VASCULAR PLANT AND SENSITIVE PLANT SPECIES INVENTORY FOR THE HIGHLAND MOUNTAINS DEERLODGE NATIONAL FOREST

Prepared for

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INTRODUCTION

The National Forest Management Act of 1976 mandates the protection of biological diversity on National Forest lands. One response to this mandate has been the development of sensitive species programs throughout the national forest system (Reel et al. 1989). Each national forest is required to protect the viability of sensitive species found within its bounds. Numerous plants that are listed as sensitive in the U.S. Forest Service Region One occur in the mountain ranges of southwest Montana (Lesica and Shelly 1991).

The Highland Mountains are a small alpine mountain range in southwest Montana. Much of this range is land administered by Deer Lodge National Forest. In spite of The Highland's proximity to Butte, there has been little botanical exploration of the area. Recently, Klaus Lackschewitz made collections in the area and discovered populations of Carex idahoa and Erigeron gracilis, but the size and extent of these populations was not reported. The Highland Mountains receive a great deal of use by recreationists as well as having mining, timber harvest and livestock grazing activity. In order to manage the Highland Mountains for the protection of biological diversity, the Forest Service must know which sensitive species are present, what habitats they occur in, and how common they are. The purpose of this study was to survey the Highland Mountains for sensitive plant species and report the size, location and habitat for these species. In addition, a complete list of all vascular plant species encountered during this study was prepared. This list will be useful to managers doing other studies in the area.

STUDY AREA

The Highland Mountains are a small alpine range in southwest Montana, just south of Butte. They lie between the Big Hole River and the Jefferson River on the south and east respectively, and they contain the headwaters of Silver Bow Creek and the Clark Fork River. The main divide ridge of the Highland Range is the Continental Divide. It runs between Red Mountain at 10,070 ft on the north, and Table Mountain at the south end, which is the highest peak at 10,200 ft. Slopes on the north, east and south sides are relatively steep, and streams and glaciers have formed canyons dropping to the main river valleys. On the west side of the divide there is a large plateau that is the headwaters of Moose Creek. Part of this plateau is referred to as Moose Town, while the northwest portion is called Burton Park. Low mountains (7,000-8,000 ft) surround Moose Town and Burton Park on the north, west and south sides. Low mountains on the west are called the Humbug Spires (Fig. 1)

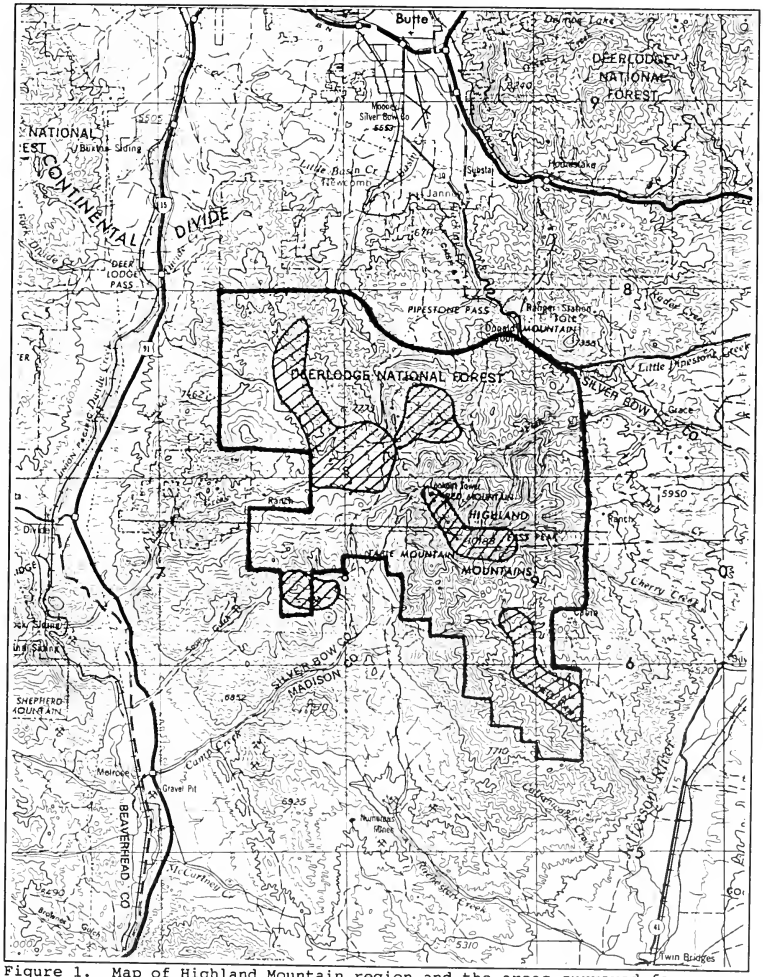

Figure 1. Map of Highland Mountain region and the areas surveyed for sensitive species.

The core of the Highland Mountains is formed of Precambrian basement rock in the south and granite of the Boulder Batholith in the north (Alt and Hyndman 1986). The Humbug Spires are low mountains formed of this granite. A band of calcareous Belt Series sedimentary rock, 5-10 miles wide runs from near the town of Divide west to just east of the Continental Divide (Alt and Hyndman 1986). The crest of the Highland Mountains are argillite on the north near Red Mountain and quartzite and granite in the south around Table Mountain. Soils at 6,000-7,500 ft throughout most of the north portion of the area are derived from granite and are coarse-textured and well-drained. Soils in the south are derived from metamorphosed sedimentary rocks and are more silty or loamy in texture. Calcareous soils occur sporadically in the Moose Town area and just east of the Continental Divide in the Lime Kiln Hill and head of Fish Creek area (Fig. 1). Soils near or above timberline are generally shallow and poorly developed. Small cirques along the main divide suggest that the core of the range was glaciated during Pleistocene times.

Climate of the Highland Mountains is continental-montane with short, cool summers and long, cold winters. Butte, at 5,540 ft on the north side of the Highland Mountains, had mean July maximum and mean January minimum of 80.1 and 3.7°F respectively from 1950 to 1980 (NOAA 1982). During this same period mean annual precipitation was 11.7 inches. Divide, at 5,406 ft on the west side of the study area, had mean July maximum and mean January minimum of 79.4 and 8.5°F respectively from 1950 to 1980 (NOAA 1982). During this same period mean annual precipitation was 12.4 inches. Precipitation in the Highland Mountains is estimated to vary from 16-30 inches per year based on snow course records (USDA-SCS 1981). June is the wettest month. Approximately half of the precipitation falls as snow during the winter.

Vegetation of the Highland Mountains is predominantly coniferous forest dominated by Douglas fir (Pseudotsuga menziesii) and lodgepole pine (Pinus contorta). Spruce (Picea engelmannii) is common along streams and higher cool slopes. Whitebark pine (Pinus albicaulis) dominates subalpine and timberline forests. Limber pine (P. flexilis) is locally common on outcrops of calcareous parent material in the Moose Town and Fish Creek areas. Where granite is the parent material, coniferous forest generally dominates on all aspects (narrow mesas above Hells Canyon Creek are an exception). On soils derived from metasediments, steppe dominated by sagebrush (Artemisia tridentata), rabbit brush (Chrysothamnus spp.), shrubby cinquefoil (Potentilla fruticosa) and Idaho fescue (Festuca idahoensis), occurs on warm slopes. Meadows dominated by tufted hairgrass (Deschampsia cespitosa) and sedges (Carex spp.) are common in Moose Town and Burton Park. Swamp and carr vegetation dominated by bog birch (Betula glandulosa) and willows (Salix spp.) are found along many drainages and in large areas of

Moose Town. Groves of aspen (Populus tremuloides) occur sporadically in the Moose Town area.

The Highland Mountains have been greatly impacted by human use. The area was the scene of a great deal of mining exploration. There are numerous old mines and associated roads in the Moose Town and Fish Creek areas. Concentrations of precious metals are presumably associated with the contact zone between the Belt sediments and the granite batholith. There is an active mining operation near the head of Fish Creek. Wherever steppe or meadows are the predominant vegetation, cattle grazing is a common use of the land. Douglas fir composing much of the forests are short and often deformed, but some areas of lodgepole pine forest have been clearcut. In addition, some trees have been harvested for firewood and lumber during the times when the area was a more active mining district. The Highland Mountains-Moffet Mountain-Moose Town area is a very productive wildlife area. I observed large numbers of elk, moose, deer, bighorn sheep and mountain goats. As a result, the area is heavily used by hunters during the fall. There is a good deal of recreational driving both on and off roads during the summer. The area is undoubtedly used by snowmobilers during the winter.

METHODS

For the purpose of my study, the Highland Mountains are defined as land administered by the U.S. Forest Service and private inholdings above 6,000 ft south of Pipestone Pass and Hwy 10, west of the Jefferson River Valley, and east and north of the Big Hole River Valley. I surveyed the Highland Mountains on June 25-July 6, 1992 and July 31-August 3, 1992. I concentrated my surveys in five areas (Fig. 1): (1) Moose Town/Burton Park - an abundance of wetlands and outcrops of calcareous parent material, (2) Fish Creek/Limekiln Mountain - numerous outcrops of calcareous parent material, (3) Red Mountain/Table Mountain - expansive alpine habitat, (4) Moffet Mountain - expanses of sagebrush steppe and high elevation grasslands, and (5) Hells Canyon Creek - coarse granitic soils and sagebrush steppe. I conducted my surveys by hiking transects through each area, inspecting typical habitat as well as unusual edaphic or topographic features. I recorded all vascular plant species observed and made representative collections of many species. I completed Montana Natural Heritage Program (MNHP) "Plant Species of Special Concern" forms for all species on the most recent MNHP list, and I completed MNHP-modified ECODATA forms for representative plant communities harboring species listed as sensitive in Region One of the U.S. Forest Service (Lesica and Shelly 1991).

Vascular plant nomenclature generally follows Hitchcock and Cronquist (1973). Nomenclature for willows follows Dorn (1984).

Information on nomenclature for sensitive species and "species of special concern" can be found in Lesica and Shelly (1991). Specimens are deposited in the herbarium of the University of Montana (MONTU).

In 1992 I received a separate contract from Deerlodge National Forest to conduct floristic surveys of the Table Mountain area. The results of that study (Lesica 1992) have been included in this report.

RESULTS

I recorded 526 species of vascular plants in 52 families from the Highland Mountains (Appendix A). Of these, seven are listed as sensitive in Region One of the U.S. Forest Service: Arabis fecunda, Carex idahoa, Juncus hallii, Orobanche corymbosa, Penstemon lemhiensis, Saxifraga tempestiva and Thlaspi parviflorum. Five additional species are listed as species of special concern by MNHP: Carex vallicola, Erigeron gracilis, Gentiana aquatica, Haplopappus macronema ssp. linearis and Ranunculus verecundus. Information on the occurrence of these species in the study area is given below. Additional information can be found in the MNHP element occurrence records in Appendix B. Copies of ECODATA forms for all sensitive species sites can be found in Appendix C.

Element Name: Arabis fecunda Rollins

Common Name: Sapphire rockcress

Range: Endemic to the Sapphire, Pioneer and Highland mountain ranges of Beaverhead, Ravalli and Silver Bow counties, Montana.

Element Rank: G2/S2

Federal Status: USFWS C2, USFS Region 1 Sensitive

Local Occurrence: Two populations of A. fecunda occur in the Moose Town area and two were found in the Fish Creek area (Fig. 2,3). Moose Town populations were estimated at 1,000-2,000 plants, while those in the Fish Creek area are larger, with 5,000-10,000 plants. All populations occur in mineral soil derived from metamorphosed calcareous sediments on south- or west-facing slopes. Associated plant communities are sparse Agropyron spicatum grasslands or very open limber pine woodland.

Although apparently appropriate habitat occurs on Limekiln Hill, I was unable to locate the species in the area.

Comments: All four populations occur in areas where there has been extensive mining exploration, and the southern Fish Creek

population is within 1 mile of an active mine. Mining is probably the principal threat to A. fecunda in the study area. In addition, the northern Moose Town population is in close proximity to a major road and may be threatened by future road construction. Finally, the areas are subject to livestock grazing, but disturbance appears to be moderate at this time and is probably not detrimental to the species. These populations are on the eastern edge of the known range of the species.

Element Name: Carex idahoa (Bailey)

Common Name: Idaho sedge

Range: Beaverhead, Madison, Powell and Silver Bow counties, Montana and southeast Idaho

Element Rank: G2QS2

Federal Status: USFWS 3C, USFS Region 1 Sensitive

Local Occurrence: I relocated the population in the Moose Town area and discovered another in the Fish Creek area (Fig. 2,3). Both populations occur in drier ecotonal areas of wet meadows along streams in areas influenced by calcareous parent material. Both populations contain fewer than 100 plants. The associated plant community is Potentilla fruticosa/Deschampsia cespitosa.

Comments: This plant is also referred to as Carex parryana Dewey ssp. idahoa (Bailey.) Murray.

I searched for this plant throughout the study area, but located only these two populations. However, populations are usually small, and I may not have located all of them. Nonetheless, C. idahoa does seem to be rare in the study area. Populations may be threatened by livestock grazing. In addition, the Moose Town population is immediately adjacent to a main road and could be threatened by road construction.

Element Name: Juncus hallii Engelm.

Common Name: Hall's rush

Range: Southwest Montana and southern Idaho south to Colorado. In Montana this species is known from Madison, Meagher, Powell and Silver Bow counties.

Element Rank: G4G5/S2

Federal Status: USFS Region 1 Sensitive
Local Occurrence: I located one population of J. hallii in the Moose Town area (Fig. 2). Unfortunately I was unsure of the

identity of the plant when I collected it and did not take extensive information on the site. It occurs in moist soil on the drier margins of a wet meadow adjacent to an old logging road. Before the area was logged this meadow was in a matrix of moist spruce forest. My impression is that the population was small, probably less than 200 plants.

Comments: At this site J. hallii occurs near a population of J. tenuis, and the two species can be confused. The logging road through the area may have impacted this population when it was built, and timber harvest undoubtedly altered the hydrologic regime of the site.

Element Name: Orobanche corymbosa (Rydb.) Ferris

Common Name: Flat-topped broomrape

Range: Southern British Columbia to southwest Montana, south to California, Nevada and Utah. In Montana the species is known from Beaverhead, Madison and Ravalli counties.

Element Rank: G4/S2

Federal Status: USFS Region 1 Sensitive

Local Occurrence: I located one population of O. corymbosa in the Hells Canyon Creek area (Fig. 4). Plants occurred in course-textured, granitic soil on gentle slopes of mesas on the northeast side of the canyon. The population consists of three subpopulations, all within 1 mile of each other. I estimated that at least 2,000 plants occur between these three subpopulations. Associated plant community is Artemisia tridentata/Festuca idahoensis.

Comments: Although similar habitat exists both north and south of the three subpopulations, I was unable to locate any plants in these areas. Additional populations may occur on BLM or private land to the west and south of the study area.

I am not aware of any threats to this population of O. corymbosa.

Element Name: Penstemon lemhiensis (Keck) Keck & Cronq.

Common Name: Lemhi beardtongue

Range: Endemic to Beaverhead, Ravalli and Silver Bow counties, Montana and Lemhi County Idaho

Element Rank: G2/S2

Federal Status: USFWS C2, USFS Region 1 Sensitive

Local Occurrence: I discovered two populations of P. lemhiensis in the Moose Town area (Fig. 2). The eastern population consists of two subpopulations on opposite sides of a hill. Both populations occur in relatively sparse vegetation on soil derived from calcareous metasediments. Both populations were estimated to be 100-200 plants. Nearly all plants in the western population had been grazed down to near the base of the plant, probably by deer or elk but possibly by livestock. The associated plant community was Festuca idahoensis/Agropyron spicatum grassland. In addition to these two populations, I observed 3-5 plants on a roadcut ca. 1/2 mile south of Fish Creek (T1N R7W S33, NW1/4 of SW1/4). Plant were present only in disturbed soil immediately adjacent to the road so I did not map or document this occurrence.

Comments: Penstemon lemhiensis occurs in areas that are subject to both mining activity and livestock grazing. Although P. lemhiensis is probably enhanced by low or even moderate levels of disturbance, both mining development and grazing could be a threat to this species. These populations are on the eastern edge of the known range of the species.

Element Name: Saxifraga tempestiva Elvander & Denton

Common Name: Storm saxifrage

Range: Endemic to Beaverhead, Deer Lodge, Granite, Ravalli and Silver Bow (?) counties, Montana

Element Rank: G2/S2

Federal Status: USFS Region 1 Sensitive

Local Occurrence: I located two subpopulations of S. tempestiva on the west flank of Table Mountain (Fig. 5). Both sites were snow cachement areas on relatively gentle terrain. The population was estimated to be fewer than 300 plants. Associated plant community was Geum rossii turf.

Comments: Plants at the Table Mountain site appear intermediate between S. tempestiva and S. rhomboidea and may be a hybrid population (see Lesica 1992 for further discussion).

The area is subject to few direct human-caused disturbances. However, grazing by bighorn sheep in the area is intense, and this level of grazing may be having an impact on the vegetation. Bighorn sheep may be overusing this remote part of their range because of intense ORV use of lower, more accessible areas (Lesica 1992).

Element Name: Thlaspi parviflorum A. Nels.

Common Name: Small-flowered pennycress

Range: Endemic to southwest Montana, northwest Wyoming and central Idaho. In Montana this species is known from Beaverhead, Madison, Park and Silver Bow counties.

Element Rank: G3/S2

Federal Status: USFS Region 1 Sensitive

Local Occurrence: I located two populations of T. parviflorum in moist grasslands and meadows on gentle slopes or alluvial terraces in the Moose Town area (Fig. 2). The eastern population occurred in a somewhat drier site and was estimated at 100-1,000 plants. The western site was estimated at 1,000-10,000 plants. Associated plant communities are Potentilla fruticosa/Festuca idahoensis and Potentilla fruticosa/Juncus balticus.

Comments: I searched extensively for this species in the Moose Town area, but in spite of large areas of apparently potential habitat, I located only two populations. However, T. parviflorum is inconspicuous unless it is blooming, and it blooms very early and has completely disappeared by mid-summer. Thus, I may not have located all populations in the study area.

Both T. parviflorum sites are subject to livestock grazing. The effects of grazing on the species are not known.

Element Name: Carex vallicola Dewey

Common Name: Valley sedge

Range: Eastern Oregon to southwest Montana and western South Dakota, south to California, Utah and Mexico. In Montana the species is known from Beaverhead, Gallatin, Lewis & Clark, Madison, Park and Silver Bow counties.

Element Rank: G5/S2

Federal Status: None

Local Occurrence: I located one population of C. vallicola in mesic high-elevation grassland in the Limekiln Hill area (Fig. 3). The population was estimated to be 100-1,000 plants. The associated plant community is Festuca idahoensis/Agropyron caninum.

Comments: This small population of C. vallicola is in an area that has extensive mining exploration. The area is also subject

to livestock grazing. The plant is highly palatable to livestock and decreases with overgrazing (Hermann 1970).

Element Name: Erigeron gracilis Rydb.

Common Name: Slender fleabane

Range: Endemic to Southwest Montana, western Wyoming and east-central Idaho. In Montana the species is known from Beaverhead, Park, Silver Bow and Sweetgrass counties.

Element Rank: G4/S2

Federal Status: None

Local Occurrence: I located populations of E. gracilis in the Moffet Mountain, Moose Town and Fish Creek/Limekiln Hill areas (Figs. 2,3,6). The plant appeared to be widespread throughout much of the Highland Mountains in silty to loamy soils of mesic to moist steppe and grasslands. Populations were all estimated to be larger than 1,000 plants. Associated plant communities are Artemisia tridentata/Festuca idahoensis (Geranium phase) and Potentilla fruticosa/Festuca idahoensis.

Comments: Erigeron gracilis was common enough in the study area that I did not purposely look for it but mapped only occurrences that I observed while surveying for other species. It is probably not threatened in the study area.

Element Name: Gentiana aquatica L.

Common Name: Wet meadow gentian

Range: Southern Alberta and Saskatchewan south to Colorado; also in Asia. In Montana the species is known from Beaverhead, Madison and Silver Bow counties.

Element Rank: G4/S2

Federal Status: USFWS 3C (under synonym of G. fremontii)

Local Occurrence: I located one population of G. aquatica in the Fish Creek area, in the same meadow as Carex idahoa (Fig. 3). The species occurs on shrub-dominated hummocks in an alkaline meadow along a small stream. Associated plant community was Potentilla fruticosa/Deschampsia cespitosa. I estimated the population to be greater than 1,000 plants.

Comments: This meadow is subject to livestock grazing. Trampling of this wet site resulting from overuse by livestock

could degrade the site and negatively impact the G. aquatica population.

Element Name: Haplopappus macronema Gray ssp. linearis (Rydb.) Hall

Common Name: Discoid goldenweed

Range: The subspecies is endemic to northwest Wyoming and southwest Montana. In Montana it is known from Beaverhead, Madison, Meagher and Silver Bow counties.

Element Rank: G4T?/S2

Federal Status: None

Local Occurrence: I located two populations of H. macronema linearis in moist steppe in the Moose Town/Burton Park area (Fig. 7). The Burton Park population was estimated to be fewer than 300 plants, while the Moose Town population was estimated to be 500-1,000 plants. Associated plant communities were Artemisia tridentata/Festuca idahoensis and Potentilla fruticosa/Festuca idahoensis.

Comments: Although there is an abundance of apparently appropriate habitat in the study area, I located only two populations of H. macronema linearis. Many of the plants at the Burton Park site had been broken due to livestock trampling. However, the plant seems to respond positively to disturbance at the Moose Town site, being most common near fences and along roads.

Element Name: Ranunculus verecundus Robins.

Common Name: Modest buttercup

Range: Alaska south to Oregon, Idaho and Wyoming. In Montana this species is known from Glacier National Park and the Highland and Anaconda ranges in Beaverhead, Deer Lodge and Madison counties.

Element Rank: G5/S1

Federal Status: None

Local Occurrence: I located one population of R. verecundus in wet tundra on the west shoulder of Table Mountain (Lesica 1992, Fig. 5). Associated plant community was Deschampsia cespitosa/Caltha leptosepala. Population size was estimated to be 200-500 plants.

Comments: Typical R. verecundus has deciduous sepals and persistent petals. Plants from the Table Mountain site have persistent sepals and lack petals (Lesica 1992). The area is subject to few direct human-caused disturbances. However, grazing by bighorn sheep in the area is intense, and this level of grazing may be having an impact on the vegetation. Bighorn sheep may be overusing this remote part of their range because of intense ORV use of lower, more accessible areas (Lesica 1992).

DISCUSSION

The Moose Town area has a great diversity of parent materials and soils. Coarse-textured sandy soils derived from granite of the Boulder Batholith occur on the northern periphery. The majority of the upland areas have silty or loamy soils derived from metasediments, including outcroppings of calcareous parent material. These soils support Douglas-fir and lodgepole pine forests, limber pine woodland, sagebrush and cinquefoil steppe, and grasslands. The area also has a complex hydrologic geology and supports a vast array of wetland communities including aspen groves, wet spruce forests, willow swamps, fens, marshes and wet meadows. The diversity of plant communities and the extent of the wetlands is exceptional. The area is also important habitat for many species of wildlife including elk, moose and bighorn sheep.

Fives species of vascular plants listed as sensitive in U.S. Forest Service Region One occur in the Moose Town area (Fig. 2): Arabis fecunda, Carex idahoa, Juncus hallii, Penstemon lemhiensis and Thlaspi parviflorum. Both A. fecunda and P. lemhiensis are candidates for listing as threatened or endangered species by the U.S. Fish and Wildlife Service, and all but J. hallii are endemic to small areas of southwest Montana and adjacent Idaho and Wyoming (Lesica and Shelly 1991). In addition, Erigeron gracilis and Haplopappus macronema ssp. linearis, two regional endemics that are MNHP species of special concern, are also found in this area (Fig. 2,7).

The habitat diversity and number of rare plant species make the Moose Town area the most outstanding biological area in the Highland Mountains. Unfortunately, the area has suffered a great deal of human-caused disturbance. It was the site of numerous mines and prospects, and apparently a small community existed there in the past. There are unreclaimed tailings heaps and mine shafts as well as water diversion ditches and old cabins. Probably more damaging are the numerous roads and 4-wheel drive trails throughout much of the area. These roads and trails continue to be used for recreation by residents of Butte and the surrounding area. The area is grazed by livestock during July and August, and some of the wetland and upland communities have been degraded as a result. Finally, forests on the north and

west sides of the Moose Town area have been clearcut. All of these disturbances have had and, in some cases, continue to have a negative impact on wildlife, populations of sensitive plants and the integrity of native communities.

Biological values in the Moose Town area could be protected by diminishing and mitigating human-caused disturbances: (1) limiting motorized vehicle traffic to main roads, (2) managing livestock to protect fragile wetland and riparian areas and prevent overgrazing of adjacent uplands, (3) reclamation of mine sites, and (4) limiting timber harvest to protect watershed values and wildlife. Approximately 1,800 acres of the Moose Town area is in private ownership; the rest is public land managed by the U.S. Forest Service and the Bureau of Land Management. A cooperative management plan for the area that addresses these issues is essential for maintaining the ecological integrity and biological diversity of the area.

The Fish Creek/Limekiln Hill area harbors populations of Arabis fecunda and Carex idahoa, both of which are on the U.S. Forest Service Region One sensitive species list. In addition, there are populations of three MNHP species of special concern in the area (Fig. 3). This area is similar to the Moose Town area in its history of mining and livestock grazing, and there is an active mine along Fish Creek at this time. The topography is steeper, so there are fewer opportunities for off-road vehicle abuse. Although I do not believe that this area has the biological significance of the Moose Town area, developments and livestock management should be regulated to protect populations of rare and sensitive species.

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Appendix A. Vascular plants observed in the Highland Mountains June 25-July 6, 1992 and July 31-August 3, 1992. Nomenclature generally follows Hitchcock and Cronquist (1973). Nomenclature for willows follows Dorn (1984). Nomenclature for sensitive species follows Lesica and Shelly (1991). Species in bold were collected and specimens are deposited at MONTU. An asterisk (*) indicates an introduced species.

Apiaceae
Angelica arguta
Cymopterus bipinnatus
Heracleum lanatum
Lomatium cous
Lomatium cusickii
Lomatium dissectum
Lomatium triternatum
Osmorhiza depauperata
Perideridia gairdneri

Asclepiadaceae
Asclepias speciosa

Asteraceae
Achillea millefolium
Agoseris aurantiaca
Agoseris glauca
Antennaria alpina
Antennaria anaphaloides
Antennaria aromatica
Antennaria corymbosa
Antennaria microphylla
Antennaria parviflora
Antennaria pulcherrima
Antennaria racemosa
Antennaria umbrinella
Arnica chamissonis
Arnica cordifolia
Arnica fulgens
Arnica mollis
Arnica sorroria
Artemisia absinthium*
Artemisia campestris
Artemisia dracunculus
Artemisia frigida
Artemisia michauxiana
Artemisia tridentata
Aster brachyactis
Aster campestris
Aster conspicuous
Aster foliaceus
Aster hesperius
Aster integrifolius
Aster laevis
Aster occidentalis
Aster scopulorum
Aster stenomeres
Chaenactis alpina
Chaenactis douglasii
Chrysopsis villosa
Chrysothamnus nauseosus
Chrysothamnus viscidiflorus
Cirsium arvense*
Cirsium canovirens
Cirsium hookerianum
Cirsium scariosum
Crepis acuminata
Crepis atrabarba
Crepis modocensis
Crepis runcinata
Erigeron acris
Erigeron caespitosus
Erigeron compositus
Erigeron corymbosus
Erigeron divergens
Erigeron gracilis
Erigeron lonchophyllus
Erigeron ochroleucus
Erigeron rydbergii
Erigeron simplex
Erigeron subtrinervis
Erigeron tweedyi
Erigeron ursinus
Filago arvensis
Gailardia aristata
Haplopappus acaulis
Haplopappus integrifolius
Haplopappus lanuginosus
Haplopappus lyallii
Haplopappus macronema ssp. linearis
Haplopappus uniflorus
Helianthella uniflora
Hieracium cynoglossoides
Hieracium gracile
Hulsea algida
Hymenopappus filifolius
Hymenoxys grandiflorus
Machaeranthera canescens
Matricaria matricarioides*
Microseris cuspidata
Senecio canus
Senecio crassulus
Senecio cymbalarioides
Senecio foetidus
Senecio fremontii
Senecio indecorus
Senecio integerrimus
Senecio pauperculus
Senecio pseudaureus
Senecio serra
Solidago missouriensis
Solidago multiradiata
Sonchus uliginosus*
Taraxacum ceratophorum
Taraxacum laevigatum*
Taraxacum lyratum
Taraxacum officinale*

Tetradymia canescens
Townsendia hookeri
Townsendia parryi

Betulaceae
Alnus sinuata
Betula glandulosa

Boraginaceae
Cryptantha ambigua
Cryptantha spiculifera
Cynoglossum officinale*
Eritrichium nanum
Hackelia micrantha
Lappula redowskii
Lithospermum ruderale
Mertensia ciliata
Mertensia oblongifolia
Onosmodium molle
Plagiobothrys scouleri

Brassicaceae
Arabis drummondii
Arabis fecunda
Arabis glabra
Arabis hirsuta
Arabis holboellii
Arabis lemmonii
Arabis lyallii
Arabis nuttallii
Arabis sparsiflora
Barbarea orthoceras
Berteroa incana
Capsella bursa-pastoris*
Cardamine pensylvanica
Descurainia pinnata
Descurainia richardsonii
Descurainia sophia*
Draba crassifolia
Draba densifolia
Draba incerta
Draba lanceolata
Draba lonchocarpa
Draba nemorosa
Draba oligosperma
Draba paysonii
Draba stenoloba
Draba sp.
Erysimum asperum
Erysimum cheiranthoides*
Erysimum repandrum
Physaria geyeri
Smelowskia calycina
Thlaspi arvense*
Thlaspi parviflorum

Callitrichaceae
Callitriche sp.

Campanulaceae
Campanula rotundifolia

Caprifoliaceae
Lonicera involucrata
Linnaea borealis
Sambucus racemosa

Caryophyllaceae
Arenaria capillaris
Arenaria congesta
Arenaria lateriflora
Arenaria nuttallii
Arenaria obtusiloba
Arenaria rossii
Cerastium arvense
Cerastium beeringianum
Cerastium vulgatum*
Silene acaulis
Silene menziesii
Silene parryi
Silene repens
Spergularia rubra*
Stellaria americana
Stellaria calycantha
Stellaria longipes

Chenopodiaceae
Chenopodium album*
Chenopodium chenopodioides
Chenopodium fremontii
Monolepsis nuttallianus

Cornaceae
Cornus stolonifera

Crassulaceae
Sedum lanceolatum
Sedum rosea

Cupressaceae
Juniperus communis

Cyperaceae
Carex albonigra
Carex aquatilis
Carex athrostachya
Carex atrata
Carex aurea
Carex bebbii
Carex canescens
Carex concinoides
Carex dioica
Carex disperma
Carex douglasii
Carex elynoides
Carex filifolia
Carex geyeri
Carex hoodii
Carex idahoa
Carex lanuginosa
Carex leporinella
Carex microptera
Carex nebrascensis
Carex norvegica

Carex obtusata
Carex paysonis
Carex pensylvanica
Carex petasata
Carex phaeocephala
Carex praegracilis
Carex raynoldsii
Carex rossii
Carex rostrata
Carex rupestris
Carex scirpoidea
Carex scopulorum
Carex simulata
Carex vallicola
Eleocharis pauciflora

Elaeagnaceae
Shepherdia canadensis

Equisetaceae
Equisetum arvense
Equisetum laevigatum
Equisetum pratense
Equisetum scirpoidea
Equisetum variegatum

Ericaceae
Arctostaphylos uva-ursi
Cassiope mertensiana
Chimaphila umbellata
Kalmia microphylla
Ledum glandulosum
Phyllodoce empetriformis
Phyllodoce glanduliflora
Pyrola asarifolia
Pyrola chlorantha
Pyrola minor
Pyrola uniflora
Vaccinium caespitosum
Vaccinium scoparium

Fabaceae
Astragalus aboriginum
Astragalus adsurgens
Astragalus agrestis
Astragalus alpinus
Astragalus atropubescens
Astragalus canadensis
Astragalus microcystis
Astragalus miser
Coronilla varia*
Hedysarum sulphurescens
Lupinus argenteus
Lupinus sericeus
Medicago lupulina*
Onobrychis viciifolia*
Oxytropis besseyi
Oxytropis campestris
Oxytropis deflexa
Oxytropis lagopus
Trifolium hybridum*
Trifolium longipes
Trifolium pratense*
Trifolium repens*

Fumariaceae
Corydalis aurea

Gentianaceae
Frasera speciosa
Gentiana amarella
Gentiana aquatica
Gentiana affinis
Gentiana aquatica
Gentiana calycosa
Gentiana propinqua

Geraniaceae
Geranium richarsonii
Geranium viscosissimum

Grossulariaceae
Ribes cereum
Ribes hudsonianum
Ribes lacustre
Ribes setosum

Hydrophyllaceae
Phacelia franklinii
Phacelia hastata
Phacelia sericea

Iridaceae
Iris missouriensis
Sisyrinchium angustifolium

Juncaceae
Juncus balticus
Juncus drummondii
Juncus ensifolius
Juncus hallii
Juncus longistylis
Juncus mertensianus
Juncus tenuis
Luzula campestris
Luzula parviflora
Luzula piperi
Luzula spicata

Liliaceae
Allium brevistylum
Allium cernuum
Allium geyeri
Allium schoenoprasum
Calochortus nuttallii
Erythronium grandiflorum
Fritillaria atropurpurea
Fritillaria pudica
Smilacina stellata
Zigadenus elegans
Zigadenus veneosus

Linaceae
Linum perenne

Onagraceae
Epilobium alpinum
Epilobium angustifolium
Epilobium glaberrimum
Epilobium palustre
Epilobium watsonii
Gayophytum decipiens

Ophioglossaceae
Botrychium lanceolatum
Botrychium lunaria

Orchidaceae
Corallorhiza trifida
Habenaria dilatata
Habenaria hyperborea
Habenaria obtusata
Spiranthes cernua

Orobanchaceae
Orobanche fasciculata

Pinaceae
Abies lasiocarpa
Picea engelmannii
Pinus albicaulis
Pinus contorta
Pinus flexilis
Pseudotsuga menziesii

Poaceae
Agropyron caninum
Agropyron cistatum*
Agropyron intermedium*
Agropyron spicatum
Agropyron scribneri
Agropyron smithii
Agrostis alba
Agrostis exarata
Agrostis humilis
Agrostis scabra
Alopecurus aequalis
Alopecurus alpinus
Alopecurus pratensis*
Bromus carinatus
Bromus ciliatus
Bromus inermis*
Bromus pumpellianus
Bromus tectorum*
Calamagrostis canadensis
Calamagrostis montanensis
Calamagrostis neglecta
Calamagrostis purpurascens
Calamagrostis rubescens
Catabrosa aquatica
Dactylis glomerata*
Danthonia intermedia
Danthonia uniflora
Deschampsia cespitosa
Elymus cinereus
Festuca idahoensis
Festuca occidentalis
Festuca ovina
Festuca rubra
Glyceria striata
Hordeum brachyantherum
Hordeum jubatum
Koeleria cristata
Muhlenbergia richardsonis
Oryzopsis exigua
Phleum alpinum
Phleum pratense*
Poa alpina
Poa annua*
Poa compressa*
Poa cusickii
Poa grayana
Poa interior
Poa juncifolia
Poa lettermanii
Poa leptocoma
Poa nervosa
Poa nevadensis
Poa pratensis*
Poa reflexa
Poa rupicola
Poa scabrella
Poa secunda
Puccinellia distans*
Puccinellia pauciflora
Sitanion hystrix
Stipa comata
Stipa occidentalis
Stipa richardsonii
Stipa viridula
Trisetum canescens
Trisetum cernuum
Trisetum spicatum

Plantaginaceae
Plantago major*

Polemoniaceae
Collomia debilis
Collomia linearis
Gilia inconspicua var. tweedyi
Gilia tenerrima
Ipomopsis spicata
Linanthus septentrionalis
Phlox longifolia
Phlox muscoides
Phlox pulvinata
Polemonium occidentale
Polemonium viscosum

Polygonaceae
Eriogonum flavum
Eriogonum ovalifolium
Eriogonum strictum
Eriogonum umbellatum
Polygonum aviculare*
Polygonum bistortoides
Polygonum douglasii
Rumex acetosella*

Rumex crispus*
Rumex paucifolius
Rumex salicifolius
Rumex venosus

Polypodiaceae
Athyrium dissentifolium
Cystopteris fragilis
Woodsia oregana

Portulacaceae
Claytonia lanceolata
Lewisia pygmaea
Lewisia redivida
Spraguea umbellata

Potamogetonaceae
Potamogeton alpinus
Potamogeton gramineus
Potamogeton pusillus

Primulaceae
Androsace filiformis
Androace septenrionalis
Dodecatheon conjugens
Dodecatheon pulchellum
Douglasia montana

Ranunculaceae
Actaea rubra
Anemone drummondii
Anemone multifida
Anemone nuttallianum
Delphinium bicolor
Delphinium occidentale
Ranunculus acriformis
Ranunculus acris*
Ranunculus cymbalaria
Ranunculus eschscholtzii
Ranunculus inamoenus
Ranunculus natans
Ranunculus sceleratus
Ranunculus uncinatus
Ranunculus verecundus
Thalictrum occidentale

Rhamnaceae
Ceanothus velutinus

Rosaceae
Amelanchier alnifolia
Dryas octopetala
Fragaria virginiana
Geum macrophyllum
Geum rossii
Geum triflorum
Potentilla anserina
Potentilla biennis
Potentilla concina
Potentilla diversifolia
Potentilla fruticosa
Potentilla glandulosa
Potentilla gracilis
Potentilla hippiana
Potentilla ovina
Potentilla pensylvanica
Purshia tridentata
Rosa nutkana
Rosa woodsii
Rubus idaeus
Sibbaldia procumbens
Spiraea betulifolia

Rubiaceae
Galium bifolium
Galium boreale
Galium trifidum

Salicaceae
Populus tremuloides
Salix bebbiana
Salix boothii
Salix brachycarpa
Salix drummondiana
Salix exigua
Salix lemmonii
Salix lutea
Salix nivalis
Salix planifolia
Salix scouleriana
Salix wolfii

Saxifragaceae
Conimitella williamsii
Heuchera cylindrica
Heuchera grossularifolia
Heuchera parvifolia
Lithophragma bulbifera
Lithophragma parviflora
Parnassia fimbriata
Parnassia palustris
Saxifraga arguta
Saxifraga bronchialis
Saxifraga cespitosa
Saxifraga oregana
Saxifraga tempestiva

Scrophulariaceae
Besseya wyomingensis
Castilleja cusickii
Castilleja linearifolia
Castilleja miniata
Castilleja pallescens
Chionophila tweedyi
Collinsia parviflora
Linaria vulgaris*
Melampyrum lineare
Mimulus guttatus
Pedicularis contorta
Pedicularis groenlandica
Pedicularis parryi
Penstemon aridus
Penstemon attenuatus
Penstemon eriantherus

Penstemon fruticosus
Penstemon lemhiensis
Penstemon montanus
Penstemon procerus
Veronica americana
Veronica peregrina
Veronica serpyllifolia
Veronica wormskjoldii

Selaginellaceae
Selaginella densa

Urticaceae
Urtica dioica

Valerianaceae
Valeriana dioica
Valeriana occidentalis

Violaceae
Viola adunca
Viola macloskeyi
Viola nephrophylla
Viola nuttallii

Appendix B. Element occurrence records for species of special concern occurring in the Highland Mountains.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ARABIS FECUNDA
Common Name: SAPPHIRE ROCKCRESS

Global rank: G2 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDBRA06290.014
Element occurrence type:

Survey site name: FISH CREEK
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: PIPESTONE PASS

Township/Range	Section:	TRS Note:
001N007W	28	S2SW4

Survey date: 1992-06-29 Elevation: 7080 - 7560
First observation: 1992-06-29 Slope/aspect: 60% / SOUTHEAST
Last observation: 1992-06-29 Size (acres): 15

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE; FROM CAMP CREEK ROAD (FS RD 8520) TAKE ROAD TO FISH CREEK. ONCE ON THE FISH CREEK ROAD, PROCEED WEST UNTIL ROAD CROSSES TO SOUTH SIDE OF CREEK. PROCEED ANOTHER 0.3 MILES. SITE IS ON NORTH SIDE OF CREEK.

Element occurrence data:
2,000 TO 5,000 INDIVIDUALS, FRUITING, EVIDENCE OF SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON STRAIGHT MIDSLOPE. DRY AREA, SANDY SOIL, CALCAREOUS METASEDIMENT. ASSOCIATED DOMINANT SPECIES: ARTEMISIA FRIGIDA, AGROPYRON SPICATUM. ADDITIONAL ASSOCIATED PLANT SPECIES: SENECIO CANUS, ERIGERON COMPOSITUS, CAMPANULA ROTUNDIFOLIA.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:
EVIDENCE OF LIVESTOCK/WILDLIFE TRAILS, OLD MINING CLAIMS. ECODATA PLOT #92PL108.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5740). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ARABIS FECUNDA
Common Name: SAPPHIRE ROCKCRESS

Global rank: G2 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDBRA06290.014
Element occurrence type:

Survey site name: FISH CREEK
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: PIPESTONE PASS

Township/Range	Section:	TRS Note:
001N007W	28	S2SW4

Survey date: 1992-06-29 Elevation: 7080 - 7560
First observation: 1992-06-29 Slope/aspect: 60% / SOUTHEAST
Last observation: 1992-06-29 Size (acres): 15

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE; FROM CAMP CREEK ROAD (FS RD 8520) TAKE ROAD TO FISH CREEK. ONCE ON THE FISH CREEK ROAD, PROCEED WEST UNTIL ROAD CROSSES TO SOUTH SIDE OF CREEK. PROCEED ANOTHER 0.3 MILES. SITE IS ON NORTH SIDE OF CREEK.

Element occurrence data:
2,000 TO 5,000 INDIVIDUALS, FRUITING, EVIDENCE OF SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON STRAIGHT MIDSLOPE. DRY AREA, SANDY SOIL, CALCAREOUS METASEDIMENT. ASSOCIATED DOMINANT SPECIES: ARTEMISIA FRIGIDA, AGROPYRON SPICATUM. ADDITIONAL ASSOCIATED PLANT SPECIES: SENECIO CANUS, ERIGERON COMPOSITUS, CAMPANULA ROTUNDIFOLIA.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:
EVIDENCE OF LIVESTOCK/WILDLIFE TRAILS, OLD MINING CLAIMS. ECODATA PLOT #92PL108.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5740). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ARABIS FECUNDA
Common Name: SAPPHIRE ROCKCRESS

Global rank: G2 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDBRA06290.015
Element occurrence type:

Survey site name: LIMEKILN HILL
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: PIPESTONE PASS

Township/Range	Section:	TRS Note:
001N007W	27	NW4, NW4SW4; 28 E2SE4NE4

Survey date:
First observation: 1992-06-29
Last observation: 1992-06-29

Elevation: 7320 - 7760
Slope/aspect: 75% / SOUTHEAST
Size (acres): 25

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. FROM FISH CREEK ROAD (FS RD 668), TAKE ROAD TO LIMEKILN HILL (FS RD 8492). PROCEED 0.6 MILE; SITE IS ON RIDGE TO THE WEST.

Element occurrence data:
5,000-10,000 INDIVIDUALS, FRUITING. EVIDENCE OF SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON UNDULATING UPPER RESIDUAL MOUNTAIN SLOPE; DRY AREA, SILTY SOIL, CALCAREOUS METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: PINUS FLEXILIS, AGROPYRON SPICATUM, HAPLOPAPPUS ACAULIS. ADDITIONAL ASSOCIATED SPECIES: POTENTILLA FRUTICOSA, PENSTEMON ARIDUS.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:
DATA GIVEN ARE FOR EAST PORTION OF THE SITE. ECODATA PLOT #92PL110.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ARABIS FECUNDA
Common Name: SAPPHIRE ROCKCRESS

Global rank: G2 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDBRA06290.016
Element occurrence type:

Survey site name: TUCKER CREEK
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: TUCKER CREEK

Township/Range	Section:	TRS Note:
001S009W	01	NW4
001N009W	36	S2

Survey date: 1992-06-27 Elevation: 6640 - 6880
First observation: 1992-06-27 Slope/aspect: 35% / SOUTH
Last observation: 1992-06-27 Size (acres): 40

Location:
FROM DIVIDE (TOWN), TAKE FRONTAGE ROAD NORTH CA. 5 MILES. GO EAST UNDER I-15 TO RANCH, THEN TAKE ROAD TO RESERVOIR. SITE IS ON HILL NORTH OF RESERVOIR.

Element occurrence data:
10,000+ INDIVIDUALS, FRUITING, SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON UNDULATING SLOPE, DRY AREA ON RESIDUAL MOUNTAIN MIDSLOPE. SANDY SOIL OF CALCAREOUS METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: CERCOCARPUS LEDIFOLIUS, AGROPYRON SPICATUM, HAPLOPAPPUS ACAULIS. ADDITIONAL ASSOCIATED SPECIES: ORYZOPSIS HYMENOIDES, CYMOPTERUS BIPINNATUS.

Land owner/manager:
BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA
STATE LAND - UNDESIGNATED
HUMBUG SPIRES PRIMITIVE AREA

Comments:
ECODATA PLOT NUMBER 92PL105. LITTLE OR NO LIVESTOCK DISTURBANCE; DEER SCAT.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ARABIS FECUNDA
Common Name: SAPPHIRE ROCKCRESS

Global rank: G2 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDBRA06290.017
Element occurrence type:

Survey site name: SOUTH FORK TUCKER CREEK
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: TUCKER CREEK

Township/Range	Section:	TRS Note:
001N008W	31	N2

Survey date: 1992-06-27 Elevation: 6720 - 6980
First observation: 1992-06-27 Slope/aspect: 50% / SOUTHWEST
Last observation: 1992-06-27 Size (acres): 25

Location:
FROM DIVIDE (TOWN) TAKE FRONTAGE ROAD NORTH CA. 5 MILES. GO EAST UNDER I-15 TO RANCH. FOLLOW DIRT ROAD TO NORTHEAST CA. 4 MILES, KEEPING TO RIGHT AT FORKS, TO SITE ON EITHER SIDE OF SOUTH FORK TUCKER CREEK, CA. 1 MILE NORTHEAST OF RESERVOIR.

Element occurrence data:
10,000+ INDIVIDUALS; FRUITING, SEED DISPERSAL.

General site description:
PARTIALLY SHADED EXPOSURE ON CONVEX SLOPE; DRY AREA ON RESIDUAL LOWER MOUNTAIN SLOPE. SANDY SOIL OF CALCAREOUS METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: CERCOCARPUS LEDIFOLIUS, JUNIPERUS SCOPULORUM, AGROPYRON SPICATUM. ADDITIONAL ASSOCIATED SPECIES: HAPLOPAPPUS ACAULIS, CYMOPTERUS BIPINNATUS. DEER SCAT PRESENT.

Land owner/manager:
BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA
HUMBUG SPIRES PRIMITIVE AREA

Comments:
ECODATA PLOT NUMBER 92PL106.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5729). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ARABIS FECUNDA
Common Name: SAPPHIRE ROCKCRESS

Global rank: G2 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDBRA06290.018
Element occurrence type:

Survey site name: MOOSE TOWN
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001S008W	03	S2, NW4; 10 N2
001N008W	35	SW4

Survey date: 1992-06-26 Elevation: 6700 - 7000
First observation: 1992-06-26 Slope/aspect: 045% / SOUTH
Last observation: 1992-06-26 Size (acres): 35

Location:
FROM HIGHLAND ROAD, TAKE MOOSE TOWN ROAD SOUTHWEST CA. 2 MILES TO MALONEY PARK. SITE IS ON BLUFFS NORTH OF MOOSE CREEK.

Element occurrence data:
1000-5000 INDIVIDUALS, FRUITING, EVIDENCE OF SEED DISPERSAL IN LARGEST SUBPOPULATION. ADDITIONAL SUBPOPULATION CA. 1.5 MILES NORTHWEST: 2000 PLANTS, FRUITING, MANY SMALL PLANTS AS EVIDENCE OF REPRODUCTIVE SUCCESS. THIRD SUBPOPULATION CA. 1 MILE NNW: 100-2000 STEMS, FRUITING, MATURE FRUIT AND SMALL PLANTS PRESENT.

General site description:
OPEN TO PARTIALLY SHADED EXPOSURE ON UNDULATING AND CONVEX SLOPES. DRY AREAS LOWER TO MIDSLOPE; SANDY SOIL OF CALCAREOUS METASEDIMENT PARENT MATERIAL AND POSSIBLY DOLOMITE. ASSOCIATED DOMINANT SPECIES: AGROPYRON SPICATUM, PHLOX MUSCOIDES, HAPLOPAPPUS ACAULIS, POTENTILLA FRUTICOSA, PINUS FLEXILIS, JUNIPERUS COMMUNIS. ADDITIONAL ASSOCIATED SPECIES: ERIGERON COMPOSITUS, DOUGLASIA MONTANA, SENECIO CANUS, ARCTOSTAPHYLOS UVA-URSI, AND SEDUM LANCEOLATUM.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
LARGEST SUBPOPULATION: ECODATA PLOT NUMBER 92PL103; MINING CLAIMS. NNE SUBPOPULATION: ECODATA PLOT NUMBER 92PL101; NO EVIDENCE OF DISTURBANCE. NNW SUBPOPULATION: ECODATA PLOT NUMBER 92PL102; LIVESTOCK.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5719). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX IDAHOA
Common Name: IDAHO SEDGE

Global rank: G2Q Forest Service status: SENSITIVE
State rank: S1 Federal Status: 3C

Element occurrence code: PMCYP036E0.001

Survey site name: HIGHLAND CITY
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001N008W	35	SW4

Survey date:
First observation: 1981-07-22
Last observation: 1992-07-11

Elevation: 6860 -
Slope/aspect: 5% / WEST
Size (acres): 1

Location:
FROM BUTTE, TAKE STATE HWY 2 TOWARD PIPESTONE PASS; CA. 1.5 MILES BEFORE PASS, GO SOUTHWEST ON FS RD 84 (HIGHLAND ROAD) 10.25 MILES TO 0.1 MILE EAST OF TURNOFF TO MOOSE TOWN. SITE IS BETWEEN ROAD AND CREEK.

Element occurrence data:
1992: CA. 50 INDIVIDUALS, WITH IMMATURE FRUIT PRESENT. 1981: 20-30 PLANTS, GROWING RIGHT ALONG THE ROAD.

General site description:
1992: OPEN EXPOSURE ON STRAIGHT SLOPE; MOIST BOTTOM IN NARROW VALLEY FLOODPLAIN. SILTY SOIL OF ALLUVIAL OR CALCAREOUS PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA, DESCHAMPSIA CESPITOSA, JUNCUS BALTICUS. ADDITIONAL ASSOCIATED PLANT SPECIES: POA PRATENSIS, CAREX PETASATA, FRAGARIA VIRGINIANA, POTENTILLA GRACILIS. 1981: CALCAREOUS WET-MOIST MEADOW SURROUNDED BY WILLOWS AND BOG BIRCH; WITH CAREX SCOPULORUM, PEDICULARIS GROENLANDICA, THALICTRUM SPARSIFLORUM, POTENTILLA FRUTICOSA.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
ECODATA PLOT #92PL114. EVIDENCE OF LIVESTOCK DISTURBANCE.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LACKSCHEWITZ, K. (9728). 1981. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX IDAHOA
Common Name: IDAHO SEDGE

Global rank: G2Q Forest Service status: SENSITIVE
State rank: S1 Federal Status: 3C

Element occurrence code: PMCYP036E0.007
Element occurrence type:

Survey site name: COYOTE HILL
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: PIPESTONE PASS

Township/Range	Section:	TRS Note:
001N007W	27	SE4SW4

Survey date:
First observation: 1992-06-29
Last observation: 1992-06-29

Elevation: 6960 -
Slope/aspect: 2% / SOUTHWEST
Size (acres): 1

Location:
HIGHLAND MOUNTAINS, SOUTH OF BUTTE. FROM FISH CREEK ROAD (FS RD 668), GO NORTH ON LIME KILN MOUNTAIN ROAD (FS RD 8492) CA. 100 YARDS. SITE IS ALONG SMALL SPRING CREEK.

Element occurrence data:
50-100 RAMETS, IMMATURE FRUIT PRESENT.

General site description:
OPEN EXPOSURE ON STRAIGHT SLOPE; MOIST AREA IN BOTTOM ON ALLUVIAL FLOODPLAIN. SILTY SOIL OF ALLUVIAL OR CALCAREOUS PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA, JUNCUS BALTICUS, DESCHAMPSIA CESPITOSA. ADDITIONAL ASSOCIATED SPECIES: POA PRATENSIS, TARAXACUM OFFICINALE, TRIFOLIUM LONGIPES.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:
ECODATA PLOT #92PL109. EVIDENCE OF LIVESTOCK GRAZING.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5746). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX IDAHOA
Common Name: IDAHO SEDGE

Global rank: G2Q Forest Service status: SENSITIVE
State rank: S1 Federal Status: 3C

Element occurrence code: PMCYP036E0.008
Element occurrence type:

Survey site name: SOUTH FORK TUCKER CREEK
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: TUCKER CREEK

Township/Range	Section:	TRS Note:
001N009W	36	NE4

Survey date:		Elevation:	6180 -
First observation:	1992-06-27	Slope/aspect:	
Last observation:	1992-06-27	Size (acres):	1

Location:
FROM DIVIDE (TOWN), GO NORTH ON FRONTAGE ROAD CA. 5 MILES. GO EAST UNDER I-15 CA. 1.5 MILES TO RANCH. TAKE ROAD TO RESERVOIR CA. 1 MILE. INSTEAD OF CONTINUING UPHILL, GO DOWN TO CREEK. SITE IS CA. 0.4 MILE UPSTREAM.

Element occurrence data:
50-100 INDIVIDUALS; IMMATURE FRUIT PRESENT.

General site description:
OPEN EXPOSURE ON STRAIGHT SLOPE; MOIST AREA IN BOTTOM ON FLOODPLAIN TERRACE. SILTY SOIL OF ALLUVIAL PARENT MATERIAL. ECOTONE BETWEEN CAREX NEBRASCENSIS WET MEADOW AND ARTEMISIA TRIDENTATA-FESTUCA IDAHOENSIS STEPPE, WITH POA PRATENSIS AND JUNCUS BALTICUS.

Land owner/manager:
STATE LAND - UNDESIGNATED

Comments:
LIVESTOCK DISTURBANCE EVIDENT.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5730). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX VALLICOLA
Common Name: A SEDGE

Global rank: G5 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PMCYP03EA0.007
Element occurrence type:

Survey site name: LIMEKILN HILL
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: PIPESTONE PASS

Township/Range	Section:	TRS Note:
001N007W	22	E2E2

Survey date: 1992-06-29 Elevation: 7600 - 7650
First observation: 1992-06-29 Slope/aspect: 10% / EAST
Last observation: 1992-06-29 Size (acres): 2

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE; CA. 0.25 MILE DUE EAST OF LIMEKILN SPRING. FROM FISH CREEK TAKE FS RD 8492 TO LIMEKILN HILL. GO NORTH TO THE SADDLE. SITE IS CA. 0.1 MILE NORTH.

Element occurrence data:
100-1000 INDIVIDUALS, IN FRUIT.

General site description:
OPEN EXPOSURE ON CONVEX UPPER SLOPE. MOIST AREA ON RESIDUAL MOUNTAIN SLOPE, SILTY SOIL, CALCAREOUS METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: FESTUCA IDAHOENSIS, LUPINUS SERICEUS. ADDITIONAL ASSOCIATED PLANT SPECIES: CAREX HOODII, CAREX PETASATA, STIPA OCCIDENTALIS, ERIOGONUM UMBELLATUM.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
ROAD RUNS THROUGH POPULATION.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5743). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CLAYTONIA LANCEOLATA VAR FLAVA
Common Name: YELLOW SPRINGBEAUTY

Global rank: G5T5 Forest Service status: SENSITIVE
State rank: S3 Federal Status: C2

Element occurrence code: PDPOR03092.005
Element occurrence type:

Survey site name: BURTON PARK
EO rank: A
EO rank comments: LARGE, REPRESENTATIVE POPULATION; ALL WHITE-FLOWERED.

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001N008W	27	SW4NE4,NE4NW4,E2SE4;22W2,NW4SE4,26SW4SW4,35NW

Survey date: 1989-06-05 Elevation: 6880 -
First observation: 1988 Slope/aspect: LEVEL
Last observation: 1989-06-05 Size (acres): 200

Location:
HIGHLAND MOUNTAINS, BURTON PARK AND UPPER NORTH FORK TUCKER CREEK, CA. 12 AIR MILES SSW OF BUTTE; ALONG HIGHLAND ROAD (N.F. ROAD #84).

Element occurrence data:
CA. 60,000 PLANTS IN 11 SUBPOPULATIONS; ONLY WHITE-FLOWERED PLANTS OBSERVED.

General site description:
LARGE, LEVEL MEADOW, WITH POTENTILLA FRUTICOSA, DODECATHEON CONJUGENS, POLYGONUM BISTORTOIDES, GEUM TRIFLORUM.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
VOUCHER-SCHASSBERGER, L.A. (204). 1988. MONTU; SYSTEMATIC STUDIES IN PROGRESS. UNIQUE POPULATION--ENTIRELY WHITE-FLOWERED.

Information source:
SCHASSBERGER, L.A. 1989. FIELD SURVEYS OF THE PIONEER MOUNTAINS, 6-9 JUNE.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: DRABA DENSIFOLIA
Common Name: DENSE-LEAF WHITLOW-GRASS

Global rank: G5 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDBRA110W0.001
Element occurrence type:

Survey site name: HOMESTAKE REST AREA
EO rank:
EO rank comments:

County: JEFFERSON

USGS quadrangle: HOMESTAKE
DELMOE LAKE

Township/Range	Section:	TRS Note:
002N006W	20	

Survey date:
First observation: 1986
Last observation: 1986-04-26

Elevation: 6300 -
Slope/aspect: - / SOUTH
Size (acres): 0

Location:
JUST EAST OF REST AREA, OFF INTERSTATE-90, 2 MILES EAST OF HOMESTAKE PASS.

Element occurrence data:
COMMON.

General site description:
IN COARSE, SANDY, GRANITE-DERIVED SOIL OF STEEP SOUTH-FACING BANK, WITH ERYSIMUM ASPERUM AND CHAENACTIS DOUGLASII.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:
LABEL READS RANGE 7 WEST; REST AREA IS IN RANGE 6 WEST.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812. (3693). 1986. SPECIMEN # 104255. MONTU.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ERIGERON GRACILIS
Common Name: SLENDER FLEABANE

Global rank: G4 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDAST3M1R0.008
Element occurrence type:

Survey site name: MOUNT HUMBUG
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001N008W	34	

Survey date: - -
First observation: 1981
Last observation: 1981-07-22

Elevation: 7300 -
Slope/aspect:
Size (acres): 0

Location:
BUTTE HIGHLANDS.

Element occurrence data:
WIDELY SCATTERED.

General site description:
SAGEBRUSH PRAIRIE.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
E. URSINUS, ANNOTATED AS E. GRACILIS BY K.H.L., 1987.

Information source:
LACKSCHEWITZ, K.H. (9739). 1981. SPECIMEN #86510. MONTU.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ERIGERON GRACILIS
Common Name: SLENDER FLEABANE

Global rank: G4 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDAST3M1R0.010
Element occurrence type:

Survey site name: PANDORA MOUNTAIN
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: WICKIUP CREEK

Township/Range	Section:	TRS Note:
001S008W	34	NE4

Survey date:		Elevation:	7350 - 7550
First observation:	1992-06-30	Slope/aspect:	5% / EAST
Last observation:	1992-06-30	Size (acres):	40

Location:
FOLLOW CAMP CREEK ROAD SOUTH TO CROSSING OF WICKIUP CREEK. PROCEED 0.2 MILE TO MOFFET MOUNTAIN ROAD. PROCEED WEST AND SOUTH CA. 1 MILE TO NATIONAL FOREST BOUNDARY. SITE IS JUST WEST OF FENCE.

Element occurrence data:
1000+ INDIVIDUALS, FLOWERING.

General site description:
OPEN EXPOSURE ON CONCAVE UPPER SLOPE. DRY/MOIST AREA ON RESIDUAL MOUNTAIN SLOPE; SILTY SOIL. ASSOCIATED DOMINANT SPECIES: ARTEMISIA TRIDENTATA, FESTUCA IDAHOENSIS, GERANIUM VISCOSISSIMUM. ADDITIONAL ASSOCIATED SPECIES: ASTER STENOMERES.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
EVIDENCE OF LIVESTOCK, 4 x 4 ROADS, PROSPECTING. SPECIES MAY BE COMMON IN THE AREA; LARGE AMOUNT OF UNSURVEYED HABITAT AVAILABLE.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5751). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ERIGERON GRACILIS
Common Name: SLENDER FLEABANE

Global rank: G4 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDAST3M1R0.012
Element occurrence type:

Survey site name: PIPESTONE PASS
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: PIPESTONE PASS

Township/Range	Section:	TRS Note:
001N007W	33	N2NE4NW4; 28 S2S2S2; 27 N2NE4; 22 S2S2SE4

Survey date:
First observation: 1992-06-29
Last observation: 1992-06-29

Elevation: 7120 - 7650
Slope/aspect: 2-15% / SOUTH, EAST
Size (acres): 35

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. TWO SITES: 1) FROM FISH CREEK TAKE ROAD TO LIMEKILN HILL (FS RD 8492), SITE IS CA. 0.2 MILES SOUTH OF SADDLE; 2) TAKE FISH CREEK ROAD (FS RD 668) WEST TO CREEK CROSSING. PROCEED 0.3 MILE TO MEADOWS.

Element occurrence data:
1,000 TO 10,000 INDIVIDUALS, FLOWERING; 2 SUBPOPULATIONS.

General site description:
OPEN EXPOSURE ON STRAIGHT SLOPE; DRY-MOIST AREA ON RESIDUAL MOUNTAIN SLOPES, SILTY SOIL, CALCAREOUS METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA, FESTUCA IDAHOENSIS, POA PRATENSIS. ADDITIONAL ASSOCIATED SPECIES: LUPINUS SERICEUS, ARTEMISIA TRIDENTATA, CERASTIUM ARVENSE, POTENTILLA GRACILIS.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
LIVESTOCK, EXOTICS, AND ROADS IN AREA. ERIGERON GRACILIS PROBABLY OCCURS IN OTHER AREAS IN HIGHLAND CITY AREA; HABITATS NOT SURVEYED.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5741). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: GENTIANA AQUATICA
Common Name: WET MEADOW GENTIAN

Global rank: G4 Forest Service status:
State rank: S2S3 Federal Status:

Element occurrence code: PDGEN06050.012
Element occurrence type:

Survey site name: LIMEKILN HILL
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: PIPESTONE PASS

Township/Range	Section:	TRS Note:
001N007W	27	SE4SW4

Survey date:
First observation: 1992-06-29
Last observation: 1992-06-29

Elevation: 6920 - 7000
Slope/aspect: 2% / SOUTH
Size (acres): 5

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. FROM FISH CREEK ROAD (FS RD 668), TAKE ROAD TO LIME KILN HILL (FS RD 8492) FOR CA. 100 YARDS. SITE IS ALONG SMALL SIDE CREEK JUST 100 YARDS UP ROAD.

Element occurrence data:
1000+ INDIVIDUALS, FLOWERING AND FRUITING. EVIDENCE OF SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON STRAIGHT BOTTOM SLOPE. MOIST AREA, SILTY SOIL, CALCAREOUS ALLUVIUM PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA, JUNCUS BALTICUS, POA PRATENSIS, DESCHAMPSIA CESPITOSA. ADDITIONAL ASSOCIATED PLANT SPECIES: ANTENNARIA CORYMBOSA.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:
LIVESTOCK GRAZING. ANNUAL SPECIES; POPULATION SIZE FLUCTUATES.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5747). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR LINEARIS
Common Name: LINEAR-LEAVED DISCOID GOLDENWEED

Global rank: G4T? Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDAST4F0U3.001
Element occurrence type:

Survey site name: MOUNT HUMBUG
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001N008W	35	SW4SW4; 34 SE4SE4
001S008W	03	NE4NE4

Survey date:
First observation: 1992-08-01
Last observation: 1992-08-01

Elevation: 6880 - 6980
Slope/aspect: 10% / SOUTHEAST
Size (acres): 15

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE; TAKE HIGHLAND ROAD (FS RD 84) WEST TO TURNOFF TO MOOSE TOWN. GO LEFT AND PROCEED TO FIRST CATTLE GUARD. SITE IS CA. 0.6 MILE SOUTHEAST OF MOOSE CAMP SPRING.

Element occurrence data:
500-1000 INDIVIDUALS; FLOWERING, IN FRUIT AND BUD. EVIDENCE OF SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON CONCAVE MIDSLOPE. DRY AREA ON RESIDUAL MOUNTAIN SLOPE; LOAM SOIL, METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA, ARTEMISIA TRIDENTATA, FESTUCA IDAHOENSIS, AGROPYRON DASYSTACHYUM, STIPA RICHARDSONII. ADDITIONAL ASSOCIATED SPECIES: POA PRATENSIS, ANTENNARIA MICROPHYLLA, GEUM TRIFLORUM, ERIOGONUM UMBELLATUM.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
ROAD RUNS THROUGH POPULATION; HEAVY LIVESTOCK USE NEAR CATTLEGUARD. PLANT APPEARS TO BE MOST COMMON IN MOST DISTURBED AREAS.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5831). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR LINEARIS
Common Name: LINEAR-LEAVED DISCOID GOLDENWEED

Global rank: G4T? Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDAST4F0U3.002
Element occurrence type:

Survey site name: BURTON PARK
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001N008W	22	S2N2

Survey date:
First observation: 1992-08-01
Last observation: 1992-08-01

Elevation: 6940 - 6980
Slope/aspect: 5% / SOUTH
Size (acres): 20

Location:
HIGHLAND MOUNTAINS, SOUTH OF BUTTE. SITE IS AT NORTH END OF BURTON PARK ALONG TRAIL #108, CA. 2.25 MILES DUE NORTH OF MOOSE CAMP SPRING.

Element occurrence data:
100-300 INDIVIDUALS, FLOWERING, IN BUD.

General site description:
OPEN EXPOSURE ON STRAIGHT LOWER SLOPE; DRY AREA ON ALLUVIAL FAN, LOAM SOIL, GRANITE PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: ARTEMESIA TRIDENTATA, FESTUCA IDAHOENSIS, CAREX FILIFOLIA. ADDITIONAL ASSOCIATED SPECIES: GEUM TRIFLORUM, SELAGINELLA DENSA.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
CATTLE DISTURBANCE; MANY PLANTS TRAMPLED. ECODATA PLOT #92PL118.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5830). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR MACRONEMA
Common Name: DISCOID GOLDENWEED

Global rank: G4T4 Forest Service status: SENSITIVE
State rank: S1 Federal Status:

Element occurrence code: PDAST4F0U2.001
Element occurrence type:

Survey site name: STORM PEAK
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: STORM PEAK

Township/Range	Section:	TRS Note:
003S010W	21	SE4

Survey date:
First observation: 1920
Last observation: 1990-07-29

Elevation: 8900 -
Slope/aspect:
Size (acres): 0

Location:
EAST PIONEER MOUNTAINS, CA. 0.5 MILE SOUTHEAST OF STORM PEAK.

Element occurrence data:
CA. 20 PLANTS OBSERVED IN AREA CA. 20M N-S BY 50M E-W; SOME NOT YET IN FLOWER.

General site description:
TALUS SLOPE, SOUTH FACING, WITH SCATTERED WHITEBARK PINE, AND RIBES, ARTEMISIA, DELPHINIUM.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, WISE RIVER RANGER DISTRICT
BEAVERHEAD NATIONAL FOREST, DILLON RANGER DISTRICT

Comments:
ADDITIONAL HABITAT TO EAST NOT SURVEYED (1990). VOUCHER - ELOFSON, H. W. (133), 1920, MONT.

Information source:
JONES, CEDRON. c/o MT NATURAL HERITAGE PROGRAM.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: JUNCUS HALLII
Common Name: HALL'S RUSH

Global rank: G4G5 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PMJUN011E0.010
Element occurrence type:

Survey site name: MOUNT HUMBUG
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001N008W	36	SE4NW4

Survey date:
First observation: 1992-06-30
Last observation: 1992-06-30

Elevation: 7210 - 7280
Slope/aspect: 5% / NORTH
Size (acres): 1

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. FROM JUNCTION OF HIGHLAND ROAD (FS RD 84) AND CAMP CREEK ROAD (FS RD 8520), TAKE HIGHLAND ROAD WEST CA. 0.5 MILE. TAKE ROAD TO RIGHT AND PROCEED CA. 0.5 MILE TO JUNCTION. STAY LEFT AND PROCEED 0.25-0.50 MILE TO SITE.

Element occurrence data:
50+ INDIVIDUALS IN EARLY FRUIT.

General site description:
OPEN EXPOSURE ON CONCAVE MIDSLOPE; MOIST AREA. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA AND JUNCUS BALTICUS. ADDITIONAL ASSOCIATED SPECIES: ASTRAGALUS ALPINUS, POTENTILLA FRUTICOSA, JUNCUS TENUIS.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
SITE IS ADJACENT TO ROAD. AREA HAS BEEN LOGGED.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5750). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: OROBANCHE CORYMBOSA
Common Name: FLAT-TOPPED BROOMRAPE

Global rank: G4 Forest Service status: WATCH
State rank: S2 Federal Status:

Element occurrence code: PDORO04040.006
Element occurrence type:

Survey site name: HELLS CANYON
EO rank:
EO rank comments:

County: MADISON

USGS quadrangle: TABLE MOUNTAIN

Township/Range	Section:	TRS Note:
002S006W	7	SW4; SW4SE4
002S007W	12	NE4NE4

Survey date: 1992-07-29 Elevation: 6150 - 6650
First observation: 1992-07-29 Slope/aspect: 5-10% / SOUTH
Last observation: 1992-07-29 Size (acres): 50

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. SITES ARE OFF MAIN HELLS CANYON ROAD. MAIN (CENTROID) POPULATION IS CA. 1.7 MILES SOUTHEAST OF HELLS CANYON FOREST SERVICE STATION.

Element occurrence data:
OVER 2000 INDIVIDUALS, WITH 3 SUBPOPULATIONS. OLD STEMS, SOME FLOWERING PLANTS. ROOTS ARE FULL OF WORMS.

General site description:
OPEN EXPOSURE ON RIDGE. CONVEX SLOPE SHAPE. DRY AREA ON RESIDUAL MOUNTAIN SLOPES. SANDY SOIL, GRANITE PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: ARTEMISIA TRIDENTATA, FESTUCA IDAHOENSIS, AGROPYRON SPICATUM. ADDITIONAL ASSOCIATED PLANT SPECIES: POA SECUNDA, ERIGERON COMPOSITUS, ANTENNARIA MICROPHYLLA.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
DISTURBANCE FROM LIVESTOCK EVIDENT. ECODATA PLOT #92PL116, 92PL117.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5811). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: PENSTEMON LEMHIENSIS
Common Name: LEMHI BEARDTONGUE

Global rank: G3 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDSCR1L3N0.046
Element occurrence type:

Survey site name: MOUNT HUMBUG
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001S007W	06	NE4
001N007W	32	SW4SW4

Survey date:
First observation: 1992-06-28
Last observation: 1992-06-28

Elevation: 7640 - 7880
Slope/aspect: 30% / NORTHEAST
Size (acres): 12

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. FROM CAMP CREEK ROAD (FS RD 8520) TAKE ROAD TO FISH CREEK AND HIGHLAND LOOKOUT (FS RD 8514). SITE IS 0.2 MILE BEYOND TURNOFF TO LOOKOUT.

Element occurrence data:
TWO SUBPOPULATIONS, EACH WITH 50-100 INDIVIDUALS, FLOWERING.

General site description:
OPEN EXPOSURE ON CONCAVE MIDSLOPE. DRY AREA ON RESIDUAL MOUNTAIN SLOPE; SANDY SOIL, CALCAREOUS METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: AGROPYRON SPICATUM, FESTUCA IDAHOENSIS, ASTRAGALUS MISER. ADDITIONAL ASSOCIATED SPECIES: PHACELIA HASTATA, DELPHINIUM BICOLOR, PHLOX LONGIFOLIA, COLLOMIA LINEARIS, BROMUS CARINATUS.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
OLD MINE PROSPECTS, ROAD, POCKET GOPHERS. ECODATA PLOT #92PL107.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5738). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: PENSTEMON LEMHIENSIS
Common Name: LEMHI BEARDTONGUE

Global rank: G3 Forest Service status: SENSITIVE
State rank: S2 Federal Status: C2

Element occurrence code: PDSCR1L3N0.047
Element occurrence type:

Survey site name: MOUNT HUMBUG
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001S008W	04	SE4NE4SE4

Survey date:
First observation: 1992-07-11
Last observation: 1992-07-11

Elevation: 6920 -
Slope/aspect: 35% / EAST
Size (acres): 1

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. FROM HIGHLAND ROAD (FS RD 84) TAKE ROAD TO MOOSE TOWN (FS RD 8594). FOLLOW ROAD TO MALONEY PARK, CONTINUE WEST 0.2 MILE TO TRACK GOING NORTH ACROSS CREEK AND PROCEED ON TRACK FOR CA. 0.7 MILES. SITE IS JUST EAST OF TRACK, CA. 1.6 MILES SOUTHEAST OF THE PEAK OF MOUNT HUMBUG.

Element occurrence data:
100-200 INDIVIDUALS, FLOWERS AND IMMATURE FRUIT. NEARLY ALL INFLORESCENCES EATEN OFF.

General site description:
OPEN EXPOSURE ON CONCAVE RESIDUAL LOWER SLOPE, DRY AREA, SANDY SOIL, CALC METASEDIMENT PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: CHRYSOTHAMNUS NAUSEOSUS, FESTUCA IDAHOENSIS, AGROPYRON SPICATUM. ADDITIONAL ASSOCIATED SPECIES: HAPLOPAPPUS ACAULIS, MACHAERANTHERA CANESCENS.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
PREDATION PROBABLY CAUSED BY ELK, BUT POSSIBLY DEER OR COWS. ECODATA PLOT #92PL115

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: RANUNCULUS VERECUNDUS
Common Name: TIMBERLINE BUTTERCUP

Global rank: G5 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDRAN0L2Q0.005
Element occurrence type:

Survey site name: HELLS CANYON
EO rank:
EO rank comments:

County: MADISON

USGS quadrangle: TABLE MOUNTAIN

Township/Range	Section:	TRS Note:
001S007W	16	S2S2; 21

Survey date:	1992-07-30	Elevation:	9200 - 9300
First observation:	1992 07-30	Slope/aspect:	10% / SOUTH
Last observation:	1992-07-30	Size (acres):	1

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE; CA. 0.6 MILE DUE WEST OF THE PEAK OF TABLE MOUNTAIN. SITE IS ALONG DRAINAGE AT HEAD OF CIRQUE.

Element occurrence data:
200-500 INDIVIDUALS, MAINLY FLOWERING.

General site description:
OPEN EXPOSURE ON BOTTOM OF MOIST, NARROW ALPINE CIRQUE. WET-ORGANIC SOIL, QUARTZITE PATENT MATERIAL. ASSOCIATED DOMINANT SPECIES: DESCHAMPSIA CESPITOSA, CAREX PAYSONIS. ADDITIONAL ASSOCIATED PLANT SPECIES; VERONICA WORMSKJOLDII, EPILOBIUM ALPINUM, CAREX ALBONIGRA, AGROSTIS HUMILIS.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:
SOME BIGHORN OR GOAT GRAZING EVIDENT.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5820). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SAXIFRAGA TEMPESTIVA
Common Name: STORM SAXIFRAGE

Global rank: G2 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PDSAX0U1R0.014
Element occurrence type:

Survey site name: HELLS CANYON
EO rank:
EO rank comments:

County: MADISON

USGS quadrangle: TABLE MOUNTAIN

Township/Range	Section:	TRS Note:
001S007W	16	SW4SE4,W2

Survey date: 1992-07-06 Elevation: 9400 - 9900
First observation: 1992-07-06 Slope/aspect: 10% / SOUTHWEST
Last observation: 1992-07-06 Size (acres): 1

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE, CA. 0.5 MILE NORTHWEST OF THE PEAK OF TABLE MOUNTAIN, AND CA. 0.25 MILE SOUTHWEST OF THE MADISON-SILVER BOW COUNTY LINE.

Element occurrence data:
100-500 INDIVIDUALS, 2 SUBPOPULATIONS, IN FRUIT.

General site description:
OPEN EXPOSURE ON UPPER CONCAVE SLOPE. MOIST AREA ON GLACIATED MOUNTAIN SLOPE, GRAVELLY/SILTY SOIL, QUARTZITE PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: GEUM ROSSII, CAREX ELYNOIDES. ADDITIONAL ASSOCIATED PLANT SPECIES: DODECATHEON PULCHELLUM, POLYGONUM BISTORTOIDES.

Land owner/manager:
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
ECODATA PLOT #92PL114.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5814). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THLASPI PARVIFLORUM
Common Name: SMALL-FLOWERED PENNYCRESS

Global rank: G3 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PDBRA2P050.007
Element occurrence type:

Survey site name: MOUNT HUMBUG
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001S008W	01	W2NW4

Survey date:
First observation: 1992-06-30
Last observation: 1992-06-30

Elevation: 6950 -
Slope/aspect: 5% / NORTHWEST
Size (acres): 5

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. FROM JUNCTION OF HIGHLAND ROAD (FS RD 84) AND CAMP CREEK ROAD (FS RD 8520), TAKE HIGHLAND ROAD WEST CA. 1.2 MILES. SITE IS 0.25 MILES SOUTH ON SOUTH SIDE OF CREEK.

Element occurrence data:
1,000-10,000 INDIVIDUALS, IN FRUIT; EVIDENCE OF SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON STRAIGHT BOTTOM SLOPE, MOIST AREA ON FLOODPLAIN IN WIDE VALLEY, SILTY SOIL, ALLUVIUM PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA, JUNCUS BALTICUS, POA JUNCIFOLIA. ADDITIONAL ASSOCIATED SPECIES: POA PRATENSIS, TARAXACUM OFFICINALE, POTENTILLA DIVERSIFOLIA.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:
EXOTICS, EVIDENCE OF LIVESTOCK GRAZING. ECODATA PLOT #92PL112.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THLASPI PARVIFLORUM
Common Name: SMALL-FLOWERED PENNYCRESS

Global rank: G3 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PDBRA2P050.008
Element occurrence type:

Survey site name: MOUNT HUMBUG
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township/Range	Section:	TRS Note:
001N007W	31	NE4SW4, SE4NW4

Survey date:
First observation: 1992-06-26
Last observation: 1992-06-26

Elevation: 7300 - 7350
Slope/aspect: 5% / SOUTHEAST
Size (acres): 3

Location:
HIGHLAND MOUNTAINS SOUTH OF BUTTE. SITE IS AT JUNCTION OF HIGHLAND ROAD (FS RD 84) AND CAMP CREEK ROAD (FS RD 8520) ON WEST EDGE OF LODGEPOLE.

Element occurrence data:
100-1,000 INDIVIDUALS, FRUITING, EVIDENCE OF SEED DISPERSAL.

General site description:
OPEN EXPOSURE ON STRAIGHT TERRACE; MOIST AREA ON RESIDUAL MOUNTAIN SLOPES, SILTY SOIL OF ALLUVIUM PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: POTENTILLA FRUTICOSA, POA PRATENSIS, TARAXACUM OFFICINALE. ADDITIONAL ASSOCIATED SPECIES: BROMUS CARINATUS, POTENTILLA GRACILIS, ERIGERON GRACILIS.

Land owner/manager:
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
ROADS, LIVESTOCK AND ABUNDANT GOPHER ACTIVITY. ECODATA PLOT #92PL104.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5723). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: VIOLA RENIFOLIA
Common Name: KIDNEY-LEAF WHITE VIOLET

Global rank: G5 Forest Service status: SENSITIVE
State rank: S1 Federal Status:

Element occurrence code: PDVIO041V0.010
Element occurrence type:

Survey site name: SOUTH FORK TUCKER CREEK
EO rank:
EO rank comments:

County: SILVER BOW

USGS quadrangle: TUCKER CREEK

Township/Range	Section:	TRS Note:
001N008W	31	SW4
001N009W	36	NW4

Survey date:
First observation: 1992-06-27
Last observation: 1992-06-27

Elevation: 6120 - 6520
Slope/aspect: 5% / -
Size (acres):

Location:
FROM DIVIDE (TOWN) TAKE FRONTAGE ROAD NORTH CA. 5 MILES. GO EAST UNDER I-15 TO RANCH. TAKE ROAD TO RESERVOIR CA. 1 MILE, THEN SIDEHILL EAST TO CREEK. SITE IS CA. 1 MILE UPSTREAM ALONG CREEK.

Element occurrence data:
100+ INDIVIDUALS IN TWO SUBPOPULATIONS; CLEISTOGAMOUS FLOWERS AND MATURE FRUIT.

General site description:
SHADED BOTTOM; MOIST AREA IN RESIDUAL MOUNTAIN STREAM VALLEY. SILTY SOIL OF ALLUVIAL PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: PICEA ENGELMANNII, PSEUDOTSUGA MENZIESII. ADDITIONAL ASSOCIATED PLANT SPECIES: ACTAEA RUBRA, RIBES HUDSONIANUM, PYROLA OSARIFOLIA.

Land owner/manager:
HUMBUG SPIRES PRIMITIVE AREA
BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA
STATE LAND - UNDESIGNATED

Comments:
ENTIRE CREEK NOT SURVEYED. STREAM IN FLOOD; SOME LIVESTOCK USE.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5731). 1992. MONTU.

Appendix C. ECODATA plot forms for plant communities associated with populations of sensitive plant species in the Highland Mountains.

Appendix D. Photographs of sensitive species and species of special concern located in the Highland Mountains.

Arabis fecunda site
Moose Town

Deerlodge NF

Silver Bow Co.
June 1992
92PL101

Moose Town

Deerlodge NF

Silver Bow Co.
June 1992
92PL103

Tucker Creek

Deerlodge NF

Silver Bow Co.
June 1992
92PL105

Arabis fecunda site
Tucker Creek

Deerlodge NF

Silver Bow Co.
June 1992
92PL106

Arabis fecunda site
Tucker Creek

Deerlodge NF

Silver Bow Co.
June 1992
92PL106

Arabis fecunda site
Highland City

Deerlodge NF

Silver Bow Co.
June 1992
92PL108

Arabis fecunda site
Highland City

Deerlodge NF

Silver Bow Co.
June 1992
92PL110

Arabis fecunda site
Humbug Spires

Silver Bow Co.
June 1992
PL

Tucker Creek
Silver Bow Co.
June 1992

Deerlodge NF

Carex parryana idahoa

Carex parryana idahoa
Highland City site

Deerlodge NF

Silver Bow Co.
June 1992
92PL109

Carex parryana idahoa
Moose Town site

Deerlodge NF

Silver Bow Co.
June 1992
92PL114

Carex parryana idahoa
Tucker Creek site

Deerlodge NF

Silver Bow Co.
June 1992

Carex vallicola
Highland City

Deerlodge NF

Silver Bow Co.
June 1992
PL

Erigeron gracilis
Moose Town

Deerlodge NF

Silver Bow Co.
June 1992

Moose Town site

Deerlodge NF

Silver Bow Co.
June 1992
92PL115

Moose Town site

Deerlodge NF

Silver Bow Co.
June 1992
92PL111

Penstemon humilis
Moose Town

Deerlodge NF

Silver Bow Co.
June 1992

Thlaspi parviflorum
Moose Town

Deerlodge NF

Silver Bow Co.
June 1992
92PL112

Saxifraga tempestiva
Table Mt.

Deerlodge NF

Silver Bow Co.
June 1992
PL

Saxifraga tempestiva
Table Mt. site

Deerlodge NF

Silver Bow Co.
June 1992
PL

Thlaspi parviflorum
Moose Town

Deerlodge NF

Silver Bow Co.
June 1992

Thlaspi parviflorum
Moose Town

Deerlodge NF

Silver Bow Co.
June 1992

Thlaspi parviflorum
Moose Town site

Deerlodge NF

Silver Bow Co.
June 1992
92PL104