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**To:**  
**Subject:** Cow Fly Salvage – Sensitive Plants BE  
**To:** District Ranger and ID Team Leader – Jan Bowey

**Cow Fly Salvage  
Sensitive Plant Biological Evaluation**

**Proposed Action**

The Madison Ranger District proposes salvage harvesting dead and dying trees (primarily Douglas-fir) on approximately 250 acres in the West Fork of the Madison River drainage. A helicopter would yard harvest trees to log decks where logs would then be hauled by truck on existing Forest Service system roads to Highway 287. Proposed harvest units do not contain any riparian areas.

**Sensitive Plants**

The Regional Forester of the Northern Region has identified plant, bird, and animal species for which viability is a concern as Sensitive. Sensitive Species are those recognized on the Update of Northern Region Sensitive Species List dated October 28, 2004.

After review of existing element occurrence reports (Sensitive Species List and 2670 Files), Montana Natural Heritage Program database, general habitats available (sagebrush/grassland, Douglas-fir, lodgepole pine, sub-alpine fir, and aspen), and field reviews (1989-2006), it was determined that the following sensitive plant species occur or may occur within the project area. The project area includes lands within the National Forest boundary in the West Fork Madison River drainage. Specifically the area bounded by the West Fork Madison River on the north, Meridian Creek to the west and Forest Road 1209 (Cliff Lake Bench Road) to the south and east. In addition to the area within these boundaries the project area includes a one half mile buffer around the perimeter.

<b>PLANTS:</b>	<p>Known in Project Area – <i>Orogenia fusiformis</i></p> <p>Potential to Occur in Project Area - <i>Ranunculus jovis</i></p>
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**Species of Concern**



*Orogenia fusiformis*: This very inconspicuous species is known to occur on the Madison Ranger District. Seven of the thirteen known populations in the state are found in Antelope Basin area located south and east of the project area. All other populations are found in western Montana; Ravalli and Missoula Counties. *Orogenia fusiformis* grows on open grassland and sagebrush slopes, ridges, and meadows, from the lower foothills to the mid-montane zone. This species flowers and sets seed soon after snowmelt and have completed its yearly life cycle before most activities start on the Forest. *Orogenia fusiformis* is found growing from 4200 - 7300 feet elevation. The Montana populations are on the eastern most edge of the species range. It is also found in California, Oregon and Idaho. There are significant amounts of potential habitat for this species in the Gravelly Range. Surveys each spring have found additional locations of this species, expanding the area covered by these populations. Due to this species early flowering and small size it is difficult to find. More intensive surveys will likely find additional populations.

*Ranunculus jovis*: This species is another very small, early flowering plant that is found on the Madison Ranger District. This regional endemic is found along the Rocky Mountain States south to Nevada, Utah and Colorado. All but three of the known populations occur on the Madison Ranger District. Surveys each spring have found additional locations of this species, expanding the area covered by these populations. More intensive surveys will likely find additional populations. Jove's buttercup is a small, low growing herb that flowers soon after snow melt. Montana populations range in elevation from 7500 to 9500 feet. Populations are generally found in snowdrift areas along rocky outcrops with low vegetative cover. This species has generally completed its yearly life cycle prior to the start of most activities on the Forest.

### Biological Risk Assessment

Species	Probability of Effect +	Consequence of Effect +	Cumulative Effect +	Determination of Effect *
<i>Adoxa moschatellina</i>	Low	Low	None	No Impact
<i>Agastache cusickii</i>	Low	Low	None	No Impact
<i>Allium acuminatum</i>	Low	Low	None	No Impact
<i>Allotropa virgata</i>	Low	Low	None	No Impact
<i>Antennaria densifolia</i>	Low	Low	None	No Impact
<i>Arabis fecunda</i>	Low	Low	None	No Impact
<i>Astragalus scaphoides</i>	Low	Low	None	No Impact
<i>Balsamorhiza macrophylla</i>	Low	Low	None	No Impact
<i>Botrychium crenulatum</i>	Low	Low	None	No Impact
<i>Botrychium hesperium</i>	Low	Low	None	No Impact
<i>Botrychium paradoxum</i>	Low	Low	None	No Impact
<i>Carex parreyana</i> spp. <i>idaho</i>	Low	Low	None	No Impact
<i>Castilleja covilleana</i>	Low	Low	None	No Impact
<i>Eleocharis rostellata</i>	Low	Low	None	No Impact
<i>Epipactis gigantea</i>	Low	Low	None	No Impact

Species	Probability of Effect +	Consequence of Effect +	Cumulative Effect +	Determination of Effect *
<i>Erigeron asperugineus</i>	Low	Low	None	No Impact
<i>Eupatorium occidentale</i>	Low	Low	None	No Impact
<i>Haplopappus macronema</i> var. <i>macronema</i>	Low	Low	None	No Impact
<i>Juncus hallii</i>	Low	Low	Low	No Impact
<i>Lesquerella paysonii</i>	Low	Low	None	No Impact
<i>Lesquerella pulchella</i>	Low	Low	None	No Impact
<i>Mimulus primuloides</i>	Low	Low	None	No Impact
<i>Oroginia fusiformis</i>	Moderate	Low	None	No Impact
<i>Oxytropis podocarpa</i>	Low	Low	None	No Impact
<i>Penstemon lemhiensis</i>	Low	Low	None	No Impact
<i>Phlox kelseyi</i> var. <i>missoulensis</i>	Low	Low	None	No Impact
<i>Polygonum douglasii</i> spp. <i>austinea</i>	Low	Low	None	No Impact
<i>Potentilla quinquefolia</i>	Low	Low	None	No Impact
<i>Ranunculus jovis</i>	Moderate	Low	None	No Impact
<i>Saussurea weberi</i>	Low	Low	None	No Impact
<i>Saxifrage tempestiva</i>	Low	Low	None	No Impact
<i>Scirpus cespitosus</i>	Low	Low	None	No Impact
<i>Thalictrum alpinum</i>	Low	Low	None	No Impact
<i>Trifolium eriocephalum</i>	Low	Low	None	No Impact
<i>Trifolium gymnocarpon</i>	Low	Low	None	No Impact
<i>Veratrum californicum</i>	Low	Low	None	No Impact

+ See Attachment A for explanation of Effect

\*Determination of Effect is based on the documents listed in Literature Cited

### Effects

*Oroginia fusiformis* is a very small, inconspicuous species. This species grows on open grassland and sagebrush slopes, ridges, and meadows, from the lower foothills to the mid-montane zone. One population is known in the project area but outside of any harvest unit. No activities tied to the Cow Fly Salvage will occur near this population. The populations located on the Madison District area have been monitored over the years. The vegetative community and soils are in good condition. Individuals of *Oroginia fusiformis* within these populations show high vigor. This species flowers and sets seed early in the spring, generally following snow melt and has completed their yearly life cycle prior to most activity on the Forest. Suitable habitat for this species is limited in the project area and no suitable habitat is found in treatment units. Due to this species very early blooming time further surveys will most likely find additional populations. State wide threat ranking is low. This species is likely to be removed from the state species of concern list as new populations are found.

No populations are known in any treatment units. The Cow Fly Salvage Project will have "No Impact" on *Oroginia fusiformis*.

*Ranunculus jovis* is found growing in rock, upland vegetation communities. Jove's buttercup is a small, low growing herb that flowers soon after snow melt. Populations are generally found in snowdrift areas along rocky outcrops. This species has generally completed their yearly life cycle prior to most activity on the Forest. Additional occurrences will likely be found with further surveys. The populations located on the Madison District area have been monitored over the years. Individuals of *Ranunculus jovis* within these populations show high vigor. Suitable habitat is limited in the project area and no suitable habitat is located in any treatment unit. No populations of Jove's buttercup were found in the project area. State wide threat ranking for this species is low. This species is likely to be removed from the state Species of Concern list as new populations are found.

No populations are known in the project area or in any treatment units. The Cow Fly Salvage Project will have "No Impact" on *Ranunculus jovis*.

*Noxious Weeds:* Establishment and the unchecked expansion of noxious weeds into a plant community have major negative effects. Aggressive weeds can out compete native plant species and slowly dominate a site. Plant communities lose their natural diversity in species and structure along with becoming less able to recover from natural disturbances. Sensitive plant species, due to their limited occurrence, can be greatly affected by noxious weeds. Not only may the noxious weed out compete the sensitive plant but also inappropriate weed control measures may destroy individuals or eliminate populations. Current noxious weed infestations within the Project Area are mapped. Primary concern species in this drainage are *Centaurea maculosa* and *Cynoglossum officinale*. These species are found in the project area. The District has an ongoing aggressive noxious weed control program.

Prevention is the best management strategy to prevent impacts of noxious weeds. Disturbed ground and bare soils are prime sites for noxious weed establishment. Any ground disturbances associated with the fuels treatment project have the potential to allow weed establishment. Wash all heavy equipment prior to delivery to work site. Locate log landings in weed free areas or if no weed free areas are available treat the site prior to use to eliminate weed seed production.

Insure ground disturbance will re-vegetate, either by artificial seeding or use of soil seed bank. If artificially seeded, use only native species common to the site. All seed and mulch material will be certified noxious weed seed free. Monitor the fuel treatment area after completion of project and control noxious weed infestations if found.

### **Cumulative Effects**

Analysis area for cumulative effects is the entire Gravelly Range (Madison Ranger District) and adjacent private, State, BLM, and other National Forest System lands.

Activities that have occurred in the project area in the past, are currently occurring, and that could occur in the future may in themselves have little impact on Sensitive plant species. When considered together, the effects may have a large cumulative impact to the species occurring in the area.

Past Activities:

Activities contributing to the existing habitat situation are timber harvest, livestock grazing, mining, and road and trail construction. Recreational activities (e.g. big game hunting) and road management are additional activities influencing habitat. As shown in the current Interagency Visitor Map, the Gravelly Range is being managed with area restrictions. There are also many specific roads and trails restricted to motorized use seasonally or yearlong.

Within the analysis area, several timber sales have occurred in the past few decades.

<u>Sale Name</u>	<u>Harvest Year</u>	<u>Sale Name</u>	<u>Harvest Year</u>
Timber Creek	1960-62	Granite Mountain	1987
Freezeout	1968-70	Idaho-Barton	1987-89
Standard Creek	1968-72	Bozelle	1987-91
Gazelle	1970-72	Frostbite Overstory Removal	1990
Lyon	1976	Dead Jack #1 and #2	1993
Bogus Bench	1978	C-Spur Insect	1993-95
Jack Pine Gulch	1978-79	Dead Jack #4	1994-95
Cliff Lake Bench	1980	Slone Salvage	1994-95
Hoodoo	1980	Freezeout Salvage	1994-95
Sudsy Salvage	1981	Well Gulch Salvage	1995
Switchback	1981	Granite Mountain	1995
Buffalo Skull	1981	Boo Insect Salvage	1995
Grouse	1981	Bearing Tree	1995
Johnny Gulch	1981-85	Secret Lake	1996
Second Chance	1982	Elk Meadow	1996
Bogus Moose	1982	Bones Salvage	1996
Frostbite	1982	Flatiron Salvage	1996-97
Bullwinkle	1982	Rescue Helio	1996-97
Frostbite	1982	Bench Insect	1997
Lost	1982-84	Cliff Lake Bench Insect	1997
Hooter Ridge	1984	Lower Gazelle	1997-98
Forget-me-not	1984-85	Meridian Helio	1998
Meridian Creek	1984-86	Upper Gazelle	1998-99
Willow Creek Talc	1985	Forget-me-not	1998-2000
Soap-out	1985-86	Quaking Aspen	1999-2002
Twin Rivers	1985-86	Frozen Face	2004

Livestock grazing has occurred in the Gravelly Range for the past century. There are 36 grazing allotments: 23 cattle and horse and 13 sheep and goat in the Gravelly area.

Two mines also occur in the Gravelly area, both being talc. These mines are closed and are currently being reclaimed.

Forest Service built guard stations at Vigilante, Antone, Divide, Notch, Wall Creek, and West Fork and campgrounds at Cottonwood Creek, West Fork, Cliff Lake, Wade Lake, Hill Top, Madison River, and West Fork Madison. Dispersed sites occur near Antone, Clover Meadows, Miller Flats, and others. Roads and trails have also been constructed in the Gravelly area (Interagency Visitor Map Southwest Montana).

#### Existing Activities:

Cattle and sheep grazing is occurring throughout the area within the 36 allotments. General condition of the allotments is good with specific riparian areas functioning at risk. Uplands are generally good to very good condition.

Mining activity in the area is sporadic and depends upon the current market values of minerals. Current levels of activity are occurring at a slow rate. Commercial rock harvest is the primary mineral activity.

Timber harvest is occurring in the West Fork area. Post and pole harvest occurs in the Gold Butte area of the West Fork drainage. Firewood gathering also occurs within the West Fork drainage, as well as, throughout the Gravelly/Snowcrest area.

Recreational use depends on the time of year. In general, recreational activity is increasing in the Gravelly area. Winter has a moderate level of snowmobile users. Summer shows moderate use by campers, hikers, fishermen, and recreational driver/sightseers. Fall has heavy use by hunters during the general rifle season.

Road maintenance and improvement is occurring across the landscape road. Road densities vary depending on the time of year because of seasonal motorized vehicle access restrictions. The Southwest Montana Interagency Visitor/Travel Map, East Half displays these restrictions.

#### Reasonably Foreseeable Activities:

Grazing: The south end grazing allotments grazing management plans will be updated

Prescribed Burning: Burning may take place within Douglas-fir/sagebrush/grassland and aspen areas within the Gravelly Area. Prescribed burning may also take place on BLM and private lands in similar habitats.

Mining: Recreational gold panning may occur throughout the area.

Timber Harvest: Harvest activity will continue on the Goldstone post and pole sale. Firewood gathering will continue throughout the area, as well as, some post and pole harvest.

Road Construction and Access: Road maintenance is ongoing. No new road construction projects are planned.

Recreation: The Lobo Mesa Trail Rehabilitation project will improve drainage and re-route portion of the trail. Trail maintenance and clearing is ongoing.

Oil and Gas: Limited exploration activity is expected under current conditions.

Other: Subdivision and house building in many areas adjacent to the Forest and patented mining claim areas.

Effects:

Current trends in range management are for an improvement in riparian conditions. Grazing management updates will be designed to improve riparian areas and maintain or improve upland conditions. This will generally result in the same or fewer numbers of livestock and maintaining or shortening the season of use. This would have a beneficial effect for plant species.

Prescribed burning would restore early successional vegetation stages within the area. This would have a very limited effect plant species.

Mineral activity would likely occur at the current rate in the project area. Ground disturbance has the potential to destroy sensitive plant habitat.

Timber harvest would restore some early successional vegetation stages within the area. It would also help to restore and maintain aspen within the Gravelly Range. This change in vegetation expression would have very limited effect on plant species.

Reconstruction of campgrounds and trails, and reconstruction and surfacing of roads would not impact any new areas. This may increase the likelihood of use thereby increasing the amount of recreational disturbance in the area. These activities would have very limited effect on plant species.

Recreational use/activity must be dealt with in two distinct ways: 1) legal use and 2) illegal use. Legal use of trails, roads, etc., is restricted during different seasons of the year. Legal use would have very limited effect on plant species.

Illegal use of trails, roads, and restricted areas pose a great impact to plant species. This type of use not only destroys habitat (e.g. wet bogs, forage), but increases the potential for noxious weed introduction. This type of activity combined with other activities (mining, house building, subdivision) poses the greatest cumulative impact to Sensitive plant species.

Subdivision and house building pose the removal of habitat and individuals. Increased disturbance throughout the area allows noxious weeds to establish. People associated with these activities increase the likelihood of the before mentioned actions.

## Conservation Measures

The following conservation measures are mandatory for a determination of **No Impact** for Sensitive Plant species:

- 1) Wash all heavy equipment prior to delivery to work site. Locate log landings and service sites in weed free areas. If no weed free areas are available treat noxious weed prior to use of the landings and service sites.
- 2) Insure ground disturbance sites will re-vegetate, either by artificial seeding or use of soil seed bank. If artificially seeded, use only native species common to the site. All seed and mulch material will be certified noxious weed seed free.

*/s/ Kevin Suzuki*

KEVIN SUZUKI  
Sensitive Plant Coordinator

## Attachment A

### Probability of Effect on Species or Habitat:

<b>LOW</b>	No evidence of species or habitat.
<b>MODERATE</b>	Evidence of species or habitat. Habitat abundant in area or not directly affected by project.
<b>HIGH</b>	Evidence of species or habitat. Habitat limited in area or directly affected by project.

### Consequence of Effect on Species and Habitat:

<b>LOW</b>	None or inconsequential effect (direct or indirect) on habitat or population.
<b>MODERATE</b>	Possible direct or indirect effects on habitat or population. Adverse effects can be mitigated by modifying action.
<b>HIGH</b>	Apparent adverse effects on habitat or population. Adverse effects can not be removed by modifying action. Cumulative effects probable.

### Likelihood of Cumulative Effects on Species and Habitat:

<b>NONE</b>	Past, present and future activities will not affect habitat or population.
<b>LOW</b>	Past activities or events have affected habitat or populations. Effects of present activities manageable by seasonal or spatial restrictions. Future activities are not likely to affect habitat or populations. No irreversible or irretrievable effects expected.
<b>MODERATE</b>	Cumulative effects are expected through time. Irreversible effects are manageable through special management actions. No irretrievable effects expected.
<b>HIGH</b>	Cumulative effects not controllable. Irreversible effects expected. Irretrievable effects probable.

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