Appendix I – Botany/Weeds and Plant Biological Evaluation of Threatened, Endangered, and Sensitive (TES) Species

This Appendix contains five separate documents: the technical specialist's report for noxious weeds (BAER team), the Grant County weed list, and Bear Valley District Weed Locations, Partial Plant Species List, and Sensitive Plant Biological Evaluation.

TECHNICAL SPECIALIST'S REPORT
BURNED AREA EMERGENCY REHABILITATION

Noxious Weeds
Easy, High Roberts, and Flagtail Fires
August 9, 2002
William L. McArthur
Forest Silviculturist, Malheur National Forest

I. Resource Condition Assessment

INTRODUCTION: This report describes the condition of the degree of threat from noxious weeds in the Easy, High Roberts, and Flagtail fires area, for the purpose of preparing the 2500-8 Report.

A. Initial Concerns:

1. Capacity of the vegetation to recover: In areas burned at high intensity, the capacity for the native vegetation to provide cover of the soil may have been diminished.

2. Noxious Weeds: Burned areas provide opportunities for invasive plants to establish extremely quickly because of disturbed soil, release of nutrients, and lack of competition. Noxious weeds could have been introduced to the areas during fire suppression. There were no wash stations at the fire for vehicles or equipment.

B. Background:

Nineteen Oregon Department of Agriculture listed noxious weed species occur on the Malheur National Forest:

Canada Thistle	Dalmatian Toadflax	Diffuse Knapweed
Field Bindweed	Hound's-tongue	Leafy Spurge
Musk Thistle	Perennial Pepperweed	Poison Hemlock
Purple Loosestrife	Scotch Broom	Scotch Thistle
Spotted Knapweed	St. Johnswort	Sulfur Cinquefoil
Tansy Ragwort	White Top	Yellow Star Thistle
Yellow Toadflax		

Species of greatest concern are spotted knapweed, diffuse knapweed, Russian knapweed, yellow star thistle, dalmatian toadflax, St. Johnswort, and white top. These weeds can spread quickly, crowding out native plants, and are difficult to eradicate once established. Inventories conducted on the Malheur National Forest over the past decade have mapped 1,713 noxious weed sites.

Flagtail Fire Area – Blue Mountain Ranger District:

Roadways support the heaviest known populations of noxious weeds and pose the biggest threat for invasion. Principal species include dalmatian toadflax, yellow toadflax, tansy, perennial pepperweed, hound's-tongue, bull thistle, Canada thistle, white top, knapweed, tarweed and sulfur cinquefoil. Hound's-tongue is widespread throughout the District along roads.

A large site of yellow toadflax occupies the Bear Valley Work Center horse pastures and along the County 63 roadway. Scotch thistle is prevalent in several areas along Scotty and Damon Creeks. Tarweed and sulfur cinquefoil cover hundreds of acres on the west end of the District in the drier scabby areas and along many road right-of-ways, and may only be brought under control with an intensive herbicide program.

In several areas, various species of biological controls have been applied to knapweed infestations with varying results. Most sites are along roadsides and in higher mountain meadows.

Easy and High Roberts Fires - Prairie City Ranger District:

Noxious weeds, located on the Prairie City Ranger District, appear to be concentrated on roads, recreation sites, and other areas that have ground disturbance. The spread of noxious weeds are mainly due to vehicle traffic, recreational use, and ground disturbing activities.

Canada thistle is located mainly on the north end of the District. It occurs in small sites, mostly 1/10 acre or less. New sites are turning up on the rest of the District.

Dalmatian toadflax is the most abundant noxious weed being tracked on the District. The north end of the District has the heaviest infestation. The south end of the District is being monitored to help prevent the spread of this species throughout the rest of the District.

Diffuse knapweed is also mainly located on the north end of the District. The largest concentration is in the Genesis project area, as well as along Hwy 26.

Hound's-tongue occurs along Hwy 26 and along all the main Forest Service roads off of Hwy 26. This weed is just now starting to show up on the north end of the District. The major infestation is located on the south end of the District. This species has moved onto the Forest from private land.

The only musk thistle site is located on the 16 road around Squaw Creek and the roadside. This species was introduced at a recreational site.

St. Johnswort is located mainly along roads and dispersed campsites. It is presently on Hwy 26, Forest Service roads 13, 16, and County Road 60 to the Strawberry Wilderness.

In summary, Canada thistle and diffuse knapweed are becoming increasingly abundant on the District, especially along main roads that enter the Forest. Hound's-tongue infestations are mainly located on the south end of the District, but there are a few sites popping up on the north end of the District. St. Johnswort, teasel and musk thistle are sporadically distributed on the Prairie City Ranger District. Dalmatian toadflax is the most abundant noxious weed on the District.

C. Findings of the on-the–ground survey:

Summary of findings:

An emergency exists for risk of noxious weed introduction and spread throughout the firelines, roads, and burned areas. I am requesting $35,795.70 to survey and conduct early control throughout the fires during 2003. It is expected that this preventive approach will have a 95 percent chance of success in combination with a Malheur National Forest noxious weed project that is already in process. It is much easier to stop noxious weed establishment and spread at early stages before they set seed and become established.

Additional information:

Noxious weeds spread after fires due to the increased light and the nutrients in the ash. The open dozer lines and safety zones are also very susceptible to invasion. In addition to the spread of existing populations, a major threat is the introduction of more weeds into the fire areas on equipment. There was no equipment washing stations of vehicles arriving at or leaving the fire areas.

There are at least 59.5 miles of dozer lines, 107.7 miles of roads, and 60 acres of safety zones on Forest Service land.

Flagtail Fire:

Known existing sites of noxious weeds: 3 yellow toadflax, 1 diffuse knapweed, and 1 dalmatian toadflax. (GIS Information)
Miles of roads: 54
Miles of fireline: 29

Easy Fire:

Known existing sites of noxious weeds: 10 dalmatian toadflax. (GIS Information)
Miles of roads: 45.7
Miles of fireline: 23
Safety Zones: 12

High Roberts Fire:

Known existing sites of noxious weeds: None. (GIS Information)
Miles of roads: 8
Miles of fireline: 7.5

II. Emergency Determination

There is an emergency with respect to noxious weeds. The primary threat to the recovery of the vegetation is the potential for spread of noxious weeds and other invasive, non-native plants. There were no provisions for washing equipment on these fires.

III. Treatments to mitigate the emergency

The treatment would be monitoring for noxious weeds in the areas of soil disturbance by equipment. The objective would be to find any introduced noxious weeds before they are able to set seed and spread. This would be accomplished by surveying dozer lines, constructed safety zones, graded roads, and other impacted sites for noxious weeds for three years with limited hand pulling of small populations that area found. The cost would be $35,795.70 to monitor 1,007.3 acres at $35.54/acre.

IV. Discussion/Summary/Recommendations

NOXIOUS WEED MONITORING: Monitoring is proposed for 3 years to determine whether noxious weeds were introduced into the burned area and dozer lines or have expanded from known locations. This involve three teams of two persons walking the approximately 59.5 miles of dozer lines and driving the roads twice each year, once for earlier season weeds (late May to early June) and once in summer (late June to early July), to ensure detection of species with different life cycles and blooming periods. Other disturbed areas will also be inspected. There would also be a follow-up visit to any noxious weed locations that have been in order to check for additional noxious weed plants. The surveyors will look with binoculars into the burned areas visible from the dozer lines and roads and in some cases they will walk through the burned area away from the dozer lines and roads. If noxious weeds are detected, the surveyors will GPS the locations for mapping in the Forest GIS layer, fill out a Weed Location Form, and then if there are just a few plants, they will remove the plants at that time by their roots, place them in a plastic bag, and dispose of them in a safer manner. If large infestations are found that would take a more significant investment or resources and time to eradicate, the Forest Noxious Weed Coordinator will be consulted and the appropriate control actions will be planned. If any noxious weeds are found near mapped archeology sites, and archeologist would be consulted before any other action is taken except in the road prism. The goal will be to prevent seed set of any weeds located during the surveys.

The first year of surveys will require more time to ensure that all the dozer lines and disturbed areas are found using satellite photos and ground surveys. Some of the areas of the fires are remote and can take 2 hours or more to reach. The expected cost of the second year will be slightly less than the first year but the third year will be much less than the first year.

GRANT COUNTY WEED LIST	
Scientific Name	**Common Name**
Cardaria chalepensis	whitetop
Carduus nutans	musk thistle
Centaurea diffusa	diffuse knapweed
Centaurea maculosa	spotted knapweed
Centaurea solstitialis	yellow starthistle
Cirsium arvense	Canada thistle
Conium maculatum	poison hemlock
Convolvulus arvensis	field bindweed
Cynoglossum officinale	houndstongue
Cytisus scoparius	Scotch broom
Euphorbia esula	leafy spurge
Hypericum perforatum	St. Johnswort/ goatweed
Lepidium latifolium	perennial pepperweed
Linaria dalmatica	Dalmatian toadflax
Linaria vulgaris	yellow toadflax/ butter-and-eggs
Lythrum salicaria	purple loosestrife
Onopordum acanthium	Scotch thistle
Potentilla recta	sulfur cinquefoil
Senecio jacobaea	tansy ragwort

BEAR VALLEY DISTRICT WEED LOG
FLAGTAIL FIRE AREA
LAST UPDATE------12/4/2001 B. Miller-Sohr
MAP (GIS) a/o 2/98 data

Notice to the User:

This is the Weed locations field book that we update yearly for the Bear Valley end. This most recent update was the end of field season 2001. (My hard copy has handwritten updates for 2002, BUT the 2002 information has been updated in the Weed Data Table.) The field book is for the Bear Valley side only.

NOTE: In the Bear Valley data you will see two numbers. Don't be confused. In the weedlocations book The SITE ID is the first, longer number. This is the one to pay attention to. It is the short hand version of the TAG number. The "Bear Valley number" is a letter and number code. Ignore it. It is our old system, which ties back to the "Weed Locations Field Book"

and really only has significance for me. SITE ID (or SITE # these are synonymous) is the same in the datatable, the field book, GIS, in the data sent to the Region for the Regional EIS and Terra Conversion as well

The Weed Data Tables are up to date with 2002 season information. GIS reflects the updates. The Data in GIS is solid, but we found some problems with the recent GIS layer update, which we think will be easy to rectify. INRIS Terra will be able to track annual changes to the sites once it is installed, and the Data we sent to the Region is supposed to rollover into Terra.

Senecio jacobea L. (Tansy Ragwort)

CHECK TANSY SITES IN EARLY AUGUST WHEN PLANTS ARE MATURE, HOPEFULLY NOT SEEDED.

0100034 TR.04 - TANSY RAGWORT - **Cold Creek**, T.16S, R.29E, Sec 11 NESE

680 Rd off County 63 (IZEE highway).On 680 about .3 mi in the road becomes inaccessible where creek crosses the road. From here continue North about 1000' to Y where old grown-in road (679) goes east up draw. Follow old road east about 1000' to lower end of meadow. Orange "T" (faded) is marked on tree on left side of meadow, green steel post with white top installed nearby. Check from the tree and post across the meadow.

- 83 39 plants flowering; 4" snow, pesticide applied; 1/2 weeds gone.
- 84 6 FP dug, 40 rosettes chopped out. Area pelleted clean.
- 85 10" snow. Plants? FS found some this year.
- 86 30+ rosettes & seedlings at old site. No FP or old stalks. Last 20 yds before washout

7 FP w/seeds & many rosettes & seedlings.(4 plants FS)

- 87 7 plants
- 7/5/88 1 pl at "T", 13 in road bottom 50'from T tree across depression which crosses road. 20x20' area. This bunch not seen before. All dug. 12-14" high, not flowering.
- 8/8/89 no plants found
- 7-7-90 no plants found
- 10-90 3 mature pts. immed. adjacent to marked tree--dug E.Swan

-8-28-91 10 rossettes & 3 mature (not seeded out) dug------skyline logging 150 ft. below on drainage & on same side as marked tree, during 1991. E.SWAN

- 7/8/93 10 adult plants dug within a 20 foot radius of newly installed post E.Swan, C.Spell
- 6-2-94 None found, needs rechecked later in `94. CS
- 8/19/97 Pulled **1 MATURE FLOWERING PLANT 4' high; 12 rosettes**. These were located 100' ESE of post near the upper end of an old log across the meadow from the post.

I checked the entire meadow area thoroughly. BAMS
- 9/27/01 **No plants** found. Checked meadow and downstream. FM

Onopordum acanthium (Scotch Thistle)

TREAT THESE SITES IN EARLY AUGUST, CHECK AGAIN LATE SEPTEMBER

0100069 ST.12 SCOTCH THISTLE. **HAY CREEK** T16S R29E SEC1 NENW. .

Along 2195 road 200' southeast of the cattleguard in section 1. Site is on the west side of the road near 8" Lodgepole pine w/scar at base (1st lodgepole south of opening & nearest road). Tree is marked with green flagging. Also check across road in burned slash pile.

- 9/11/97 Hacked down **1 MATURE, FLOWERING** plant 8' tall. Stuffed it in a slash pile

to be burned this fall. BAMS
- 11/97 Pile burned by fire crew. BAMS
-6/4/98 **Pulled 8 seedlings** at stump of old plant, checked slash pile. BAMS
- 5/29/01 Hacked out **4 rosettes**. (No plants at pile) BAMS

0100090 TX.01 DALMATION TOADFLAX. **WEST of BVWC**. T16S R29E S12 SWSE

Izee hwy, WEST of BVWC, starting 100' before the first curve and continuing on south side of highway to 300 feet beyond the curve. *Also at site: Yellow Toadflax 0100186 TX.03.*

- 7/6/88 2 plants dug
- 1989 no plants found
- 1990 2 plants pulled
- 8-28-91 1 plant pulled--not seeded out--immediately adjacent to blacktop E.SWAN - 6/24/93 none found C.Spell, K.Lynch
- 6-2-94 None found. CS
- THE ABOVE REPORTS ARE DALMATION TOADFLAX. YELLOW IS AT THE SITE 1997.
- 7/8/97 No dalmation toadflax found. See 0100186 TX.03.. BAMS

CARDARIA DRABA (L.) Desv. (Hoary Cress or White Top)

TREAT **THESE** SITES IN LATE MAY OR EARLY JUNE; TREAT PRIOR TO GRAZING.

0100131 WT.02 WHITE TOP. **Hog Creek**. T.16S, R.29E, Sec 27 NWNWSW -- .1 mi past 31-331 JCT

Plants in clear cut between roads. 7/97 "CLEARCUT" is now a stand of young lodgepole directly across from 348 junction.

- 8/1/85 Reported, not found.
- 6/25/87 pulled 45 plants.
- 7/6/88 Pulled a few plants - fewer than in 87.
- 1990 nothing found
- 10-3-91 nothing found. dm,jo,mc
- 8-6-92 NOTHING FOUND DM KL
- 9/2/93 unable to locate site no plants present
- 6-2-94 none found. cs
- 6/18/95 NONE FOUND ER/JY
-7/8/97 No plants found. Covered area between 31/331 jct and both sides of 31 to past

348
and also the original legal (SESWSW) which did not match the location description. Has not been grazed yet. BAMS
- 7/2001 **No plants** found. BAMS

0100133 WT.04 - WHITE TOP. **Hog Creek**. T16S R29E S27 SESWSW. JCT 31/382. East of 31, south of 382.

- 1987. Site found and treated.
- 7/8/98 No plants found. BAMS
- 7/2001 **No plants** found. BAMS

LINARIA SPP. (L.) Mill. **(**Toadflax**)**

TREAT THESE SITES LATE JULY, PRIOR TO FLOWERING, CHECK AGAIN LATER.

0100180 TX.05 YELLOW TOADFLAX. **24 RD along SILVIES RIVER**. T16S, R29E, SEC 23 SENE.

24 Road .2 mile east of 133 jct. On north shoulder 3 concentrations starting at the culvert and extending 100 yards to the east.

- 9/2/93 unable to locate post no plants present in area cattle grazed heavy
- 7-26-94 300 plants picked by CS and JTPA. Small site. Two small clumps 20 feet apart.
Clumps very dense. 150 plants per clump.
- 7/8/97 Site consists of ~500 plants. Need to return with more time. BAMS.
- 8/5/97 Pulled 1025 plants. Some headed out, some flowering. BAMS
- 7/98 Pulled 200 plants in 3 spots. T. Smith & crew
- 6/25/01 Pulled ~**500 plants** in 3 concentrations. OYCC/BAMS

0100181 TX.06 YELLOW TOADFLAX. **HOG CREEK**. T16S, R29E, SEC 33 SWSW.

Off the 31 road take 348 over cattleguard and up draw through gate up to a T (485 JCT). Take a right still on 348. Post is on lower side of road .1 mi north of 485 junciton.

-8/20/93 Post intalled, no tag, post on lower side of road about 1/10 mile past "T" in road 348 to right, 500 plants extracted, extracted all mature plants in plot. Approximately 1500
plants left plot is approximately 50' wide and 100' long running down draw from road
- 6/13/94 From road to road and thick. Good JTPA project. CS
- 7/24/95 1500 plants pulled. ER/JTPA.
-7/7/97 Pulled 2555 plants, all immature, none flowering. BAMS
-7/98 Pulled ~300 plants. T. Smith & crew.
- 7/2001 Cut or pulled area about **100x50**'. BAMS FM RIP

0100182 TX.07 - YELLOW TOADFLAX - **BEAR VALLEY WORK CTR** T16S, R29E, SEC 12 SWNESE.

At gate and in pasture. Along driveway to BVWC & 100 yards east & west on Izee Hwy. on both sides. of the highway.

- 8/26/93 PLANTS ALONG THE ROAD AND ENTRANCE C.SPELL
- 6-2-94 - Extensive. Good job for JTPA. CS
- 7-26-94 - 1000 plants picked. CS JTPA
- 7-28-94 - Thousands of plants picked. Large infestation found in the field Southwest of work center. CS
7/24/95 over 2000 plants pulled. ER/JTPA.
- 6/10/97 - Pulled 200 plants. None blooming. More to pull. BAMS. SB.
- 8/98 Pulled or cut 100' each direction of intersection. T. Smith & crew.
- 8/2001 **No plants** found. F. Martin

0100184 TX**.19** - YELLOW TOADFLAX. **2195 road**. T16 R29 S12 NWSE.

Site is just North of Izee Highway/2195 jct. 100' past cattleguard on east side of road. Post installed 96.

- 9/4/96 1000 plants pulled. ER
- 6/30/97 Large site, no time to pull. Need to return. BAMS
- 8/17/97 Pulled 725 plants, some flowering, some headed out. Thousands remain, many growing up through slash of down lodgepole pine. I pulled above the tree to the road. Attempt to burn this site when conditions allow. BAMS
-11/98 Slash burned. Little effect. Site requires attention summer98. BAMS
- 7/98 Pulled/cut site. T. Smith & crew.
- 8/98 Pulled/cut again. T. Smith & crew

0100185 TX.20 YELLOW TOADFLAX. **CARSON SPRING**. T16S R29E S33 NESWSW.

Site is located along the 348 road at Carson Spring, .3 mile north of TX.06. Post installed 96. Two concentrations, one below the road at post, another above and to the north of spring tank. About **.5 acre** total. **2001:** Site is less dense. Light scattering of plants at post and above tank, a concentration in the skid trail above the tank to the north.

-9-3-96 2500 plants pulled. ER
- 7/8/97 Pulled 500 plants- many more left. At post site is 50x75' below road. Above road
patch starts at water trough and extends uphill and to the north about .25 acre. BAMS
- 8/5/97 Pulled about **3000 plants**. BAMS, ER, D
- 7/98 **Pulled** area below road. T. Smith & crew.
- 8/98 Returned to site, **cut with weedeater** & pulled rest of site. T. Smith
-7/31/01 Cut or pulled about **500 plants**. (Less acreage, less dense) BAMS RIP FM

0100187 TX.45 YELLOW TOADFLAX. **BVWC BARN.** T16S R29E S12 NWSESE

Behind (south of) the barn near and above the culvert.

8/98 Pulled 50 plants. BAMS

PLANT BIOLOGICAL EVALUATION

for

Threatened, Endangered, and Sensitive (TES) Species

Blue Mountain Ranger District
Malheur National Forest

Flagtail Fire Recovery Project

February 2, 2004

Prepared by: /s/ Nancy L. Hafer Date: February 2, 2004
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EXECUTIVE SUMMARY

In July 2002, the Flagtail Fire burned 7,120 acres on the Malheur National (Figures 1 and 2, Map Section). The Flagtail Fire Recovery Project proposes four action alternatives that would: salvage harvest 0 to 4,340 acres; reduce fuels on 1,250 to 3,000 acres; construct less than 4 miles of new system and temporary roads; subsoil 0 to 240 acres; plant conifers on 4,290 acres; and decommission 12 to 13 miles of system roads, removing 16 to 17 culverts and replacing 1 culvert (FEIS Chapter 2). Activities would begin in 2004 and some would last through 2009.

At this time, there are no threatened or endangered plant species found or suspected to be on the Malheur National Forest. Only sensitive plant species have been located. Three species have been documented on 4.9 acres at two riparian sites within the Flagtail Fire project boundary: *Botrychium crenulatum, B. minganese*, and *Carex interior*. A new *botrychium minganese* subpopulation was documented on July 16, 2003 during project area surveys. Fire did not noticeable affect these habitats. Habitat for *Thelypodium eucosmum* was suspected, however surveys verified no habitat existed within the project area.

Roads decommissioned near existing riparian populations or potential habitat were used to evaluate impacts on *botryichium* and *carex* species. No other measures were used because no activities are planned within documented sites or within habitat for known species, or because proposed activities (roadside hazard tree felling, fuel treatment, or culvert replacement) would not affect habitat.

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Table 1--Threatened, endangered and sensitive (TES) plant species considered in the analysis of the Flagtail Fire Recovery project and the effects determination for the Proposed Action (Alternative 5, FEIS Chapter 2).

Species	Scientific Name	Status	Occurrence	Effects Of Alternatives
Transparent Milkvetch	*Astragalus diaphanous var. diurnus*	S	HN	NI
Deschutes Milkvetch	*Astragalus tegetarioides*	S	HN	NI
Upswept Moonwort	*Botrychium ascendens*	S	HN	NI
Dainty Moonwort	*Botrychium crenulatum*	S	HN	NI
Triangle Moonwort	*Botrychium lanceolatum*	S	HN	NI
Mingan Moonwort	*Botrychium minganense*	S	HN	NI
Northwestern Moonwort	*Botrychium pinnatum*	S	HN	NI
Peck's Long-Bearded Mariposa	*Calochortus longebarbatus var. peckii*	S	HN	NI
Dwarf Suncup	*Camissonia pygmaea*	S	HN	NI
Back's Sedge	*Carex backii*	S	HN	NI
Inland Sedge	*Carex interior*	S	HN	NI
Parry's Sedge	*Carex parryana*	S	HN	NI
Clustered Lady Slipper	*Cypripedium fasciculatum*	S	HN	NI
Northern Twayblade	*Listera borealis*	S	HN	NI
Red-Fruited Lomatium	*Lomatium erythrocarpum*	S	HN	NI
Raven's Desert Parsley	*Lomatium ravenii*	S	HN	NI
Colonial Luina	*Luina serpentina*	S	HN	NI
Fleeting Monkeyflower	*Mimulus evanescens*	S	HN	NI
Henderson's Ricegrass	*Oryzopsis hendersonii*[1]	S	HN	NI
Least Phacelia	*Phacelia minutissima*	S	HN	NI
Oregon Semaphore Grass	*Pleuropogon oregonus*	S	HN	NI
Arrow-Leaved Thelypody	*Thelypodium eucosmum*	S	HN	NI

[1]*Achnatherum* hendersonii (Henderson's ricegrass)and *Achnatherum wallowensis* (Wallowa ricegrass) = *Oryzopsis hendersonii* (Vasey).

Status

E	Federally Endangered
T	Federally Threatened
S	Sensitive species from Regional Forester's list
C	Candidate species under Endangered Species Act
MS	Magnuson-Stevens Act designated Essential Fish Habitat

Occurrence

HD	Habitat Documented or suspected within the project area or near enough to be impacted by project activities
HN	Habitat Not within the project area or affected by its activities
D	Species Documented in general vicinity of project activities
S	Species Suspected in general vicinity of project activities
N	Species Not documented and not suspected in general vicinity of project activities

Effects Determinations - Sensitive Species

NI	No Impact
MIIH	May Impact Individuals or Habitat, but Will Not Likely Contribute to a Trend Towards Federal Listing or Cause a Loss of Viability to the Population or Species
WIFV	Will Impact Individuals or Habitat with a Consequence that the Action May Contribute to a Trend Towards Federal Listing or Cause a Loss of Viability to the Population or Species
BI	Beneficial Impact

INTRODUCTION

This Biological Evaluation (BE) analyzes the potential effects of the proposed action (Alternative 2) for Flagtail Fire Recovery Project, Malheur National Forest. This BE satisfies the requirements of Forest Service Manual 2672.4 that requires the Forest Service to review all planned, funded, executed or permitted programs and activities for possible effects on proposed, endangered, threatened or sensitive species.

The following sources of information have been reviewed to determine which TES species, or their habitats, occur in the project area:

- Regional Forester's Sensitive Species List
- Forest or district sensitive species database(s) and the GIS mapping layer(s)
- Oregon Natural Heritage Program, Rare, Threatened and Endangered Plants and Animals of Oregon
- Project area maps and aerial photos.

The Flagtail Fire Recovery Project will harvest timber, yard logs, treat slash, construct log landings, build temporary and system roads, decommission roads, and remove culverts and reshape the affected area. For a more detailed description see Chapter 2 Alternatives in the NEPA document.

PROJECT DESCRIPTION

Description of proposed actions

The project will take place in T.16 N., R.29 and 30 E. of Grant County, Oregon, within the Upper Silvies Watershed. The Flagtail Fire Recovery FEIS Chapter 1 describes the Proposed Action (Alternative 2) in greater detail, Chapter 2 describes other alternatives, and the Map Section displays locations of proposed activities and vicinity location.

Project activities include felling trees; yarding trees using ground equipment, skyline, and helicopter systems; constructing and maintaining roads; constructing log landings; treating slash from logging and hazard tree felling or removal; burning slash; closing roads; decommissioning roads (removing culverts and reshaping the area); sub-soiling compacted areas (landings, units, roads); and planting conifers.

Salvage harvest and road work would begin in the spring of 2004. Subsoiling compacted areas, fuel treatments, and tree planting would occur from 2004 to 2006; and road closures, decommissioning, mitigation measures, and monitoring would occur from 2004 through 2009.

Description of the Action Area

On Forest Service land, habitat has probably declined and decreased after previous management practices such as building roads, railroad grades, and log landings, and grazing practices occurred within riparian areas. As a result of these activities, water distribution, riparian vegetation, and micro-sites have changed to favor other vegetation. Native vegetation is not as vigorous or as plentiful. Private land adjoins the fire area on the north and west sides. This land is generally grazing pasture and water running off National Forest land has generally been used for stock watering. There is little habitat for sensitive species.

The Flagtail Fire Recovery Project proposes limited treatments within riparian or RHCA areas: felling roadside hazard trees for safe road travel, removing culverts to restore natural drainage while decommissioning roads, and installing a culvert to accommodate high water flow.

For a more detailed description of the Alternatives see the Chapter 2 - Alternatives in the Flagtail Fire Recovery FEIS.

EFFECTS ANALYSIS

To determine which sensitive plant species may be affected by the proposed action two steps are taken. First, the Forest GIS and sensitive plant database is searched to locate known sensitive plant populations that occur in or near the area of the proposed action. Second, to identify habitats that may harbor sensitive plants, the physical and biological features in the project area are correlated with those in which sensitive plants are known or suspected to occur (Nelson 1985). Specific habitat features for Forest sensitive plants are described in Sensitive Plants of the Malheur, Ochoco, Umatilla, and Wallowa-Whitman National Forests, (Brooks, et al. 1991), and in site reports of documented species.

Surveys were conducted if potential habitat (moderate and high probability of being habitat) existed within proposed harvest units of the Proposed Action (most acreage and impact) or if habitat could be affected by road construction or decommissioning activities. No habitat existed for sensitive species at proposed road construction sites.

Potential habitat for riparian associated species, five species of botrychiums and *Carex interior*, was identified near road decommissioning sites. The determination of effects for these species will be discussed together, since their habitat is similar. Surveys for *Thelypodium eucosmum* sites during July, 2003 verified there was no habitat within the project area.

Moonwort Species - *Botrychium crenulatum, B. minganense*

Status: Federal - Species of Concern (*B. crenulatum* only)
State - Candidate (*B. crenulatum* only)
Region 6 - Sensitive

Inland sedge - *Carex interior*

Status: Federal - none
State - none
Region 6 - Sensitive

Moonworts Environmental Baseline:

Moonworts are small spore-bearing plants closely related to ferns, and like many ferns prefer a moist and partially shaded habitat. They are widespread in distribution, but seldom abundant; they are easily overlooked, and little is known of their life cycles. They are mycorrhizal and do not produce leaves and fruiting bodies every year; however the conditions required to cause leaf growth and fruiting are not known. They are sometimes found in areas where ground disturbance occurred 20 to 40 years previously, on the Umatilla National Forest they have been found in numerous 30 year old spruce and fir plantations. In the Flagtail Fire analysis area, botrychiums are found on drier ground just above the high water mark along small streams and seeps under other vegetation or next to downed wood. Strawberry plants are a good habitat indicator. At other locations on the Blue Mtn. Ranger District, botrychiums have also been found in boggy areas in small forest openings, or in moist meadows. In the southern Blue Mountains they are found above 4500 feet, most often in association with lodgepole pine and/or Engelmann spruce. They become identifiable in late July to August as their leaves unfurl and fruiting bodies ripen.

In the past, four known locations of sensitive plants have been documented within the Flagtail Fire boundary (Blue Mtn.GIS): *Botrychium crenulatum* and *Botrychium minganese Victorin* and *Carex interior* (sedge) were documented. *Botrychium minganese* and *Carex interior* are located within Snow Creek drainage and *Botrychium crenulatum* within the Jack Creek drainage. None of these plants or habitat is near proposed activities. A new *B. minganese* subpopulation was documented on July 16, 2003 at a new location within the Snow Creek drainage, 100 to 150' below the headwater seep, but well above the culvert removal site. Surveys for botrychium species near proposed culvert removal sites and adjacent to roads proposed to be decommissioned, were completed in July and August, 2003.

Interior Sedge Environmental Baseline:

Inland sedge grows in low to mid-elevation wet meadows, and in marshy forest openings around seeps and springs, especially if they are calcareous. In the Flagtail Fire analysis area this species is located in moist riparian habitat in the vicinity of botrychium species. It is widespread in distribution, but seldom abundant. It can be recognized in August when it is in fruit, but it is not easily distinguished from the more common *Carex muricata.* It has been identified on the Bear Valley District growing with *Carex cusickii, C. utriculata, Cicuta douglasii, Deschampsia cespitosa, Juncus* spp., and *Menyanthes trifoliata*.

In the past, one location has been documented within the Flagtail Fire boundary (Blue Mtn.GIS) within the Snow Creek drainage. None of these plants or habitat is near proposed activities.

Effects of the proposed action

Direct and Indirect Effects

<u>All Alternatives</u>
No direct effects are expected since there will be no activity in the area of the known plant populations. Even though hazard trees would be cut, removed, and slash would be treated along roads adjacent to riparian habitat, as part of Alternatives 2, 3, 4, and 5, there should be no impact. Equipment would only remove roadside hazard trees while parked on existing roads or within a treatment unit along open roads and within habitat is within riparian areas where only manual methods would be used to perform activities

<u>Alternatives 2, 3, 4, and 5</u>
Water distribution would likely change after culverts are removed as part of road decommissioning activities. Within the Snow Creek in particular, this redistribution of water could increase sensitive species riparian habitat when the "dam effect" of the culvert is removed. Alternative 4 differs from the other action alternatives by not decommissioning the Snow Creek road (2400133), and not removing culverts to restore natural water drainage in that drainage.

There are no adverse affects to sensitive plants or habitat of proposed activities, but there are adverse long-term effects to the No Action alternative (Alt. 1).

Cumulative Effects

Planting native hardwood species within riparian areas and fencing aspen and associated seep or spring areas, would provide protection for riparian areas and might create habitat for sensitive plant species by improving habitat and watershed function. These activities would not affect known populations within the project area.

Planting native species would restore native vegetation that is important to maintaining desirable site conditions for sensitive species by establishing plants that are adapted to local conditions and disturbances, and reduce the extent and distribution of exotic plant populations.

Effects Determination

I have determined the proposed project will not affect individual plants or habitat, and will not contribute to a trend towards federal listing or cause a loss of viability to the species because there would be no affect on known populations, no ground disturbing activities, and only limited, small scale disturbance to potential habitat.

Arrow-leaved Thelypody – *Thelypodium eucosmum*

Environmental Baseline:

Thelypodium eucosmum is a local endemic, and is a biennial or short-lived perennial mustard found only in Grant and Wheeler counties, Oregon. Known populations range in elevation from 1800 to 5000 feet.

Arrow-leaved thelypody inhabits slopes with vernal moisture sources on otherwise dry sites, and is often found in the shade of junipers or ponderosa pine. It also occurs in sagebrush and grass steppe communities, frequently in association with many introduced weedy species such as *Bromus tectorum* and *Lepidium perfoliatum*. It can grow on a variety of substrates including light clays, and occasionally moist, possibly alkaline soils near rivers. It is probably not tolerant of very dry sites.

Thelypodiums propagate by seed, and since they are at least biennial, each plant requires a minimum of one year of adequate moisture to amass the resources necessary to progress from the rosette stage to flowering and fruit set. When the species functions as a short-lived perennial, it may be able to hold for several years as a rosette until conditions are optimum for seed production. However, Thelypodiums are known to be highly palatable to cattle, so increasing time to seed set increases vulnerability to predation as well. Since this species often grows in heavily grazed habitat that has lost much of its palatable forage, presence of cattle is probably its primary threat. Several populations documented by historic collections have proved impossible to re-locate, and the species was considered extinct until a new site was documented in 1981. About 20 extant populations have now been found.

No information is available on pollinators of this species.

Direct and Indirect Effects

There is no effect on this plant or habitat because there is no habitat or plants within the project area.

Cumulative Effects

There are no cumulative effects since there is no known habitat.

Effects Determination

I have determined the proposed project will not affect individual plants or habitat, and will not contribute to a trend towards federal listing or cause a loss of viability to the species because no habitat exists within the project area.

References

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