August 2000-- photo by McColgan

July 2002-- photo by Simmerman

Fire Effects Information Online

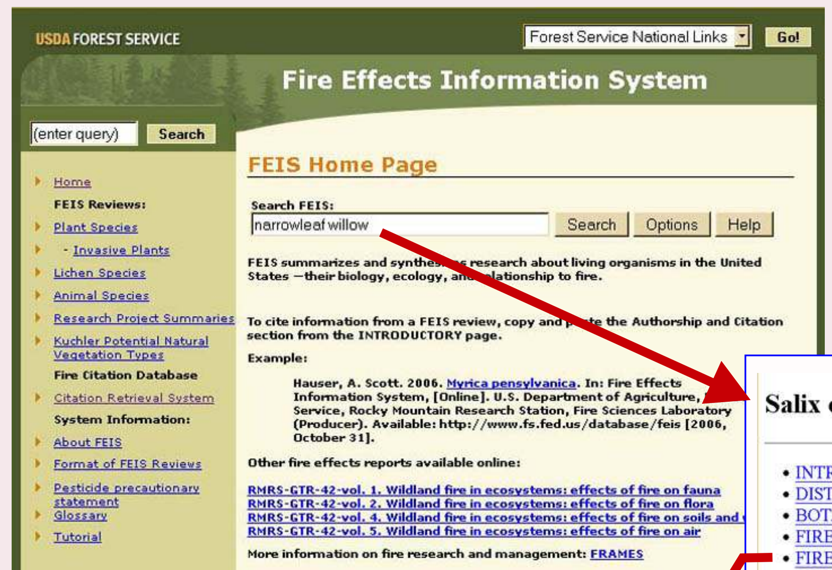
FEIS: www.fs.fed.us/database/feis

Kris Zouhar and Jane Kapler Smith

U.S.D.A. Forest Service, Rocky Mountain Research Station, Fire Modeling Institute, Missoula, MT

How will fire affect plants & animals in this burn?

FEIS has answers in its reviews of scientific literature on more than 1000 plant and animal species in North America.



What's in a species review?

Salix exigua

- INTRODUCTORY
- DISTRIBUTION AND OCCURRENCE
- BOTANICAL AND ECOLOGICAL CHARACTERISTICS
- FIRE ECOLOGY
- FIRE EFFECTS
- MANAGEMENT CONSIDERATIONS
- REFERENCES

INTRODUCTORY

- AUTHORSHIP AND CITATION
- FEIS ABBREVIATION
- SYNONYMS
- NRCS PLANT CODE
- COMMON NAMES
- TAXONOMY
- LIFE FORM
- FEDERAL LEGAL STATUS
- OTHER STATUS

Al Schneider @ www.swcoloradowildflowers.com

AUTHORSHIP AND CITATION:
Anderson, Michelle. 2006. Salix exigua. 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, September 12).

What about fire?

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 burn the upper layers of soil can destroy or expose roots and root crowns, resulting in willow mortality [108].

DISCUSSION AND QUALIFICATION OF FIRE EFFECT:
Narrowleaf willow communities often act as firebreaks due to their occurrence on sites with high water tables or near streams, but they may burn during unusually dry years [135]. For more information, see the Fire Ecology section.

(More.....)

Who says so?

.....

of 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;

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U.S.D.A. Forest Service, Rocky Mountain Research Station, Fire Modeling Institute

Partners:
~ USDA Forest Service Fire and Aviation Management
~ Joint Fire Science Program
~ Rocky Mountain Research Station's Fire Ecology & Fuels RWU
~ The Nature Conservancy's Global Invasive Species Initiative

What's new in FEIS?

Literature reviews of 200 plant and animal species are being rewritten or added to FEIS (2004-2007).

Western tanager-- photo by Bill Schmoker

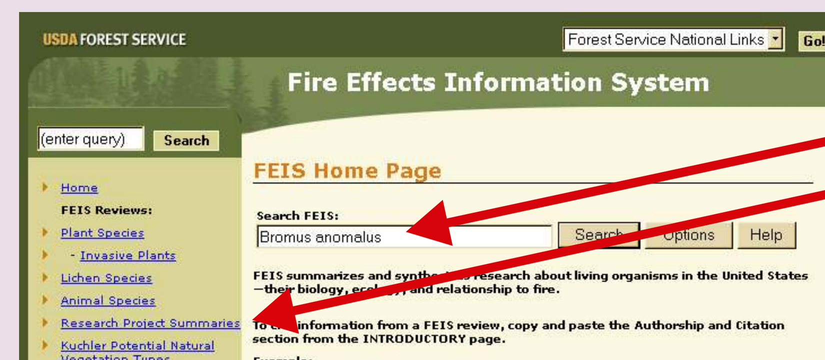
Pointleaf manzanita-- photo by John Elliott

Approximate list of taxa included (species recommended by FEIS Advisory Committee):

Genus species	Genus species	Genus species	Genus species
Acacia constricta	*Crotalus horridus horridus*	*Lycaeides melissa samuelis*	*Quercus douglasii*
Acacia greggii	*Cynomys ludovicianus*	*Lycurus pheoides*	*Quercus garryana*
Acer grandidentatum	*Dactylis glomerata*	*Lymnothlypsis swainsonii*	*Quercus havardii*
Agave lechuguilla	*Dalea purpurea*	*Lynx canadensis*	*Quercus ilicifolia*
Aimophila aestivalis	*Dendroica pinus*	*Berberis repens*	*Quercus kelloggii*
Ammodramus savannarum	*Distichlis spicata*	*Martes pennanti*	*Quercus prinoides*
Andromeda polifolia	*Dryopteris spinulosa*	*Medicago sativa*	*Quercus undulata*
Apocynum cannabinum	*Echinacea angustifolia*	*Melanerpes erythrocephalus*	*Rangifer tarandus caribou*
Apocynum androsaemifolium	*Eleocharis palustris*	*Melanerpes formicivorus*	*Regulus satrapa*
Arabis macdonaldiana	*Elymus trachycaulus*	*Melilotus alba*	*Rhododendron maximum*
Arctostaphylos pungens	*Elytrigia repens*	*Melilotus officinalis*	*Rhus trilobata*
Arctostaphylos rubra	*Eragrostis lehmanniana*	*Melinus minutifolia*	*Ribes roezlii*
Artemisia campestris	*Erigeron lanatus*	*Mertensia paniculata*	*Ribes triste*
Artemisia dracunculus	*Eurybia horrida*	*Microtus longicaudus*	*Rosa arkansana*
Artemisia ludoviciana	*Falco peregrinus*	*Muhlenbergia racemosa*	*Rosa woodsii*
Artemisia arctica	*Festuca arizonica*	*Muhlenbergia rigens*	*Salix discolor*
Artemisia papposa	*Fragaria vesca*	*Mustela nigripes*	*Salix exigua*
Artemisia pedatifida	*Fraxinus nigra*	*Myotis sodalis*	*Salix geyeriana*
Artemisia pygmaea	*Fraxinus pensylvanica*	*Myrica pensylvanica*	*Salix lasiandra*
Arundinaria gigantea	*Galax urceolata*	*Neotoma albigula*	*Salix lemmonii*
Asarum caudatum	*Galium aparine*	*Neotoma cinerea*	*Salix lutea*
Asclepias speciosa	*Galium boreale, G. triflorum*	*Nolina microcarpa*	*Salix pulchra*
Aster macrophyllus	*Gaylussacia baccata*	*Nucifraga columbiana*	*Salsola kali*
Astragalus alpinus	*Gaylussacia ursina*	*Odocoileus hemionus*	*Sambucus mexicana*
Atriplex lentiformis	*Geranium bicknellii*	*Opuntia fragilis*	*Sanguisorba minor*
Aulacomnium palustre	*Geum triflorum*	*Opuntia humifusa*	*Sorghastrum nutans*
Balsamorhiza hookeri	*Goodyera oblongifolia*	*Pediocactus knowltonii*	*Sphaeralcea coccinea*
Berberis thunbergii	*Gopherus agassizii*	*Pennisetum setaceum*	*Sphaeralcea grossulariaefolia*
Betula glandulosa	*Gulo gulo*	*Perisoreus canadensis*	*Sphagnum*
Betula nana	*Gymnorhinus cyanocephalus*	*Peromyscus boylii*	*Sporobolus heterolepis*
Bouteloua barbata	*Hedysarum alpinum*	*Phlox hoodii*	*Achnatherum richardsonii*
Bromus carinatus	*Hemidactylium scutatum*	*Phragmites australis*	*Strix nebulosa*
Calamagrostis montanensis	*Hibiscus moscheutos*	*Picoides arcticus*	*Strix occidentalis caurina*
Calamovilfa longifolia	*Hieracium albiflorum*	*Pinus jeffreyi*	*Symphoricarpos longiflorus*
Calypso bulbosa	*Hordeum jubatum*	*Pinus lambertiana*	*Taxodium ascendens*
Carex aquatilis	*Hudsonia ericoides*	*Pinus ponderosa var. ponderosa*	*Taxodium distichlis*
Carex filifolia	*Isatis tinctoria*	*Pinus pungens*	*Terrapene carolina*
Carex rossii	*Juncus balticus*	*Pinus rigida*	*Toxicodendron radicans*
Carex rostrata	*Juniperus horizontalis*	*Pipilo erythrophthalmus*	*Tragopogon dubius*
Ceanothus cordulatus	*Kalmia latifolia*	*Piptochaetium fimbriatum*	*Typha latifolia*
Ceanothus cuneatus	*Kochia scoparia*	*Piranga ludoviciana*	*Ursus americanus*
Cenchrus ciliaris	*Kosteletzkya virginica*	*Poa bulbosa*	*Verbascum thapsis*
Cercis occidentalis	*Krascheninnikovia lanata*	*Poa fendleriana*	*Vitis arizonica*
Cercocarpus montanus	*Ledum groenlandicum*	*Polytrichum juniperinum*	*Vulpes velox*
Cercocarpus betuloides	*Ledum palustre*	*Porzana carolina*	*Vulpia microstachys*
Cercocarpus ledifolius	*Leptodactylon pungens*	*Potentilla glandulosa*	*Vulpia myuros*
Cervus elaphus	*Leucopoa kingii*	*Potentilla newberryi*	*Vulpia octoflora*
Chlorogalum pomeridianum	*Libocedrus decurrens*	*Prosopis pubescens*	*Yucca baccata*
Cladina spp.	*Linum lewisii*	*Prunus andersonii*	*Yucca brevifolia*
Clintonia uniflora	*Lithocarpus densiflora*	*Prunus pumila*	*Yucca glauca*
Columba fasciata	*Lonicera hispidula*	*Pseudotsuga menziesii var. menziesii*	*Yucca schidigera*
Cornus nuttallii	*Lupinus latifolius*	*Pyrola asarifolia*	
Corylus cornuta	*Lupinus perennis*	*Quercus chrysolepis*	

Research Project Summaries (RPS):

Summaries of fire effects studies with relatively complete descriptions of burning conditions, fire behavior, and burned and unburned vegetation are being added to FEIS.



Find them through search window or RPS menu

Understory vegetation response to restoration treatments in ponderosa pine/Douglas-fir forests

RESEARCH PROJECT SUMMARY CITATION:
Metlen, Kerry L.; Dodson, Erich K.; Fiedler, Carl E. 2006. Vegetation response to re[...] treatments in ponderosa pine-Douglas-fir forests. In: Fire Effects Information System, [...] Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sc[...] Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ [2006, November [...]

SPECIES INCLUDED IN THE SUMMARY:

Common name	Scientific name
Trees	
Rocky Mountain juniper	*Juniperus scopulorum*
western larch	*Larix occidentalis*
Rocky Mountain lodgepole pine	*Pinus contorta var. latifolia*
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*
tickle grass	*Agrostis scabra*
dense silkybent	*Apera interrupta*
nodding brome	*Bromus anomalus*
cheatgrass	*Bromus tectorum*
purple pinegrass	*Calamagrostis purpurascens*
pinegrass	*Calamagrostis rubescens*

Hot off the Press: Results from Fire & Fire Surrogate Study, w. Montana

Links to & from FEIS reviews for 75 species

Treatment effects on total of 203 species

Mean areal cover of all successfully identified species on the Lubrecht FFS study treatment units before treatment and in 2004 (3 years after harvest and 2 years after burning). A standard error (N=3) is provided in parentheses. Rarity of species and the large area over which the samples were taken has resulted in mean covers of <0.00% for some species.

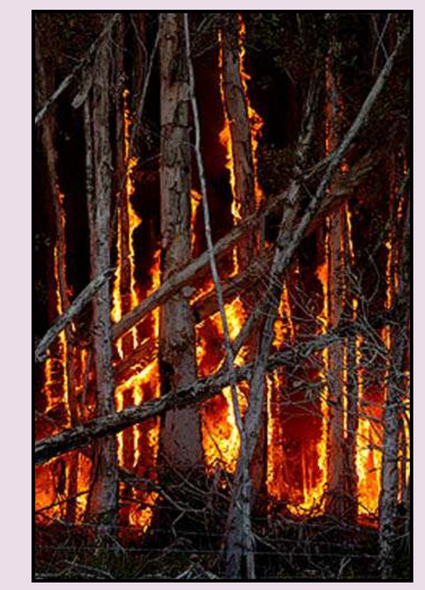
	Pretreatment mean % cover (standard error)				2004 mean % cover (standard error)			
Scientific name	Control	Burn-only	Thin-only	Thin-burn	Control	Burn-only	Thin-only	Thin-burn
Achnatherum occidentale	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	0.00 (0.00)	0.03 (0.03)	0.04 (0.03)	0.01 (0.00)	0.06 (0.05)
Achnatherum richardsonii	0.07 (0.03)	0.15 (0.14)	0.11 (0.02)	0.21 (0.13)	0.19 (0.07)	0.18 (0.17)	0.17 (0.05)	0.27 (0.2)
Agrostis scabra	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.01 (0.00)	0.01 (0.01)	0.02 (0.00)	0.06 (0.03)
Apera interrupta	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)
Bromus anomalus	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)
Bromus tectorum	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)
Calamagrostis purpurascens	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.02 (0.02)	0.00 (0.00)	0.00 (0.00)
Calamagrostis rubescens	1.61 (0.18)	1.36 (0.34)	2.22 (0.96)	1.84 (0.47)	0.87 (0.08)	0.92 (0.16)	1.49 (0.25)	1.55 (0.23)

(More.....)

Includes 128 species not reviewed in FEIS

Literature reviews of 60 nonnative invasive plant species have been rewritten or added to FEIS since 2000.

St. Johnswort-- photo by by Barry A. Rice



Melaleuca (courtesy of South Florida Sun-Sentinel 2005)

Taxa of nonnative invasive species added or rewritten in FEIS since 2000:

Genus species	No. spp	New or Rewritten	Genus species	No. spp	New or Rewritten
Acer platanoides	1	N	*Ligustrum vulgare, L sinense, L. japonicum, L. amurense*	4	N
Acroptilon repens (Centaurea repens)	1	R	*Linaria dalmatica, L. vulgaris*	2	N
Ailanthus altissima	1	N	*Lonicera fragrantissima, L. maackii, L. morrowii, L. tatarica, L. xylosteum, L. x bella*	6	N
Alliaria petiolata	1	N	*Lonicera japonica*	1	R
Arundo donax	1	R	*Lygodium japonicum, L. microphyllum*	2	N
Bromus tectorum	1	R	*Lythrum salicaria*	1	R
Cardaria draba, C. pubescens, C. chalapensis	3	R	*Melaleuca quinquenervia*	1	R
Carduus nutans	1	R	*Microstegium vimineum*	1	N
Celastrus orbiculatus	1	N	*Potentilla recta*	1	R
Centaurea diffusa	1	R	*Pueraria montana var. lobata*	1	R
Centaurea maculosa (C. biebersteinii, C. stoebe ssp. micranthos)	1	R	*Rosa multiflora*	1	R
Centaurea solstitialis	1	R	*Schinus terebinthifolius*	1	R
Chondrilla juncea	1	N	*Sonchus arvensis*	1	R
Cirsium arvense	1	R	*Sorghum halepense*	1	R
Cirsium vulgare	1	R	*Spartium junceum*	1	N
Convolvulus arvensis	1	R	*Tamarix ramosissima, T. chinensis, T. parviflora, T. gallica*	4	N
Cynoglossum officinale	1	N	*Triadica sebifera (Sapium sebiferum)*	1	N
Cytisus scoparius, C. striatus	2	N	*Ulex europaeus*	1	N
Elaeagnus angustifolia	1	N			
Elaeagnus umbellata	1	R			
Genista monspessulana	1	N	**Total no. species:**	60	
Hypericum perforatum	1	N			
Imperata cylindrica, I. brasiliensis	2	N	**No. literature reviews:**	43	
Lepidium latifolium	1	R	**No. reviews new to FEIS:**	20	
Lespedeza cuneata	1	R	**No. reviews completely rewritten in FEIS:**	23	