

THREATENED AND SENSITIVE PLANTS

Introduction

The Endangered Species Act (ESA) 1973, as amended (16 U.S.C. 1536(c), 50 CFR 402), requires that the Forest Service conserve endangered and threatened species. The National Forest Management Act (NFMA) and Forest Service policy direct that National Forest System (NFS) lands be managed to maintain populations of all existing native plant and animal species at or above minimum population levels. A minimum viable population consists of the number of individuals adequately distributed throughout their range necessary to perpetuate the existence of the species in natural, genetically stable, self-sustaining populations.

In addition to plants protected under the ESA, the Forest Service identifies plant species for which population viability is a concern as “sensitive species” as designated by the Regional Forester (36 CFR 2670.44). Currently, 53 plant species are designated as sensitive on the Regional Forester’s sensitive plant list for the Flathead National Forest (FNF) and seven additional species are proposed for the 2004 sensitive species revision. Forest Service policy requires that activities conducted on NFS lands be reviewed for possible impacts to threatened, endangered, or sensitive (TES) species (36 CFR 2670.32). The Forest Service has no jurisdiction to protect habitat of sensitive plant species on private lands.

Many plant surveys have been conducted in the South Fork Flathead drainage. There are no known occurrences of the federally threatened water howellia (*Howellia aquatilis*) or Spalding’s catchfly (*Silene spaldingii*) within the affected action area. In addition, no Regional Forester’s sensitive plants are currently known to occur within the burn perimeter of the West-Side Post-Fire project area. Seven Regional Forester’s sensitive plants are known to occur within 5 miles of the action area: Sitka Club-moss (*Diphasiastrum sitchense*), great sundew (*Drosera anglica*), spreading monkeyflower (*Mimulus patulus subsp. montanus*), slender cottongrass (*Eriophorum gracile*), Adder's tongue (*Ophioglossum pusillum*), *Potentilla quinquefolia* (*Potentilla quinquefolia*), and pod grass (*Scheuchzeria palustris*). In addition one proposed plant for the 2004 Regional Forester’s list revision, Short-flowered monkeyflower (*Mimulus brevisflorus*), occurs within five miles of the action area.

Information Sources

Data sources used for this analysis includes the Montana Natural Heritage Program’s Element Occurrence Database; the FNF Threatened, Endangered, and Sensitive Species (TES) Survey Atlas; and the FNF TES Plant Location Database. All other sources of information are cited in the text. Prior to implementing any action alternative, ground surveys would be conducted to determine the existence of any TES species.

Analysis Area

The analysis area used to examine the impacts of the proposed action and its alternatives on sensitive plants is the same as described for vegetation in the previous section.

Affected Environment

Threatened and Endangered Plant Species

There are currently no federally listed endangered plant species in Montana. Two threatened plant species, water howellia (*Howellia aquatilis*) and Spalding's catchfly (*Silene spaldingii*), do occur in Montana and have been identified by the U.S. Fish and Wildlife Service as having potential to occur within the FNF.

Water howellia (*Howellia aquatilis*)

Status and Threats

Water howellia occurrences are distributed throughout the Pacific Northwest in scattered clumps across Montana, Idaho, Washington, and California. There are 130 known occurrences known to Montana, all in the Swan Valley (Table 3-25). Water howellia habitat has been subject to various management activities including dredging, draining, road construction, logging, and grazing (Shelly 1988, USDA 1997). Reed canarygrass (*Phalaris arundinacea*), an introduced species, also threatens populations across its range (Lesica 1997b). The National Heritage Program Network has ranked this species as G2, meaning that it is globally imperiled because of rarity, or because of other factors demonstrably making it very vulnerable to extinction throughout its range. The Montana Natural Heritage Program has ranked the species similarly for the state as S2 (MNHP 2003). Water howellia is currently listed as threatened by the USFWS.

Associated Plant Community

Water howellia is an aquatic plant restricted to small pothole ponds, or oxbows, long since isolated from the flowing surface waters of the adjacent river. These wetland habitats are generally shallow (~1 m deep), but the species has occasionally been observed in water up to approximately 2 m in depth. The ponds typically occur in a matrix of dense forest vegetation, and are nearly always surrounded in part by a small ring of deciduous vegetation. The bottom surfaces of the wetlands usually consist of firm consolidated silts and clays overlain by 0-24 inches of organic sediments. These ponds are generally filled by snowmelt run-off and spring rains, later drying out to varying degrees by the end of the growing season, depending on annual patterns of temperature and precipitation. Water howellia occurs between elevations of 3m (10 feet) in Washington to 1372m (4500 feet) in Montana. All Montana occurrences lie

between 945m (3100 feet) and 1372m (4500 feet), and are found only in the Swan River Valley from just south of the community of Swan Lake, south to the Clearwater/Swan divide.

Table 3-25. Element occurrence by ownership of water howellia (*Howellia aquatilis*).

State	County	Ownership	Number of Occurrences
Montana 130 total	Lake/Missoula	Forest Service	73*
		Forest Service/Plum Creek Timber Co.**	7
		Forest Service/Nature Conservancy**	1
		Forest Service/Private**	2
		Forest Service/ State of Montana**	1
		Plum Creek Timber Co.	27
		State of Montana	1
		State of Montana/ Plum Creek Timber Co.**	1
		Private	14
Plum Creek Timber Co./Private**	3		
Idaho 1 total	Latah	Private	1
Washington 73 total	Clark Pierce Spokane	U.S. Fish and Wildlife Service	4
		U.S. Department of Defense	18
		U.S. Fish and Wildlife Service	37
		Department of Natural Resources	1
		Bureau of Land Management	1
		Private	12
California 7 total	Mendocino	Forest Service	7
		Total	211

* Flathead National Forest occurrences updated 6 March 2004 by Linh Davis, Flathead National Forest Botanist; all other occurrences last updated by Maria Mantas (The Nature Conservancy), May 2001.

** Occupied wetland crosses ownership boundary.

Associated Plant Community

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In Montana, most water howellia occurrences are in glacially-formed ponds surrounded by diverse coniferous forests. These forests are of mixed composition with various coverage of

the following tree species: grand fir (*Abies grandis*), subalpine fir (*Abies bifolia* {*A. lasiocarpa*}), western larch (*Larix occidentalis*), Englemann spruce (*Picea engelmannii*), lodgepole pine (*Pinus contorta*), white pine (*Pinus monticola*), ponderosa pine (*Pinus ponderosa*), and Douglas fir (*Pseudotsuga menziesii*). Black cottonwood (*Populus trichocarpa*) is the most frequently associated broadleaf deciduous tree at pond margins. Quaking aspen (*Populus tremuloides*) is also a common associate. In the northern end of the Swan Valley, *Betula papyrifera* is found near some pond margins. Shrub species bordering the ponds include: *Alnus incana*, *Cornus stolonifera*, *Juniperus communis*, *Rhamnus alnifolia*, but most commonly, *Salix bebbiana*. Aquatic herbaceous species commonly associated with *H. aquatilis* are *Carex vesicaria*, *Callitriche heterophylla*, *Equisetum fluviatile*, *Potamogeton gramineus*, *Ranunculus aquatilis*, *Sium suave*, and *Sparganium minimum*.

Surveys and Occurrences

The USFWS has identified all areas below 5000 feet on the FNF within the range of water howellia. Consequently, all areas above that elevation are outside the range of the species. Therefore, all areas above 5000 feet in the project area will no longer be addressed in this EIS with regards to current status of and effects to water howellia.

On the FNF, water howellia is only known to occur within the Swan Valley, over 10 miles from the southern boundary of the West-Side Post-Fire project area.

Aerial photo interpretation was conducted for the entire project area to locate potential sites for water howellia. Potential habitat can be detected on aerial photos, as aquatic potholes ponds are easily discernable. No suitable habitats were located.

Spalding's Catchfly (*Silene spaldingii*)

Status and Threats

Spalding's catchfly is a Palouse Prairie endemic that is currently known from 52 populations across its range in Montana, Idaho, Oregon, Washington, and British Columbia. This species has suffered considerable habitat loss and fragmentation due to agricultural and urban development, grazing, herbicide treatment, and exotic weed invasion (Schassberger 1988, Lichthardt 1997). The National Heritage Program Network has ranked this species as G2, meaning that it is globally imperiled because of rarity, or because of other factors contributing to its vulnerability to extinction throughout its range. The MNHP has ranked the species as S1, meaning that it is critically imperiled in Montana because of extreme rarity, or because some factor of its biology makes it especially vulnerable to extinction (MNHP 2003). Spalding's catchfly is currently listed as threatened by the U.S. Fish and Wildlife Service.

Nine occurrences are known from Montana, all in grassland plant communities located in the northwestern portion of the state. Numbers of individuals at these nine occurrences are very low. The population at the Nature Conservancy's Dancing Prairie Preserve in the Tobacco Valley is believed to be the largest remaining population of this species in the world, with thousands of plants. However, all other Montana locations have less than 150 plants each;

with some occurrences only have a few plants. No populations are known from the FNF, yet there are several nearby occurrences, including a historic location in the vicinity of Columbia Falls (17 miles north of the action area). This occurrence was recorded from a herbarium specimen dated 1894. A search was conducted in the area, but the plants have not been relocated since the original report (Schassberger 1988). It is likely that the valley floor grassland where this collection was made has been converted to agriculture or developed. Four other occurrences are between 10 and 15 air miles from FNF lands.

Associated Plant Community

Although extremely scarce, plant communities that are suitable habitat for Spalding’s catchfly in Montana do occur on the FNF. These are grasslands dominated by rough fescue (*Festuca scabrella*), bluebunch wheatgrass (*Elymus spicatus* or *Agropyron spicatum*), and/or Idaho fescue (*Festuca idahoensis*). These grasslands may have scattered ponderosa pine (*Pinus ponderosa*) trees forming an open canopy. Although there are numerous mountain grasslands on the FNF with similar species composition it appears that Spalding’s catchfly prefers mesic sites within a matrix of drier grassland communities in the foothill and valley floor zones.

On the FNF, small isolated suitable habitats exist along the North Fork of the Flathead River floodplain from the Canadian border to Polebridge, in very small isolated grasslands in the Swan Valley, and in larger open fescue bunchgrass prairies in the upper South Fork Flathead and Danaher Creek Drainages within the Bob Marshall Wilderness. There may be suitable grasslands in the Hog Heaven Range of the Swan Island Unit and on the south slopes near Ashley Lake as well. None of these areas are specifically mapped; however, they would not comprise more than 1% of the land base of the FNF.

Surveys and Occurrences

There are no known occurrences of Spalding’s catchfly within the affected action area or within the Flathead National Forest, based on MNHP database and FNF sensitive plants database.

Table 3-26. Surveys conducted along North Fork of the Flathead River floodplain from the Canadian border to Polebridge and at Danaher, Horse, and Bar Creek Meadows within the Bob Marshall Wilderness for *Silene spaldingii*.

Spotted Bear Ranger District (Bob Marshall Wilderness)			Glacier View Ranger District
Danaher Meadows	Horse Hill Meadow	Bar Creek Meadow	North Fork Flathead River
127-00-01	127-00-03	127-00-05	3-00-01
127-00-02	127A-00-2	127A-00-01	3-00-02
127-00-06	127-00-04		3-00-03
127-00-07			7-00-02
127-00-08			12-00-01
127-00-09			

In 2000, aerial photos of the entire Flathead National Forest were reviewed to locate large expanses of grassland with potential habitat for Spalding’s catchfly. Grassland openings were delineated from aerial photos in areas along the North Fork of the Flathead River floodplain from the Canadian border to Polebridge and at Danaher, Horse Hill, and Bar Creek Meadows within the Bob Marshall Wilderness. All delineated grassland areas were surveyed specifically looking for Spalding’s catchfly in 2000. No plants were found (preceding Table). These grassland habitats were determined to be unsuitable for Spalding’s catchfly. None of these delineated grassland areas of potential habitat are within the action area or within the vicinity or the action area. Based on the aerial photo interpretation conducted in 2000, there are no areas of potential habitat for Spalding’s catchfly within the West-Side Reservoir Post-Fire project area.

Regional Forester’s Sensitive Plants

Known Occurrences

There are 53 recognized Regional Forester’s sensitive plants for the FNF (USDA Forest Service 1999) and seven proposed sensitive plant species for the 2004 Regional Forester’s revision list (Table 3-27). The MNHP database and FNF occurrences databases were queried to determine known occurrences within the West-Side Post-Fire action area. No Regional Forester’s sensitive plants (hereafter referred as sensitive plants) are currently known to occur within the burn perimeter of the West-Side Post-Fire project area. Seven Regional Forester’s sensitive plants are known to occur within 5 miles of the action area: Sitka Club-moss (*Diphasiastrum sitchense*), great sundew (*Drosera anglica*), spreading monkeyflower (*Mimulus patulus* subsp. *montanus*) slender cottongrass (*Eriophorum gracile*), Adder's tongue (*Ophioglossum pusillum*), *Potentilla quinquefolia* (*Potentilla quinquefolia*), and pod grass (*Scheuchzeria palustris*). In addition one proposed plant for the 2004 Regional Forester’s list revision, Short-flowered monkeyflower (*Mimulus breviflorus*), occurs within five miles of the action area (Table 3-28).

Table 3-27. Regional Forester’s sensitive plant species occurring or potentially occurring Flathead National Forest.

Scientific name	Common name	Global Status*	State Status*	Documented Occurrence in General Area	Documented Occurrence in Project Area
<i>Amerorchis rotundifolia</i>	round-leaved orchis	G5	S2S3	N	N
<i>Astragalus lackschewitzii</i>	leadville milkvetch	G2	S2	N	N
<i>Bidens beckii</i>	water marigold	G4	SU	N	N
<i>Botrychium ascendens</i>	upward-lobed moonwort	G3	S1	N	N
<i>Botrychium crenulatum</i>	wavy moonwort	G3	S2	N	N
<i>Botrychium hesperium</i>	western moonwort	G3	S2	N	N
<i>Botrychium montanum</i>	mountain moonwort	G3	S3	N	N
<i>Botrychium paradoxum</i>	peculiar moonwort	G3	S2	N	N
<i>Brasenia schreberi</i>	water-shield	G5	S2	N	N
<i>Carex chordorrhiza</i>	creeping sedge	G5	S2	N	N
<i>Carex livida</i>	pale sedge	G5	S3	N	N
<i>Carex paupercula</i>	poor sedge	G5	NA	N	N

Scientific name	Common name	Global Status*	State Status*	Documented Occurrence in General Area	Documented Occurrence in Project Area
<i>Carex rostrata</i>	beaked sedge	G5	S1	N	N
<i>Cetraria subalpina</i>	Iceland moss lichen	G3?	S2	N	N
<i>Collema curtisporum</i>	short-spored jelly lichen	G3	S2	N	N
<i>Corydalis sempervirens</i>	pink corydalis	G4G5	S1	N	N
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	G4	S2	N	N
<i>Cypripedium parviflorum</i>	yellow lady's-slipper	G5	S3	N	N
<i>Cypripedium passerinum</i>	sparrow's egg lady's-slipper	G4G5	S2	N	N
<i>Diphasiastrum sitchense</i>	Sitka club-moss	G5	S3	Y	N
<i>Drosera anglica</i>	great sundew	G5	S2	Y	N
<i>Drosera linearis</i>	linear-leaved sundew	G4	S1	N	N
<i>Dryopteris cristata</i>	buckler fern	G5	S2	N	N
<i>Eleocharis rostellata</i>	beaked spikerush	G5	S2	N	N
<i>Epipactis gigantea</i>	giant hellebore	G4	S2	N	N
<i>Erigeron lackschewitzii</i>	Front Mountain erigeron	G3	S3	N	N
<i>Eriophorum gracile</i>	slender cottongrass	G5	S2	Y	N
<i>Grimmia brittoniae</i>	cushion moss	G1	S1	N	N
<i>Grindelia howellii</i>	Howell's gumweed	G3	S2S3	N	N
<i>Heteranthera dubia</i>	water star-grass	G5	S1	N	N
<i>Idahoia scapigera</i>	scalepod	G5	S1	N	N
<i>Kalmia polifolia</i>	pale laurel	G5	S1	N	N
<i>Lathyrus bijugatus</i>	pine woods peavine	G4	S1	N	N
<i>Liparis loeselii</i>	fen orchid	G5	S1	N	N
<i>Lycopodiella inundata</i>	northern bog clubmoss	G5	S1	N	N
<i>Lycopodium dendroideum</i>	prickly-tree clubmoss	G5	S1	N	N
<i>Meesia triquetra</i>	three-angled thread moss	G5	S2	N	N
<i>Mimulus patulus</i> subsp. <i>montanus</i>	spreading monkeyflower	G2Q	S1	Y	N
<i>Ophioglossum pusillum</i>	adder's tongue	G5	S2	Y	N
<i>Oxytropis campestris</i> var. <i>columbiana</i>	Columbia crazyweed	G5T3	S1	N	N
<i>Oxytropis podocarpa</i>	stalked-pod crazyweed	G4	S1	N	N
<i>Petasites fragilis</i> var. <i>navalis</i>	sweet coltsfoot	G5T?	S1	N	N
<i>Phegopteris connectilis</i>	northern beechfern	G5	S2	N	N
<i>Polygonum douglasii</i> ssp. <i>austinae</i>	Austin's knotweed	G5T4	S2S3	N	N
<i>Potamogeton obtusifolius</i>	blunt-leaved pondweed	G5	S2	N	N
<i>Potentilla quinquefolia</i>	snow cinquefoil	G5T4	S2	Y	N
<i>Salix barrattiana</i>	Barratt's willow	G5	S1	N	N
<i>Scheuchzeria palustris</i>	pod grass	G5	S2	Y	N
<i>Scirpus cespitosus</i>	tufted clubrush	G5	S2	N	N
<i>Scirpus subterminalis</i>	water bulrush	G4G5	S2	N	N
<i>Scorpidium scorpioides</i>	scorpion feather moss	G4G5	S2	N	N
<i>Utricularia intermedia</i>	mountain bladderwort	G5	S1	N	N
<i>Viola renifolia</i>	kidney-leaf white violet	G5	NA	N	N

(Table 3-27 continued)

Proposed for additions to 2004 Regional Forester's sensitive list					
<i>Botrychium pedunculatum</i>	stalked moonwort	G3	S1	N	N
<i>Carex lacustris</i>	lake-bank sedge	G5	S1	N	N
<i>Heterocodon rariflorum</i>	western pearl-flower	G5	S1	N	N
<i>Castilleja cervina</i>	deer indian paintbrush	G4	S1	N	N
<i>Mimulus brevisflorus</i>	short-flowered monkeyflower	G4	S1	Y	N
<i>Rhizomnium nudum</i>	naked mniium	G5	S?	N	N
<i>Viola selkirkii</i>	great-spurred violet	G5?	S1	N	N

* Explanation of 'global' and 'state' codes in preceding table.

G1 S1	Critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction.
G2 S2	Imperiled because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extinction.
G3 S3	Either very rare and local, or found locally (even abundantly at some of its locations) in a restricted range, or vulnerable to extinction throughout its range because of other factors; in the range of 21 to 100 occurrences.
G4 S4	Apparently secure, though it may be quite rare in parts of its range, especially at the periphery.
G5 S5	Demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery.
GU SU	Possibly in peril, put status uncertain; more information needed. This is the rank assigned all species on the list of plants of undetermined status and small number of plants being tracked under select circumstances.
GH SH	Historically known only from records before 1940; may be rediscovered.
GX SX	Believed to be extinct; known only from records at sites where systematic relocation efforts have been unsuccessful. Note: There are no Montana plant species assigned the GX or SX rank at present.
Other codes:	
Q	Taxonomic questions or problems involved, more information needed;
T	Rank for a subspecific taxon (subspecies or variety); appended to global rank for the full species.

Table 3-28. Regional Forester's sensitive plants known occurrences near West-Side Post-Fire action area.

Species	Common Name	EO# ^a
<i>Diphasiastrum sitchense</i>	Sitka club-moss	03, unknown
<i>Drosera anglica</i>	great sundew	01
<i>Mimulus brevisflorus</i>	short-flowered monkeyflower	00
<i>Mimulus patulus</i> subsp. <i>montanus</i>	spreading monkeyflower	00, 00
<i>Eriophorum gracile</i>	slender cottongrass	04
<i>Ophioglossum pusillum</i>	adder's tongue	13
<i>Potentilla quinquefolia</i>	snow cinquefoil	01
<i>Scheuchzeria palustris</i>	pod grass	12

^a EO = Element Occurrence numbers as assigned by the Montana Natural Heritage Program. ^b Currently no number assigned

Species Accounts of known occurrences within 5-mile buffer of action area

Sitka club-moss (*Diphasiastrum sitchense*) is a perennial club-moss known from Greenland, across the Canadian Provinces, Alaska, Idaho, Maine, Montana, New Hampshire, New York, Oregon, Vermont, Washington, and Japan. There are 6 occurrences on the FNF. The Montana Natural Heritage Database no longer tracks this species as rare or sensitive. Plants are found in alpine meadows, open rocky barrens, and coniferous woods between 1870 to 2134 meters (5400 to 7000 feet).

Great sundew (*Drosera anglica*) is a carnivorous, herbaceous perennial. It is known from Alaska to California and Nevada, east to Idaho, Montana, Great Lake region, and eastern Canada (also in Eurasia). The Montana Natural Heritage Database reports 26 records in Montana with 6 occurrences on the FNF. Plants are restricted to peatlands (fens) and are found in valleys and mid-elevations in the mountains from 945 to 2750 meters (3100 to 9000 feet). Plants flower in July with fruit maturing from July to August.

Slender cottongrass (*Eriophorum gracile*) is a grass-like perennial. It has a circumboreal distribution extending south to Pennsylvania, Iowa, Colorado, Idaho, western Montana, and central California. The Montana Natural Heritage reports 20 records in Montana with 5 occurrences on the FNF. Plants flower from June through August and are found in wet, organic soils of fens in the valley and montane zone between 940 to 2300 meters (3080 to 7060 feet).

Short-flowered monkeyflower (*Mimulus breviflorus*) is a glandular herbaceous annual. In the United States it is known from Washington, Oregon, Idaho, Wyoming, California, Montana, and Massachusetts. The Montana Natural Heritage reports one occurrence in Montana (Glacier National Park) with no occurrences on the FNF. Plants flower from May through early June, occurring in shallow, vernal moist soil among rock outcrops in coniferous forests or grasslands in the montane zone.

Spreading monkeyflower (*Mimulus patulus subsp. montanus*) is an herbaceous annual distributed in and east of the Rocky Mountains, from Idaho and Montana, south to northwest Wyoming. The Montana Natural Heritage reports 2 records in Montana with one occurrence on the FNF. Plants flower from June through early July and are found in rocky and open seeps of montane valleys around 1280 meters (4200 feet).

Adder's tongue (*Ophioglossum pusillum*)

Adder's tongue an herbaceous perennial known from British Columbia to Nova Scotia, Massachusetts and New Hampshire, south to Ohio, Nebraska, and Montana and Washington. The Montana Natural Heritage Database reports 22 records for the Montana with 7 occurrences on the Flathead National Forest. Plants are found in moist to wet meadows in the lower zone from 2900 to 4500 feet. Plants produce spores from June through early July.

Snow cinquefoil (*Potentilla quinquefolia*) is an herbaceous perennial arising from a branched root crown. It is known from British Columbia to Saskatchewan, south to Oregon, Utah, and Colorado. The Montana Natural Heritage Database reports 10 records in Montana with 2 occurrences on the FNF. Plants flower in July, occurring in dry, gravelly soil of windswept ridges and slopes in the alpine zone between 1980 to 3050 meters (6500 to 10000 feet).

Pod grass (*Scheuchzeria palustris*) is a grass-like perennial arising from creeping rhizomes. It has a circumboreal distribution, occurring in North America in Alaska to Labrador and Newfoundland, south to British Columbia, Washington, northern California, Idaho, Wisconsin, Iowa, Indiana, and New Jersey. The Montana Natural Heritage Database reports 25 records in Montana with 13 occurrences on the FNF. Plants occur in marshes and fens, usually with Sphagnum, or on peaty lake margins between 899 to 1996 meters (2950 to 6550 feet). Plants flower in June and fruit from July through August.

Potential Occurrences

A habitat suitability analysis was conducted to evaluate the potential for additional sensitive plants occurrences within the action areas. Known vegetation types and elevation ranges of the action area were considered. Sensitive plants species were grouped in habitat guilds (Table 3-29). Because the West-Side Post-Fire action area contains many different habitat guilds (aquatic, fens/fen margins, other wetlands, riparian, moist cliff/seeps/talus slopes, wet coniferous forest, upland coniferous forest grasslands and forest openings, and alpine/subalpine), there is potential for all sensitive plant species to occur within the action area. Although most of the areas proposed for activity have been burned, it is possible that some areas that escaped the fire within the project area will be affected by this action; therefore all species that can occur in both burned and unburned vegetation types are listed here. It is also important to note that some sensitive species may experience increased vigor as a result of fire due to increased nutrient availability (several plant nutrients such as phosphorus and nitrogen can become readily soluble in soil as a result of organic matter transformation from fire (Wright and Bailey 1982). This stimulating effect would only affect perennial plants with surviving perennating buds below the surface. Table 3-30 displays the expected response to fire for species that have potential to occur within the action area.

Pale corydalis (*Corydalis sempervirens*) There is a high possibility that the sensitive plant, pale corydalis (*Corydalis sempervirens*), will emerge in the West-Side Post-Fire action areas in the growing seasons following these wildfires. This species is a fire dependent biennial/annual, occurring within one to two seasons (possibly three) following a fire and prefers disturbed sites; especially dry sunny exposures. Plants develop after recent burns, as seeds are dependent on heat treatments for germination. Plants grow and reproduce for a few years after a fire, and then live only as seeds in the soil awaiting the next fire event. During the 2002 sensitive plant surveys following the Moose Fire in 2001 (North Fork Flathead drainage), pale corydalis was located in several areas adjacent to roads and stream crossings within the fire area both on the FNF and in Glacier National Park.

Within the Moose Fire some plants behaved as annuals, bolting and flowering in the first season of growth. Plants functioned as biennials, having basal rosettes with some plants producing flowers and setting seed in the first year. The majority of plants over-winter during the first year as basal rosettes and then flower and seed in year two (personal observations). In the third post-fire year (2004) of the Moose Fire, several new plants have emerged and flowered. The potential for plants to persist and emerge for a fourth post-fire season is unknown.

Pale corydalis is a showy herbaceous plant with basal rosettes appearing in early spring and flowering in July (pink and yellow flowers). It is known from Arkansas, British Columbia and northwest Montana, east to Newfoundland and Georgia. The Montana Natural Heritage Database reports 6 occurrences in Montana where it is considered peripheral in its range distribution. Surveyors located five occurrences on the FNF following the Moose 2001 Fire.

Surveys

On the ground sensitive plant surveys of all areas scheduled for ground disturbing activities will be conducted in the summer of 2004, focusing on sensitive species determined to have potential habitat within the action areas.

Table 3-29. Habitat groups for sensitive species on the Flathead National Forest.

AQUATIC	MOIST CLIFFS, SEEPS & TALUS SLOPES
<i>Bidens beckii</i>	<i>Grimmia brittoniae</i> (moss)
<i>Brasenia schreberi</i>	<i>Heterocodon rariflorum</i> **
<i>Heteranthera dubia</i>	<i>Idahoia scapigera</i>
<i>Potamogeton obtusifolius</i>	<i>Mimulus breviflorus</i> **
<i>Scirpus subterminalis</i>	<i>Mimulus patulus</i>
<i>Utricularia intermedia</i>	<i>Phegopteris connectilis</i>
FENS & FEN MARGINS*	WET CONIFEROUS FOREST*
<i>Amerorchis rotundifolia</i>	(not associated with surface water)
<i>Carex lacustris</i> **	<i>Amerorchis rotundifolia</i>
<i>Carex livida</i>	<i>Botrychium crenulatum</i>
<i>Carex paupercula</i>	<i>Botrychium montanum</i>
<i>Carex rostrata</i>	<i>Botrychium pendunculatum</i> **
<i>Collema curtisporum</i> (lichen)	<i>Carex paupercula</i>
<i>Cyrtopodium parviflorum</i>	<i>Collema curtisporum</i> (lichen)
<i>Cyrtopodium passerinum</i>	<i>Cyrtopodium parviflorum</i>
<i>Drosera anglica</i>	<i>Cyrtopodium passerinum</i>
<i>Drosera linearis</i>	<i>Drvopteris cristata</i>
<i>Drvopteris cristata</i>	<i>Epipactis gigantea</i>
<i>Eleocharis rostellata</i>	<i>Petasites frigidus</i> var. <i>nivalis</i>
<i>Epipactis gigantea</i>	<i>Viola selkirkii</i> **
<i>Eriophorum gracile</i>	<i>Viola renifolia</i>
<i>Kalmia polifolia</i>	
<i>Liparis loeselii</i>	UPLAND CONIFEROUS FOREST
<i>Lycopodiella inundata</i>	<i>Botrychium crenulatum</i>
<i>Meesia triquetra</i> (moss)	<i>Botrychium hesperium</i>
<i>Scirpus cespitosus</i>	<i>Botrychium montanum</i>
<i>Scorpidium scorpioides</i> (moss)	<i>Cetraria subalpina</i> (lichen)
<i>Viola renifolia</i>	<i>Corvidalis sempervirens</i>
OTHER WETLANDS	<i>Cyrtopodium fasciculatum</i>
(marshes/wet meadows)	<i>Diphasiastrum sitchense</i>
<i>Botrychium crenulatum</i>	<i>Lathyrus biugatus</i>
<i>Botrychium pendunculatum</i> **	<i>Lycopodium dendroideum</i>
<i>Carex chordorrhiza</i>	<i>Polygonum douglasii</i> ssp. <i>Austinae</i>
<i>Carex lacustris</i> **	
<i>Heterocodon rariflorum</i> **	GRASSLANDS & FOREST OPENINGS (non-
<i>OphioGLOSSUM pusillum</i>	<i>Botrychium ascendens</i>
<i>Scheuchzeria palustris</i>	<i>Botrychium crenulatum</i>
	<i>Botrychium hesperium</i>
	<i>Botrychium paradoxum</i>
	<i>Castilleja cervina</i> **
	<i>Corvidalis sempervirens</i>
	<i>Grindelia howellii</i>
	<i>Lathyrus biugatus</i>
	<i>Polygonum douglasii</i> ssp. <i>Austinae</i>
	ALPINE & SUBALPINE
	<i>Astragalus lackschewitzii</i>
	<i>Botrychium</i> spp.
	<i>Cetraria subalpina</i> (lichen)
	<i>Diphasiastrum sitchense</i>
	<i>Erigeron lackschewitzii</i>
	<i>Oxytropis podocarpa</i>
	<i>Potentilla quinquefolia</i>
	<i>Salix barrattiana</i>
	** Proposed for additions to 2004 Regional Forester's sensitive list
RIPARIAN	
(adjacent to flowing or stagnant surface water)	
<i>Amerorchis rotundifolia</i>	
<i>Botrychium ascendens</i>	
<i>Botrychium crenulatum</i>	
<i>Botrychium hesperium</i>	
<i>Botrychium pendunculatum</i> **	
<i>Carex paupercula</i>	
<i>Collema curtisporum</i> (lichen)	
<i>Cyrtopodium parviflorum</i>	
<i>Cyrtopodium passerinum</i>	
<i>Drvopteris cristata</i>	
<i>Epipactis gigantea</i>	
<i>Heterocodon rariflorum</i> **	
<i>Mimulus patulus</i>	
<i>Oxytropis campestris</i> var. <i>columbiana</i>	
<i>Petasites frigidus</i> var. <i>nivalis</i>	
<i>Phegopteris connectilis</i>	
<i>Rhizomnium nudum</i> **	
<i>Salix barrattiana</i>	
<i>Viola selkirkii</i> **	
<i>Viola renifolia</i>	

* Wet coniferous forests and fen margins are areas with an organic substrate and a very shallow water table. These forests are commonly found adjacent to fens and act as an ecotone between the fen and adjacent upland forest. The two main forest types representing this habitat are: *Picea engelmannii*/*Equisetum arvense*, *Picea engelmannii*/*Lysichiton americanus*.

Table 3-30. Estimations of post fire survivorship based on root morphology of Regional Forester’s sensitive plant species with potential habitat in the West-Side Post-Fire action areas.

Scientific name	Root System	Probability of surviving fire disturbance
<i>Amerorchis rotundifolia</i>	rhizomatous with fleshy rootstocks	good to poor depending on fire severity and soil saturation
<i>Astragalus lackschewitzii</i>	taproot	Good, depending on severity. Grows on alpine, open, gravelly sites that are less likely to burn at high intensities (low fuels)
<i>Bidens beckii</i>	rhizomes	grows in aquatic habitat, survival likely high
<i>Botrychium ascendens</i>	unbranched fleshy roots	good to poor depending on fire severity and soil saturation
<i>Botrychium crenulatum</i>	unbranched fleshy roots	good to poor depending on fire severity and soil saturation
<i>Botrychium hesperium</i>	unbranched fleshy roots	good to poor depending on severity. Grows on gravelly sites that are less likely to burn (low fuels)
<i>Botrychium montanum</i>	unbranched fleshy roots	poor, these sites are typically dry during burning season and have high litter duff component
<i>Botrychium paradoxum</i>	unbranched fleshy roots	good to poor depending on fire severity and soil saturation
<i>Brasenia schreberi</i>	slender rootstocks with thick gelatinous sheath	grows in aquatic habitat, survival likely high
<i>Carex chordorrhiza</i>	rhizomes	grows in very wet sites, survival likely high
<i>Carex livida</i>	rhizomes	grows in very wet sites, survival likely high
<i>Carex paupercula</i>	short to long rhizomes	grows in very wet sites, survival likely high
<i>Carex rostrata</i>	rhizome	grows in very wet sites, survival likely high
<i>Cetraria subalpina</i>	lichen on ericaceous shrub stems and tree trunks	no survival if consumed
<i>Collema curtisporum</i>	trunk lichen	no survival if consumed
<i>Corydalis sempervirens</i>	annual/biennial with fibrous roots	Excellent. This is a fire dependent species that only reproduces via on-site seed after fire.
<i>Cypripedium fasciculatum</i>	short rhizomes	low, main root system above mineral soil in duff
<i>Cypripedium parviflorum</i>	short rhizomes	good to poor depending on fire severity and soil saturation
<i>Cypripedium passerinum</i>	short rhizomes	good to poor depending on fire severity and soil saturation
<i>Diphasiastrum sitchense</i>	slender, above-ground or slightly buried, rooting, horizontal stems	low if consumed, but growing sites are usually rocky with low fuel levels
<i>Drosera anglica</i>	shallow taproot	good to poor depending on fire severity and soil saturation, root system shallow only used for support of plant not nutrient uptake)
<i>Drosera linearis</i>	shallow taproot	good to poor depending on fire severity and soil saturation, root system shallow only used for support of plant not nutrient uptake)
<i>Dryopteris cristata</i>	short rhizomes	grows in very wet sites, survival likely high
<i>Eleocharis rostellata</i>	rhizomes	grows in very wet sites, survival likely high
<i>Epipactis gigantean</i>	rhizomes	grows in very wet sites, survival likely high
<i>Erigeron lackschewitzii</i>	taproot	Good, depending on severity. Grows on alpine, open, or gravelly sites that are less likely to burn at high intensities (low fuels)
<i>Eriophorum gracile</i>	slender rhizomes	grows in very wet sites, survival likely high
<i>Grimmia brittoniae</i>	moss	mortality high if moss desiccated
<i>Grindelia howellii</i>	taproot	high. this is a disturbance oriented species

Scientific name	Root System	Probability of surviving fire disturbance
<i>Heteranthera dubia</i>	perennial, root at nodes	grows in aquatic habitat, survival likely high
<i>Idaho scapigera</i>	annual	plants desiccated and only seeds present during fire season. Survival unknown
<i>Kalmia polifoila</i>	short rhizomes	good to poor; plants grow in wet sites
<i>Lathyrus bijugatus</i>	rhizomes	high, unless severely burned
<i>Liparis loeselii</i>	bulb-like base	good to poor depending on fire severity and soil saturation
<i>Lycopodiella inundata</i>	shallow roots	plants desiccated and only seeds present during fire season. Survival unknown
<i>Lycopodium dendroideum</i>	deep underground rhizomes	good to poor depending on severity
<i>Meesia triquetra</i>	shallow root-like rhizoids	good to poor; plants grow in wet sites
<i>Mimulus patulus subsp. montanus</i>	annual	plants desiccated and only seeds present during fire season. Survival unknown
<i>Ophioglossum pusillum</i>	unbranched fleshy roots	good to poor; plants grow in wet sites
<i>Oxytropis campestris var. columbiana</i>	woody rhizomes	good to poor depending on severity. Grows on gravelly sites that are less likely to burn (low fuels)
<i>Oxytropis podocarpa</i>	taproot	Good, depending on severity. Grows on alpine, open, gravelly sites that are less likely to burn at high intensities (low fuels)
<i>Petasites fragilis var. nivalis</i>	rhizomes	good to poor depending on severity
<i>Phegopteris connectilis</i>	long rhizomes	good to poor depending on severity
<i>Polygonum douglasii ssp austinae</i>	annual	plants desiccated and only seeds present during fire season. Survival unknown
<i>Potamogeton obtusifolius</i>	rhizomes	grows in aquatic habitat, survival likely high
<i>Potentilla quinquefolia</i>	short rootstock	Good, depending on severity. Grows on alpine, open, gravelly sites that are less likely to burn at high intensities (low fuels)
<i>Salix barrattiana</i>	branching roots	Good, depending on severity. Grows on alpine and wet sites that are less likely to burn at high intensities (low fuels)
<i>Scheuchzeria palustris</i>	rhizomes	good to poor; plants grows in wet sites
<i>Scirpus cespitosus</i>	tufted culms with fibrous roots	good to poor; plants grows in wet sites
<i>Scirpus subterminalis</i>	rhizomes	grows in aquatic habitat, survival likely high
<i>Scorpidium scorpioides</i>	shallow root-like rhizoids	good to poor; plants grow in wet sites
<i>Utricularia intermedia</i>	no true root system	good to poor depending on fire severity and soil saturation
<i>Viola renifolia</i>	rhizomes	grows in very wet sites, survival likely high

Table 3-30 (continued).

Proposed for additions to 2004 Regional Forester's sensitive list		
Scientific Name	Root System	Probability of surviving fire disturbance
<i>Botrychium pedunculatum</i>	unbranched fleshy roots	good to poor depending on fire severity and soil saturation
<i>Carex lacustris</i>	rhizomes	grows in very wet sites, survival likely high
<i>Heterocodon rariflorum</i>	annual	plants desiccated and only seeds present during fire season. Survival unknown
<i>Castilleja cervina</i>	branched root crown	good to poor depending on fire severity and soil saturation
<i>Mimulus breviflorus</i>	annual	plants desiccated and only seeds present during fire season. Survival unknown
<i>Rhizomnium nudum</i>	shallow root-like rhizoids	good to poor; plants grow in wet sites
<i>Viola selkirkii</i>	rhizomes	grows in very wet sites, survival likely high

Environmental Consequences

Effects of The No-Action Alternative For Threatened And Sensitive Plant Species

There would be no ground disturbance associated with this activity, as no action is proposed for this alternative, therefore no effects to federally threatened or Regional Forester's sensitive plants would result.

Effects Common To All Action Alternatives For Threatened Plant Species

Analysis of existing conditions determined that there are no known occurrences or suitable habitat for federally threatened water howellia (*Howellia aquatilis*) or Spalding's catchfly (*Silene spaldingii*) within the project area. The proposed West-Side Post-Fire Project would have no effect on either of these species. There are no federally listed endangered plants in Montana.

Effects Common To All Action Alternatives For Sensitive Plant Species

Direct and Indirect Effects

There are currently no known occurrences of sensitive plants within the proposed action area. Surveys for sensitive plants will occur in summer 2004, prior to ground disturbing activities.

Potential occurrences

Pale Corydalis (*Corydalis sempervirens*). New locations for pale corydalis within the proposed project area are highly probable. Occurrences located during the upcoming 2004 field season will be flagged with a protection buffer to include the extent of the existing occurrence and the potential habitat for dispersal in the immediate vicinity, as determined by the Forest Botanist. Ground disturbance will be avoided at known locations during project implementation for those treatments occurring during the active growing period of plants (spring, summer, and fall months). Plants will be permitted to complete its life cycle (germinate, bolt, flower, and set seed) prior to ground disturbing activities. This life cycle process may require up to two to three years (see species account above), after which plants will die and the population will remain dormant as seeds, until the next fire event.

For those occurrences that are not located during surveys, the proposed project may directly affect new occurrences by trampling of plants and disturbing the surrounding soils within ground-based and skyline operation units (approximately 30% of proposed action area for all action alternatives). Occurrences located during project implementation will be reported to the Forest Botanist and Project Operations Leader and appropriate mitigation measures will be applied to the new location (Exhibit Pt-1).

For all action alternatives, approximately 17-19% of proposed ground disturbing activities will be required to occur during winter months. No direct effects are expected for those plants located in units proposed for winter treatments, as plants will be protected under compacted snow.

The proposed project may have direct and indirect effects on pale corydalis if occurrences are disturbed and not permitted to flower and set seed. Failure for plants to set seed may result in decreased population viability following future fire events. However, the majority of undetected plants may only minimally be disturbed, as approximately 70-72% of acres proposed for activity will utilize low impact harvest systems (helicopter logging) for all action alternatives.

Large populations of plants located from the Moose (2001) post-fire surveys (over 5000 plants in Glacier National Park and FNF) reduce concerns for loss of viability for pale corydalis in the analysis area.

Other potentially occurring sensitive species

Because the West-Side Post-Fire Project action areas contain all habitat guilds (aquatic, fens/fen margins, other wetlands, riparian, moist cliff/seeps/talus slopes, wet coniferous forest, upland coniferous forest grasslands and forest openings, and alpine/subalpine), there is potential for all sensitive plant species to occur within the action area. Occurrences located during 2004 project surveys will be flagged and appropriate mitigation measures will be applied for the occurrence; depending on site location, species life history requirements, and treatments proposed (Exhibit Pt-1).

For those potentially occurring Regional Forester's sensitive plants and proposed sensitive plants listed for the FNF (Table 3-27) the direct, indirect, and cumulative effects for

undetected occurrences are unknown and can only be speculative due to lack of known locations. In treatment units occurring during periods without snow compaction, undetected occurrences may experience mechanical compaction, noxious weed competition / displacement, roadside dusting, and hydrology alteration due to salvage activities. Undetected annual plants disturbed prior to seed set may experience decrease population viability in subsequent years, due to a reduction of the seed bank. Perennial plants may experience ground disturbance to rootstocks (rhizomes, taproots, bulbs, corymbs), potentially inhibiting the plants ability to resprout from rootstock.

Cumulative Effects

Past activities such as road construction, timber extraction, dispersed recreation, and other development has occurred within the proposed West-Side Post-Fire Project. Past, present, and foreseeable actions within the action area (federal and nonfederal) include timber harvesting, road construction and maintenance, dispersed recreation, noxious weed control, and fire suppression. These actions may have historically affected Regional Forester's sensitive plants and may continue to have effects.

Timber harvesting, fire suppression, and development

Timber harvesting, road construction, and associated infrastructure development may alter the hydrologic processes for sensitive plants of wetland-associated habitat groups (Table 3-29 - aquatic, fens and fen margins, riparian, and wet coniferous forest). Changes to the hydrologic processes at wetlands may result in both a decrease and increase of wetland water levels. Timber harvesting and associated infrastructure development often decreases canopy cover and in consequence may decrease evapotranspiration rates of surrounding upland trees. This may result in increased inundation of wetlands from runoff. Also, increased canopy openings near wetlands may increase evaporation of the wetlands, effectively reducing water levels earlier in the growing season.

For non-wetland associated sensitive plants, timber harvesting often increases light level to the understory. This may be a beneficial effect for some rare sensitive plants, but may have adverse effects for other rare plants requiring greater canopy cover (e.g. clustered lady's-slipper). In many cases, timber harvest creates stand changes not unlike that of naturally occurring fires; however, the pattern and distribution of forest size classes has drastically shifted from patterns that were created under natural disturbance regimes. Today forest stands are far more fragmented in the landscape in reference to forest structure and size class. Also, fire suppression has created a more dense understory condition in many un-harvested stands where historically, low intensity understory fires occurred regularly. These fires that have been eliminated from the understory played a role in reducing fuels and encroaching vegetation (USDA Forest Service 1998b). Fire suppression resulting in closed-canopy may have effects of reduced light levels to sensitive plants in the understory.

No effects to sensitive plants resulted from fire suppression related activities from the 2003 wildfires, as there are no sensitive plants currently known to occur within the fire areas of the West-Side Post-Fire Project (USDA Forest Service 2003a; USDA Forest Service 2003b – Burned Area Emergency Response – Sensitive Plant Report Blackfoot Lake Complex Fires).

Roads

Past, present, and future maintenance of the roads have both adverse and positive cumulative effects on documented and potentially occurring roadside sensitive plant populations. Disturbance of roadsides may benefit those sensitive species that have a competitive edge in disturbed environments (Howell's gumweed, pink corydalis, Austin's knotweed, and western moonwort) and temporarily adversely affect these populations until new seedlings establish in the openings. Maintenance of roads may increase traffic along these roads and thus increase potential for disturbance of plant populations adjacent to roads. Road construction and maintenance may also affect wetland habitats. It is possible that past (and future) road construction may have affected ground water and sediment flow in some wetlands. Increased siltation may result in shifts in the wetland vegetation composition, supporting emergent vegetation in place of submergent vegetation types (USDI 1996). Timber harvesting and development may also contribute to these same effects to wetland plants.

A Burned Areas Road Maintenance Project is proposed to occur within the fire areas over the next several years. A Sensitive Plant Biological Evaluation was completed for this project and determined that sensitive plants may be affected from the road maintenance project, but these potential effects would not likely contribute to a trend towards federal listing or cause a loss of viability for all potentially occurring species on the FNF.

Recreation

Trails and other areas frequented by recreationists may contribute to the cumulative effects to sensitive plants. Trail construction/maintenance near wetlands may affect sensitive wetland plants by increased siltation into wetlands or the dispersal of noxious weed seeds from human vectors. However, most recreationists are reluctant to tread in the mucky waters of wetlands. Non-wetland plants may experience cumulative effects of trampling and collecting from dispersed recreation.

Commercial and personal use morel mushroom harvesting is expected to occur during the 2004 spring/summer season. Post-fire mushroom harvesting throughout the fire areas will be dispersed so that no significant trampling would occur at one site. Minor to moderate amounts of trampling may occur at sensitive plant locations. These effects are expected to be localized, and of low to moderate intensity and, depending on the intensity, of short to moderate duration.

Chemical control

Sensitive plants adjacent to areas of chemical weed control may be at risk of exposure to chemicals used in weed control. However on the FNF, sensitive plant surveys are conducted for each site (not previously treated) prior to all chemical control treatments as required by the FNF Noxious Weed and Invasive Weed Control Decision Notice and Finding of No Significant Impact (USDA Forest Service 2001a). With the exception of some sensitive plants that occur in “disturbed” environments (Howell's gumweed, pink corydalis, Austin's knotweed, and western moonwort) noxious weeds do not persist with rare plants due to differing habitat requirements. Weed control on State and private lands may have adverse effects to plant viability for these plants that occupy disturbed habitats that may favor weed establishment.

Spread of noxious weeds resulting from suppression activities, recreation, and this proposed salvage project has the greatest potential for cumulative effects on known and potentially occurring sensitive plant populations. Areas within the fire perimeter will actively be monitored for invasive weeds and active management of weeds would occur in compliance with the FNF Noxious Weed and Invasive Weed Control Decision Notice and Finding of No Significant Impact (USDA Forest Service 2001a). In addition, project design criteria for the West-Side Post-Fire project will mitigate this potential impact (see Exhibit Pt-1).

Summary of Effects

The proposed West-Side Post-Fire project is expected to have no direct effects on any known occurrences of Regional Forester's sensitive plants, and indirect effects are expected to be minimal. All ground-disturbing activities from the on-set of the FNF Botany Program, since 1990, have been analyzed for effects to threatened, endangered, and sensitive plants. In addition, all foreseeable federal actions within the project area are required to be evaluated for impacts to threatened, endangered, and sensitive plant species. Foreseeable actions would be modified to mitigate anticipated impacts resulting from foreseeable action as required by Forest Service policy (FSM 2670). Due to the small scope of direct and indirect effects and the measures proposed to control noxious weeds, cumulative effects of the project on potential occurrences are expected to contribute minimally to the total effects. However, cumulative effects on unknown occurrences can only be speculative due to lack of known locations.

The total of the direct and indirect effects from the proposed West-Side Post-Fire project and the contributing cumulative effects from past, present, and reasonably foreseeable future actions would not likely reach thresholds where pale corydalis and other Regional Forester's sensitive plants could not maintain their ability to survive in the South Fork Flathead drainage.

The proposed West-Side Post-Fire Project *may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability* for potentially occurring Regional Forester's sensitive plant species and proposed plant species listed in Table 3-27. This is based on the, 1) presence of suitable habitat for potentially occurring sensitive plants within the project area; 2) the potential for indirect effects of noxious weed competition; 3) delineation and

exclusion of riparian areas and wetlands from the proposed action areas; and 4) the delineation of new occurrences located prior to project implementation.

REGULATORY FRAMEWORK AND CONSISTENCY

Threatened or endangered status affords a species and its habitat special protection from adverse effects resulting from federally authorized or funded projects. It is the responsibility of the Forest Service to design activities that contribute to the recovery of listed species in accordance with recovery plans developed as directed by the Endangered Species Act (ESA) (50 CFR part 402). The Flathead National Forest's Amendment 20 to the Land Resource Management Plan (LRMP) provides for conservation measures to ensure the protection of water howellia. Amendment 21 to the LRMP has a goal to "provide sufficient habitat to promote the recovery of threatened and endangered species and conserve the ecosystems upon which they depend."

Federal laws and direction applicable to sensitive species include the National Forest Management Act (NFMA 1976) and Forest Service Manual 2670. Amendment 21 to the Forest Plan has standards to conduct analyses to review programs and activities, to determine their potential effect on sensitive species, and to prepare a Biological Evaluation. It also states "*adverse impacts to sensitive species or their habitats should be avoided. If impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole will be analyzed. Project decisions will not result in loss of species viability or create significant trends towards federal listing.*" Future conservation strategies for each species will present direction on maintaining habitat diversity and managing for population viability, as required by the NFMA and Forest Plan Amendment 21. The Forest Service is bound by Federal statutes (ESA, NFMA Act), regulations (USDA 9500-4) and agency policy (FSM 2670) to conserve biological diversity on NFS lands. A goal in Forest Plan Amendment 21 is to "*ensure that Forest Service actions do not contribute to the loss of viability of native species.*"

The West-Side Post-Fire Project proposed action will meet the direction of Forest Service Manual 2670.3 (sensitive plant species) and is consistent with the Forest Plan direction for sensitive plants. In addition, the proposed project is also in compliance with ESA and FNF LRMP Amendments 20 and 21, with respect to federally listed plants.