

Using resilience and resistance concepts to manage persistent threats to sagebrush ecosystems and greater sage-grouse

www.nrfirescience.org/resource/16558

Conservation of imperiled species often demands addressing a complex suite of threats that undermine species viability. Regulatory approaches, such as the US Endangered Species Act (1973), tend to focus on anthropogenic threats through adoption of policies and regulatory mechanisms. However, persistent ecosystem-based threats, such...

Author(s): Jeanne C. Chambers, Jeremy D. Maestas, David A. Pyke, Chad S. Boyd, Michael L. Pellant, Amarina Wuenschel

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Removal of perennial herbaceous species affects response of cold desert scrublands to fire

www.nrfirescience.org/resource/16529

Two of the primary global change factors that threaten shrublands worldwide are loss of native perennial herbaceous species due to inappropriate livestock grazing and loss of native shrubs due to altered fire regimes. We asked: (1) how do the separate and interacting effects of removal of perennial herbaceous species and burning...

Author(s): Jeanne C. Chambers, David Board, Bruce A. Roundy, Peter J. Weisberg

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Development of remote sensing indicators for mapping episodic die-off of an invasive annual grass (*Bromus tectorum*) from the Landsat archive

www.nrfirescience.org/resource/16625

The exotic annual grass *Bromus tectorum* (cheatgrass) dominates vast acreages of rangeland in the western USA, leading to increased fire frequency and ecosystem degradation that is often irreversible. Episodic regeneration failure ("die-off") has been observed in cheatgrass monocultures and can have negative ecosystem...

Author(s): Peter J. Weisberg, Thomas E. Dilts, Owen W. Baughman, Susan E. Meyer, Elizabeth A. Leger, K. Jane Van Gunst, Lauren Cleeves

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Effects of climate change on rangeland vegetation in the northern Rockies

www.nrfirescience.org/resource/16538

A longer growing season with climate change is expected to increase net primary productivity of many rangeland types, especially those dominated by grasses, although responses will depend on local climate and soil conditions. Elevated atmospheric carbon dioxide may increase water use efficiency and productivity of some species. In...

Author(s): Matthew C. Reeves, Mary Manning, Jeff P. DiBenedetto, Kyle Palmquist, William Lauenroth, John Bradford, Daniel Schlaepfer

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Post-fire vegetation response at the woodland-shrubland interface is mediated by the pre-fire community

www.nrfirescience.org/resource/16496

Understanding the drivers of ecosystem responses to disturbance is essential for management aimed at maintaining or restoring ecosystem processes and services, especially where invasive species respond strongly to disturbance. In this study, we used repeat vegetation surveys from a network of prescribed fire treatments at the...

Author(s): Alexandra K. Urza, Peter J. Weisberg, Jeanne C. Chambers, Jessica M. Dhaemers, David Board

Year Published: 2017

Type: Document

Book or Chapter or Journal Article

Secondary invasion: the bane of weed management

www.nrfirescience.org/resource/14387

Exotic plant invasions present a global threat to natural ecosystems, yet the efficacy of management efforts in mitigating invader impacts remains unclear. A rapidly emerging problem is that of secondary invasion — an increase in abundance of non-target exotics following treatment of targeted invasive plants. Here, we present a...

Author(s): Dean E. Pearson, Yvette K. Ortega, Justin B. Runyon, Jack L. Butler

Year Published: 2016

Type: Document

Book or Chapter or Journal Article, Synthesis

Cascading effects of fire retardant on plant-microbe interactions, community composition, and invasion

www.nrfirescience.org/resource/14485

Climate change, historical fire suppression, and a rise in human movements in urban-forest boundaries have resulted in an increased use of long-term fire retardant (LTFR). While LTFR is an effective fire-fighting tool, it contains high concentrations of nitrogen and phosphorus, and little is known about how this nutrient pulse...

Author(s): Abigail Marshall, Lauren Waller, Ylva Lekberg

Year Published: 2016

Type: Document

Book or Chapter or Journal Article

Bromus tectorum response to fire varies with climate conditions

www.nrfirescience.org/resource/12979

The invasive annual grass *Bromus tectorum* (cheatgrass) forms a positive feedback with fire in some areas of western North America's sagebrush biome by increasing fire frequency and size, which then increases *B. tectorum* abundance post-fire and dramatically alters ecosystem structure and processes. However, this positive response to...

Author(s): Kimberly Taylor, Tyler Brummer, Lisa J. Rew, Matt Lavin, Bruce D. Maxwell

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

Using resistance and resilience concepts to reduce impacts of invasive annual grasses and altered fire regimes on the sagebrush ecosystem and greater sage-grouse: a strategic multi-scale approach

www.nrfirescience.org/resource/12989

This Report provides a strategic approach for conservation of sagebrush ecosystems and Greater Sage- Grouse (sage-grouse) that focuses specifically on habitat threats caused by invasive annual

grasses and altered fire regimes. It uses information on factors that influence (1) sagebrush ecosystem resilience to disturbance and...

Author(s): Jeanne C. Chambers, David A. Pyke, Jeremy D. Maestas, Michael L. Pellant, Chad S. Boyd, Steven B. Campbell, Shawn Espinosa, Douglas W. Havlina, Kenneth E. Mayer, Amarina Wuenschel

Year Published: 2014

Type: Document

Management or Planning Document

Resilience to stress and disturbance, and resistance to *Bromus tectorum* L. invasion in cold desert shrublands of western North America

www.nrfirescience.org/resource/12897

Alien grass invasions in arid and semi-arid ecosystems are resulting in grass-fire cycles and ecosystem-level transformations that severely diminish ecosystem services. Our capacity to address the rapid and complex changes occurring in these ecosystems can be enhanced by developing an understanding of the environmental factors and...

Author(s): Jeanne C. Chambers, Bethany A. Bradley, Cynthia S. Brown, Carla M. D'Antonio, Matthew J. Germino, James B. Grace, Stuart P. Hardegree, Richard F. Miller, David A. Pyke

Year Published: 2014

Type: Document

Book or Chapter or Journal Article

A field guide for selecting the most appropriate treatment in sagebrush and pinon-juniper ecosystems in the Great Basin: Evaluating resilience to disturbance and resistance to invasive annual grasses, and predicting vegetation response

www.nrfirescience.org/resource/14682

This field guide identifies seven primary components that largely determine resilience to disturbance, as well as resistance to invasive grasses and plant succession following treatment of areas of concern. The primary components are (1) characteristics of the ecological site, (2) current vegetation prior to treatment, (3)...

Author(s): Richard F. Miller, Jeanne C. Chambers, Michael L. Pellant

Year Published: 2014

Type: Document

Technical Report or White Paper

Resistance to invasives and altered fire regimes differs between cold and hot desert shrublands

www.nrfirescience.org/resource/12136

Settlement by Anglo-Americans in the desert shrublands of North America has resulted in the introduction and subsequent invasion of multiple nonnative invasive grass species. These invasions have altered pre-settlement fire regimes, converted native perennial shrublands to nonnative annual grasslands, and placed many native desert...

Author(s): Matthew L. Brooks, Jeanne C. Chambers

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

A review of fire effects on vegetation and soils in the Great Basin Region: response and ecological site characteristics

www.nrfirescience.org/resource/12147

This review synthesizes the state of knowledge on fire effects on vegetation and soils in semi-arid ecosystems in the Great Basin Region, including the central and northern Great Basin and Range, Columbia River Basin, and the Snake River Plain. We summarize available literature related to: (1) the

effects of environmental gradients...

Author(s): Richard F. Miller, Jeanne C. Chambers, David A. Pyke, Frederick B. Pierson

Year Published: 2013

Type: Document

Synthesis, Technical Report or White Paper

Introduced annual grass increases regional fire activity across the arid western USA (1980-2009)

www.nrfirescience.org/resource/12110

Non-native, invasive grasses have been linked to altered grass-fire cycles worldwide. Although a few studies have quantified resulting changes in fire activity at local scales, and many have speculated about larger scales, regional alterations to fire regimes remain poorly documented. We assessed the influence of large-scale *Bromus*...

Author(s): Jennifer Balch, Bethany A. Bradley, Carla M. D'Antonio, Jose Gomez-Dans

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Using native annual plants to restore post-fire habitats in western North America

www.nrfirescience.org/resource/12139

Increasing fire frequencies and uncharacteristic severe fires have created a need for improved restoration methods across rangelands in western North America. Traditional restoration seed mixtures of native perennial mid- to late-seral plant species may not be suitable for intensely burned sites that have been returned to an early-...

Author(s): Christopher M. Herron, Jayne L. Jonas, Paul J. Meiman, Mark W. Paschke

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Does *Kochia prostrata* spread from seeded sites? an evaluation from southwestern Idaho, USA

www.nrfirescience.org/resource/12145

Purposeful introductions of exotic species for rehabilitation efforts following wildfire are common on rangelands in the western United States, though ecological impacts of exotic species in novel environments are often poorly understood. One such introduced species, *Kochia prostrata* (L.) Schrad (forage kochia) has been seeded on...

Author(s): Erin C. Gray, Patricia S. Muir

Year Published: 2013

Type: Document

Book or Chapter or Journal Article

Fire as a tool for controlling *Tamarix* spp. seedlings

www.nrfirescience.org/resource/13506

Fire is often used in northern grasslands to control invasive grass species but has unknown effects on *Tamarix* spp., more recent invaders. Temperature (using an oven as a fire surrogate) and duration combinations that would be most lethal to *Tamarix* seeds and seedlings were determined. *Tamarix* seeds were sown in soil-lined dishes,...

Author(s): Michelle K. Ohrtman, Sharon A. Clay, David E. Clay, Alexander J. Smart

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

Aquatic species invasions in the context of fire and climate change

www.nrfirescience.org/resource/11273

This paper focuses on the nexus among native and nonnative fishes with respect to fire and climate change in the western United States. Although many taxa are involved, I emphasize native and nonnative salmonids because these are obligate coldwater species that might be expected to respond strongly to fire and because most research...

Author(s): Michael K. Young

Year Published: 2012

Type: Document

Technical Report or White Paper

Fire effects on noxious weeds

www.nrfirescience.org/resource/12003

The Fire Effects Information System (FEIS, www.fs.fed.us/database/feis/) has been providing reviews of scientific knowledge about fire effects since 1986. FEIS is an online collection of literature reviews on more than 1,100 species and their relationships with fire. Reviews cover plants and animals throughout the United States,...

Author(s): Robin J. Innes

Year Published: 2012

Type: Document

Research Brief or Fact Sheet

Postfire downy brome (*Bromus tectorum*) invasion at high elevations in Wyoming

www.nrfirescience.org/resource/12122

The invasive annual grass downy brome is the most ubiquitous weed in sagebrush systems of western North America. The center of invasion has largely been the Great Basin region, but there is an increasing abundance and distribution in the Rocky Mountain States. We evaluated postfire vegetation change using very large-scale aerial (...)

Author(s): Brian A. Meador, Samuel Cox, D. Terrance Booth

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

A common-garden study of resource-island effects on a native and an exotic, annual grass after fire

www.nrfirescience.org/resource/11474

Plant-soil variation related to perennial-plant resource islands (coppices) interspersed with relatively bare interspaces is a major source of heterogeneity in desert rangelands. Our objective was to determine how native and exotic grasses vary on coppice mounds and interspaces (microsites) in unburned and burned sites and...

Author(s): Amber N. Hoover, Matthew J. Germino

Year Published: 2012

Type: Document

Book or Chapter or Journal Article

Cheating cheatgrass: new research to combat a wily invasive weed

www.nrfirescience.org/resource/12130

Cheatgrass and its cousin, red brome, are exotic annual grasses that have invaded and altered ecosystem dynamics in more than 41 million acres of desert shrublands between the Rockies and the Cascade-Sierra chain. A fungus naturally associated with these *Bromus* species has been found lethal to the plants' soil-banked dormant seeds....

Author(s): Gail Wells
Year Published: 2012
Type: Document
Research Brief or Fact Sheet

Rocky Mountain Research Station invasive species visionary white paper

www.nrfirescience.org/resource/11236

Invasive species represent one of the single greatest threats to natural ecosystems and the services they provide. Effectively addressing the invasive species problem requires management that is based on sound research. We provide an overview of recent and ongoing invasive species research conducted by Rocky Mountain Research...

Author(s): Dean E. Pearson, Mee-Sook Kim, Jack L. Butler

Year Published: 2011

Type: Document

Technical Report or White Paper

Canyon grassland vegetation changes following fire in northern Idaho

www.nrfirescience.org/resource/12049

Native and nonnative vegetation mosaics are common in western rangelands. If land managers could better predict changes in the abundance of native and nonnative species following disturbances, maintenance of native plant cover and diversity may be improved. In August 2000, during suppression of a wildfire near Lewiston, Idaho, a...

Author(s): Corey L. Gucker, Stephen C. Bunting

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Hieracium caespitosum (meadow hawkweed)

www.nrfirescience.org/resource/10473

This FEIS species review synthesizes information on the relationship of Hieracium caespitosum (meadow hawkweed) 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'...

Author(s): Katharine R. Stone

Year Published: 2011

Type: Document

Synthesis

Euphorbia esula (leafy spurge)

www.nrfirescience.org/resource/10451

This FEIS species review synthesizes information on the relationship of Euphorbia esula (leafy spurge) 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): Corey L. Gucker

Year Published: 2011

Type: Document

Synthesis

Economic and social impacts of wildfires and invasive plants in American deserts: lessons from

the Great Basin

www.nrfirescience.org/resource/11463

Research on the impacts of wildfire and invasive plants in rangelands has focused on biophysical rather than human dimensions of these environmental processes. We offer a synthetic perspective on economic and social aspects of wildfire and invasive plants in American deserts, focusing on the Great Basin because greater research...

Author(s): Mark W. Brunson, John A. Tanaka

Year Published: 2011

Type: Document

Book or Chapter or Journal Article, Synthesis

Fire, plant invasions, and erosion events on western rangelands

www.nrfirescience.org/resource/8290

Millions of hectares of rangeland in the western United States have been invaded by annual and woody plants that have increased the role of wildland fire. Altered fire regimes pose significant implications for runoff and erosion. In this paper we synthesize what is known about fire impacts on rangeland hydrology and erosion, and how...

Author(s): Frederick B. Pierson, Christopher Jason Williams, Stuart P. Hardegree, Mark A. Weltz, Jeffrey J. Stone, Patrick E. Clark

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Fire effects on the cheatgrass seed bank pathogen *Pyrenophora semeniperda*

www.nrfirescience.org/resource/11450

The generalist fungal pathogen *Pyrenophora semeniperda* occurs primarily in cheatgrass (*Bromus tectorum*) seed banks, where it causes high mortality. We investigated the relationship between this pathogen and its cheatgrass host in the context of fire, asking whether burning would facilitate host escape from the pathogen or increase...

Author(s): Julie Beckstead, Laura E. Street, Susan E. Meyer, Phil S. Allen

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

Influence of fire on native and nonnative salmonid populations and habitat in a western Montana basin

www.nrfirescience.org/resource/8286

Anticipated increases in the frequency and severity of wildfire may threaten the persistence of native salmonid populations in headwater streams in western North America. This study used extensive pre- and postfire data to assess whether wildfire leads to hypothesized declines in native westslope cutthroat trout *Oncorhynchus clarkii*...

Author(s): Clint M. Sestrich, Thomas E. McMahon, Michael K. Young

Year Published: 2011

Type: Document

Book or Chapter or Journal Article

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

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

Post-wildfire seeding in forests of the western United States: an evidence-based review

www.nrfirescience.org/resource/12595

Broadcast seeding is one of the most widely used post-wildfire emergency response treatments intended to reduce soil erosion, increase vegetative ground cover, and minimize establishment and spread of non-native plant species. We conducted an evidence-based review to examine the effectiveness and effects of post-wildfire seeding...

Author(s): Donna Peppin, Peter Z. Fule, Carolyn Hull Sieg, Jan L. Beyers, Molly E. Hunter

Year Published: 2010

Type: Document

Book or Chapter or Journal Article, Synthesis

Ranching, invasive annual grasses, and the external costs of wildfire in the Great Basin: a stochastic dynamic programming approach

www.nrfirescience.org/resource/11468

The spread of invasive annual grasses and resulting escalation of wildfire frequency and severity pose a significant and growing threat to the economic and ecological viability of the rangelands in the Great Basin. While private ranchers have the option to limit the severity of wildfires through fuels removal treatments, few...

Author(s): Mimako Kobayashi, Michael H. Taylor

Year Published: 2010

Type: Document

Conference Proceedings

Ailanthus altissima (tree-of-heaven)

www.nrfirescience.org/resource/10450

This FEIS species review synthesizes information on the relationship of *Ailanthus altissima* (tree-of-heaven) 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): Janet L. Fryer

Year Published: 2010

Type: Document

Synthesis

Schedonorus pratensis (meadow fescue)

www.nrfirescience.org/resource/10472

This FEIS species review synthesizes information on the relationship of *Schedonorus pratensis* (meadow fescue) 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): Katharine R. Stone

Year Published: 2010

Type: Document

Synthesis

Effect of fire on a seed bank pathogen and on seeds of its host *Bromus tectorum*

www.nrfirescience.org/resource/11462

The generalist pathogen *Pyrenophora semeniperda* (Brittlebank and Adam) Shoemaker occurs primarily in cheatgrass (*Bromus tectorum* L.) seed banks, where it causes high seed mortality (Beckstead et al. 2007; Meyer et al. 2007). How does fire impact survival of a fungal seed pathogen, *P. semeniperda*, versus survival of the seeds of its...

Author(s): Julie Beckstead, Susan E. Meyer, Laura E. Street, Phil S. Allen

Year Published: 2010

Type: Document

Conference Proceedings

***Euphorbia cyparissias* (cypress spruce)**

www.nrfirescience.org/resource/10455

This FEIS species review synthesizes information on the relationship of *Euphorbia cyparissias* (cypress spruce) 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): Corey L. Gucker

Year Published: 2010

Type: Document

Synthesis

***Coronilla varia* (crownvetch)**

www.nrfirescience.org/resource/10452

This FEIS species review synthesizes information on the relationship of *Coronilla varia* (crownvetch) 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): Corey L. Gucker

Year Published: 2010

Type: Document

Synthesis

Response of six non-native plant species to wildfires in the northern Rocky Mountains, USA

www.nrfirescience.org/resource/11216

This paper presents early results on the response of six non-native invasive plant species to eight wildfires on six National Forests (NFs) in the northern Rocky Mountains, USA. Stratified random sampling was used to choose 224 stands based on burn severity, habitat type series, slope steepness, stand height, and stand density. Data...

Author(s): Dennis E. Ferguson, Christine L. Craig

Year Published: 2010

Type: Document

Technical Report or White Paper

***Hieracium aurantiacum* (orange hawkweed)**

www.nrfirescience.org/resource/10474

This FEIS species review synthesizes information on the relationship of *Hieracium aurantiacum* (orange hawkweed) 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'...

Author(s): Katharine R. Stone
Year Published: 2010
Type: Document
Synthesis

Polygonum aviculare (prostrate knotweed)

www.nrfirescience.org/resource/10471

This FEIS species review synthesizes information on the relationship of *Polygonum aviculare* (prostrate knotweed) 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'...

Author(s): Katharine R. Stone
Year Published: 2010
Type: Document
Synthesis

Berberis vulgaris (common barberry)

www.nrfirescience.org/resource/10454

This FEIS species review synthesizes information on the relationship of *Berberis vulgaris* (common barberry) 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): Corey L. Gucker
Year Published: 2009
Type: Document
Synthesis

Variable impacts of imazapic rate on downy brome (*Bromus tectorum*) and seeded species in two rangeland communities

www.nrfirescience.org/resource/8332

The herbicide imazapic is registered for use on rangelands and provides effective short-term control of certain invasive annual grasses. However, details about optimal application rates for downy brome and susceptibility of simultaneously seeded species are lacking. Thus, we investigated downy brome and seeded species responses to...

Author(s): Christo Morris, Thomas A. Monaco, Craig W. Rigby
Year Published: 2009
Type: Document
Book or Chapter or Journal Article

Tanacetum vulgare (common tansy)

www.nrfirescience.org/resource/10453

This FEIS species review synthesizes information on the relationship of *Tanacetum vulgare* (common tansy) 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): Corey L. Gucker
Year Published: 2009
Type: Document
Synthesis

Isatis tinctoria (dyer's woad)

www.nrfirescience.org/resource/10498

This FEIS species review synthesizes information on the relationship of *Isatis tinctoria* (dyer's woad) 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: 2009

Type: Document

Synthesis

The tao of treating weeds: reaching for restoration in the northern Rocky Mountains

www.nrfirescience.org/resource/11093

Noxious weeds are a serious problem that is spreading across the West. Herbicides such as Picloram have proven to be powerful tools in reducing weed invaders, although use of this tool has often produced unintended consequences. Broadleaf herbicides kill forbs, such as the noxious knapweed, but also harm native forbs such as...

Author(s): Lisa-Natalie Anjozian

Year Published: 2008

Type: Document

Research Brief or Fact Sheet

Fire, native species, and soil resource interactions influence the spatio-temporal invasion pattern of *Bromus tectorum*

www.nrfirescience.org/resource/8362

Bromus tectorum (cheatgrass) is an invasive annual that occupies perennial grass and shrub communities throughout the western United States. *Bromus tectorum* exhibits an intriguing spatio-temporal pattern of invasion in low elevation ponderosa pine *Pinus ponderosa*/bunchgrass communities in western Montana where it forms dense rings...

Author(s): Michael J. Gundale, Steve Sutherland, Thomas H. DeLuca

Year Published: 2008

Type: Document

Book or Chapter or Journal Article

Chapter 12. Gaps in scientific knowledge about fire and nonnative invasive plants

www.nrfirescience.org/resource/12563

The potential for nonnative, invasive plants to alter an ecosystem depends on species traits, ecosystem characteristics, and the effects of disturbances, including fire. This study identifies gaps in science-based knowledge about the relationships between fire and nonnative invasive plants in the United States. The literature was...

Author(s): Kristin L. Zouhar, Gregory T. Munger, Jane Kapler Smith

Year Published: 2008

Type: Document

Synthesis, Technical Report or White Paper

Wildland fire in ecosystems: fire and nonnative invasive plants

www.nrfirescience.org/resource/12531

This state-of-knowledge review of information on relationships between wildland fire and nonnative invasive plants can assist fire managers and other land managers concerned with prevention, detection, and eradication or control of nonnative invasive plants. The 16 chapters in this volume synthesize ecological and botanical...

Year Published: 2008
Type: Document
Synthesis, Technical Report or White Paper

Big changes in the Great Basin

www.nrfirescience.org/resource/12131

JFSP-funded researchers are exploring the ecological functioning of sagebrush-steppe communities in the Great Basin and other places in the dry Intermountain West. Their work is helping managers effectively use tools such as tree mastication and prescribed fire to help these communities become more resilient in the face of invasive...

Author(s): Gail Wells
Year Published: 2008
Type: Document
Research Brief or Fact Sheet

Chapter 16. Fire and nonnative plants—summary and conclusions

www.nrfirescience.org/resource/12583

This volume synthesizes scientific information about interactions between fire and nonnative invasive plants in wildlands of the United States. If the subject were clear and simple, this volume would be short; obviously, it is not.

Author(s): Jane Kapler Smith, Kristin L. Zouhar, Steve Sutherland, Matthew L. Brooks
Year Published: 2008
Type: Document
Synthesis, Technical Report or White Paper

Chapter 2. Effects of fire on nonnative invasive plants and invasibility of wildland ecosystems

www.nrfirescience.org/resource/12532

Considerable experimental and theoretical work has been done on general concepts regarding nonnative species and disturbance, but experimental research on the effects of fire on nonnative invasive species is sparse. We begin this chapter by connecting fundamental concepts from the literature of invasion ecology to fire. Then we...

Author(s): Kristin L. Zouhar, Jane Kapler Smith, Steve Sutherland
Year Published: 2008
Type: Document
Synthesis, Technical Report or White Paper

Cheatgrass and red brome; the history and biology of two invaders

www.nrfirescience.org/resource/11023

In recent history, there has not been a more ecologically important event than the introduction of cheatgrass (*Bromus tectorum*) and red brome (*Bromus rubens*) into the Intermountain West. These grasses are very similar in ecology and history and are separated mostly by function of elevation. Both species are from the Mediterranean...

Author(s): Chad R. Reid, Sherel Goodrich, James E. Bowns
Year Published: 2008
Type: Document
Conference Proceedings

Postfire invasion potential of rush skeletonweed (*Chondrilla juncea*)

www.nrfirescience.org/resource/11455

North American sagebrush steppe communities have been transformed by the introduction of invasive

annual grasses and subsequent increase in fire size and frequency. We examined the effects of wildfires and environmental conditions on the ability of rush skeletonweed (*Chondrilla juncea* L.), a perennial Eurasian composite, to invade...

Author(s): Cecilia Lynn Kinter, Brian A. Meador, Nancy L. Shaw, Ann L. Hild

Year Published: 2007

Type: Document

Book or Chapter or Journal Article

Impacts of restoration treatments on alien plant invasion in *Pinus ponderosa* forests, Montana, USA

www.nrfirescience.org/resource/7897

Invasion by alien plant species represents a challenge to land managers throughout the world as they attempt to restore frequent fire-adapted ecosystems following decades of fire exclusion. In ponderosa pine *Pinus ponderosa* forests of western North America, the response of alien species to restoration treatments has not been well...

Author(s): Erich K. Dodson, Carl E. Fiedler

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

***Vulpia myuros* (rattail sixweeks grass)**

www.nrfirescience.org/resource/10460

This FEIS species review synthesizes information on the relationship of *Vulpia myuros* (rattail sixweeks grass) 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): Janet L. Howard

Year Published: 2006

Type: Document

Synthesis

Combustion properties of *Bromus tectorum* L.: influence of ecotype and growth under four CO₂ concentrations

www.nrfirescience.org/resource/11409

We grew from seed the exotic invasive annual grass *Bromus tectorum* L., collected from three elevation ecotypes in northern Nevada, USA. Plants were exposed to four CO₂ atmosphere concentrations: 270, 320, 370, and 420 $\mu\text{mol mol}^{-1}$. After harvest on day 87, above-ground tissue was milled, conditioned to 30% relative humidity, and...

Author(s): Robert R. Blank, Robert H. White, Lewis H. Ziska

Year Published: 2006

Type: Document

Book or Chapter or Journal Article

Fire management impacts on invasive plants in the western United States

www.nrfirescience.org/resource/12024

Fire management practices affect alien plant invasions in diverse ways. I considered the impact of six fire management practices on alien invasions: fire suppression, forest fuel reduction, prescription burning in crown-fire ecosystems, fuel breaks, targeting of noxious aliens, and postfire rehabilitation. Most western United States...

Author(s): Jon E. Keeley

Year Published: 2006

Type: Document
Book or Chapter or Journal Article, Synthesis

Lonicera fragrantissima, Lonicera maackii, Lonicera morrowii, Lonicera tatarica, Lonicera x bella, Lonicera xylosteum (winter honeysuckle, Amur honeysuckle, Morrow's honeysuckle, Tatarian honeysuckle, Bell's honeysuckle, European fly honeysuckle)

www.nrfirescience.org/resource/10465

This FEIS species review synthesizes information on the relationship of *Lonicera fragrantissima*, *Lonicera maackii*, *Lonicera morrowii*, *Lonicera tatarica*, *Lonicera x bella*, *Lonicera xylosteum* (winter honeysuckle, Amur honeysuckle, Morrow's honeysuckle, Tatarian honeysuckle, Bell's honeysuckle, European fly honeysuckle) to fire--how...

Author(s): Gregory T. Munger

Year Published: 2005

Type: Document

Synthesis

Hypericum perforatum (common St Johnswort)

www.nrfirescience.org/resource/10499

This FEIS species review synthesizes information on the relationship of *Hypericum perforatum* (common St Johnswort) 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'...

Author(s): Kristin L. Zouhar

Year Published: 2005

Type: Document

Synthesis

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

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

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

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

Elaeagnus angustifolia (Russian-olive)

www.nrfirescience.org/resource/10486

This FEIS species review synthesizes information on the relationship of *Elaeagnus angustifolia* (Russian-olive) 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: 2005

Type: Document

Synthesis

Psathyrostachys juncea (Russian wildrye)

www.nrfirescience.org/resource/10476

This FEIS species review synthesizes information on the relationship of *Psathyrostachys juncea* (Russian wildrye) 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'...

Author(s): Jane E. Taylor

Year Published: 2005

Type: Document

Synthesis

Sagebrush steppe and pinyon-juniper ecosystems - effects of changing fire regimes, increased fuel loads, and invasive species - Final Report to the Joint Fire Science Program

www.nrfirescience.org/resource/11152

Pinyon-juniper woodlands and Wyoming big sagebrush ecosystems have undergone major changes in vegetation structure and composition since settlement by European Americans. These changes are resulting in dramatic shifts in fire frequency, size and severity. Effective management of these systems has been hindered by lack of information...

Author(s): Jeanne C. Chambers, E. Durant McArthur, Stephen B. Monsen, Susan E. Meyer, Nancy L. Shaw, Robin J. Tausch, Robert R. Blank, Stephen C. Bunting, Richard R. Miller, Michael L. Pellant, Bruce A. Roundy, Scott C. Walker

Year Published: 2005

Type: Document

Technical Report or White Paper

Cytisus scoparius, Cytisus striatus (Scotch broom, Portuguese broom)

www.nrfirescience.org/resource/10488

This FEIS species review synthesizes information on the relationship of *Cytisus scoparius*, *Cytisus striatus* (Scotch broom, Portuguese broom) 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...

Author(s): Kristin L. Zouhar

Year Published: 2005

Type: Document

Synthesis

Effective management strategies for sage-grouse and sagebrush: a question of triage?

www.nrfirescience.org/resource/8367

The sagebrush (*Artemisia* spp.) ecosystem once occupied over 150 million acres of western North America (Barbour and Billings 1988). The ecosystem still occupies over 100 million acres (Connelly et

al. 2004, Wisdom et al. 2005), but the abundance and condition of sagebrush communities is declining rapidly in response to a variety of...

Author(s): Michael J. Wisdom, Mary M. Rowland, Robin J. Tausch

Year Published: 2005

Type: Document

Book or Chapter or Journal Article

Fall-prescribed burn and spring-applied herbicide effects on Canada thistle control and soil seedbank in a northern mixed-grass prairie

www.nrfirescience.org/resource/8280

Prescribed burning in Theodore Roosevelt National Park has played an important role in maintaining a natural ecosystem. However, changes in plant community dynamics caused by burning may have led to an invasion of weedy species such as Canada thistle (*Cirsium arvense* L.). The objectives of this research were to evaluate the effect...

Author(s): Andrea J. Travnicsek, Rodney G. Lym, Chad Prosser

Year Published: 2005

Type: Document

Book or Chapter or Journal Article

Chondrilla juncea (rush skeletonweed)

www.nrfirescience.org/resource/10483

This FEIS species review synthesizes information on the relationship of *Chondrilla juncea* (rush skeletonweed) 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: 2004

Type: Document

Synthesis

Monitoring change in exotic plant abundance after fuel reduction/restoration treatments in ponderosa pine forests of western Montana

www.nrfirescience.org/resource/11279

Exotic species were monitored following treatments designed to reduce wildfire hazard and initiate restoration of forest structure and process in ponderosa pine (*Pinus ponderosa*)/Douglas-fir (*Pseudotsuga menziesii*) forests to compare response among treatments. Treatments included: no treatment (control), prescribed burning,...

Author(s): Erich K. Dodson

Year Published: 2004

Type: Document

Dissertation or Thesis

Convolvulus arvensis (field bindweed)

www.nrfirescience.org/resource/10487

This FEIS species review synthesizes information on the relationship of *Convolvulus arvensis* (field bindweed) 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: 2004

Type: Document

Synthesis

Lepidium latifolium (perennial pepperweed)

www.nrfirescience.org/resource/10491

This FEIS species review synthesizes information on the relationship of *Lepidium latifolium* (perennial pepperweed) 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'...

Author(s): Kristin L. Zouhar

Year Published: 2004

Type: Document

Synthesis

Cardaria chalapensis, Cardaria draba, Cardaria pubescens (lens-podded hoary cress, heart-podded hoary cress, globe-podded hoary cress)

www.nrfirescience.org/resource/10490

This FEIS species review synthesizes information on the relationship of *Cardaria chalapensis*, *Cardaria draba*, *Cardaria pubescens* (lens-podded hoary cress, heart-podded hoary cress, globe-podded hoary cress) to fire--how fire affects the species and its habitat, invasiveness of the species, effects of the species on fuels and fire...

Author(s): Kristin L. Zouhar

Year Published: 2004

Type: Document

Synthesis

Sorghum halepense (Johnson grass)

www.nrfirescience.org/resource/10459

This FEIS species review synthesizes information on the relationship of *Sorghum halepense* (Johnson grass) 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): Janet L. Howard

Year Published: 2004

Type: Document

Synthesis

Sonchus arvensis (perennial sowthistle)

www.nrfirescience.org/resource/10464

This FEIS species review synthesizes information on the relationship of *Sonchus arvensis* (perennial sowthistle) 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'...

Author(s): Jack McWilliams

Year Published: 2004

Type: Document

Synthesis

Monitoring changes in weed populations: post-fire and post-herbicide treatment

www.nrfirescience.org/resource/11040

Description not entered

Author(s): Elaine Kennedy Sutherland
Year Published: 2004
Type: Document
Conference Proceedings

How much do we know about the effects of wildfire on the occurrence and expansion of non-native plant species' distributions in natural areas?

www.nrfirescience.org/resource/10980

Invasion of non-native plant species into natural and managed ecosystems is a widespread problem, with potentially devastating ecological and economic consequences. Increased occurrence and severity of wildland fires has been identified as a potential threat to natural and managed ecosystems. Wildfire is often linked with the...

Author(s): Mara Johnson, Lisa J. Rew, Bruce D. Maxwell, Steve Sutherland
Year Published: 2004
Type: Document
Conference Proceedings, Synthesis

Potentilla recta (sulfur cinquefoil)

www.nrfirescience.org/resource/10497

This FEIS species review synthesizes information on the relationship of *Potentilla recta* (sulfur cinquefoil) 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: 2003
Type: Document
Synthesis

Bromus tectorum (cheatgrass)

www.nrfirescience.org/resource/10495

This FEIS species review synthesizes information on the relationship of *Bromus tectorum* (cheatgrass) 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: 2003
Type: Document
Synthesis

Sisymbrium altissimum (tumble mustard)

www.nrfirescience.org/resource/10458

This FEIS species review synthesizes information on the relationship of *Sisymbrium altissimum* (tumble mustard) 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): Janet L. Howard
Year Published: 2003
Type: Document
Synthesis

Tamarix chinensis, Tamarix gallica, Tamarix parviflora, Tamarix ramosissima (tamarisk, French tamarisk, small-flowered tamarisk, saltcedar)

www.nrfirescience.org/resource/10485

This FEIS species review synthesizes information on the relationship of Tamarix chinensis, Tamarix gallica, Tamarix parviflora, Tamarix ramosissima (tamarisk, French tamarisk, small-flowered tamarisk, saltcedar) to fire--how fire affects the species and its habitat, invasiveness of the species, effects of the species on fuels and...

Author(s): Kristin L. Zouhar

Year Published: 2003

Type: Document

Synthesis

Acer platanoides (Norway maple)

www.nrfirescience.org/resource/10466

This FEIS species review synthesizes information on the relationship of Acer platanoides (Norway maple) 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): Gregory T. Munger

Year Published: 2003

Type: Document

Synthesis

On the impact of fire suppression and BAER restoration on weeds

www.nrfirescience.org/resource/11043

In 2000, wildfires burned more than 200,000 acres on the Bitterroot National Forest of Montana and nearly 1.5 million acres in the Northern and Intermountain Regions. Management activities associated with fire suppression and post-fire restoration have had the unintentional consequence of promoting invasive weeds. As part of fire...

Author(s): Elaine Kennedy Sutherland

Year Published: 2003

Type: Document

Conference Proceedings

Descurainia sophia (flixweed tansymustard)

www.nrfirescience.org/resource/10463

This FEIS species review synthesizes information on the relationship of Descurainia sophia (flixweed tansymustard) 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'...

Author(s): Janet L. Howard

Year Published: 2003

Type: Document

Synthesis

Prescribed fire effects on dalmation toadflax

www.nrfirescience.org/resource/8281

Prescribed fires are important for rangeland restoration and affect plant community composition and species interactions. Many rangeland plant communities have been, or are under the threat of noxious weed invasion, however there is little information on how fire effects weeds. Our objective was to determine the effects of...

Author(s): James S. Jacobs, Roger L. Sheley
Year Published: 2003
Type: Document
Book or Chapter or Journal Article

Mapping the cheatgrass-caused departure from historical natural fire regimes in the Great Basin, USA

www.nrfirescience.org/resource/11490

Cheatgrass (*Bromus tectorum*) is an exotic grass that has increased fire hazard on millions of square kilometers of semi-arid rangelands in the western United States. Cheatgrass aggressively out competes native vegetation after fire and significantly enhances fire size and frequency. To evaluate the effect of cheatgrass on historical...

Author(s): James P. Menakis, Dianne Osborne, Melanie Miller
Year Published: 2003
Type: Document
Conference Proceedings

Effects of prescribed fire and season of burn on recruitment of the invasive exotic plant, *Potentilla recta*, in a semiarid grassland

www.nrfirescience.org/resource/7944

Prescribed fire is often used to restore grassland systems to presettlement conditions; however, fire also has the potential to facilitate the invasion of exotic plants. Managers of wildlands and nature reserves must decide whether and how to apply prescribed burning to the best advantage in the face of this dilemma. Herbicide is...

Author(s): Peter Lesica, B. Martin
Year Published: 2003
Type: Document
Book or Chapter or Journal Article

Wildfire and weeds in the Northern Rockies

www.nrfirescience.org/resource/8414

In 2000, wildfires burned more than 200,000 acres on the Bitterroot National Forest of Montana and nearly 1.5 million acres in the Northern and Intermountain Regions. These fires increased light and nutrient levels, reduced plant competition, and increased exposure of bare soil. These conditions favor the invasion and expansion of...

Author(s): Elaine Kennedy Sutherland
Year Published: 2003
Type: Document
Conference Proceedings

***Linaria dalmatica*, *Linaria vulgaris* (Dalmatian toadflax, yellow toadflax)**

www.nrfirescience.org/resource/10489

This FEIS species review synthesizes information on the relationship of *Linaria dalmatica*, *Linaria vulgaris* (Dalmatian toadflax, yellow toadflax) 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): Kristin L. Zouhar
Year Published: 2003
Type: Document
Synthesis

Centaurea solstitialis (yellow starthistle)

www.nrfirescience.org/resource/10484

This FEIS species review synthesizes information on the relationship of *Centaurea solstitialis* (yellow starthistle) 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'...

Author(s): Kristin L. Zouhar

Year Published: 2002

Type: Document

Synthesis

Carduus nutans (musk thistle)

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

Cynoglossum officinale (houndstongue)

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

Cirsium vulgare (bull thistle)

www.nrfirescience.org/resource/10492

This FEIS species review synthesizes information on the relationship of *Cirsium vulgare* (bull 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

Lythrum salicaria (purple loosestrife)

www.nrfirescience.org/resource/10467

This FEIS species review synthesizes information on the relationship of *Lythrum salicaria* (purple loosestrife) 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): Gregory T. Munger
Year Published: 2002
Type: Document
Synthesis

Bromus madritensis, Bromus rubens (foxtail chess, red brome)

www.nrfirescience.org/resource/10469

This FEIS species review synthesizes information on the relationship of Bromus madritensis, Bromus rubens (foxtail chess, red brome) 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...

Author(s): Kevin A. Simonin
Year Published: 2001
Type: Document
Synthesis

Centaurea diffusa (diffuse knapweed)

www.nrfirescience.org/resource/10481

This FEIS species review synthesizes information on the relationship of Centaurea diffusa (diffuse 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

Acroptilon repens (Russian knapweed)

www.nrfirescience.org/resource/10496

This FEIS species review synthesizes information on the relationship of Acroptilon repens (Russian 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

Centaurea maculosa (spotted knapweed)

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

Taeniatherum caput-medusae (medusahead)

www.nrfirescience.org/resource/10447

This FEIS species review synthesizes information on the relationship of *Taeniatherum caput-medusae* (medusahead) 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'...

Author(s): Amy Archer

Year Published: 2001

Type: Document

Synthesis

Cirsium arvense (Canada thistle)

www.nrfirescience.org/resource/10482

This FEIS species review synthesizes information on the relationship of *Cirsium arvense* (Canada 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: 2001

Type: Document

Synthesis

Fire and invasive species within the temperate and boreal coniferous forests of western North America

www.nrfirescience.org/resource/10966

Invasive, nonnative plant species have been a concern of land managers within the temperate and boreal coniferous forest eco-region for nearly a century. Fire management, timber harvest, grazing, mining, recreation, and agriculture have not only exacerbated invasive species establishment and spread, but have been impacted by such...

Author(s): Richy J. Harrod, Sarah Reichard

Year Published: 2000

Type: Document

Conference Proceedings, Synthesis

Bromus tectorum expansion and biodiversity loss on the Snake River Plain, southern Idaho, U.S.A.

www.nrfirescience.org/resource/11420

The Snake River Plain forms a 6 million ha arc-shaped depression across southern Idaho. Basalt flows, fresh water sediments, loess and volcanic deposits cover its surface. Elevation increases eastward from 650 to 2,150 m altitude. Climate is semi-arid with annual precipitation ranging from 150 to 400 mm, arriving primarily in winter...

Author(s): Nancy L. Shaw, Victoria A. Saab, Stephen B. Monsen, T. D. Rich

Year Published: 1999

Type: Document

Conference Proceedings

Prescribed fire effects on biological control of leafy spurge

www.nrfirescience.org/resource/8282

The flea beetle, *Aphthona nigriscutis* Foudras, is a potentially useful agent for biological control of leafy spurge (*Euphorbia esula* L.) in grasslands devoted to wildlife conservation. However, effects of other grassland management practices on the persistence and dynamics of flea beetle populations are not well understood. We...

Author(s): David P. Fellows, Wesley E. Newton
Year Published: 1999
Type: Document
Book or Chapter or Journal Article

The budgetary, ecological, and managerial impacts of pinyon-juniper and cheatgrass fires

www.nrfirescience.org/resource/12108

The 1996 fire season illustrated the potential impacts of wildland fires on the Bureau of Land Management (BLM) administered lands through numerous western states. During the 1996 fire season, over six million acres burned in the United States through unplanned ignitions (wildfires). Over two million acres burned on BLM administered...

Author(s): Thomas C. Roberts
Year Published: 1999
Type: Document
Conference Proceedings

Bromus hordeaceus (soft chess)

www.nrfirescience.org/resource/10461

This FEIS species review synthesizes information on the relationship of Bromus hordeaceus (soft chess) 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 management...

Author(s): Janet L. Howard
Year Published: 1998
Type: Document
Synthesis

Schedonorus arundinaceus (tall fescue)

www.nrfirescience.org/resource/10479

This FEIS species review synthesizes information on the relationship of Schedonorus arundinaceus (tall fescue) 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): Roberta A. Walsh
Year Published: 1995
Type: Document
Synthesis

Molothrus ater (brown-headed cowbird)

www.nrfirescience.org/resource/10444

This FEIS species review synthesizes information on the relationship of Molothrus ater (brown-headed cowbird) 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 Sullivan
Year Published: 1995
Type: Document
Synthesis

Fire conditions and pre- and postoccurrence of annual grasses on the Snake River Plain

www.nrfirescience.org/resource/12047

Fire has been an important factor in the development of the vegetation of the Snake River Plain. Prior to Euro-American influence, fire helped determine the physiognomy and species composition of many communities. The occurrence of fire varied widely depending on the vegetation present, topography, and other factors. This impact can...

Author(s): Erin F. Peters, Stephen C. Bunting

Year Published: 1994

Type: Document

Conference Proceedings, Synthesis, Technical Report or White Paper

Proceedings-ecology and management of annual rangelands; 1992 May 18-21; Boise, ID

www.nrfirescience.org/resource/12046

Annual weeds continue to expand throughout the West eliminating many desirable species and plant communities. Wildfires are now common on lands infested with annual weeds, causing a loss of wildlife habitat and other natural resources. Measures can be used to reduce burning and restore native plant communities, but restoration is...

Author(s): Stephen B. Monsen, Stanley G. Kitchen

Year Published: 1994

Type: Document

Conference Proceedings, Technical Report or White Paper

Poa pratensis (Kentucky bluegrass)

www.nrfirescience.org/resource/10446

This FEIS species review synthesizes information on the relationship of *Poa pratensis* (Kentucky bluegrass) 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 management...

Author(s): Ronald Uchytel

Year Published: 1993

Type: Document

Synthesis

Amaranthus retroflexus (rough pigweed)

www.nrfirescience.org/resource/10480

This FEIS species review synthesizes information on the relationship of *Amaranthus retroflexus* (rough pigweed) 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): Roberta A. Walsh

Year Published: 1993

Type: Document

Synthesis

Phleum pratense (timothy)

www.nrfirescience.org/resource/10449

This FEIS species review synthesizes information on the relationship of *Phleum pratense* (timothy) 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 management. This...

Author(s): Lora L. Esser

Year Published: 1993

Type: Document
Synthesis

Taraxacum officinale (common dandelion)

www.nrfirescience.org/resource/10448

This FEIS species review synthesizes information on the relationship of *Taraxacum officinale* (common dandelion) 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): Lora L. Esser
Year Published: 1993
Type: Document
Synthesis

Halogeton glomeratus (halogeton)

www.nrfirescience.org/resource/10468

This FEIS species review synthesizes information on the relationship of *Halogeton glomeratus* (halogeton) 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 management....

Author(s): Diane S. Pavsek
Year Published: 1992
Type: Document
Synthesis

Elymus repens (quackgrass)

www.nrfirescience.org/resource/10470

This FEIS species review synthesizes information on the relationship of *Elymus repens* (quackgrass) 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 management. This...

Author(s): S. A. Snyder
Year Published: 1992
Type: Document
Synthesis

Medicago sativa (alfalfa)

www.nrfirescience.org/resource/10475

This FEIS species review synthesizes information on the relationship of *Medicago sativa* (alfalfa) 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 management. This...

Author(s): Janet Sullivan
Year Published: 1992
Type: Document
Synthesis

Xanthium strumarium (common cocklebur)

www.nrfirescience.org/resource/10445

This FEIS species review synthesizes information on the relationship of *Xanthium strumarium* (common

cocklebur) 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): Ronald Uchtyl

Year Published: 1992

Type: Document

Synthesis

Erodium cicutarium (cutleaf filaree)

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

Rubus laciniatus (evergreen blackberry)

www.nrfirescience.org/resource/10478

This FEIS species review synthesizes information on the relationship of *Rubus laciniatus* (evergreen blackberry) 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): D. A. Tirmenstein

Year Published: 1989

Type: Document

Synthesis

Rubus discolor (Himalayan blackberry)

www.nrfirescience.org/resource/10477

This FEIS species review synthesizes information on the relationship of *Rubus discolor* (Himalayan blackberry) 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): D. A. Tirmenstein

Year Published: 1989

Type: Document

Synthesis

Relations among cheatgrass driven fire, climate and sensitive status birds

www.nrfirescience.org/resource/16094

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

Type: Media

Webinar

Bark Beetle Outbreaks in Western North America: Causes, Control and Consequences

www.nrfirescience.org/resource/15501

With climate warming and more frequent and severe droughts western North America has experienced increases in disturbances arising from native bark beetle outbreaks. The focus of the talk will be on common bark beetle species and their hosts, environmental triggers for beetle outbreaks, management options for bark beetles and the...

Type: Media

Webinar

A science framework for assessing threats to sagebrush ecosystems and greater sage-grouse and prioritizing conservation and restoration actions

www.nrfirescience.org/resource/14880

On September 26, Jeanne Chambers, U.S. Forest Service Rocky Mountain Research Station, and Steve Hanser, U.S. Geological Survey, discussed the tools and methods developed as part of the Science Framework for the Conservation and Restoration Strategy of Sec. Order 3336. Department of the Interior Secretary Order 3336 called for...

Type: Media

Webinar

Sagebrush responses to shifting climate and fire disturbances

www.nrfirescience.org/resource/14380

This presentation addresses issues confronting preservation and restoration of big sagebrush, focusing on climate, wildfire, and invasives. Preliminary and published insights on climate responses of sagebrush and implications for vulnerability assessments and post-fire restoration will be described. Responses of big sagebrush and...

Type: Media

Webinar

Rangeland Management Strategies and Tools: Promoting Resiliency and Addressing Invasive Species

www.nrfirescience.org/resource/15931

The Western Governors' Association webinar "Rangeland Management Strategies and Tools: Promoting Resiliency and Addressing Invasive Species" examined new developments for increased resilience to the threats posed to western rangelands by invasive species, drought, wildfire and other stressors. Panelists discussed techniques that...

Type: Media

Webinar

National forest and rangeland management initiative webinar: rangeland management strategies and tools

www.nrfirescience.org/resource/15116

The Western Governors' Association webinar "Rangeland Management Strategies and Tools: Promoting Resiliency and Addressing Invasive Species" examined new developments for increased resilience to the threats posed to western rangelands by invasive species, drought, wildfire and other stressors. Panelists discussed techniques that...

Type: Media

Webinar