

SUMMARY ABSTRACT (Information from the Conclusion section of this document)

Documented sites or potential suitable habitat exists in the **Trout-West** Project for the sensitive plants listed in the following table (Table S-1). Determinations of impacts are noted.

Table S-1: Summary of Sensitive Species and Determination Statements, by Alternative

Species Name	Proposed Action	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
<i>Botrychium lineare</i> Narrow-lvd moonwort	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Botrychium echo</i> Reflected moonwort	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Botrychium pallidum</i> Pale moonwort	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Carex livida</i> Livid sedge	NI	NI	NI	NI	NI	NI
<i>Malaxis brachyopoda</i> Addersmouth	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Potentilla rupicola</i> Rock cinquefoil	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Viola selkirkii</i> Spurred violet	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH

NI = No Impact,

MIIH = May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the populations or species.

MANAGEMENT RECOMMENDATIONS

Recommended Mitigation

Field surveys in the project area are recommended to reduce the determination statements to “no impact” for all sensitive species. The alternatives with the least amount of temporary road building would have the least amount of impacts on unknown sensitive plant habitats (if surveys are not accomplished).

Recommended Monitoring

If sensitive plant populations are found during any field surveys or during project implementation, monitoring of those populations should be accomplished.

BIOLOGICAL EVALUATION for SENSITIVE PLANTS

TROUT-WEST PROJECT Pike & San Isabel National Forests South Platte Ranger District - Pikes Peak Ranger District Douglas County- Teller County, Colorado October 21, 2002

INTRODUCTION

Activities considered in the proposed Trout-West project environmental analysis require a Biological Evaluation (BE) per Forest Service Manual direction (FSM 2672.2). The Biological Evaluation is completed to ensure that proposed actions:

- 1.) do not cause US Forest Service Sensitive species to move toward Federal listing
- 2.) do not contribute to the loss of viability of native or desired non-native species

The Forest Service current management objectives for Sensitive species are in Forest Service Manual (FSM) 2670.32. The management objectives are:

- to comply with the requirements of the Endangered Species Act that actions of Federal agencies not jeopardize or adversely modify critical habitat of Federally listed¹ or proposed species.
- to provide a process and standard by which to ensure that threatened, endangered, proposed, and sensitive species receive full consideration in the decision-making process.
- to ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native species or to a trend toward Federal listing.

Sensitive species are defined by the Regional Forester (FSM 2670.5) as those species for which population viability is a concern, as evidenced by:

- significant current or predicted downward trends in population numbers or density.
- significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

¹ (Note: Plants that are listed Threatened or Endangered or Proposed Species by the U.S. Fish & Wildlife Service are discussed in a separate document (Biological Assessment for Threatened, Endangered, and Proposed Plant Species.)

PROPOSED PROJECT DESCRIPTION

The Pike-San Isabel National Forest Supervisor proposes to implement the National Fire Plan (US Forest Service 2000) with the Trout-West Project. The Fire Plan identifies Woodland Park as an urban interface community at risk from catastrophic wildfire. The proposed project is intended to decrease the threat of wildfire to Woodland Park and surrounding communities, through reducing hazardous fuels within the urban interface. The potential effects of wildfire need to be moderated within the Trout-West area to provide for public safety and beneficial uses. The risk of adverse effects from wildfire is high (and increasing) within much of the Trout-West project area. The purpose of the Trout-West Fuels Reduction Project is to reduce the potential for damaging wildfires where high hazard, risk, and values overlap. *(The project purpose and need is described in detail in Chapter 1 of the NEPA environmental document. See project maps for general project location.)*

Fuels reduction treatments are proposed on 6,750 to 26,320 acres (*acres treated vary by alternative*) within several treatment units in the Trout and West Creek watersheds (*see project maps*). Fuels reduction can take many forms: thinning and removal of cut vegetation, thinning and on-site slash treatment such as piling and burning, and burning without any thinning at all. The Proposed Action would implement a mix of these treatments, depending on site conditions. The treatments are intended to moderate the potential adverse effects of wildfire, provide for firefighter and public safety, and reflect historic conditions that are thought to be more sustainable than current conditions.

Thinning

Under the Proposed Action, stands would be thinned down to 15 to 20 percent canopy closure. The larger, platy-barked ponderosa pine would be retained. Smaller pines, Douglas-fir, and trees infected with dwarf mistletoe would be removed. Trees would be retained in a mosaic and clumpy distribution, following current distribution patterns. Single story stand structures would be favored to maintain lower fuel hazard over longer periods of time. These stand structures were historically maintained by frequent fire. Stands that are already at or near the 15 to 20 percent canopy closure would be lightly thinned to minimize ladder fuels.

The intent of this project is to retain the oldest and largest trees. Most of the project area has been previously logged however, older trees are found throughout the project area. Concentrations of older trees and stands that potentially provide old growth habitat would be retained at higher canopy densities.

Removal of Cut Vegetation

Trees would be thinned and treated on site, or removed from the site, depending on the environmental risks and economics of removing material. A variety of administrative tools may be used to implement the Proposed Action, including service contracts, fuel wood sales, stewardship partnerships, and timber sales. Whole tree yarding will be considered where appropriate to reduce fuels remaining on site.

Conventional logging methods using mechanical harvesters and tractors are proposed on slopes up to 20%. Removal of thinned trees on steeper slopes would require more advanced logging systems. Mitigation measures such as winter logging, helicopter or cable systems, staggered burning schedule, burn intensity restrictions, equipment restrictions, protection of skid trails, sub-soiling and grass-seeding, and restricted operation season would be applied to reduce the risk of adverse impacts associated with the proposed treatments.

The existing transportation system would be used to remove yarded material. Temporary roads and stream crossings may be utilized to access treatment areas; these would be rehabilitated following operations. No new permanent roads are proposed. Road improvement and realignment may occur where current conditions are adversely affecting water quality.

On-Site Fuels Treatment

Cut vegetation within some stands proposed for heavy or light thinning would be treated on site, rather than removed. Areas where yarding of vegetation is not economically or environmentally advisable may need considerable hand work to reduce hazardous fuels. Most stands proposed for heavy thinning would require post-thinning fuels treatment, even if some vegetation were yarded away. Slash created from thinning would be treated via hand or machine piling and pile burning, jackpot or under-burning, crushing, or lopping and scattering.

The Proposed Action would guide fire managers in selecting an appropriate fuel treatment method, but would allow for flexibility given site-specific fuel conditions, annual variation in weather, workforce availability, and timing of activities.

Burning Without Pre-Treatment

Some areas proposed for light thinning may be burned with little or no mechanical pre-treatment. Understory vegetation would be killed and ladder fuels reduced by jackpot or underburning.

Summary of Activities by Alternative

The following table (Table 1) displays approximate acreage proposed for treatment within the six treatment areas (*see project maps for each alternative*). These treatments would be implemented in the ten-year period following the NEPA decision, assuming funding under the National Fire Plan.

Table 1: Summary of Project Activities by Alternative

	No Action (NA)	Proposed Action (PA)	Alternative A No Burning	Alternative B No Treat Beyond 1 mile of pvt land	Alternative C No new temporary roads	Alternative D No Treat Beyond ½ mile of pvt. land	Alternative E Historical Condition
Total Acres Treated	0	20,170	19,220	13,570	20,170	6,750	26,320
Acres Tractor/ Other	0	13,380	13,380	9,270	11,280	3,130	19,380
Acres Helicopter	0	3,890	3,890	2,900	6,090	3,020	5,690

Table 1: Summary of Project Activities by Alternative

	No Action (NA)	Proposed Action (PA)	Alternative A No Burning	Alternative B No Treat Beyond 1 mile of pvt land	Alternative C No new temporary roads	Alternative D No Treat Beyond ½ mile of pvt. land	Alternative E Historical Condition
Acres On-Site Treatment	0	950	0	300	950	0	1,250
Acres Light Thin	0	1,945	1,945	1,100	1,945	600	0
Miles System Road	0	68	68	50	68	36	68
Miles Existing Unclassified Road	0	48	48	31	48	13	48
Miles New Temporary Spur	0	14	14	12	0	0	14
Acres proposed for pile burning (not broadcast)	0	10,660	0	10,660	10,660	0	13,500
Acres proposed for pile and broadcast burning	0	6,600	0	0	6,600	3,840	9,410
Acres proposed for mechanical slash treat only	0	2,910	19,220	2,910	2,910	2,910	3,410
Acres Treated Outside 1 mile urban interface buffer	0	6,600	5,650	0	6,600	0	9,410

Additional details of the Proposed Action alternative, other action alternatives, and alternative maps are found in Chapter 2 of the NEPA environmental document.

HABITAT ASSESSMENT

The Trout-West project area lies within the Southern Rocky Mountain geographic province. Vegetation types consist of three major forested types including ponderosa pine, Douglas-fir, and Engelmann spruce/Subalpine fir. Other vegetation types found in smaller amounts in the project area include lodgepole pine, aspen stands, shrubfields, grasslands, and meadows. In addition, there are areas of barren rock outcrops at higher elevations. Streams and riparian areas include Trout Creek, West Creek, Trail Creek, and many other smaller streams. A manmade lake (Manitou Park Lake) is found along Trout Creek close to the Manitou Experimental Forest area. Elevations range from 12,200 feet at Baldy Mountain to 6,660 feet where Trout Creek reaches the South Platte River. Most of the project treatment units are found above 7,500 feet elevation in the middle Trout Creek basin area. The area is framed by Trout Creek, in the center of the project area flowing north, and the higher elevation Rampart Ridge topographic feature forming the project boundary to the east. Trout Creek (mid-basin) is characterized by open grasslands and meadows interspersed with dry ponderosa pine stands. Numerous private land subdivisions are found in Trout Creek and Trail Creek. *Detailed information on the project area vegetation, geology, and soils is found in the project environmental document.*

PRE-FIELD REVIEW

The Regional Forester's Sensitive Plant list is derived through a cooperative effort with US Fish and Wildlife Service and State Natural Heritage Programs (Colorado Natural Heritage Program). The complete Regional Forester's Sensitive Plant List is on file at the Pike-San Isabel National Forest.

The following sources of information were used to determine the sensitive plant species that occur or may have potential habitat or sites in the project area:

- Ryke et al. 2002. Threatened, Endangered and Sensitive Species of the Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands.
- Tapia, Steve. 2001. Biological Evaluation for Sensitive Species. Pikes Peak Range Allotment Management Plans.
- Foster Wheeler. 1999. Landscape Assessment of the Upper South Platte Watershed. Prepared for the US Forest Service, Pike San Isabel NF.
- Foster Wheeler. 2001. Upper South Platte Watershed Protection and Restoration Environmental Assessment. Prepared for the US Forest Service, Pike San Isabel NF.
- Colorado Natural Heritage Program database (CNHP). 2001. Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands Rare, Threatened, Endangered and Sensitive Species overlays and accompanying reports. College of Natural Resources, Colorado State University, Ft Collins, CO.
- Spackman et al. 1997. Colorado Rare Plant Field Guide.
- US Fish and Wildlife Service. Federally Listed and Candidate Species and Status in CO.

In addition, information on previous field surveys or other biologists' professional knowledge of the area for sensitive plants was sought out and considered.

No known sites for any sensitive plant species are found in the project area. Documented sites for sensitive plants are known from outside the project area and those species are considered as having the highest probability for occurrence within the project area. See attached Figure 1 for known sites of sensitive plants adjacent to the project area.

Table 2 displays the complete list of sensitive plant species for the Pike San Isabel National Forest and Grasslands Units. Those species that have documented sites or have the potential to occur in the project area are noted in the table and will be discussed in the environmental effects section of this BE.

Table 2: Pike San Isabel National Forest Sensitive Plants (Jan. 2002)

FS Sensitive Plant Species	Distribution and Habitat ²	Analyzed for project area?
<i>Adiantum capillus-veneris</i> Southern maidenhair fern	The distribution in Colorado includes Baca County, and possibly the Comanche National Grasslands. Found in wet seeps & cliffs on sandstone and calcareous rocks or highly mineralized soils. Elevations range from 4800-7800 ft. Spores are produced June-September.	NO (Known and suspected distribution is outside the project area)
<i>Ambrosia linearis</i> Plains ragweed	This plains species is known only north of the Arkansas River (and may possibly occur on Comanche National Grasslands), in Elbert, El Paso, and Lincoln counties. It is found in roadside ditches and railroad embankments in sandy or gravelly, seasonally moist soils. Elevations range from 4300-6700 ft. Flowering June-early August; fruiting August-September	NO (Known and suspected distribution is outside the project area)
<i>Armeria martima siberica</i> Sea pink	This alpine species has a widely disjunct distribution in Colorado. It is found in Summit and Park counties and occurs on the South Park and South Platte Ranger Districts. The habitat consists of grassy tundra slopes, wet, sandy or spongy organic soils. Elevations range from 11,000-12,500 ft. Flowering late June-early July; fruiting in August.	NO (No known sites, and project activities will occur at lower elevations)
<i>Asclepias uncialis</i> Dwarf milkweed	Distribution includes the counties of Baca, Fremont, Huerfano, Las Animas and Pueblo, and the Comanche National Grasslands. Found in shortgrass prairie, often on sandstone-derived soils and gravelly, rocky side slopes. Elevations range from 4000-6500 ft. Flowering in late April to mid-May; fruiting in late May to early June.	NO nown and suspected distribution is outside the project area
<i>Astragalus molybdenus</i> Molybdenum milkvetch	Distribution includes Lake, Park, Pitkin, and Summit Counties. This alpine/subalpine species is found in tundra and exposed slopes above treeline and limestone scree slopes. Its small size (1-2 inches high) and pale violet flowers are distinctive. Elevations range from 11,000-13,000 ft. Flowering & fruiting occur late July-August.	NO nown and suspected distribution is outside the project area
<i>Botrychium lineare</i> Narrow-lvd moonwort <i>USFWS Candidate</i>	Distribution includes El Paso County along the Pikes Peak toll road. Other locations of record are Oregon and Quebec. Deep grass & forb meadows, under trees in woods, & on shelves on limestone cliffs, mainly at higher elevations. Elevations range from 8700-11,000 ft. Spores mature in late June & July.	YES (No known sites, but <u>potential</u> habitat may be present)
<i>Botrychium echo</i> Reflected moonwort	Distribution in Central Colorado includes El Paso and Clear Creek counties. This fern is found growing in gravelly soils near roads & trails, rocky hillsides, grassy slopes, & mountain meadows. Elevations range from 9500- 11,000 ft. Spores produced in July.	YES (No known sites, but <u>potential</u> habitat may be present)
<i>Botrychium pallidum</i> Pale moonwort	Distribution includes Teller County. Found in mountain meadows, grassy slopes, open exposed hillsides, burned or cleared areas, and old mining sites. Elevations range from 9800-10,600 ft. Spores produced July-August.	YES (No known sites, but <u>potential</u> habitat may be present)
<i>Braya glabella ssp. glabella</i> Smooth rockcress	This species has a disjunct distribution in central Colorado which includes Chaffee County. This alpine species is found on calcareous substrates (Leadville limestone & Manitou dolomite), scree slopes & disturbed gravel soils. Elevations range from 12,000-12,300 ft. Flowering late June - July; fruiting in August.	NO nown and suspected distribution is outside the project area

² Distribution and habitat information source is: Ryke et al. 2002. *Threatened, Endangered and Sensitive Species of the Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands.*

Table 2: Pike San Isabel National Forest Sensitive Plants (Jan. 2002)

FS Sensitive Plant Species	Distribution and Habitat ²	Analyzed for project area?
<i>Carex livida</i> Livid sedge	Distribution includes Park County. A wetland species occurring in rich fens & wetlands. Elevations range from 9000-10,000 ft.	YES (No known sites, but <i>potential</i> habitat may be present)
<i>Chenopodium cycloides</i> Sandhills goosefoot	Distribution includes southwestern Kansas and southeastern Colorado (Las Animas and Pueblo Counties), Cimmaron National Grasslands and may occur on Comanche National Grasslands. Habitat consists of sandy soils on dunes & stabilized sand in blowouts. Flowering occurs from July - August; fruiting August - September.	NO nown and suspected distribution is outside the project area
<i>Draba smithii</i> Smith's whitlow-grass	Distribution includes south-central Colorado, including Custer, Lake, Las Animas and Saguache Counties. Endemic to cliffs and canyons, talus slopes, crevices, & between rocks in shaded, protected sites in upper montane and lower subalpine areas. Elevations range from 8000-11,000 ft. Flowers & fruits in June-July.	NO nown and suspected distribution is outside the project area
<i>Epipactis gigantea</i> Giant helleborine orchid	Distribution in Colorado includes Chaffee County near Poncha Hot springs. It may occur in some areas of the Comanche Grassland. It occurs in cliffs, hillsides, springs, & riparian areas. Elevations range from 4800-8000 ft. Flowering June-July; fruiting August-September.	NO nown and suspected distribution is outside the project area
<i>Eriogonum brandegeei</i> Brandegee buckwheat	Distribution includes Fremont and Chaffee counties. This species grows in association with open sagebrush or pinyon-juniper stands, on white to grayish limestone-shale soils in the Dry Union and Morrison formations. Elevations range from 5700-7600 ft. Flowering July-August; fruiting August-September.	NO nown and suspected distribution is outside the project area
<i>Eriophorum altaicum var. neogaeum</i> Altai cottongrass	Distribution includes the Mosquito Range on the Pike National Forest. This plant is found growing in fens. Elevations range from 9500-14000 ft. Fruiting late July-August.	NO (No known sites or habitat potential in project area)
<i>Festuca hallii</i> Hall fescue	Distribution may include the Pike National Forest in <i>Kobresia</i> stands. There is one historic record from the 1890's from somewhere in or around the north end of South Park. This plant grows on alpine tundra & dry subalpine grasslands. Elevations range from 11,000-12,000 ft. Flowering/ fruiting July-August.	NO nown and suspected distribution is outside the project area
<i>Frasera coloradensis</i> Colorado gentian	Endemic to southeastern Colorado, including Baca and Las Animas Counties and Comanche National Grasslands. It is found in dry, rocky outcrops & sparsely vegetated slopes, especially on Greenhorn limestone (white limestone breaks), in pinyon-juniper & grasslands. Elevations from 4,000 - 5,400 feet. The plant flowers in June; fruits in July.	NO nown and suspected distribution is outside the project area
<i>Ipomopsis globularis</i> Globe gilia	Endemic to central Colorado, the distribution is limited to the Mosquito Range and the Hoosier Ridge area, which includes Lake and Park Counties. It grows in gravelly, exposed calcareous, alpine ridges on Leadville limestone or Manitou dolomite. Elevations range from 11,500-14,000 ft. Flowering in July & early August; fruiting in August.	NO nown and suspected distribution is outside the project area
<i>Machaeranthera coloradoensis</i> Colorado tansy-aster	Known locations are in Horseshoe Cirque and the floor of South Park in Park County. This low or prostrate mat-plant has solitary heads with purple or violet ray flowers. It is found in gravelly places in high mountain parks and on dry tundra. Elevation ranges from 8500-12,500 ft. Flowering from July-early August; fruiting in August.	NO (No known sites or habitat potential in project area)

Table 2: Pike San Isabel National Forest Sensitive Plants (Jan. 2002)

FS Sensitive Plant Species	Distribution and Habitat ²	Analyzed for project area?
<i>Malaxis brachyopoda</i> Addersmouth	Occurrences are given as Boulder, Jefferson, and EL Paso counties. The El Paso county site is thought to have been destroyed by development. One site is near Bailey on the Pike NF. This plant grows along streams in mosses where it is kept wet by water spray. It is all green in color & difficult to distinguish from streamside vegetation. Elevation ranges from 7200–8000 ft. Flowers in July; fruiting in August.	YES (No known sites, but <u>potential</u> habitat may be present)
<i>Mimulus gemmiparus</i> Weber's monkeyflower	Endemic to two locations in Colorado: Rocky Mountain National Park and the Tarryall Mountains (Grand, Jefferson and Larimer Counties). A wetlands species, it occurs in seeping granite outcrops & slopes, wet banks & rocks. Elevations range from 8400-10,500 ft. This is the only <i>Mimulus</i> species that reproduces vegetatively. Flowers are usually absent – when present, flowering occurs early to mid-July. It is difficult to identify because it flowers infrequently.	NO nown and suspected distribution is outside the project area
<i>Muhlenbergia glomerata</i> Marsh muhly	Distribution may occur include Comanche NG. This grass occurs on the plains in wetter sites including bogs, springs, fens, peaty, or calcareous meadows, in floating mats and along stream edges. Elevations range from 4700-6600 feet.	NO nown and suspected distribution is outside the project area
<i>Neoparrya lithophila</i> Rock aletes	Distribution includes south-central Colorado, including Chaffee, Huerfano and Saguache Counties. This plant is found in pinyon-juniper woodlands on north-facing ledges, cliffs & canyons associated with volcanic dikes composed of igneous outcrops or sedimentary rock. Elevations range from 7000-10,000 ft. Flowering May - early July; fruiting late June-September.	NO nown and suspected distribution is outside the project area
<i>Penstemon degeneri</i> Degener's penstemon	Endemic to central Colorado (Fremont County), it is known to occur on the San Carlos Ranger District. Endemic to pinyon-juniper woodlands, montane grasslands/ mountain meadows on rocky soils with igneous bedrock. Elevations range from 6000-9500 ft. Flowering June-July; fruiting in late July.	NO nown and suspected distribution is outside the project area
<i>Potentilla rupincola</i> Rock cinquefoil	Colorado endemic (Boulder, Clear Creek, Larimer and Park counties). This species occurs on granitic outcrops or thin, gravelly-granitic soils with west or north exposure. Often associated with ponderosa pine or limber pine. Elevations range from 6900-10,500 ft. Flowering in mid-June to August.	YES (No known sites, but <u>potential</u> habitat may be present)
<i>Primula egaliksensis</i> Greenland primrose	Disjunct distribution in Colorado (Park County). This species occurs in wet meadows, willow carrs, streambanks, swales & fens in high mountain valleys. Elevations range from 9000 to 9800 ft. Flowering June-July.	NO nown and suspected distribution is outside the project area
<i>Ptilagrostis mongholica</i> <i>ssp. porteri</i> False needlegrass	Endemic to central Colorado (Park County). A wetland species found in peat bog hummocks & willow carrs. Elevations range from 9200-12,000 ft. Fruit matures mid-August to early September.	NO (No known sites or habitat potential in project area)
<i>Rubus arcticus</i> <i>ssp. acaulis</i> Dwarf raspberry	Distribution includes Clear Creek and Park Counties. A wetland species found in willow carrs & mossy streambanks. Elevation ranges from 8600- 9700 ft. Flowers late June-early July; fruiting late July-August; species seldom sets fruit in Colorado.	NO (No known sites or habitat potential in project area)
<i>Salix lanata</i> <i>ssp. calcicola</i> Woolly willow	Disjunct distribution in Colorado (Park County), it is known to occur in Horseshoe Cirque on South Park Ranger District. This low growing tundra willow is a wetlands species growing on calcareous lakeshores. Elevation 12,000 ft. Catkins mature in July.	NO (No known sites or habitat potential in project area)

Table 2: Pike San Isabel National Forest Sensitive Plants (Jan. 2002)

FS Sensitive Plant Species	Distribution and Habitat ²	Analyzed for project area?
<i>Salix myrtilifolia</i> var. <i>myrtilifolia</i> . Myrtle-leaf willow	Disjunct distribution in Colorado (Park County). A wetlands shrub found on calcareous fens. Elevation 9300 ft. Catkins mature late June-mid July.	NO (No known sites or habitat potential in project area)
<i>Scripus rollandii</i> Rolland' bulrush	Disjunct distribution in Colorado, it is known to occur in Horseshoe Cirque on South Park Ranger District. An alpine, wetland species that grows in wet moss & willow carrs on calcareous soils. Elevation ranges from 9300- 11,000 ft. Flowering June-July; fruiting August – early September.	NO (No known sites or habitat potential in project area)
<i>Viola selkirkii</i> Spurred violet	Distribution in Colorado includes Douglas County; there is a known site near Devil's Head. It grows in cold mountain (aspen) forests; moist woods & thickets. Elevations range from 8500-9100 ft. Flowering May-June.	YES (No known sites, but <u>potential</u> habitat may be present)

FIELD RECONNAISSANCE

No intensive field surveys were conducted for this specific project. However, a field-check visit to the project area was accomplished (*G. Lind, July 9-12 2001*). The intent of the field check was to become familiar with the project area and vegetation types and to discuss the potential for rare plants with the District biologist. Additionally, a field trip was made to an area outside of the project area (Pike Peak Road) to observe a documented site for *Botrychium lineare*, a USFWS Candidate species documented in the Pikes Peak vicinity. Previous field surveys for other related projects include sensitive plant surveys³ on several livestock allotments in the project area. Those surveys occurred in 1999 and 2000 and were accomplished for a livestock grazing Environmental Assessment.

ANALYSIS OF EFFECTS

Introduction

Only those plant species noted in the previous table as having known sites or suspected habitat within the project are discussed in this section. The environmental consequences section will focus on any effects on the Sensitive plant resource by implementation of the activities proposed in the Trout-West project area. Effects can be direct, indirect, or cumulative.

1. Direct effects occur at the same time and place as the proposed action. Road building activities in Listed/Sensitive plant habitat would be an example of direct effects.
2. Indirect effects occur at a later time or in a different area from the proposed action. Increased recreational vehicle use off-trail would be an indirect effect of building a new road.

³ USDA-Forest Service. 2001. Pikes Peak Range Allotment Management Plans, Biological Evaluation for Sensitive Species. Steve Tapia, District Biologist.

3. Cumulative effects result from the combined impacts of past actions, the proposed action, other present ongoing actions, and any reasonably foreseeable actions.

After evaluating the potential for effect, a determination statement (finding) is used to describe the impacts on the rare plant resource.

Determination statements⁴ for Sensitive species are:

- Beneficial impact (BI): (where effects are expected to be beneficial)
- No impact (NI): (where no effect is expected)
- May Adversely Impact Individuals or Habitats, (MIIH) but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability rangewide.
- Likely to Result in a Loss of Viability (LRLV) in the planning area, in a trend to federal listing, or in a loss of species viability rangewide

Direct, Indirect, and Cumulative Effects of the Alternatives

No Action Alternative

No adverse direct, indirect, or cumulative effects would occur on any Sensitive plant species from the No Action alternative. No ground disturbing activities would occur; however, existing and ongoing uses of the project area would still occur, including recreation, grazing, firewood cutting, and many other uses. In the event of a large stand-replacing wildfire, adverse impacts could affect native plants populations and communities, including rare species, through soil, habitat, and watershed damage that could occur.

Proposed Action

The following plant species (from Table 2 above) are either documented or have the potential to occur in the project area. A discussion of potential impacts for each species is presented and a determination finding for each species will be noted.

⁴ The Forest Service uses the word “impact” to differentiate findings on FS Sensitive species from the determination finding use of the word “effects” required for USFWS listed and proposed species.

***Botrychium echo* (Reflected moonwort)**



Source: Colorado Natural Heritage Program, Rare Plant Field Guide
Photo Copyright © 1999 by L. Yeatts

Distribution in Central Colorado includes El Paso and Clear Creek counties. Habitat for this fern is found growing in gravelly soils near roads & trails, rocky hillsides, grassy slopes, and mountain meadows. Elevations range from 9,500- 11,000 ft. Spores produced in July.

No sites are known for the Trout-West project area, however there are areas of potential habitat that was noted during the initial field check of the project area (G. Lind, 2001). Potential habitat is in gravelly soil areas near disturbed areas by roads and trails, also grassy slopes and rocky meadows. This species seems to occur at higher elevations, and only the Rampart Ridge treatment unit would have habitat at this elevation. Project activities in these habitats would be prescribed fire and removal of invading conifers with commercial or precommercial

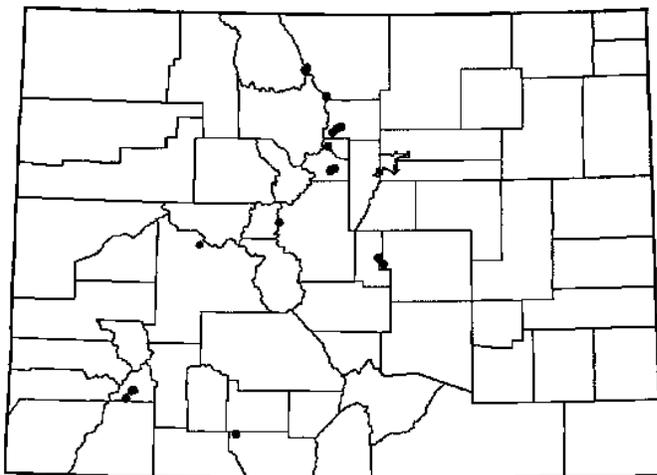
thinning. Prescribed fire would occur in the early season or late season and should not affect plants or populations during the June-July maturing season. Precommercial thinning activities should not significantly affect habitat for this species due to limited ground disturbing effects. Commercial thinning with mechanized equipment within these habitats could have adverse impacts on populations or habitat; however those impacts are not thought to be significant due to lack of documented sites and the project is using protection buffers for riparian and draw features. Some new temporary roads may bisect potential habitat, but the



Typical habitat for *Botrychium echo*
Source: Colorado Natural Heritage Program,
Rare Plant Field Guide
Photo Copyright © 1999 by B. Jennings

impacts are limited to a small impact due to the limited area impacted by roads.

Therefore, a determination of: may impact individuals or habitat, but not likely to cause a trend toward Federal listing or a loss of viability is warranted.



Range Map in Colorado for *Botrychium echo*
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

***Botrychium lineare* (Narrow-lyd moonwort) USFWS Candidate Species**



Photo of *Botrychium lineare*
Source: Colorado Natural Heritage Program,
Rare Plant Field Guide
Photo Copyright © 1999 by J. Sellers

Distribution includes El Paso County along the Pikes Peak toll road. Other locations of record are Oregon and Quebec. Habitats are grass-forb meadows, under trees in woods, and on limestone cliffs, mainly at higher elevations. Elevations range from 7,900-11,000 ft. Spores mature in late June & July.

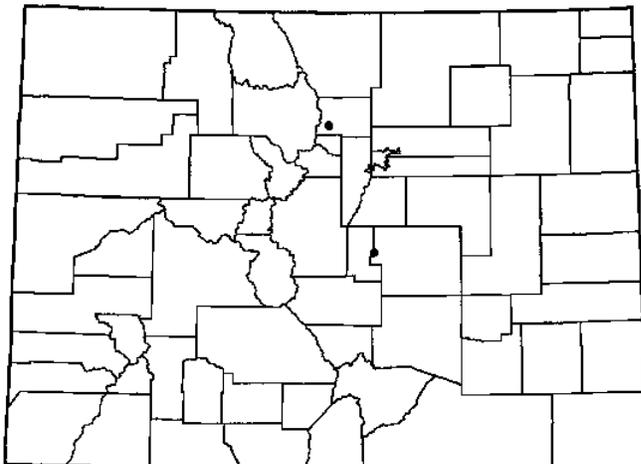


Photo of *Botrychium lineare* habitat
Source: Colorado Natural Heritage Program
Rare Plant Field Guide
Photo Copyright © 1999 by S. Spackman

No sites are known for the Trout-West project area, however there are areas of potential habitat that were noted during the initial field check of the project area (G. Lind 2001). Potential habitat is in grassy aspen areas close to streams and woody draws. Project activities (although limited) in these habitats would be prescribed fire and removal of invading conifers with commercial or precommercial thinning.

Prescribed fire would occur in the early season or late season and should not affect plants or populations during the June-July maturing season. Precommercial thinning activities should not significantly affect habitat for this species due to limited ground disturbing effects. Commercial thinning with mechanized equipment within these habitats could have adverse impacts on populations or habitat; however those impacts are

not thought to be significant due to lack of documented sites and the project is using protection buffers for riparian and draw features. Some new temporary roads may cross riparian or woody draw features, but the impacts would be limited to a small area due to the limited acres impacted by a road crossing.



Distribution of *Botrychium lineare* in Colorado
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

Therefore, a determination of: may impact individuals or habitat, but not likely to cause a trend toward Federal listing or a loss of viability is warranted.

***Botrychium pallidum* (Pale moonwort)**



Photo of *Botrychium pallidum*
Source: Colorado Natural
Heritage Program, Rare Plant Field
Guide
Photo © 1999 by D. Erhard

Distribution includes Teller County. Found in mountain meadows, grassy slopes, open exposed hillsides, burned or cleared areas, and old mining sites. Elevations range from 9800-10,600 ft. Spores produced July-August.

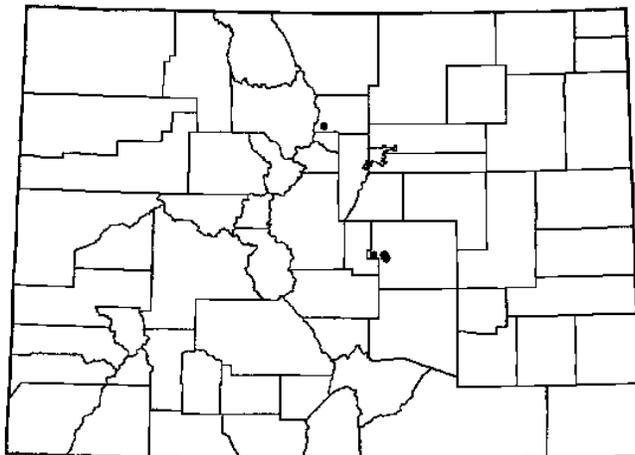
There are no documented sites in the Trout-West project area; however, a documented site is found < 10 miles southeast of the project area along the road to Pikes Peak. Potential habitat is likely within the Trout-West project area, at higher elevations along Rampart Ridge and other locations above 9,000 feet.

The habitat of open sites would not likely be impacted by ground disturbing

logging operations, but logging decks, helicopter landings, and new road construction may impact potential habitat. In addition, this species has been found in areas with disturbances such as fire and cleared areas. Due to the lack of documented sites and the fact that previous field investigations in the area have not found new sites for this species, any impacts should be limited and not significant to this species.



Photo of habitat for *Botrychium pallidum*
Source: Colorado Natural Heritage Program,
Rare Plant Field Guide.
Photo © 1999 by D. Erhard



Distribution of *Botrychium pallidum* in Colorado
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

Therefore, a determination of: may impact individuals or habitat, but not likely to cause a trend toward Federal listing or a loss of viability is warranted.

***Carex livida* (Livid sedge)**



Photo of *Carex livida*
Source: Colorado Natural Heritage
Program, Rare Plant Field Guide
Photo Copyright © 1999 by J. Coles

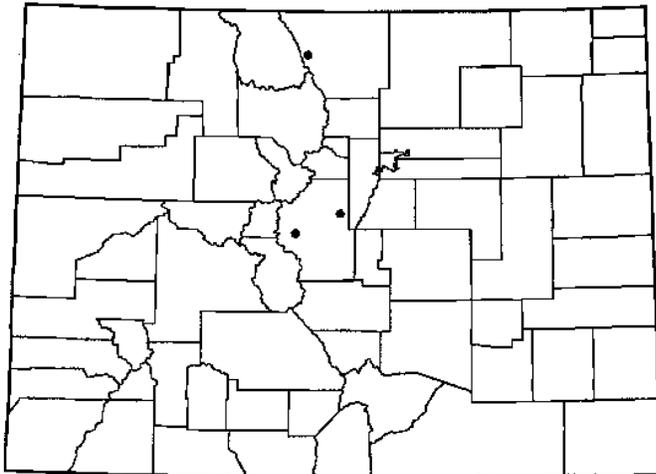
Distribution includes Park County. A wetland species occurring in rich fens and wetlands. Elevations range from 9000-10,000 ft.

No documented sites are known from the Trout-West project area. Documented sites are found to the northwest in Park County. The species' habitat is wetlands, lakeshores, and rich fens. There is potential habitat (lake shore) at Manitou Park Lake; however, this lake feature and other wetland or rich fen habitats would not be affected by any project activities.



Photo of habitat for *Carex livida*
Source: Colorado Natural Heritage Program,
Rare Plant Field Guide.
Photo Copyright © 1999 by B. Neely

Therefore, a determination of: no impact to this species is warranted.



Distribution of *Carex livida* in Colorado
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

***Malaxis brachyopoda* (White Addersmouth Orchid)**



Photo of *Malaxis brachyopoda*
Source: Colorado Natural Heritage
Program, Rare Plant Field Guide
Photo © 1999 by B. Jennings

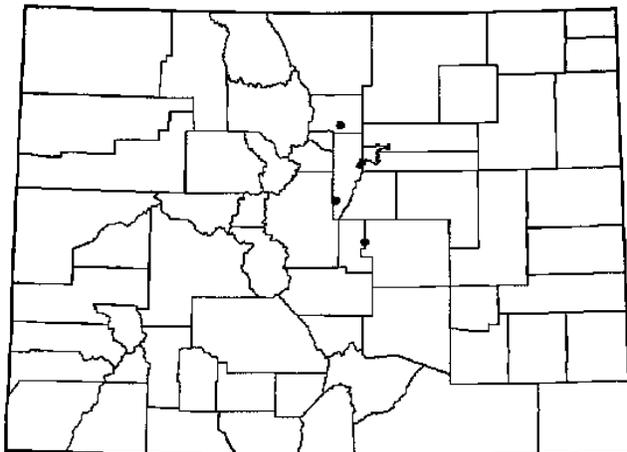
Occurrences are given as Boulder, Jefferson, and EL Paso counties. The El Paso County site is thought to have been destroyed by development. One site is near Bailey on the Pike NF. This plant grows along streams in mosses where it is kept wet by water spray. It is all green in color and difficult to distinguish from streamside vegetation. Elevation ranges from 7200–8000 ft. Flowers in July; fruiting in August.

There are no documented sites in the Trout-West project area; however, one known site is found < 10 miles to southeast of the project area. Riparian areas are buffered from any management activities in the Trout-West project. However, there may be some road crossings that may affect riparian habitats, but those crossings would be limited in scope and acres affected.



Habitat for *Malaxis brachyopoda*
Source: Colorado Natural Heritage
Program, Rare Plant Field Guide
Photo © 1999 by B. Jennings

Therefore, a determination of: may impact individuals or habitat, but not likely to cause a trend toward Federal listing or a loss of viability is warranted.



Distribution of *Malaxis brachyopoda* in Colorado
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

Potentilla rupincola (Rock cinquefoil)



Photo of *Potentilla rupincola*
Source: Colorado Natural Heritage Program, Rare Plant Field Guide
Photo Copyright © 1999 by S. Spackman

Colorado endemic (Boulder, Clear Creek, Larimer, and Park counties). This species occurs on granitic outcrops or thin, gravelly-granitic soils with west or north exposure. Often associated with ponderosa pine or limber pine. Elevations range from 6900-10,500 ft. Flowering in mid-June to August.

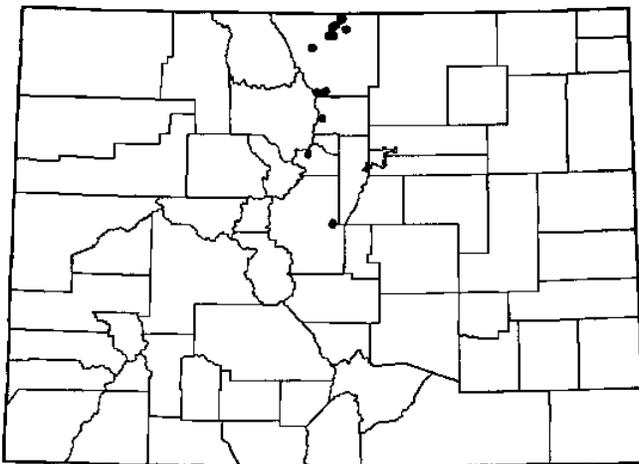
There are no documented sites for this species in the Trout-West project area; however there are known sites in Park County < 10 miles from project area. Potential habitat occurs in the project area but the granitic outcrop habitats would not

be affected by most project activities. Road construction activities that affect rock outcrops could impact potential habitat for this species, but the impacts should be minimal due to the limited road construction that would affect granitic outcrops.

Therefore, a determination of: may impact individuals or habitat, but not likely to cause a trend toward Federal listing or a loss of viability is warranted.

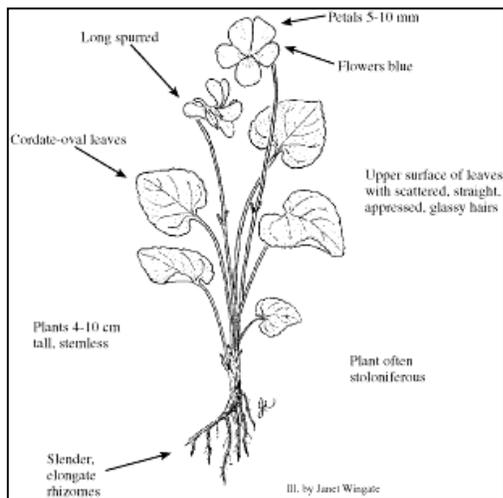


Photo of habitat for *Potentilla rupincola*
Source: Colorado Natural Heritage Program, Rare Plant Field Guide
Photo Copyright © 1999 by S. Spackman



Distribution of *Potentilla rupincola* in Colorado
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

Viola selkirkii (Great-spurred violet)

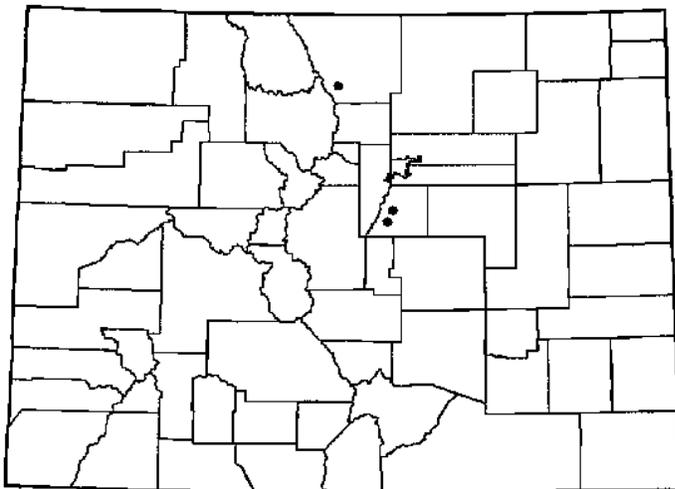


British Columbia east to Greenland, south to Washington and New Mexico. Distribution in Colorado includes Larimer County and Douglas County where there is a known site near Devil's Head. This species grows in cold mountain (aspen) forests; moist woods and thickets. Elevations range from 8,500 to 9,100 ft. Flowering in May-June.

There are no known sites in the Trout-West project area; however the known site at Devil's Head is < 10 miles to northeast of project area, and potential habitat occurs in project area along the Rampart Ridge area. Project activities would occur in aspen stands along Rampart Ridge, including commercial logging and

burning of slash. Road construction and temporary skid trails could also impact this species. There is abundant Aspen habitat along the Rampart Ridge area, and in many other areas of the District, therefore any impacts should not be significant for the viability of this species.

Therefore, a determination of: may impact individuals or habitat, but not likely to cause a trend toward Federal listing or a loss of viability is warranted.



Distribution of *Viola selkirkii* in Colorado
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

Effects of Alternatives A-E

The potential effects on sensitive plants and the determination statements are the same for all action alternatives, due to the lack of documented sites in the project area. However the impacts of the alternatives with the least amount of ground-disturbing activities would have the least probability of impacting unknown habitats for sensitive plants. The following table ranks the alternatives' relevant potential impacts on sensitive plants (Table 3). Alternatives C and D would have the least impacts due to no temporary road construction activities.

Table 3: Comparison of Effects on Sensitive Plants, by Alternative

Alternative	Acres Treated	Ranking <i>(1-7, with 1 rated best due to least amount of ground disturbing activities)</i>
No Action	0	1
Alternative D	6,750	2
Alternative B	13,570	3
Alternative A	19,220	4
Proposed Action	20,170	5
Alternative C	20,170	6
Alternative E	26,320	7

CONCLUSION

Documented sites or potential suitable habitat exists in the Trout-West project area for the following sensitive plants (Table 4). Determinations of impacts are noted.

Table 4: Summary of Sensitive Species and Determination Statements by Alternative

Species Name	Proposed Action	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
<i>Botrychium lineare</i> Narrow-lvd moonwort	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Botrychium echo</i> Reflected moonwort	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Botrychium pallidum</i> Pale moonwort	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Carex livida</i> Livid sedge	NI	NI	NI	NI	NI	NI
<i>Malaxis brachyopoda</i> Addersmouth	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Potentilla rupincola</i> Rock cinquefoil	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
<i>Viola selkirkii</i> Spurred violet	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH

NI = No Impact,

MIIH = May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the populations or species.

MANAGEMENT RECOMMENDATIONS

Recommended Mitigation

Field surveys in the project area are recommended to reduce the determination statements to “no impact” for all sensitive species. The alternatives with the least amount of temporary road building would have the least amount of impacts on unknown sensitive plant habitats (if surveys are not accomplished).

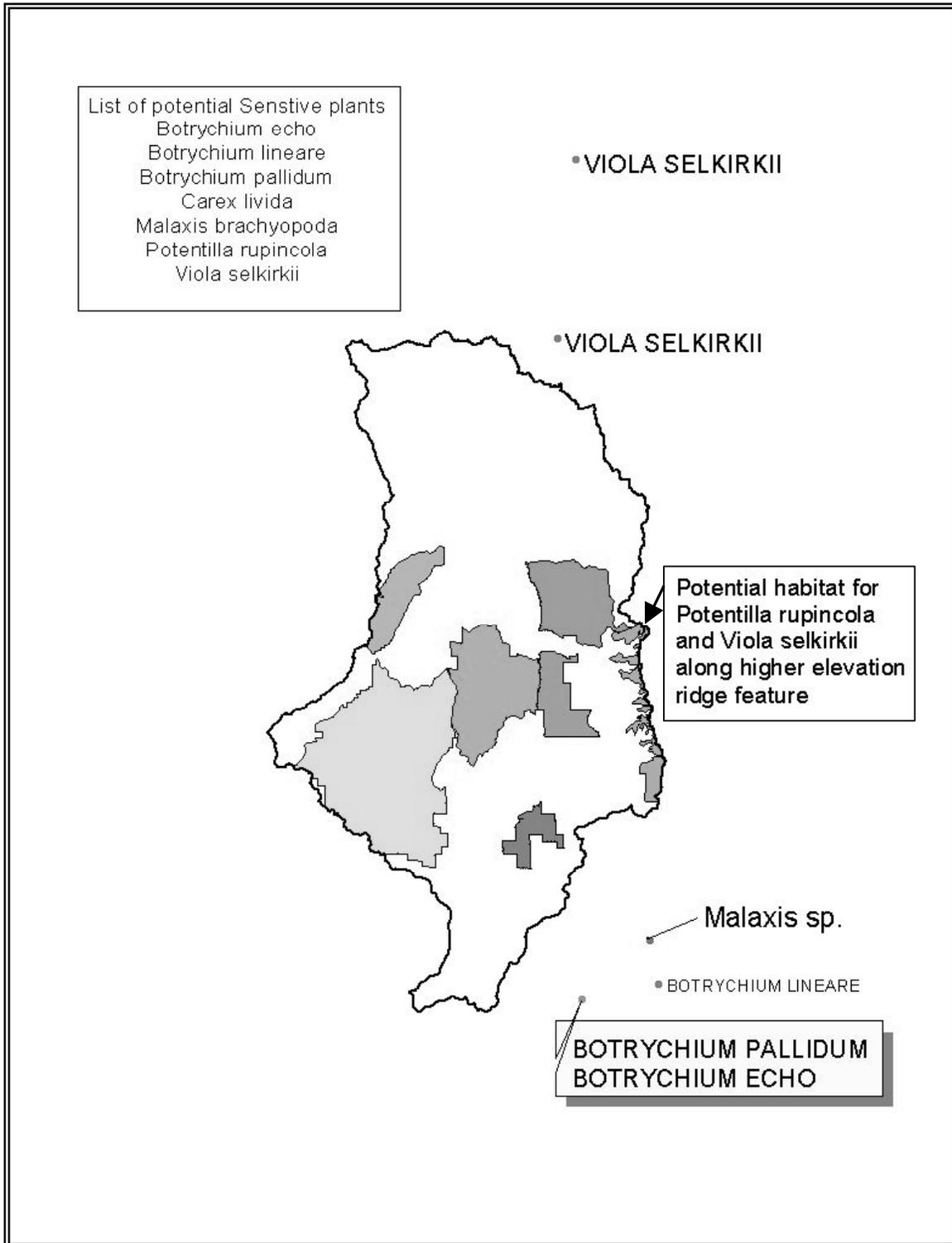
Recommended Monitoring

If sensitive plant populations are found during any field surveys or during project implementation, monitoring of those populations should be accomplished.

LITERATURE CONSULTED

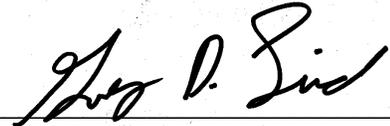
- Colorado Natural Heritage Program (CNHP). 2001. Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands Rare, Threatened, Endangered, and Sensitive Species GIS data. College of Natural Resources, Colorado State University, Ft Collins, CO.
- Foster Wheeler. 1999. Landscape Assessment of the Upper South Platte Watershed. Prepared for the US Forest Service, Pike San Isabel NF.
- Foster Wheeler. 2001. Upper South Platte Watershed Protection and Restoration Environmental Assessment. Prepared for the US Forest Service, Pike San Isabel NF.
- Ryke et al. 2002. Threatened, Endangered and Sensitive Species of the Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands. Unpublished document on file at the Pike-San Isabel National Forest.
http://fsweb.psicc.r2.fs.fed.us/wildlife/psicc_tes_list.htm
- Spackman, S., B. Jennings, J. Coles, C. Dawson, M. Minton, A. Kratz, and C. Spurrier. 1997. Colorado Rare Plant Field Guide. Prepared for the Bureau of Land Management, U.S. Forest Service and the U.S. Fish and Wildlife Service by the Colorado Natural Heritage Program. <http://ndis.nrel.colostate.edu/ndis/rareplants/cover.html>
- Tapia, Steve. 2001. Biological Evaluation for Sensitive Species. Pikes Peak Range Allotment Management Plans.

Figure 1: Distribution of Sensitive Plants Adjacent to the Trout-West Project Area



BIOLOGICAL ASSESSMENT
for
THREATENED, ENDANGERED, AND PROPOSED PLANTS (TEP)
TROUT-WEST PROJECT
Pike & San Isabel National Forests
South Platte Ranger District - Pikes Peak Ranger District
Douglas County - Teller County, Colorado
October 18, 2002

Prepared by: _____


Greg D. Lind, Botanist
USDA-FS Enterprise T.E.A.M.S.

/s/ Oct. 18, 2002
Date



SUMMARY ABSTRACT (Information From The Conclusion Section Of This Document)

No documented sites or potential suitable habitat exists in the **Trout-West** Project for the following plants listed as Threatened or Endangered, or Proposed (TEP) for listing by the USFWS (Table S-1). Determinations of effects are noted.

Table S-1: Summary of TEP Species and Determination Statements, by Alternative

Species Name	Proposed Action	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
<i>Spiranthes diluvalis</i>	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
<i>Eutrema edwardsii ssp. penlandii</i>	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect

Management Recommendations

Recommended Mitigation

No mitigation is needed or recommended, no changes to the project design are recommended.

Recommended Monitoring

No monitoring is recommended.

TABLE OF CONTENTS

INTRODUCTION.....	24
PROPOSED PROJECT DESCRIPTION.....	25
<i>Thinning</i>	25
<i>Removal of Cut Vegetation</i>	25
<i>On-Site Fuels Treatment</i>	26
<i>Burning Without Pre-Treatment</i>	26
<i>Summary of Activities by Alternative</i>	26
HABITAT ASSESSMENT.....	27
CONSULTATION HISTORY and PRE-FIELD REVIEW.....	28
FIELD RECONNAISSANCE.....	29
SPECIES INFORMATION.....	30
ANALYSIS OF EFFECTS.....	32
<i>Introduction</i>	32
Determination statements for TEP species are:.....	32
<i>Direct, Indirect, and Cumulative Effects</i>	32
Alternative #1 (No Action alternative).....	32
Alternative #2 (Proposed Action or Alternatives A-E).....	32
<i>Cumulative Effects</i>	33
CONCLUSION.....	33
Management Recommendations.....	33
Recommended Mitigation.....	33
Recommended Monitoring.....	33
LITERATURE CONSULTED.....	34

BIOLOGICAL ASSESSMENT
for
THREATENED, ENDANGERED, AND PROPOSED PLANTS (TEP)
TROUT-WEST PROJECT
Pike & San Isabel National Forests
South Platte Ranger District - Pikes Peak Ranger District
Douglas County - Teller County, Colorado
October 18, 2002

INTRODUCTION

Activities considered in the proposed Trout-West project environmental analysis require a Biological Assessment (BA) per Forest Service Manual direction (FSM 2672.2). The Biological Assessment is completed to ensure that proposed actions:

- 3.) do not adversely affect any Federally Listed or Proposed-listed species or their critical habitat.

Throughout this document, Threatened, Endangered, and Proposed species will be referred to as TEP.

The Forest Service current management objectives for TEP species are in Forest Service Manual (FSM 2670.32). The management objectives are as follows:

- Comply with the requirements of the Endangered Species Act that actions of Federal agencies not jeopardize or adversely modify critical habitat of Federally listed or proposed species.
- Provide a process and standard by which to ensure that threatened, endangered, proposed and sensitive⁵ species receive full consideration in the decision-making process.
- Ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native species or to a trend toward Federal listing.

Threatened, Endangered, and Proposed species (TEP) are defined as those species that have been formally proposed for listing, or have been listed by the U.S. Fish and Wildlife Service (USFWS).

The USFWS maintains the current Listed Threatened, Endangered, and Proposed list, and publishes that information in the Federal Register.

⁵ (Note: Plants that are Sensitive Species on the USFS Regional Forester Sensitive Species List are discussed in a separate document (Biological Evaluation [BE] for Sensitive Plant Species.)

PROPOSED PROJECT DESCRIPTION

The Pike-San Isabel National Forest Supervisor proposes to implement the National Fire Plan (US Forest Service, 2000) with the Trout-West Fuels Reduction Project. The Fire Plan identifies Woodland Park as a Wildland-urban interface community at risk from catastrophic wildfire. The proposed project is intended decrease the threat of wildfire to Woodland Park and surrounding subdivisions and communities, through reducing hazardous fuels within the wildland-urban interface. The potential effects of wildfire need to be moderated within the Trout-West area to provide for public safety and beneficial uses. The risk of adverse effects from wildfire is high (and increasing) within much of the Trout-West project area. The purpose of the Trout-West Fuels Reduction Project is to reduce the potential for damaging wildfires where high hazard, risk, and values overlap. *(The project purpose and need and location of the project area are described in detail in Chapter 1 of the NEPA environmental document.)*

Fuels reduction treatments are proposed on **6,750 to 26,320** acres (*acres treated vary by alternative*) within six treatment areas in the Trout and West Creek watersheds. Fuels reduction can take many forms: thinning and removal of cut vegetation, thinning and on-site slash treatment such as piling and burning, and burning without any thinning at all. The Proposed Action would implement a mix of these treatments depending on site conditions. The treatments are intended to moderate the potential adverse effects of wildfire, provide for firefighter and public safety, and reflect historic conditions that are thought to be more sustainable than current conditions.

Thinning

Under the Proposed Action, stands would be thinned down to 15 to 20 percent canopy closure. The larger, platy-barked ponderosa pine would be retained. Smaller pines, Douglas-fir, and trees infected with dwarf mistletoe would be removed. Trees would be retained in a mosaic and clumpy distribution, following current distribution patterns. Single story stand structures would be favored to maintain lower fuel hazard over longer periods of time. These stand structures were historically maintained by frequent fire. Stands that are already at or near the 15 to 20 percent canopy closure would be lightly thinned to minimize ladder fuels.

The intent of this project is to retain the oldest and largest trees. Most of the project area has been previously logged; however, older trees are found throughout. Concentrations of older trees and stands that potentially provide old growth habitat would be retained at higher canopy densities.

Removal of Cut Vegetation

Trees would be thinned and treated on site or removed from the site, depending on the environmental risks and economics of removing material. A variety of administrative tools may be used to implement the Proposed Action, including service contracts, fuel wood sales, stewardship partnerships, and timber sales. Whole tree yarding will be considered where appropriate to reduce fuels remaining on site.

Conventional logging methods using mechanical harvesters and tractors are proposed on slopes up to 20%. Removal of thinned trees on steeper slopes would require more advanced logging systems. Mitigation measures such as winter logging, helicopter or cable systems, staggered burning schedule, burn intensity restrictions, equipment restrictions, protection of skid trails, sub-soiling and grass-seeding, and restricted operation season would be applied to reduce the risk of adverse impacts associated with the proposed treatments.

The existing transportation system would be used to remove yarded material. Temporary roads and stream crossings may be utilized to access treatment areas; these would be rehabilitated following operations. No new permanent roads are proposed. Road improvement and realignment may occur where current conditions are adversely affecting water quality.

On-Site Fuels Treatment

Cut vegetation within some stands proposed for heavy or light thinning would be treated on site, rather than removed. Areas where yarding of vegetation is not economically or environmentally advisable may need considerable hand work to reduce hazardous fuels. Most stands proposed for heavy thinning would require post-thinning fuels treatment, even if some vegetation were yarded away. Slash created from thinning would be treated via hand or machine piling and pile burning, jackpot or under-burning, crushing, or lopping and scattering.

The Proposed Action would guide fire managers in selecting an appropriate fuel treatment method, but would allow for flexibility given site-specific fuel conditions, annual variation in weather, workforce availability, and timing of activities.

Burning Without Pre-Treatment

Some areas proposed for light thinning may be burned with little or no mechanical pre-treatment. Understory vegetation would be killed and ladder fuels reduced by jackpot or underburning.

Summary of Activities by Alternative

The following table displays approximate acreage proposed for treatment within the six treatment areas. These treatments would be implemented in the ten-year period following the NEPA decision, assuming funding under the National Fire Plan.

Table 1: Summary of Project Activities by Alternative

	No Action (NA)	Proposed Action (PA)	Alternative A <i>No Burning</i>	Alternative B <i>No Treat Beyond 1 mile of pvt land</i>	Alternative C <i>No new temporary roads</i>	Alternative D <i>No Treat Beyond ½ mile of pvt. land</i>	Alternative E <i>Historical Condition</i>
Total Acres Treated	0	20,170	19,220	13,570	20,170	6,750	26,320
Acres Tractor/Other	0	13,380	13,380	9,270	11,280	3,130	19,380
Acres Helicopter	0	3,890	3,890	2,900	6,090	3,020	5,690

Table 1: Summary of Project Activities by Alternative

	No Action (NA)	Proposed Action (PA)	Alternative A No Burning	Alternative B No Treat Beyond 1 mile of pvt land	Alternative C No new temporary roads	Alternative D No Treat Beyond ½ mile of pvt. land	Alternative E Historical Condition
Acres On-Site Treatment	0	950	0	300	950	0	1,250
Acres Light Thin	0	1,945	1,945	1,100	1,945	600	0
Miles System Road	0	68	68	50	68	36	68
Miles Existing Unclassified Road	0	48	48	31	48	13	48
Miles New Temporary Spur	0	14	14	12	0	0	14
Acres proposed for pile burning (not broadcast)	0	10,660	0	10,660	10,660	0	13,500
Acres proposed for pile and broadcast burning	0	6,600	0	0	6,600	3,840	9,410
Acres proposed for mechanical slash treat only	0	2,910	19,220	2,910	2,910	2,910	3,410
Acres Treated Outside 1 mile urban interface buffer	0	6,600	5,650	0	6,600	0	9,410

Additional details of the proposed Action alternative, other action alternatives, and alternative maps are found in Chapter 2 of the NEPA environmental document.

HABITAT ASSESSMENT

The Trout-West project area lies within the Southern Rocky Mountain geographic province. Vegetation types consist of three major forested types including ponderosa pine, Douglas-fir, and Engelmann spruce/Subalpine fir. Other vegetation types found in smaller amounts in the project area include lodgepole pine, aspen stands, shrubfields, grasslands, and meadows. In addition, there are areas of barren rock outcrops at higher elevations. Streams and riparian areas include Trout Creek, West Creek, Trail Creek, and many other smaller streams. A manmade lake (Manitou Park Lake) is found along Trout Creek close to the Manitou Experimental Forest area. Elevations range from 12,200 feet at Baldy Mountain to 6,660 feet where Trout Creek reaches the South Platte River. Most of the project treatment units are found above 7,500 feet elevation in the middle Trout Creek basin area. The area is framed by Trout Creek, in the center of the project area flowing north, and the higher elevation Rampart Ridge topographic feature forming the project boundary to the east. Trout Creek (mid-basin) is characterized by open grasslands and meadows interspersed with dry ponderosa pine stands. Numerous private land subdivisions are found in Trout Creek and Trail Creek. *Detailed information on the project area vegetation, geology, and soils is found in the project environmental document.*

CONSULTATION HISTORY AND PRE-FIELD REVIEW

The Regional Forester's TEP and Sensitive Plant list is derived through a cooperative effort with USFWS and State Natural Heritage Programs (Colorado Natural Heritage Program). The complete Regional Forester's TEP and Sensitive Plant List is on file at the Pike & San Isabel National Forests. Table 2 displays the complete list of TEP plant species for the Pike San Isabel National Forest and Grasslands. Those species that are documented to occur or having the potential to occur in the project area are noted and will be discussed in environmental effects section of this biological assessment. *(The complete list of FS Sensitive plants for the PSI NF is presented in the project Biological Evaluation document.)*

Table 2: Pike-San Isabel National Forest TEP plants (version Jan. 2002)

USFWS Listed Plant Species	Distribution and Habitat ¹	In project area? ²
<i>Spiranthes diluvialis</i> Ute ladies'-tresses <i>USFWS Listed Threatened</i>	Distribution includes Jefferson County, the perennial tributaries, and 100-year flood plain of Fountain Creek (to southern boundary of El Paso County). It is also found along the South Platte River drainage from the Front Range and eastern plains. This orchid grows in seasonally moist soils & wet meadows near springs, lakes or perennial streams & their associated floodplains from 4500-6800 ft. Typical sites include old stream channels, abandoned meanders, alluvial terraces, sub-irrigated meadows & other sites where soils are saturated, at least temporarily, to within 18" of the surface during the spring/summer growing season. Flowering July-September.	NO Elevations in project area are above 6800 feet
<i>Eutrema penlandii</i> Penland eutrema <i>USFWS Listed Threatened</i>	Endemic to central Colorado in Park and Summit Counties, it is known to occur on the leeward side of the crest of the Mosquito Range, from Hoosier Pass to Mt. Sherman. It grows down slope from persistent snowfields that provide moisture all summer; alpine tundra or bogs where it is rooted in mossy bogs that are wet year-round with a constant source of flowing water. Elevations range from 12,000-12,800 ft. Flowering late June-early July; fruiting July-August. Elevations from 12,000 - 12,800 feet.	NO Project activities will occur at lower elevations

¹ *Habitat info source is: Ryke et al. 2002. Threatened, Endangered and Sensitive Species of the Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands.*

² *Documented = documented site within project area. Potential = potential habitat in project area, but no documented sites are known from project area.*

The following sources of information were used to determine the TEP plant species that occur or may occur in the project area:

- Ryke et al. 2002. Threatened, Endangered and Sensitive Species of the Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands.
- Tapia, Steve. 2001. Pikes Peak Range Allotment Management Plans, Biological Evaluation for Sensitive Species.
- Foster Wheeler. 1999. Landscape Assessment of the Upper South Platte Watershed. Prepared for the US Forest Service, Pike San Isabel NF.
- Foster Wheeler. 2001. Upper South Platte Watershed Protection and Restoration Environmental Assessment. Prepared for the US Forest Service, Pike San Isabel NF.
- Colorado Natural Heritage Program database (CNHP). 2001. Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands Rare, Threatened, Endangered and Sensitive Species overlays and accompanying reports. College of Natural Resources, Colorado State University, Ft Collins, CO.
- Spackman, et al. 1997. Colorado Rare Plant Field Guide.

- US Fish and Wildlife Service. Federally Listed and Candidate Species and Their Status in Colorado.

In addition, information on previous field surveys or other biologists' professional knowledge of the area for TEP plants was sought out and considered.

FIELD RECONNAISSANCE

No intensive field surveys were conducted for this specific project for TEP plants, as no potential habitat is known from the project area. However, a field check visit to the project area was accomplished (*G. Lind, July 9-12 2001*). The intent of the field check was to become familiar with the project area, vegetation types, and discuss the potential for rare plants with the District biologist. Additionally, a field trip was made to an area outside of the project area (Pike Peak Road) to observe a documented site for *Botrychium lineare*, a USFWS Candidate⁶ species of grapefern documented in the Pikes Peak vicinity. (*Botrychium lineare is discussed in the Biological Evaluation document for FS Sensitive Species.*) Previous field surveys for other related projects include rare plant surveys on several livestock allotments in the project area. Those surveys occurred in 1999 and 2000 and were accomplished for a livestock grazing Environmental Assessment⁷.

⁶ FWS "Candidate" species are not formally Listed as Threatened or Endangered. FWS Candidate species are tracked by the USFS Regional Forester's Sensitive Species List.

⁷ USDA-Forest Service. 2001. Pikes Peak Range Allotment Management Plans, Biological Evaluation for Sensitive Species. Steve Tapia, District Biologist.

SPECIES INFORMATION

Spiranthes diluvialis (*Ute ladies' -tresses*)
USFWS Listed Threatened

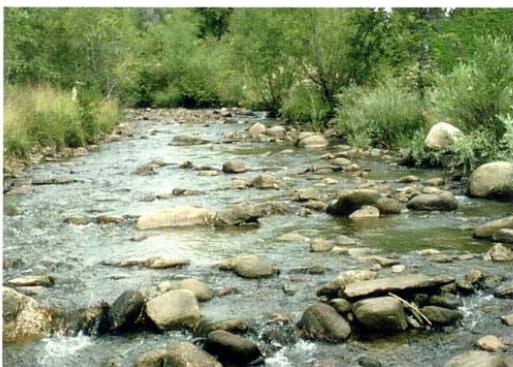


Closeup of *Spiranthes diluvialis* by R. Brune

Source: Colorado Natural Heritage
Program, Rare Plant Field Guide
Photo copyright by R. Brune

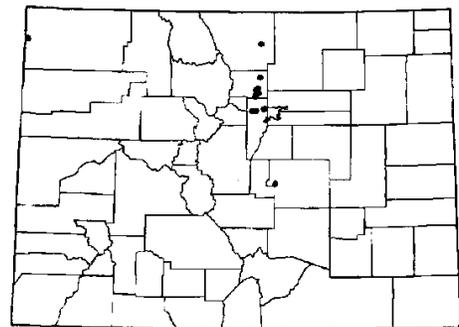
Distribution includes Jefferson County, the perennial tributaries, and 100-year flood plain of Fountain Creek (to southern boundary of El Paso County). It is also found along the South Platte River drainage from the Front Range and eastern plains. This orchid grows in seasonally moist soils and wet meadows near springs, lakes, or perennial streams and their associated floodplains from 4500 to 6800 ft. Typical sites include old stream channels, abandoned meanders, alluvial terraces, sub-irrigated meadows, and other sites where soils are saturated, at least temporarily, to within 18" of the surface during the spring/summer growing season. Flowering July-September.

No sites are known for the Trout-West project area; however, documented sites are known to the north of the project area on the South Platte River and to the southeast of the project area in El Paso County. Elevations in the project area specific treatment areas are higher (> 7,500 ft) than the known potential habitat elevation range. Therefore, this species is unlikely to occur in the project area that would be affected by the specific alternative activities



Habitat of *Spiranthes diluvialis* by R. Brune

Typical habitat for *Spiranthes diluvialis*
Source: Colorado Natural Heritage Program,
Rare Plant Field Guide
Photo Copyright by R. Brune



Range Map in Colorado for *Spiranthes diluvialis*
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

***Eutrema edwardsii* ssp. *penlandii* (Penland Alpine Fen Mustard)**
USFWS Listed Threatened



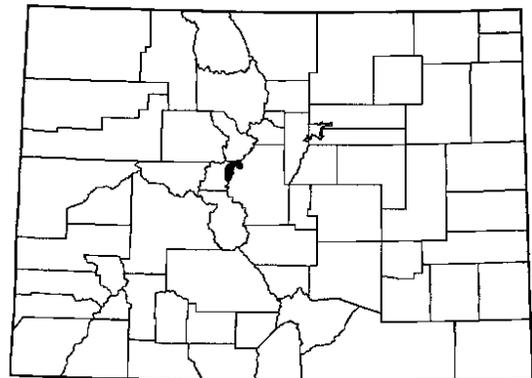
Source: Colorado Natural Heritage Program,
Rare Plant Field Guide
Photo Copyright © 1999 by B. Jennings

Endemic to central Colorado in Park and Summit counties, it is known to occur on the leeward side of the crest of the Mosquito Range, from Hoosier Pass to Mt. Sherman. It grows down slope from persistent snowfields that provide moisture all summer; alpine tundra or bogs where it is rooted in mossy bogs that are wet year-round with a constant source of flowing water. Elevations range from 12,000-12,800 ft. Flowering late June-early July; fruiting July-August. Elevations from 12,000 - 12,800 feet.

There are no known sites in the Trout-West project area; however, known populations are found to the northwest in Park County. Those sites are found at high elevations, and there is no potential habitat within the project area at those elevations; no proposed project activities would impact any potential habitat for this species.



Typical habitat for *Eutrema edwardsii* ssp. *penlandii*
Source: Colorado Natural Heritage Program,
Rare Plant Field Guide
Photo Copyright © 1999 by B. Jennings



Range Map in Colorado for *Eutrema edwardsii* ssp. *penlandii*
Source: Colorado Natural Heritage Program, Rare Plant Field Guide

ANALYSIS OF EFFECTS

Introduction

The environmental consequences section will focus on any effects on the TEP plant resource by implementation of the activities proposed in the Trout-West project area. Effects can be direct, indirect or cumulative.

1. Direct effects occur at the same time and place as the proposed action. Road building activities in Listed plant habitat would be an example of direct effects.
2. Indirect effects occur at a later time or in a different area from the proposed action. Increased recreational vehicle use off-trail would be an indirect effect of building a new road.
3. Cumulative effects result from the combined impacts of past actions, the proposed action, other present ongoing actions, and any reasonably foreseeable actions.

After evaluating the potential for effect, a determination statement (finding) is used to describe the impacts on the TEP plant resource.

Determination statements for TEP species are:

- No Effect:--(where no effect is expected).
- Not Likely to adversely affect:--(where effects are expected to be beneficial, insignificant, or discountable).
- Likely to adversely affect:--(where effects are expected to be adverse or detrimental).

Direct, Indirect, and Cumulative Effects

Alternative #1 (No Action alternative)

No adverse direct, indirect or cumulative effects would occur on any TEP plant species from the No Action alternative. No ground-disturbing activities would occur. Existing and ongoing uses of the project area would still occur.

Alternative #2 (Proposed Action or Alternatives A-E)

There is not potential habitat for any TEP plant species in the specific project treatment units. No known sites are documented for any TEP plants within the project area and no potential habitat would be affected for any TEP plant species.

Therefore, a determination of: No Effect for *Spiranthes diluvialis* and *Eutrema edwardsii ssp. Penlandii* is warranted.

Cumulative Effects

There would be no direct or indirect effects from this project; therefore, there would be no cumulative effects on any TEP plant species.

CONCLUSION

No documented sites or potential suitable habitat exists in the Trout-West project area for the following plants listed as Threatened or Endangered, or Proposed (TEP) for listing by the USFWS. Determinations of effects are noted.

Table 3: Summary of TEP Species and Determination Statements by Alternative

Species Name	Proposed Action	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
<i>Spiranthes diluvalis</i>	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
<i>Eutrema edwardsii ssp. penlandii</i>	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect

MANAGEMENT RECOMMENDATIONS

Recommended Mitigation

No mitigation is needed or recommended, no changes to the project design are recommended.

Recommended Monitoring

No monitoring is recommended.

LITERATURE CONSULTED

- Colorado Natural Heritage Program (CNHP). 2001. Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands Rare, Threatened, Endangered, and Sensitive Species GIS data. College of Natural Resources, Colorado State University, Ft Collins, CO.
- Foster Wheeler. 1999. Landscape Assessment of the Upper South Platte Watershed. Prepared for the US Forest Service, Pike San Isabel NF.
- Foster Wheeler. 2001. Upper South Platte Watershed Protection and Restoration Environmental Assessment. Prepared for the US Forest Service, Pike San Isabel NF.
- Ryke et al. 2002. Threatened, Endangered and Sensitive Species of the Pike & San Isabel National Forests and Cimarron & Comanche National Grasslands. Unpublished document on file at the Pike-San Isabel National Forest. http://fswweb.psicc.r2.fs.fed.us/wildlife/psicc_tes_list.htm
- Spackman, S., B. Jennings, J. Coles, C. Dawson, M. Minton, A. Kratz, and C. Spurrier. 1997. Colorado Rare Plant Field Guide. Prepared for the Bureau of Land Management, U.S. Forest Service and the U.S. Fish and Wildlife Service by the Colorado Natural Heritage Program. <http://ndis.nrel.colostate.edu/ndis/rareplants/cover.html>
- Tapia, Steve. 2001. Biological Evaluation for Sensitive Species. Pikes Peak Range Allotment Management Plans.