward O. Garton

Year Published: 2004

Type: Document

Technical Report or White Paper

### **Postfire aspen seedling recruitment across the Yellowstone (USA) landscape**

[www.nrfirescience.org/resource/13542](http://www.nrfirescience.org/resource/13542)

Landscape patterns of quaking aspen (*Populus tremuloides*) seedling occurrence and abundance were studied after a rare recruitment event following the 1988 fires in Yellowstone National Park, Wyoming, USA. Belt transects (1 to 17 km in length, 4 m width) along 18 foot trails were surveyed for aspen seedlings on the...

Author(s): Monica G. Turner, William H. Romme, Gerald A. Tuskan, Rebecca A. Reed

Year Published: 2003

Type: Document

Book or Chapter or Journal Article

### **Vegetation dynamics under fire exclusion and logging in a Rocky Mountain watershed, 1856-1996**

[www.nrfirescience.org/resource/8264](http://www.nrfirescience.org/resource/8264)

How have changes in land management practices affected vegetation patterns in the greater Yellowstone ecosystem? This question led us to develop a deterministic, successional, vegetation model to 'turn back the clock' on a study area and assess how patterns in vegetation cover type and structure have changed through different...

Author(s): Alisa L. Gallant, Andrew J. Hansen, John S. Councilman, Duane K. Monte, David W. Betz

Year Published: 2003

Type: Document

Book or Chapter or Journal Article

### ***Pseudotsuga menziesii* var. *glauca* (Rocky Mountain Douglas-fir)**

[www.nrfirescience.org/resource/10853](http://www.nrfirescience.org/resource/10853)

This FEIS species review synthesizes information on the relationship of *Pseudotsuga menziesii* var. *glauca* (Rocky Mountain Douglas-fir) to fire--how fire affects the species and its habitat, effects of the

species on fuels and fire regimes, and fire management considerations. Information is also provided on the species' taxonomy,...

Author(s): Peter D. Steinberg

Year Published: 2002

Type: Document

Synthesis

### **Cynoglossum officinale (houndstongue)**

[www.nrfirescience.org/resource/10500](http://www.nrfirescience.org/resource/10500)

This FEIS species review synthesizes information on the relationship of *Cynoglossum officinale* (houndstongue) to fire--how fire affects the species and its habitat, invasiveness of the species, effects of the species on fuels and fire regimes, and fire management considerations. Information is also provided on the species' taxonomy...

Author(s): Kristin L. Zouhar

Year Published: 2002

Type: Document

Synthesis

### **Carduus nutans (musk thistle)**

[www.nrfirescience.org/resource/10494](http://www.nrfirescience.org/resource/10494)

This FEIS species review synthesizes information on the relationship of *Carduus nutans* (musk thistle) to fire--how fire affects the species and its habitat, invasiveness of the species, effects of the species on fuels and fire regimes, and fire management considerations. Information is also provided on the species' taxonomy,...

Author(s): Kristin L. Zouhar

Year Published: 2002

Type: Document

Synthesis

### **Aspen's ecological role in the West**

[www.nrfirescience.org/resource/11883](http://www.nrfirescience.org/resource/11883)

Aspen exhibits a variety of ecological roles. In southern Colorado, the 1880 landscape mosaic contained a range of stand ages, of which half were >70 years old and half were younger. Pure aspen stands in southern Colorado are widespread and may result from previous short fire intervals that eliminated local conifer seed sources....

Author(s): William H. Romme, Lisa Floyd-Hanna, David D. Hanna, Elisabeth Bartlett

Year Published: 2001

Type: Document

Conference Proceedings

### **Water quality, substratum and biotic responses of five central Idaho (USA) streams during the first year following the Mortar Creek fire**

[www.nrfirescience.org/resource/11442](http://www.nrfirescience.org/resource/11442)

The Mortar Creek Fire burned 26 000 ha of mixed-conifer Rocky Mountain forest in July-August 1979. Changes in burn stream conditions were examined relative to reference streams for various ecological factors on two to six occasions, from October 1979 to August 1980. Factors included major ions and nutrients, suspended and benthic...

Author(s): G. Wayne Minshall, James T. Brock, Douglas A. Andrews, Christopher T. Robinson

Year Published: 2001

Type: Document

Book or Chapter or Journal Article

### **Centaurea maculosa (spotted knapweed)**

[www.nrfirescience.org/resource/10493](http://www.nrfirescience.org/resource/10493)

This FEIS species review synthesizes information on the relationship of *Centaurea maculosa* (spotted knapweed) to fire--how fire affects the species and its habitat, invasiveness of the species, effects of the species on fuels and fire regimes, and fire management considerations. Information is also provided on the species' taxonomy...

Author(s): Kristin L. Zouhar

Year Published: 2001

Type: Document

Synthesis

### **Manipulations to regenerate aspen ecosystems**

[www.nrfirescience.org/resource/11882](http://www.nrfirescience.org/resource/11882)

Vegetative regeneration of aspen can be initiated through manipulations that provide hormonal stimulation, proper growth environment, and sucker protection - the three elements of the aspen regeneration triangle. The correct course of action depends upon a careful evaluation of the size, vigor, age, and successional status of the...

Author(s): Wayne D. Shepperd

Year Published: 2001

Type: Document

Conference Proceedings

### **The role of fire in juniper and pinyon woodlands: a descriptive analysis**

[www.nrfirescience.org/resource/10994](http://www.nrfirescience.org/resource/10994)

Among the most pronounced vegetation changes in past 130 years has been the increase in both distribution and density of juniper (*Juniperus* spp.) and pinyon (*Pinus* spp.) across the Intermountain West. Juniper and pinyon species between the Canadian and Mexican borders occupy over 30 million ha throughout this region. Prior to...

Author(s): Richard F. Miller, Robin J. Tausch

Year Published: 2001

Type: Document

Conference Proceedings

### **Aspen response to prescribed fire and wild ungulate herbivory**

[www.nrfirescience.org/resource/12104](http://www.nrfirescience.org/resource/12104)

Land management agencies in northwest Wyoming have implemented an active prescribed fire program to address historically altered fire regimes, regenerate aspen, and improve overall watershed functions. Treated clones are susceptible to extensive browsing from elk concentrated on supplemental feedgrounds and from wintering moose....

Author(s): Steve Kilpatrick, Diane Abendroth

Year Published: 2001

Type: Document

Conference Proceedings

### **Native burning in western North America: implications for hardwood forest management**

[www.nrfirescience.org/resource/11062](http://www.nrfirescience.org/resource/11062)

It is now widely acknowledged that frequent low-intensity fires once structured many western forests. What is not generally recognized, however, is that most of those fires were purposefully set by native people, not started by lightning. Data from the Rocky Mountains attest to the widespread use of fire by

native people, as does...  
Author(s): Charles E. Kay  
Year Published: 2000  
Type: Document  
Conference Proceedings

**Environmental assessment: Tenderfoot Creek Experimental Forest - Vegetative treatment research project, Kings Hill Ranger District, Lewis and Clark National Forest, Meagher County, Montana**

[www.nrfirescience.org/resource/11513](http://www.nrfirescience.org/resource/11513)

Environmental assessment of the Tenderfoot Research Project. This research project proposes to harvest timber in two treatment subwatersheds, Spring Park Creek and Sun Creek. The silvicultural system proposed is a two-aged system termed 'shelterwood with reserves,' that uses even distribution of single or small groups and uneven...

Author(s): Gloria E. Flora, Ward W. McCaughey  
Year Published: 1998  
Type: Document  
Management or Planning Document

**Fire and insects in northern and boreal forest ecosystems of North America**

[www.nrfirescience.org/resource/7945](http://www.nrfirescience.org/resource/7945)

Fire and insects are natural disturbance agents in many forest ecosystems, often interacting to affect succession, nutrient cycling, and forest species composition. We review literature pertaining to effects of fire-insect interactions on ecological succession, use of prescribed fire for insect pest control, and effects of fire on...

Author(s): Deborah G. McCullough, Richard A. Werner, David Neumann  
Year Published: 1998  
Type: Document  
Book or Chapter or Journal Article, Synthesis

**Assessing simulated ecosystem processes for climate variability research at Glacier National Park, USA**

[www.nrfirescience.org/resource/8378](http://www.nrfirescience.org/resource/8378)

Glacier National Park served as a test site for ecosystem analyses that involved a suite of integrated models embedded within a geographic information system. The goal of the exercise was to provide managers with maps that could illustrate probable shifts in vegetation, net primary production (NPP), and hydrologic responses...

Author(s): Joseph D. White, Steven W. Running, Peter Thornton, Robert E. Keane, Kevin C. Ryan, Daniel B. Fagre, Carl H. Key  
Year Published: 1998  
Type: Document  
Book or Chapter or Journal Article

**Mapping historic fire regimes for the western United States: integrating remote sensing and biophysical data**

[www.nrfirescience.org/resource/7937](http://www.nrfirescience.org/resource/7937)

We have developed a spatial database of historic natural fire regimes for the eleven western States to provide information in support of expected national increases in prescribed burning. Fire regimes are described in terms both of frequency and severity, and we have classified five distinct fire regimes:

Author(s): Colin C. Hardy, James P. Menakis, Donald G. Long, James K. Brown, David L. Bunnell  
Year Published: 1998

Type: Document  
Conference Proceedings

### **A rare episode of sexual reproduction in aspen (*Populus tremuloides* Michx) following the 1988 Yellowstone fires**

[www.nrfirescience.org/resource/8236](http://www.nrfirescience.org/resource/8236)

No description available.

Author(s): William H. Romme, Monica G. Turner, Robert H. Gardner, William W. Hargrove, Gerald A. Tuskan, Don G. Despain, Roy A. Renkin

Year Published: 1997

Type: Document

Book or Chapter or Journal Article

### ***Populus tremuloides* (quaking aspen)**

[www.nrfirescience.org/resource/10717](http://www.nrfirescience.org/resource/10717)

This FEIS species review synthesizes information on the relationship of *Populus tremuloides* (quaking aspen) to fire--how fire affects the species and its habitat, and fire management considerations. Information is also provided on the species' taxonomy, distribution, basic biology, and general management. This species review can be...

Author(s): Janet L. Howard

Year Published: 1996

Type: Document

Synthesis

### **Aspen, elk, and fire in northern Yellowstone Park**

[www.nrfirescience.org/resource/8261](http://www.nrfirescience.org/resource/8261)

Most stands of trembling aspen (*Populus tremuloides*) in northern Yellowstone National Park appear to have become established between 1870 and 1890, with little regeneration since 1900. There has been controversy throughout this century regarding the relative roles of browsing by elk (*Cervus elaphus*) and fire suppression in...

Author(s): William H. Romme, Monica G. Turner, Linda L. Wallace, Jennifer S. Walker

Year Published: 1995

Type: Document

Book or Chapter or Journal Article

### ***Festuca subulata* (bearded fescue)**

[www.nrfirescience.org/resource/10644](http://www.nrfirescience.org/resource/10644)

This FEIS species review synthesizes information on the relationship of *Festuca subulata* (bearded fescue) to fire--how fire affects the species and its habitat, and fire management considerations. Information is also provided on the species' taxonomy, distribution, basic biology, and general management. This species review can be...

Author(s): Lora L. Esser

Year Published: 1994

Type: Document

Synthesis

### ***Erodium cicutarium* (cutleaf filaree)**

[www.nrfirescience.org/resource/10462](http://www.nrfirescience.org/resource/10462)

This FEIS species review synthesizes information on the relationship of *Erodium cicutarium* (cutleaf filaree) to fire--how fire affects the species and its habitat, invasiveness of the species, and fire

management considerations. Information is also provided on the species' taxonomy, distribution, basic biology, and general...

Author(s): Janet L. Howard

Year Published: 1992

Type: Document

Synthesis

### **Pinus ponderosa var. ponderosa (Pacific ponderosa pine)**

[www.nrfirescience.org/resource/10687](http://www.nrfirescience.org/resource/10687)

This FEIS species review synthesizes information on the relationship of *Pinus ponderosa* var. *ponderosa* (Pacific ponderosa pine) to fire--how fire affects the species and its habitat, and fire management considerations. Information is also provided on the species' taxonomy, distribution, basic biology, and general management. This...

Author(s): James R. Habeck

Year Published: 1992

Type: Document

Synthesis

### **Fire ecology of the forest habitat types of eastern Idaho and western Wyoming**

[www.nrfirescience.org/resource/12116](http://www.nrfirescience.org/resource/12116)

This report summarizes the available fire ecology and management information relating to the forest habitat types of eastern Idaho and western Wyoming, west of the crest of the Wind River Mountain.

Author(s): Anne F. Bradley, William C. Fischer, Nonan V. Noste

Year Published: 1992

Type: Document

Technical Report or White Paper

### **Picea glauca (white spruce)**

[www.nrfirescience.org/resource/10579](http://www.nrfirescience.org/resource/10579)

This FEIS species review synthesizes information on the relationship of *Picea glauca* (white spruce) to fire--how fire affects the species and its habitat, and fire management considerations. Information is also provided on the species' taxonomy, distribution, basic biology, and general management. This species review can be used for...

Author(s): Ronald Uchytel

Year Published: 1991

Type: Document

Synthesis

### **Picea engelmannii (Engelmann spruce)**

[www.nrfirescience.org/resource/10569](http://www.nrfirescience.org/resource/10569)

This FEIS species review synthesizes information on the relationship of *Picea engelmannii* (Engelmann spruce) to fire--how fire affects the species and its habitat, and fire management considerations. Information is also provided on the species' taxonomy, distribution, basic biology, and general management. This species review can be...

Author(s): Ronald Uchytel

Year Published: 1991

Type: Document

Synthesis

### **Forage quality in burned and unburned aspen communities**

[www.nrfirescience.org/resource/11483](http://www.nrfirescience.org/resource/11483)

Selected forage species were sampled during the first and second summers after autumn prescribed burning of three sites in southeastern Idaho. They were analyzed for in vitro dry matter digestibility, protein, calcium, and phosphorus. This aspen type has a highly nutritious understory. Burning further improved the quality of the...

Author(s): Norbert V. DeByle, Philip J. Urness, Deborah L. Blank

Year Published: 1989

Type: Document

Technical Report or White Paper

### **Soil temperatures and suckering in burned and unburned aspen stands in Idaho**

[www.nrfirescience.org/resource/12121](http://www.nrfirescience.org/resource/12121)

Monthly average soil temperatures in a burned aspen stand ranged from 0 to 8 °F higher than in the unburned stand at depths to 12 inches for a site in southeastern Idaho. From June through August the first year after burning, soil temperatures were significantly different at all depths in burned and unburned stands. By the second...

Author(s): Roger D. Hungerford

Year Published: 1988

Type: Document

Research Brief or Fact Sheet

### **Fire ecology of western Montana forest habitat types**

[www.nrfirescience.org/resource/11257](http://www.nrfirescience.org/resource/11257)

Provides information on fire as an ecological factor for forest habitat types in western Montana. Identifies Fire Groups of habitat types based on fire's role in forest succession. Describes forest fuels and suggests considerations for fire management.

Author(s): William C. Fischer, Anne F. Bradley

Year Published: 1987

Type: Document

Technical Report or White Paper

### **Appraising fuels and flammability in western aspen: a prescribed fire guide**

[www.nrfirescience.org/resource/11132](http://www.nrfirescience.org/resource/11132)

Describes a method for appraising fuels and fire behavior potential in aspen forests to guide the use of prescribed fire and the preparation of fire prescriptions. Includes an illustrated classification of aspen fuels; appraisals of fireline intensity, rate of spread, adjective ratings for fire behavior and probability of burn...

Author(s): James K. Brown, Dennis Simmerman

Year Published: 1986

Type: Document

Technical Report or White Paper

### **Fire ecology of the forest habitat types of central Idaho**

[www.nrfirescience.org/resource/11258](http://www.nrfirescience.org/resource/11258)

Discusses fire as an ecological factor for forest habitat types occurring in central Idaho. Identifies "Fire Groups" of habitat types based on fire's role in forest succession. Considerations for fire management are suggested.

Author(s): Marilyn F. Crane, William C. Fischer

Year Published: 1986

Type: Document

Technical Report or White Paper

**Rangeland fire effects**

[www.nrfirescience.org/resource/11003](http://www.nrfirescience.org/resource/11003)

Description not entered

Author(s): Ken Sanders, Jack Durham

Year Published: 1985

Type: Document

Conference Proceedings

**Managing wildlife habitat with fire in the Aspen ecosystem**

[www.nrfirescience.org/resource/11482](http://www.nrfirescience.org/resource/11482)

Much of the nearly 7 million acres (2.86 million ha) of aspen in the western United States is seral to conifers. Also, most aspen stands are old, in excess of 60 years. Proper treatment of these aspen forests will retain the aspen and can produce optimum wildlife habitat. Optimally, all age and size classes of aspen should be...

Author(s): Norbert V. DeByle

Year Published: 1985

Type: Document

Conference Proceedings

**Estimating postfire changes in production and value of northern rocky mountain-intermountain rangelands**

[www.nrfirescience.org/resource/11222](http://www.nrfirescience.org/resource/11222)

A simulation model was developed to estimate postfire changes in the production and value of grazing lands in the Northern Rocky Mountain-Intermountain region. Ecological information and management decisions were used to simulate expected changes in production and value after wildfire in six major rangeland types: permanent forested...

Author(s): David L. Peterson, Patrick J. Flowers

Year Published: 1984

Type: Document

Technical Report or White Paper

**Monoammonium phosphate: effect on flammability of excelsior and pine needles**

[www.nrfirescience.org/resource/11959](http://www.nrfirescience.org/resource/11959)

The study quantified differences between fire-retarding abilities of monoammonium phosphate samples from five different sources. Ponderosa pine needles and aspen excelsior fuel beds were spray-treated with different levels of chemical solutions, dried, and burned under controlled laboratory conditions.

Flame spread and energy...

Author(s): Aylmer D. Blakely

Year Published: 1983

Type: Document

Technical Report or White Paper

**Fire ecology and prescribed burning in the Great Plains: a research review**

[www.nrfirescience.org/resource/11912](http://www.nrfirescience.org/resource/11912)

Historical evidence indicates that fires were prevalent in grasslands. In the past, big prairie fires usually occurred during drought years that followed 1 to 3 years of above-average precipitation, which provided abundant and continuous fuel. Fire frequency probably varied from 5 to 10 years in level-to-rolling topography and from...

Author(s): Henry A. Wright, Arthur W. Bailey

Year Published: 1980  
Type: Document  
Technical Report or White Paper

**Fire's influence on wildlife habitat on the Bridger-Teton National Forest, Wyoming - Volume I: photographic record and analysis**

[www.nrfirescience.org/resource/12151](http://www.nrfirescience.org/resource/12151)

The Bridger-Teton National Forest in the Jackson Hole Region of Wyoming has long been recognized for its wildlife resource. Management efforts have emphasized the measurement of forage utilization by elk (*Cervus canadensis nelsoni*) and their effect on summer and winter ranges. Less consideration has been given to other biotic and...

Author(s): George E. Gruell  
Year Published: 1980  
Type: Document  
Technical Report or White Paper

**Fire's influence on wildlife habitat on the Bridger-Teton National Forest, Wyoming - Volume II: changes and causes, management implications**

[www.nrfirescience.org/resource/12126](http://www.nrfirescience.org/resource/12126)

Provides information on wildlife habitat condition and trend on the Bridger-Teton National Forest in the Jackson Hole Region of Wyoming by analysis of broad plant communities. Visual evidence of condition and trend are provided in Volume I, The Photo Record. Management implications are included.

Author(s): George E. Gruell  
Year Published: 1980  
Type: Document  
Technical Report or White Paper

**Elk-aspen relationships on a prescribed burn**

[www.nrfirescience.org/resource/11924](http://www.nrfirescience.org/resource/11924)

Elk use of aspen alones was deterred only one winter following prescribed fire. Numbers of aspen suckers on the nine burned clones increased 178 percent in 3 years, but the response varied greatly among clones. Elk browsing the third winter after burning averaged 44 percent of current annual growth, and eliminated incremental height...

Author(s): Joseph V. Basile  
Year Published: 1979  
Type: Document  
Research Brief or Fact Sheet

**Spring burning in an aspen-conifer stand for maintenance of moose habitat, West Boulder River, Montana**

[www.nrfirescience.org/resource/8441](http://www.nrfirescience.org/resource/8441)

Description not entered  
Author(s): Floyd A. Gordon  
Year Published: 1976  
Type: Document  
Conference Proceedings

**Airborne infrared forest fire detection system: final report**

[www.nrfirescience.org/resource/11942](http://www.nrfirescience.org/resource/11942)

This work was undertaken because of a mutual interest of the Department of Defense, Advanced

Research Projects Agency (ARPA), and the USDA Forest Service in the problems of detecting hot targets against natural terrain backgrounds using airborne infrared (IR) line scanning instrumentation. The study objectives were broadly defined...

Author(s): Ralph A. Wilson, Stanley N. Hirsch, Forrest H. Madden, John B. Losensky

Year Published: 1971

Type: Document

Technical Report or White Paper