

Information Resources for Fire Managers

1) “Rainbow Series”

Scientific literature reviews
available on Internet & in print

2) Fire Effects Information System

Online literature reviews of
basic biology & fire ecology on
>1,100 species

Rainbow Series

**A set of handbooks on
fire-effects basics**

Currently includes 5 scientific
literature reviews (eventually 6),
available on the Internet

Rainbow Series

real title:

“Wildland fire in ecosystems”

1. **Effects of fire on fauna**
2. **Effects of fire on flora**
3. **Effects of fire on cultural resources and archaeology**
4. **Effects of fire on soil and water**
5. **Effects of fire on air**
6. **Fire and nonnative invasive plants**

Rainbow Series

real title:

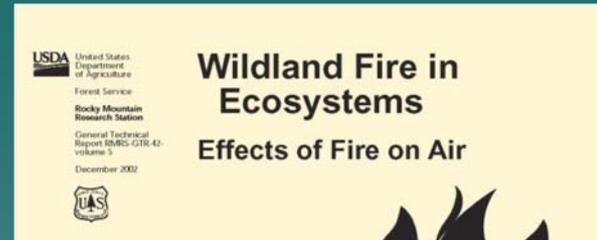
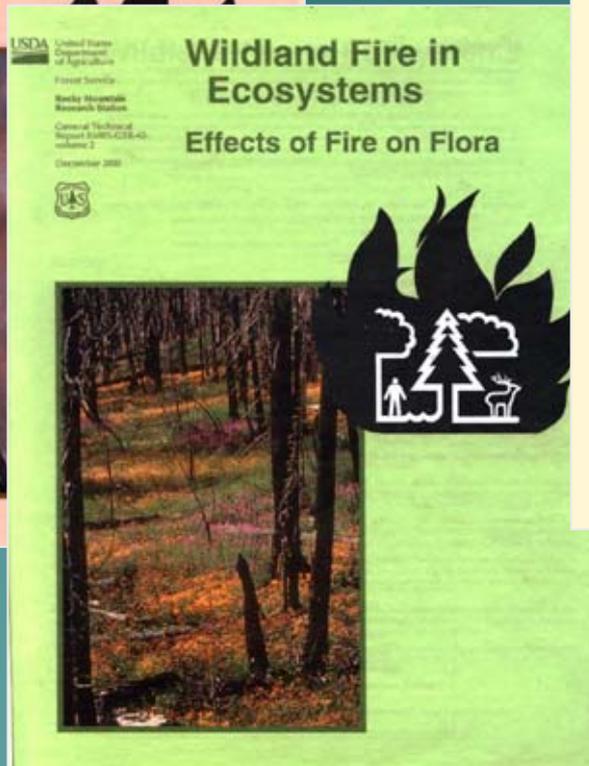
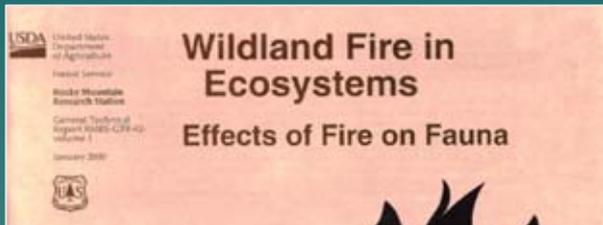
“Wildland fire in ecosystems”

Availability— *on handout!*

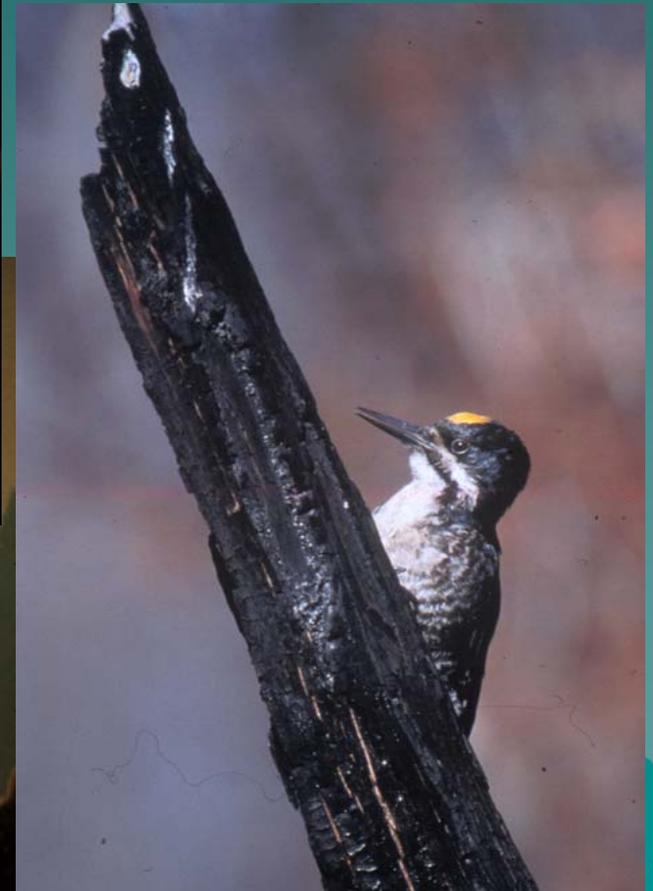
Vol.	Topic	In print—order from rschneider@fs.fed.us	Downloadable version
1	Fauna	Yes	www.fs.fed.us/rm/pubs/rmrs_gtr042_1.html
2	Flora	Out of stock	www.fs.fed.us/rm/pubs/rmrs_gtr042_2.html
3	Cultural	Not yet completed—check for status at www.fs.fed.us/rm/pubs/rmrs_gtr042_3.html	
4	Soil/Water	Yes	www.fs.fed.us/rm/pubs/rmrs_gtr042_4.html
5	Air	Yes	www.fs.fed.us/rm/pubs/rmrs_gtr042_5.html
6	Weeds	In press—not yet in print	www.fs.fed.us/fmi/products/Zouhar_et_al_2007.html

Rainbow

....because of cover colors



Contents of “Fauna” (Volume 1):



Fire regime map from “Flora” (Volume 2):

USDA Forest Service Gen. Tech. Rep. RMRS-GTR-42-vol. 2, 2000

Chapter 1. Introduction and Fire Regimes

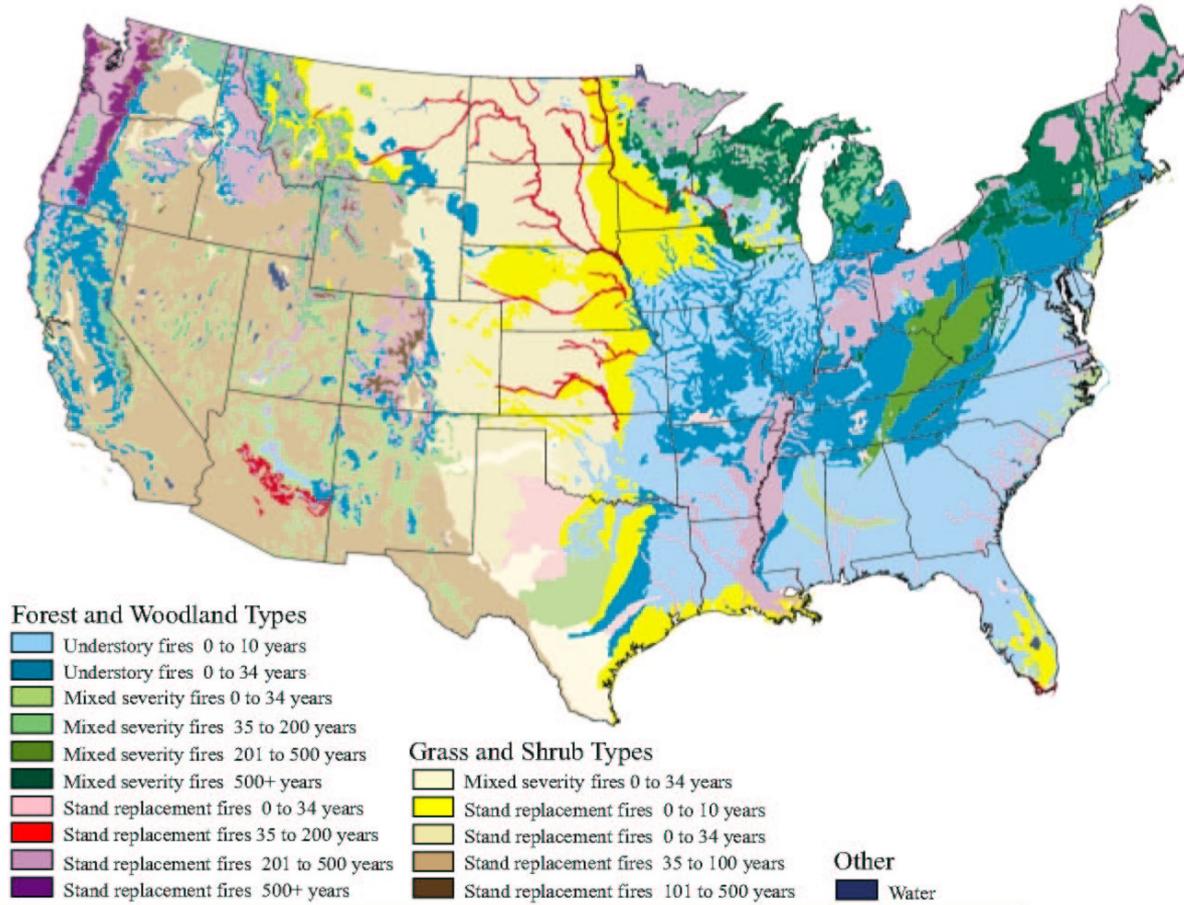


Figure 1-2—Fire regime types based on Kuchler's Potential Natural Vegetation types (prepared by Jim Menakis).

Topics from “Air” (Volume 5)

- Air quality regulations
- Describing emissions
- Smoke chemistry
- Smoke dispersion



From “Weeds” (Volume 6):



- Effects of fire on weeds
- Weed effects on fire regimes
- Fire to control weeds

Fire Effects Information System (FEIS)

Literature reviews of basic
biology & fire ecology of
~1,100 species of plants and
animals

Available on the Internet

Sponsors include: USDA, FS Fire and Aviation Management; USDA, FS Rocky Mountain Research Station; National Wildfire Coordinating Group; US Department of Interior; Joint Fire Science Program



FEIS

- ❖ **What:** Literature reviews of fire effects info
- ❖ **Why:** For wildland fire managers
- ❖ **Where:** Internet, maintained at RMRS Fire Lab
- ❖ **How:** Summarize & critically review literature
 - Information archived regularly
 - Updates & additions completed as funding becomes available

www.fs.fed.us/database/feis

- **Organized by species--
animal, plant, or lichen**
- **Also includes**
 - Research Project Summaries**
 - Fire Case Studies**
 - Reviews of a few plant communities
(Kuchlers)**



How to find a species?

USDA FOREST SERVICE Forest Service National Links

Fire Effects Information System

(enter query)

FEIS Home Page

FEIS Reviews:

- [Plant Species](#)
- [- Invasive Plants](#)
- [Lichen Species](#)
- [Animal Species](#)
- [Research Project Summaries](#)
- [Kuchler Potential Natural Vegetation Types](#)

Fire Citation Database

[Citation Retrieval System](#)

System Information:

- [About FEIS](#)
- [Format of FEIS Reviews](#)
- [Pesticide precautionary statement](#)
- [Glossary](#)
- [Tutorial](#)

Search FEIS:

FEIS summarizes and synthesizes research about living organisms in the United States —their biology, ecology, and relationship to fire.

To cite information from a FEIS review, copy and paste the Authorship and Citation section from the INTRODUCTORY page.

Example:

Hauser, A. Scott. 2006. [Myrica pensylvanica](#). In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis> [2006, October 31].

Other fire effects reports available online:

- [RMRS-GTR-42-vol. 1. Wildland fire in ecosystems: effects of fire on fauna](#)
- [RMRS-GTR-42-vol. 2. Wildland fire in ecosystems: effects of fire on flora](#)
- [RMRS-GTR-42-vol. 4. Wildland fire in ecosystems: effects of fire on soils and water](#)
- [RMRS-GTR-42-vol. 5. Wildland fire in ecosystems: effects of fire on air](#)

More information on fire research and management: [FRAMES](#)

What info do I get?

Salix exigua

- [INTRODUCTORY](#)
- [DISTRIBUTION AND OCCURRENCE](#)
- [BOTANICAL AND ECOLOGICAL CHARACTERISTICS](#)
- [FIRE ECOLOGY](#)
- [FIRE EFFECTS](#)
- [MANAGEMENT CONSIDERATIONS](#)
- [REFERENCES](#)



FIRE EFFECTS

SPECIES: *Salix exigua*

- [IMMEDIATE FIRE EFFECT ON PLANT](#)
- [DISCUSSION AND QUALIFICATION OF FIRE EFFECT](#)
- [PLANT RESPONSE TO FIRE](#)
- [DISCUSSION AND QUALIFICATION OF PLANT RESPONSE](#)
- [FIRE MANAGEMENT CONSIDERATIONS](#)

IMMEDIATE FIRE EFFECT ON PLANT:
Narrowleaf willow is top-killed by fire [109]. Fires that destroy or expose roots and root crow willow mortality [108].

DISCUSSION AND QUALIFICATION OF FIRE EFFECT:
Narrowleaf willow communities often act as firebreaks. Fire occurrence on sites with high water tables or near stream burn during unusually dry years [135]. For more information see [Fire Ecology](#) section.

INTRODUCTORY

- [DISTRIBUTION AND OCCURRENCE](#)
- [BOTANICAL AND ECOLOGICAL CHARACTERISTICS](#)
- [FIRE ECOLOGY](#)
- [FIRE EFFECTS](#)
- [MANAGEMENT CONSIDERATIONS](#)
- [REFERENCES](#)

or juniperus occidentalis (western juniper) in southeastern Oregon. The Great Basin Naturalist. 55(1): 37-45. [25666]

134. Moir, William H. 1982. A fire history of the High Chisos, Big Bend National Park, Texas. The Southwestern Naturalist. 27(1): 87-98. [5916]

135. Monsen, Stephen B.; Stevens, Richard; Shaw, Nancy L. 2004. Shrubs of other families. In: Monsen, Stephen B.; Stevens, Richard; Shaw, Nancy L., comps. Restoring western ranges and wildlands. Gen. Tech. Rep. RMRS-GTR-136-vol-2. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 598-698. [52846]

136. Mount, Joanne; Krausman, William; Finch, Deborah M. 1996. Riparian habitat change along the Isleta-Belen reach of the Rio Grande. In: Shaw, Douglas W.; Finch, Deborah M., tech. coords. Desired future conditions for southwestern riparian ecosystems: bringing interests and concerns together. Symposium proceedings.



com

How to Cite **FEIS**

- Cite species reviews individually
- Copy correct citation from the AUTHORSHIP AND CITATION portion of the **INTRODUCTORY** section. Example:

Luensmann, Peggy. 2006. *Melanerpes erythrocephalus*. In: Fire Effects Information System [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis> [2007, March 13].

Research Project Summary

- ❁ Provides site-specific information about effects of a particular prescribed fire on multiple species
- ❁ Includes fire weather, fuels, and fire behavior data if available
- ❁ Covers both FEIS species and others

How to find an RPS?

- Through a species review
- Through the search engine
- Through RPS list

SPECIES: *Agrostis scabra*

DISCUSSION AND QUALIFICATION OF PLANT RESPONSE :

The following Research Project Summaries provide information on prescribed fire use and postfire response of plant community species including ticklegrass:

- [Vegetation response to restoration treatments in ponderosa pine-Douglas-fir forests of western Montana](#)
- [Understory recovery after burning and reburning quaking aspen stands in central Alberta](#)

Service National Links

Fire Effects Information System

(enter query)

Home
FEIS Reviews:
Plant Species
- Invasive Plants
Lichen Species
Animal Species
Research Project Summaries
Potential Natural Vegetation Types

FEIS Home Page

Search FEIS:
Bromus anomalus

FEIS summarizes and synthesizes research about living organisms in the United States —their biology, ecology, and relationship to fire.

To cite information from a FEIS review, copy and paste the Authorship and Citation section from the INTRODUCTORY page.

Example:

What info do I get?

Vegetation response to restoration treatments in ponderosa pine-Douglas-fir forests of western Montana

Table of Contents

- [Research Project Summary](#)

Pacific ponderosa pine	Pinus ponderosa var. ponderosa
Rocky Mountain Douglas-fir	Pseudotsuga menziesii var. glauca
quaking aspen	Populus tremuloides
Scouler's willow	Salix scouleriana
Graminoids	
western needlegrass	Achnatherum occidentale
Richardson needlegrass	Achnatherum richardsonii

FEIS species

Non-FEIS species

Mean % cover (standard error)	Pretreatment		Posttreatment	
	Control	Burn-only	Control	Burn-only
Scientific name				
Achnatherum occidentale	0.00 (0.00)	0.01 (0.01)	0.03 (0.03)	0.04 (0.03)
Achnatherum richardsonii	0.07 (0.03)	0.15 (0.14)	0.19 (0.07)	0.18 (0.17)
Agrostis scabra	0.00 (0.00)	0.00 (0.00)	0.01 (0.00)	0.01 (0.01)
Apera interrupta	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Bromus anomalus	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
Bromus tectorum	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
Calamagrostis purpurascens	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.02 (0.02)
Calamagrostis rubescens	1.61 (0.18)	1.36 (0.34)	0.87 (0.08)	0.92 (0.16)

Vegetation response to restoration treatments in ponderosa pine-Douglas-fir forests of western Montana.

Detailed fire effects info

Scavenger Hunt-- Tips

- Find a literature review by using the search box with species name (common or scientific)
- Use the “find” command under the “edit” menu to locate information on a particular topic (example: “fire regime”)

Go: www.fs.fed.us/database/feis