SENSITIVE PLANT SPECIES INVENTORY IN THE CENTENNIAL VALLEY, BEAVERHEAD COUNTY, MONTANA

BUREAU OF LAND MANAGEMENT, BUTTE DISTRICT

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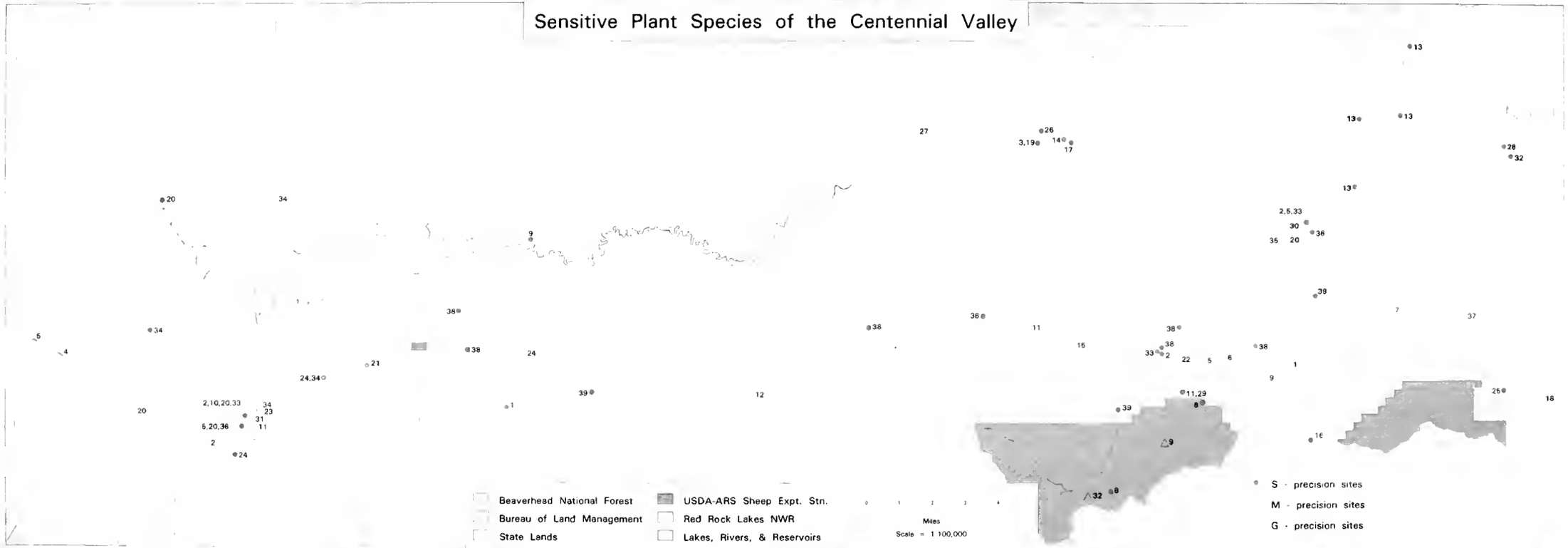
Sensitive Plant Species of the Centennial Valley



Species List

1 Aquilegia formosa
2 Astragelus argophyllus
3 Astragalus ceramicus var. apus
4 Astragalus lentiginosus
5 Astragalus leptaleus
6 Astragalus terminalis
7 Atriplex truncata
8 Balsamorhiza macrophylla
9 Carex multicostata
10 Carex parryana ssp. idahoa
11 Carex vallicola
12 Castilleje rustice
13 Cirsium subniveum
14 Cryptantha fendleri
15 Downingia laeta
16 Draba globosa
17 Elymus flavescens
18 Erigeron gracilis
19 Eriogonum ovalifolium var. nevadense
20 Gentiana aquatica
21 Gentianopsis simplex
22 Haplopappus nanus
23 Helenium hoopesii
24 Ipomopsis congesta ssp. crebrifolia
25 Lesquerella sp. novum
26 Denothera pallida var. idahoensis
27 Orobanche corymbosa
28 Orogenia fusiformis
29 Penstemon whippleanus
30 Potentilla plattensis
31 Primula alcalina
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I. INTRODUCTION

A sensitive plant survey of the Centennial Valley and Mountains was conducted during the summer of 1993. The primary purpose of this investigation was to determine the occurrence, frequency and distribution of the rare plant species considered potentially sensitive by the Bureau of Land Management (BLM). This inventory of sensitive plants is a management tool for the BLM to revise the draft BLM list of sensitive plants in Montana and to implement a sensitive species program in the Centennial Valley.

The Centennial Valley has among the highest numbers of rare species of all BLM land areas in Montana. Although there had been no extensive systematic survey of BLM lands prior to this study, thirteen of the thirty-six known state species of concern in the Centennial Valley (Table 1) had been documented on BLM-administered lands at the start of this project based on such studies as represented in Dorn (1968), Lowry (1979), Lesica (1985), Schassberger (1988) and Heidel (1993).

II. STUDY AREA

The Centennial Mountains form much of the Continental Divide along the border between southwestern Montana and Idaho (Fig 1). The Centennial Mountains are on of the few ranges in North America that run in an east-west direction. The mountains are bounded on the north by the Centennial Valley and on the south by the Snake River Plains. This area is represented by a wide range of floristic and vegetational diversity including: open sagebrush desert; open, rocky canyons and streambanks; open, disturbed roadways and trails; dry, open grasslands; seasonally moist, montane coniferous forests; seasonally moist aspen groves; moist stream courses; montane and subalpine meadows and slopes; subalpine and alpine lakes; subalpine and alpine coniferous forests; alpine scree and talus slopes; meadows, grasslands, and windswept ridges; a wide range of wetland habitats including lakes, ponds, wet meadows, marshes, and seepage area; and sand dunes and hills (Lesica, 1984; Lowry, 1979).

The Centennial Valley is a high elevation (6600 feet) intermontane valley centered on the Red Rock River headwaters. The valley is located between 44^0 31′ and 44^0 40′ latitude and 111^0 40′ and 112^0 20′ longitude (Figure 1). Centennial Valley is approximately 40 miles long and 7 miles wide, bordered on the northeast by the Gravelly Range and the Snowcrest Mountains to the northwest. The Centennial Mountains are oriented approximately in an east-west direction, forming the southside of Centennial Valley for 40 miles from Monida Pass, Montana to the Henry's Fork of the Snake River in Idaho. Mount Jefferson on the east side of the range is the highest point, reaching an elevation of 10,211 feet (MAPS 1990).

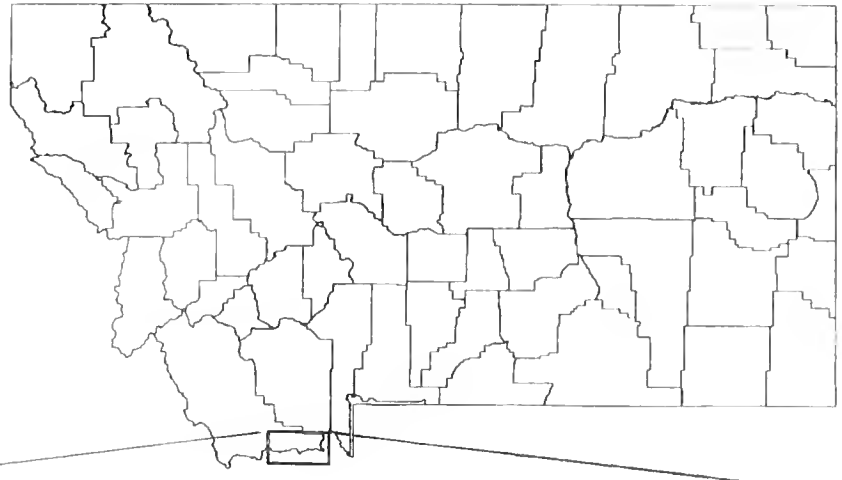

Figure 1.
Centennial Valley study area in southwestern Montana

Table 1. Primary target species for sensitive plant inventory on BLM lands in the Centennial Valley, Beaverhead County, MT.

SENSITIVE PLANTS OF THE CENTENNIAL VALLEY*
Montana Natural Heritage Program

Aquilegia formosa*
Astragalus argophyllus var. argophyllus
Astragalus ceramicus var. apus*
Astragalus lentiginosus*
Astragalus leptaleus
Astragalus terminalis*
Atriplex truncata
Balsamorhiza macrophylla
Carex multicostata
Carex parryana ssp. idahoa
Carex vallicola
Castilleja rustica
Cirsium subniveum
Cryptantha fendleri*
Downingia laeta
Elymus flavescens
Erigeron gracilis
Eriogonum ovalifolium var nevadense*
Gentiana aquatica
Gentianopsis simplex
Haplopappus nanus
Helenium hoopesii
Ipomopsis congesta ssp. crebrifolia
Lesquerella sp. novum*
Oenothera pallida var. idahoensis*
Orobanche corymbosa
Orogenia fusiformis
Potentilla plattensis
Primula alcalina
Ranunculus jovis
Senecio debilis
Sphaeralcea munroana*
Stellaria crassifolia
Thalictrum alpinum
Thelypodium paniculatum*
Thelypodium sagittatum var. sagittatum

* This list represents a compilation of all state species of concern documented within the study area as of 24 March 1993, which were the primary target species for inventory. Those which had been documented on BLM lands prior to this study are marked by an asterisk (*), and those species which were proposed for BLM status in Montana (sensitive or watch; BLM draft list of March 1993) are bold-faced.

In addition, five more rare species are reported from the area by various sources, with incomplete information: Allium acuminatum from the Centennials area by Lowry (1979), Castilleja gracillima from the Centennials area by Lowry (1979), Kobresia simpliciuscula from Odell Canyon by Lowry (1979), Pteryxia hendersonii (Cymopteris hendersonii) reported from Odell Canyon and Sheep Mountain - herbarium records needed from RM, and Stephanomeria spinosa from Red Rock Pass - source unknown.

The area's land ownership is divided between Bureau of Land Management, Red Rock Lakes National Wildlife Refuge, Beaverhead National Forest, Agricultural Research Service, State of Montana and private.

Throughout this report, "Centennial Valley" will be used to refer to the entire study area, which encompasses the Montana side of the Centennial Mountains, and the lower foothills of the Gravelly and Snowcrest Ranges.

Ownership within the study area is depicted on Figure 1, based on BLM digitized data, as updated by Department of State Lands in post-1982 corrections. The 1990 Southwestern Montana Interagency Map produced by the BLM was used to resolve disparities between the two preceding maps, unless map consultants responsible for these products directed otherwise.

Geology

The Centennial Mountains belong to the Laramide orogeny system and are included in the broader category of "Central Rockies" (Eardley 1951). The mountains are tectonic in origin, arising from the prominent "Centennial Fault"; a fault block of east-west orientation that runs along the northern foot slope of the mountains. The Centennial Mountains to the south of the fault are the uplifted range-block and the Centennial Valley to the north is the down-thrown basin block, resulting in a 3,000 foot fault scarp. The uplift of the Centennial Range began in Lower Cretaceous time, which marked the advent of the Laramide orogeny, and continued to early Eocene time (Honkala 1960).

The Centennial escarpment was further modified by glaciation during the Pinedale and Bull Lake stages (Taylor and Ashley 1990). Small terminal moraines at the foot slope of the mountains are common as are small north-south trending glacial valleys and cirques. More recently, the scarp was modified by avalanches and landslides which are evident along the mountain sides.

The rocks comprising the Centennial Mountains are: 1. Precambrian metamorphics; 2. Paleozoic, Mesozoic, and Cenozoic sediments; and 3. Cenozoic volcanics. The watershed to the east which includes the Alaska Basin area and the Tom Creek drainage is comprised almost entirely of Precambrian metamorphosed carbonates (Taylor and Ashley 1990).

Above the Precambrian metamorphics, at the headwater of Red Rock Creek and Tom Creek, sedimentary rocks prevail. Represented in these high altitude rocks are Cambrian rocks which are progressively overlain by sedimentaries of Devonian Jefferson Limestone or Three Forks Formation; Mississippian Madison Formation Limestone; Permian Phosphoria Formation' Pennsylvanian Amsden and Quadrant Formation; and in some areas, Tertiary volcanics (Egbert 1960, Mann 1960, Taylor and Ashley 1990). With the exception of the Phosphoria Formation which contains cherts, shales, and phosphorite (Cressman and Swanson 1960), the above strata are primarily composed of limestone, dolomite, and sandstones (Mann 1960).

The continuity of the Centennial Mountains is disrupted by a north-south trending fault through the Odell Creek drainage. Honkala (1960) theorized that this is a high-angle normal fault. The area west of the fault is composed of Tertiary volcanics. Mount Baldy dominates the area at an elevation of 9889 feet.

The geologic composition of the Centennial Valley floor is Quaternary alluvium which resulted from the erosional breakdown of the surrounding mountains (Taylor and Ashley 1990).

Climate

The Centennial Region is characterized by long cold winters and short cool summers. The average annual precipitation is 20 inches (1961-1991).

Average snowfall during the winter months is 150 inches. Snowfall during every month of the year is not uncommon.

The mean annual temperature is 34.9 F. During extreme cold periods, air temperatures commonly drop to the -30^0F to -40^0F range. The summer maximum temperature rarely exceeds 90 F.

Although frost occasionally occurs during every month of the year, the average length of the frost-free season is approximately 51 days. This season extends from mid-June to mid-August (MAPS 1990).

Soils

The soils of the western portion of the Centennial Mountains (east of Odell Creek) consist of rock outcrops and talus slopes at higher elevations and mollisols on the benches and terraces. The soils of the Centennial Mountains west of Odell Creek, north and south of the Red Rock River basin, are inceptisols-alfisols. The parent materials are colluvium, igneous rock, and sedimentary. The Red Rock River drainage contains characteristic mollisols from a cold, wet basin who are derived from the parent material alluvium. The soils surrounding the Lima Reservoir are aridisols-mollisols that are calcareous from the parent materials of alluvium and colluvium (MAPS 1990).

Soils of the Centennial Valley are in the process of being mapped by the Soil Conservation Service (Gomez personal communication).

Vegetation

Vegetation of the Centennial Mountains is diverse and varies with elevation, hydrology, substrate and microhabitat. It is predominately coniferous forest dominated by Douglas fir (Pseudotsuga menziesii) and lodgepole pine (Pinus contorta). The streams and higher cool slopes are characterized by the spruce (Picea engelmannii) and horsetail (Equisetum arvense) association (DeVelice 1992). Whitebark pine (Pinus albicaulis) and subalpine fir (Abies lasiocarpa) dominate in the subalpine region with occasional stands of limber pine (Pinus flexilis) (DeVelice 1992). The lower elevations along the foothills are dominated by big sagebrush (Artemisia tridentata), three-part sagebrush (A. tripartita) and rabbit brush (Chrysothamnus nauseosus). The upper wetlands are dominated by shrubby cinquefoil (Potentilla fruticosa) and Idaho fescue (Festuca idahoensis). The lower, wetter meadows are dominated by tufted hairgrass (Deschampsia cespitosa), sedges (Carex spp.) and rushes (Juncus spp.). The swamps and drainages are dominated by willows (Salix spp). The Centennial Sandhills consist dominated by thickspike wheat grass (Agropyron dasystachyum), silverleaf

phacelia (Phacelia hastata), big sagebrush (Artemisia tridentata), threetip sagebrush, (Artemisia tripartita), Idaho fescue (Festuca idahoensis) (DeVelice 1992).

Flora

A recent floristic inventory of the Centennial Mountains on BLM lands documented 362 taxa (including species, subspecies, and varieties) representing 190 genera in 43 families (Lowry 1979), or approximately 15% of the flora of Montana (Shelley 1986). Dorn (1968), in a more complete floristic study of the Red Rock Lakes National Wildlife Refuge and adjacent Centennial Mountains, listed 487 species in 243 genera and 65 families, or approximately 21% of Montana's flora (Shelley 1986). Areas of such high floristic and geographic diversity often harbor numerous rare or unique species (Shelley 1986). There are no taxa known to be strictly endemic to the Centennial Region, however a number of taxa occur there which are either regional endemics or which occur on the edge of their range (Shelley 1986).

III. METHODS

The Centennial Valley and Mountains was surveyed on May 26-31, June 18-30, July 1-28, and August 3-20 for state plant species of concern which have been documented from the Centennial Valley (Table 1). The search routes for each of the target species were concentrated on BLM tracts with potential habitat, as determined from review of existing records in the Biological Conservation Database of the Montana Natural Heritage Program (MTHP). I reviewed specimens of target species at the Montana State University (MSU) herbarium prior to the field season and outlined potential new sites evaluating soil and aerial maps of the study area. I conducted my surveys by hiking through each target area, inspecting typical habitat as well as unusual edaphic or topographic features. "Plant Species of Special Concern" survey forms were filled out upon location of a target plant (Appendix B). Topographical maps were then marked with the population and photographs of the individual species and their habitat were taken.

Identification of collections was made following Dorn (1984) and Hitchcock and Cronquist (1973). More difficult determinations were made by using specimens in the MSU Herbarium for reference and consulting with Dr. J. Rumely. Voucher specimens are deposited at MSU Herbarium.

VI. RESULTS

The results from the sensitive plant species inventory yielded data that confirmed that the Centennial Valley is a highly diverse area. The data within Table 2 and presented in Figure 2 are a compilation of the rare flora that have been documented in Centennial Valley. The species information that follows represents detailed data gathered from BLM-administered land on the following plant species: Astragalus ceramicus var. apus, Carex vallicola, Cryptantha fendleri, Eriogonum ovalifolium var. nevadense, Ipomopsis congesta ssp. crebifolia, Penstemon whippleanus, Senecio debilis, Sphaeralcea munroana and Thelypodium sagittatum ssp sagittatum. In addition, Draba globosa was collected by a cooperating researcher, and sensitive plant survey forms were submitted by the author and a cooperating researcher on four additional state species of special concern after this report was conveyed in final form to the Montana Natural Heritage Program. The four additional species include Astragalus argophyllus var. argophyllus, Astragalus lentinginosus var. salinus, Astragalus terminalis and a new species addition to the state flora, Stellaria jamesiana. The results represent new information on fourteen species, with detailed treatment for the first nine.

In addition, there were previous documentations of the following plant species on BLM-administered land: Balsamorhiza macrophylla, Carex parryana ssp. idahoa, Elymus flavescens, Gentiana aquatica, Oenothera pallida var. idahoensis and Thalictrum alpinum; for a total of twenty rare taxa documented on BLM lands. All new or revisited records and pre-existing records are depicted in Figure 2, pocket map.

Of the 39 Centennial Valley rare species, ten are recommended dropped from BLM proposed sensitive or watch consideration, but eleven are recommended for sensitive consideration and eleven for watch consideration.

The field season of 1993 was often interrupted due to unseasonally cool temperatures and high precipitation. These factors significantly influenced the extent of the area surveyed, which places even more importance on the high numbers of species documented in an abbreviated field season. The significant number of occurrences of rare plant species documented in a shortened field season, indicates a need for further survey work in the Centennial Valley to determine the extent of biodiversity in this region. These results strongly indicate that further survey work would reveal more element occurrences of rare plant species.

Results and recommendations based on this work are summarized on the Table 2 (next page). Information on individual species follows alphabetically, beginning with nine species described in detail, followed by five species whose status in the Centennial Valley is briefly summarized based on information which came in late. Appendix B includes printouts of all species recommended for further consideration, and Appendix C includes maps of new or revisited records.

Table 2. Summary of Results

Centennial Valley Species	No. of Prior Records	No. of New Records	BLM Current Status	Recommended Status
Aquilegia formosa	2	-	None	None
Astragalus argophyllus var. argophyllus	5	4	Proposed Watch	Drop
Astragalus ceramicus var. apus	1	-	Proposed Sensitive	Sensitive
Astragalus lentiginosus	1	3	Proposed Watch	Drop
Astragalus leptaleus	4	-	Proposed Watch	Drop
Astragalus terminalis	2	2	Proposed Watch	Watch
Atriplex truncata	1	-	None	Watch
Balsamorhiza macrophylla	1	-	None	None
Carex multicostata	2	-	Proposed Watch	Watch
Carex parryana ssp. idahoa	1	-	Proposed Watch	Sensitive
Carex vallicola	2	1	None	Watch
Castilleja rustica	1	-	Proposed Watch	Drop
Cirsium subniveum	4	-	None	None
Cryptantha fendleri	1	Yes	Proposed Watch	Sensitive
Downingia laeta	1	-	None	Watch
Draba globosa	0	1	None	Sensitive
Elymus flavescens	1	-	Proposed Watch	Sensitive
Erigeron gracilis	1	-	None	None
Eriogonum ovalifolium var. nevadense	1	-	Proposed Sensitive	Drop
Gentiana aquatica	5	-	Proposed Watch	Watch

Gentianopsis simplex	1	-	None	None
Haplopappus nanus	1	-	Proposed Watch	Watch
Helenium hoopesii	1	-	Proposed Watch	Watch
Ipomopsis congesta ssp. crebrifolia	2	1	Proposed Sensitive	Drop
Lesquerella sp. novum	1	-	Proposed Watch	Sensitive
Oenothera pallida var. idahoensis	1	-	None	Sensitive
Orobanche corymbosa	1	-	None	Drop
Orogenia fusiformis	1	-	None	None
Penstemon whippleanus	-	1	None	Sensitive
Potentilla plattensis	1	-	None	None
Primula alcalina	1	-	Proposed Watch	None
Ranunculus jovis	1	-	None	Watch
Senecio debilis	2	4	Proposed Sensitive	Drop
Sphaeralcea munroana	2	3	Proposed Sensitive	Drop
Stellaria crassifolia	1	-	None	Watch
Stellaria jamesiana	-	2	None	Sensitive
Thalictrum alpinum	1	-	None	Sensitive
Thelypodium paniculatum	1	-	Proposed Watch	Watch
Thelypodium sagittatum var. sagittatum	3	8	Proposed Sensitive	Sensitive

Note: Some of the sensitive species recommendations area based on work in the Tendoy Mts. (Vanderhorst and Lesica 1994).

Astragalus ceramicus Sheld. var. apus Barneby

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Astragalus ceramicus var. apus

2. **COMMON NAME:** Painted milkvetch

3. **FAMILY:** Fabaceae

4. **GENUS:** According to Cronquist et.al. (1989), the genus Astragalus contains perhaps 1600 species, in number of taxa but not in biomass the largest of Leguminosae, dispersed primarily around the Northern Hemisphere, most highly diversified in arid continental, desert, and Mediterranean climates (An ancient Greek name for some leguminous plant, possibly from *astragalos*, ankle bone, in reference to the pod or leaf shape.)

5. **SPECIES:** Astragalus ceramicus var. apus is found within sand dunes and sandy flats or draws at elevations of 1400-1500 m. It is locally abundant on the upper Snake River Plains in Idaho and in southwestern Montana (Cronquist et al. 1990).

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Astragalus ceramicus var. apus is proposed as a sensitive species for the Dillon Resource Area. No changes to BLM status are recommended based on this study.

2. **STATE:** Astragalus ceramicus var. apus is currently recognized by the MTHP as "critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction" (state rank = S1). No changes to MTHP rank are recommended based on this study.

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Astragalus ceramicus var. apus is a perennial plant with elongated stems and linear leaves. The distinctive pods are oblong and inflated, like a balloon, mottled with bright patches of purple.

2. **TECHNICAL DESCRIPTION:** Astragalus ceramicus var. apus is a finely strigillose, usually canescent perennial with a deep root and long slender filiform rootstocks, easily mistaken for an annual; stems 1-3 dm tall, flexuous and often zigzag; stipules linear-lanceolate, 3-8 mm. long, the lower ones usually very shortly connate, the lower ones free; leaflets mostly lacking, the rachis elongate and flexuous, 5-13 cm. long, occasionally with 1-several linear leaflets 1-3.5 cm. long; racemes 3-10 flowered; peduncles much shorter than the leaves; pedicels 1-3 mm. long; flowers 6-9 mm. long; calyx about 4 mm. long, strigillose, often purplish mottled, the short auricles, little if any longer than the purplish-tipped keel; pod ordinarily stipitate but usually sessile, the body membranous, much inflated, purplish-mottled, oblong-ellipsoid, 2.5-3.5 cm. long, glabrous, 1-celled, the lower suture often prominent but only very slightly if at all intruded.

3. **LOCAL FIELD CHARACTERS:** Astragalus ceramicus var. apus is easily recognized anytime during or after fruiting by its inflated pods that are purple mottled. The leaflets are long and slender, less than 3 mm wide.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Astragalus ceramicus var. apus is found in sand dunes and prairie lands from central Idaho to southwestern Montana.

2. **CURRENT SITES:** Astragalus ceramicus var. apus is found within the sand dune region of Centennial Valley, located on the north side of Red Rock Lakes National Wildlife Refuge. This is the only place it is known from in Montana.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Astragalus ceramicus var. apus is found in blowout area within sand dune regions. It is found in sandy, well drained soils with the following grasses and forbs accounting for 40-50% vegetative cover:

Artemisia tripartita (threetip sagebrush)
buckwheat)
Cryptantha fendleri (Fendler cat's eye)
Elymus flavescens (sand wildrye)
Eriogonum ovalifolium var. nevadense (oval-leaved
buckwheat)
Festuca idahoensis (Idaho fescue)
Oenothera pallida var. idahoensis (pale evening

Phacelia hastata (whiteleaf phacelia)
primrose)
Stipa comata (needle and thread grass)
Tetradymia canescens (gray horsebrush)

2. **TOPOGRAPHY AND SOILS:** Astragalus ceramicus var. apus is found on sandy well-drained soils in blowouts associated with sand dune areas. Individuals are located on open south and west facing slopes, at 6600 ft. elevation. The slopes are moderately steep (20-30%).

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** Astragalus ceramicus var. apus was reported in 1987 to have a well established large population (Schassberger, 1987). However, I noted that there were few individuals (less than 100) and no large populations. I did not make an intensive survey of the area to confirm the decrease of individuals. There is no evidence to indicate that this taxon can go dormant over entire growing seasons, so these preliminary observations are taken to indicate a major population decline.

G. REPRODUCTIVE BIOLOGY: Astragalus ceramicus var. apus is a perennial that reproduces by seed.

H. LAND OWNERSHIP: Astragalus ceramicus var. apus occurs on BLM and private lands.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: Astragalus ceramicus var. apus occurs on the sand dune region in the Centennial Valley where there is light to moderate grazing pressure. In 1987 the populations were reported as thriving. However, in 1993 during the sensitive plant survey I observed only a few small populations. A possible factor is the livestock use in the area, as suggested by Schassberger (1988).

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: The decline in numbers warrants a study to determine the cause before future management decisions can be made.

C. SUMMARY: Astragalus ceramicus var. apus occurs in Montana in the sandy hills and plains of the Centennial Valley. The apparent population decline is a priority for sensitive species monitoring on lands administered by BLM and U.S. Fish and Wildlife Service. It is among the singular features of the Centennial Sandhills, an area which has been proposed for natural area recognition (Lesica, no date).

Carex vallicola

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Carex vallicola

2. **COMMON NAME:** Valley sedge

3. **FAMILY:** Cyperaceace

4. **GENUS:** According to Hermann (1970) there are more than 600 species of Carex known to exist in North America, and the differences among them being often small though definite. The species of Carex are comparable to the grasses in forage value.

5. **SPECIES:** Carex vallicola has a forage value from fair to excellent, and in the Great Basin area particularly it is considered an important plant on the range. It is found on dry, open slopes and in clearings, chiefly at 6,000 to 8,000 feet.

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Further survey is warranted before proposing any changes to BLM status or ruling it out.

2. **STATE:** Carex vallicola is defined as being imperiled because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extinction throughout its range (S2 = state ranking). No changes to MTHP rank are recommended based on this study.

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Carex vallicola can be readily distinguished in the field by the dorsal bulging of the mature perigynium, the distention being so pronounced that the resultant stretching of the perigynium walls displaces the thickened margins so that they run down the ventral surface of the perigynium.

2. **TECHNICAL DESCRIPTION:** Carex vallicola is caespitose from short-prolonged, fibrillose rootstocks; culms slender, 2-6 dm. high, roughened on the angles below the head; leaves about 3 to a culm, 1-1.5 mm. wide, thin, the sheaths light, thin ventrally, the ligule

very short, wider than long; spikes closely aggregated into a dense, terminal, oblong-linear head, 1.5-2.5 cm. long, 6-8 mm. wide, the staminate flowers terminal and inconspicuous; scales broadly triangular, shorter than the perigynia, hyaline with the centers brownish and one-three-nerved, acute to short-cuspidate; perigynia plano-convex, oblong-elliptic, 3.5-3.75 mm. long, 1.75-2.25 mm. wide, margined, greenish or brownish-tinged, nerveless ventrally, obscurely nerved dorsally, glossy at maturity, the margin more or less serrulate above, abruptly narrowed into a minutely serrulate beak about 1 mm. long, obliquely cut and only shallowly bidentulate; achenes lenticular, orbicular, substipitate, 2 X 2 mm.

3. **LOCAL FIELD CHARACTERS:** Carex vallicola is distinguished by the perigynia that contracts into a beak. The beak of the perigynia is obliquely cleft dorsally and minutely bidentulate. The leaf blades are 0.5-2 mm wide.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Carex vallicola is found at 6,000 to 8,000 feet in South Dakota, southwestern Montana, Oregon, California, and Mexico.

2. **CURRENT SITES:** Carex vallicola was found in 1993 on the northwest slope of Sheep Mountain along the avalanche chute. Two previous records were not located. One location was recorded in 1908 at the townsite of Monida (Jones, MTNHP) and in 1968 by Dorn, 1.25 miles west of Lakeview on the Red Rock Lakes National Wildlife Refuge.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Carex vallicola was found in an opening associated with an avalanche chute with the following grasses and forbs:

Artemisia ludoviciana (western mugwort)
Bromus ciliatus (fringed brome)
Epilobium latifolium (red willow-herb)
Erigeron glabellus (smooth daisy)
Fragaria virginiana (wild strawberry)
Geum macrophyllum (large-leaved avens)
Heracleum lanatum (cow parsnip)
Melica bulbosa (oniongrass)
Penstemon whippleanus (Whipple's penstemon)
Poa glaucifolia (white poa)
Trisetum spicatum (spike trisetum)
Valeriana dioica (northern valerian)

2. **TOPOGRAPHY AND SOILS:** Carex vallicola was found in an opening surrounded by forest within an avalanche chute. The slope was gentle (5%) on a northwest aspect. The soils were moist and were of a silt loam texture.

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** One new element occurrence was located of Carex vallicola, however the two previous element occurrences, one on U.S. Fish and Wildlife tract and one on a BLM tract, were not relocated.

G. REPRODUCTIVE BIOLOGY: Carex vallicola reproduces by seeds.

H. LAND OWNERSHIP: Carex vallicola was located on BLM lands associated with the Centennial Wilderness Study Area.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: Carex vallicola was found in the BLM Wilderness Study Area in the Centennial Mountains. The only possible threat would be from an increase of grazing pressure.

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: Carex vallicola was located with Penstemon whippleanus. At the time of collection, the species was not identified and many pertinent population parameters were not noted. A further assessment of this population's size, viability and security is recommended.

C. SUMMARY: Carex vallicola is a Great Basin species that extends into western Montana. Further surveys are called for to determine the rarity or abundance of the species.

Cryptantha fendleri (Gray) Greene

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Cryptantha fendleri

2. **COMMON NAME:** Fendler's cryptantha

3. **FAMILY:** Boraginaceae

4. **GENUS:** The genus Cryptantha contains approximately 150 species native to western North America and western South America. (Name from the Greek kryptos, hidden, and anthos, flower, referring to the cleistogamous flowers of the original South American species).

5. **SPECIES:** Cryptantha fendleri is a cordilleran species that frequents sand dunes or very sandy soils. It is rare in Montana, but has been documented in Sheridan County (Dorn, 1984).

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Cryptantha fendleri is proposed as a watch species for the Dillon Resource Area. Documentation of it on BLM lands in this study provides basis for changing its proposed status to sensitive.

2. **STATE:** Cryptantha fendleri is currently listed by the Montana Natural Heritage Program as "critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction" (state rank = S1). No changes to MTHP rank are recommended based on this study.

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Cryptantha fendleri is a diffusely branched annual, approximately 1-4 dm tall. The nutlets are lanceolate and smooth. The margins of the nutlets are rounded or blunt.

2. **TECHNICAL DESCRIPTION:** Cryptantha fendleri is an annual, 1-4 dm. tall, subsimple or often much branched; stem strigose and spreading-hirsute; leaves

linear or nearly so, acute, often rather numerous, hispid-hirsute with spreading or ascending, conspicuously pustulate-based hairs of varying size; spikes naked or nearly so; fruiting calyx 4-6 mm. long, subcilately strigose-hirsute and conspicuously pustulate-hispid; corolla inconspicuous, about 1 mm. wide; nutlets 4, lanceolate, 1.5-2 mm. long, 0.5-0.7 mm. wide, nearly or fully 3 times as long as wide, smooth and shining, the margins rounded or broadly obtuse; scar opening at the base into an areola; style equaling or slightly surpassing the nutlets.

3. **LOCAL FIELD CHARACTERS:** Cryptantha fendleri is distinguished by the diffuse branching inflorescence. The nutlets are lanceolate, averaging 0.5-0.7 mm wide.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Cryptantha fendleri is found on sand dunes or very sandy soils. It has been documented in Washington, Oregon, Idaho and Sheridan County, Montana.

2. **CURRENT SITES:** Cryptantha fendleri is found within the sand dune region of Centennial Valley, the north side of Red Rock Lakes National Wildlife Refuge (Schassberger, MTNHP). In Montana, it is restricted to sand dunes at opposite corners of the state in Beaverhead and Sheridan counties.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Cryptantha fendleri is found in blowout area within sand dune regions. It is found in sandy, well drained soils with the following grasses and forbs:

Artemisia tripartita (threetip sagebrush)
buckwheat)
Astragalus ceramicus var. apus (painted milk-vetch)
Elymus flavescens (sand wildrye)
Eriogonum ovalifolium var. nevadense (oval-leaved
Festuca idahoensis (Idaho fescue)
Oenothera pallida var. idahoensis (pale evening
Phacelia hastata (whiteleaf phacelia)
primrose)
Stipa comata (needle and thread grass)
Tetradymia canescens (gray horsebrush)

2. **TOPOGRAPHY AND SOILS:** Cryptantha fendleri is found on sandy well-drained soils in blowouts associated with sand dune areas. Individuals are located on open south and west facing slopes, at 6600 ft. elevation. The slopes are moderately steep (20-30%).

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** Cryptantha fendleri population seemed stable. Many of the previous element occurrences were relocated

G. REPRODUCTIVE BIOLOGY: Cryptantha fendleri reproduces by seeds giving rise to annual plants.

H. LAND OWNERSHIP: Cryptantha fendleri is found on lands belonging to the BLM and private ownerships.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: Populations of Cryptantha fendleri occur in the sand dune region on BLM land where there is moderate livestock use. Species' response to grazing and other management practices has not been studied.

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: Cryptantha fendleri does not seem to be adversely affected by present grazing pressure. However, any changes to current management practices warrant a management response study.

C. SUMMARY: Cryptantha fendleri is among the singular features of the Centennial Sandhills, an area which has been proposed for special natural area recognition (Lesica,no date).

Eriogonum ovalifolium var. nevadense Gand.

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Eriogonum ovalifolium var. nevadense

2. **COMMON NAME:** Cushion buckwheat

3. **FAMILY:** Polygonaceae

4. **GENUS:** According to Hitchcock and Cronquist (1964) Eriogonum is a genus of about 150 species, one reported from South America, all the others from North America, chiefly in the arid regions of the western United States. (From the Greek *erion*, wool and *gony*, knee or joint, because of the wooly stems of many species.)

5. **SPECIES:** Eriogonum ovalifolium is one of the widest-ranging species and one that is greatly influenced by local ecological conditions. The general size of the plant decreases gradually with elevation, the variation appearing to be of a clinal nature; the dwarfed alpine plants usually have the leaf shape of their adjacent lowland relatives. Eriogonum ovalifolium var. nevadense is distinguished from other varieties by having yellow flowers (Reveal, 1985).

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Eriogonum ovalifolium var. nevadense is proposed as a sensitive species for the Dillon Resource Area. Documentation of it on many BLM lands in the Tendoy Mountains this past year provides basis for recommending that it be dropped from further consideration (Vanderhorst and Lesica, in progress)

2. **STATE:** Eriogonum ovalifolium var. nevadense is defined as being imperiled because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extinction throughout its range (S2 = state ranking). Documentation of it in the Tendoy Mountains this past year provides basis for recommending that it be changed to S3 (Vanderhorst and Lesica, in progress)

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Eriogonum ovalifolium var. nevadense is a perennial with a thick taproot and mat-forming. The perianth is narrowed directly to the attachment with the pedicel, without a stipe at base, glabrous on the outer surface, segments are free or nearly so; bracts at base of inflorescence only wholly foliaceous, usually scale-like. The inflorescence is capitate with yellow flowers.

2. **TECHNICAL DESCRIPTION:** Eriogonum ovalifolium var. nevadense as a caespitose perennial, forming mats up to 3-4 dm. broad; leaves all basal, from pannose-lanate and nearly white on both surfaces to less heavily tomentose and often somewhat greenish, from spatulate and less than 1 cm. long to slenderly petiolate, the petioles 1-3 times as long as the blades, which are elliptic to rhombic, oblong, oval, or oblanceolate, 5-20 mm. long, and 3-15 mm. wide; flowering stems leafless, 3-20 cm. tall, tomentose; inflorescence a capitate cluster of several involucres, 1-3.5 cm. broad, rarely the involucres short pedunculate and inflorescence somewhat umbellate, subtended by 3 or more linear-lanceolate bracts or very rarely with one or more of the bracts foliaceous; involucres narrowly turbinate to almost cylindric, 3-5 mm. long, with 5 lanceolate, erect or occasionally recurved teeth 0.5-1.5 mm. long; perianth glabrous externally, yellow 3-4 mm. long, nonstipitate, the segments free almost to the swollen base, the outer ones oblong to obovate, often slightly cordate at base, considerably broader than the oblong to spatulate inner segments; flowers commonly imperfect, yellow; filaments pilose at base; ovary glabrous.

3. **LOCAL FIELD CHARACTERS:** Eriogonum ovalifolium var. nevadense is distinguishable by the rounded bright yellow flowers. The perianth is narrow and attached directly to the pedicel without a stipe at the base. The leaves are basal and oval shaped.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Eriogonum ovaliforum var. nevadense is widespread throughout lower elevation from 4,000-7,000 feet. It is usually found in sandy soils.

2. **CURRENT SITES:** Eriogonum ovalifolium var. nevadense is found within the sand dune region of Centennial Valley, the north side of Red Rock Lakes National Wildlife Refuge. In Montana it is known from many sites in southern Beaverhead County.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Eriogonum ovalifolium var. nevadense is found within the sand dune regions. It is found in sandy, well drained soils with the following grasses and forbs:

   Artemisia tripartita (threetip sagebrush)
   buckwheat)
   Astragalus ceramicus var. apus (painted milk-vetch)
   Elymus flavescens (sand wildrye)
   Eriogonum ovalifolium var. nevadense (oval-leaved
   Festuca idahoensis (Idaho fescue)
   Oenothera pallida var. idahoensis (pale evening
   Phacelia hastata (whiteleaf phacelia)
   primrose)
   Stipa comata (needle and thread grass)
   Tetradymia canescens (gray horsebrush)

2. **TOPOGRAPHY AND SOILS:** Eriogonum ovalifolium var. nevadense is located in sandy, well-drained soils. It is ubiquitous throughout the sand dune region. It is found on gentle slopes (5%) to moderately steep (30-35%) and at all aspects.

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** Eriogonum ovalifolium var. nevadense population seems to be flourishing. It was found extensively throughout the core of the sand dune area to the periphery.

G. REPRODUCTIVE BIOLOGY: Eriogonum ovalifolium var. nevadense reproduces by seeds resulting in a long-lived perennial.

H. LAND OWNERSHIP: Eriogonum ovalifolium var. nevadense is located on BLM, National Wildlife Refuge and private lands.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: Populations of Eriogonum ovalifolium var. nevadense occur in areas where there is little to moderate livestock use. However, this does not seem to adversely affect the populations. During the summer of 1993 the populations seem to be thriving.

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: No assessments or altered management practices seem to be called for at this time.

C. **SUMMARY:** Eriogonum ovalifolium var. nevadense is a Great Basin species that has extended its range to the sandy soils of Beaverhead County. Based on concurrent surveys in the Tendoy Mountains of Beaverhead County, it is recommended that this species be dropped from further consideration by BLM as a sensitive species.

Ipomopsis congesta ssp crebifolia (Hook.) Grant

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Ipomopsis congesta ssp crebifolia

2. **COMMON NAME:** Ballhead Gilia

3. **FAMILY:** Polemoniaceae

4. **GENUS:** According to Hitchcock and Cronquist (1973), there are about 40 or 50 species, native to North and South America, chiefly in western United Stated, especially in California. The segregate genus Ipomopsis, as recently delimited by Grant, seems to be scarcely definable on a morphological basis.

5. **SPECIES:** Ipomopsis congesta ssp crebifolia is found from southwestern Montana to northern and western Wyoming.

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Ipomopsis congesta ssp crebifolia is proposed as a sensitive species for the Dillon Resource Area. Documentation of it on many BLM lands in this study provides basis for recommending that it be dropped from further consideration.

2. **STATE:** Ipomopsis congesta ssp crebifolia is currently listed by the Montana Natural Heritage Program as "critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction" (state rank = S1). Documentation of it in this study provides basis for recommending that it be changed to S3, but still tracked as a limited distribution species.

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Ipomopsis congesta ssp. crebifolia is a perennial herb arising from a taproot. The leaves are linear and entire. The flowers are white and congested. The plants are found on area of soil disturbances such as; slumps, road cuts or eroded stream banks.

2. **TECHNICAL DESCRIPTION:** The flowers are borne in one or more very dense, capitate or spicate-capitate clusters. The filaments are 2 to 4 times as long as the anthers. The stems are basally branched and woody. The leaves are green and glabrous or nearly so, generally many of them crowded on short, sterile shoots near the base.

3. **LOCAL FIELD CHARACTERS:** Ipomopsis congesta ssp crebifolia is distinguished by the narrow, glabrous, "evergreen-like" leaves and the clustered white flowers.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Ipomopsis congesta ssp crebifolia is a regional endemic found in southwestern Montana to northern and western Wyoming.

2. **CURRENT SITES:** Ipomopsis congesta ssp crebifolia was found in abundance on the southwestern portion of Centennial Valley. The plant was thriving in disturbance area, e.g. road cuts, soil slumps, or eroded hillsides from Monida, MT to Bear Creek (approximately 15 miles east of Monida). In Montana, it is known only from the Centennial Valley.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Ipomopsis congesta ssp crebifolia occurs on dry slopes at mid to high elevations. The sites occurred in open sagebrush (Artemisia tridentata, A. nova) with the following grasses and forbs:

Chrysothamnus nauseosus (rubber rabbitbrush)
Chrysothamnus viscidiflorus (green rabbitbrush)
Penstemon erianthus (crested tongue penstemon)
Senecio canus (wooly groundsel)
Agropyron spicatum (bluebunch wheatgrass)
Agropyron smithii (bluestem wheatgrass)
Lupinus sericeus (silky lupine)

2. **TOPOGRAPHY AND SOILS:** Ipomopsis congesta ssp crebifolia was found at elevations ranging from 6800-7200 feet along open sagebrush grasslands in disturbed areas in clayey soils.

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** The extent of the Ipomopsis congesta ssp crebifolia in the Centennial Valley is large. It flourishes in disturbed areas along the roads or overgrazed hillsides.

G. REPRODUCTIVE BIOLOGY: Ipomopsis congesta ssp crebifolia reproduces by seed resulting in a taprooted perennial.

H. LAND OWNERSHIP: Ipomopsis congesta ssp crebifolia was located on both BLM and private lands.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: The BLM lands where Ipomopsis congesta ssp crebifolia was located are moderately utilized as grazing allotments and access to timber sale areas. However, the populations do not seem to be adversely affected with the amount of natural or unnatural disturbance at present.

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: No altered management practices seem to be called for at this time.

C. SUMMARY: Ipomopsis congesta ssp crebifolia is an endemic variety. Its frequency and disturbance response in the Centennial Valley provides basis for recommending that it no longer be considered for sensitive status by BLM, but it will still be tracked as a taxon of limited distribution by MTHP.

Penstemon whippleanus Gray

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Penstemon whippleanus

2. **COMMON NAME:** Whipple's penstemon

3. **FAMILY:** Scrophulariaceae

4. **GENUS:** According to Cronquist et. al. (1984), Penstemon is a large genus of about 250 species occurring in North America from Alaska and the Yukon Territory to Guatemala, but mostly in the western United States. (Name from the Latin *paene*, nearly, almost, and the Greek stemon, thread, indicating that the staminode is almost a stamen.)

5. **SPECIES:** Penstemon whippleanus from subalpine woodlands and open slopes to timberline and sometimes on alpine tundra, (2000) 2500-3600 meters; southwestern Montana, southeastern Idaho and southern and western Wyoming (Cronquist et al., 1984).

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Documentation of it on BLM lands in this study provides basis for recommending that it be proposed as sensitive.

2. **STATE:** Penstemon whippleanus is currently listed by the Montana Natural Heritage Program as "critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction" (state rank = S1). No changes to MTHP rank are recommended based on this study.

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Penstemon whippleanus is herbaceous plant with a glabrous inflorescence. The anthers are glabrous; blue to violet corolla; staminode glabrous or bearded only near tip.

2. **TECHNICAL DESCRIPTION:** Penstemon whippleanus is tufted from a surficial, branched caudex, 2-6 dm tall

essentially glabrous below becoming strongly glandular-hairy in the inflorescence; leaves all entire or nearly so, the basal with elliptic to ovate blade up to 6 cm. long and 3.5 cm. wide, longer or shorter than the petioled, the cauline mostly sessile and oblong or lanceolate, up to about 6 cm. long and 1.5 cm. wide; inflorescence of 2-7 verticillasters, these not very dense; calyx elongate, 7-11 mm. long, the segments lanceolate or narrower and wholly or almost wholly herbaceous; corolla glandular-hairy externally, blue or violet to dull purple, lavender, or cream, sometimes vari-colored, 18-28 mm. long, strongly inflated distally, mostly 7-11 mm. wide at the mouth, glabrous, 1-1.4 mm. long, wholly dehiscent, becoming opposite and eventually explanate; staminode evidently exserted from the orifice of the corolla, usually bearded toward the scarcely expanded tip; ovary and capsule ordinarily glandular-puberulent near the tip; capsule 6-9 mm. and seeds about 1-1.5 mm. long.

3. **LOCAL FIELD CHARACTERS:** Penstemon whippleanus is distinguished by a white or pale white corolla. The plant is glabrous below the inflorescence and the staminode is also glabrous or bearded only at tip.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Penstemon whippleanus is found on dry meadows and open or lightly wooded, often rocky slopes well up in the mountains, often near timber line.

2. **CURRENT SITES:** This is the first element occurrence for Penstemon whippleanus in the Centennial Valley. Efforts to relocate the only other Montana collection site for it in Gallatin County have been unsuccessful to date.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Penstemon whippleanus was found in a disturbed area associated with an avalanche chute with the following grasses and forbs:

Artemisia ludoviciana (western mugwort)
Bromus ciliatus (fringed brome)
Carex vallicola (valley sedge)
Epilobium latifolium (red willow-herb)
Erigeron glabellus (smooth daisy)
Fragaria virginiana (wild strawberry)
Geum macrophyllum (large-leaved avens)
Heracleum lanatum (cow parsnip)

Melica bulbosa (oniongrass)
Poa glaucifolia (white poa)
Trisetum spicatum (spike trisetum)
Valeriana dioica (northern valerian)

2. **TOPOGRAPHY AND SOILS:** Penstemon whippleanus was found in a partial shaded area within an avalanche chute. The slope was gentle (5%) on a northwest aspect. The soils were moist and were of a silt loam texture.

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** Penstemon whippleanus population status is unknown. This is the first element occurrence for the Centennial Valley, so a more intensive survey is warranted.

G. REPRODUCTIVE BIOLOGY: Penstemon whippleanus is a perennial reproducing by seed.

H. LAND OWNERSHIP: Penstemon whippleanus was located on BLM land designated as Wilderness Study Area.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: Penstemon whippleanus occurs on the BLM Wilderness Study portion of Centennial Valley, in an area with little or no livestock use. This was a new element occurrence for this area, with no identifiable threats.

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: Penstemon whippleanus has only be recorded in southwestern Montana at one site in the Centennial Mountains. Further survey is needed.

C. SUMMARY: Discovery of Penstemon whippleanus in the Centennial Mountains represents a range extension for this species in Montana, and the only recent record in the state. It is recommended for addition to the proposed BLM list as sensitive, and requires further survey.

Senecio debilis Nutt.

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Senecio debilis

2. **COMMON NAME:** Rocky Mountain Ragwort

3. **FAMILY:** Asteraceae

4. **GENUS:** According to Hitchcock and Cronquist (1973), the genus Senecio is one of the largest genera of plants, containing probably well over 1000 species, of very wide geographic distribution. Many of the species are closely related, often indeed, with only about the degree of distinctness more commonly associated with varieties. An attempt to reach a more conservative treatment frequently necessitates the inclusion of such a large number of highly diverse taxa within the limits of a single "species" as to be wholly impractical. (Name from the Latin senex, an old man, probably referring to the white pappus or hoary pubescence of some species.)

5. **SPECIES:** Senecio debilis occurs in moist open meadows, especially in alkaline situations; northern Colorado northwestward through Wyoming to southwestern Montana and adjacent Idaho (Barkley, 1978).

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Senecio debilis is proposed as a sensitive species for the Dillon Resource Area. Documentation of it on many BLM lands in the Tendoy Mountains this past year provides basis for recommending that it be dropped from further consideration (Vanderhorst and Lesica, in progress).

2. **STATE:** Senecio debilis is currently listed by the Montana Natural Heritage Program as "critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction" (state rank = S1). Documentation of it in the Tendoy Mountains this past year provides basis for recommending that it be changed to S3 (Vanderhorst and Lesica, in progress).

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Senecio debilis is a rayless composite with dark orange disk flowers. The stem leaves have rounded lobe tips and are lobed about halfway or more to midrib. The plant is located in moist, alkaline meadows along roadsides.

2. **TECHNICAL DESCRIPTION:** Senecio debilis is a fibrous-rooted perennial from a short caudex, 1-5 dm. tall, glabrous or lightly floccose-tomentose when young; leaves are thickish, somewhat succulent , the basal ones petiolate, with entire to more often crenate or lobulate blades; cauline leaves few and reduced, becoming sessile, sublyrate to pinnately divided, with deep, rounded sinuses and narrow, obtuse or rounded lobes; heads several or rather many, discoid, often somewhat orange; involucre 5-7 mm high.

3. **LOCAL FIELD CHARACTERS:** Senecio debilis is distinguished by the bright orange rayless flowers and the stem leaves that have rounded lobes.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Senecio debilis is found from in northern Colorado northwestward through Wyoming to southwestern Montana and adjacent Idaho.

2. **CURRENT SITES:** Senecio debilis was found frequently in the alkaline regions of Centennial Valley, especially the western portion. In Montana, it is known from three counties: Beaverhead, Madison and Lewis and Clark. This species was also surveyed this past year in the Tendoy Mountains (Vanderhorst and Lesica, in progress).

E. HABITAT

1. **ASSOCIATED VEGETATION:** Senecio debilis occurs in wet alkaline meadows that are dominated by Carex spp. and Deschampsia elongatum and with the following forbs:

   Polemonium occidentale (western jacob's ladder)
   Valerian edulis (edible valerian)
   Cirsium scariosum (elk thistle)
   Juncus balticus (baltic rush)
   Spartina pectinata (cordgrass)
   Hordeum brachyantherum (meadow barley)
   Antennaria microphylla (rosy pussy-toes)

2. **TOPOGRAPHY AND SOILS:** Senecio debilis occurs in bottomlands that are derived from alkaline soils.

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** Past element occurrences were located for Senecio debilis including many new locations. The populations seems to be stable to increasing in numbers.

G. REPRODUCTIVE BIOLOGY: Senecio debilis reproduces by seeds resulting in a perennial plant.

H. LAND OWNERSHIP: Senecio debilis populations were located on both BLM and private lands.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: Populations of Senecio debilis appear to be stable at this time. Observations made in the Tendoy Mountains indicate that this species persists or increases under some level(s) of grazing (Vanderhorst and Lesica, in progress).

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: None identified.

C. SUMMARY: Senecio debilis is a Great Basin species that is found recurrently is alkaline meadows of Beaverhead County. Its number of populations and reported persistence (Vanderhorst and Lesica, in progress) under grazing provide basis for recommending that it be dropped from further consideration by BLM as a sensitive species.

Sphaeralcea munroana (Doug. ex Lindl.) Spach ex Gray

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Sphaeralcea munroana

2. **COMMON NAME:** Desert Mallow

3. **FAMILY:** Malvaceae

4. **GENUS:** There are over 200 species of Africa and the Western Hemisphere. (Greek *sphaera*, sphere, and *alcea*, mallow, alluding to the globose fruits.) There are only 3 species of Sphaeralcea that occur in the northwestern portion of the United States.

5. **SPECIES:** Sphaeralcea munroana is found in the desert plains to lower mountains within the western United States.

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Sphaeralcea munroana is proposed as a sensitive species for the Dillon Resource Area. Documentation of it on BLM lands in this study provides some basis for recommending that its proposed status is appropriate, but more information is needed about its extent in the Centennial Valley and disturbance response.

2. **STATE:** Sphaeralcea munroana is currently listed by the Montana Natural Heritage Program as "critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction" (state rank = S1). No changes to MTHP rank are recommended based on this work.

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Sphaeralcea munroana is a perennial with a stout root. The flowers are apricot-pink to red. The leaves are crenate to lobed less than halfway to the midvein.

2. **TECHNICAL DESCRIPTION:** Sphaeralcea munroana is a

thick-rooted, grayish-hairy to greenish, multistemmed perennial 2-8 dm. tall; leaf blades 2-6 cm long, reniform to ovate-deltoid, from rather shallowly 3-5 lobed to merely crenate; pedicels usually shorter than the calyx; calyx bracteoles usually 3, linear; petals 1-2 cm long, apricot-ping to reddish; carpels about 3 mm long, rugose-reticulate only on the lower (indehiscent) third, mostly 1-seeded.

3. **LOCAL FIELD CHARACTERS:** Sphaeralcea munroana is distinguishable by its apricot flowers and the stellate-pubescence along the stem and leaves.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Sphaeralcea munroana occurs from southcentral British Colombia to Western Montana, into California and Utah.

2. **CURRENT SITES:** Sphaeralcea munroana was found frequently in the western portion of Centennial Valley along the road and hillsides. It was located approximately 3 miles west of Monida and found extensively near the Lima dam. It is known in Montana only from the Centennial Valley.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Sphaeralcea munroana occurs on open sagebrush (Artemisia tridentata) grassland (Festuca idahoenis) along with the following forbs:

Erigeron caespitosus (gray daisy)
Chrysothamnus viscidiflorus (green rabbitbrush)
Koeleria cristatum (June grass)
Hordeum jubatum (Foxtail barley)
Poa pratensis (Kentucky bluegrass)
Poa cusickii (Cusick's bluegrass)

2. **TOPOGRAPHY AND SOILS:** Sphaeralcea munroana occurs on south facing or open slopes along hillsides or roads. It was found to occur in red calcareous soils.

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** Sphaeralcea munroana populations seem to be expanding from the roadsides to the midslopes of the hillsides. The populations observed were healthy with no evidence of disturbance.

G. REPRODUCTIVE BIOLOGY: Sphaeralcea munroana reproduces by seed resulting in a taproot perennial.

H. **LAND OWNERSHIP:** Sphaeralcea munroana was located on both BLM and private lands.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. **THREATS TO KNOWN POPULATIONS:** None identified.

B. **FURTHER ASSESSMENT AND MANAGEMENT NEEDS:** No altered management practices seem to be called for at this time. However, if future surveys show a decline in numbers, then reassesment would then be warranted.

C. **SUMMARY:** Sphaeralcea munroana is a native desert species known in Montana only from the Centennial Valley. It is recommended that it be considered for adding to the proposed BLM list of sensitive plants pending further survey work.

Thelypodium sagittatum ssp sagittatum
(Nutt.) Endl. ex Walpers

I. SPECIES INFORMATION

A. CLASSIFICATION

1. **SCIENTIFIC NAME:** Thelypodium sagittatum ssp sagittatum

2. **COMMON NAME:** Slender Thelypody

3. **FAMILY:** Brassicaceae

4. **GENUS:** According to Hitchcock and Cronquist (1964) there are about a dozen species in western North America, chiefly in the desert region, often on alkaline soil (Greek *thelys*, female, and *podion*, little foot, referring to the (often) stipitate ovary.) There are seven genera of Thelypodium that occur in the northwestern portion of the United States.

5. **SPECIES:** Thelypodium sagittatum ssp sagittatum if found in moist, often alkaline meadows that usually dry by midsummer.

B. PRESENT LEGAL OR OTHER FORMAL STATUS

1. **BUREAU OF LAND MANAGEMENT:** Thelypodium ssp sagittatum is proposed as a sensitive species for the Dillon Resource Area. Documentation of it on BLM lands in this study provides basis for recommending that its proposed status is appropriate.

2. **STATE:** Thelypodium ssp sagittatum is currently listed by the Montana Natural Heritage Program as "critically imperiled because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction" (state rank = S1). Documentation of it on BLM lands in this study and in the Tendoy Mountains (Vanderhorst and Lesica, in progress) provide basis for recommending that its MTHP rank be changed to S2.

C. DESCRIPTION

1. **GENERAL NONTECHNICAL DESCRIPTION:** Thelypodium sagittatum ssp sagittatum is a biennial with distinct auriculate stem leaves. The mature fruits

are 0.5-1.2 mm wide and 0.7-1.3 mm long and somewhat flattened when fresh. The petals are 0.5-3 mm wide.

2. **TECHNICAL DESCRIPTION:** Thelypodium sagittatum ssp sagittatum have stem leaves that are mostly sessile and auricle, leaves are entire or merely sinuate to dentate, generally glabrous. The plants are biennial without creeping roots; sepals 5-8 mm; petals light to deep violet-purple, 10-16 mm; siliques straight, ascending, sessile or with stipe, scarcely 0.5 mm.

3. **LOCAL FIELD CHARACTERS:** Thelypodium sagittatum ssp sagittatum occurs in moist alkaline meadows in large population in the early spring (late May-mid June). The pink petals are short-lived, therefore the auriculate stem leaves in addition to the long, beaked fruits allows for easy identification.

D. GEOGRAPHICAL DISTRIBUTION

1. **RANGE:** Thelypodium sagittatum ssp sagittatum is found from desert plains to lower mountains in southeastern Wyoming to California, east to Montana and Wyoming.

2. **CURRENT SITES:** Thelypodium sagittatum ssp sagittatum was found in abundance during the spring of 1993. It was found in Red Rocks National Wildlife Refuge in the bottomlands near the lakes. Also, there are element occurrences for BLM lands next to Lima Resevoir, Red Rock River, and Mud Lake. It is known in Montana only from the Centennial Valley and Tendoy Mountains of Beaverhead County.

E. HABITAT

1. **ASSOCIATED VEGETATION:** Thelypodium sagittatum ssp sagittatum is found in moist alkaline bottomlands with Carex ssp. (sedges), Juncus balticus (Baltic rush) and with the following grasses and forbs:

Deschampsia caespitosa (tufted hairgrass)
Dodecatheon pulchellum (few-flowered shooting star)
Festuca idahoensis (Idaho fescue)
Haplopappus uniflorus (one-flowered goldenweed)
Iris missouriensis (western blue flag)
Pentaphylloides floribunda (shrubby cinquefoil)
Phlox kelseyi (Kelsey's phlox)
Sarcobatus vermiculatus (black greasewood)
Valeriana edulis (edible valerian)

2. **TOPOGRAPHY AND SOILS:** Thelypodium sagittatum ssp

sagittatum is found in bottomlands with open exposure. It is found in moist, alkaline soils.

F. POPULATION DEMOGRAPHY AND BIOLOGY

1. **POPULATION SIZE AND CONDITION:** Thelypodium sagittatum ssp sagittatum population for the spring/summer of 1993 was abundant. It was the dominant species all along the lake and river bottomlands.

G. REPRODUCTIVE BIOLOGY: Thelypodium sagittatum ssp sagittatum is a biennial that reproduces by seed.

H. LAND OWNERSHIP: Thelypodium sagittatum ssp sagittatum was located on lands belonging to BLM, National Wildlife Refuge, and private.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: Populations of Thelypodium sagittatum ssp sagittatum appear to stable at this time. The only likely threat would be if grazing was to increase in the area where disturbance might produce detrimental effects.

B. FURTHER ASSESSMENT AND MANAGEMENT NEEDS: No altered management practices seem to be called for at this time. Should further surveys reveal a population decline because of disturbance, then monitoring of populations would be called for to assess whether or not livestock use posed a threat.

C. SUMMARY: Thelypodium sagittatum ssp sagittatum is recommended for addition to the proposed BLM list of sensitive species.

Astragalus argophyllus Nutt. var. argophyllus

Four new Centennial Valley populations were found of Astragalus argophyllus var. argophyllus, almost doubling the local number of populations. Included among these was one of the largest known populations at over 1000 plants, in T.14S R.5W Sec. 30 NW 1/4 on BLM lands. These results underscore the interpretation made in the Tendoy Mts. sensitive plant survey that this species is relatively widespread in southern Beaverhead Co., MT (Vanderhorst and Lesica 1994). Its habitat is often heavily used by cattle, but the species does not appear to show major decline under livestock grazing. For these reasons, it has been recommended that it be dropped from further consideration by the BLM and the Montana Natural Heritage Program.

It occupies wet, alkaline meadows associated with plants such as Juncus balticus, Poa nevadensis, Artemisia tripartita, Iris missouriensis and others. These are not shown on the Figure 2 map.

Astragalus lentiginosus (Rydb.) Peck var. salinus Howell) Barneby

Three new Centennial Valley populations were found of Astragalus lentiginosus var. salinus along the north side of the valley. These results underscore the interpretation made in the Tendoy Mts. sensitive plant survey that this species is relatively widespread in southern Beaverhead County, MT (Vanderhorst and Lesica 1994). Some of its populations in this other study are extremely large and had no apparent threats. For this reason, it has been recommended that it be dropped from further consideration by the BLM and the Montana Natural Heritage Program.

It occupies sagebrush habitat on sandy or clayey soils. Its Centennial Valley habitat is dominated by Artemisia tridentata or Agropyron spicatum with Festuca idahonis or Festuca scabrella. Other associated species include Lupinus sericeus, Bromis inermis, and Haplopappus acaulis. These are not shown on the Figure 2 map.

Astragalus terminalis Wats.

Two new Centennial Valley populations were found of Astragalus terminalis. However, both were found incidental to BLM surveywork and are located on Red Rock Lakes National Wildlife Refuge. Of the two previous records, one was near BLM land and may have extended onto BLM land, but this cannot be confirmed, and watch status is appropriate for the present.

The new records are from dry valley-bottom ecotonal settings, while the previous records are from subalpine slopes ca. 3000′ higher than the valleybottom sites. This elevation amplitude is reflected in the species′ habitat description (Hitchcock and Cronquist 1973). One of the new sites is in an association of Artemisia tridentata / Festuca idahonis with nonnative grass encroachment. The other is at the edge of a stand of Populus tremuloides. While it occupies a range of elevations, it apparently restricted to limestone-derived substrate (Hitchcock and Cronquist 1973). These are not shown on the Figure 2 map.

Draba globosa Payson
(Draba apiculata Hitchc. var. apiculata)

Draba globosa was collected in the Centennial Mountains for the first time by Lynn Bacon on BLM land. The site is located at 9400′ near the Continental Divide (Figure 2 map). Detailed information was not collected on its population conditions or subalpine setting. This represents the fourth time it has been collected in Montana. All previous collections were in Madison County.

Stellaria jamesiana Torrey

Stellaria jamesiana was collected in Montana for the first time by Denise Culver in two BLM areas. It is mentioned in Dorn (1984) as "expected" in Montana, based on Dorn′s familiarity with the species′ habitat and distribution in Wyoming.

The two new records are from side valleys on the south side of the Centennial Valley as shown on the Figure 2 map. Both were found in moist, shaded lower slopes among Populus tremuloides with or without major Psuedotsuga menziesii cover.

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Appendix A. LIST OF BLM SITES SURVEYED-NEGATIVE RESULTS

East of Odell Creek Drainage and south of Centennial Valley Road

T.14 S R.2 E Sections 36, 26, 27, 22, 23, 24
T.14 S R.1 E Sections 21, 28, 27, 34, 35, 31, 32

West of Odell Creek Drainage and south of Centennial Valley Road

T.14 S R.1 W Sections 33, 35, 34, 27, 26
T.14 S R.2 W Sections 1, 2, 3, 34, 35, 36, 31, 32, 28, 29, 30, 25, 21, 19
T.14 S R.3 W Sections 1, 2, 3, 6, 5, 4, 10, 11, 12, 7, 8, 9
T.14 S R.4 W Sections 4, 5, 6, 7, 8, 9, 1, 34, 31, 32 26, 27
T.14 S R.5 W Sections 4, 5, 6, 22, 23, 24, 30, 25, 26, 27

West of Odell Creek Drainage and north of Centennial Valley Road

T.13 S R.1 W Sections 22, 23
T.13 S R.2 W Sections 1, 2, 3, 4, 5, 6, 7, 1322, 23, 24, 26, 27
T.13 S R.3 W Sections 1, 2, 3, 4, 5, 6, 35, 34
T.13 S R.4 W Sections 1, 2, 3, 10, 11, 12, 13, 14, 15
T.13 S R.5 W Sections 1, 2, 4, 5, 6, 32, 29, 20, 19
T.13 S R.6 W Sections 8, 9, 4, 5, 20, 19

Appendix B. ELEMENT OCCURRENCE PRINTOUTS

Note: This includes printouts for all records for species represented on the Figure 2 map, including those species recommended for deletion, excluding Draba globosa and Stellaria jamesiana.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: AQUILEGIA FORMOSA
Common Name: SITKA COLUMBINE

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

Element occurrence code: PDRAN050B0.001
Element occurrence type:

Survey site name: RED ROCK LAKE REFUGE
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	25	NW4

Precision: M
Survey date:
First observation: 1968
Last observation: 1968-06-23
Elevation: 6700 -
Slope/aspect:
Size (acres): 0

Location:
RED ROCK LAKE REFUGE (CENTENNIAL VALLEY).

Element occurrence data:
SPARSE.

General site description:
GRASSLAND WITH FESTUCA OVINA, SENECIO.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
SPECIMEN ORIGINALLY LABELED A. FLAVESCENS; ANNOTATED AS A. FORMOSA BY DORN, 1975.

Information source: REFUGE PERSONNEL, RED ROCK LAKES NATIONAL WILDLIFE REFUGE, MONIDA STAR ROUTE, BOX 15, LIMA, MT 59739.

Specimens: DORN, R. D. (386). 1968. SPECIMEN #64495.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: AQUILEGIA FORMOSA
Common Name: SITKA COLUMBINE

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

Element occurrence code: PDRAN050B0.003
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: CORRAL CREEK

Township:	Range:	Section:	TRS comments:
014S	005W	36	SE4
014S	004W	35	NE4

Precision: S
Survey date:
First observation: 1990
Last observation: 1990-06-27
Elevation: 7280 -
Slope/aspect:
Size (acres):

Location:
CA. 2.0 MILES SOUTH OF THE JUNCTION OF THE CENTENNIAL VALLEY ROAD WITH THE PRICE PEET ROAD.

Element occurrence data:
WIDESPREAD POPULATION; SEVERAL HUNDRED PLANTS.

General site description:
SILT LOAM SOILS IN OPEN DOUGLAS FIR AND ASPEN WOODS.

Land owner/manager:
STATE LAND - UNDESIGNATED
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
POPULATION PROBABLY EXTENDS ONTO BLM LANDS IN SECTION 31, T14SR4W.

Information source: VLAHOVICH, STAN. DEPARTMENT OF STATE LANDS, 730 NORTH MONTANA, DILLON, MT 59725. 406/683-6305.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS ARGOPHYLLUS VAR ARGOPHYLLUS
Common Name: SILVERLEAF MILK-VETCH

Global rank: G5T4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDFAB0F0S1.001
Element occurrence type:

Survey site name: MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	NE4
014S	006W	34	SE4

Precision: S
Survey date: 1985-06-10 Elevation: 6770 -
First observation: 1985 Slope/aspect:
Last observation: 1986-06-27 Size (acres): 40

Location:
0.1-0.4 AIR MI. NW. OF MONIDA, N. OF OLD HIGHWAY ACROSS RR TRACKS.

Element occurrence data:
51-100+ INDIVIDUALS, NON-BLOOMING PLANTS DIFFICULT TO SEE; PLANTS ARE SCATTERED, IN MEADOW WHICH HAS HAD SOME GRAZING; AREA IS REMOTE AND NOT HEAVILY VISITED; SPECIES OCCURS IN SOMEWHAT DRIER, LESS HEAVILY VEGETATED AREAS; NO FRUIT FOUND IN 1985.

General site description:
WET ALKALINE MEADOW, ON VERY GENTLE SLOPE; MEADOW DOMINATED BY GRAMINOIDS, WITH PHLOX KELSEYI, JUNCUS BALITICUS, CAREX SPP., ANTENNARIA MICROPHYLLA, TRIGLOCHIN.

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

Comments:

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

Specimens: LESICA, P. (3370). 1985. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS ARGOPHYLLUS VAR ARGOPHYLLUS
Common Name: SILVERLEAF MILK-VETCH

Global rank: G5T4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDFAB0F0S1.002
Element occurrence type:

Survey site name: ODELL CREEK ALKALINE MEADOW
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SLIDE MOUNTAIN
UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	20	S2

Precision: S
Survey date: 1987-06-06 Elevation: 6620 -
First observation: 1987 Slope/aspect:
Last observation: 1987-06-06 Size (acres): 200

Location:
CENTENNIAL VALLEY, 3 MILES EAST OF LAKEVIEW, NORTH OR RED ROCK PASS ROAD, CA. 0.25 MILE NW OF TRUMPETER SWAN POND.

Element occurrence data:
UNKNOWN; EVIDENCE OF LIGHT LIVESTOCK USE.

General site description:
MOIST ALKALINE MEADOW; WITH POTENTILLA FRUTICOSA, JUNCUS BALTICUS, PHLOX KELSEYI, DODECATHEON PULCHELLUM.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
RED ROCK LAKES WILDERNESS

Comments:

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

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS ARGOPHYLLUS VAR ARGOPHYLLUS
Common Name: SILVERLEAF MILK-VETCH

Global rank: G5T4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDFAB0F0S1.003
Element occurrence type:

Survey site name: ELK CREEK ALKALINE MEADOW
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
013S	001W	36	SE4

Precision: S
Survey date: 1987-06-06 Elevation: 6640 -
First observation: 1987 Slope/aspect:
Last observation: 1987-06-06 Size (acres): 5

Location:
CENTENNIAL VALLEY, RED ROCK LAKES NATIONAL WILDLIFE REFUGE, 0.2 MILE WEST OF ROAD TO ELK LAKE, CA. 0.5 MILE NORTH OF ELK CREEK.

Element occurrence data:
UNKNOWN; SITE IS SMALL (2-5 ACRES); SOME EVIDENCE OF LIVE- STOCK GRAZING; AREA BURNED RECENTLY, POTENTILLA IS RESPROUT- ING.

General site description:
HUMMOCKY, MOIST ALKALINE MEADOW, DOMINATED BY POTENTILLA FRUTICOSA, JUNCUS BALTICUS, PHLOX KELSEYI.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:

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

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS ARGOPHYLLUS VAR ARGOPHYLLUS
Common Name: SILVERLEAF MILK-VETCH

Global rank: G5T4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDFAB0F0S1.004
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: MONIDA
SNOWLINE

Township:	Range:	Section:	TRS comments:
014S	006W	31	SE4

Precision: M
Survey date:
First observation: 1985
Last observation: 1985-06-10
Elevation: 6700 -
Slope/aspect:
Size (acres): 0

Location:
CA. 2 MILES WEST OF MONIDA, ON WEST SIDE OF PINETOP HILL.

Element occurrence data:
UNCOMMON.

General site description:
ALONG THE MARGIN OF A WET, ALKALINE MEADOW, WITH JUNCUS BALTICUS AND IRIS MISSOURIENSIS.

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

Comments:
NONE.

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

Specimens: LESICA, P. (3376). 1985. SPECIMEN #109852. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS ARGOPHYLLUS VAR ARGOPHYLLUS
Common Name: SILVERLEAF MILK-VETCH

Global rank: G5T4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDFAB0F0S1.005
Element occurrence type:

Survey site name: SOUTHWEST MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	04	

Precision: M
Survey date:
First observation: 1986
Last observation: 1986-06-11
Elevation: 6900 -
Slope/aspect:
Size (acres): 0

Location:
CA. 0.5 MILES SOUTHWEST OF MONIDA PASS.

Element occurrence data:
UNCOMMON.

General site description:
IN MOIST SOIL ALONG THE MARGINS OF A WET, ALKALINE MEADOW, WITH ANTENNANIA MICROPHYLLA AND PHLOX KELSEYI.

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

Comments:
NONE.

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

Specimens: LESICA, P. (3812). 1986. SPECIMEN #104299. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS CERAMICUS VAR APUS
Common Name: PAINTED MILKVETCH

Global rank: G4T3 Forest Service status:
State rank: S1 Federal Status: 3C

Element occurrence code: PDFAB0F1V1.001
Element occurrence type:

Survey site name: CENTENNIAL SANDHILLS
EO rank: A
EO rank comments: MANY SUBPOPULATIONS OVER LARGE AREA.

County: BEAVERHEAD

USGS quadrangle: LOWER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
013S	002W	22	E2; 23; 14 SE4, SE4SW4; 13 S2SW4; 24 NW4; 27

Precision: S
Survey date: 1987-07-23 Elevation: 6680 -
First observation: 1983 Slope/aspect:
Last observation: 1987-09-03 Size (acres): 700

Location:
CENTENNIAL VALLEY, 40 KM NORTHEAST OF MONIDA; SANDHILLS AT THE NORTHEAST END OF THE VALLEY.

Element occurrence data:
LARGE POPULATION. WELL ESTABLISHED IN BLOWOUTS ACROSS THE SAND DUNE COMPLEX.

General site description:
BLOWOUT AREAS IN SANDHILLS.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE
STATE LAND - UNDESIGNATED
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens: LESICA, P. (2716). 1983. MONTU. NY.
SCHASSBERGER, L. A. (0132). 1987. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS LENTIGINOSUS
Common Name: FRECKLED MILKVETCH

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

Element occurrence code: PDFAB0FB90.002
Element occurrence type:

Survey site name:
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SNOWLINE

Township:	Range:	Section:	TRS comments:
014S	007W	27	NE4

Precision: M
Survey date: 1986-06-11 Elevation: 6700 -
First observation: 1986 Slope/aspect:
Last observation: 1986-06-11 Size (acres): 0

Location:
GENTLE SLOPES ABOUT 6.7 MILES NORTHEAST OF MONIDA PASS.

Element occurrence data:
UNCOMMON.

General site description:
IN GRASSLANDS ON GENTLE SLOPES; WITH ARTEMISIA TRIPARTITA, FESTUCA IDAHOENSIS.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: LESICA, P. (3814). 1986. SPECIMEN #104305. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS LEPTALEUS
Common Name: PARK MILKVETCH

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

Element occurrence code: PDFAB0F4R0.001
Element occurrence type:

Survey site name: MONIDA
EO rank: BC
EO rank comments: GOOD OCCURRENCE, BUT ADJACENT TO FREEWAY.

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	N2

Precision: S
Survey date: 1986-06-27 Elevation: 6750 -
First observation: 1986 Slope/aspect:
Last observation: 1986-06-27 Size (acres): 2

Location:
NORTH SIDE OF INTERSTATE 15 AT MONIDA EXIT, CA. .5 MI NW OF MONIDA PASS, .25 AIR MI SW OF MONIDA (TOWNSITE).

Element occurrence data:
COMMON, 101-1000 INDIVIDUALS.

General site description:
ON HUMMOCKS MOIST ALKALINE MEADOW, WITH JUNCUS BALTICUS, POTENTILLA FRUTICOSA, PHLOX KELSEYI, DODECATHEON PULCHELLUM.

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

Comments:

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

Specimens: LESICA, P. (3917). 1986. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS LEPTALEUS
Common Name: PARK MILKVETCH

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

Element occurrence code: PDFAB0F4R0.004
Element occurrence type:

Survey site name:
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SNOWLINE

Township:	Range:	Section:	TRS comments:
014S	007W	22	SW4

Precision: M
Survey date: 1986-07-07 Elevation: 6600 -
First observation: 1986 Slope/aspect:
Last observation: 1986-07-07 Size (acres): 0

Location:
BETWEEN THE OLD HIGHWAY AND I-15, 0.5 MILE SOUTH OF UPPER SNOWLINE RANCH, ABOUT 6 MILES NORTHWEST OF MONIDA.

Element occurrence data:
COMMON.

General site description:
IN A SMALL REMNANT ALKALINE MEADOW; WITH PHLOX KELSEYI, POTENTILLA FRUTICOSA.

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

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: LESICA, P. (3936). 1986. SPECIMEN #104458. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS LEPTALEUS
Common Name: PARK MILKVETCH

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

Element occurrence code: PDFAB0F4R0.006
Element occurrence type:

Survey site name: ELK CREEK ALKALINE MEADOW
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
013S	001W	36	SE4

Precision: S
Survey date: 1987-06-06 Elevation: 6640 -
First observation: 1987 Slope/aspect:
Last observation: 1987-06-06 Size (acres): 5

Location:
CENTENNIAL VALLEY, RED ROCK LAKES NATIONAL WILDLIFE REFUGE, 0.2 MILE WEST OF ROAD TO ELK LAKE, CA. 0.5 MILE NORTH OF ELK CREEK.

Element occurrence data:
UNKNOWN; SITE IS SMALL (2-5 ACRES); SOME EVIDENCE OF LIVE- STOCK GRAZING; AREA BURNED RECENTLY, POTENTILLA IS RESPROUT- ING.

General site description:
HUMMOCKY, MOIST ALKALINE MEADOW, DOMINATED BY POTENTILLA FRUTICOSA, JUNCUS BALTICUS, PHLOX KELSEYI.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:

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

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS LEPTALEUS
Common Name: PARK MILKVETCH

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

Element occurrence code: PDFAB0F4R0.007
Element occurrence type:

Survey site name: UPPER RED ROCK LAKE
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	28	

Precision: M
Survey date:
First observation: 1986
Last observation: 1986-07-10
Elevation: 6700 -
Slope/aspect: - / NORTH
Size (acres): 0

Location:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE, SOUTH OF UPPER RED ROCK LAKE; NORTH SLOPE ABOVE MAIN ROAD.

Element occurrence data:
COMMON FROM HERE WESTWARD ABOVE MOIST PLAINS.

General site description:
ON DRYISH LEDGES OF NORTH SLOPE, WITH HEDYSARUM BOREALE, BUPLEURUM.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
LABEL READS TOWNSHIP 15 SOUTH.

Information source: REFUGE PERSONNEL, RED ROCK LAKES NATIONAL WILDLIFE REFUGE, MONIDA STAR ROUTE, BOX 15, LIMA, MT 59739.

Specimens: LACKSCHEWITZ, K. H. (11002). 1986. SPECIMEN #103764. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS TERMINALIS
Common Name: RAILHEAD MILKVETCH

Global rank: G3G4 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDFAB0F8U0.001
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	33	NE4

Precision: S
Survey date: 1983-07-12 Elevation: 9560 -
First observation: 1983 Slope/aspect:
Last observation: 1983-07-12 Size (acres): 5

Location:
SHEEP MTN., CENTENNIAL RANGE; FROM MONIDA, TAKE ROAD TO RED ROCK LAKES REFUGE HEADQUARTERS, THEN 3 MI. FURTHER; CLIMB TO SITE.

Element occurrence data:
SPECIES IS COMMON; SITE IS NOT VERY DISTURBED, ALTHOUGH IT IS GRAZED BY SHEEP; UNUSUAL HIGH ELEVATION FORM.

General site description:
WIND-SWEPT RIDGE CREST; CUSHION PLANTS DOMINATE, WITH LOMATIUM COUS, ASTRAGALUS KENTROPHYTA.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
CENTENNIAL MOUNTAINS PRIMITIVE AREA

Comments:
BUTTE BLM DISTRICT OFFICE.

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

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ASTRAGALUS TERMINALIS
Common Name: RAILHEAD MILKVETCH

Global rank: G3G4 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDFAB0F8U0.005
Element occurrence type:

Survey site name: RED ROCK LAKE REFUGE
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	27	NW4

Precision: M
Survey date: Elevation: 6700 -
First observation: 1968 Slope/aspect:
Last observation: 1968-07-06 Size (acres):

Location:
RED ROCK LAKE REFUGE; RED ROCK PASS ROAD, CA. 5 MIKLES EAST OF LAKEVIEW.

Element occurrence data:
IN FLOWER.

General site description:
GRASSLAND WITH LUPINUS, ANEMONE, AND IRIS.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
NONE.

Information source: REFUGE PERSONNEL, RED ROCK LAKES NATIONAL WILDLIFE REFUGE, MONIDA STAR ROUTE, BOX 15, LIMA, MT 59739.

Specimens: DORN, R. D. (450). 1968. MONT (MRPP CARD).

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ATRIPLEX TRUNCATA
Common Name: WEDGE-LEAVED SALTBUSH

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

Element occurrence code: PDCHE04230.002
Element occurrence type:

Survey site name: CENTENNIAL VALLEY
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MOUNT JEFFERSON

Township:	Range:	Section:	TRS comments:
014S	001E	16	

Precision: G
Survey date:
First observation: 1952
Last observation: 1952-08-23
Elevation: 6700 -
Slope/aspect:
Size (acres): 0

Location:
4 MILES WEST OF RED ROCK PASS.

Element occurrence data:
ABUNDANT.

General site description:
IN SMALL DENUDED AREA; ALKALINE.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
NONE.

Information source: REFUGE PERSONNEL, RED ROCK LAKES NATIONAL WILDLIFE REFUGE, MONIDA STAR ROUTE, BOX 15, LIMA, MT 59739.

Specimens: BOOTH, W. E. (52485). 1952. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: BALSAMORHIZA MACROPHYLLA
Common Name: LARGE-LEAFED BALSAMROOT

Global rank: G3G5 Forest Service status: SENSITIVE
State rank: S1 Federal Status:

Element occurrence code: PDAST11070.002
Element occurrence type:

Survey site name: ODELL CREEK
EO rank: A
EO rank comments: LARGE POPULATION IN EXCELLENT CONDITION HABITAT.

County: BEAVERHEAD

USGS quadrangle: SLIDE MOUNTAIN

Township:	Range:	Section:	TRS comments:
015S	002W	13	N2, NE4SE4; 12 S2SE4
015S	001W	18	SW4NW4, NW4SW4

Precision: S
Survey date: 1992-07-05 Elevation: 7500 - 7920
First observation: 1992-07-05 Slope/aspect: 0-15% / VARIED
Last observation: 1992-07-05 Size (acres): 160

Location:
CENTENNIAL MOUNTAINS, CA. 4 MILES UP ODELL CREEK TRAIL SOUTH TO CONTINENTAL DIVIDE RIDGES.

Element occurrence data:
5,000-10,000 PLANTS, NOTABLY VIGOROUS AND MANY-FLOWERED. IN FRUIT AND VERY LATE FLOWER. COMMON OVER LARGE AREA.

General site description:
SUBALPINE RIDGES CONTIGUOUS WITH CONTINENTAL DIVIDE; IN BROAD LUXURIANT MEADOWS DOMINATED BY FESTUCA SCABRELLA. ASSOCIATED SPECIES: LIGUSTICUM FILICINUM, GERANIUM VISCOSISSIMUM, ARTEMISIA TRIDENTATA, MELICA SPECTABILIS, AGASTACHE URTICIFOLIA, PERIDERIDIA GAIRDNERI, POTENTILLA GRACILIS.

Land owner/manager:
U.S. SHEEP EXPERIMENT STATION

Comments:
THERE IS A HISTORIC COLLECTION OF THIS SPECIES FROM THE CENTENNIAL MOUNTAINS IN THIS AREA. POPULATION SPANS STATE LINE ALONG CONTINENTAL DIVIDE.

Information source: HEIDEL, B. L. 1992. [FIELD SURVEY TO CENTENNIAL MOUNTAINS OF 5 JULY.]

Specimens: HEIDEL, B. (754). 1992. MONT.

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: PMCYP036E0.002
Element occurrence type:

Survey site name: MONIDA
EO rank: A
EO rank comments: AREA RELATIVELY UNDISTURBED, GOOD POPULATION.

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	NE4
014S	006W	34	SE4

Precision: S
Survey date: 1985-07-19 Elevation: 6770 -
First observation: 1985 Slope/aspect:
Last observation: 1986-06-27 Size (acres): 40

Location:
0.1-0.4 AIR MI. NW. OF MONIDA, N. OF OLD HIGHWAY ACROSS RR TRACKS.

Element occurrence data:
101-1000 INDIVIDUALS (RHIZOMATOUS); PLANTS FRUITING; MEADOW IS FAIRLY UNDISTURBED AND NOT HEAVILY GRAZED; AREA IS SELDOM VISITED.

General site description:
WET ALKALINE MEADOW, ON VERY GENTLE SLOPE; MEADOW DOMINATED BY GRAMINOIDS, WITH PHLOX KELSEYI, JUNCUS BALTICUS, CAREX SPP., IN DENSE TURF.

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

Comments:
AREA REMOTE & NOT VERY CLOSE TO HIGHWAY; SEE EF FOR SPECIAL PLANT SURVEY FORM.

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

Specimens: LESICA, P. (3551). 1985. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX MULTICOSTATA
Common Name: MANY-RIBBED SEDGE

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

Element occurrence code: PMCYP038Y0.001
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	26	

Precision: M
Survey date: 1959-07-06 Elevation: 6900 -
First observation: 1959 Slope/aspect:
Last observation: 1959-07-06 Size (acres): 0

Location:
CANYON TO TAYLOR MTN., U.S. SHEEP STATION ALLOTMENT, CENTENNIAL RANGE.

Element occurrence data:
OCCASIONAL.

General site description:
10% SLOPE, NORTH EXPOSURE; GRASSLAND.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: LEWIS, M. E. (864). 1959. SPECIMEN #431845. RM.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX MULTICOSTATA
Common Name: MANY-RIBBED SEDGE

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

Element occurrence code: PMCYP038Y0.002
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE
SLIDE MOUNTAIN

Township:	Range:	Section:	TRS comments:
015S	001W	05	

Precision: M
Survey date: 1959-07-13 Elevation: 7600 -
First observation: 1959 Slope/aspect:
Last observation: 1959-07-13 Size (acres): 0

Location:
U.S.SHEEP EXPERIMENT STATION, ODELL CREEK (BIG MTN.).

Element occurrence data:
UNKNOWN.

General site description:
GRASSLAND, WITH POA, MELICA, CAREX.

Land owner/manager:
U.S. SHEEP EXPERIMENT STATION

Comments:

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: CALVERT (SR-25). 1959. SPECIMEN #431846. RM.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX VALLICOLA
Common Name: VALLEY SEDGE

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

Element occurrence code: PMCYP03EA0.002
Element occurrence type:

Survey site name: MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	NE4

Precision: M
Survey date: Elevation: 6794 -
First observation: 1908 Slope/aspect:
Last observation: 1908-07-14 Size (acres): 0

Location:
MONIDA (HISTORICAL RECORD).

Element occurrence data:
IN FRUIT (14 JULY 1908).

General site description:
UNKNOWN.

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

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: JONES, M. E. 1908. MONTU. (MRPP CARD).

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX VALLICOLA
Common Name: VALLEY SEDGE

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

Element occurrence code: PMCYP03EA0.006
Element occurrence type:

Survey site name: LOWER RED ROCK LAKE
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SLIDE MOUNTAIN

Township:	Range:	Section:	TRS comments:
014S	002W	22	NW4

Precision: M
Survey date:
First observation: 1968
Last observation: 1968-06-21
Elevation: 6700 -
Slope/aspect:
Size (acres): 0

Location:
RED ROCKS LAKES NATIONAL WILDLIFE REFUGE (CA. 1.25 MILES WEST OF LAKEVIEW).

Element occurrence data:
SPARSE; IN FRUIT (21 JUNE 1968).

General site description:
GRASSLAND, WITH TARAXACUM LUPINUS, AND IRIS.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
RED ROCK LAKES NATIONAL WILDLIFE REFUGE
RED ROCK LAKES WILDERNESS

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: DORN, R. D. (365). 1968. MONT. (MRPP CARD).

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CAREX VALLICOLA
Common Name: VALLEY SEDGE

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

Element occurrence code: PMCYP03EA0.009
Element occurrence type:

Survey site name: CENTENNIAL MOUNTAINS
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	32	NE4NE4

Precision: S
Survey date:
First observation: 1993-08-06
Last observation: 1993-08-06
Elevation: 8050 -
Slope/aspect: 2% / NNW
Size (acres):

Location:
CENTENNIAL MOUNTAINS; 2.5 MILES EAST OF LAKEVIEW IN VALLEY IMMEDIATELY WEST OF SHEEP MOUNTAIN. 1 MILE ABOVE ROAD.

Element occurrence data:
FRUITING.

General site description:
MEADOW NEAR STREAM HEADWATERS AND LOWER END OF OPEN AVALANCHE CHUTE, IN ALLUVIAL SOIL. ASSOCIATED SPECIES: POA NERVOSA, BROMUS CILIATUS, FRAGARIA VIRGINIANA, MELICA BULBOSA, TRISETUM SPICATUM, EPILOBIUM LATIFOLIUM.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
OBSERVED BY BONNIE HEIDEL.

Information source:

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CASTILLEJA RUSTICA
Common Name: RUSTIC PAINTBRUSH

Global rank: G4G5T3T4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDSCR0D0X2.001
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: BIG TABLE MOUNTAIN

Township:	Range:	Section:	TRS comments:
014S	003W	31	

Precision: M
Survey date: 1937-06-28 Elevation: 7150 -
First observation: 1937 Slope/aspect:
Last observation: 1937-06-28 Size (acres): 0

Location:
SOUTHEAST OF SAWYER ALONG BEAR CREEK, 16 MILES EAST OF MONIDA.
BEAVERHEAD MOUNTAINS.

Element occurrence data:
UNKNOWN.

General site description:
GRAVELLY AND STONEY SLOPES.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
STATE LAND - UNDESIGNATED
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
CENTENNIAL MOUNTAINS PRIMITIVE AREA

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: PENNELL (20606). 1937. SPECIMEN #245575. RM.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CIRSIUM SUBNIVEUM
Common Name: JACKSON'S HOLE THISTLE

Global rank: G3G4 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PDAST2E2S0.002
Element occurrence type:

Survey site name: ELK LAKE
EO rank: B
EO rank comments: GRAZING AND WEEDY SPECIES.

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
013S	001E	29	SW4; 32 NW4

Precision: S
Survey date: 1991-08-21 Elevation: 6800 -
First observation: 1986 Slope/aspect: 0-45 % / EAST, SOUTH
Last observation: 1991-08-21 Size (acres): 60

Location:
ABOVE ELK LAKE.

Element occurrence data:
125+ PLANTS.

General site description:
ON STEEP, UNSTABLE GRAVEL AND ROCKSLIDES, EAST SLOPE, NEAR CHAENACTIS DOUGLASII, PENSTEMON CYANEUS, AND P. DEUSTUS.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens: LACKSCHEWITZ, K. (10993). 1986. SPECIMEN # 103712. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CIRSIUM SUBNIVEUM
Common Name: JACKSON'S HOLE THISTLE

Global rank: G3G4 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PDAST2E2S0.006
Element occurrence type:

Survey site name: ELK LAKE
EO rank: A
EO rank comments: EXCELLENT SITE WITH WELL ESTABLISHED POPULATIONS.

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
013S	001E	17	SW4; 20 CENTRAL

Precision: S
Survey date: 1991-08-20 Elevation: 7400 -
First observation: 1991 Slope/aspect: 0-40% / SOUTHWEST, WEST, EAST
Last observation: 1991-08-20 Size (acres): 25

Location:
CENTENNIAL VALLEY; SITE IS CA. 1 MILE NORTH OF ELK LAKE. FOLLOW ROAD ON WEST SIDE OF LAKE TO RIDGETOP, PARK AND WALK WEST CA. 0.2 MILE TO SMALL ROCKY RIDGE. OTHER SITES ARE UP A DRY FORK OF NARROWS CREEK.

Element occurrence data:
120 PLANTS IN FOUR SUBPOPULATIONS, IN FLOWER AND FRUIT.

General site description:
OPEN, ERODING SCREE SLOPES (TERTIARY VOLANIC ROCK), WITH RUBUS IDAEUS, JUNIPERUS COMMUNIS, SPIRAEA BETULIFOLIA AND POLYPODIUM HESPERIUM. SURROUNDING FOREST IS PSEUDOTSUGA MENZIESII, JUNIPERUS SCOPULORUM AND POPULUS TREMULOIDES.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:
PLANTS ARE MORE OFTEN AT THE TOP OF SCREE SLOPES.

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CIRSIUM SUBNIVEUM
Common Name: JACKSON'S HOLE THISTLE

Global rank: G3G4 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PDAST2E2S0.007
Element occurrence type:

Survey site name: ELK LAKE
EO rank: B
EO rank comments: LARGE, HEALTHY POPULATION, SURROUNDING AREA IS HEAVILY GRAZED.

County: BEAVERHEAD

USGS quadrangle: HIDDEN LAKE BENCH

Township:	Range:	Section:	TRS comments:
013S	001E	16	SE4

Precision: S
Survey date: 1991-08-21 Elevation: 6800 -
First observation: 1991 Slope/aspect: 0-40% / NORTHWEST
Last observation: 1991-08-21 Size (acres): 30

Location:
CENTENNIAL VALLEY, CA. 0.3 MILE NORTH OF ELK LAKE, NORTHWEST-FACING ROCKY SLOPE.

Element occurrence data:
100+ PLANTS, MOSTLY IN FRUIT.

General site description:
OPEN, ERODING SCREE SLOPE (TERTIARY VOLCANIC ROCK), WITH ARTEMISIA TRIDENTATA, AGROPYRON SPICATUM, POA SECUNDA, JUNIPERUS COMMUNIS AND POLYPODIUM HESPERIUM.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens: ROE, L. S. (480). 1991. MONT.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CIRSIUM SUBNIVEUM
Common Name: JACKSON'S HOLE THISTLE

Global rank: G3G4 Forest Service status: SENSITIVE
State rank: S2 Federal Status:

Element occurrence code: PDAST2E2S0.008
Element occurrence type:

Survey site name: HIDDEN LAKE
EO rank: A
EO rank comments: SMALL POPULATION, BUT EXCELLENT LOCATION WITH NO WEED INVASION.

County: MADISON

USGS quadrangle: HIDDEN LAKE BENCH

Township:	Range:	Section:	TRS comments:
013S	001E	3	NW4SW4

Precision: S
Survey date: 1991-08-22 Elevation: 6760 -
First observation: 1991 Slope/aspect: 10-35% / SOUTHWEST
Last observation: 1991-08-22 Size (acres): 15

Location:
NORTH OF CENTENNIAL VALLEY, JUST NORTH OF HIDDEN LAKE. FROM RED ROCK LAKE WILDLIFE REFUGE, TAKE FS RD 8384 NORTH PAST ELK LAKE TO END OF ROAD. PARK AND WALK NORTH ON TRAIL 35 TO NEAR THE END OF HIDDEN LAKE; TURN WEST ON TRAIL #19 FOR 0.2 MILES; SCREE SLOPES ARE ABOVE TRAIL.

Element occurrence data:
CA. 43 PLANTS IN 3 SMALL SUBPOPULATIONS, SCATTERED OVER A LARGE AREA.

General site description:
ALONG THE UPPER AND LOWER EDGES OF OPEN SCREE SLOPES WITH SPARSE VEGETATIVE COVER OF PENSTEMON DEUSTUS, POA SECUNDA, CAREX FILIFOLIA, JUNIPERUS COMMUNIS; SURROUNDING FOREST IS SPARSE PSEUDOTSUGA MENZIESII.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens: ROE, L. S. (481). 1991. MONT.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: CRYPTANTHA FENDLERI
Common Name: FENDLER CAT'S-EYE

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBOR0A0X0.001
Element occurrence type:

Survey site name: CENTENNIAL SANDHILLS
EO rank: A
EO rank comments: WELL-ESTABLISHED IN RECENTLY-DISTURBED SOILS.

County: BEAVERHEAD

USGS quadrangle: LOWER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
013S	002W	23	SW4N2; 22 E2

Precision: S
Survey date: 1987-07-14 Elevation: 6680 -
First observation: 1983 Slope/aspect:
Last observation: 1987-08-05 Size (acres): 0

Location:
CENTENNIAL SANDHILLS, AT THE NORTHEAST END OF THE CENTENNIAL VALLEY.

Element occurrence data:
1001-10000 INDIVIDUALS, MATURE FRUIT PRESENT; LARGE POPULATION, SPREAD OVER LARGE AREA; SOME EVIDENCE OF GRAZING, THOUGH MOST AREAS SHOW LITTLE EVIDENCE OF DISTURBANCE.

General site description:
SAND DUNES, WITH ALLIUM TEXTILE, ELYMUS TRACHYCAULUS.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
POPULATIONS IN RECENTLY-DISTURBED SOILS AND MORE OPEN BLOWOUTS.

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens: SCHASSBERGER, L.A. (122). 1987. MONTU.
LESICA, P. (2820). 1983. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: DOWNINGIA LAETA
Common Name: GREAT BASIN DOWNINGIA

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

Element occurrence code: PDCAM06080.004
Element occurrence type:

Survey site name: LAKEVIEW
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SLIDE MOUNTAIN

Township:	Range:	Section:	TRS comments:
014S	002W	23	

Precision: M
Survey date:
First observation: 1932
Last observation: 1932-08-14

Elevation: 6660 -
Slope/aspect:
Size (acres): 0

Location:
CENTENNIAL VALLEY, LAKEVIEW.

Element occurrence data:
IN FRUIT (14 AUGUST 1932).

General site description:
ALKALINE CLAY.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
RED ROCK LAKES WILDERNESS

Comments:
LABEL ELEVATION OF 6500 FEET IS NOT IN LAKEVIEW VICINITY.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: JENNISON, H. M. (32-55). 1932. MONT. (MRPP CARD).

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ELYMUS FLAVESCENS
Common Name: SAND WILDRYE

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PMPOA6P080.001
Element occurrence type:

Survey site name: CENTENNIAL SANDHILLS
EO rank: C
EO rank comments: SEVERAL SMALL POPULATIONS; LIMITED DISTRIBUTION.

County: BEAVERHEAD

USGS quadrangle: LOWER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
013S	002W	23	NE4; 14

Precision: S
Survey date: 1987-06-28 Elevation: 6680 -
First observation: 1984 Slope/aspect:
Last observation: 1987-09-03 Size (acres): 1

Location:
CENTENNIAL SANDHILLS, AT THE NORTHEAST END OF THE CENTENNIAL VALLEY; EAST END OF THE SAND HILL AREA.

Element occurrence data:
THREE SMALL COLONIES, ONE WITH 125-225 FLOWERING CULMS; PROBABLY OTHER POPULATIONS IN THE AREA; EVIDENCE OF RECENT DISTURBANCE BY CATTLE IN THE AREA. FOUND IN THE MOST OPEN SOILS.

General site description:
CREST OF A SAND HILL, BY AN OLD, HEALING BLOWOUT AND IN TWO OTHER RECENTLY-DISTURBED AREAS. WITH STIPA COMATA, AGROPYRON CANINUM.

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

Comments:

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens: SCHASSBERGER, L. A. (088). 1987. MONTU.
LESICA, P. (3211). 1984. 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: PDAST3M1R0.006
Element occurrence type:

Survey site name: RED ROCK MOUNTAIN
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MOUNT JEFFERSON

Township:	Range:	Section:	TRS comments:
014S	002E	32	

Precision: M
Survey date: 1983-08-13 Elevation: 9200 -
First observation: 1983 Slope/aspect:
Last observation: 1983-08-13 Size (acres): 0

Location:
BASIN SOUTH OF RED ROCK MOUNTAIN, ABOUT 35 MILES EAST OF MONIDA.

Element occurrence data:
COMMON. IN FLOWER.

General site description:
IN ROCKY SOIL ON MODERATE, WEST-FACING SLOPE. WITH FRASERA, POA.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: LESICA, P. (2823). 1983. SPECIMEN #92792. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: ERIOGONUM OVALIFOLIUM VAR NEVADENSE
Common Name: OVAL-LEAVED BUCKWHEAT

Global rank: G5T4 Forest Service status:
State rank: S2 Federal Status:

Element occurrence code: PDPGN084FE.003
Element occurrence type:

Survey site name: CENTENNIAL SAND DUNES
EO rank: A
EO rank comments: LARGE POPULATION; WELL ESTABLISHED IN SANDHILLS.

County: BEAVERHEAD

USGS quadrangle: LOWER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
013S	002W	22	E2; 23; 14 SE4, SE4SW4; 13 S2SW4; 24 NW4; 27

Precision: S
Survey date: 1987-07-23 Elevation: 6680 - 6750
First observation: 1983 Slope/aspect: 0-30% / -
Last observation: 1993-07-22 Size (acres): 700

Location:
CENTENNIAL VALLEY, CA. 25 MILES NORTHEAST OF MONIDA; SANDHILLS JUST NORTH OF LOWER RED ROCK LAKES.

Element occurrence data:
1993: 10,000-100,000 PLANTS, 100% FLOWERING. 1987: VERY COMMON ACROSS SANDHILLS.

General site description:
TAXON OCCUPIES DISCONTINUOUS CHOPPY DUNE HABITAT. WITH PHACELIA HASTATA, STIPA COMATA, FESTUCA IDAHOENSIS, ARTEMISIA TRIPARTITA, A. TRIDENTATA, AND TETRADYMIA CANESCENS. OTHER SPECIES OBSERVED IN 1993: CHRYSOTHAMNUS NAUSEOSUS, C. VISCIDIFLORUS, LUPINUS SERICEUS, PSORALEA LANCEOLATA, ELYMUS LANCEOLATUS, FESTUCA OVINA, ARTEMISIA LUDOVICIANA, LEPTODACTYLON PUNGENS, ACHILLEA MILLEFOLIUM, COMMANDRA UMBELLATA, PHLOX HOODII, TARAXACUM SP., KOELERIA MACRANTHA. ELYMUS FLAVESCENS AND ASTRAGALUS CERAMICUS VAR. APUS ALSO RELOCATED AT SITE.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE
STATE LAND - UNDESIGNATED
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
POPULATION RELOCATED IN 1993 BY DENISE CULVER AND BONNIE HEIDEL.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

ERIOGONUM OVALIFOLIUM VAR NEVADENSE .003 (CONT.)

Information source: HEIDEL, BONNIE. [BOTANIST] MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, P.O. BOX 201800, HELENA, MT 59620-1800. WORK: 406/444-3009.

Specimens: LESICA, P. (2664). 1983. SPECIMEN # 092699. MONTU.
SCHASSBERGER, L. A. (055). 1987. 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: PDGEN06050.001
Element occurrence type:

Survey site name: MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	NE4
014S	006W	34	SE4

Precision: S
Survey date: 1985-06-10 Elevation: 6770 -
First observation: 1984 Slope/aspect:
Last observation: 1986-06-27 Size (acres): 40

Location:
0.1-0.4 AIR MI. NW. OF MONIDA, N. OF OLD HIGHWAY ACROSS RR TRACKS.

Element occurrence data:
101-1000 INDIVIDUALS, IN FLOWER AND FRUIT; SUBSTANTIAL AVAILABLE HABITAT; AREA NOT HEAVILY GRAZED IN APPEARANCE, AND IS REMOTE AND NOT HEAVILY VISITED; SPECIES OCCURS IN SOMEWHAT DRIER AND LESS HEAVILY VEGETATED PARTS OF MEADOW.

General site description:
WET ALKALINE MEADOW, ON VERY GENTLE SLOPE; WITH PHLOX KELSEYI, JUNCUS BALTICUS, ANTENNARIA MICROPHYLLA, CAREX SPP., TRIGLOCHIN, VIOLA NEPHROPHYLLA, AND PHLOX KELSEYI.

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

Comments:

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

Specimens: LESICA, P. (3368). 1985. 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: PDGEN06050.002
Element occurrence type:

Survey site name: UPPER RED ROCK LAKE
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
014S	001W	01	NE4

Precision: M
Survey date: 1969-06-09 Elevation: 6635 -
First observation: 1969 Slope/aspect:
Last observation: 1969-06-09 Size (acres): 0

Location:
CENTENNIAL VALLEY, CA. 2.75 AIR MI. NE. OF NE. SHORE OF UPPER RED ROCK LAKE, ADJACENT TO ELK CREEK.

Element occurrence data:
MODERATE ABUNDANCE; COROLLA WHITE.

General site description:
MOIST GRASSLAND WITH TARAXACUM AND TRIFOLIUM.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: DORN, R. D. (845). 1969. SPECIMEN #296846. RM.

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: PDGEN06050.005
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: MONIDA
SNOWLINE

Township:	Range:	Section:	TRS comments:
014S	006W	31	SE4

Precision: M
Survey date:
First observation: 1985
Last observation: 1985-06-10
Elevation: 6700 -
Slope/aspect:
Size (acres):

Location:
SOUTH OF MONIDA HIGHWAY INTERCHANGE, TAKE UNIMPROVED ROAD WNW CA. 3 MILES TO WEST SIDE OF PINETOP HILL.

Element occurrence data:
COMMON

General site description:
MOIST ALKALINE MEADOW ON THE WEST SIDE OF PINETOP HILL, WITH PHLOX KELSEYI AND JUNCUS BALTICUS.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:

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

Specimens: LESICA, P. (3373). 1985. 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: PDGEN06050.007
Element occurrence type:

Survey site name: MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	

Precision: S
Survey date:
First observation: 1986
Last observation: 1986-06-11
Elevation: 6800 -
Slope/aspect:
Size (acres):

Location:
JUST NORTH OF SOUTHBOUND ENTRANCE RAMP OF I-15 AT MONIDA.

Element occurrence data:
COMMON.

General site description:
ON HUMMOCKS IN A WET ALKALINE MEADOW, WITH POTENTILLA FRUTICOSA AND JUNCUS BALTICUS.

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

Comments:

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

Specimens: LESICA, P. (3811). 1986. SPECIMEN #104574. MONTU. DUPL. DET. J. GILLETT, 12/1986.

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: PDGEN06050.008
Element occurrence type:

Survey site name: LIMA RESERVOIR
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: LIMA DAM

Township:	Range:	Section:	TRS comments:
013S	006W	35	CENTER

Precision: M
Survey date:
First observation: 1986
Last observation: 1986-06-10
Elevation: 6700 -
Slope/aspect:
Size (acres): 0

Location:
CA. 6.5 AIR MILES NORTH OF MONIDA, ALONG THE LIMA RESERVOIR ROAD.

Element occurrence data:
COMMON.

General site description:
HUMMOCKS IN A SMALL ALKALINE SEEP ON THE NORTH SIDE OF LIMA RESERVOIR. WITH DODECATHEON PULCHELLUM AND JUNCUS BALTICUS.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:

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

Specimens: LESICA, P. (3808). 1986. SPECIMEN #104544. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: GENTIANOPSIS SIMPLEX
Common Name: HIKER'S GENTIAN

Global rank: G3G4 Forest Service status: SENSITIVE
State rank: S1 Federal Status:

Element occurrence code: PDGEN080A0.004
Element occurrence type:

Survey site name: LIMA MEADOW
EO rank: B
EO rank comments: GOOD SIZE POPULATION; VIABILITY UNKNOWN.

County: BEAVERHEAD

USGS quadrangle: CORRAL CREEK

Township:	Range:	Section:	TRS comments:
014S	005W	29	

Precision: S
Survey date: 1992-07-04 Elevation: 6710 -
First observation: 1992-07-04 Slope/aspect:
Last observation: 1992-07-04 Size (acres): 1

Location:
CENTENNIAL VALLEY, 4.5 MILES EAST OF MONIDA, ON NORTH SIDE OF ROAD, ABOVE LIMA RESERVOIR.

Element occurrence data:
100-200 PLANTS, PAST FRUIT AND IN FRUIT.

General site description:
MARL HABITAT NEAR CENTER OF PEATLAND MADE UP OF MOUNDS AND POOLS; ANY NATURAL PATTERNING OBSCURED. SPECIES RESTRICTED TO MOUNDS. CO-DOMINANT SPECIES INCLUDE CAREX SCIRPIFORMIS, MUHLENBERGIA FILIFORMIS AND JUNCUS SPP.

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

Comments:
LIVESTOCK TRAMPLING IS WEAK IMPACT IN THE SATURATED MARL HABITAT, BUT HAS CAUSED HUMMOCKS IN SURROUNDING HABITAT, WHICH STILL RETAINS HIGH SPECIES DIVERSITY.

Information source: HEIDEL, B. L. 1992. [FIELD SURVEY TO LIMA FEN OF 4 JULY.]

Specimens: HEIDEL, B. L. (735). 1992.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: HAPLOPAPPUS NANUS
Common Name: DWARF GOLDENWEED

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

Element occurrence code: PDAST3L0B0.001
Element occurrence type:

Survey site name: RED ROCK LAKES
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	28	

Precision: G
Survey date: 1952-08-23 Elevation: 6700 -
First observation: 1952 Slope/aspect:
Last observation: 1952-08-23 Size (acres):

Location:
(CENTENNIAL VALLEY) SOUTH SIDE OF RED ROCK LAKE.

Element occurrence data:
IN FLOWER (23 AUGUST 1952).

General site description:
DRY SLOPE ALONG SOUTH SIDE OF LAKE; SAGEBRUSH TYPE, GROWING OUT OF STERILE ROCK SLIDE.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
SPECIMEN LABEL DATA DOES NOT SPECIFY UPPER OR LOWER RED ROCK LAKE. OCCURRENCE MAPPED SOUTH OF UPPER RED ROCK LAKE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: BOOTH, W.E. (52493). 1952. MONT.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: HELENIUM HOOPESII
Common Name: ORANGE SNEEZEWEED

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

Element occurrence code: PDAST34010.001
Element occurrence type:

Survey site name: MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
014S	006W	35	SW4

Precision: M
Survey date: 1986-08-01 Elevation: 6820 -
First observation: 1986 Slope/aspect:
Last observation: 1986-08-01 Size (acres): 0

Location:
CA. 0.5 KM NE OF MONIDA, ALONG THE ROAD TO RED ROCK LAKES.

Element occurrence data:
UNKNOWN

General site description:
IN BOGGY AREA BELOW THE ROAD, WITH SENECIO FOETIDUS AND CAREX SPP.

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

Comments:

Information source: LACKSCHEWITZ, KLAUS. DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF MONTANA, MISSOULA, MT 59812. 406/243-5222.

Specimens: LACKSCHEWITZ, K. (11061). 1986. MONTU, NY. VERIFIED BY A. CRONQUIST, NY.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: IPOMOPSIS CONGESTA SSP CREBRIFOLIA
Common Name: BALLHEAD GILIA

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

Element occurrence code: PDPLM06032.001
Element occurrence type:

Survey site name: MONIDA HILLS
EO rank: B
EO rank comments: GOOD CONDITION HABITAT, FAIRLY SMALL POPULATION.

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	10	NW4

Precision: S
Survey date: 1986-06-12 Elevation: 7050 -
First observation: 1986 Slope/aspect:
Last observation: 1986-06-12 Size (acres): 2

Location:
CA. 1.1 AIR MILES SSW OF MONIDA, 0.35 AIR MILE WEST OF THE MONTANA-IDAHO STATE LINE. SMALL DRAINAGE 0.5 MILES WEST OF MONIDA PASS.

Element occurrence data:
COMMON, ABOUT 100-200 PLANTS.

General site description:
SLUMPING CLAY-LOAM SOILS, WITH ARTEMISIA TRIPARTITA, FESTUCA IDAHOENSIS, TETRADYMIA CANESCENS, CHRYSOTHAMNUS NAUSEOSUS.

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

Comments:

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

Specimens: LESICA, P. (3818). 1986. SPECIMEN #104561. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: IPOMOPSIS CONGESTA SSP CREBRIFOLIA
Common Name: BALLHEAD GILIA

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

Element occurrence code: PDPLM06032.002
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: CORRAL CREEK

Township:	Range:	Section:	TRS comments:
014S	004W	30	NW4NW4

Precision: M
Survey date:
First observation: 1984
Last observation: 1984-07-07
Elevation: 6700 -
Slope/aspect:
Size (acres): 0

Location:
CENTENNIAL VALLEY; CA. 10 MILES EAST OF MONIDA, ABOVE SAND CREEK.

Element occurrence data:
VERY COMMON.

General site description:
IN HEAVY SOIL OF SLUMPING BANKS ABOVE CREEK, WITH PENSTEMON ERIANTHERUS AND SENECIO CANUS.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:

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

Specimens: LESICA, P. (3113). 1984. SPECIMEN #079459. MONTU. ! A. CRONQUIST 1984.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: IPOMOPSIS CONGESTA SSP CREBRIFOLIA
Common Name: BALLHEAD GILIA

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

Element occurrence code: PDPLM06032.003
Element occurrence type:

Survey site name: CENTENNIAL VALLEY
EO rank:

County: BEAVERHEAD

USGS quadrangle: CORRAL CREEK
BIG TABLE MOUNTAIN
MONIDA

Township:	Range:	Section:	TRS comments:
014S	005W	23	SW4; 26 N2; 30 SW4
014S	004W	30	SW4; 31 NW4; 28 SW4
014S	003W	31	W2

Precision: S
Survey date:
First observation: 1993-07-23
Last observation: 1993-07-23
Elevation: 6700 - 7320
Slope/aspect: 5-25% / ALL
Size (acres): 500

Location:
CENTENNIAL VALLEY; PLANT FOUND IN ABUNDANCE FROM MONIDA TO BEAR CREEK (CA. 15 MILES EAST OF MONIDA). ALONG MOST ROAD CUTS OR DISTURBED BARE AREAS/SOIL SLUMPS.

Element occurrence data:
10,000 TO 100,000 PLANTS, 80% FLOWERING, 20% SEED.

General site description:
OPEN, DRY LOWER ROLLING UPLANDS. CLAY PARENT MATERIAL. ASSOCIATED SPECIES: PENSTEMON ERIANTHUS, ARTEMISIA TRIDENTATA, SENECIO CANUS, CHRYSOTHAMNUS NAUSEOUS, C. VICIDIFLORUS, AGROPYRON SMITHII.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
OBSERVED BUT INCOMPLETELY DOCUMENTED ALONG 15 MILES OF EXPOSED SHALE FACIES DISSECTING CENTENNIAL ESCARPMENT. TRAMPLING BY CATTLE. OBSERVED BY DENISE CULVER; SPECIMEN COLLECTED--COLLECTION # AND REPOSITORY UNKNOWN.

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]
Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: LESQUERELLA SP NOV 1
Common Name: UNDESCRIBED BLADDERPOD

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

Element occurrence code: PDBRA1N240.004
Element occurrence type:

Survey site name: NEMESIS MOUNTAIN
EO rank: A
EO rank comments: EXCELLENT SITE IN PROPOSED BLM WILDERNESS AREA.

County: BEAVERHEAD

USGS quadrangle: MOUNT JEFFERSON

Township:	Range:	Section:	TRS comments:
014S	002E	31	NW4, SW4NE4
014S	001E	36	NE4; 25 SE4

Precision: S
Survey date: 1992-07-26 Elevation: 8800 - 9200
First observation: 1979-06-20 Slope/aspect:
Last observation: 1992-07-26 Size (acres): 0

Location:
CENTENNIAL MOUNTAINS, NEMESIS MOUNTAIN AND EAST ALONG RIDGELINE.

Element occurrence data:
1992: AT LEAST 500-1000 PLANTS IN PEAK FLOWERING AND EARLY FRUITING ON 27 JUNE. 1979: RARE.

General site description:
ALPINE SCREE SLOPES AND BELOW TO PSEUDOTSUGA MENZIESII/CAREX GEYERI HABITAT TYPE ON SOUTH FACE, IN PINUS ALBICAULIS-ABIES LASIOCARPA PLANT ASSOCIATION INCLUDING BURNED AREA. OTHER ASSOCIATED SPECIES: CAREX ROSSII, GEUM ROSSII, HEDYSARUM SULPHURESCENS, LLOYDIA SEROTINA, POA ALPINA, VALERIANA DIOICA.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:
LOWRY SPECIMEN TAKEN IN FLOWER, AND PREVIOUS YEAR'S FRUIT IS IN POOR CONDITION; ROE SPECIMEN TAKEN IN FRUIT. DETERMINED LESQUERELLA SP NOVUM BY REED ROLLINS, 3/93.

Information source: LOWRY, P. P., II. 1979. VASCULAR PLANTS OF THE CENTENNIAL MOUNTAINS INSTANT STUDY AREA, BEAVERHEAD COUNTY, MONTANA, AND ADJACENT CLARK AND FREMONT COUNTIES, IDAHO. BUREAU OF LAND MANAGEMENT, BUTTE DISTRICT. UNPUBLISHED REPORT. 57 PP.

LESQUERELLA SP NOV 1 .004 (CONT.)

Specimens: LOWRY, II, P. P. (2090). 1979. SPECIMEN #68303. MONT.
ROE, L. S. (493). 1992. GH.
HEIDEL, B. (721, 722). 1992.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: OENOTHERA PALLIDA VAR IDAHOENSIS
Common Name: PALE EVENING-PRIMROSE

Global rank: G5T4Q Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDONA0C0Y2.001
Element occurrence type:

Survey site name: CENTENNIAL SANDHILLS
EO rank: A
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: LOWER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
013S	002W	22	NW4NE4; 23 S2NE4

Precision: S
Survey date: 1987-07-13 Elevation: 6680 -
First observation: 1983 Slope/aspect:
Last observation: 1987-07-13 Size (acres): 10

Location:
CENTENNIAL SANDHILLS, AT THE NORTHEAST END OF THE CENTENNIAL VALLEY.

Element occurrence data:
101-1000 INDIVIDUALS, FLOWERING; SAND HILLS ARE RELATIVELY UNDISTURBED, PARTICULARLY THOSE ON BLM LAND; COLONIES APPEAR TO BE REPRODUCING WELL. SCATTERED.

General site description:
550-575 PLANTS ON CRESTS AND SLOPES OF UNSTABLE SAND HILLS, WITH PSORALEA TENUIFLORA, ALLIUM TEXTILE. OFTEN IN RECENTLY-DISTURBED SOILS, ESPECIALLY SQUIRREL MOUNDS.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
INFORMATION NEEDED ON SAND DUNE DYNAMICS AND SUCCESSIONAL STABILIZATION IN THE AREA.

Information source: ROE, LISA SCHASSBERGER. [BOTANIST.] 556 SPENCER, HELENA, MONTANA 59601.

Specimens: SCHASSBERGER, L. A. (112). 1987. MONTU.
LESICA, P. (2713, 2817). 1983. 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: PDORO04040.007
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: METZEL CREEK

Township:	Range:	Section:	TRS comments:
013S	002W	19	

Precision: M
Survey date:
First observation: 1992-08-15
Last observation: 1992-08-15
Elevation: 6660 - 6720
Slope/aspect: 2% / NORTHWEST
Size (acres): 500

Location:
CA. 3 AIR MILES NORTH OF DAM ON LOWER RED ROCK LAKE; SITE IS ALONG NORTH SIDE ROAD 5 MILES EAST OF BRUNDAGE LANE.

Element occurrence data:
50+ INDIVIDUALS, FLOWERING AND FRUITING.

General site description:
OPEN EXPOSURE ON STRAIGHT BOTTOM; DRY AREA ON ALLUVIAL FAN. CLAY SOIL OF CLAY ALLUVIUM PARENT MATERIAL. ASSOCIATED DOMINANT SPECIES: ARTEMISIA ARBUSCULA, AGROPYRON SMITHII, POA SECUNDA. ADDITIONAL ASSOCIATED PLANT SPECIES: ASTER CAMPESTRIS, ASTRAGALUS AGRESTIS.

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

Comments:
ECODATA PLOT #92PL123. CATTLE TRAILS PRESENT.

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

Specimens: LESICA, P. (5867). 1992. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: OROGENIA FUSIFORMIS
Common Name: TAPERED-ROOT OROGENIA

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

Element occurrence code: PDAPI1J010.005
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: HIDDEN LAKE BENCH

Township:	Range:	Section:	TRS comments:
013S	002E	19	SW4
013S	001E	24	SE4

Precision: S
Survey date:
First observation: 1992-04-29
Last observation: 1992-04-29
Elevation: 7125 -
Slope/aspect: 15% / NNE
Size (acres): 1

Location:
FROM ENNIS GO SOUTH ON HWYS 287 AND 87 TO 1 MILE NORTH OF RAYNOLDS PASS. TURN WEST ON ANTELOPE BASIN ROAD (FS RD #230) AND CONTINUE CA. 5.5 MILES TOWARDS LONE TREE CREEK. SITE IS ON SLOPE ON EAST SIDE OF ROAD, JUST UP FROM JUNCTION WITH DEAD-END ROAD TO SITZ'S COW CAMP.

Element occurrence data:
200-300 INDIVIDUALS, 90% FLOWERING TO BEGINNING FRUIT, 10% VEGETATIVE. ONE SUBPOPULATION CA. 0.5 MILE TO THE NORTHWEST.

General site description:
PARTIALLY SHADED, DRY MIDSLOPE, LOAM SOIL, DOLOMITE/QUARTZITE PARENT. ARTEMISIA TRIDENTATA VAR. VASYANA/FESTUCA IDAHOENSIS HABITAT TYPE, WITH SYMPHORICARPOS OREOPHILUS AND GEUM TRIFLORUM.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:
LATE SNOWMELT AREA; SNOWBANK PRESENT ABOVE SITE WHEN SURVEYED. POPULATION EXTENDS INTO ASPEN CLONE TO THE SOUTH, MINOR AMOUNTS OF GROUND SQUIRREL DIGGING. SURVEY CONDUCTED BY K. SUZUKI AND M. KLEIN. ECODATA PLOT #027C92S004.

Information source: SENSITIVE PLANT COORDINATOR, BEAVERHEAD NATIONAL FOREST, 610 NORTH MONTANA STREET, DILLON, MT 59725.
Specimens: SUZUKI, K. (00292). 1992. MONT.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: PENSTEMON WHIPPLEANUS
Common Name: WHIPPLE'S BEARDTONGUE

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

Element occurrence code: PDSCR1L6P0.002
Element occurrence type:

Survey site name: CENTENNIAL MOUNTAINS
EO rank: BC
EO rank comments: THIS PRELIMINARY RANK IS BASED ON LIMITED SURVEY.

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	32	NE4NE4; 29 W2SE4

Precision: S
Survey date: 1993-08-06 Elevation: 7600 - 8100
First observation: 1993-08-06 Slope/aspect: 2-10% / W-NE
Last observation: 1993-08-06 Size (acres): 10

Location:
CENTENNIAL MOUNTAINS; 2.5 MILES EAST OF LAKEVIEW IN VALLEY IMMEDIATELY WEST OF SHEEP MOUNTAIN. 0.75-1.35 MILE ABOVE ROAD.

Element occurrence data:
50-100 PLANTS WITHIN THIS WATERCOURSE, WIDELY SCATTERED IN LOW DENSITIES. IN PEAK FLOWERING AND EARLY FLOWERING, DEPENDING ON LIGHT CONDITIONS.

General site description:
HEADWATERS AREA OF SMALL STREAM BELOW SHEEP MOUNTAIN IN OPEN MEADOW AND ADJOINING FOREST ECOTONE OF AVALANCHE CHUTE ZONE AND LOWER SCREE SLOPES. GROWING IN ALLUVIAL AND COLLUVIAL SOIL. ASSOCIATED SPECIES: POA NERVOSA, BROMUS CILIATUS, FRAGARIA VIRGINIANA, ASTER INCONSPICUUS, GEUM MACROPHYLLUM.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
OBSERVED BY B. HEIDEL, D. CULVER, AND S. COOPER.

Information source:

Specimens: HEIDEL, B.L., CULVER, D., AND COOPER, S.V. (1158). 1993.
MONT.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: POTENTILLA PLATTENSIS
Common Name: PLATTE CINQUEFOIL

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDROS1B1E0.001
Element occurrence type:

Survey site name: RED ROCK LAKE NWR
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
014S	001W	01	NW4

Precision: M
Survey date: Elevation: 6600 -
First observation: 1968 Slope/aspect:
Last observation: 1968-06-22 Size (acres): 0

Location:
RED ROCKS LAKES NATIONAL WILDLIFE REFUGE (NORTHEAST OF LAKEVIEW).

Element occurrence data:
IN FLOWER (22 JUNE 1968); MODERATE ABUNDANCE.

General site description:
GRASSLAND; ASSOCIATED WITH ASTRAGALUS INFLEXUS, PHLOX KELSEYI.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: DORN, R. D. (377). 1968. MONT. (MRPP CARD).

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: PRIMULA ALCALINA
Common Name: IDAHO PRIMROSE

Global rank: G1 Forest Service status:
State rank: SU Federal Status: C2

Element occurrence code: PDPRI080Q0.001
Element occurrence type:

Survey site name: MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	NE4

Precision: M
Survey date: 1936-06-17 Elevation: 6770 -
First observation: 1936 Slope/aspect:
Last observation: 1936-06-17 Size (acres): 0

Location:
MONIDA (HISTORICAL COLLECTION).

Element occurrence data:
UNKNOWN.

General site description:
NOT INDICATED ON LABEL; ELEMENT IS KNOWN TO OCCUR IN MOIST, ALKALINE MEADOWS.

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

Comments:
MT SPECIMEN VERIFIED BY D. HENDERSON; SEVERAL AREAS IN SOUTH BEAVERHEAD COUNTY UNSUCCESSFULLY SEARCHED.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: ROSE, F. H. (471). 1936. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: RANUNCULUS JOVIS
Common Name: JOVE'S BUTTERCUP

Global rank: G4G5 Forest Service status: SENSITIVE
State rank: S1S2 Federal Status:

Element occurrence code: PDRAN0L1D0.002
Element occurrence type:

Survey site name: ODELL BASIN
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SLIDE MOUNTAIN

Township:	Range:	Section:	TRS comments:
015S	002W	13	NW4

Precision: M
Survey date: 1968-06-14 Elevation: 7500 -
First observation: 1968 Slope/aspect:
Last observation: 1968-06-24 Size (acres): 0

Location:
CENTENNIAL MOUNTAINS, SOUTH OF RED ROCK LAKE IN ODELL BASIN.

Element occurrence data:
MODERATELY ABUNDANT (DORN 334); LOCALLY ABUNDANT (DORN 402).

General site description:
SPRUCE-FIR PARKLAND, MOIST OPEN SLOPE WITH CLAYTONIA, VALERIANA, POTENTILLA.

Land owner/manager:
U.S. SHEEP EXPERIMENT STATION

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: DORN, R. D. (334, 402). 1968. SPECIMEN #s 64242, 64305. RM.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: RANUNCULUS JOVIS
Common Name: JOVE'S BUTTERCUP

Global rank: G4G5 Forest Service status: SENSITIVE
State rank: S1S2 Federal Status:

Element occurrence code: PDRAN0L1D0.004
Element occurrence type:

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

County: BEAVERHEAD

USGS quadrangle: HIDDEN LAKE BENCH

Township:	Range:	Section:	TRS comments:
013S	001E	24	SE4

Precision: S
Survey date:
First observation: 1992-04-29
Last observation: 1992-04-29
Elevation: 7120 - 7160
Slope/aspect: 5% / SSW
Size (acres): 1

Location:
FROM ENNIS GO SOUTH ON HWYS 287 AND 87 TO 1 MILE NORTH OF RAYNOLDS PASS. TURN WEST ON ANTELOPE BASIN ROAD (FS RD #230) AND CONTINUE CA. 5.5 MILES TOWARDS LONE TREE CREEK. SITE IS UP DEAD END ROAD TOWARD SITZ'S COW CAMP. SUBPOPULATIONS ARE ON EITHER SIDE OF ROAD.

Element occurrence data:
4000+ INDIVIDUALS IN 5 SUBPOPULATIONS; 95% FLOWERING, 5% IN FRUIT.

General site description:
ALONG BANDS OF ROCKY OUTCROPS ALONG A SLOPE BREAK, MODERATELY FROST-CHURNED; MOIST CLAY LOAM, DOLOMITE/QUARTZITE PARENT. ARTEMISIA TRIDENTATA VAR. VASYANA/FESTUCA IDAHOENSIS HABITAT TYPE, WITH ERIOGONUM UMBELLATUM, DICENTRA UNIFLORA AND OROGENIA FUSIFORMIS.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, MADISON RANGER DISTRICT

Comments:
SOME DISTURBANCE FROM GROUND SQUIRREL DIGGING; LATE SNOWMELT AREA. SURVEYED BY K. SUZUKI. ECODATA PLOT #027C92S003.

Information source: SENSITIVE PLANT COORDINATOR, BEAVERHEAD NATIONAL FOREST, 610 NORTH MONTANA STREET, DILLON, MT 59725.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SENECIO DEBILIS
Common Name: ROCKY MOUNTAIN RAGWORT

Global rank: G3G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDAST8H110.001
Element occurrence type:

Survey site name: MONIDA
EO rank: B
EO rank comments: AREA IS NOT VERY HEAVILY GRAZED.

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	NE4
014S	006W	34	SE4

Precision: S
Survey date: 1985-07-19 Elevation: 6770 -
First observation: 1985 Slope/aspect:
Last observation: 1986-06-27 Size (acres): 40

Location:
0.1-0.4 AIR MILE NORTHWEST OF MONIDA, NORTH OF OLD HIGHWAY ACROSS RAILROAD TRACKS.

Element occurrence data:
CA. 51-100 INDIVIDUALS, FLOWERING; AREA IS NOT VERY HEAVILY GRAZED; ELEMENT OCCURS IN MORE OPEN AREAS, OFTEN NEAR DRAINAGES WHERE THERE IS SOME SOIL SLIPPAGE.

General site description:
WET ALKALINE MEADOW, ON VERY GENTLE SLOPE; WET AREAS DOMINATED BY CAREX SPP.; MOIST AREAS HAVE CAREX, JUNCUS BALTICUS, PHLOX KELSEYI, VALERIANA EDULIS, DODECATHEON PULCHELLUM.

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

Comments:
AREA IS REMOTE AND NOT VERY CLOSE TO HIGHWAY; SEE EF FOR SPECIAL PLANT SURVEY FORM.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: LESICA, P. (3550). 1985. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SENECIO DEBILIS
Common Name: ROCKY MOUNTAIN RAGWORT

Global rank: G3G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDAST8H110.003
Element occurrence type:

Survey site name: SHAMBO POND
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SLIDE MOUNTAIN
UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	20	SW4, SE4

Precision: S
Survey date: Elevation: 6610 -
First observation: 1983-08-12 Slope/aspect:
Last observation: 1993-07-23 Size (acres): 0

Location:
NEAR SOUTHWEST SHORE OF UPPER RED ROCK LAKE, CENTENNIAL VALLEY, 0.25 MILE WEST OF SHAMBO POND ON NORTH SIDE OF ROAD.

Element occurrence data:
1993: 5 INDIVIDUALS COUNTED, 90% FLOWERING. 1983: COMMON. DISCOID PLANTS ON NORTH SIDE OF LAKE, RADIATE PLANTS ON SOUTH SIDE.

General site description:
1993: SATURATED, PEATY BOTTOMLAND, WITH DESCHAMPSIA ELONGATUM, CAREX SPP., JUNCUS SP., POLEMONIUM OCCIDENTALE, VALERIAN EDULIS. 1983: IN MOIST, PROBABLY ALKALINE MEADOW AROUND SMALL LAKE; WITH JUNCUS BALTICUS AND HAPLOPAPPUS LANCEOLATUS.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
INFREQUENT SIGNS OF GRAZING. POPULATION OBSERVED IN SW4 OF SECTION 20 BY DENISE CULVER IN 1993; COLLECTED IN SE4 OF SECTION 20 BY DORN IN 1968.

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens: LESICA, P. (2819). 1983. SPECIMEN #092917. MONTU.
DORN, R. D. (725). 1968. MONT.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SENECIO DEBILIS
Common Name: ROCKY MOUNTAIN RAGWORT

Global rank: G3G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDAST8H110.008
Element occurrence type:

Survey site name:
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SNOWLINE

Township:	Range:	Section:	TRS comments:
014S	007W	22	SW4

Precision: M
Survey date: - -
First observation: 1986
Last observation: 1986-07-07
Elevation: 6600 -
Slope/aspect:
Size (acres): 0

Location:
MEADOW BETWEEN THE OLD HIGHWAY AND I-15, 0.5 MILE SOUTH OF THE UPPER SNOWLINE RANCH; ABOUT 6 MILES NORTHWEST OF MONIDA.

Element occurrence data:
UNCOMMON.

General site description:
SMALL REMNANT ALKALINE MEADOW; WITH PHLOX KELSEYI, POTENTILLA FRUTICOSA.

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

Comments:
NONE.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: LESICA, P. (3935). 1986. SPECIMEN #104566. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SENECIO DEBILIS
Common Name: ROCKY MOUNTAIN RAGWORT

Global rank: G3G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDAST8H110.011
Element occurrence type:

Survey site name: WEST OF ELK SPRINGS
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
013S	001W	36	SE4
014S	001W	01	NE4

Precision: S
Survey date:
First observation: 1993-07-28
Last observation: 1993-07-28
Elevation: 6620 -
Slope/aspect: LEVEL
Size (acres): 4

Location:
CENTENNIAL VALLEY; GO 10 MILES EAST OF RED ROCK LAKES NWR HEADQUARTERS TO ELK LAKE ROAD, THEN 2.3 MILES NORTH TO INTERSECTION WITH NORTH CENTENNIAL VALLEY ROAD. SITE IS 0.2 MILE WEST, ON SOUTH SIDE OF ROAD.

Element occurrence data:
80-100 INDIVIDUALS, 100% FLOWERING.

General site description:
MOIST, PEATY BOTTOMLAND, WITH PENTAPHYLLOIDES FLORIBUNDA, FESTUCA IDAHOENSIS, CIRSIUM SCARIOSUM, POTENTILLA HIPPIANA, ANTENNARIA MICROPHYLLA, IRIS MISSOURIENSIS, TARAXACUM OFFICINALE, VALERIANA EDULIS, AGROPYRON SPICATUM, CAREX SP., EQUISETUM VARIEGATUM.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
NO EVIDENCE OF DISTURBANCE. OBSERVED BY DENISE CULVER. ASTRAGALUS LEPTALEUS AND A. ARGOPHYLLUS ALSO OBSERVED IN VICINITY IN PREVIOUS YEARS.

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SENECIO DEBILIS
Common Name: ROCKY MOUNTAIN RAGWORT

Global rank: G3G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDAST8H110.012
Element occurrence type:

Survey site name: RED ROCK RIVER
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: WOLVERINE CREEK

Township:	Range:	Section:	TRS comments:
014S	004W	06	CENTER

Precision: S
Survey date:
First observation: 1993-07-27
Last observation: 1993-07-27
Elevation: 6580 - 6600
Slope/aspect: LEVEL
Size (acres): 1

Location:
CENTENNIAL VALLEY; FROM MONIDA GO 11 MILES EAST TO PRICE LANE, THEN NORTH CA. 2.5 MILES. SITE IS 100 FT. WEST OF WEST CREEK, ON SOUTH SIDE OF CENTENNIAL VALLEY ROAD.

Element occurrence data:
40-50 INDIVIDUALS, ALL FLOWERING.

General site description:
MOIST, PEATY BOTTOMLAND, WITH DESCHAMPSIA CAESPITOSA, CAREX SPP., CIRSIUM SCARIOSUM, JUNCUS BALTICUS, HORDEUM BRACHYANTHERUM, H. JUBATUM, SPARTINA PECTINATA, ANTENNARIA MICROPHYLLUM, SENECIO HYDROPHILUS, POTENTILLA HIPPIANA, DESCHAMPSIA ELONGATA.

Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
NO EVIDENCE OF DISTURBANCE, BUT LIKELY BECAUSE OF ROAD PROXIMITY. OBSERVED BY DENISE CULVER.

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SPHAERALCEA MUNROANA
Common Name: WHITE-STEMMED GLOBE-MALLOW

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDMAL140F0.001
Element occurrence type:

Survey site name: LIMA DAM CLIFFS
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: LIMA DAM
HENRY GULCH

Township:	Range:	Section:	TRS comments:
013S	006W	32	S2; 33 S2; 31 SE4
014S	006W	04	NE4

Precision: S
Survey date: 1986-06-10 Elevation: 6960 -
First observation: 1986-06-10 Slope/aspect:
Last observation: 1993-07-26 Size (acres): 1

Location:
WEST END OF LIMA RESERVOIR, CA. 7 AIR MILES NNW OF MONIDA. POPULATION BEGINS 0.3 MILE WEST OF DAM AND EXTENDS CA. 1.5 MILES EAST ALONG ROAD.

Element occurrence data:
1993: 100-150 PLANTS, 100% FLOWERING. 1987: SEVERAL PLANTS. 1986: VERY SMALL POPULATION, NO MORE THAN 5 PLANTS SEEN; ENTIRE POPULATION NOT SURVEYED.

General site description:
RED CALCAREOUS SOIL, SAGEBRUSH GRASSLAND AT BASE OF AND ON SOUTH-FACING CLIFFS IN SHALLOW SOIL; WITH ERIGERON CAESPITOSUS, HESPEROCHLOA KINGII. ASSOCIATED SPECIES OBSERVED IN 1993: STIPA COMATA, BROMUS TECORUM, POA PRATENSIS, AGROPYRON SPICATUM, A. INTERMEDIUM, ARTEMISIA TRIDENTATA, LUPINUS SERICEUS, ACHILLEA MILLEFOLIUM, BALSOMORHIZA SAGITTATA, CHRYSOTHAMNUS VISCIDIFLORUS, ASTRAGALUS DRUMMONDII, ARTEMISIA DRACUNCULUS.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:
SITE REVISITED BY DENISE CULVER IN 1993. SPECIMEN COLLECTED; REPOSITORY AND SPECIMEN NUMBER NOT KNOWN.

SPHAERALCEA MUNROANA .001 (CONT.)

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

Specimens: LACKSCHEWITZ, K. H. (11270). 1987. SPECIMEN #105455. MONTU. COLLECTED IN SOUTH HALF OF S31.
HILDEBRAND, B. (S.N., 410). 1977. 1978. MONT.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SPHAERALCEA MUNROANA
Common Name: WHITE-STEMMED GLOBE-MALLOW

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDMAL140F0.002
Element occurrence type:

Survey site name: MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
014S	006W	35	SW4

Precision: M
Survey date:
First observation: 1986
Last observation: 1986-07-11
Elevation: 6820 -
Slope/aspect: - / -
Size (acres): 0

Location:
CA. 0.25 MI. EAST OF MONIDA; ABOVE ROAD TO RED ROCK LAKES.

Element occurrence data:
NONE.

General site description:
ON DRY SLOPE, WITH HAPLOPAPPUS ACAULIS AND POTENTILLA PENNSYLVANICA.

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

Comments:
LABEL READS 6700 FT. ELEVATIONS IN SW QUARTER OF S35 ARE ALL GREATER THAN 6800 FT.

Information source: LACKSCHEWITZ, KLAUS. DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF MONTANA, MISSOULA, MT 59812. 406/243-5222.

Specimens: LACKSCHEWITZ, K. (11014). 1986. SPECIMEN #103696. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SPHAERALCEA MUNROANA
Common Name: WHITE-STEMMED GLOBE-MALLOW

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDMAL140F0.003
Element occurrence type:

Survey site name: NORTHEAST OF MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
014S	005W	30	SW4

Precision: S
Survey date:
First observation: 1993-06-09
Last observation: 1993-06-09
Elevation: 6740 -
Slope/aspect: 10% / SOUTH
Size (acres): 1

Location:
ALONG CENTENNIAL ROAD--2.5 MILES NORTHEAST OF MONIDA ON NORTH SIDE OF ROAD CUT.

Element occurrence data:
8 PLANTS, 90% FLOWERING, 10% VEGETATIVE.

General site description:
DRY, OPEN LOWERSLOPE; ROLLING UPLANDS. ALKALINE PARENT MATERIAL, FINE SOIL. ASSOCIATED SPECIES: ACHILLEA MILLEFOLIUM, CHRYSOTHAMNUS NAUSEOUS, LEPTODACTYLON PUNGENS.

Land owner/manager:
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
OBSERVED BY DENISE CULVER. DISTURBANCE BY ROAD.

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: SPHAERALCEA MUNROANA
Common Name: WHITE-STEMMED GLOBE-MALLOW

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDMAL140F0.004
Element occurrence type:

Survey site name: NW OF MONIDA
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: SNOWLINE

Township:	Range:	Section:	TRS comments:
014S	006W	19	S2NE4

Precision: S
Survey date:
First observation: 1993-07-26
Last observation: 1993-07-26
Elevation: 6800 -
Slope/aspect: LEVEL
Size (acres): 1

Location:
CENTENNIAL VALLEY; CA. 4.3 AIR MILES NORTHWEST OF MONIDA.

Element occurrence data:
8 PLANTS, 40% FLOWERING, 3 VEGETATIVE.

General site description:
OPEN, DRY, MIDSLOPE; ROLLING UPLANDS. SANDSTONE PARENT MATERIAL, SANDY SOIL. ASSOCIATED SPECIES: CHRYSOTHAMNUS VISCIDIFLORUS, ARTEMISIA TRIDENTATA, KOELERIA CRISTATA, HORDEUM JUBATUM, POA PRATENSIS, POA CUSICKII, FESTUCA IDAHOENSIS, F. SCABRELLA.

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

Comments:
OBSERVED BY DENISE CULVER. HEAVY GRAZING AND COWTRAILS IN EVIDENCE.

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: STELLARIA CRASSIFOLIA
Common Name: FLESHY STITCHWORT

Global rank: G4 Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDCAR0X090.004
Element occurrence type:

Survey site name: UPPER RED ROCK LAKE
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
014S	001W	02	

Precision: G
Survey date: Elevation: 6620 -
First observation: 1930 Slope/aspect:
Last observation: 1930-07-26 Size (acres): 0

Location:
NORTHEAST OF UPPER RED ROCK LAKE; HAYDEN RANCH.

Element occurrence data:
IN FRUIT.

General site description:
ALONG CREEK; ON WET GROUND WITH GRASSES AND SEDGES.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
GENERAL LOCATION.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: JENNISON, H. M. (J56-30). 1930. MONT. (MRPP CARD).

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THALICTRUM ALPINUM
Common Name: ALPINE MEADOWRUE

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

Element occurrence code: PDRAN0M010.001
Element occurrence type:

Survey site name: MONIDA
EO rank: BC
EO rank comments: GOOD OCCURRENCE, BUT ADJACENT TO FREEWAY.

County: BEAVERHEAD

USGS quadrangle: MONIDA

Township:	Range:	Section:	TRS comments:
015S	006W	03	N2

Precision: S
Survey date: 1986-06-27 Elevation: 6750 -
First observation: 1986 Slope/aspect:
Last observation: 1987-05-17 Size (acres): 2

Location:
NORTH SIDE OF INTERSTATE 15 AT MONIDA EXIT, CA. 0.5 MI NW OF MONIDA PASS, 0.25 AIR MI SW OF MONIDA (TOWNSITE).

Element occurrence data:
1001-10,000 INDIVIDUALS.

General site description:
MOIST ALKALINE MEADOW, WITH JUNCUS BALTICUS, POTENILLA FRUTICOSA, PHLOX KELSEYI, DODECATHEON PULCHELLUM.

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

Comments:

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

Specimens: LESICA, P. (3918). 1986. MONTU.
LESICA, P. (4230). 1987. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM PANICULATUM
Common Name: NORTHWESTERN THELYPODY

Global rank: G3G4 Forest Service status:
State rank: SH Federal Status:

Element occurrence code: PDBRA2N0B0.001
Element occurrence type:

Survey site name: ALASKA BASIN
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: MOUNT JEFFERSON

Township:	Range:	Section:	TRS comments:
014S	001E	14	

Precision: M
Survey date: 1899-06-20 Elevation: 6760 -
First observation: 1899 Slope/aspect:
Last observation: 1899-06-20 Size (acres): 0

Location:
ALASKA BASIN, EAST OF UPPER RED ROCK LAKE (HISTORICAL RECORD).

Element occurrence data:
UNKNOWN.

General site description:
ON BOGGY FLATS.

Land owner/manager:
STATE LAND - UNDESIGNATED
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
ANNOTATED FROM T. TORULOSUM/SAGITTATUM BY I.A. AL-SHEHBAZ, 1972. BOGGY FLATS EXTEND INTO SECS. 13,15,16.

Information source: BOTANIST, MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620-1800.

Specimens: NELSON, A. AND E. NELSON. (5474). 1899. SPECIMEN #164529. RM.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM SAGITTATUM SSP SAGITTATUM
Common Name: SLENDER THELYPODY

Global rank: G3G4T? Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBRA2N0E2.001
Element occurrence type:

Survey site name: ODELL CREEK ALKALINE MEADOW
EO rank: B
EO rank comments: LARGE POPULATION, GOOD EXAMPLE OF COMMUNITY TYPE.

County: BEAVERHEAD

USGS quadrangle: SLIDE MOUNTAIN
UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	20	SW4; 19 SE4

Precision: S
Survey date: 1987-06-06 Elevation: 6620 -
First observation: 1987-06-06 Slope/aspect: LEVEL
Last observation: 1993-06-19 Size (acres): 80

Location:
CENTENNIAL VALLEY, 3 MILES EAST OF LAKEVIEW, NORTH OF RED ROCK PASS ROAD, CA. 0.50 MILE NORTHWEST OF SHAMBO POND.

Element occurrence data:
1993: ESTIMATED 500 INDIVIDUALS, 50% IN FLOWER, 50% IN FRUIT. 1987: CA. 50 PLANTS OBSERVED; EST. 101-1000 GENETS; EVIDENCE OF LIGHT LIVESTOCK USE.

General site description:
MOIST ALKALINE MEADOW; WITH POTENTILLA FRUTICOSA, JUNCUS BALTICUS, PHLOX KELSEYI, DODECATHEON PULCHELLUM, ARTEMISIA TRIDENTATA, A. TRIPARTITA, VALERIANA EDULIS, CAREX SPP., DESCHAMPSIA CAESPITOSA, SALIX SP.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
RED ROCK LAKES WILDERNESS

Comments:
OBSERVED BY DENISE CULVER IN 1993.

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

Specimens: LESICA, P. (4263). 1987. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM SAGITTATUM SSP SAGITTATUM
Common Name: SLENDER THELYPODY

Global rank: G3G4T? Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBRA2N0E2.003
Element occurrence type:

Survey site name: WIDGEON POND
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: ELK SPRINGS

Township:	Range:	Section:	TRS comments:
014S	001W	01	NE4
014S	001E	06	NW4

Precision: S
Survey date:
First observation: 1986-07-10
Last observation: 1993-07-10
Elevation: 6620 -
Slope/aspect: LEVEL
Size (acres): 0

Location:
CENTENNIAL VALLEY. FROM CENTENNIAL VALLEY ROAD GO 2 MILES NORTH ON ELK LAKE ROAD TO CROSSING OF ELK SPRINGS CREEK. SITE IS 500 YARDS SOUTHWEST OF ELK LAKE ROAD.

Element occurrence data:
1993: 5 INDIVIDUALS, 10% FLOWERING, REMAINDER IN FRUIT. 1986: A FEW PLANTS.

General site description:
1993: ASSOCIATED SPECIES: PENTAPHYLLOIDES FLORIBUNDA, FESTUCA IDAHOENSIS, SALIX SP., CIRSIUM SCARIOSUM, DESCHAMPSIA CAESPITOSUM, D. ELONGATUM. 1986: IN A MODESTLY DRY TO WET ALKALINE MEADOW, NEAR HAPLOPAPPUS UNIFLORUS AND ERIGERON GLABELLUS.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:
OBSERVED BY DENISE CULVER IN 1993. LIKELY A RELOCATION OF 1986 LACKSCHEWITZ COLLECTION.

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens: LACKSCHEWITZ, K. (10995). 1986. SPECIMEN #103839. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM SAGITTATUM SSP SAGITTATUM
Common Name: SLENDER THELYPODY

Global rank: G3G4T? Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBRA2N0E2.005
Element occurrence type:

Survey site name: CENTENNIAL VALLEY
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: WINSLOW CREEK

Township:	Range:	Section:	TRS comments:
014S	003W	23	NW4

Precision: S
Survey date:
First observation: 1985-06-15
Last observation: 1993-06-21
Elevation: 6700 -
Slope/aspect: LEVEL
Size (acres): 1

Location:
CENTENNIAL VALLEY, 1.5 MILE EAST OF WINSLOW CREEK ON NORTH SIDE OF CENTENNIAL VALLEY ROAD, WITHIN AN ABANDONED HORSE CORRAL.

Element occurrence data:
1993: 200 INDIVIDUALS, 75% FLOWERING, 25% FRUITING. 1985: COMMON.

General site description:
1993: ARTEMISIA TRIDENTATA, SARCOBATUS VERMICULATUS, AGROPYRON SMITHII OBSERVED. 1985: IN MOIST ALKALINE MEADOW WITH JUNCUS BALTICUS AND DODECATHEON PULCHELLUM.

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

Comments:
OBSERVED BY DENISE CULVER IN 1993. 1985 LESICA COLLECTION MADE IN ADJACENT SECTION 22.

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

Specimens: LESICA, P. (3395). 1985. SPECIMEN #102347. MONTU.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM SAGITTATUM SSP SAGITTATUM
Common Name: SLENDER THELYPODY

Global rank: G3G4T? Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBRA2N0E2.007
Element occurrence type:

Survey site name: UPPER RED ROCK LAKE-SOUTH
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	23	SW4

Precision: S
Survey date:
First observation: 1993-07-12
Last observation: 1993-07-12
Elevation: 6620 -
Slope/aspect: LEVEL
Size (acres): 50

Location:
ALONG SOUTHWEST SHORE OF UPPER RED ROCK LAKE, CA. 1.7 MILES WEST OF TOM CREEK.

Element occurrence data:
180-200 AERIAL STEMS, 30% IN FLOWER, 70% IN FRUIT.

General site description:
OPEN, SATURATED BOTTOM, PEAT PARENT MATERIAL, WITH CAREX SP., JUNCUS BALTICUS, PENTAPHYLLOIDES FLORIBUNDA, DESCHAMPSIA CAESPITOSA, D. ELONGATUM.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens: CULVER, D. (508). 1993.

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM SAGITTATUM SSP SAGITTATUM
Common Name: SLENDER THELYPODY

Global rank: G3G4T? Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBRA2N0E2.008
Element occurrence type:

Survey site name: UPPER RED ROCK LAKE-EAST
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014N	001E	18	NW4
014N	001W	13	NE4

Precision: S
Survey date:
First observation: 1993-07-08
Last observation: 1993-07-08
Elevation: 6620 -
Slope/aspect: LEVEL
Size (acres): 3

Location:
WEST OF UPPER RED ROCK LAKE, WHERE ELK LAKE ROAD CROSSES RED ROCK CREEK.

Element occurrence data:
80-100 PLANTS, 10% IN FLOWER, 90% IN FRUIT.

General site description:
MOIST, OPEN BOTTOMLAND, WITH PENTAPHYLLOIDES FLORIBUNDA, IRIS MISSOURIENSIS, JUNCUS BALTICUS, FESTUCA IDAHOENSIS.

Land owner/manager:
RED ROCK LAKES NATIONAL WILDLIFE REFUGE
RED ROCK LAKES WILDERNESS

Comments:

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM SAGITTATUM SSP SAGITTATUM
Common Name: SLENDER THELYPODY

Global rank: G3G4T? Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBRA2N0E2.009
Element occurrence type:

Survey site name: UPPER RED ROCK LAKE - WEST
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: UPPER RED ROCK LAKE

Township:	Range:	Section:	TRS comments:
014S	001W	20	NE4; 17 SE4

Precision: S
Survey date:
First observation: 1993-06-11
Last observation: 1993-06-11
Elevation: 6620 -
Slope/aspect: LEVEL
Size (acres): 5

Location:
WEST SHORE OF UPPER RED ROCK LAKE, CA. 0.25 MILE NORTHEAST OF SHAMBOW POND.

Element occurrence data:
300-350 INDIVIDUALS, 10% FLOWERING, 90% IN FRUIT.

General site description:
INUNDATED BOTTOMLAND, PLANTS FORMING NARROW BAND ALONG ELEVATED HUMMOCKS, WITH JUNCUS BALTICUS, CAREX SPP., POLEMONIUM OCCIDENTALE, DESCHAMPSIA ELONGATUM.

Land owner/manager:
RED ROCK LAKES WILDERNESS
RED ROCK LAKES NATIONAL WILDLIFE REFUGE

Comments:

Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]

Specimens:

MONTANA NATURAL HERITAGE PROGRAM
Element Occurrence Record

Scientific Name: THELYPODIUM SAGITTATUM SSP SAGITTATUM
Common Name: SLENDER THELYPODY

Global rank: G3G4T? Forest Service status:
State rank: S1 Federal Status:

Element occurrence code: PDBRA2N0E2.011
Element occurrence type:

Survey site name: MUD LAKE
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: CORRAL CREEK

Township:	Range:	Section:	TRS comments:
014S	005W	14	SW4; 22 NE4SE4

Precision: S
Survey date:
First observation: 1993-07-02
Last observation: 1993-07-02
Elevation: 6620 - 6690
Slope/aspect: LEVEL
Size (acres): 5

Location:
CENTENNIAL VALLEY; GO WEST CA. 1.5 MILE ON BLM ACCESS ROAD SOUTHWEST OF LYONS BRIDGE (2.5 MILES NORTH OF CENTENNIAL VALLEY ROAD), THEN SOUTH FOR 1 MILE TO MUD LAKE.

Element occurrence data:
2 SUBPOPULATIONS, 1 NEAR THE NORTH SHORE OF MUD LAKE (40 INDIVIDUALS, 75% FRUITING, 25% FLOWERING); 1 SOUTH OF MUD LAKE JUST NORTH OF THE CENTENNIAL VALLEY ROAD (15 INDIVIDUALS, 100% FLOWERING).

General site description:
MOIST, PEATY BOTTOMLAND WITH SARCOBATUS VERMICULATUS, AGROPYRON SMITHII, CAREX ROSTRATA, JUNCUS BALTICUS (NORTH POPULATION); IRIS MISSOURIENSIS, ANTENNARIA MICROPHYLLA, POA PRATENSIS, KOELERIA CRISTATA, CIRSIUM SCARIOSUM, ELYMUS CINERUS, AGROPYRON SMITHII (SOUTH POPULATION).

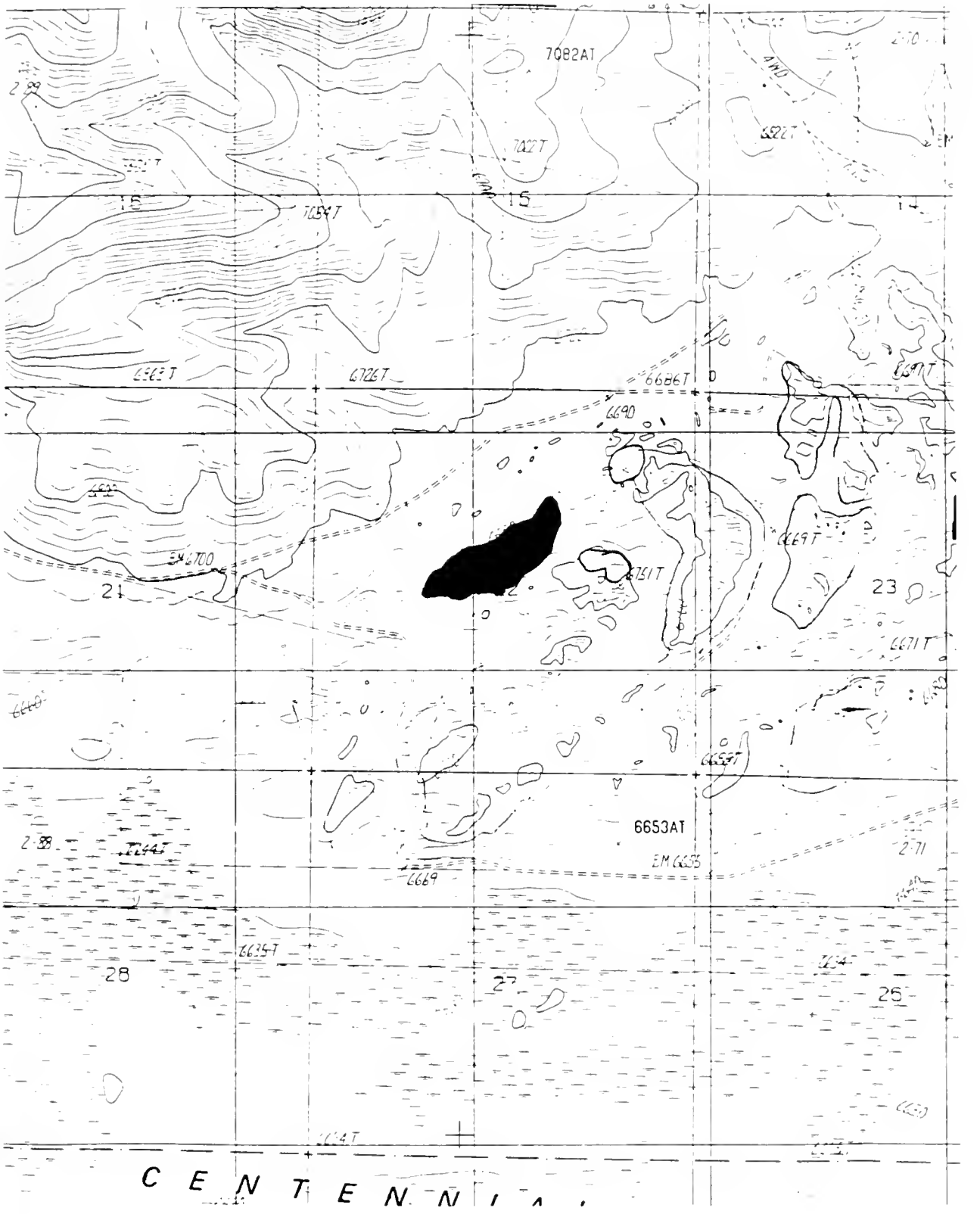
Land owner/manager:
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:
NORTH POPULATION IS ADJACENT TO A 2-TRACK ROAD; NO EVIDENCE OF DISTURBANCE. SOUTH POPULATION'S LOCATION NEAR ROAD AND FENCE INCREASES CHANCE OF TRAMPLING. OBSERVED BY DENISE CULVER.

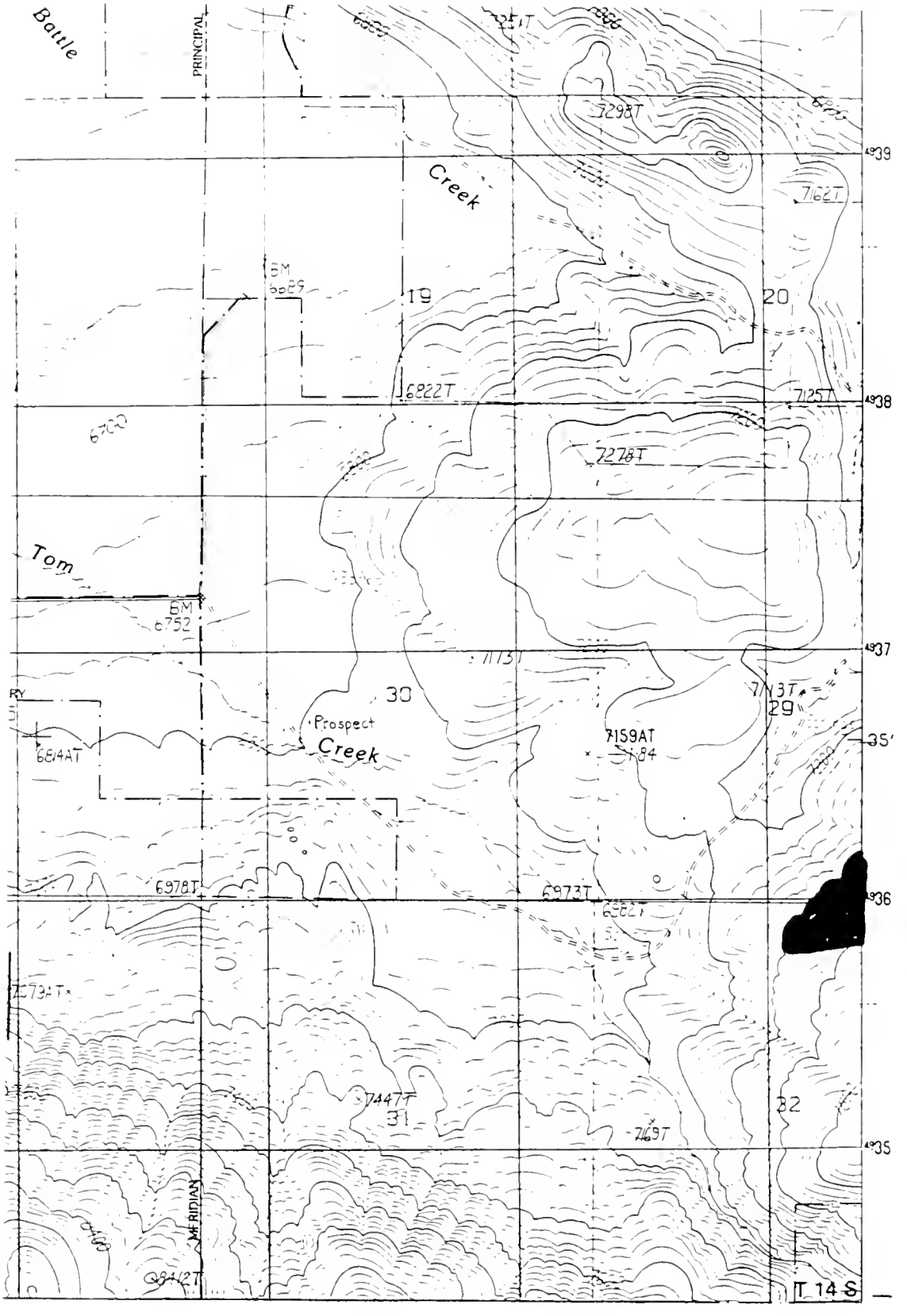
Information source: CULVER, D. 1993. [MTNHP FIELD SURVEYS IN THE CENTENNIAL VALLEY, MONTANA, MAY-AUGUST.]
Specimens:

Appendix C. ELEMENT OCCURRENCE MAPS

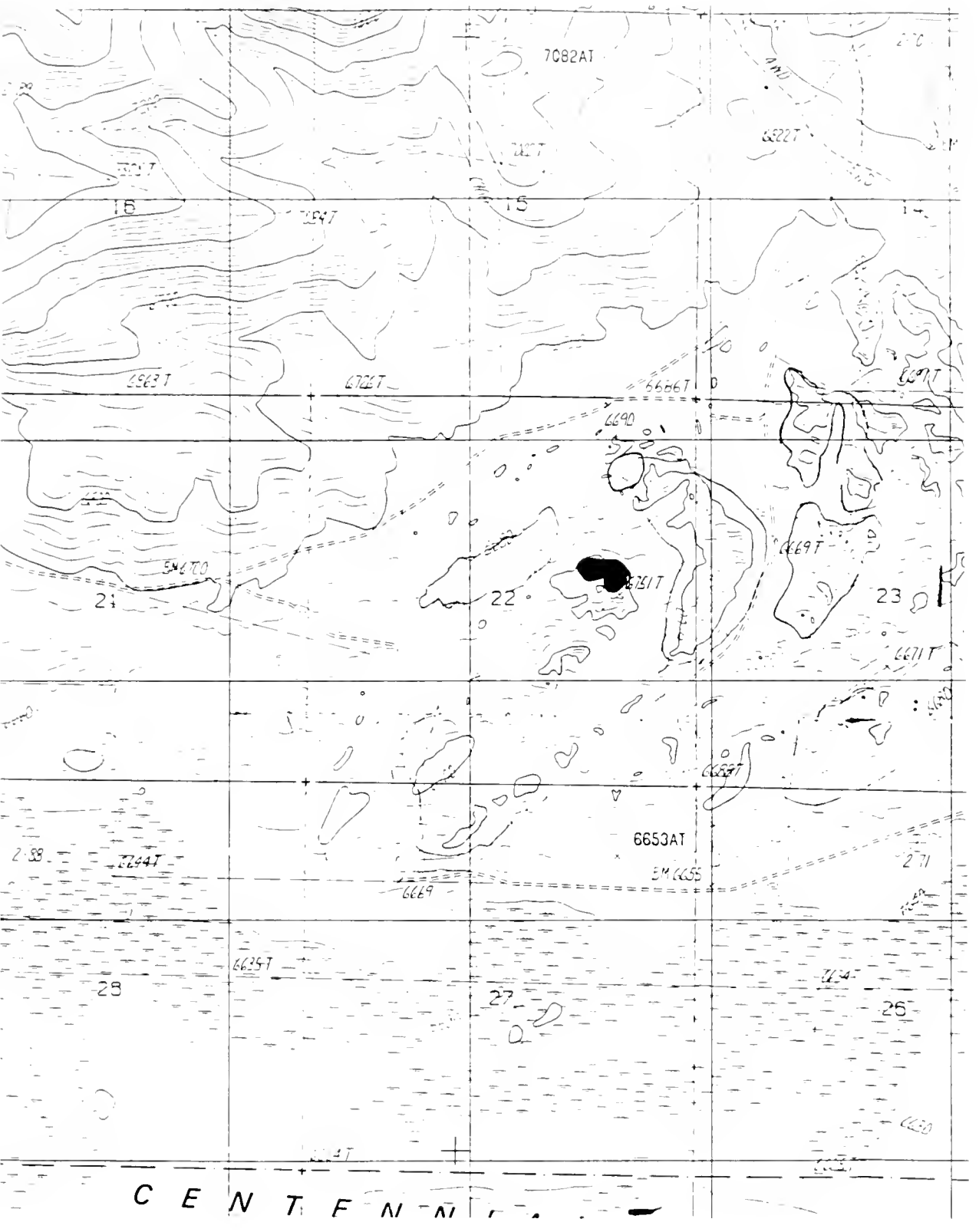
Note: This includes all new element occurrences as of December 1993.



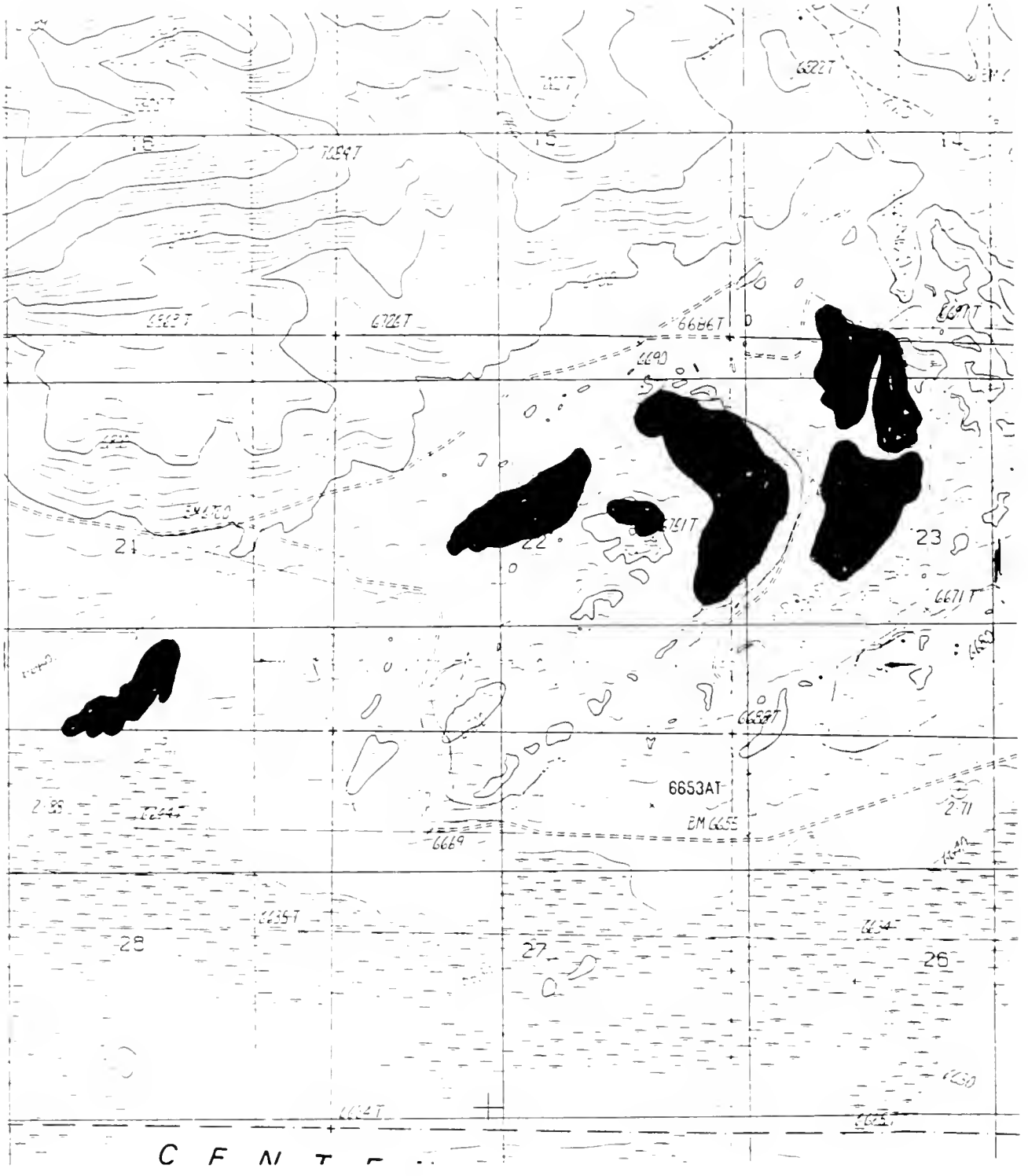
USGS Lower Red Rock Lakes Quadrangle (7'5)
Astragalus ceramicus var. apus



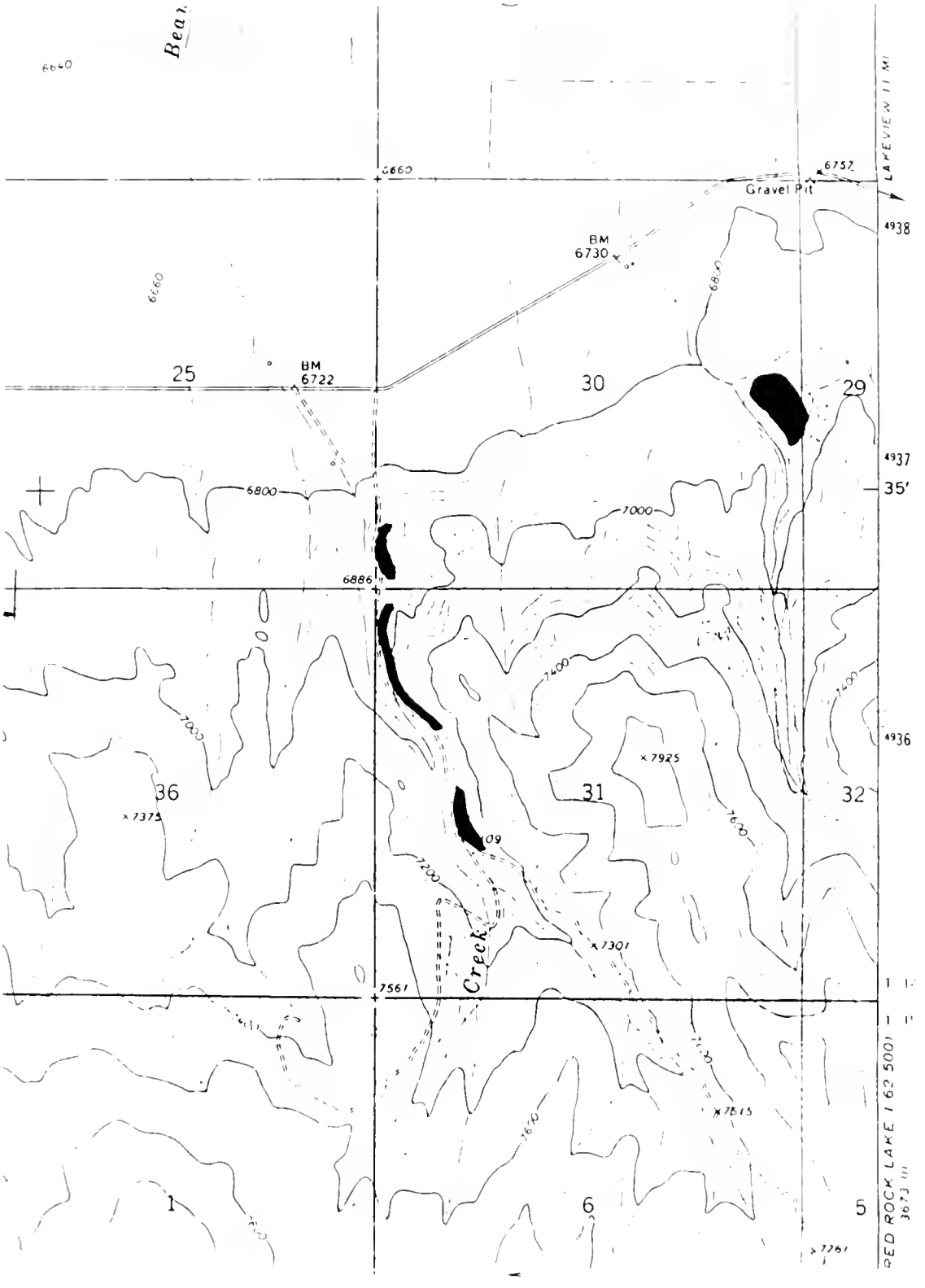
USGS Upper Red Rock Lakes Quadrangle (7'5)
Carex vallicola



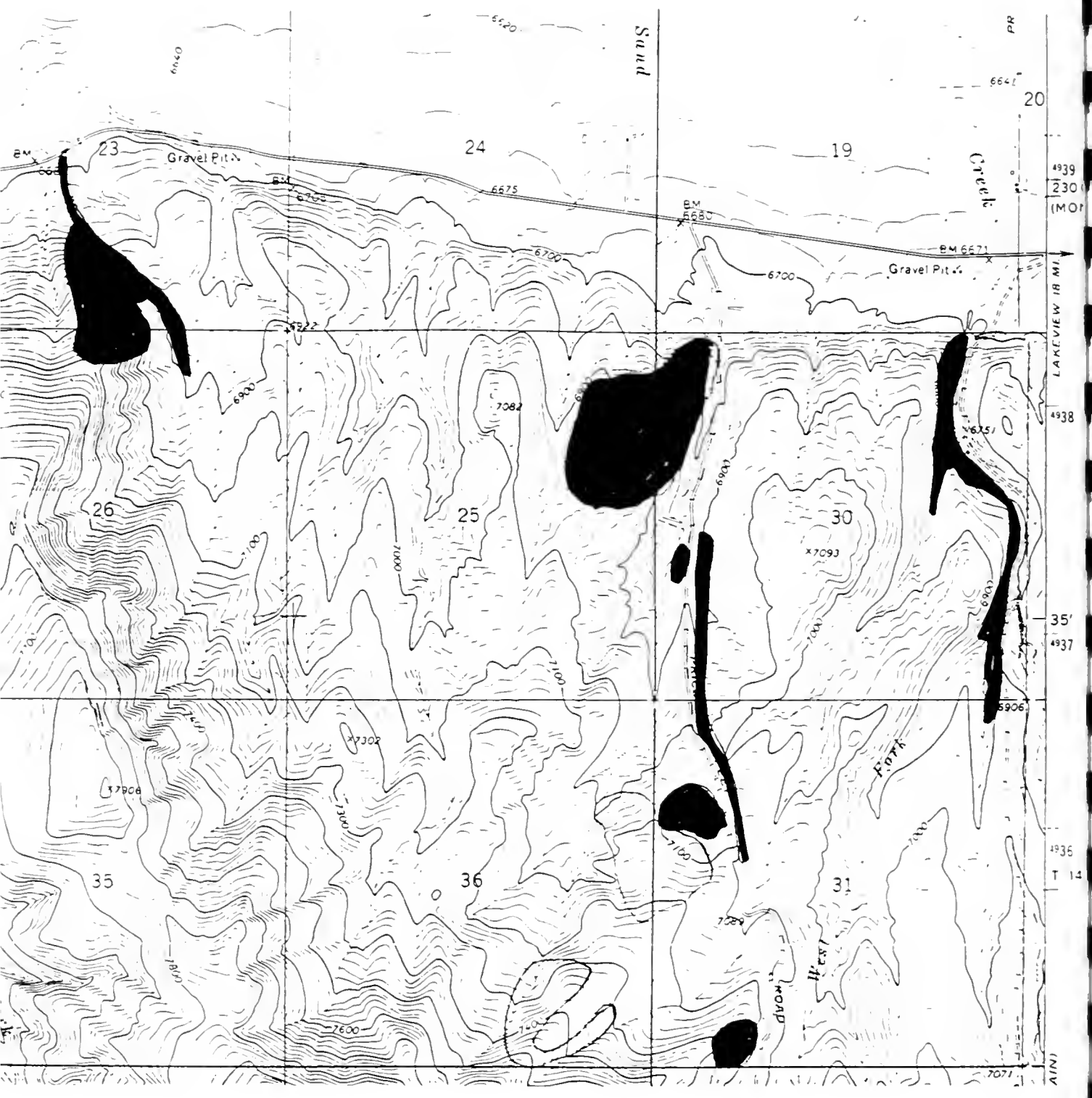
USGS Lower Red Rock Lakes Quadrangle (7'5)
Cryptantha fendleri



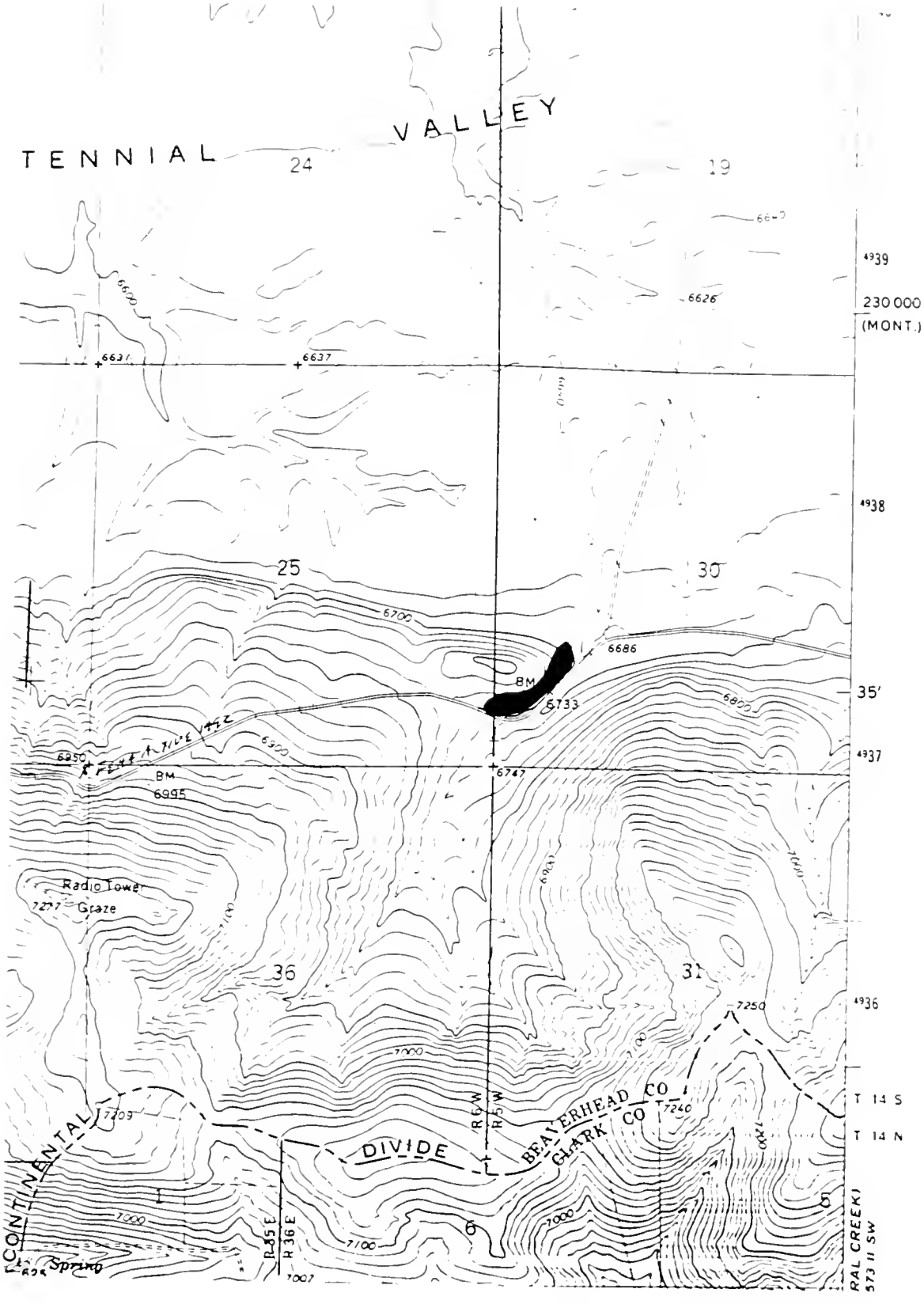
USGS Lower Red Rock Lakes Quadrangle (7.5')
Eriogonum ovalifolium var. nevadense



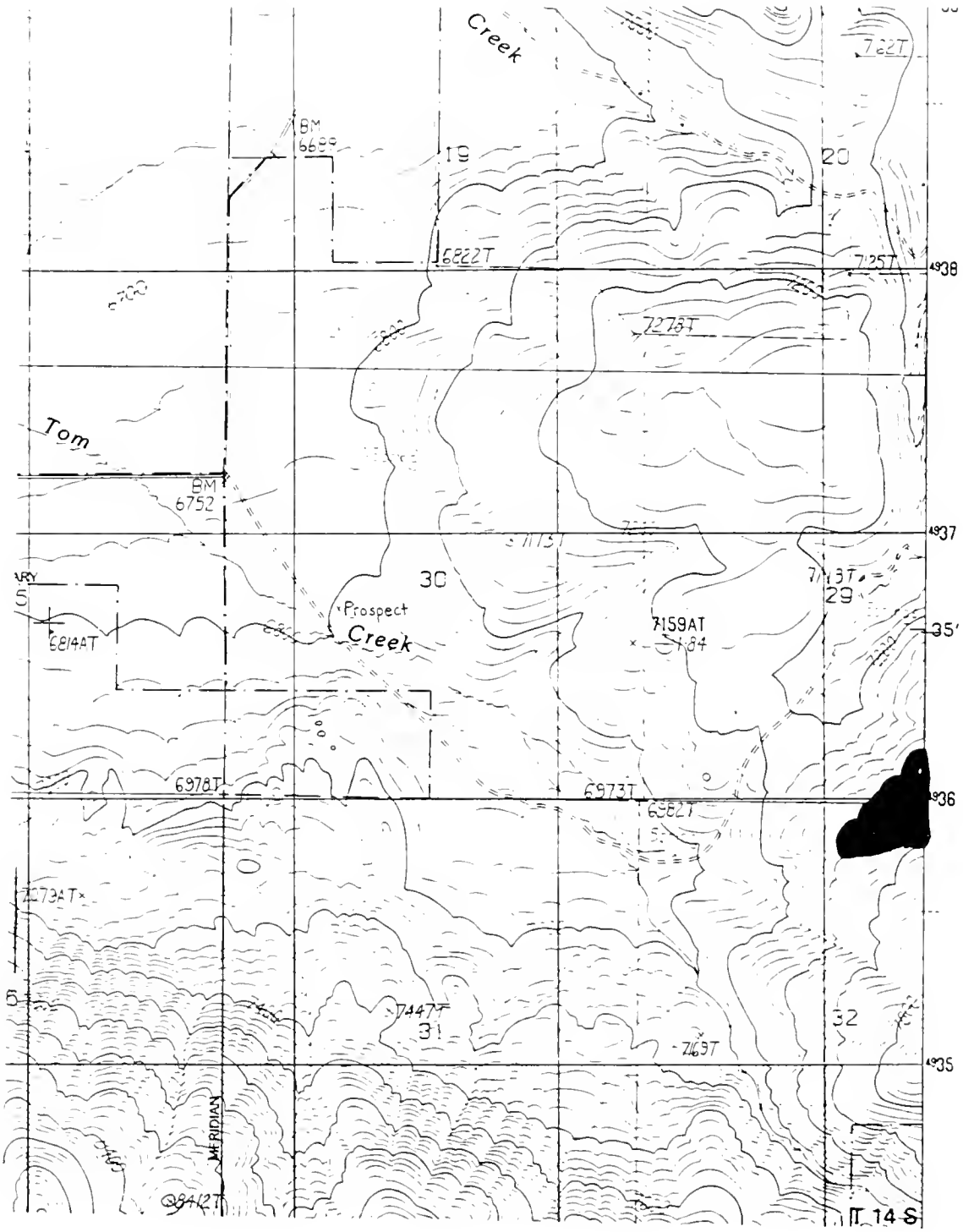
USGS Big Table Mountain (7.5')
Ipomopsis congesta ssp crebifolia



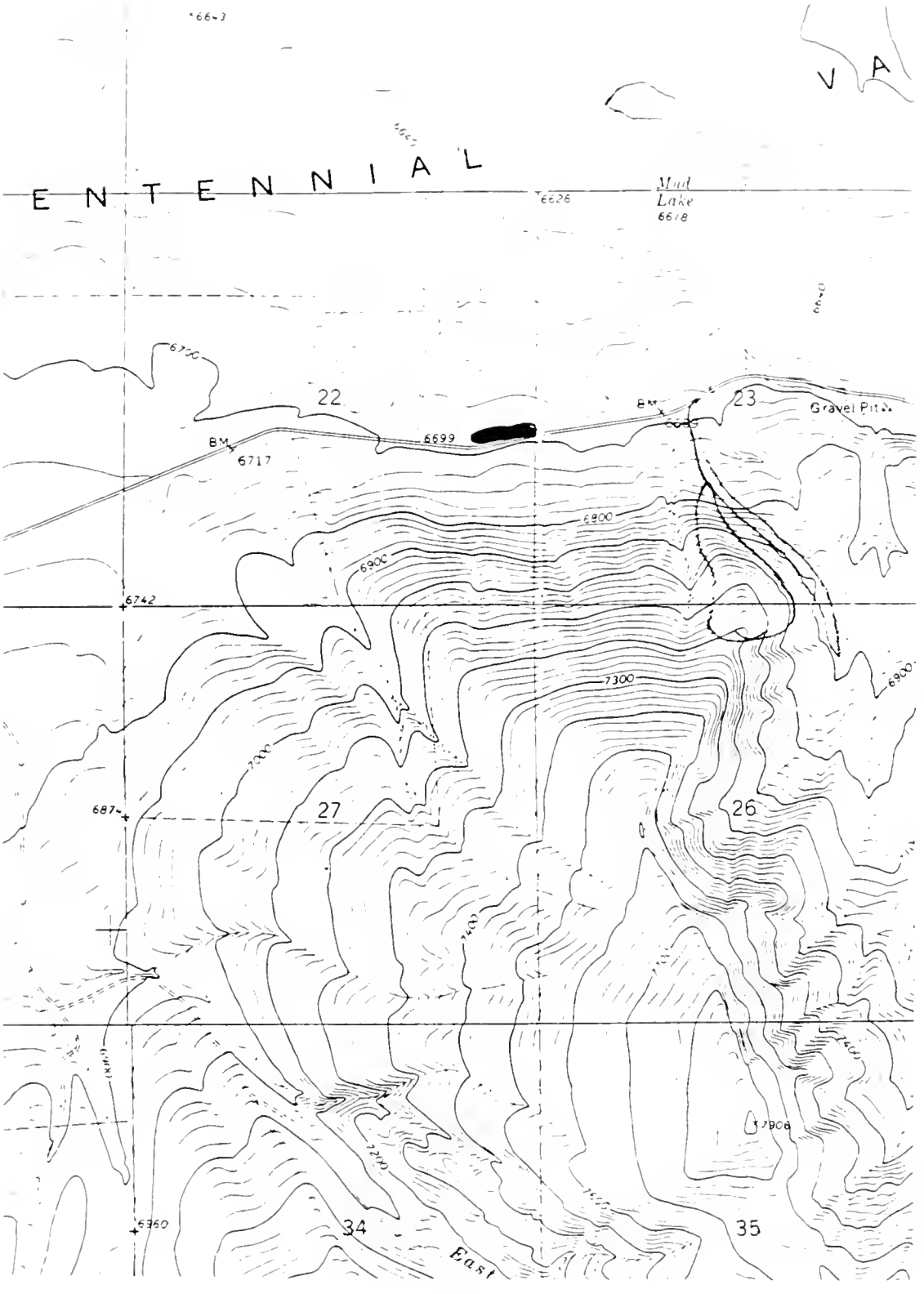
USGS Corral Creek Quadrangle (7.5')
Ipomopsis congesta ssp crebifolia



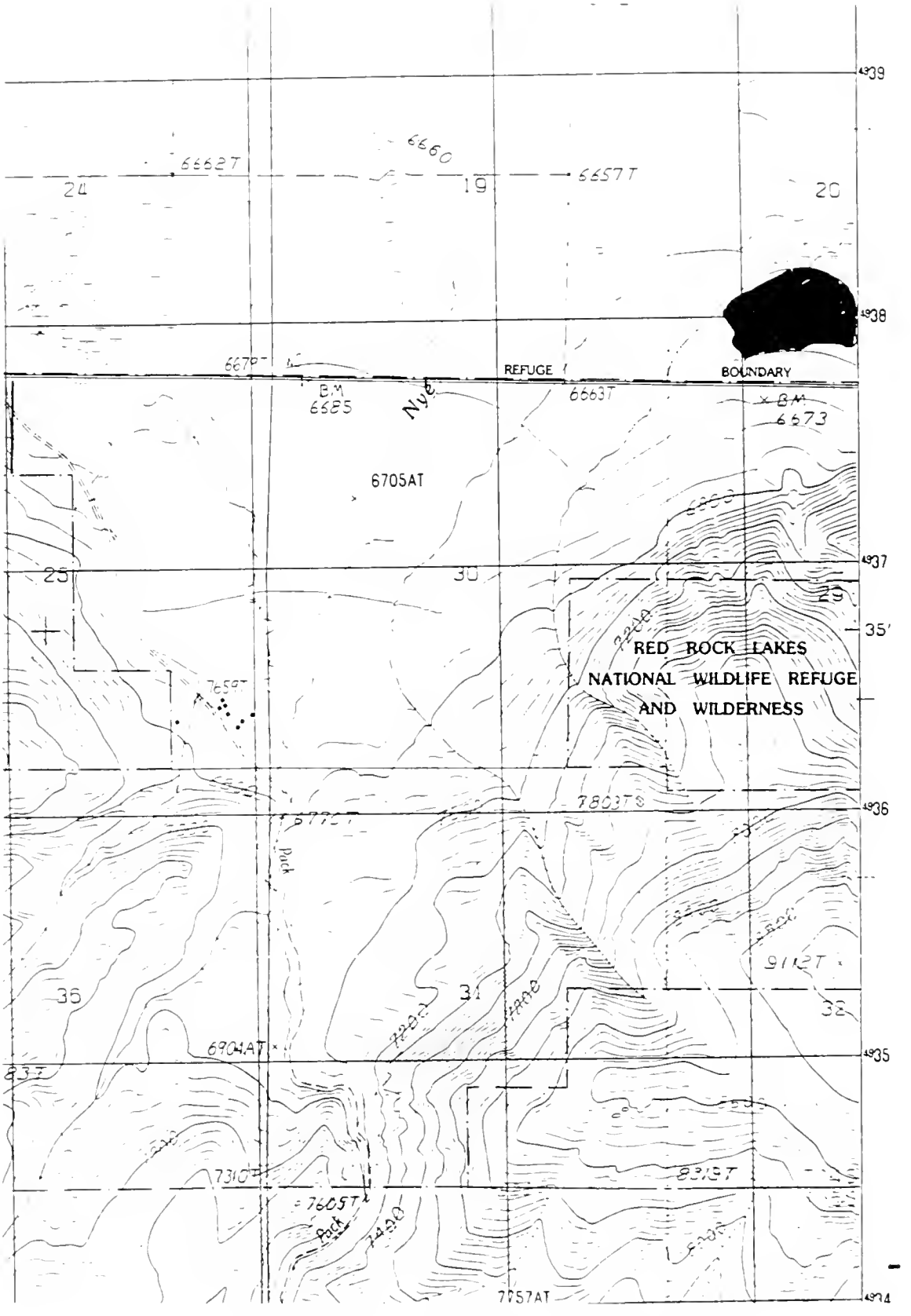
USGS Monida Quadrangle (7.5')
Ipomopsis congesta ssp crebifolia



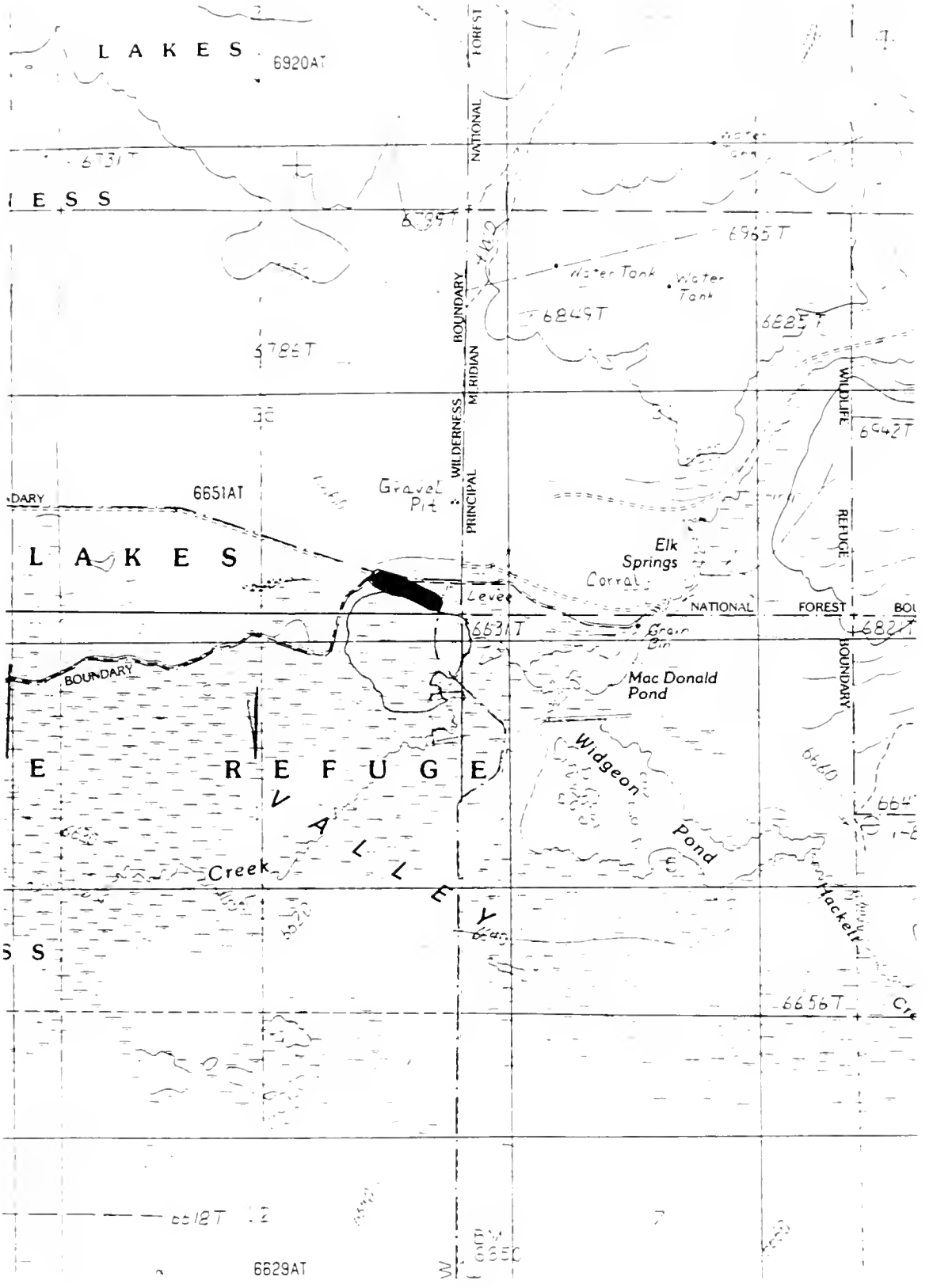
USGS Upper Red Rock Lakes Quadrangle (7.5')
Penstemon whippleanus



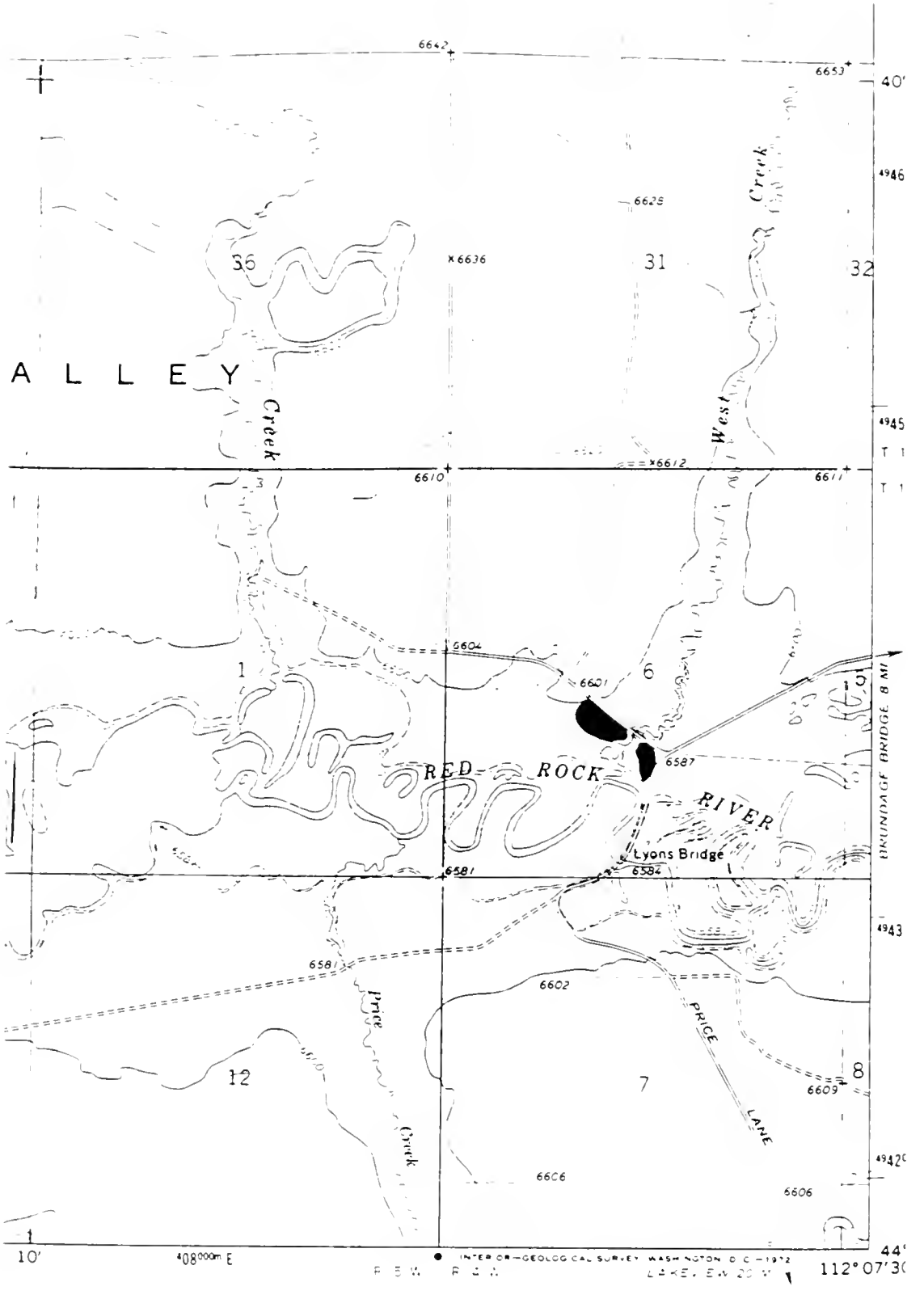
USGS Corral Creek Quadrangle (7.5')
Senecio debilis



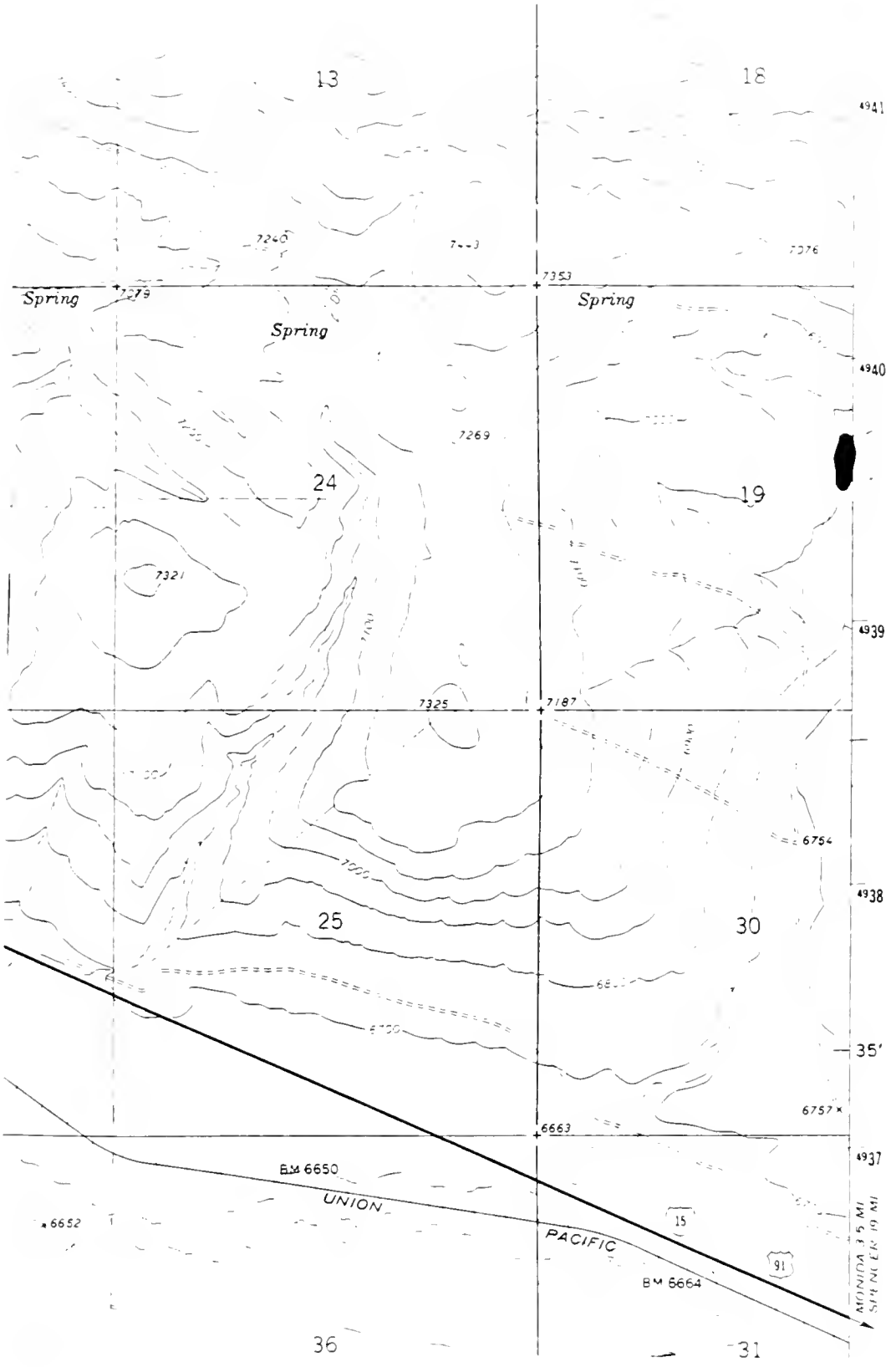
USGS Slide Mountain Quadrangle (7.5')
Senecio debilis



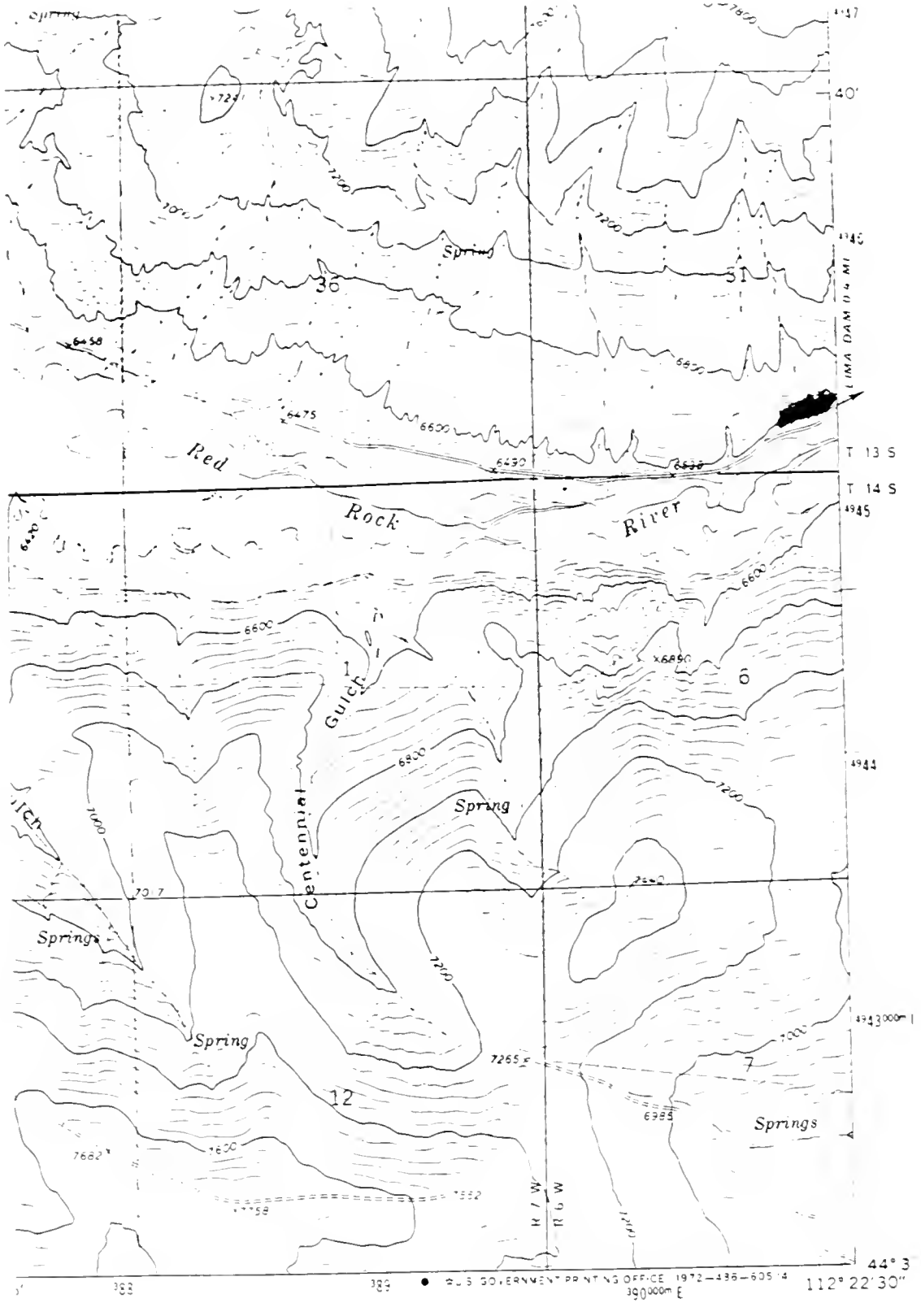
USGS Elk Springs Quadrangle (7.5')
Senecio debilis



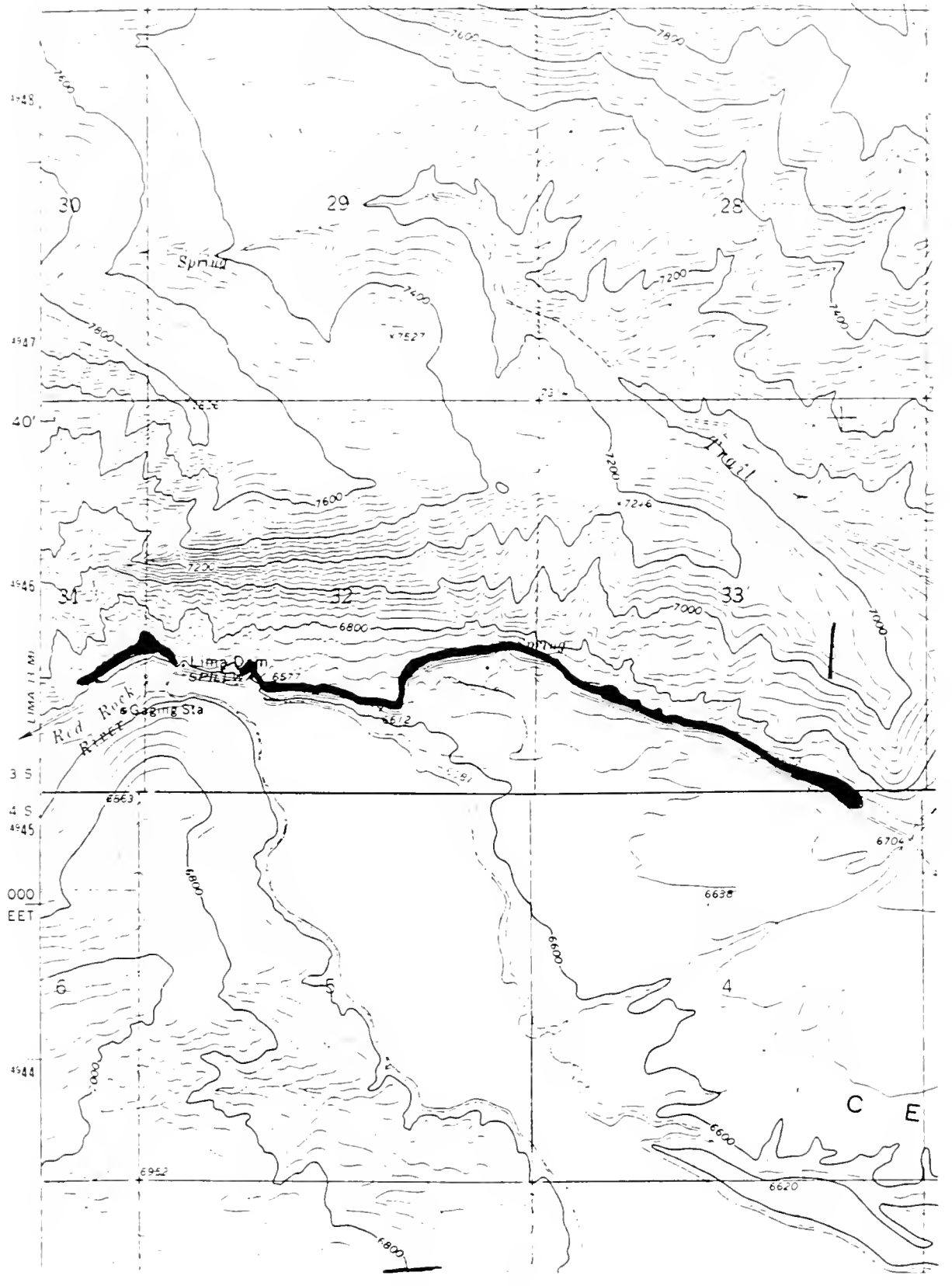
USGS Wolverine Creek Quadrangle (7.5')
Senecio debilis



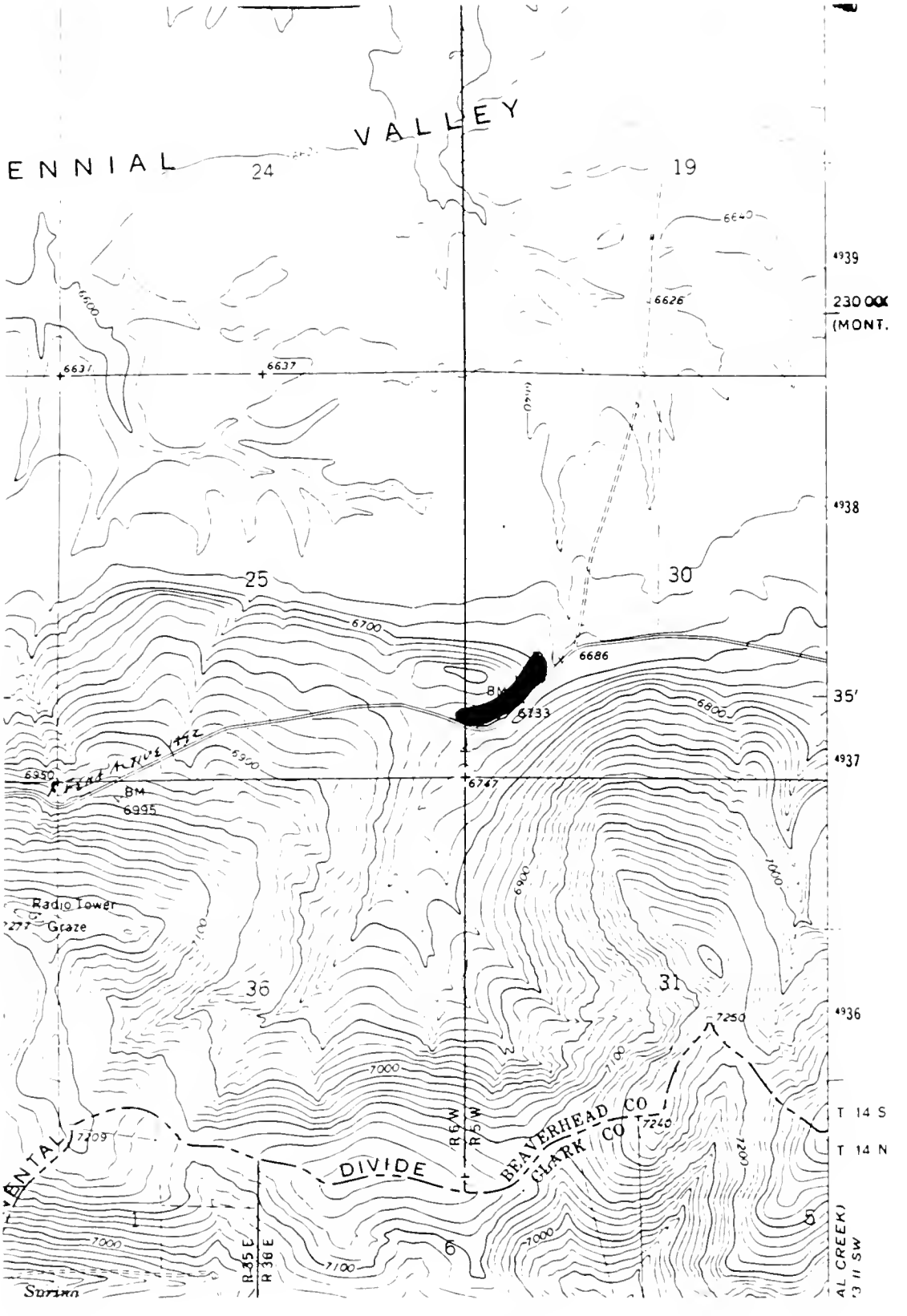
USGS Snowline Quadrangle (7.5')
Sphaeralcea munroana



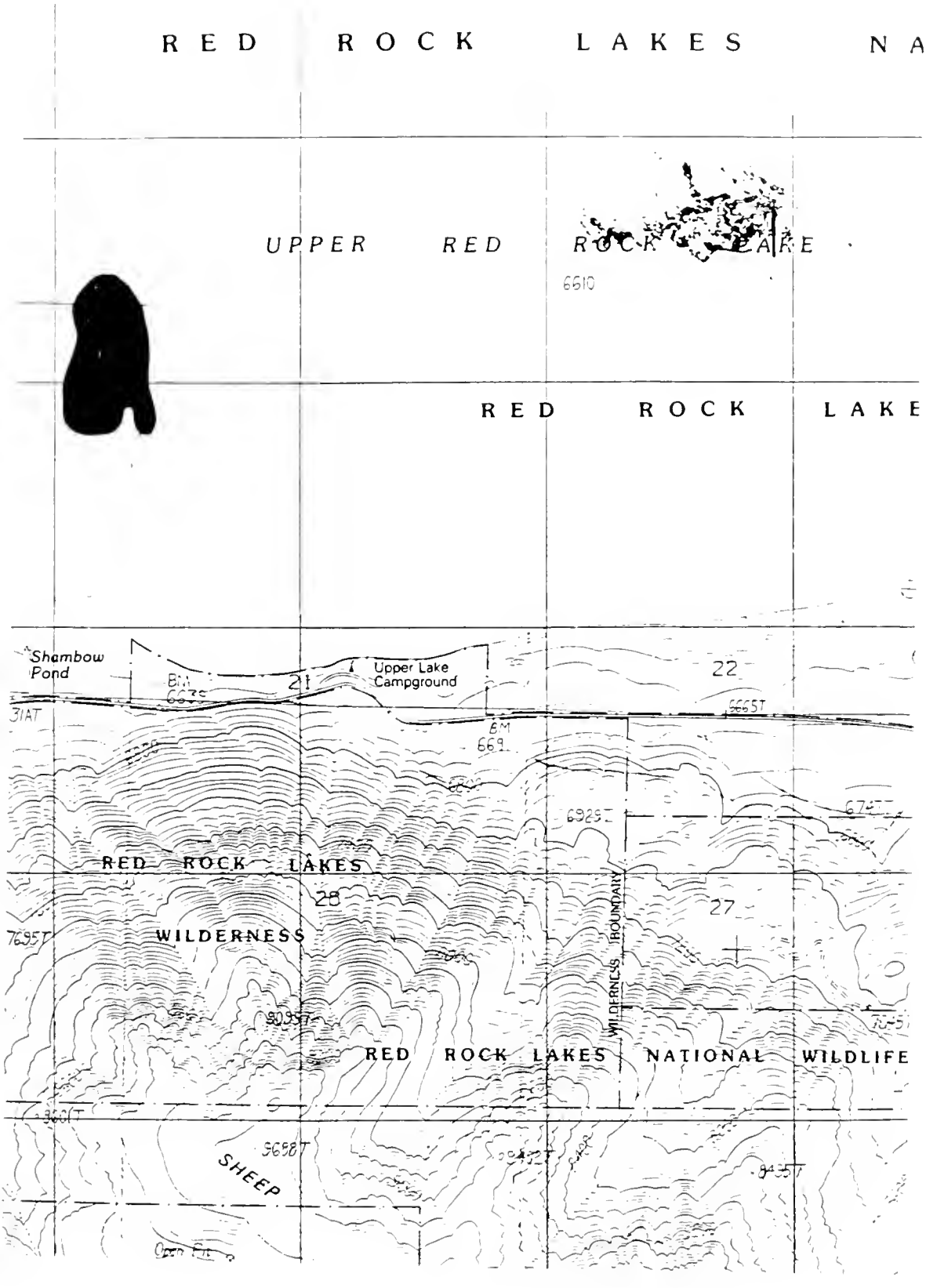
USGS Henry Gulch Quadrangle (7.5')
Sphaeralcea munroana



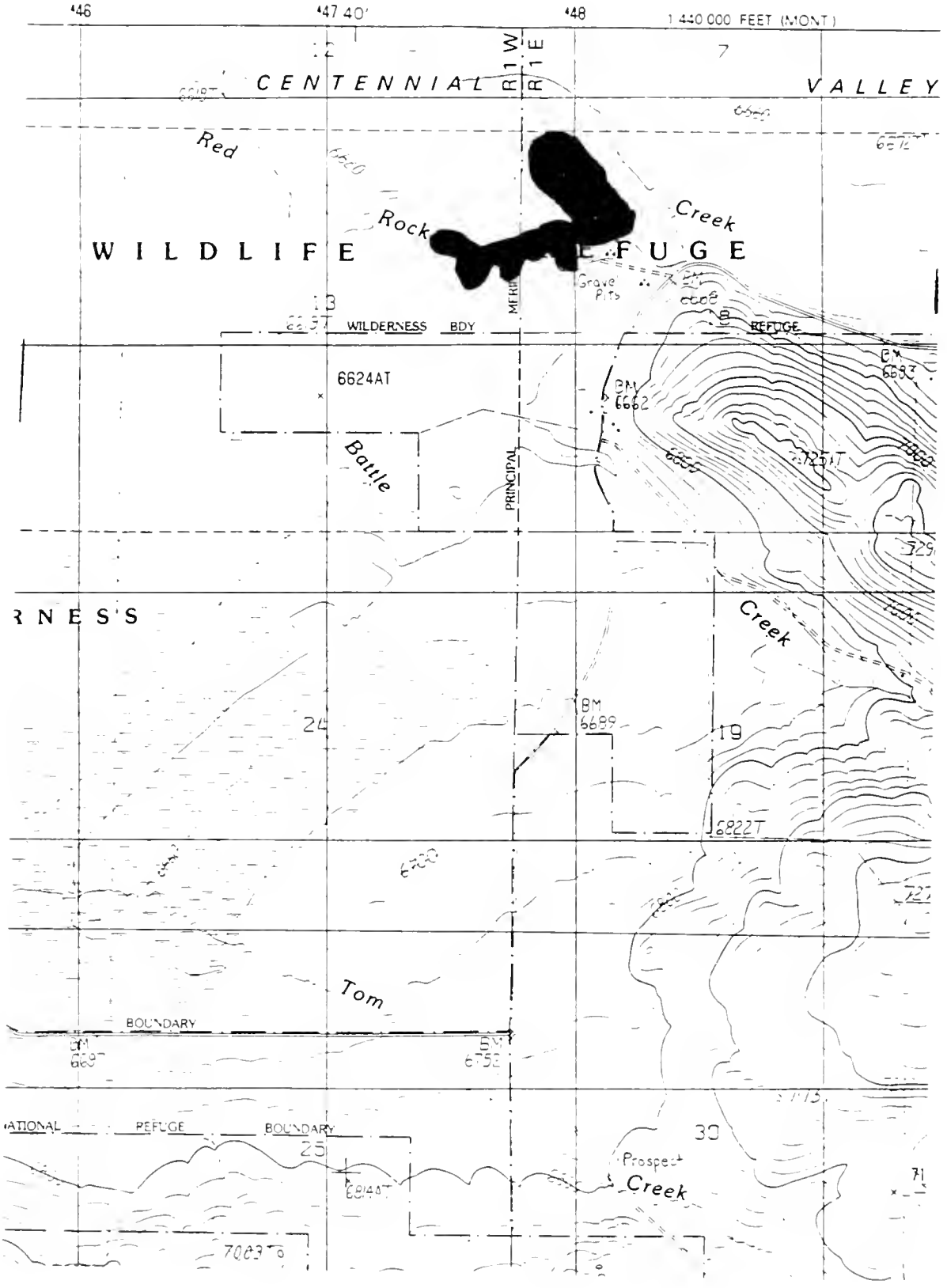
USGS Lima Dam Quadrangle (7.5')
Sphaeralcea munroana



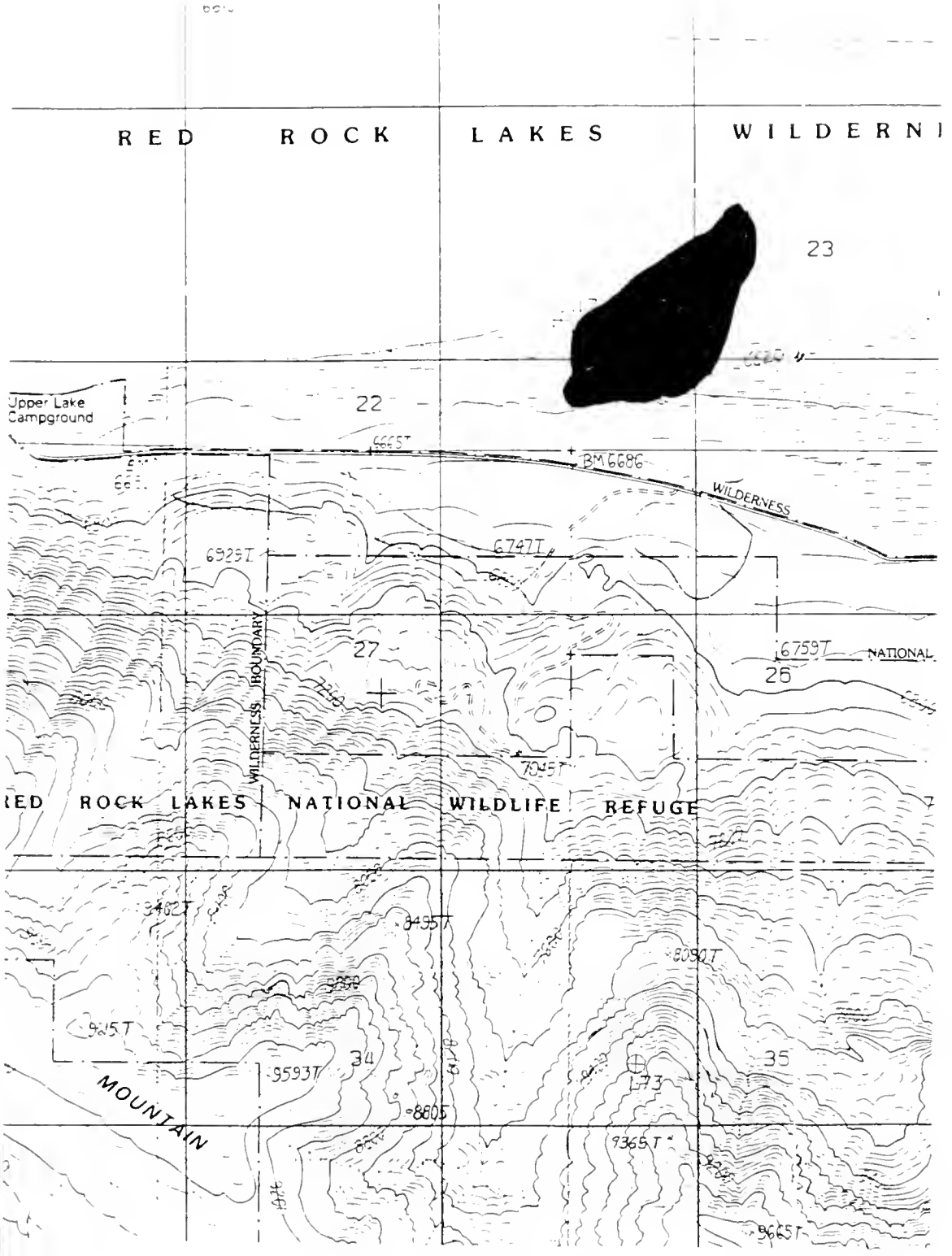
USGS Monida Quadrangle (7.5')
Sphaeralcea munroana



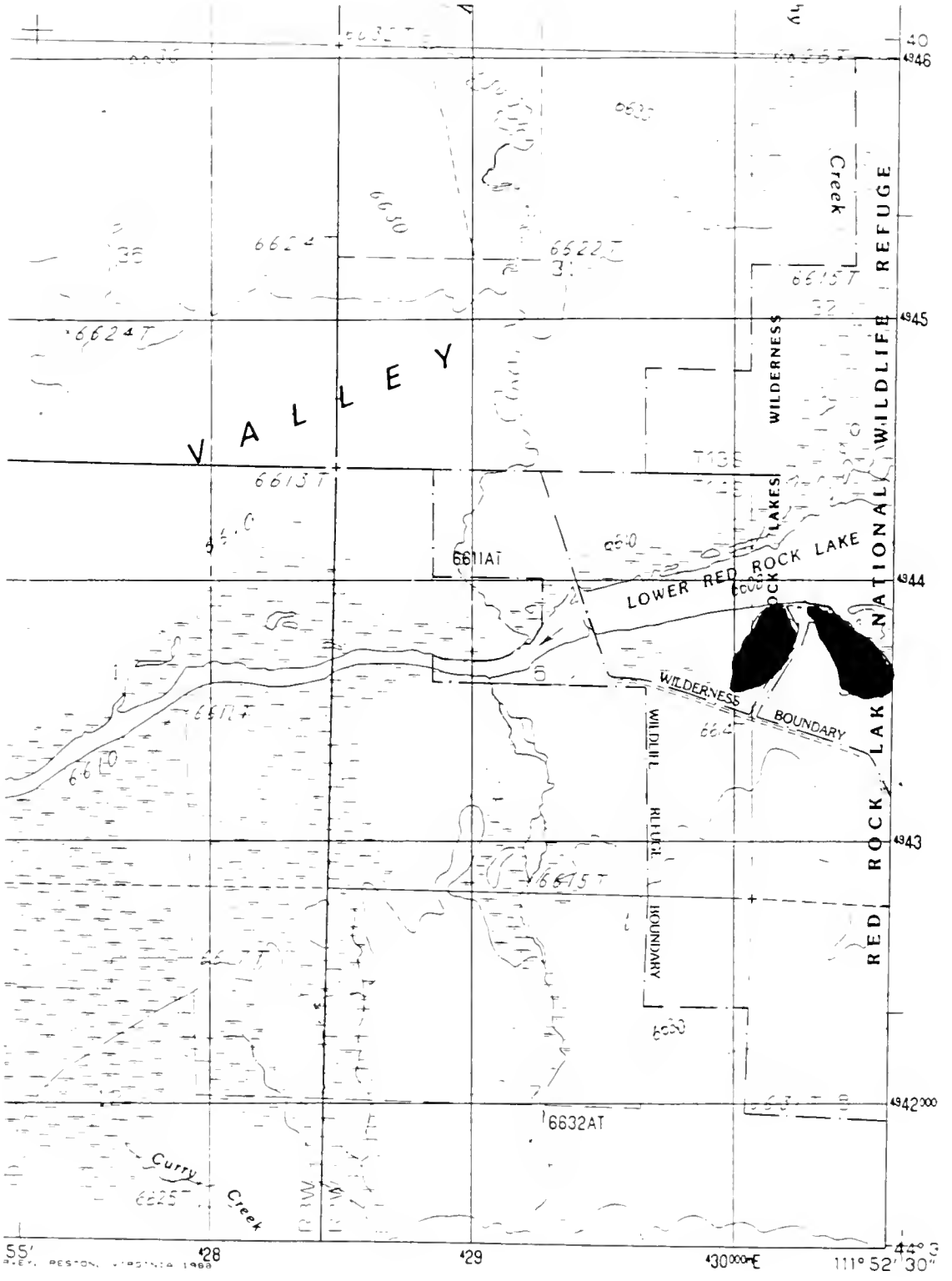
USGS Upper Red Rock Lakes Quadrangle (7.5')
Thelypodium sagitatum ssp sagitatum



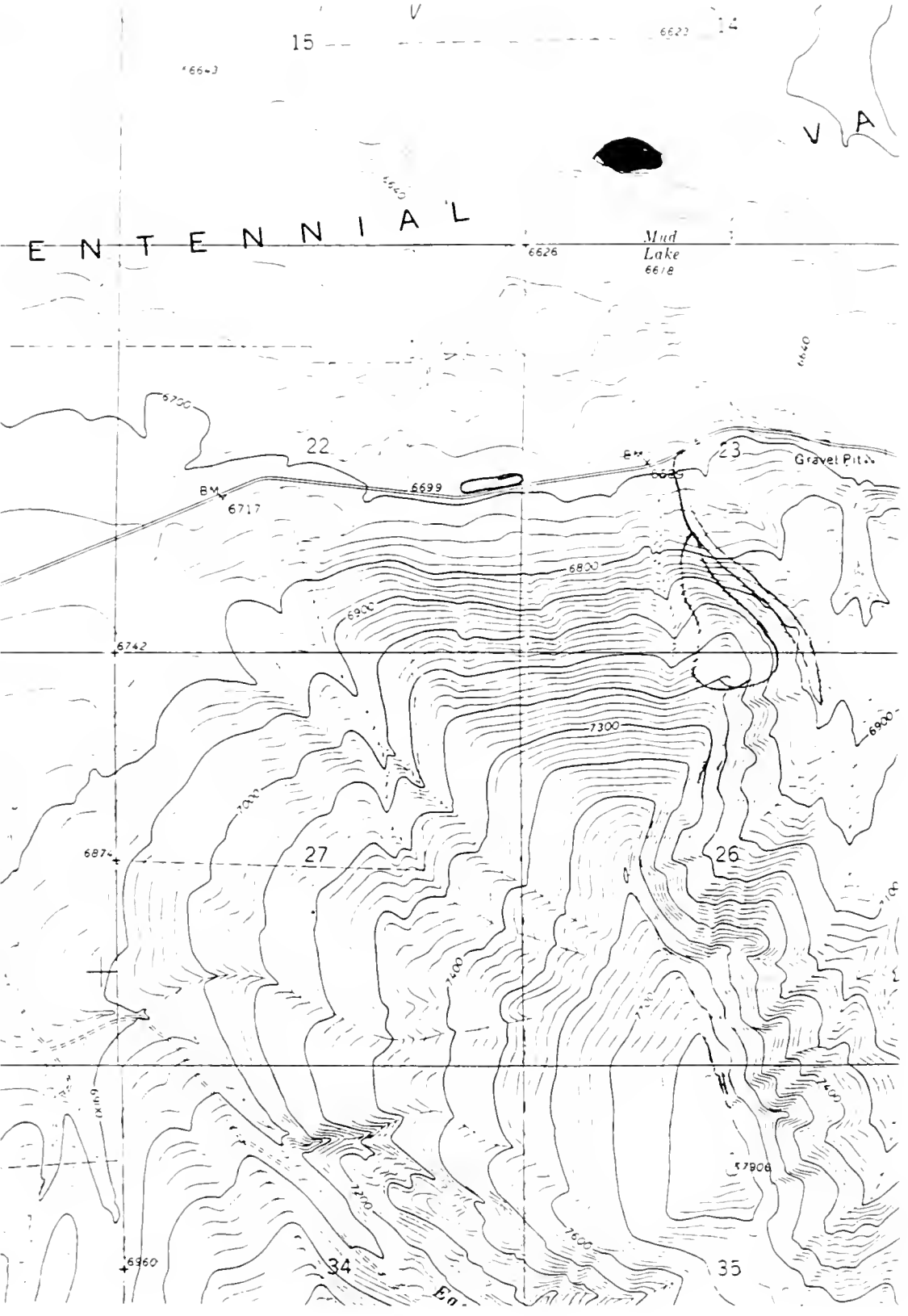
USGS Upper Red Rock Lakes Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum



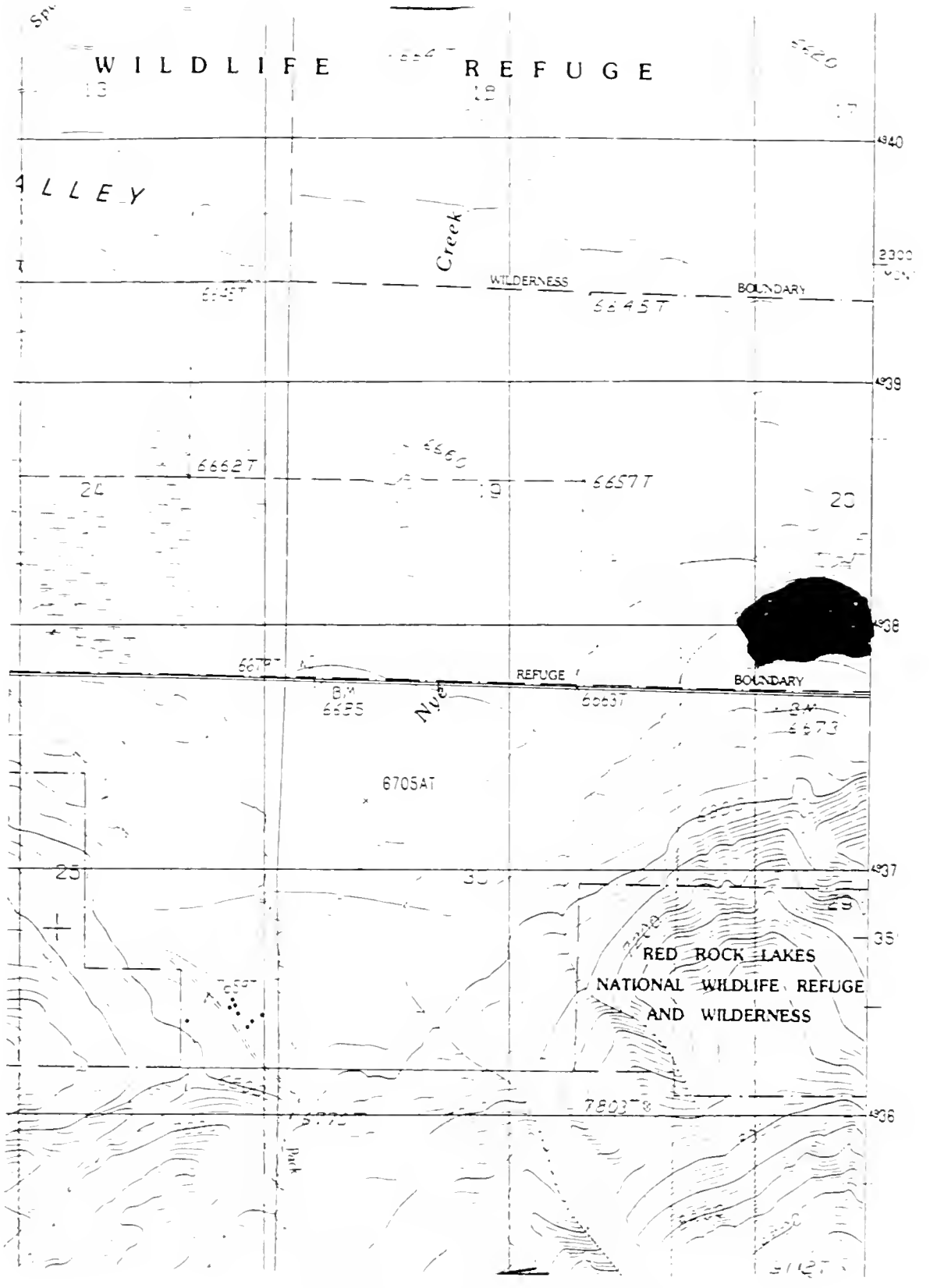
USGS Upper Red Rock Lakes Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum



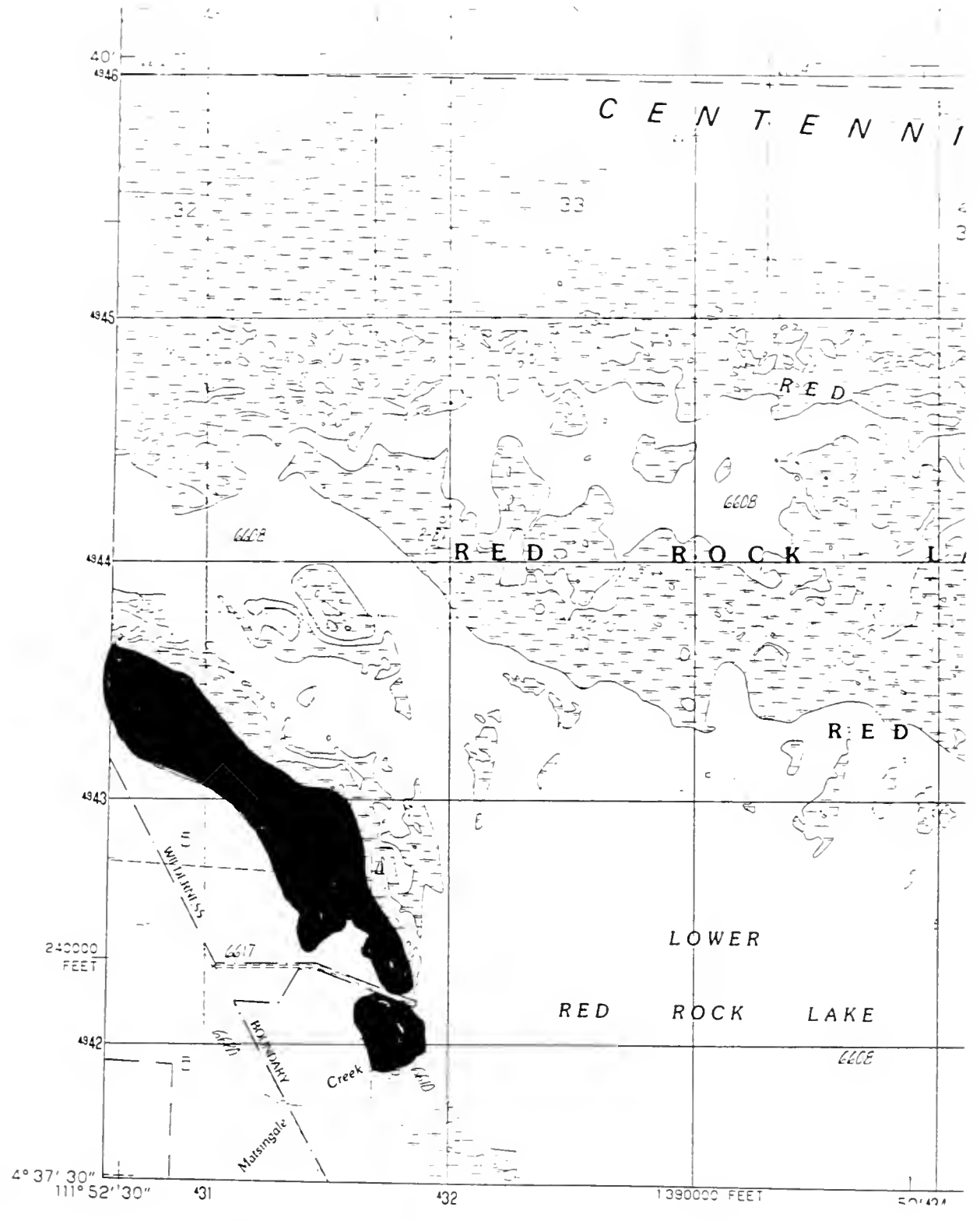
USGS Lower Red Rock Lakes Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum



USGS Corral Creek Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum

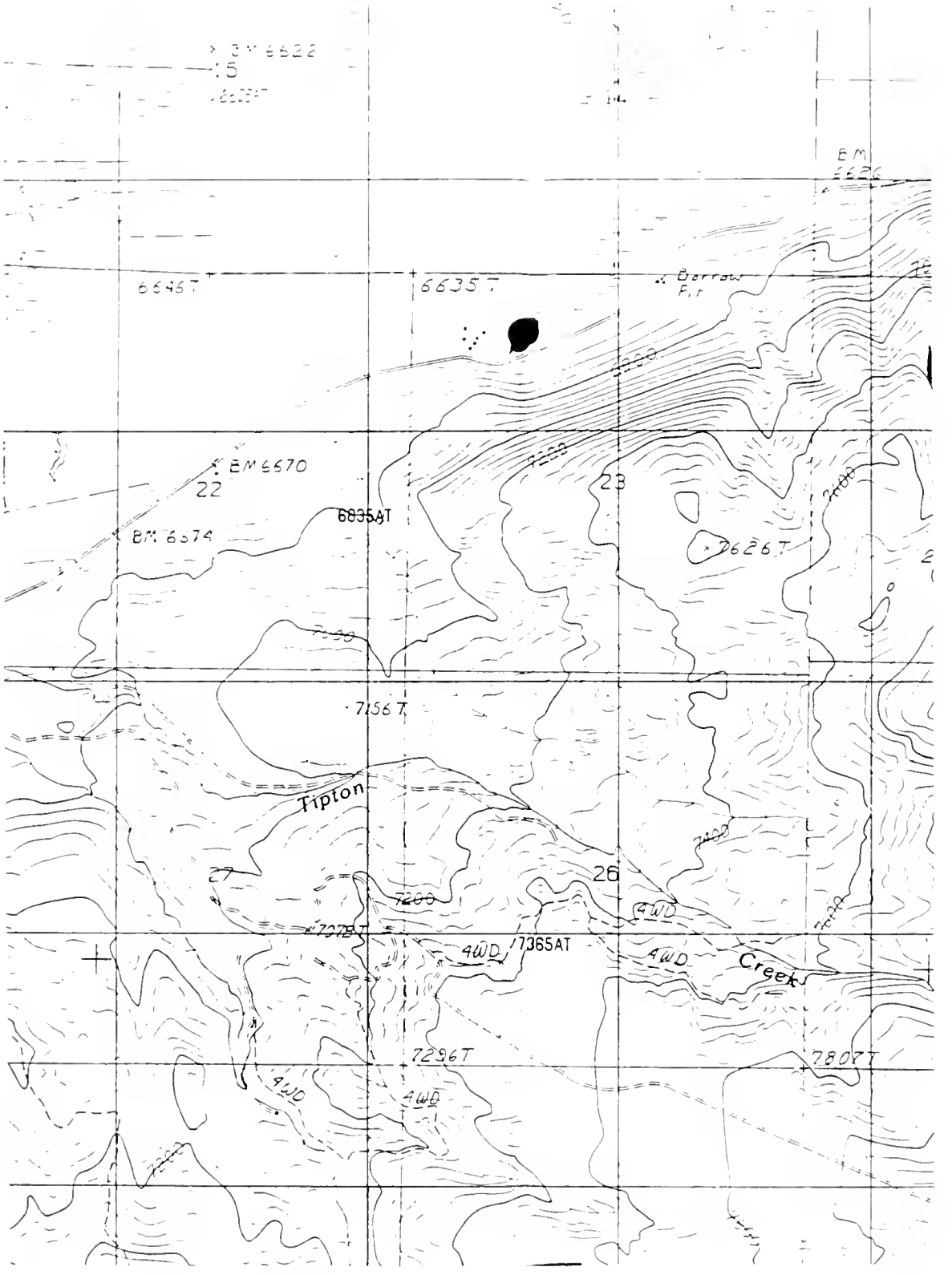


USGS Slide Mountain Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum

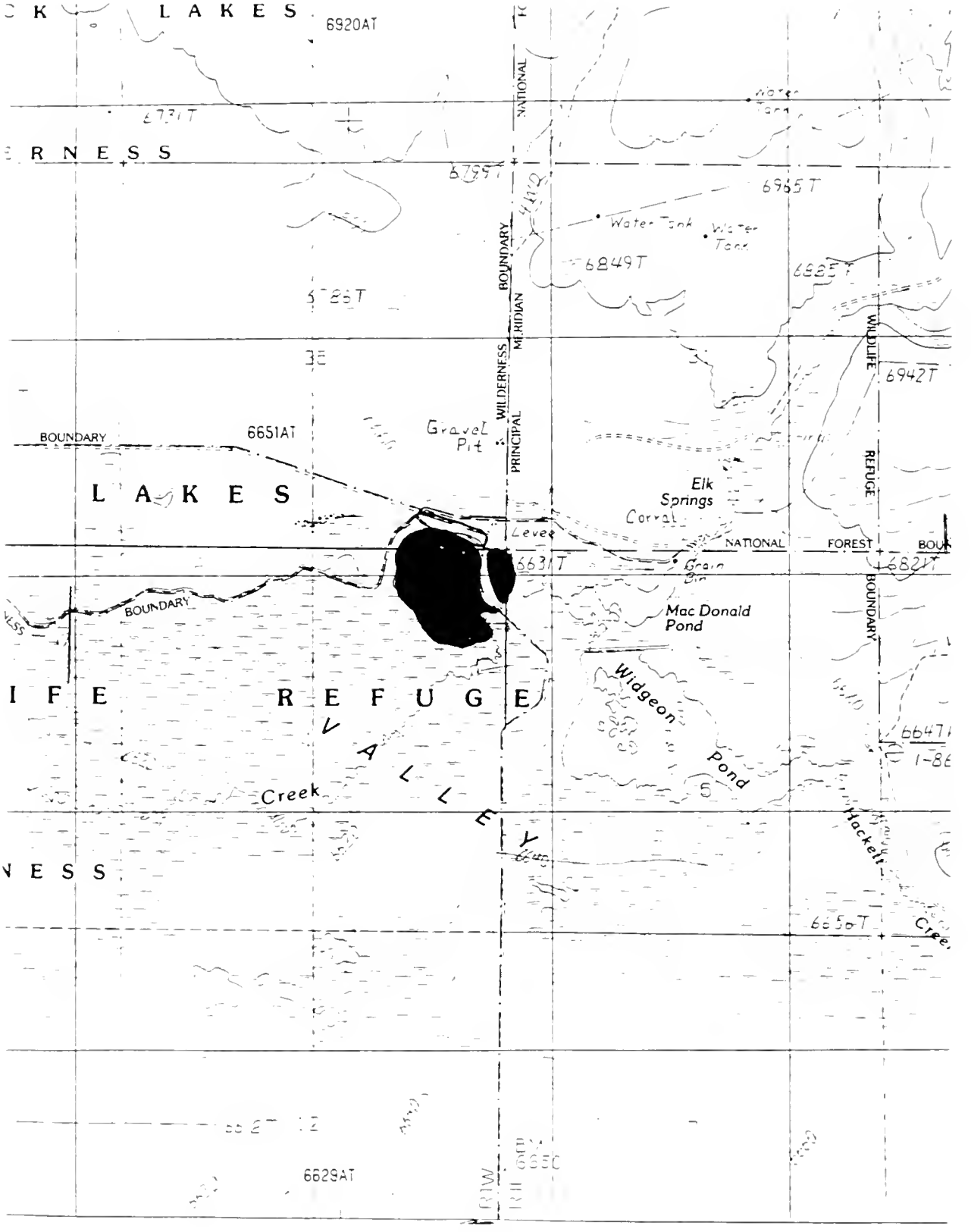


USGS Slide Mountain Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum

USGS Slide Mountain Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum



USGS Winslow Creek Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum



USGS Elk Springs Quadrangle (7.5')
Thelypodium sagittatum ssp sagittatum

Appendix D. Slides

1 Ipomopsis congesta close-up

2 Ipomopsis congesta habitat

3 Sphaeralcea munroa close-up

4 Sphaeralcea munroa habitat

5 Thelypodium sagittatum close-up

6 Thelypodium sagitattum habitat