

Rare Plant Survey

San Juan National Forest



Prepared for U.S. Forest Service
San Juan National Forest
Durango, Colorado

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Introduction

Colorado Natural Heritage Program (CNHP) performed a survey of rare plants on the San Juan National Forest in Archuleta County, Colorado, and selected areas in adjacent counties, (Hinsdale, Mineral, Rio Grande and LaPlata), in 2001. This survey complements the Upper San Juan Basin Biological Survey, a survey of plants, animals and natural communities on private lands of Archuleta and Hinsdale counties, that will be conducted by CNHP in 2002 for the Southwest Land Alliance, funded by Great Outdoors Colorado. In addition, CNHP conducted the 2001 monitoring of the *Lesquerella pruinosus* population at the Coyote South Pasture of the East Fork Piedra Allotment (Lyon et al. in preparation.)

This document is the preliminary report of the 2001 survey of rare plants the San Juan National Forest in Archuleta County. Results of this survey will also be included in the Upper San Juan Basin Biological Assessment report which will be produced in 2002-2003. That report will also be provided to the Forest Service.

The Natural Heritage Network and Biological Diversity

Colorado is well known for its rich diversity of geography, wildlife, plants, and plant communities. However, like many other states, it is experiencing a loss of much of its flora and fauna. This decline in biological diversity is a global trend resulting from human population growth, land development, and subsequent habitat loss. Globally, the loss in species diversity has become so rapid and severe that it has been compared to the great natural catastrophes at the end of the Paleozoic and Mesozoic eras (Wilson 1988). The need to address this loss in biological diversity has been recognized for decades in the scientific community. However, many conservation efforts made in this country have not been based upon preserving biological diversity; instead, they have primarily focused on preserving game animals, striking scenery, and locally favorite open spaces. To address the absence of a methodical, science-based approach to preserving biological diversity, The Nature Conservancy developed the Natural Heritage Methodology in 1978.

Recognizing that rare and imperiled species are more likely to become extinct than common ones, the Natural Heritage Methodology ranks species according to their rarity or degree of imperilment. The ranking system is based upon the number of known locations of the species as well as its biology and known threats. By ranking the relative rarity or imperilment of a species, the quality of its populations, and the importance of associated conservation sites, the methodology can facilitate the prioritization of conservation efforts so the most rare and imperiled species may be preserved first. As the scientific community began to realize that plant communities are equally important as individual species, this methodology has also been applied to ranking and preserving rare plant communities as well as the best examples of common communities.

The Natural Heritage Methodology is used by Natural Heritage Programs throughout North, Central, and South America, forming an international database network. Natural Heritage Network data centers are located in each of the 50 U.S. states, five provinces of Canada, and 13 countries in South and Central America and the Caribbean. This network enables scientists to monitor the status of species from a state,

national, and global perspective. It also enables conservationists and natural resource managers to make informed, objective decisions in prioritizing and focusing conservation efforts.

What is Biological Diversity?

Protecting biological diversity has become an important management issue for many natural resource professionals. Biological diversity at its most basic level includes the full range of species on earth, from unicellular bacteria and protists through multicellular plants, animals, and fungi. At finer levels of organization, biological diversity includes the genetic variation within species, both among geographically separated populations and among individuals within a single population. On a wider scale, diversity includes variations in the biological communities in which species live, the ecosystems in which communities exist, and the interactions among these levels. All levels are necessary for the continued survival of species and plant communities, and all are important for the well being of humans. It stands to reason that biological diversity should be of concern to all people.

The biological diversity of an area can be described at four levels:

1. **Genetic Diversity** -- the genetic variation within a population and among populations of a plant or animal species. The genetic makeup of a species is variable between populations within its geographic range. Loss of a population results in a loss of genetic diversity for that species and a reduction of total biological diversity for the region. Once lost, this unique genetic information cannot be reclaimed.
2. **Species Diversity** -- the total number and abundance of plant and animal species and subspecies in an area.
3. **Community Diversity** -- the variety of plant communities within an area that represent the range of species relationships and interdependence. These communities may be characteristic of or even endemic to an area. It is within communities that all life dwells.
4. **Landscape Diversity** -- the type, condition, pattern, and connectedness of plant communities. A landscape consisting of a mosaic of plant communities may contain one multifaceted ecosystem, such as a wetland ecosystem. A landscape also may contain several distinct ecosystems, such as a riparian corridor meandering through shortgrass prairie. Fragmentation of landscapes, loss of connections and migratory corridors, and loss of natural communities all result in a loss of biological diversity for a region. Humans and the results of their activities are integral parts of most landscapes.

The conservation of biological diversity must include all levels of diversity: genetic, species, community, and landscape. Each level is dependent on the other levels

and inextricably linked. In addition, and all too often omitted, humans are also linked to all levels of this hierarchy. We at the Colorado Natural Heritage Program believe that a healthy natural environment and human environment go hand in hand, and that recognition of the most imperiled species or communities is an important step in comprehensive conservation planning.

Colorado's Natural Heritage Program

To place this document in context, it is useful to understand the history and functions of the Colorado Natural Heritage Program (CNHP).

CNHP is the state's primary comprehensive biological diversity data center, gathering information and field observations to help develop statewide conservation priorities. After operating in Colorado for fourteen years, the Program was relocated from the State Division of Parks and Outdoor Recreation to the University of Colorado Museum in 1992 and then in 1994 to the College of Natural Resources at Colorado State University.

CNHP's multi-disciplinary team of scientists and information managers gathers comprehensive information on rare, threatened, and endangered species and significant plant communities of Colorado. Life history, status, and locational data are incorporated into a continually updated data system. Sources include published and unpublished literature, museum and herbaria labels, and field surveys conducted by knowledgeable naturalists, experts, agency personnel, and our own staff of botanists, ecologists, and zoologists. Information management staff carefully plot the locations on 1:24,000 scale U.S.G.S. maps and enter it into the Biological and Conservation Data System (BCD). The data are also stored in a geographic information system (Arc/INFO and ArcView GIS). The database can be accessed through a variety of attributes, including taxonomic group, global and state rarity rank, federal and state legal status, source, observation date, county, quadrangle map, watershed, management area, township, range, and section, precision, and conservation unit.

CNHP is part of an international network of conservation data centers that uses the Biological and Conservation Data System (BCD) developed by The Nature Conservancy. CNHP has effective relationships with several state and federal agencies, including the Colorado Natural Areas Program, Colorado Department of Natural Resources and the Colorado Division of Wildlife, the U.S. Environmental Protection Agency, the U.S. Bureau of Land Management and the U.S. Forest Service. Numerous local governments and private entities also work closely with CNHP. Use of the data by many different individuals and organizations, including Great Outdoors Colorado, encourages a proactive approach to development and conservation thereby reducing the potential for conflict. Information collected by the Natural Heritage Programs around the globe provides a means to protect species before the need for legal endangerment status arises.

Concentrating on site-specific data for each species or community enables the evaluation of the significance of each location with respect to the conservation of natural biological diversity in Colorado and the nation. By using species imperilment ranks and quality ratings for each location, priorities can be established for the protection of the most sensitive or imperiled sites. A continually updated locational database and priority-

setting system such as that maintained by CNHP provides an effective, proactive land-planning tool.

The Natural Heritage Ranking System

Each of the plant and animal species and plant communities tracked by CNHP is considered an **element of natural diversity**, or simply an **element**. Each element is assigned a rank that indicates its relative degree of imperilment on a five-point scale (e.g., 1 = extremely rare/imperiled, 5 = abundant/secure). The primary criterion for ranking elements is the number of occurrences, i.e., the number of known distinct localities or populations. This factor is weighted more heavily because an element found in one place is more imperiled than something found in twenty-one places. Also considered in the ranking is the size of the geographic range, the number of individuals, trends in population and distribution, identifiable threats, and the number of already protected occurrences.

Element imperilment ranks are assigned both in terms of the element's degree of imperilment within Colorado (its State or S-rank) and the element's imperilment over its entire range (its Global or G-rank). Taken together, these two ranks indicate the degree of imperilment of an element. For example, the lynx, which is thought to be secure in northern North America but is known from less than 5 current locations in Colorado, is ranked G5S1. Naturita milkvetch, which is known from 37 locations in the Four Corners Area, is ranked a G3S3, vulnerable both globally and in Colorado. Further, a tiger beetle that is only known from one location in the world at the Great Sand Dunes National Monument is ranked G1S1, critically imperiled both globally and in Colorado. CNHP actively collects, maps, and electronically processes specific occurrence information for elements considered extremely imperiled to vulnerable (S1 - S3). Those with a ranking of S3S4 are "watchlisted," meaning that specific occurrence data are collected and periodically analyzed to determine whether more active tracking is warranted. A complete description of each of the Natural Heritage ranks is provided in Table 1.

This single rank system works readily for all species except those that are migratory. Those animals that migrate may spend only a portion of their life cycles within the state. In these cases, it is necessary to distinguish between breeding, non-breeding, and resident species. As noted in Table 1, ranks followed by a "B", e.g., S1B, indicate that the rank applies only to the status of breeding occurrences. Similarly, ranks followed by an "N", e.g., S4N, refer to non-breeding status, typically during migration and winter. Elements without this notation are believed to be year-round residents within the state.

Legal Designations

Natural Heritage imperilment ranks are not legal designations and should not be interpreted as such. Although most species protected under state or federal endangered species laws are extremely rare, not all rare species receive legal protection. Legal status is designated by either the U.S. Fish and Wildlife Service under the Endangered Species Act or by the Colorado Division of Wildlife under Colorado Statutes

33-2-105 Article 2. State designations apply to animals only; Colorado has no legal list of threatened and endangered plant species (Buckner and Bunin 1992).

In addition, the U.S. Forest Service recognizes some species as "Sensitive," as does the Bureau of Land Management. Table 2 defines the special status assigned by these agencies and provides a key to the abbreviations used by CNHP.

Please note that the U.S. Fish and Wildlife Service has issued a Notice of Review in the February 28, 1996 Federal Register for plants and animal species that are "candidates" for listing as endangered or threatened under the Endangered Species Act. The revised candidate list replaces an old system that listed many more species under three categories: Category 1 (C1), Category 2 (C2), and Category 3 (including 3A, 3B, 3C). Beginning with the February 28, 1996 notice, the Service will recognize as candidates for listing most species that would have been included in the former Category 1. This includes those species for which the Service has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act.

Candidate species listed in the February 28, 1996 Federal Register are indicated with a "C". While obsolete legal status codes (Category 2 and 3) are no longer used, CNHP will continue to maintain them in its Biological and Conservation Data system for reference.

Table 1. Definition of Colorado Natural Heritage Imperilment Ranks.

Global imperilment ranks are based on the range-wide status of a species. State imperilment ranks are based on the status of a species in an individual state. State and Global ranks are denoted, respectively, with an "S" or a "G" followed by a character. These ranks should not be interpreted as legal designations.	
G/S1	Critically imperiled globally/state because of rarity (5 or fewer occurrences in the world/state; or very few remaining individuals), or because some factor of its biology makes it especially vulnerable to extinction.
G/S2	Imperiled globally/state because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extinction throughout its range.
G/S3	Vulnerable throughout its range or found locally in a restricted range (21 to 100 occurrences).
G/S4	Apparently secure globally/state, though it might be quite rare in parts of its range, especially at the periphery.
G/S5	Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
GX	Presumed extinct.
G#?	Indicates uncertainty about an assigned global rank.
G/SU	Unable to assign rank due to lack of available information.
GQ	Indicates uncertainty about taxonomic status.
G/SH	Historically known, but not verified for an extended period.
G#T#	Trinomial rank (T) is used for subspecies or varieties. These species or subspecies are ranked on the same criteria as G1-G5.
S#B	Refers to the breeding season imperilment of elements that are not permanent residents.
S#N	Refers to the non-breeding season imperilment of elements that are not permanent residents. Where no consistent location can be discerned for migrants or non-breeding populations, a rank of SZN is used
SZ	Migrant whose occurrences are too irregular, transitory, and/or dispersed to be reliably identified, mapped, and protected.
SA	Accidental in the state.
SR	Reported to occur in the state, but unverified.
S?	Unranked. Some evidence that species may be imperiled, but awaiting formal rarity ranking.
Notes: Where two numbers appear in a state or global rank (e.g., S2S3), the actual rank of the element falls between the two numbers.	

Element Occurrence Ranking

Actual locations of elements, whether they be single organisms, populations, or plant communities, are referred to as element occurrences. The element occurrence is considered the most fundamental unit of conservation interest and is at the heart of the Natural Heritage Methodology. In order to prioritize element occurrences for a given species, an element occurrence rank (EO-Rank) is assigned according to the estimated viability or probability of persistence (whenever sufficient information is available). This ranking system is designed to indicate which occurrences are the healthiest and ecologically the most viable, thus focusing conservation efforts where they will be most successful. The EO-Rank is based on 3 factors:

Size – a quantitative measure of the area and/or abundance of an occurrence such as area of occupancy, population abundance, population density, or population fluctuation.

Condition – an integrated measure of the quality of biotic and abiotic factors, structures, and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components may include reproduction and health, development/maturity for communities, ecological processes, species composition and structure, and abiotic physical or chemical factors.

Table 2. Federal and State Agency Special Designations.

Federal Status:	
1. U.S. Fish and Wildlife Service (58 Federal Register 51147, 1993) and (61 Federal Register 7598, 1996)	
LE	Endangered; species or subspecies formally listed as endangered.
E(S/A)	Endangered due to similarity of appearance with listed species.
LT	Threatened; species or subspecies formally listed as threatened.
P	Potential Endangered or Threatened; species or subspecies formally listed as potentially endangered or threatened.
PD	Potential for delisting
C	Candidate: species or subspecies for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened.
2. U.S. Forest Service (Forest Service Manual 2670.5) (noted by the Forest Service as “S”)	
FS	Sensitive: those plant and animal species identified by the Regional Forester for which population viability is a concern as evidenced by: a. Significant current or predicted downward trends in population numbers or density. b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.
3. Bureau of Land Management (BLM Manual 6840.06D) (noted by BLM as “S”)	
BLM	Sensitive: those species found on public lands, designated by a State Director that could easily become endangered or extinct in a state. The protection provided for sensitive species is the same as that provided for C (candidate) species. This list does not include species that are listed endangered (LE) or threatened (LT).
State Status:	
1. Colorado Division of Wildlife	
	CO-E Endangered
	CO-T Threatened
	CO-SC Special Concern

Landscape Context – an integrated measure of the quality of biotic and abiotic factors, and processes surrounding the occurrence, and the degree to which they affect the continued existence of the occurrence. Components may include landscape structure and extent, genetic connectivity, and condition of the surrounding landscape.

Each of these factors is rated on a scale of A through D, with A representing an excellent grade and D representing a poor grade. These grades are then averaged to determine an appropriate EO-Rank for the occurrence. If there is insufficient information available to rank an element occurrence, an EO-Rank is not assigned. Possible EO-Ranks and their appropriate definitions are as follows:

A	Excellent estimated viability.
B	Good estimated viability.
C	Fair estimated viability.
D	Poor estimated viability.
E	Viability has not been assessed.
H	Historically known, but not verified for an extended period of time
X	Extirpated

Potential Conservation Areas

In order to successfully protect populations or occurrences, it is necessary to delineate conservation areas. These conservation areas focus on capturing the ecological processes that are necessary to support the continued existence of a particular element occurrence of biological diversity significance. Conservation areas may include a single occurrence of a rare element or a suite of rare element occurrences or significant features. Not all element occurrences are included in Potential Conservation Areas (PCAs). Sites are ordinarily drawn for A to C ranked G1 to G3 and S1 or S2 elements only. Other lower ranked element occurrences may fall geographically within the site boundaries, and are thus included, but would not warrant a PCA on their own. In addition, sites may be drawn for lower ranked species that are of local conservation interest, e.g. the Colorado River cutthroat trout or Black Swift.

The goal of the process is to identify a land area that can provide the habitat and ecological processes upon which a particular element occurrence or suite of element occurrences depends for its continued existence. The best available knowledge of each species' life history is used in conjunction with information about topographic, geomorphic, and hydrologic features, vegetative cover, as well as current and potential land uses.

In developing Potential Conservation Area boundaries, CNHP staff considers a number of factors that include, but are not limited to:

- the extent of current and potential habitat for the elements present, considering the ecological processes necessary to maintain or improve existing conditions;
- species movement and migration corridors;
- maintenance of surface water quality within the site and the surrounding watershed;
- maintenance of the hydrologic integrity of the groundwater, e.g., by protecting recharge zones;
- land intended to buffer the site against future changes in the use of surrounding lands;
- exclusion or control of invasive exotic species;
- land necessary for management or monitoring activities.

The proposed boundary does not necessarily recommend the exclusion of all activity. It is hypothesized that some activities will prove degrading to the element or the process on which the element depends, while others will not. Specific activities or land use changes proposed within or adjacent to the preliminary conservation planning boundary should be carefully considered and evaluated for their consequences to the element on which the conservation unit is based and other significant elements that fall within the site.

The boundaries presented here are for planning purposes. They delineate ecologically sensitive areas where land-use practices should be carefully planned and managed to ensure that they are compatible with protection goals for natural heritage resources and sensitive species. Please note that these boundaries are based primarily on our understanding of the ecological systems. A thorough analysis of the human context and potential stresses was not conducted. All land within the conservation planning boundary should be considered an integral part of a complex economic, social, and ecological landscape that requires thoughtful land-use planning at all levels.

Off-Site Considerations

It is often the case that all relevant ecological processes cannot be contained within a Potential Conservation Area of reasonable size. For instance, while a PCA for Colorado River cutthroat trout may be drawn to include only the riparian zone of a river or creek, it should be remembered that activities in the entire watershed can affect water quality, which will in turn affect the trout population. The boundaries illustrated in this report signify the immediate, and therefore most important, area in need of protection. Continued landscape level conservation efforts are needed. This will involve countywide efforts as well as coordination and cooperation with private landowners, neighboring land planners, and state and federal agencies.

Ranking of Potential Conservation Areas

Biological diversity Rank

One of the strongest ways that the CNHP uses element and element occurrence ranks is to assess the overall biological diversity significance of a site, which may include one or many element occurrences. If an element occurrence is unranked due to a lack of information, the element occurrence rank is considered a C rank. Similarly, if an element is a GU or G? it is treated as a G4. Based on these ranks, each site is assigned a **biological diversity rank (B rank)**:

B1 Outstanding Significance: the only site known for an element or an excellent occurrence of a G1 species.

B2 Very High Significance: one of the best examples of a community type, good or fair occurrence of a G1 species, or excellent occurrence of a G3 species.

B3 High Significance: excellent example of any community type, fair occurrence of a G2 species, excellent or good occurrence of a G3 species, or a large concentration of good occurrences of state rare species.

B4 Moderate or Regional Significance: good example of a community type, excellent or good occurrence of state-rare species.

B5 General or Statewide Biological diversity Significance: good or marginal occurrence of a community type, S1, or S2 species.

Protection Urgency Ranks

Protection urgency ranks (P-ranks) refer to the time frame in which conservation protection should occur in order to prevent the loss of the element. In most cases, this rank refers to the need for a major change of protective status (e.g., agency special area designations or ownership). The urgency for protection rating reflects the need to take legal, political, or other administrative measures to alleviate potential threats that are related to land ownership or designation. The following codes are used to indicate the urgency to protect the area:

- P1** May be immediately threatened by severely destructive forces, within 1 year of rank date; protect now or never!
- P2** Threat expected within 5 years.
- P3** Definable threat but not in the next 5 years.
- P4** No threat known for foreseeable future.
- P5** Land protection complete or adequate reasons exists not to protect the site; do not act on this site.

A protection action involves increasing the current level of legal protection accorded one or more tracts of a potential conservation area. Protection strategies on private lands may involve outright purchase, purchase of development rights, or creation of conservation easements. On public lands, they may include special designations such as Wilderness, Research Natural Areas, or Areas of Critical Environmental Concern (ACEC). They may also include activities such as educational or public relations campaigns or collaborative planning efforts with public or private entities to minimize adverse impacts to element occurrences at a site. Protection in this sense does not include management actions. Threats that may require a protection action are as follows:

- 1) Anthropogenic forces that threaten the existence of one or more element occurrences at a site; e.g., development that would destroy, degrade or seriously compromise the long-term viability of an element occurrence and timber, range, recreational, or hydrologic management that is incompatible with an element occurrence's existence;
- 2) The inability to undertake a management action in the absence of a protection action; e.g., obtaining a management agreement;

- 3) In extraordinary circumstances, a prospective change in ownership that will make future protection actions more difficult.

Management Urgency Ranks

Management urgency ranks (M-ranks) indicate the time frame in which a change in management of the element or site must occur in order to ensure the element's future existence. Using best scientific estimates, this rank refers to the need for management in contrast to protection (e.g., increased fire frequency, decreased grazing, weed control, etc.). The urgency for management rating focuses on land use management or land stewardship action required to maintain element occurrences at the potential conservation area.

A management action may include biological management (prescribed burning, removal of exotics, mowing, etc.) or people and site management (building barriers, rerouting trails, patrolling for collectors, hunters, or trespassers, etc.). It may also include conducting further research or monitoring. Management action does not include legal, political, or administrative measures taken to protect a potential conservation area. The following codes are used to indicate the action needed at the area:

- M1** Management action may be required immediately or element occurrences could be lost or irretrievably degraded within one year.
- M2** New management action may be needed within 5 years to prevent the loss of element occurrences.
- M3** New management action may be needed within 5 years to maintain current quality of element occurrences.
- M4** Although the element is not currently threatened, management may be needed in the future to maintain the current quality of element occurrences.
- M5** No serious management needs known or anticipated at the site.

Methods

The methods for assessing and prioritizing conservation needs over a large area are necessarily diverse. This study follows a general method that the Colorado Natural Heritage Program has and continues to develop specifically for this purpose. The Survey of Rare Plants of the San Juan National Forest in Archuleta County was conducted in several steps summarized below.

1. Collect available information

CNHP databases were the first source consulted regarding the known locations of rare plants of the study area. A variety of information sources comprise the information in the data system. Both general and specific literature sources are incorporated into CNHP databases, as either locational information or as biological data pertaining to a species in general. Such information covers basic species and community biology including range, habitat, phenology (timing), food sources, and substrates. Much of this information is available to the public through the internet at www.Natureserve.org. Also included is information from herbarium records, and from previous surveys conducted by agency personnel, universities, private consultants and CNHP staff. Interviews were conducted with National Forest personnel and local botanists for further information on rare plants known from the study area.

2. Identify rare plants with potential to occur in the San Juan National Forest.

The information collected in the previous step was used to refine the potential element list and to identify our search areas. Targeted species included plants tracked by CNHP and plants on the National Forest Sensitive Species List (Table 3.).

Table 3. Targeted Plant Species

Scientific Name	Common name	CNHP Global Rank	CNHP State Rank	Forest Service Sensitive Species List	Previously known from Archuleta County	Previously known from nearby counties	Previously known from San Juan National Forest in Archuleta Cty	Formerly tracked, now watchlisted
<i>Aletes lithophilus</i>	Rock-Loving Neoparrya	G2	S2	X		X (Saguache)	X	
<i>Astragalus missouriensis ssp. humistratus</i>	Missouri milkvetch ssp.	G5T2	S1?		X		X	
<i>Astragalus oocalycis</i>	Arboles milkvetch	G4	S2S3 (now S3S4)	Considered	X	X	X	X
<i>Astragalus proximus</i>	Aztec milkvetch	G4	S2	X	X		X	
<i>Botrychium echo</i>	Reflected moonwort	G2	S2	X		X (Conejos, San Juan, Montezuma, Hinsdale, Mineral)	X	
<i>Botrychium lunaria</i>	Common moonwort	G5	S2S3 (now S3S4)					X
<i>Botrychium pallidum</i>	Pale moonwort	G2	S2	X		X (Conejos, San Juan)	X	
<i>Botrychium pinnatum</i>	Northern moonwort	G4?	S1		X		X	
<i>Calochortus flexuosus</i>	Weak-stemmed mariposa lily	G4	S1		X		X	
<i>Cryptogramma stelleri</i>	Slender rock-brake	G5	S2		X		X	
<i>Draba smithii</i>	Smith's whitflow grass	G2	S2	X	X		X	
<i>Draba spectabilis var. oxyloba</i>	Draba	G3?T3Q	S3		X		X	
<i>Epipactis gigantea</i>	Helleborine	G3	S2		X		X	
<i>Epipactis gigantea</i>	Helleborine	G4	S2	X	X		X	
<i>Erigeron philadelphicus</i>	Philadelphia fleabane	G5	S1		X			

<i>Eriophorum altaicum</i> var. <i>neogaeum</i>	Altai cottongrass	G4T?	S3	X		X (San Juan, La Plata, Mineral, Hinsdale)	X	
<i>Gaura neomexicana</i> ssp. <i>neomexicana</i>	New Mexico butterfly weed	G3T3	S1		X			
<i>Goodyera repens</i>	Dwarf rattlesnake plantain	G5	S3 (now S3S4)					X
<i>Ipomopsis polyantha</i>	Pagosa gilia	G1	S1	X	X			
<i>Lesquerella pruinoso</i>	Pagosa bladderpod	G2	S2	X	X		X	
<i>Liatris ligulistylis</i>	Gay-feather	G5?	S1S2		X			
<i>Lilium philadelphicum</i>	Wood lily	G5	S3 (now S3S4)					X
<i>Limnorchis ensifolia</i>	Canyon bog orchid	G4?	S3		X		X	
<i>Machaeranthera coloradense</i>	Colorado tansy-aster	G2?	S2	X		X (San Juan, La Plata, Hinsdale, Rio Grande)	X	
<i>Pediocactus nowltonii</i>	Knowlton cactus	G1	S1		X			
<i>Penstemon lentus</i>	Abajo penstemon	G4Q	S2 (now S3S4)					X
<i>Phlox caryophylla</i>	Pagosa phlox	G4	S2		X		X	
<i>Pyrola picta</i>	Pictureleaf wintergreen	G4G5	S3 (now S3S4)					X
<i>Salix arizonica</i>	Arizona willow	?	S1	X (expected)		X (Conejos)		
<i>Townsendia glabella</i>	Gray's Townsend daisy	G2?	S2?		X			
<i>Viola pedatifida</i>	Prairie violet	G5	S2		X		X	

1. National Forest Sensitive Species list:

Ten plant species are listed as sensitive in the San Juan National Forest. Four of these are known from National Forest lands in Archuleta County. They are:

Astragalus proximus

Epipactis gigantea

Lesquerella pruinosa

Draba smithii

Five species on the sensitive list are known from the San Juan National Forest, but not from Archuleta County. However, their presence in other counties on the forest indicated that they should be considered as potentially occurring in Archuleta County.

Botrychium echo (known from Conejos, San Juan, Montezuma, Hinsdale and Mineral counties)

B. pallidum (known from Conejos and San Juan counties)

Eriophorum altaicum (known from San Juan, La Plata, Mineral, and Hinsdale counties)

Machaeranthera coloradense (known from San Juan, La Plata, Hinsdale, and Rio Grande counties)

Neoparrya (Aletes) lithophila (known from Saguache County.)

The tenth species on the sensitive list, *Ipomopsis polyantha* is known from only two locations, both on private lands in Archuleta County. It is included on the National Forest Sensitive Species List because of its extreme rarity and proximity to forest lands.

Salix arizonica is included on the sensitive list as “expected” (more likely than not) to occur on the San Juan National Forest. It was recently located for the first time in Colorado in Conejos County.

Astragalus oocalycis is not currently on the sensitive list, but was being considered for addition, and so determining its rarity was a high priority for this survey.

2. CNHP tracked plants

Thirteen plant species tracked by CNHP (including the first four Forest Service sensitive species mentioned above) were known from the San Juan National Forest in Archuleta County at the beginning of this survey. Following are their Natural Heritage ranks, number of occurrences in the county, and number of occurrences on the Forest within the county (see Appendix I for explanation of ranking system).

<i>Astragalus missouriensis</i> ssp. <i>humistratus</i>	G5T2 S1?	(1 of the 2 known occurrences in the county were on the National Forest)
<i>Astragalus oocalycis</i>	G4 S2S3	(2 of 11 on NF)
<i>Astragalus proximus</i> *	G4 S2	(2 of 6 on NF)
<i>Botrychium pinnatum</i>	G4? S1	(1 on NF)
<i>Calochortus flexuosus</i>	G4 S1	(1 on pvt/NF boundary)
<i>Cryptogramma stelleri</i>	G5 S2	(1 on NF)
<i>Draba smithii</i> *	G2 S2	(1 on NF)
<i>Draba spectabilis</i> var. <i>oxyloba</i>	G3?T3Q S3	(1 on NF)
<i>Epipactis gigantea</i> *	G3 S2	(2 on NF)
<i>Lesquerella pruinosa</i> *	G2 S2	(3 of 16 on NF)
<i>Limnorchis ensifolia</i>	G4? S3	(1 on NF)
<i>Phlox caryophylla</i>	G4 S2	(7 of 22 on NF)
<i>Viola pedatifida</i>	G5 S2	(1 on NF)

* also on Forest Sensitive List

Six additional rare plants tracked by CNHP were known from Archuleta County, but had not been located on National Forest Lands.

<i>Erigeron philadelphicus</i>	G5 S1
<i>Gaura neomexicana</i>	G3T3 S1
<i>Ipomopsis polyantha</i>	G1 S1
<i>Liatris ligulistylis</i>	G5? S1S2
<i>Pediocactus knowltonii</i>	G1 S1
<i>Townsendia glabella</i>	G2? S2?

The following species that were formerly tracked by CNHP have now been watchlisted:

Astragalus oocalycis
Botrychium lunaria
Goodyera repens
Lilium philadelphicum
Penstemon lentus
Pyrola picta

Targeted Inventory Areas

Targeted areas for survey were selected based on the likelihood that they harbored plant species of concern. Information used to predict rare plant locations included our knowledge of the plants' habitat requirements; vegetation, topography and geology maps;

aerial photos; existing records; and interviews with knowledgeable local residents. At the request of the Forest Service, highest priority was given to the lower elevation areas of the Forest, and to ascertaining the locations and rarity of the Arboles milkvetch, *Astragalus oocalycis*, that was being considered for listing as a U.S. Forest Service sensitive species. Other high priority plant species were selected based on the Forest Service Sensitive Species List and Colorado Natural Heritage Program Ranks (see Appendix I for explanation of ranking system).

Previously documented locations of rare plants were also targeted in order to verify and update these records by adding new information on precise location, habitat, and condition and size of the population. In several cases, new sub-populations were discovered.

Species Lists

In areas that were searched, whether or not rare plants were encountered, a list of plant species observed was prepared. Eighty-five species lists are included in this document as Appendix II.

Results

A total of 51 element occurrences were documented during this survey. Of these, 46 were plants, 3 natural communities, and 2 animals. Of the 46 plant occurrences, 29 were previously undocumented populations, while 17 were updates of known occurrences (Table 4). Element occurrence records will be entered into CNHP's Biological Conservation Data System (BCD) along with records that will be generated from the 2002 survey of Archuleta County. Summaries of element occurrence records are included in Appendix I.

Table 4. Element occurrences located in 2001.

Scientific Name	Common Name	Global Rank	State Rank	Number of previously undocumented occurrences located 2001	Number of occurrences updated 2001
<i>Astragalus missouriensis</i>	Missouri milkvetch	G5T2	S1?	1	1
<i>Astragalus oocalycis</i>	Arboles milkvetch	G4	S3S4	8	2
<i>Astragalus proximus</i>	Aztec milkvetch	G4	S2	2	2
<i>Botrychium echo</i>	Reflected moonwort	G2	S2	1	
<i>Botrychium hesperium</i>	Western moonwort	G3	S2	1	
<i>Botrychium lunaria</i>	Common moonwort	G5	S3S4		1
<i>Botrychium minganense</i>	Mingan moonwort	G4	S1		1
<i>Botrychium pinnatum</i>	Northern moonwort	G4?	S1		1
<i>Carex retrorsa</i>	Retorse sedge	G5	S1	2	
<i>Castilleja lineata</i>	Marsh-meadow	G4?	S1	1	
<i>Cryptogramma stelleri</i>	Slender rock-brake	G5	S2	1	1
<i>Draba smithii</i>	Smith's whitlow	G2	S2		1
<i>Epipactis gigantea</i>	Helleborine	G3	S2		1
<i>Erigeron philadelphicus</i>	Philadelphia	G5	S1	1	
<i>Goodyera repens</i>	Dwarf rattlesnake	G5	S3S4	3	
<i>Hippochaete variegata</i>	Variegated scouring	G5T?	S1	1	
<i>Lesquerella pruinos</i>	Pagosa bladderpod	G2	S2		3
<i>Limnorchis ensifolia</i>	Canyon bog orchid	G4??	S3		1
<i>Phlox caryophylla</i>	Pagosa phlox	G4	S2	5	1
<i>Polypodium hesperium</i>	Western polypody	G5	S1S2	1	
<i>Viola pedatifida</i>	Prairie violet	G5	S2		1
<i>Woodsia neomexicana</i>	New Mexico cliff	G4?	S2	1	

New occurrences were found for the following 12 species:

<i>Astragalus missouriensis</i> ssp. <i>humistrata</i>	G5T2 S1?
<i>Astragalus oocalycis</i>	G4 S2S3
<i>Astragalus proximus</i>	G4 S2
<i>Botrychium echo</i>	G2 S2
<i>Botrychium hesperium</i>	G3 S2
<i>Botrychium minganense</i>	G4 S1
<i>Carex retrorsa</i>	G5 S1
<i>Castilleja lineata</i>	G4? S1
<i>Cryptogramma stelleri</i>	G5 S2
<i>Erigeron philadelphicus</i>	G5 S1
<i>Goodyera repens</i>	G5 S3
<i>Hippochaete variegata</i>	G5T? S1

<i>Phlox caryophylla</i>	G4 S2
<i>Woodsia neomexicana</i>	G4? S2

Eight of those species were found for the first time in Archuleta County.

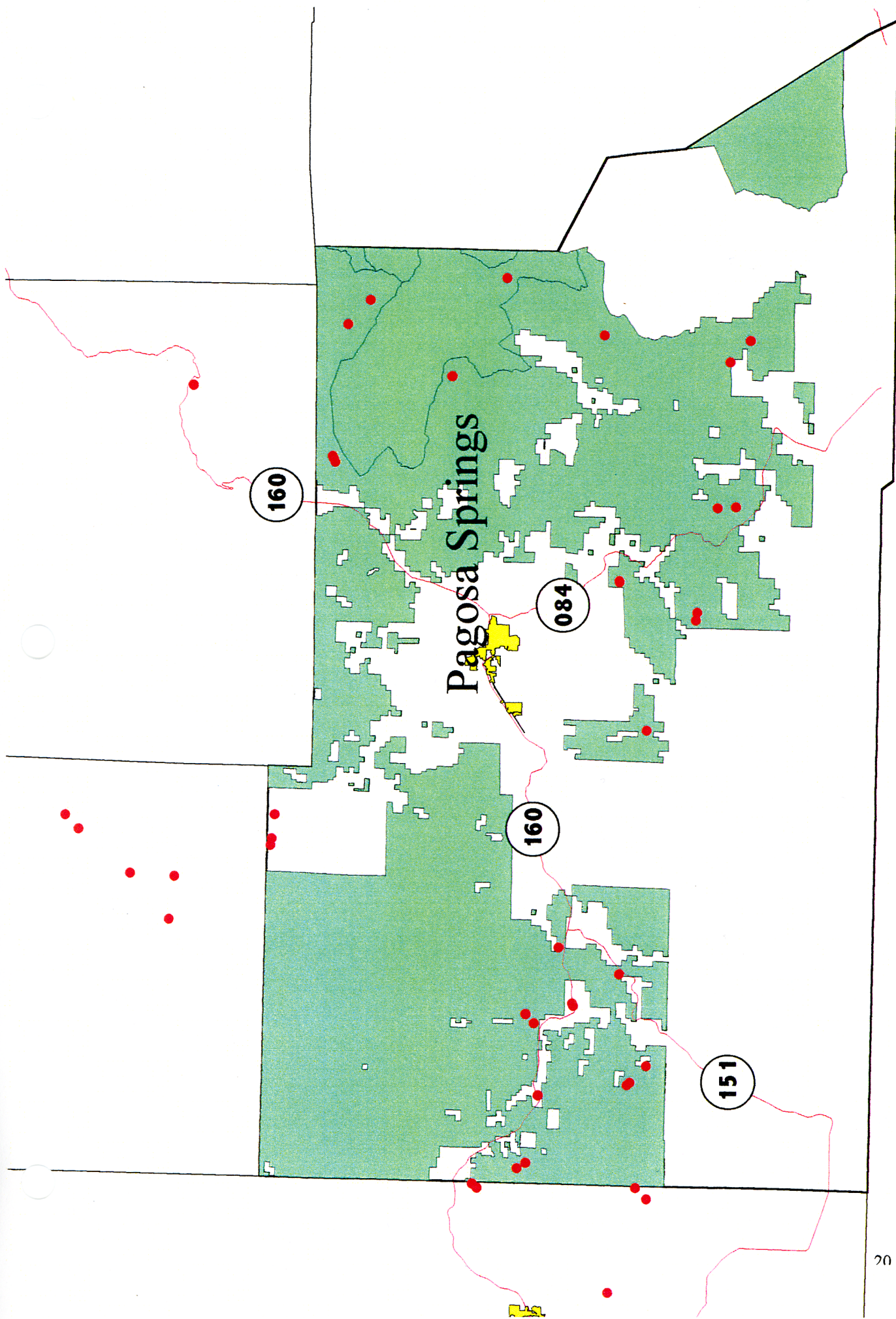
<i>Botrychium hesperium</i>	G3 S2
<i>Carex deweyana</i>	GU SU
<i>Carex retrorsa</i>	G5 S1
<i>Castilleja lineata</i>	G4? S1
<i>Goodyera repens</i>	G5 S3
<i>Hippochaete variegata</i>	G5T? S1
<i>Polypodium hesperium</i>	G5 S1S2
<i>Woodsia neomexicana</i>	G4? S2

Element occurrence records for the following species were updated:

Astragalus missouriensis var. *humistratus*
Astragalus oocalycis
Astragalus proximus
Botrychium lunaria
Botrychium pinnatum
Cryptogramma stelleri
Draba smithii
Epipactis gigantea
Lesquerella pruinosa
Limnorchis ensifolia
Phlox caryophylla
Viola pedatifida

Conclusion

The results of this survey indicate that the San Juan National Forest and Archuleta County are rich in plant biodiversity. Further research is warranted, especially in the early spring (April and May), to document species that were unidentifiable during this survey which began in June. Early blooming species that should be targeted in the spring include *Pediocactus knowltonii*, *Phlox caryophylla*, *Viola pedatifida*, *Astragalus missouriensis*, and *Calochortus flexuosus*.



Locations of New and Updated Plant Element Occurrence Records 2001

Ipomopsis polyantha, a species with only two confirmed locations in the world, was a high priority for this survey. Targeted areas included lower elevation areas in the Mancos Shale formation, particularly in the areas near the forest boundary north of Highway 160. No new locations were found on the National Forest. Areas of potential habitat were observed close to the Forest, but in all cases, the suitable habitat did not extend into the Forest. (Photo Copyright © 1999 by B. Jennings, from Spackman et al. 1997)



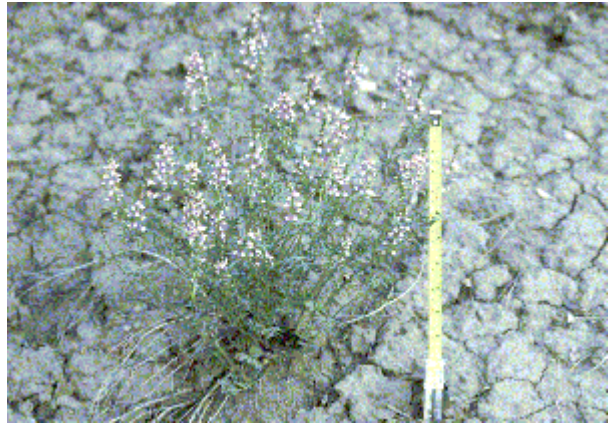
Lesquerella pruinosa records at Turkey Mountain and The Ant Hill PCAs were updated. A new sub-population was located at Turkey Mountain (Eight Mile Mesa Road), where *Lesquerella* was growing with two other rare species, *Phlox caryophylla* and *Astragalus missouriensis*. All three species seemed to prefer disturbed areas. The species blooms early, and seeds are dropped by May. By August, many new seedlings have sprouted. This is discussed further in the report on the monitoring of the O'Neal Hill population (Lyon in prep). (Photo Copyright © 1999 by C. Dawson, from Spackman et al. 1997)



Astragalus oocalycis was found to be abundant in the San Juan National Forest, both in Archuleta County and extending into La Plata County. Eight new locations of this very large, showy milkvetch were documented, representing many thousands of individuals. This species will now be moved to a “watchlist” status by CNHP. We recommend that it not be added to the forest’s sensitive species list. The photograph below was taken on the Pine-Piedra stock trail, south of Highway 160.



Astragalus proximus was documented in one new location near Piedra, and new sub-populations were located at Chimney Rock Archaeological Center. Plants were in fruit by early June. (Photo Copyright © 1999 by B. Jennings, from Spackman et al. 1997.)



Draba smithii was first located in Archuleta County along the East Fork of the San Juan River in 2000 by Ken Heil. The boundaries of this population were mapped in 2001 and were found to extend both upstream and downstream from the original location. The plants were especially abundant at a small seep in the steep cliffs north of the river, but were also found growing under shrubs on scree slopes. The plants were in fruit when they were observed in early August. (Photo Copyright © 1999 by L. Yeatts, from Spackman et al. 1997)

Astragalus missouriensis ssp. *humistrata* was found at its known site near Turkey Mountain, and in a new location on the Pine Piedra stock trail, growing with *Phlox caryophylla*. Plants were in fruit on June 22.





Cryptogramma stelleri was found at a known location along the East Fork of the San Juan River, and at a new location on cliffs above Quartz Creek. It grows in crevices of vertical cliffs and under shallow rock overhangs.

Phlox caryophylla was found in five new locations during this survey. It blooms very early, and the plants seen in June were withered and dried up. It should be looked for in April and May. Further search is expected to show that the species is abundant enough to be moved to a watchlist status.



Viola pedatifida was found in its previously known location along the grassy banks of Boone Creek in the Kenney Flats area. Although the previously mapped area was south of the forest road, one individual was found north of the road. Only a few plants were still flowering in early June. Areas upstream were searched, but no plants were found. (Photo Copyright © 1999 by S. Spackman, from Spackman et al. 1997.)



Goodyera repens, a small orchid previously unknown from the county, was found in three new locations in the Forest: on a steep, north facing slope above the East Fork of the San Juan River; in deep shady forest on the Quartz Creek trail, and on the Indian Creek trail. Associated species included *Goodyera oblongifolia*, *Orthilia secunda*, mosses, lichens, and several species of *Pyrola*.



Several species of *Botrychium* were found in the forest at Nipple Mountain and at Wolf Creek Pass. Identifications of our collections from Nipple Mountain made by fern expert Peter Root, include *B. hesperium*, *B. echo*, *B. minganense*, and possible *B. pinnatum* and *B. pallidum*. *B. lunaria* and *B. pinnatum* were found at Wolf Creek Pass. *Botrychiums* prefer areas that were previously disturbed such as clear-cuts or natural blow-downs in the spruce forest. Over one hundred individuals of various species were counted at Nipple Mountain by two people in two hours. Photo of *B. echo*, Copyright © 1999 by L. Yeatts, from Spackman et al. 1997.)



Castilleja lineata was found for the first time in Archuleta County at Pollito Canyon. The species is characterized by very densely pubescent stems, leaves and bracts. It was growing along the road to Pollito Canyon on the National Forest, with Arizona fescue, within a Ponderosa pine and Gambel oak community.

Woodsia neomexicana was another first occurrence for the Upper San Juan Basin. It was found in crevices of a rock outcrop along the Williams Creek trail in Hinsdale County. Only a few clumps were found; however, additional survey of rock outcrops and cliffs in the area is warranted.





Epipactis gigantea was found in a seep above the First Fork Road, with two other rare plants, *Limnorchis ensifolia*, and *Erigeron philadelphicus*. The seep area also supported river birch, Rocky Mountain willow and red-osier dogwood. Adjacent forest consisted of Douglas fir and Ponderosa pine.

Limnorchis ensifolia was found at the same location described above. More than 350 individuals were counted. Many other moist areas and seeps were surveyed for these orchids, with negative results.





Pediocactus knowltonii, although not known from the National Forest, is a high priority target that has been reported within a few miles of the Forest. This is the only federally listed species in Archuleta County, and will be a top priority for the 2002 survey of the County. (Photo Copyright © 1999 by B. Johnston, from Spackman et al. 1997.)

Draft
Potential Conservation Areas with Rare Plants
San Juan National Forest, Archuleta County
2001

Potential Conservation Area Site Profiles

Twenty-four Potential Conservation Areas (PCAs) containing rare plants have been identified on the San Juan National Forest in the area covered by this project. Twenty-two of these are in Archuleta County, including two that extend into Hinsdale County, and one that extends into La Plata County. In addition, we have included one site entirely in Hinsdale County, and one entirely in La Plata County.

These PCAs are preliminary, and are expected to be modified following the Upper San Juan Basin Biological Assessment to be carried out by CNHP in 2002.

The following profiles of these Potential Conservation Areas are arranged alphabetically within each Biodiversity Rank (see page 4 for an explanation of Natural Heritage ranks).

Each potential conservation area is described in a standard site report reflecting data fields in CNHP's Biological and Conservation Data System (BCD). The sections of this report and the contents are outlined and explained below.

Biodiversity Rank (B-rank): The overall significance of the site in terms of rarity of the Natural Heritage resources and the quality (condition, abundance, etc.) of the occurrences. For rank definitions, please see the **Natural Heritage Ranking System** section of this report.

Biodiversity Comments: A synopsis of the significant elements occurring in the site. A table within the site profile lists the element occurrences found within the site, their rarity ranks, the occurrence ranks, and federal and state agency special designations (FS and/or BLM indicate the species is on the National Forest and/or BLM sensitive species list.) The species or communities that are the primary elements of concern are printed in bold type within the table. When several entries are in bold type, any one of the occurrences would be sufficient to justify the site rank.

Protection Urgency Rank (P-rank): An estimate of the time frame in which conservation protection must occur. This rank generally refers to the need for a major change of protective status (i.e., ownership or designation as a natural area). For rank definitions, please see the **Natural Heritage Ranking System** section of this report.

Management Urgency Rank (M-rank): An estimate of the time frame in which conservation management must occur. Using best scientific estimates, this rank refers to the need for management in contrast to protection (legal, political, or administrative measures). For rank definitions, please see the **Natural Heritage Ranking System** section of this report.

Location: County, general location, usually in approximate air miles from the nearest town, and USGS 7.5 minute topographic map name.

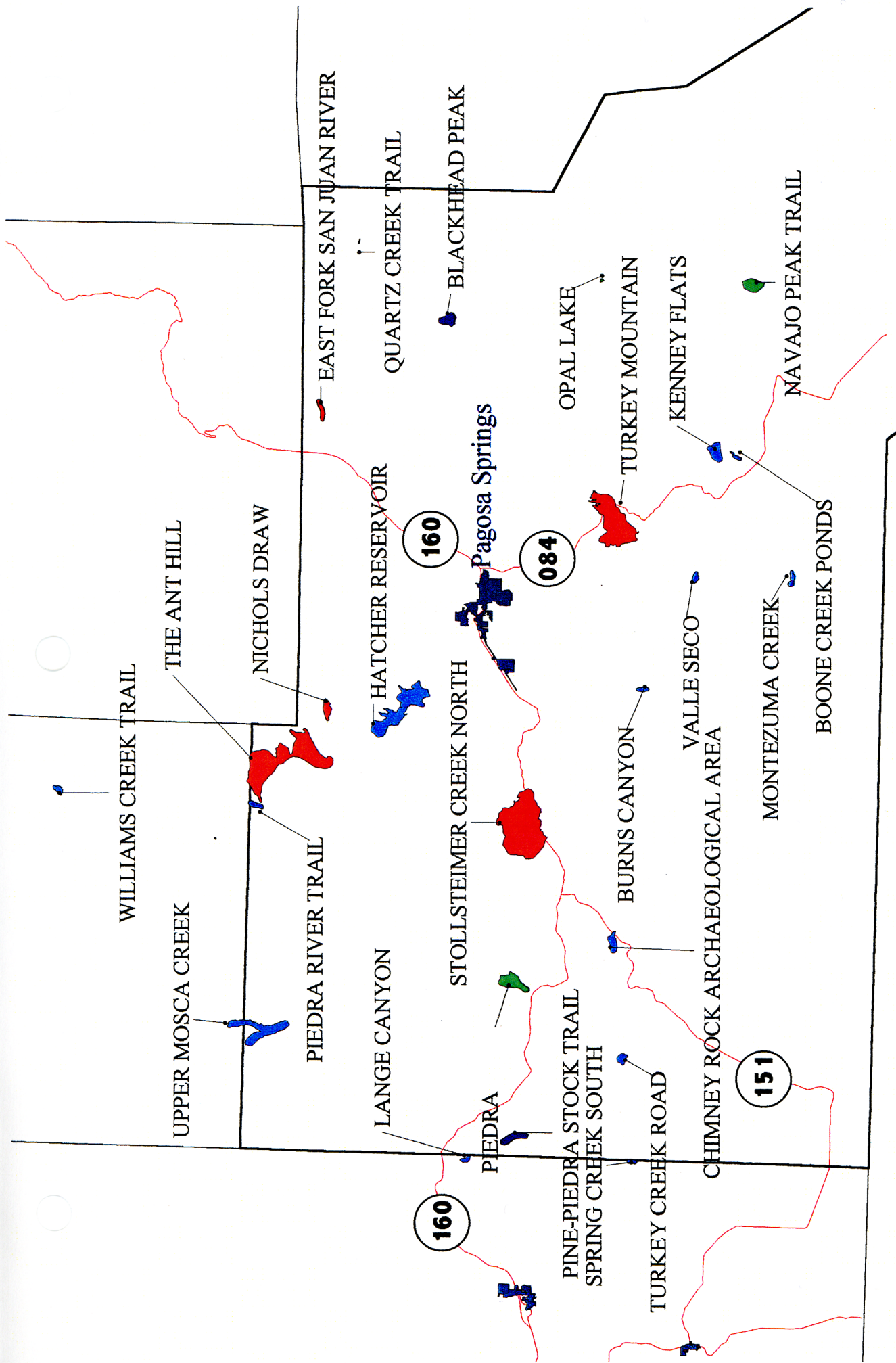
Legal Description: Township, range and section(s).

Elevation Range: Lowest and highest elevations in feet within the site boundaries, as drawn on U.S.G.S. topographic maps.

Size: Number of acres within the site boundary, as determined from GIS mapping (ArcView).

General Description: A brief narrative of the topography, vegetation, and current use of the potential conservation area.

Boundary Justification: Justification for the location of the potential conservation site planning boundary delineated in this report, including all known occurrences of natural heritage resources and, in some cases, adjacent lands required for their protection.



Potential Conservation Areas With Rare Plants

In San Juan National Forest, Archuleta County

Red: B2 Very High Significance
 Blue: B3 High Significance
 Green: B4 Moderate Significance
 Turquoise: B5 General Biodiversity Significance

East Fork San Juan River Potential Conservation Area

Biodiversity Rank: B2 Nearly irreplaceable.

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 Although not currently threatened, management may be needed in the future to maintain current quality of the element occurrences.

Location: Archuleta County, East Fork of the San Juan River, about 11 miles northeast of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Wolf Creek Pass. T36N R1E S5

Size: 112 acres

Elevation: 7800 to 8200 feet

General Description: This PCA includes a narrow canyon of the East Fork of the San Juan River. A Forest Road runs along the north side of the river. On the south side, which is quite difficult to access, the very steep north-facing slopes and cliffs of Tertiary volcanics harbor a rich diversity of species that thrive in the cool, moist site. This is the location of the state rare fern, slender rock-brake (*Cryptogramma stelleri*). The fern was found under shallow overhangs in the cliffs. On the opposite side of the river, above the road, the warmer south-facing slopes support the county's only known occurrence of Smith's whitlow-grass (*Draba smithii*). This species is abundant in a small mossy seep, and also is scattered on steep hillsides under shrubs, and in crevices of vertical cliffs. Another unusual, although not rare, plant in the site is mountain leaftail (*Pericome caudata*), a very showy member of the sunflower family that is abundant along the road.

Natural Heritage element occurrences at the East Fork San Juan River PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Draba smithii	Smith's whitlow-grass	G2	S2	FS	B
<i>Cryptogramma stelleri</i>	Slender rock-brake	G5	S2		B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA supports a good (B ranked) occurrence of Smith's whitlow-grass, a globally imperiled (G2) plant. A Colorado endemic, there are seventeen known occurrences of Smith's whitlow-grass, mostly in Mineral and Saguache counties. The PCA also has a good (B ranked) occurrence of the slender rockbrake, a state rare (S2) plant. Rattlesnake plantain (*Goodyera repens*), an orchid that was considered

vulnerable in Colorado at the time of this survey, was found among mosses on the ground. This species has since been placed on a “watchlist”.

Boundary Justification: The boundary is drawn to encompass the canyonsides of a section of the East Fork San Juan River. These steep, moist slopes support occurrences of two rare plants that require the shady, moist environment found in the narrow canyon. This site previously included broad valley areas upstream known as the East Fork Park PCA that are home to several high quality plant communities. The site has been divided into two to reflect their different landscapes and significant elements of biodiversity.

Protection Rank Comments: The East Fork San Juan River site is entirely within the San Juan National Forest. The Smith’s whitlow-grass is afforded some protection because it is listed as a Forest Service Sensitive Species.

Management Rank Comments: This area is a popular fishing spot. However, most activity is on the north shore, between the road and the river, and few fishermen access the steep cliff areas that harbor the rare plants. No non-native plants were observed at this site.

Nichols Draw Potential Conservation Area

Biodiversity Rank: B2 Nearly irreplaceable.

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 No current management needs are known.

Location: Archuleta County, access from Jack's Pasture Road, about 8 air miles northwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Pagosa Springs. T36N R2W S7; T36N R2.5W S12

Size: 163 acres

Elevation: 8120 to 8419 feet

General Description: The Nichols Draw PCA is characterized by hills of Mancos shale with 30 to 60% bare ground, and some grasses and forbs. Plant species on the site include June grass (*Koeleria macrantha*), hairy golden aster (*Heterotheca villosa*) and milkvetch (*Asclepias*) species (CNHP 2002). Vegetation at the site is mapped as ponderosa pine forest. The site was not visited in 2001, but is included in the areas targeted for inventory in 2002.

Natural Heritage element occurrences at the Nichols Draw PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Lesquerella pruinosa	Pagosa bladderpod	G2	S2	FS/BLM	B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: The Nichols Draw PCA supports a good (B ranked) occurrence of Pagosa bladderpod, a globally imperiled (G2) plant species. Approximately 350 to 400 individuals were observed at this site in 1995.

Boundary Justification: The PCA includes the occurrence and a small buffer of surrounding suitable habitat. The buffer is designed to protect the occurrence from direct disturbance such as trampling and allow additional individuals to become established over time. This boundary was drawn from maps in 1997, and was not visited in 2001. Further surveys of this site are planned for 2002, and may result in modification of the boundary.

Protection Rank Comments: The site is entirely on the San Juan National Forest, and the bladderpod location is known by forest personnel who discovered it.

Management Rank Comments: The site is lightly grazed by cattle and elk. The Forest Service biologist who documented the site in 1995 reported no impacts on the rare plants.

Stollsteimer Creek North Potential Conservation Area

Biodiversity Rank: B2 Nearly irreplaceable.

Protection Urgency Rank: P2 The private land in this PCA may be threatened by development within 5 years.

Management Urgency Rank: M2 Ongoing, recurrent management action (weed control) is necessary to maintain the current quality of element occurrences.

Location: Archuleta County, along State Highway 160 and north, about 11 miles west of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Lonetree Canyon, Chris Mountain. T34 N R3W S2-5, 8-11, 16; T35N R3W S32-34

Size: 3018 acres

Elevation: 6750 to 7614 feet

General Description: The site comprises disturbed areas along Highway 160 at Dyke, and foothills north of the highway to the National Forest boundary. It is characterized by low hills of Mancos Shale, with sparse to moderately dense vegetation including Rocky Mountain juniper (*Juniperus scopulorum*), skunkbrush (*Rhus trilobata*), rabbitbrush (*Chrysothamnus nauseosus*), chokecherry (*Prunus virginiana* var. *melanocarpa*), bitter brush (*Purshia tridentata*), Gambel oak (*Quercus gambelii*) and a mixture of native and introduced grasses and forbs, including Indian rice grass (*Oryzopsis hymenoides*), blue gramma (*Bouteloua gracilis*) and galleta (*Hilaria jamesii*). Upper slopes have ponderosa pine (*Pinus ponderosa*) and Gambel oak, with Douglas fir (*Pseudotsuga menziesii*) present on cooler sites. The PCA also includes an irrigated pasture on the south side of the highway.

Natural Heritage element occurrences at the Stollsteimer Creek North PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
<i>Ipomopsis polyantha</i>	Pagosa gilia	G1	S1	FS/BLM	B
<i>Lesquerella pruinosa</i>	Pagosa bladderpod	G2	S2	FS/BLM	B
<i>Lesquerella pruinosa</i>	Pagosa bladderpod	G2	S2	FS/BLM	E
<i>Lesquerella pruinosa</i>	Pagosa bladderpod	G2	S2	FS/BLM	D

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA includes one of only two known occurrences of the critically imperiled (G1) Pagosa gilia (*Ipomopsis polyantha*), in the entire world. The occurrence is ranked good (B). Although it is a roadside site, the continuing existence of this species requires that no location be lost. The site also contains good (B), unranked (E) and poor (D) occurrences of the Pagosa bladderpod (*Lesquerella pruinosa*), a globally imperiled (G2) plant.

Boundary Justification: The site encompasses three occurrences of the Pagosa bladderpod and one occurrence of the Pagosa gilia, along with some unoccupied or unsurveyed but suitable adjacent habitat. The boundaries incorporate areas of Mancos Shale and alluvial soils that are subject to some degree of natural erosion. Boundaries may be further refined when the private land within the area is surveyed in 2002.

Protection Rank Comments: The majority of this PCA is privately owned. There is a small area (approximately 100 acres) of National Forest on the north, and three isolated parcels of BLM land comprising about 320 acres, surrounded by private land. One occurrence of Pagosa bladderpod is located on BLM land. The other occurrences in this PCA are on private land within an area undergoing rapid development. Protection of this site should be a high priority. Although small isolated parcels of BLM land are often identified for disposal or exchange, BLM could help to preserve this site by continuing its ownership and giving special protection, such as designation as an Area of Critical Environmental Concern (ACEC), to these three very important parcels. The site is included in the area that The Nature Conservancy has identified as a high priority for conservation action in their Southern Rocky Mountain Ecoregional Plan.

Management Rank Comments: The Pagosa gilia population is extremely vulnerable to highway maintenance activities and grazing management. State highway personnel should be made aware of the location of the Pagosa gilia along Highway 160 and avoid spraying or other actions that would threaten the plants. The plants on the south side of the highway may be vulnerable to changes in grazing and irrigation management of the pasture in which they occur. Present management of this area is unknown.

The Ant Hill Potential Conservation Area

Biodiversity Rank: B2 Nearly irreplaceable

Protection Urgency Rank: P4 No threat is known for the foreseeable future. Ownership is divided between private land, part of which is in a conservation easement, and U. S. Forest Service land, including the O’Neal Hill Special Botanical Area. 510 acres are included in a registered State Natural Area.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences. Light grazing is ongoing within the site; however, it has not been shown to be negatively affecting the occurrence. Weed control by the Forest Service is ongoing.

Location: Northern Archuleta County, extending slightly into Hinsdale County, along the Piedra Road, about 12 miles northwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangles: Oakbrush Ridge, Chris Mountain. T36N R2.5W S2, 3; T36N R3W S1- 3, 11-13, 24-26; T37N R2.5W S 13; T37N R3W S22, 23.

Size: 2586 acres

Elevation: 8000 to 8800 feet

General Description: The Ant Hill PCA consists of gentle to steep slopes of the Mancos shale formation. Rare plants are found in somewhat disturbed areas with mixed grasses and forbs. Common associated species include curlyhead goldenweed (*Pyrocoma crocea*), fringed sage (*Artemisia frigida*), trailing fleabane (*Erigeron flagellaris*), rosy pussytoes (*Antennaria rosea*), hairy golden aster (*Heterotheca villosa*), shrubby cinquefoil (*Pentaphylloides floribunda*), wooly cinquefoil (*Potentilla hippiana*), and baby goldenrod (*Solidago nana*). Upper slopes are dominated by ponderosa pine (*Pinus ponderosa*), Gambel oak (*Quercus gambellii*) and Arizona fescue (*Festuca arizonica*).

Natural Heritage element occurrences at the Ant Hill PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Lesquerella pruinosa	Pagosa bladderpod	G2	S2	FS/BLM	A
Phlox caryophylla	Pagosa phlox	G4	S3		E

Eo rank is “Element Occurrence” Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This rank is based on an excellent (A ranked), large occurrence of the Pagosa bladderpod (*Lesquerella pruinosa*), a globally imperiled (G2) plant species.

It also contains an occurrence of the Pagosa phlox (*Phlox caryophylla*), a plant considered vulnerable in Colorado, last seen at this location in 1985.

Boundary Justification: The boundary encompasses the populations of Pagosa bladderpod and Pagosa phlox, and provides a buffer to limit direct disturbances. The site includes the O’Neal Hill Special Botanical Area and a conservation easement for the bladderpod held by The Nature Conservancy. Adjacent private property with suitable habitat for the bladderpod is included in the site, although it has not yet been surveyed.

Protection Rank Comments: A Special Botanical Area was established by the Forest Service in 1993 after it was purchased from The Nature Conservancy, and should assure conservation of the Pagosa bladderpod population at that site. One parcel of private land is held in a conservation easement by The Nature Conservancy. Adjacent private lands with suitable habitat have not been surveyed to our knowledge. This should be a high priority during the 2002 Archuleta County Biological Survey. Part of the site falls within the area identified as a high priority for protection by the Nature Conservancy in their Southern Rocky Mountains Ecoregional Plan.

Management Rank Comments: Ongoing monitoring of the Pagosa bladderpod population at the O’Neal Hill Special Botanical Area by the Forest Service seeks to determine what if any impacts grazing may have on the bladderpod. Monitoring was begun in 1999, and continued under a revised plan implementing permanent plots in 2001. The Nature Conservancy continues to monitor the easement property on private land. Several patches of yellow toadflax (*Linaria vulgaris*) are present in the site. The Forest Service has been treating these areas with herbicides, but has not succeeded in eradicating the weeds. Further surveys during the flowering season (April and May) of the Pagosa phlox could reveal that the population is more extensive.

Turkey Mountain Potential Conservation Area

Biodiversity Rank: B2 Nearly irreplaceable

Protection Urgency Rank: P3 Moderate urgency. Although there is a definable threat to the area, it is unknown when it will affect the occurrence. Private land in this area is likely to be developed as the county grows.

Management Urgency Rank: M3 Ongoing, recurrent management action including control of exotic species would help to maintain the current quality of element occurrences.

Location: Archuleta County, northwest flank of Turkey Mountain, about 6 miles southeast of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Serviceberry Mountain. T34N R1W S8-11, 14-17, 20-22

Size: 1803 acres

Elevation: 7400 to 7858 feet

General Description: This PCA includes the gentle northwest slopes of Turkey Mountain, on soils derived from the Mancos Shale Formation. Dominant vegetation includes ponderosa pine (*Pinus ponderosa*), Gambel oak (*Quercus gambelii*) and flat meadow openings. Other common species include Oregon grape (*Mahonia repens*), serviceberry (*Amelanchier alnifolia*), orange sneezeweed (*Dugaldia hoopesii*), western wheatgrass (*Pascopyrum smithii*), redroot buckwheat (*Eriogonum racemosum*), yarrow (*Achillea lanulosa*), Louisiana sagewort (*Artemisia ludoviciana*), and Easter daisy (*Townsendia* sp.). Three rare plants were observed along Eight Mile Mesa Road, which runs through the site, in 2001. Pagosa bladderpod (*Lesquerella pruinosa*) and Missouri milkvetch (*Astragalus missouriensis* var. *humistrata*) were growing together in disturbed areas just off an unmapped spur road, while Pagosa phlox (*Phlox caryophyllaea*) was found on the sparsely vegetated roadside.

Natural Heritage element occurrences at the Turkey Mountain PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
<i>Lesquerella pruinosa</i>	Pagosa bladderpod	G2	S2	FS/BLM	B
<i>Lesquerella pruinosa</i>	Pagosa bladderpod	G2	S2	FS/BLM	B
<i>Lesquerella pruinosa</i>	Pagosa bladderpod	G2	S2	FS/BLM	E
<i>Astragalus missouriensis</i> var. <i>humistrata</i>	Missouri milkvetch	G5T1	S1		B

<i>Phlox caryophylla</i>	Pagosa phlox	G4	S3		B
<i>Phlox caryophylla</i>	Pagosa phlox	G4	S3		B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA includes two good (B ranked) occurrences of Pagosa bladderpod (*Lesquerella pruinoso*), a globally imperiled (G2) plant. It also contains an unranked (E) occurrence of the same species, a good occurrence of a globally imperiled variety of Missouri milkvetch (*Astragalus missouriensis* var. *humistratus*), and two good occurrences of Pagosa phlox (*Phlox caryophylla*), which is vulnerable in Colorado (S3).

Boundary Justification: The boundary encompasses occurrences of three rare plants and adjacent suitable habitat, as well as providing a buffer to limit direct disturbance. Further surveys in this area are planned for 2002, and may result in expanding this boundary.

Protection Rank Comments: The site is primarily within the San Juan National Forest, but contains some private land. The proximity of the PCA to Pagosa Springs suggests that development of the private land may be a potential threat. The Pagosa bladderpod plants that occur on National Forest are afforded some protection by their listing as a forest sensitive species.

Management Rank Comments: All three rare plant populations observed in 2001 may be vulnerable to road maintenance or modifications. Exotic species observed at the site were smooth brome (*Bromus inermis*), Canada thistle (*Cirsium arvense*), alfalfa (*Medicago sativa*), yellow sweet clover (*Melilotus officinalis*), salsify (*Tragopogon dubius*), Kentucky bluegrass (*Poa pratensis*) and dandelion (*Taraxacum officinalis*). Other concerns within the site are grazing management and OHV use. Further surveys during the flowering season (April and May) of Pagosa phlox could reveal that the population is more extensive.

Blackhead Peak Potential Conservation Area

Biodiversity Rank: B3 High biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 Although not currently threatened, management may be needed in the future to maintain current quality of the element occurrences.

Location: Archuleta County, about 12 miles east of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Blackhead Peak. T35N R1E S1, 12; T35N R2E S6, 7

Size: 224 acres

Elevation: 10,200 to 10,800 feet

General Description: This PCA encompasses a clear cut in a spruce forest. New tree growth is about 3 to 5 feet tall. Moonworts (*Botrychiums*) were found in moist areas under grasses and forbs. The dominant tree species at the site is Engelmann spruce (*Picea engelmannii*). Understory species include rock jasmine (*Androsace septentrionalis*), Parry's thistle (*Cirsium parryi*), Sierra corydalis (*Corydalis caseana*), fireweed (*Epilobium angustifolium*), wild strawberry (*Fragaria virginiana*), pennycress (*Noccaea montana*), Whipple penstemon (*Penstemon whippleanus*), bracken fern (*Pteridium aquilinum* var. *pubescens*), and Carolina bugbane (*Trautvetteria caroliniensis*).

Natural Heritage element occurrences at the Blackhead Peak PCA.

Scientific name	Common name	Global	State rank	Fed/state	Eo rank*
Botrychium echo	Reflected moonwort	G2	S2	FS	E
<i>Botrychium hesperium</i>	Western moonwort	G3	S2		E
<i>Botrychium minganense</i>	Mingan moonwort	G4	S1		E
<i>Botrychium pinnatum</i>	Northern moonwort	G4?	S1		E
<i>Botrychium minganense</i>	Common moonwort	G5	S2S3		E

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA supports occurrences of *Botrychium echo*, a globally imperiled (G2) species, as well as *B. hesperium* a vulnerable (G3) species, and *B. minganense* and *B. pinnatum*, both state rare (S1) species. All occurrences are ranked E, or extant, since several consecutive years' observation are necessary to assign an element occurrence rank for *Botrychiums*. Photocopies of collections made in 2001 were sent to

Dr. Peter Root at the Denver Botanical Garden for identification. He, in turn, sent the sheets to Peter Zika in Seattle, for further confirmation. The species listed above are those confirmed by both botanists.

Boundary Justification: The boundary encompasses the known locations of the several species of moonworts. The entire clearcut area has potential habitat for this genus, but only areas that were surveyed were included in this draft boundary. Further survey could lead to enlarging the PCA.

Protection Rank Comments: The PCA is entirely within the San Juan National Forest. The reflected moonwort is afforded some protection by its listing as a forest sensitive species.

Management Rank Comments: No current management needs are known.

Pine Piedra Stock Trail Potential Conservation Area

Biodiversity Rank: B3 High biodiversity significance.

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M3 Ongoing, recurrent management action including control of exotic species would help to maintain the current quality of element occurrences.

Location: Archuleta County, south of Highway 160, about 25 miles west of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Pargin Mountain. T34N R5W S6, 7; T34N R6W S1.

Size: 235 acres

Elevation: 8000 to 8750 feet

General Description: This PCA is located along a section of the historic Pine-Piedra Stock Trail. The portion of the trail within this PCA follows a north-south ridgetop through ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), pinyon pine (*Pinus edulis*), Rocky Mountain juniper (*Juniperus scopulorum*), and mixed shrub communities. The ridge top is composed of the Tertiary San Juan Formation.

Natural Heritage element occurrences at the Pine-Piedra stock trail PCA.

Scientific name	Common name	Global rank	State rank	fed/state status	Eo rank*
<i>Astragalus missouriensis</i> var. humistratus	Missouri milkvetch	G5T1	S1		B
Phlox caryophylla	Pagosa phlox	G4	S3		A

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA contains a good (B-ranked) occurrence of Missouri milkvetch, a Colorado endemic plant subspecies considered vulnerable (T2) throughout its range. This is the seventh known occurrence of the subspecies. The PCA also has an excellent (A-ranked) occurrence of Pagosa phlox, a species that is considered vulnerable (S3) in Colorado. Pagosa phlox is known from Colorado and New Mexico. Of the 29 occurrences in Colorado, all but two are in Archuleta County.

Boundary Justification: The boundary is drawn to include two sub-populations of Missouri milkvetch and Pagosa phlox. A small amount of additional potential habitat around the occurrences is included to allow for movement of the plants over time.

Protection Rank Comments: The PCA is entirely within the San Juan National Forest. Neither of the rare plants has special protection.

Management Rank Comments: The PCA appears to be in good condition, but continued monitoring and control of weeds would help to maintain this high quality. Exotic species encountered on the trail (not necessarily within the PCA) include musk thistle (*Carduus nutans*), Kentucky bluegrass (*Poa pratensis*), dandelion (*Taraxacum officinale*), smooth brome (*Bromus inermis*), orchard grass (*Dactylis glomerata*), salsify (*Tragopogon dubius*), and alfalfa (*Medicago sativa*). Further surveys during the flowering season (April and May) of Pagosa phlox could reveal that the population is more extensive.

Navajo Peak Trail Potential Conservation Area

Biodiversity Rank: B4 Moderate biodiversity significance.

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M2 Ongoing, recurrent management action (weed control) is necessary to maintain the current quality of element occurrences.

Location: Archuleta County, Price Lakes area, about 19 miles southeast of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Chromo, Chama Peak. T33N R2E S16, 17, 20, 21, 28, 29

Size: 281 acres

Elevation: 9400 to 9600 feet

General Description: This PCA is located in the Price Lakes area, which encompasses numerous small lakes, beaver ponds and associated wetlands. Vegetation in moist forested areas includes white fir (*Abies concolor*), Engelmann spruce (*Picea engelmannii*), and aspen (*Populus tremuloides*), with an understory of snowberry (*Symphoricarpos oreophilus*). Other common wetland plants are horsetails (*Equisetum arvense*), American speedwell (*Veronica americana*). Exotic species include Canada thistle (*Cirsium arvense*) and several others (see below). Northern leopard frogs (*Rana pipiens*), a species formerly tracked by CNHP but now watchlisted, were found in abundance in small ponds.

Natural Heritage element occurrences at the Navajo Peak Trail PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Carex retrorsa	Retrorsed sedge	G5	S1		B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA contains a good occurrence of retrorsed sedge (*Carex retrorsa*), a plant that is very rare (S1) in Colorado, although not threatened globally.

Boundary Justification: The boundary was drawn to include the occurrence of retrorsed sedge with a buffer of approximately 1000 feet. There are hundreds of other small lakes, streams and wetlands in the area with potential habitat for retrorsed sedge that are not included within this boundary. Further survey could result in enlargement of this site.

Protection Rank Comments: The PCA is entirely within the San Juan National Forest, and partly within the South San Juan Wilderness, which should provide adequate protection.

Management Rank Comments: Management is needed to control exotic plant invasion. Canada thistle (*Cirsium arvense*) is present in the PCA, and in some areas it is abundant. Other exotics observed in the PCA include musk thistle (*Carduus nutans*), common plantain (*Plantago major*), tarweed (*Madia glomerata*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), nodding beggartick (*Bidens cernua*), and dandelion (*Taraxacum officinale*). Non-native pasture grasses such as smooth brome (*Bromus inermis*), orchard grass (*Dactylis glomerata*), Kentucky bluegrass (*Poa pratensis*), and meadow timothy (*Phleum pratense*) are common along roads and trails.

Opal Lake Potential Conservation Area

Biodiversity Rank: B4 Moderate biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, wetlands around Opal Lake, about 15 miles east-southeast of Pagosa Springs in the San Juan National Forest.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Harris Lake, Elephant Head Rock. T34N R2E S8, 9

Size: 11 acres

Elevation: 8800 feet

General Description: This PCA comprises the wetlands around Opal Lake, with diverse riparian and wetland vegetation. There are several beaver ponds just below the lake. The lake is a popular destination for hikers, via a pack trail to the north of the PCA. Retrorse sedge was found on the east shore of the lake.

Natural Heritage element occurrences at the White Creek at Opal Lake PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
<i>Carex retrorsa</i>	Retrorse sedge	G5	S1		B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: The PCA contains a good (B ranked) occurrence of a plant that is extremely rare (S1) in Colorado.

Boundary Justification: The boundary was drawn to include the wetlands around Opal Lake, where an occurrence of retrorse sedge (*Carex retrorsa*) was found, and a small part of White Creek that contains similar habitat.

Protection Rank Comments: The site falls entirely within the San Juan National Forest. No special protection is in place, and should not be required if present management and level of public use continue.

Management Rank Comments: The area is a popular destination for day hikers. Vegetation around the lake could be impacted if visitation is increased. Exotic plant species observed at Opal Lake were Canada thistle (*Cirsium arvense*) and meadow timothy (*Phleum pratense*). Management of these and other potential invasive species that can be transported by hikers and horses may be needed in the future. In addition, hydrological processes originating outside of the planning boundary, including water quality, quantity, timing and flow are critical for maintaining the quality of the riparian and wetland communities.

Piedra Potential Conservation Area

Biodiversity Rank: B4 Moderate biodiversity significance.

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, north of Highway 160 at Piedra on First Fork Road, about 17 miles west of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Chimney Rock. T34N R4W S5, 8; T35N R4W S32

Size: 410 acres

Elevation: 6600 to 7800 feet

General Description: The Piedra PCA is located on the hillsides above the Piedra River, in ponderosa pine and Douglas fir forest. A seep above First Fork Road about a tenth of a mile north of the National Forest boundary is the site of three rare plants, the helleborine (*Epipactis gigantea*), canyon bog orchid (*Limnorchis ensifolia*) and Philadelphia fleabane (*Erigeron philadelphicus*). This small area has a powerline running through it and a road adjacent. The Aztec milkvetch (*Astragalus proximus*) was found on the west side of the river, in ponderosa pine and Gambel oak forest, south of the Lower Piedra campground.

Natural Heritage element occurrences at the Piedra Site PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
<i>Astragalus proximus</i>	Aztec milkvetch	G4	S2	FS/BLM	B
<i>Epipactis gigantea</i>	Helleborine	G4	S2	FS/BLM	B
<i>Epipactis gigantea</i>	Helleborine	G4	S2	FS/BLM	E
<i>Limnorchis ensifolia</i>	Canyon bog orchid	G4G5T3?	S3		B
<i>Erigeron philadelphicus</i>	Philadelphia fleabane	G5	S1		C

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA is home to four plant species that are rare in Colorado, although apparently secure globally. The site rank is based on good (B ranked) occurrences of Aztec milkvetch (*Astragalus proximus*) and helleborine (*Epipactis gigantea*), both rare in Colorado (S2). There is also a good occurrence of the canyon bog orchid (*Limnorchis ensifolia*), vulnerable in Colorado (S3) and a fair (C ranked) occurrence of Philadelphia fleabane (*Erigeron philadelphicus*), which is very rare in Colorado (S1). The Aztec milkvetch occurs in New Mexico and twelve known locations in Colorado.

Boundary Justification: The boundary includes the four element occurrences, located on the hillsides on both sides of the Piedra River, north of State Highway 160. The site was enlarged in 2001 to include the new location of Aztec milkvetch.

Protection Rank Comments: The site is entirely within the San Juan National Forest, and should need no further protection beyond that provided by the sensitive species status of Aztec milkvetch and helleborine.

Management Rank Comments: The seep area is vulnerable to maintenance of the power line that passes through it, and is also dependent on continuation of the present hydrology. Coordination between power company personnel and the Forest Service when maintenance activities are planned would help prevent future damage to the rare plants. The seep hydrology is an important consideration when activities such as logging are initiated by the National Forest in this area.

Boone Creek Ponds Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, Kenney Flats area, about 13 air miles south-southeast of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Edith. T33N R1E S13, 18

Size: 46 acres

Elevation: 7600 to 7760 feet

General Description: This PCA is a small, intermittent drainage between two stock ponds. The moist stream banks of Boone Creek are home to the prairie violet (*Viola pedatifida*), growing along with a variety of grasses, sedges and forbs. Only a few plants were still blooming in early June.

Natural Heritage element occurrences at the Boone Creek Ponds PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Viola pedatifida	Prairie violet	G5	S2		C

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA supports a fair (C ranked) occurrence of the prairie, or bird's foot, violet, a species that is rare (S2) in Colorado.

Boundary Justification: The boundary is drawn to encompass the occurrence of the prairie violet and includes a buffer to limit direct disturbance and allow for movement of the population both upstream and downstream.

Protection Rank Comments: The site is entirely within the San Juan National Forest, and should be adequately protected as long as forest ownership continues. Forest personnel are aware of this occurrence.

Management Rank Comments: Future surveys should include other streams in the area, and be conducted early in the season. Stock ponds upstream of the occurrence are degraded and may cause the invasion of exotic species along the stream. Exotics found in the site were bull thistle (*Cirsium vulgare*), Kentucky bluegrass (*Poa pratensis*), and

alsike clover (*Trifolium hybridum*). Some areas north of this PCA have been invaded by tarweed (*Madia glomerata*), and this may eventually pose a threat to the entire area. Other exotics noted upstream of the site are yellow sweet clover (*Melilotus officinalis*), and chamomile (*Matricaria perforata*).

Burns Canyon Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, about 8 miles south-southwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Oakbrush Hill. T34N R2W S29

Size: 67 acres

Elevation: 7120 to 7400 feet

General Description: This PCA occupies a small side canyon (Pollito Canyon) off Burns Canyon. It is forested with ponderosa pine and Gambel oak, and includes openings with Arizona fescue (*Festuca arizonica*). Marsh meadow Indian paintbrush (*Castilleja lineata*) was found in a grassy opening near the Pollito Canyon Road which runs through the site.

Natural Heritage element occurrences at the Burns Canyon PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Castilleja lineata	Marsh meadow Indian paintbrush	G4?	S1		C

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This site contains a fair (C-ranked) occurrence of marsh meadow Indian paintbrush, a plant that is extremely rare in Colorado (S1). Although the species is known from New Mexico and Arizona, this is the first occurrence to be documented in the CNHP database for Colorado.

Boundary Justification: The boundary was drawn to enclose the occurrence of marsh meadow Indian paintbrush and includes some adjacent potential habitat to allow for movement of the plants over time. Future surveys of the area may result in enlargement of the site.

Protection Rank Comments: The site is within the San Juan National Forest. Private land to the north of the PCA was not surveyed, but contains similar habitat.

Management Rank Comments: Although the area is in relatively good condition, a few exotic species were found nearby, including common mullein (*Verbascum thapsus*),

cheatgrass (*Bromus tectorum*), smooth brome (*Bromus inermis*), yellow sweet clover (*Melilotus officinalis*), and Kentucky bluegrass (*Poa pratensis*). Monitoring of the population is recommended to detect weed invasion or change in the quality of the occurrence.

Chimney Rock Archaeological Area Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance.

Protection Urgency Rank: P5 Land protection is adequate. The site is within the San Juan National Forest, and is designated a Research Natural Area.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Chimney Rock Archaeological Area is located on the west side of State Highway 151, about 3 miles south of the intersection with Highway 160, and about 14 air miles west-southwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Chimney Rock. T34N R4W S20, 21

Size: 178 acres

Elevation: 6240 to 6800 feet

General Description: This PCA is located within the Chimney Rock Archaeological Site, an area of Indian ruins that receives many visitors each year. The area includes steep slopes of Mancos Shale with barren areas on convex slopes. Ponderosa pine and Gambel oak grow on concave slopes and in the draws. An interesting inversion of plant communities occurs here, with pinyon and juniper occupying the higher elevations, while ponderosa pine is found at the lower elevations (Schmoll 1932). Aztec milkvetch was found on these barren lower slopes and flats, while at higher elevations it is replaced by the similar but more common bent milkvetch (*Astragalus flexuosus*).

Natural Heritage element occurrences at the Chimney Rock Archaeological Area PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Astragalus proximus	Aztec milkvetch	G4	S2		A

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: The Chimney Rock Archaeological Area is home to an excellent (A ranked) occurrence of the state rare (S2) Aztec milkvetch (*Astragalus proximus*). The population consists of at least 6 sub-populations that are separated by less than a mile from each other. Four of these sub-populations were documented in 2001. The Aztec milkvetch occurs in New Mexico and twelve known locations in Colorado. During a re-visit to the site in May, 2002, a year of extreme drought conditions, no *Astragalus proximus* was found at the locations where it was documented in 2001. A historic record of another rare milkvetch, *Astragalus iodopetalus*, dates from

a 1934 collection by Hazel Schmoll, but this species has not been relocated in recent years.

Boundary Justification: The boundary is drawn to encompass six known sub-populations of the Aztec milkvetch, with some surrounding potential habitat to allow for expansion or movement of the population over time. The boundary was enlarged in 2001 to include four new sub-populations.

Protection Rank Comments: This PCA is located in the San Juan National Forest, and has been designated a Research Natural Area. Further protection should not be necessary.

Management Rank Comments: Although the site attracts many visitors, the locations of the milkvetch are not heavily used. Any future development of roads or the visitor center should take into account the locations of the Aztec milkvetch. A number of exotic plants were noted in the site, including smooth brome (*Bromus inermis*), cheatgrass (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), littlepod false flax (*Camelina microcarpa*), prickly lettuce (*Lactuca serriola*), alfalfa (*Medicago sativa*), and yellow sweet clover (*Melilotus officinalis*). Weed eradication and monitoring of the rare plant population would benefit the long-term survival of Aztec milkvetch at this location.

Hatcher Reservoir Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance.

Protection Urgency Rank: P3 Moderate urgency. Although there is a definable threat to the area, it is unknown when it will affect the occurrence.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, four miles northwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Pagosa Springs. T36N R2.5W S23-26, 36; T36N R2W S 30-32; T35N R2W S6

Size: 1384 acres

Elevation: 7720 to 8160 feet

General Description: This PCA is characterized by xeric to somewhat mesic conditions in ponderosa pine savanna and Gambel oak communities. The loamy soils are derived from Mancos Shale. Other plants that occur in the site include mules ears (*Wyethia* sp.), fleabane (*Erigeron* sp.), and bluegrass (*Poa* spp). This site was identified in 1985, and was not visited in 2001, so current condition is not known.

Natural Heritage element occurrences at the Hatcher Reservoir PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Phlox caryophylla	Pagosa phlox	G4	S3		A

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: The Hatcher Reservoir PCA is home to an excellent (A-ranked) occurrence of Pagosa phlox, a species that is vulnerable (S3) in Colorado.

Boundary Justification: The boundary includes the occurrence and a small buffer of suitable habitat to allow for additional individuals to become established over time.

Protection Rank Comments: The site includes a combination of private and San Juan National Forest lands. Plans of private landowners are unknown, but could include development and other activities that would threaten the rare plant population.

Management Rank Comments: There are many roads in the site, as well as heavy grazing. Further surveys during the flowering season (April and May) of the Pagosa phlox could reveal that the population is more extensive.

Kenney Flats Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, about 13 miles south southeast of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Edith. T33 N R1E S7, 12

Size: 227 acres

Elevation: 7600 to 7900 feet

General Description: Ponderosa pine savanna, with large grassy meadows, and less Gambel oak than in most in Archuleta County. The site has some excellent stands of bunchgrasses, including Arizona fescue (*Festuca arizonica*), needle and thread (*Stipa comata*), Indian rice grass (*Oryzopsis hymenoides*), mountain muhly (*Muhlenbergia montana*), and pine dropseed (*Blepharoneuron tricholepis*). However, the quality of the understory is patchy, and non-native species such as smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) are also present. Of greater concern are large areas of tarweed (*Madia glomerata*) that have invaded in the broad swales.

Natural Heritage element occurrences at the Kenney Flats PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Hippochaete variegata	Variegated scouring rush	G5T?	S1		C

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA has a fair (C-ranked) occurrence of a state rare (S1) plant. Variegated scouring rush is a smaller plant than its close relative, common scouring rush (*H. hyemalis*), and can be found from moderately low to high elevations. At this PCA it was growing in mud surrounding a stock pond. Although the species is widespread throughout the United States and Canada, there are only two other known locations in Colorado. However, it may be more common and just overlooked. Other nearby stock ponds and muddy areas should be checked for this plant.

Boundary Justification: The boundary is drawn to include the occurrence of variegated scouring rush, and areas uphill from the pond that contain exotic plant species that may threaten this occurrence.

Protection Rank Comments: The PCA is within the San Juan National Forest, and should be adequately protected as long as forest ownership is maintained.

Management Rank Comments: Large areas of tarweed (*Madia glomerata*) have invaded the broad swales in the non-forested areas uphill from the pond where the variegated scouring rush was found. Although this exotic plant has not been identified as a noxious weed, the degree to which it poses a threat to natural communities should be investigated.

Lange Canyon Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance.

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 Although not currently threatened, management may be needed in the future to maintain current quality of the element occurrences.

Location: La Plata County, just west of the Archuleta County line, about 26 air miles west of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Baldy Mountain. T35N R6W S25, 26

Size: 61 acres

Elevation: 7400 to 7600 feet

General Description: This PCA includes a sagebrush opening in a ponderosa pine and Gambel oak forest. Mountain big sage (*Artemisia tridentata* ssp. *vaseyana*) and black sage (*A. nova*), dominate the small opening. Other species present were Arboles milkvetch (*Astragalus oocalycis*), yellow milkvetch (*A. flavus*), longflower rabbitbrush (*Chrysothamnus depressus*), rubber rabbitbrush (*C. nauseosus*), sandburg bluegrass (*Poa secunda*), Louisiana sagewort (*Artemisia ludoviciana*), redroot buckwheat (*Eriogonum racemosum*), tapertip onion (*Allium acuminatum*), and Gray's biscuitroot (*Lomatium grayi*). The milkvetches are commonly found on Mancos Shale derived soils containing selenium.

Natural Heritage element occurrences at the Lange Canyon PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Phlox caryophylla	Pagosa phlox	G4	S3		A

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA supports an excellent (A ranked) occurrence of a plant that is considered vulnerable in Colorado (S3). The species is also known from New Mexico. Of the 29 known occurrences in Colorado, all but two are in Archuleta County. When this site was surveyed on June 20, 2001, most of the plants were past flowering and drying up. There were thousands of individuals present.

Boundary Justification: The PCA boundary represents the area around the occurrence of the Pagosa phlox and adjacent similar habitat that was not surveyed. It includes the

entire sagebrush dominated opening in the forest, allowing for expansion of the population over time.

Protection Rank Comments: The PCA includes both San Juan National Forest land and adjacent private land that was not surveyed. It is expected that the Pagosa phlox population continues on the private land.

Management Rank Comments: Although a road runs through the site, no non-native species were observed in the PCA. Further surveys during the flowering season (April and May) of the Pagosa phlox could reveal that the population is more extensive.

Montezuma Creek Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P3 Moderate urgency. Although there is a definable threat to the area, it is unknown when it will affect the occurrence.

Management Urgency Rank: M4 Although not currently threatened, management may be needed in the future to maintain current quality of the element occurrences.

Location: Archuleta County, north of Montezuma Creek on County Road 522, about 14 air miles south of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Edith, Trujillo. T33N R1W S30, 31; T33N R1.5 W S25, 36

Size: 88 acres

Elevation: 7400 feet

General Description: This PCA consists of dry, open, south facing slopes with about 30% bare ground, on both sides of a county road. Vegetation includes Gambel oak, grasses and forbs. The site was not visited in 2001.

Natural Heritage element occurrences at the Montezuma Creek PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Astragalus proximus	Aztec milkvetch	G4	S2	FS/BLM	A

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA encompasses an excellent (A ranked) occurrence of the Aztec milkvetch, a species that is rare (S2) in Colorado. The population is comprised of five sub-populations. The Aztec milkvetch occurs in New Mexico and twelve known locations in Colorado.

Boundary Justification: The boundary was drawn to encompass five sub-populations of Aztec milkvetch, and provide a small buffer around them.

Protection Rank Comments: The majority of the site is on private land, along a public road. The northern 20% of the PCA is on the San Juan National Forest.

Management Rank Comments: No current management needs are known.

Piedra River Trail Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, about 15 miles northwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Oakbrush Ridge

Size: 94 acres

Elevation: 7600 to 7800 feet

General Description: This PCA includes a small area along the Piedra River trail, which runs through a canyon of the Piedra River just south of the Hinsdale County line. The western polypody was found at the moist base of large boulders on the west side of the river. Other species in the area were Reeves' bladderfern (*Cystopteris reevesiana*), starry false solomonseal (*Maianthemum stellatum*), and northern bedstraw (*Galium boreale*). The adjacent hillsides were dry and covered with oak and other shrubs.

Natural Heritage element occurrences at the Piedra River Trail PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Polypodium hesperium	Western polypody	G5	S1S2		C

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA supports a small, C ranked population of the western polypody, a fern that is rare in Colorado (S1S2).

Boundary Justification: The boundary is drawn to include the occurrence of the Western polypody and some adjacent area with similar habitat, to allow for expansion or movement of the population over time.

Protection Rank Comments: The PCA is within the San Juan National Forest.

Management Rank Comments: Although it is located along a popular hiking trail, there are no known direct threats to the western polypody occurrence. Several non-native species were found along the trail, however, including burdock (*Arctium minus*), orchard grass (*Dactylis glomerata*), quackgrass (*Elytrigia repens*), and toadflax (*Linaria vulgaris*). Monitoring and controlling the spread of the invasive weeds would benefit this occurrence.

Quartz Creek Trail Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P5 Protection of the site is adequate.

Management Urgency Rank: M4 No current management needs are known.

Location: Archuleta County, about 1.5 miles west of the Continental Divide, and 17 air miles east northeast of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Summit Peak. T36N R2E S22

Size: 6 acres

Elevation: 9680 10,000 feet

General Description: This PCA encompasses a small area of cliffs along Quartz Creek by a waterfall. Steller's cliff brake was found growing in horizontal crevices in the rock, with mosses and mat saxifrage (*Cilaria austromontana*), kept moist by spray from the falls, or in one place by a seep in an alcove. The surrounding area is forested with spruce (*Picea engelmannii*) and fir (*Abies lasiocarpa*), with an understory of whortleberry (*Vaccinium* spp.). The entire area is in excellent condition. The only non-native plants observed were a few red clover plants along the lower part of the trail.

Natural Heritage element occurrences at the Quartz Creek Trail PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Cryptogramma stelleri	Steller's cliff brake	G5	S2		B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA contains a good (B ranked) occurrence of steller's cliff brake, a fern that is rare in Colorado (S2), although globally secure.

Boundary Justification: The boundary is drawn to encompass the cliffs that support the Steller's cliff brake. Although the continuation of the current hydrology is essential to the long-term survival of the cliff brake, the larger watershed was not included in the boundary.

Protection Rank Comments: The site is within the South San Juan Wilderness of the San Juan National Forest, and is well protected.

Management Rank Comments: This trail is popular with hikers, but damage to the cliff brake is unlikely due to its location on cliff sides that are difficult to access. The rare plant population depends on the continued supply of water to the site.

Spring Creek South Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 No current management needs are known.

Location: Archuleta and LaPlata counties, about 25 miles west southwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Pargin Mountain. T34N R6W S27

Size: 47 acres

Elevation: 7400 to 7600 feet

General Description: This PCA is located along Spring Creek, in an area dominated by pinyon, juniper and Gambel oak. Forest Road 537 runs adjacent to creek. The state rare plant, Pagosa phlox, was found in disturbed areas along road, with western wheatgrass (*Pascopyrum smithii*), squirreltail (*Elymus elymoides*), trailing fleabane (*Erigeron flagellaris*), tapertip onion (*Allium acuminatum*), Louisiana sagewort (*Artemisia ludoviciana*), Arboles milkvetch (*Astragalus oocalycis*), and purple springparsely (*Cymopterus purpureus*). Exotic species in the site included storksbill (*Erodium cicutarium*), yellow sweet clover (*Melilotus officinalis*), and cheatgrass (*Bromus tectorum*).

Natural Heritage element occurrences at the Spring Creek PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
<i>Phlox caryophylla</i>	Pagosa phlox	G4	S2		B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA contains a good (B ranked) occurrence of a plant that is rare (S2) in Colorado, although globally secure.

Boundary Justification: The boundary is drawn to encompass the element occurrence along Spring Creek.

Protection Rank Comments: The site is entirely within the San Juan National Forest.

Management Rank Comments: No urgent management needs are known. Although there are exotic species along the road, control of these would need to take into account possible impacts on the Pagosa phlox. Further surveys during the flowering season (April and May) of the Pagosa phlox could reveal that the population is more extensive.

Turkey Creek Road Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta County, about 22 miles west-southwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Pargin Mountain. T34N R5W S21, 28

Size: 99 acres

Elevation: 6800 to 7000 feet

General Description: This PCA includes a grassy sagebrush opening in ponderosa pine and Gambel oak forest at the end of Forest Road 615A. About 200 individuals of Pagosa phlox, a state rare plant, were observed at the site. Some of the other plants found in the open area include black sage (*Artemisia nova*), Arboles milkvetch (*Astragalus oocalycis*), longflower rabbitbrush (*Chrysothamnus depressus*), King's lupine (*Lupinus kingii*), western wheatgrass (*Pascopyrum smithii*), Rocky Mountain milkvetch (*Astragalus scopulorum*), trailing fleabane (*Erigeron flagellaris*), redroot buckwheat (*Eriogonum racemosum*) and mule's ears (*Wyethia* sp.). Exotic species at the site were cheatgrass (*Bromus tectorum*) and yellow sweet clover (*Melilotus officinalis*).

Natural Heritage element occurrences at the Turkey Creek Road PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Phlox caryophylla	Pagosa phlox	G4	S2		B

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA contains a good (B ranked) occurrence of Pagosa phlox, a plant that is considered rare (S2) in Colorado.

Boundary Justification: The boundary is drawn to encompass the area where the Pagosa phlox was found.

Protection Rank Comments: The PCA is entirely within the San Juan National Forest. Oil and gas development could pose potential threats to this occurrence.

Management Rank Comments: Oil and gas development or new road construction could lead to potential management concerns, such as weed invasion, to the rare plants at this site. Further surveys during the flowering season (April and May) of the Pagosa phlox could reveal that the population is more extensive.

Upper Mosca Creek Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance.

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Archuleta and Hinsdale Counties.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Granite Peak, Bear Mountain.
T36N R5W S1, 2, 11-14; T37N R5W S36

Size: 655 acres

Elevation: 7860 to 9400 feet

General Description: This PCA is comprised of the riparian area along Upper Mosca Creek. Forested uplands have spruce and fir, while the upper watershed has been logged. There are many open meadows along the drainage, where several hundred individuals of a globally vulnerable plant species, *Draba spectabilis*, were located in 1995.

Natural Heritage element occurrences at the Upper Mosca Creek PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Draba spectabilis	Draba	G3?T3Q	S3		E

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: The Upper Mosca Creek PCA contains an unranked (E) occurrence of a plant subspecies that is vulnerable (G3?T3Q) throughout its range.

Boundary Justification: The boundary encompasses the occurrence and a buffer of approximately 1000 feet.

Protection Rank Comments: The PCA is located in the Bear Park Potential Research Natural Area of the San Juan National Forest. The RNA has not yet been designated but has been highly recommended. Designation would change this rank to P5.

Management Rank Comments: There is evidence of impacts from logging at the site, but it appears to be recovering. Access roads to timber sale areas may provide potential for non-native species invasion.

Valle Seco Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P4 No threat is known for the foreseeable future.

Management Urgency Rank: M4 Although not currently threatened, management may be needed in the future to maintain current quality of the element occurrences.

Location: Archuleta County, about 9 miles south southeast of Pagosa Springs

Legal Description: U.S.G.S. 7.5 minute quadrangle: Serviceberry Mountain. T33N R1W S6

Size: 74 acres

Elevation: 6900 to 7200 feet

General Description: This PCA comprises a sagebrush meadow and an open, east-facing hillside within a ponderosa pine and Gambel oak forest. Soils are derived from Mancos shale, and support several shale-loving species, including Arboles milkvetch (*Astragalus oocalycis*) and Hayden's milkvetch (*Astragalus haydenianus*). Other plants at the site included squirreltail (*Elymus elymoides*), hairy golden aster (*Heterotheca villosa*), trailing fleabane (*Erigeron flagellaris*), fernleaf biscuitroot (*Lomatium dissectum*), and prickly pear cactus (*Opuntia fragilis*).

Natural Heritage element occurrences at the Valle Seco PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Phlox caryophylla	Pagosa phlox	G4	S2		C

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA contains a fair (C ranked) occurrence of Pagosa phlox, a plant that is rare in Colorado (S2).

Boundary Justification: The boundary encompasses the location of the Pagosa phlox, with a small buffer to allow for movement of the population over time..

Protection Rank Comments: The site is within the San Juan National Forest.

Management Rank Comments: Non-native species observed at the site include crested wheatgrass (*Agropyrum cristatum*) and Kentucky bluegrass (*Poa pratensis*). Further surveys during the flowering season (April and May) of the Pagosa phlox could reveal that the population is more extensive.

Williams Creek Trail Potential Conservation Area

Biodiversity Rank: B5 General biodiversity significance

Protection Urgency Rank: P5 Protection of the site is adequate.

Management Urgency Rank: M3 Ongoing, recurrent management action would help to maintain the current quality of element occurrences.

Location: Hinsdale County, along Williams Creek, about 22 miles north northwest of Pagosa Springs.

Legal Description: U.S.G.S. 7.5 minute quadrangle: Cimarrona Peak. T38N R3W S4, 9

Size: 82 acres

Elevation: 8500 to 9550 feet

General Description: This PCA is in a mixed conifer forest along Williams Creek, with some barren rock outcrops. Dominant trees include white fir (*Abies concolor*), subalpine fir (*Abies lasiocarpa*), and Rocky Mountain maple (*Acer glabrum*). A popular hiking trail follows the creek. The state rare New Mexico cliff fern was found in crevices of rock outcrops, growing along with brittle fern (*Cystopteris fragilis*), woodsorrel (*Oxalis* sp.), Porter's oniongrass (*Melica porteri*), and hairy golden aster (*Heterotheca villosa*). Rattlesnake plantain (*Goodyera repens*), a small orchid that was considered vulnerable (S3) in Colorado at the time of this survey, was found along the trail to Indian Creek. This species has since been placed on a "watchlist" and is no longer tracked by CNHP.

Natural Heritage element occurrences at the Williams Creek Trail PCA.

Scientific name	Common name	Global rank	State rank	Fed/state status	Eo rank*
Woodsia neomexicana	New Mexico cliff fern	G4?	S2		C

Eo rank is "Element Occurrence" Rank

** Bold type indicates the primary element of concern upon which the PCA rank is based.

Biodiversity comments: This PCA supports a small, fair (C ranked) population of New Mexico cliff fern, as species that is rare (S2) in Colorado.

Boundary Justification: The boundary is drawn to encompass the location of the New Mexico cliff fern, and some adjacent habitat that has not been thoroughly surveyed.

Protection Rank Comments: The PCA is almost entirely within the San Juan National Forest, and most of the site is within the Weminuche Wilderness. The ferns should not need additional protection since they are located on steep cliffs that are not normally used by hikers.

Management Rank Comments: The forest is generally in excellent condition, with few weeds. However some non-native plants were observed along the trail, probably brought in by horses. These include cheatgrass (*Bromus tectorum*), meadow timothy (*Phleum pratense*), common plantain (*Plantago major*), common dandelion (*Taraxacum officinale*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), Kentucky bluegrass (*Poa pratensis*), and probably most serious, hound's tongue (*Cynoglossum officinale*). Enforcement of regulations requiring weed-free hay should help to prevent further weed invasion. Continued searches in other nearby rocky areas could reveal more of the cliff fern, and raise the rank of this occurrence.

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Appendix I
Element Occurrence Records
San Juan National Forest, Archuleta County, 2001

SURVEY DATE: 2001-06-17

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: HWY 160 AT YELLOWJACKET CREEK

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N005W SECTION 10

ELEMENT OCCURRENCE RANK: A

COMMENTS: ESTIMATE 1000+ PLANTS; ALL PLANTS IN FLOWER

GENERAL DESCRIPTION: SOUTH FACING HILLSIDES ABOVE HWY 160. SEE APPENDIX II FOR MORE COMPLETE SPECIES LIST.

ELEVATION: 6039 FT TO 6080 FT

PROTECTION COMMENTS: [LYON 2001:] OCURRENCE IS WELL ABOVE ROAD, NO THREATS NOTED

OWNER: PRIVATE. OCCURRENCE IS VISIBLE FROM ROAD

SURVEY DATE: 2001-06-17

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: TURKEY CREEK ROAD (FR 616A)

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N005W SECTION 21, 28

ELEMENT OCCURRENCE RANK: A

COMMENTS: THOUSANDS OF PLANTS IN RELATIVELY UNDISTURBED SITE. PLANTS IN FLOWER. SCARCE TO ABSENT IN CENTER OF LARGE MEADOWS PAST END OF ROAD. ABUNDANT TO MODERATELY ABUNDANT ON EDGES AND RIDGES. ALSO ON SIDES OF SEVERAL SMALL TRIBUTARIES OF GOOSE CR.

GENERAL DESCRIPTION: CLEARINGS IN PONDEROSA PINE-GAMBEL OAK COMMUNITY. ASSOCIATED SPP. INCLUDE ARTEMISIA NOVA, PHLOX CARYOPHYLLA, CHRYSOTHAMNUS DEPRESSUS, LUPINUS KINGII, PASCOPYRUM (AGROPYRON*) SMITHII, STIPA NELSONII, ANTENNARIA DIMORPHA, ALLIUM ACUMINATUM, ASTRAGALUS SCOPULORUM, COLLOMIA LINEARIS, OPUNTIA FRAGILIS, GAYOPHYTUM DIFFUSUM, ERIGERON FLAGELLARIS, ERIOGONUM RACEMOSUM, SPHAERALCEA COCCINEA, KOELERIA MACRANTHA, CIRSIUM TRACYI. SEE APPENDIX II FOR MORE COMPLETE SPECIES LIST.

ELEVATION: 6,800 FT TO 7,000 FT.

PROTECTION COMMENTS: OCURRENCE IS WELL ABOVE ROAD, NO THREATS NOTED

MANAGEMENT AND PROTECTION COMMENTS: NO MANAGEMENT NEEDS NOTED

OWNER: USFS, SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-17

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: TURKEY CREEK ROAD (FR 616A)

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N005W SECTION: 21, 28

ELEMENT OCCURRENCE RANK: A

COMMENTS: THOUSANDS OF PLANTS IN RELATIVELY UNDISTURBED SITE. PLANTS IN FLOWER. SCARCE TO ABSENT IN CENTER OF LARGE MEADOWS PAST END OF ROAD. ABUNDANT TO MODERATELY ABUNDANT ON EDGES AND RIDGES. ALSO ON SIDES OF SEVERAL SMALL TRIBUTARIES OF GOOSE CR.

GENERAL DESCRIPTION: CLEARINGS IN PONDEROSA PINE-GAMBEL OAK COMMUNITY. ASSOCIATED SPP. INCLUDE ARTEMISIA NOVA, PHLOX CARYOPHYLLA, CHRYSOTHAMNUS DEPRESSUS, LUPINUS KINGII, PASCOPYRUM (AGROPYRON*) SMITHII, STIPA NELSONII, ANTENNARIA DIMORPHA, ALLIUM ACUMINATUM, ASTRAGALUS SCOPULORUM, COLLOMIA LINEARIS, OPUNTIA FRAGILIS, GAYOPHYTUM DIFFUSUM, ERIGERON FLAGELLARIS, ERIOGONUM RACEMOSUM, SPHAERALCEA COCCINEA, KOELERIA MACRANTHA, CIRSIIUM TRACYI. .

ELEVATION: 6,800 FT.TO 7,000 FT.

OWNER: USFS SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-17

SPECIES: PHLOX CARYOPHYLLA

SURVEYSITE: TURKEY CREEK ROAD (FR 616A)

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N005W SECTION: 28

ELEMENT OCCURRENCE RANK: B

COMMENTS: HUNDREDS OF PLANTS, NOT COUNTED. PLANTS IN LATE FLOWER, WILTED

GENERAL DESCRIPTION: BLACK SAGE MEADOW WITHIN PONDEROSA PINE-GAMBEL OAK FOREST. ASSOC. SPP. INCLUDE: ARTEMISIA NOVA, CHRYSOTHAMNUS DEPRESSUS, ASTRAGALUS OOCALYCIS, LUPINUS KINGII, PASCOPYRUM (AGROPYRON*)SMITHII, STIPA NELSONII, ANTENNARIA DIOMORPHA, ALLIUM ACUMINATUM, ASTRAGALUS SCOPULORUM, COLLOMIA LINEARIS, OPUNTIA FRAGILIS, GAYOPHYTUM DIFFUSUM, ERIGERON FLAGELLARIS, ALLIUM ACUMINATUM, ERIOGONUM RACEMOSUM, SPHAERALCEA COCCINEA, KOELERIA MACRANTHA, CIRSIUM TRACYI. .

ELEVATION: 6840 FT

MANAGEMENT AND PROTECTION COMMENTS: MAJOR USE APPEARS TO BE HUNTING

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-18

SPECIES: ASTRAGALUS PROXIMUS

SURVEYSITE: HIGHWAY 160

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: -34N004W SECTION: 7

ELEMENT OCCURRENCE RANK: D

COMMENTS: SMALL POPULATION IN AREA VULNERABLE TO ROAD
MAINTENANCE.
ABOUT 25 PLANTS

GENERAL DESCRIPTION: BARREN CLAY SOILS OF ROAD CUT, WEEDY

ELEVATION: 6476 FT

MANAGEMENT AND PROTECTION COMMENTS: POPULATION COULD BE
THREATENED BY ROAD MAINTENANCE

OWNER: U.S. HIGHWAY RIGHT OF WAY

SURVEY DATE: 2001-06-08

SPECIES: ASTRAGALUS PROXIMUS

SURVEYSITE: CHIMNEY ROCK ARCHAEOLOGICAL AREA

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: 034N004W SECTION: 20, 21

ELEMENT OCCURRENCE RANK: A

COMMENTS: PLANTS IN FRUIT. EST. 350 INDIV. IN 4 SUBPOPULATIONS

GENERAL DESCRIPTION: FAIRLY FLAT AREA NEAR ROAD TO VISITOR CENTER AND HIGHWAY 151, WITH SCATTERED JUNIPERUS SCOPULORUM, PRUNUS VIRGINIANA VAR. MELANOCARPA, QUERCUS GAMBELLII, ARTEMISIA FRIGIDA, HETEROTHECA VILLOSA, ORYZOPSIS HYMENOIDES, STIPA COMATA, BROMUS TECTORUM; ALSO LEVEL AREA SOUTH OF VISITOR CENTER AND GENTLE SLOPE NORTH OF ROAD TO RUINS. . AT SLIGHTLY HIGHER ELEVATIONS, ASTRAGALUS PROXIMUS IS REPLACED BY THE SIMILAR A. FLEXUOSUS.

ELEVATION: 6560 FT TO 7000 FT

MANAGEMENT AND PROTECTION COMMENTS: SOME BROMUS TECTORUM IN SITE

PROTECTION COMMENTS: SHOULD BE PROTECTED WITHIN ARCHAEOLOGICAL AREA. THERE IS MINIMAL FOOT TRAFFIC IN ASTRAGALUS SITES.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-09

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: TURKEY CREEK ROAD

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N005W SECTION: 34

ELEMENT OCCURRENCE RANK: A

COMMENTS: NOT COUNTED, BUT ASTRAGALUS IS ABUNDANT, PROBABLY 1000+

GENERAL DESCRIPTION: DRY, RELATIVELY FLAT OPEN AREA WITHIN PONDEROSA PINE-GAMBEL OAK COMMUNITY, WITH ARTEMISIA TRIDENTATA SSP. VASEYANA, ALLIUM ACUMINATUM, CASTILLEJA, KOELERIA, LOMATIUM GRAYI, CIRSIUM TRACYI, PINUS EDULIS, JUNIPERUS SCOPULORUM, PENSTEMON GLABRESCENS, PHLOX LONGIFOLIA, SPHAERALCEA COCCINEA, TETRANEURIS IVESIANA, WYETHIA X MAGNA. .

ELEVATION: 6700 FT TO 6740 FT

MANAGEMENT AND PROTECTION COMMENTS: SOME BROMUS TECTORUM AND MELILOTUS OFFICINALIS.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-10

SPECIES: ASTRAGALUS PROXIMUS

SURVEYSITE: LOWER PIEDRA CAMPGROUND ROAD

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: 034N004W SECTION: 8

ELEMENT OCCURRENCE RANK: B

COMMENTS: ABOUT 100 PLANTS, IN FRUIT.

GENERAL DESCRIPTION: PONDEROSA PINE-QUERCUS GAMBELLII
COMMUNITY ADJACENT TO BARREN SHALE AREA. ASSOC. SPP.:
ARTEMISIA FRIGIDA, ARTEMISIA LUDOVICIANA, ARTEMISIA TRIDENTATA
SSP. VASEYANA, ASTER GLAUCODES, CAREX GEYERI, CERCOCARPUS
MONTANUS, CHAENACTIS DOUGLASII, CHAETOPAPP A ERICOIDES,
CIRSIIUM TRACYI, ERIGERON FLAGELLARIS, ERIOGONUM RACEMOSUM,
HETEROTHECA VILLOSA, JUNIPERUS SCOPULORUM, KOELERIA
MACRANTHA, MAHONIA REPENS, MAIANTHEMUM STELLATUM,
MELILOTUS OFFICINALIS, ORYZOPSIS HYMENOIDES, PASCOPYRUM
SMITHII, POA FENDLERIANA, PSEUDOTSUGA MENZIESII,
STIPA COMATA, WYETHIA X MAGNA

ELEVATION: 6600 FT TO 6700 FT

MANAGEMENT AND PROTECTION COMMENTS: NO MANAGEMENT NEEDS
NOTED . AREA IS DIFFICULT TO ACCESS ABOVE STEEP ROAD CUT

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-11

SPECIES: VIOLA PEDATIFIDA

SURVEYSITE: BOONE CREEK

COUNTY: ARCHULETA

QUADRANGLE: EDITH

LEGAL: T33N R1W SECTION 13

ELEMENT OCCURRENCE RANK: C

COMMENTS: COUNTED 45 PLANTS IN MAIN POPULATION SOUTH OF ROAD,
AND ONE INDIVIDUAL NORTH OF ROAD. ONLY A FEW STILL IN FLOWER.

GENERAL DESCRIPTION: GRASSY BANKS OF SMALL CREEK. ALSO
SEARCHED UPPER POND PER DIRECTIONS FROM SARA BRINTON, UNABLE
TO FIND

ELEVATION: 7640 TO 7680 FT.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-11

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: VALLE SECO

COUNTY: ARCHULETA

QUADRANGLE: SERVICEBERRY MOUNTAIN

LEGAL: 033N001W SECTION: 6

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: HUNDREDS OF PLANTS; SOME AGROPYRON CRISTATUM; PROBABLY MORE ON ADJACENT UTE LAND, NOT SURVEYED

GENERAL DESCRIPTION: SPARSELY VEGETATED HILLSIDE WITH ARTEMISIA TRIDENTATA SSP. VASEYANA, PHLOX CARYOPHYLLA, ASTRAGALUS HAYDENIANUS, ERIGERON FLAGELLARIS, HETEROTHECA VILLOSA.

ELEVATION: 7000 FT TO 7200 FT

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-11

SPECIES: PHLOX CARYOPHYLLA

SURVEYSITE: VALLE SECO

COUNTY: ARCHULETA

QUADRANGLE: SERVICEBERRY MOUNTAIN

LEGAL: 033N001W SECTION: 6

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: ONLY COUNTED ABOUT 50 PLANTS,
BUT THEY WERE PAST FLOWERING AND DRIED UP.

GENERAL DESCRIPTION: SPARSELY VEGETATED HILLSIDE WITH
ARTEMISIA TRIDENTATA SSP. VASEYANA, ASTRAGALUS OOCALYCIS,
ASTRAGALUS HAYDENIANUS, ERIGERON FLAGELLARIS, HETEROTHECA
VILLOSA.

ELEVATION: 7000 FT

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-18

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: HIGHWAY 160 SOUTH OF PIEDRA

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: 034N004W SECTION: 7

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: ABOUT 60 PLANTS OBSERVED

GENERAL DESCRIPTION: SOUTH FACING SLOPES ABOVE HIGHWAY AND
DISTURBED AREA BETWEEN ROADS.

ELEVATION: 6500 FT

MANAGEMENT AND PROTECTION COMMENTS: POPULATION ON SOUTH
SIDE OF HIGHWAY VULNERABLE TO HIGHWAY MAINTENANCE

OWNER: SAN JUAN NATIONAL FOREST, U.S. HIGHWAY RIGHT OF WAY

SURVEY DATE: 2001-06-19

SPECIES: PHLOX CARYOPHYLLA

SURVEYSITE: SPRING CREEK ROAD

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N006W SECTION: 23

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: ABOUT 200+ PLANTS, DENSE IN DISTURBED ROADSIDE. PLANTS IN LATE FLOWER. PROBABLY SCATTERED THROUGHOUT IN ADJACENT GRASSY AREAS, NOT CHECKED.

GENERAL DESCRIPTION: DISTURBED AREA AT ROADSIDE AND ADJACENT GRASSY AREA, WITH PASCOPYRUM (AGROPYRON) SMITHII, MELILOTUS OFFICINALIS, ALLIUM ACUMINATUM, BROMUS TECTORUM, IN PINUS EDULIS, JUNIPERUS SCOPULORUM, QUERCUS GAMBELLII COMMUNITY. ALSO ERODIUM CICUTARIUM, CYMPTERUS PURPUREUS, ARTEMISIA LUDOVICIANA, ELYMUS ELYMOIDES, ERIGERON FLAGELLARIS, ASTRAGALUS OOCALYCIS.

ELEVATION: 7800 FT

MANAGEMENT AND PROTECTION COMMENTS: PLANTS ALONG ROAD MAY BE VULNERABLE TO ROAD MAINTENANCE

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-19

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: SPRING CREEK ROAD

COUNTY: ARCHULETA|LA PLATA

QUADRANGLE: PARGIN MOUNTAIN|BAYFIELD

LEGAL: 034N006W SECTION: 23, 26, 27, 34, 33, 32, 31

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: THOUSANDS OF PLANTS ALL ALONG ROAD, APPROXIMATELY 100 TO 300 IN EACH 0.1 MILE STRETCH. ABSENT FROM AREAS WITH HEAVY VEGETATION

GENERAL DESCRIPTION: OPEN PINYON-JUNIPER AND ARTEMISIA COMMUNITY WITH DIVERSE GRASSES AND FORBS.

ELEVATION: APPROX 6500 FT TO 8000 FT

MANAGEMENT AND PROTECTION COMMENTS: EXOTIC SPP. INCLUDE ALYSSUM PARVIFLORUM, BROMUS INERMIS, BROMUS TECTORUM AND MELILOTUS OFFICINALIS

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-19

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: BUCK HIGHWAY

COUNTY: LA PLATA

QUADRANGLE: BAYFIELD

LEGAL: 034N007W|033N007W SECTION: 14, 21, 26|2, 11

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: PLANTS ARE COMMON BUT PATCHY,
ON PRIVATE LAND ALONG COUNTY ROADS.

GENERAL DESCRIPTION: PINYON-JUNIPER, ARTEMISIA COMMUNITIES

OWNER: PRIVATE, VISIBLE FROM HIGHWAY

SURVEY DATE: 2001-06-19

SPECIES: ASTRAGALUS MISSOURIENSIS VAR. HUMISTRATUS

SURVEYSITE: PINE-PIEDRA STOCK DRIVEWAY

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N005W SECTION: 6, 7

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: SIZE B: SEVERAL HUNDRED PLANTS.
CONDITION: B; PLANTS IN FRUIT, NO EVIDENCE OF HERBIVORY.
LANDSCAPE CONTEXT B: SOMEWHAT DISTURBED AREA WITH SOME
INCREASERS, BUT NO EXOTICS.

GENERAL DESCRIPTION: NORTH FACING SLOPE WITH QUERCUS
GAMBELLII, WYETHIA ARIZONICA, ALLIUM ACUMINATUM, ERIGERON
FLAGELLARIS, ERIOGONUM RACEMOSUM, PHLOX CARYOPHYLLA AND
ASTRAGALUS OOCALYCIS.

ELEVATION: 8400 FT

MANAGEMENT AND PROTECTION COMMENTS: APPARENTLY LITTLE
USED TRAIL

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-20

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: LANGE CANYON

COUNTY: ARCHULETA|LA PLATA

QUADRANGLE: BALDY MOUNTAIN

LEGAL: 035N006W SECTION: 25

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: THREE SUBPOPULATIONS WITH 2, 10, AND 50 PLANTS EACH

GENERAL DESCRIPTION: LEVEL TO GENTLY SLOPING AREAS IN PONDEROSA PINE/GAMBEL OAK COMMUNITY, AND IN OPENINGS. ASSOC. SPP: PHLOX CARYOPHYLLA, ARTEMISIA NOVA, ERIGERON SPECIOSUS, ARTEMISIA TRIDENTATA SSP. VASEYANA, ARTEMISIA LUDOVICIANA, ERIOGONUM RACEMOSUM, ALLIUM ACUMINATUM, KOELERIA MACRANTHA, CHRYSOTHAMNUS DEPRESSUS, ASTRAGALUS FLAVUS, ANTENNARIA DIMORPHA, POA SECUNDA, LOMATIUM GRAYI, CHRYSOTHAMNUS NAUSEOSUS.

ELEVATION: 7400 FT TO 7600 FT

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-20

SPECIES: PHLOX CARYOPHYLLA

SURVEYSITE: LANGE CANYON

COUNTY: LA PLATA

QUADRANGLE: BALDY MOUNTAIN

LEGAL: 035N006W SECTION: 25

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: THOUSANDS OF PLANTS, MOSTLY
DRIED UP BY SURVEY DATE.

GENERAL DESCRIPTION: SAGEBRUSH MEADOW OPENING IN PONDEROSA
PINE/GAMBEL OAK FOREST. ASSOC. SPP: ASTRAGALUS OOCALYCIS,
ARTEMISIA NOVA, ERIGERON SPECIOSUS, ARTEMISIA TRIDENTATA SSP.
VASEYANA, ARTEMISIA LUDOVICIANA, ERIOGONUM RACEMOSUM,
ALLIUM ACUMINATUM, KOELERIA MACRANTHA, CHRYSOTHAMNUS
DEPRESSUS, ASTRAGALUS FLAVUS, ANTENNARIA DIMORPHA, POA
SECUNDA, LOMATIUM GRAYI, CHRYSOTHAMNUS NAUSEOSUS.

ELEVATION: 7400 FT

MANAGEMENT AND PROTECTION COMMENTS: NO MANAGEMENT NEEDS
NOTED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-20

SPECIES: ASTRAGALUS PROXIMUS (NEGATIVE SEARCH TO UPDATE *11)

SURVEYSITE:

COUNTY: ARCHULETA

QUADRANGLE: BALDY MOUNTAIN

LEGAL:

ELEMENT OCCURRENCE RANK: U (UNABLE TO FIND)

ELEMENT OCCURRENCE COMMENTS: SEARCHED ABOUT 1 HOUR ON
SOUTH FACING SLOPES ABOVE YELLOWJACKET PASS, UNABLE TO
LOCATE OCCURRENCE.

GENERAL DESCRIPTION:

ELEVATION:

MANAGEMENT AND PROTECTION COMMENTS:

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-21

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: UTE CAMPGROUND

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: 034N004W SECTION: 14

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: 100+ PLANTS IN FLOWER

GENERAL DESCRIPTION: OPENING IN PONDEROSA PINE/GAMBEL OAK COMMUNITY. ASSOC. SPP. INCLUDE ARTEMISIA NOVA, ARTEMISIA LUDOVICIANA, CERCOCARPUS MONTANUS, JUNIPERUS SCOPULORUM, AMELANCHIER UTAHENSIS. SEE SAN JUAN NF RARE PLANT SURVEY, LYON 2001, FOR COMPLETE LIST.

ELEVATION: 6844 FT

MANAGEMENT AND PROTECTION COMMENTS: NO EXOTIC SPECIES PRESENT.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-21

SPECIES: LESQUERELLA PRUINOSA

SURVEYSITE: TURKEY MOUNTAIN

COUNTY: ARCHULETA

QUADRANGLE: SERVICEBERRY MOUNTAIN

LEGAL: 034N001W SECTION: 16

ELEMENT OCCURRENCE RANK: C (THIS SUB-POPULATION ONLY)

ELEMENT OCCURRENCE COMMENTS: AT NORTH LOCATION (NEW SUB), 8 PLANTS ON EAST SIDE OF ROAD AND 3 ON WEST. SECOND LOCATION, DOT 8B, ABOUT 40 PLANTS COUNTED IN DISTURBED AREA BETWEEN ROADS AND ALONG HORSE TRAIL. ESTIMATE 100+ ALTOGETHER IN THIS SUB.

GENERAL DESCRIPTION: OPENINGS IN PONDEROSA PINE FOREST. ASSOC. SPP. INCLUDE ERIGERON FLAGELLARIS, ARTEMISIA LUDOVICIANA AND ASTRAGALUS MISSOURIENSIS.

ELEVATION: 7470 FT

MANAGEMENT AND PROTECTION COMMENTS: DISTURBED AREA; HOWEVER SPECIES NEEDS DISTURBANCE, SO MANAGEMENT OF SITE IS PROBLEMATICAL

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-21

SPECIES: PHLOX CARYOPHYLLA

SURVEYSITE: TURKEY MOUNTAIN

COUNTY: ARCHULETA

QUADRANGLE: SERVICEBERRY MOUNTAIN

LEGAL: T34N R1W SECTION 16

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: SMALL POPULATION, PLANTS PAST
FLOWERING AND DRIED UP

GENERAL DESCRIPTION: DISTURBED ROADSIDE, EIGHT MILE MESA ROAD,
ON BARREN SHALE

ELEVATION: 7400 FT.

MANAGEMENT AND PROTECTION COMMENTS: DISTURBED AREA;
HOWEVER SPECIES NEEDS DISTURBANCE, SO MANAGEMENT OF SITE IS
PROBLEMATICAL

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-22 UPDATE FOR EOR *002

SPECIES: ASTRAGALUS MISSOURIENSIS VAR. HUMISTRATA

SURVEYSITE: TURKEY MOUNTAIN (EIGHT MILE MESA ROAD)

COUNTY: ARCHULETA

QUADRANGLE: SERVICEBERRY MOUNTAIN

LEGAL: 034N001W SECTION: 16

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: ESTIMATE 500+ ALONG ROAD AND 200+ ALONG TRAIL. ALL PLANTS PAST FLOWERING, 75% FRUIT, 25% VEGETATIVE.

GENERAL DESCRIPTION: DISTURBED ROADSIDE AND ALONG HORSE TRAIL IN PONDEROSA PINE/GAMBEL OAK COMMUNITY. ASSOC. SPP: LESQUERELLA PRUINOSA, DUGALDIA HOOPSII, TARAXACUM OFFICINALE, PASCOPYRUM SMITHII, ARTEMISIA LUDOVICIANA, ERIOGONUM RACEMOSUM, ACHILLEA MILLEFOLIUM, MAHONIA REPENS.

ELEVATION: 7470 FT

MANAGEMENT AND PROTECTION COMMENTS: DISTURBED AREA, BUT NOT HEAVILY USED. POSSIBLE THREATS FROM OFF-ROAD VEHICLES, ALTHOUGH PLANTS SEEM TO THRIVE IN AREAS PREVIOUSLY DISTURBED BY VEHICLES

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-23

SPECIES: ASTRAGALUS OOCALYCIS

SURVEYSITE: PINE-PIEDRA STOCK TRAIL

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN|BALDY MOUNTAIN

LEGAL: 034N005W|035N 005W SECTION: 6, 7|31

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: THOUSANDS OF INDIVIDUALS IN AT LEAST TEN SUBPOPULATIONS ON SOUTH FACING SLOPES ALONG TRAIL. EXPECTED IN SIMILAR HABITAT BOTH EAST AND WEST OF TRAIL

GENERAL DESCRIPTION: ALONG STOCK DRIVEWAY AND OFF TRAIL, IN PINUS PONDEROSA-QUERCUS GAMBELII COMMUNITY WITH WYETHIA ARIZONICA, ARTEMISIA NOVA, PHLOX CARYOPHYLLA, ASTRAGALUS OOCALYCIS. SEE SAN JUAN NATIONAL FOREST RARE PLANT SURVEY, LYON 2001, FOR COMPLETE SPECIES LISTS.

OTHER ASSOC SPP: ALLIUM ACUMINATUM, ERIGERON FLAGELLARIS, ERIOGONUM RACEMOSUM

ELEVATION: 8400 FT

MANAGEMENT AND PROTECTION COMMENTS: APPARENTLY VERY LITTLE TRAFFIC ON STOCK DRIVEWAY. SOME EXOTIC PASTURE GRASSES PRESENT (BROMUS INERMIS, DACTYLIS GLOMERATA), BUT GENERALLY FEW WEEDS

OWNER: USFS, SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-23

SPECIES: PHLOX CARYOPHYLLA

SURVEYSITE: PINE-PIEDRA STOCK TRAIL

COUNTY: ARCHULETA

QUADRANGLE: PARGIN MOUNTAIN

LEGAL: 034N005W SECTION: 6

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: SEVERAL HUNDRED OBSERVED, BUT EXPECT MORE IN AREA. ALMOST NO EXOTIC SPECIES

GENERAL DESCRIPTION: ALONG STOCK DRIVEWAY AND OFF TRAIL, IN PINUS PONDEROSA-QUERCUS GAMBELII COMMUNITY WITH WYETHIA ARIZONICA, ARTEMISIA NOVA, ASTRAGALUS MISSOURIENSIS, ASTRAGALUS OOCALYCIS. SEE SAN JUAN NATIONAL FOREST RARE PLANT SURVEY, LYON 2001, FOR COMPLETE SPECIES LISTS.

ELEVATION: 8400 FT TO 8600 FT

MANAGEMENT AND PROTECTION COMMENTS: APPARENTLY LITTLE USE OF TRAIL.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-06-25

SPECIES: CASTILLEJA LINEATA

SURVEYSITE: BURNS CANYON

COUNTY: ARCHULETA

QUADRANGLE: OAK BRUSH HILL

LEGAL: 034N002W SECTION: 29

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: SEVERAL CLUMPS OF PLANTS.

GENERAL DESCRIPTION: PINUS PONDEROSA/ARIZONA FESCUE COMMUNITY. OTHER ASSOC. SPP: ACHILLEA LANULOSA, ALYSSUM PARVIFLORUM, ARTEMISIA LUDOVICIANA, ASTRAGALUS BISULCATUS, ASTRAGALUS LONCHOCARPUS, ATRIPLEX CANESCENS, BROMUS CILIATUS, BROMUS INERMIS, BROMUS TECTORUM, CAREX GEYERI, CASTILLEJA LINARIIFOLIA, CHRYSOTHAMNUS NAUSEOSUS, CIRSIUM TRACYI, COLLINSIA PARVIFLORA, DESCURAINIA SP., ELYMUS ELYMOIDES, ERIGERON FLAGELLARIS, ERIOGONUM RACEMOSUM, GEUM TRIFLORUM, HETEROTHECA VILLOSA, IPOMOPSIS AGGREGATA, JUNIPERUS SCOPULORUM, KOELERIA MACRANTHA, LACTUCA SERRIOLA, MELILOTUS OFFICINALIS, PASCOPYRUM (AGROPYRON*)SMITHII, PENSTEMON GLABRESCENS, PENSTEMON STRICTUS, POA PRATENSIS, POTENTILLA HIPPIANA, POTENTILLA PULCHERRIMA, PSEUDOCYOPTERUS MONTANUS, PSEUDOTSUGA MENZIESII, PSILOCHENIA INTERMEDIA, QUERCUS GAMBELLII, RHUS TRILOBATA, RIBES CEREUM, ROSA WOODSII, RUMEX CRISPUS, SPHAERALCEA COCCINEA, STIPA NELSONII, SYMPHORICARPOS OREOPHILUS, TETRANEURIS IVESIANA, TOWNSENDIA INCANA, TRAGOPOGON DUBIUS, VERBASUM THAPSUS, VICIA AMERICANA

ELEVATION: 7000 FT

MANAGEMENT AND PROTECTION COMMENTS: SOME BROMUS TECTORUM AND BROMUS INERMIS, BUT AREA GENERALLY IN GOOD CONDITION

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-11

SPECIES: EPIPACTIS GIGANTEA

SURVEYSITE: FIRST FORK ROAD

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: 034N004W SECTION: 5

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: ESTIMATE 500+ INDIVIDUALS.
SMALL COMPARED TO THE LARGEST KNOWN POPULATIONS

GENERAL DESCRIPTION: SEEP IN PONDEROSA PINE-DOUGLAS FIR
COMMUNITY. SEEP EXTENDS FROM ROAD TO NEAR TOP OF RIDGE.

ELEVATION: 6720 TO 6880 FT.

MANAGEMENT AND PROTECTION COMMENTS: POWERLINE RUNS
THROUGH SITE. POWER COMPANY HAD CLEARED LARGE SWATH OF
TREES UNDER POWERLINE ON 7-11-01, AND PILED BRANCHES OVER WET
AREAS. FOREST SERVICE PERSONNEL WERE NOTIFIED AND REMOVED
BRANCHES.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-11

SPECIES: LIMNORCHIS ENSIFOLIA

SURVEYSITE: FIRST FORK ROAD

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: 034N004W SECTION: 5

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: ESTIMATE 350+ INDIVIDUALS.
SMALL COMPARED TO THE LARGEST KNOWN POPULATIONS

GENERAL DESCRIPTION: SEEP IN PONDEROSA PINE-DOUGLAS FIR
COMMUNITY. SEEP EXTENDS FROM ROAD TO NEAR TOP OF RIDGE.

ELEVATION: 6720 TO 6880 FT.

MANAGEMENT AND PROTECTION COMMENTS: POWERLINE RUNS
THROUGH SITE. POWER COMPANY HAD CLEARED LARGE SWATH OF
TREES UNDER POWERLINE ON 7-11-01, AND PILED BRANCHES OVER WET
AREAS. FOREST SERVICE PERSONNEL WERE NOTIFIED AND REMOVED
BRANCHES.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-11 UPDATE *010

SPECIES: LESQUERELLA PRUINOSA

SURVEYSITE: O'NEAL HILL SPECIAL BOTANICAL AREA

COUNTY: ARCHULETA

QUADRANGLE: OAK BRUSH RIDGE

LEGAL: 036N003W SECTION: 1, 2

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: PLANTS ABUNDANT, ESPECIALLY IN DISTURBED AREAS. SEE MONITORING REPORT 200.

GENERAL DESCRIPTION: GENTLY SOUTH SLOPING GRAZED PASTURE, AND SMALL PORTION OF UNGRAZED AREA NORTH OF FENCELINE. PLANTS IN FRUIT WHEN MONITORING SET UP ON 7-11-01. MANY NEW SEEDLINGS ON SECOND VISIT 8-9-01. ASSOCIATED SPP. INCLUDE: PYRROCOMA CROCAEA, ACHILLEA LANULOSA, ANTENNARIA ROSEA, ARTEMISIA FRIGIDA, , CIRSIUM SCARIOSUM, CIRSIUM TRACYI, ELYMUS TRACHYCAULUS, ERIGERON FLAGELLARIS, ERIGERON GLABELLUS, ERIGERON SUBTRINERVIS, FESTUCA ARIZONICA, HETEROTHECA VILLOSA, MUHLENBERGIA RICHARDSONIS, PENTAPHYLLOIDES FLORIBUNDA, POA COMPRESSA, POA PRATENSIS, POTENTILLA HIPPIANA, POTENTILLA PULCHERRIMA, SOLIDAGO NANA, STIPA VIRIDULA, VALERIANA EDULIS. EXOTICS INCLUDE CIRSIUM ARVENSE AND LINARIA VULGARIS. JUNCUS BALTICUS, CAREX AQUATILIS, CAREX UTRICULATA, AND ALOPECURUS AEQUALIS OCCUPY WET AREAS

ELEVATION: 7780 FT TO 7860 FT

MANAGEMENT AND PROTECTION COMMENTS: USFS IS SPRAYING FOR CIRSIUM ARVENSE AND LINARIA VULGARIS. MONITORING DONE IN 1999 AND 2001. UNABLE TO USE 1999 DATA. PERMANENT PLOTS SET UP IN 2001. DESIGNATED AS SPECIAL BOTANICAL AREA. HOWEVER, BOUNDARIES OF BOTANICAL AREA DO NOT COINCIDE WITH OCCURRENCE.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-12

SPECIES: DANTHONIA PARRYI GRASSLAND

SURVEYSITE: PIEDRA ROAD AT COUNTY LINE

COUNTY: ARCHULETA

QUADRANGLE: OAKBRUSH RIDGE

LEGAL: 036N003W SECTION: 5

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: APPROX 100 ACRES, SOMEWHAT PATCHY. FEW EXOTICS.

GENERAL DESCRIPTION: WEST FACING SLOPE, 10-20 DEGREES; FESTUCA ARIZONICA AND DANTHONIA PARRYI EACH ABOUT 30% COVER. ARTEMISIA LUDOVICIANA, SOLIDAGO NANA, ARTEMISIA CARRUTHII, ERIGERON FLAGELLARIS, HETEROTHECA VILLOSA EACH ABOUT 5%. OTHER SPECIES 1-5% OR <1%. MOSS, LICHEN AND ROCK ABOUT 5%. BUNCHGRASSES MAINLY ON SLOPES, MORE ARTEMISIA LUDOVICIANA ON BENCHES. APPEARS TO BE LIGHTLY GRAZED.. COMMUNITY CONTINUES ON OTHER SIDE OF DRAINAGE TO EAST, AND MORE PATCHES OCCUR THROUGHOUT A LARGE AREA.

ELEVATION: 7760 FT TO 7920 FT

MANAGEMENT AND PROTECTION COMMENTS: APPARENTLY ONLY LIGHTLY GRAZED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-26

SPECIES: GOODYERA REPENS

SURVEYSITE: EAST FORK SAN JUAN RIVER

COUNTY: ARCHULETA

QUADRANGLE: WOLF CREEK PASS

LEGAL: 036N001E SECTION: 5

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: SCATTERED SMALL POPULATIONS ALONG ONE MILE STRETCH OF RIVER. MANY PLANTS IN FLOWER. AREA IS PRISTINE AND QUITE INACCESSIBLE.

GENERAL DESCRIPTION: STEEP, MOIST, NORTH FACING HILLSIDE WITH PICEA ENGELMANNII, LINNAEA BOREALIS, STREPTOPUS FASSETTII, PICEA PUNGENS, ACER GLABRUM, LONICERA INVOLUCRATA, MIMULUS GUTTATUS, MAIANTHEMUM STELLATUM, MAHONIA REPENS, ACTAEA RUBRA, CYSTOPTERIS FRAGILIS, PYROLA ROTUNDIFOLIA, PYROLA MINOR, MELICA PORTERI, ORYZOPSIS MICRANTHA, CORNUS SERICEA, ATERIUM FELIX-FEMINA, GOODYERA OBLONGIFOLIA.

ELEVATION: 8,000 FT TO 8,200 FT

MANAGEMENT AND PROTECTION COMMENTS: ACCESS VERY DIFFICULT, NO MANAGEMENT NEEDS KNOWN

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-27

SPECIES: GOODYERA REPENS

SURVEYSITE: QUARTZ CREEK TRAIL

COUNTY: ARCHULETA

QUADRANGLE: SUMMIT PEAK

LEGAL: 036N002E SECTION: 16

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: COUNTED 54 PLANTS IN SMALL AREA NEAR TRAIL. PROBABLY MANY MORE AWAY FROM TRAIL. FEW EXOTICS IN AREA ONCE INSIDE WILDERNESS BOUNDARY.

GENERAL DESCRIPTION: MOIST, SHADY SPRUCE-FIR/VACCINIUM MYRTILUS COMMUNITY. ASSOC. SPP. INCLUDE PYROLA ROTUNDIFOLIA, GOODYERA OBLONGIFOLIA, ORTHILIA SECUNDA, PICEA ENGELMANNII, ABIES LASIOCARPA, PAXISTIMA MYRSINITES, ARNICA CORDIFOLIA, ERIGERON EXIMIUS, VIOLA CANADENSIS, RUBACER PARVIFLORUS, VACCINIUM MYRTILUS, GALIUM TRIFLORUM, LINNAEA BOREALIS, MAHONIA REPENS.

ELEVATION: 8976 FT

MANAGEMENT AND PROTECTION COMMENTS: POPULATION CLOSE TO TRAIL
PROTECTION IN SOUTH SAN JUAN WILDERNESS

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-27

SPECIES: CRYPTOGRAMMA STELLERI

SURVEYSITE: QUARTZ CREEK

COUNTY: ARCHULETA

QUADRANGLE: SUMMIT PEAK

LEGAL: 036N002E SECTION: 22

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: 200+ PLANTS IN CREVICES OF CLIFFS
NEAR WATERFALLS

GENERAL DESCRIPTION: MOSSY CLIFFS ABOVE QUARTZ CREEK AT
WATERFALLS

ELEVATION: 9000 FT TO 10,000 FT

MANAGEMENT AND PROTECTION COMMENTS: WITHIN SOUTH SAN JUAN
WILDERNESS NO MANAGEMENT NEEDS KNOWN.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-01

SPECIES: BOTRYCHIUM MINGANENSE

SURVEYSITE: NIPPLE MOUNTAIN

COUNTY: ARCHULETA

QUADRANGLE: BLACKHEAD PEAK

LEGAL: 035N001E SECTION: 1

ELEMENT OCCURRENCE RANK: E

ELEMENT OCCURRENCE COMMENTS: COUNTED 100+ BOTRYCHIUMS, (2 PEOPLE, 2.5 HOURS), OF WHICH THE MAJORITY APPEARED TO BE B. HESPERIUM. OTHERS IDENTIFIED FROM OUR SPECIMENS INCLUDED B. HESPERIUM, B. MINGANENSE, AND POSSIBLE B. PINNATUM AND B. PALLIDUM. PROBABLY MANY MORE IN LARGER AREA

GENERAL DESCRIPTION: OLD CLEAR-CUT AREA, WITH YOUNG SPRUCE. ASSOC. SPP. INCLUDE: FRAGARIA VIRGINIANA, NOCCA EA MONTANA, ANDROSACE SEPTENTRIONALIS, PTERIDIUM AQUILINUM VAR. PUBESCENS, TRAUTVETTERIA CAROLINIENSIS, EPILOBIUM ANGUSTIFOLIUM, CORYDALIS CASEANA, PENSTEMON WHIPPLEANUS, CIRSIUM PARRYI.

ELEVATION: 10,360 TO 10,480 FT.

MANAGEMENT AND PROTECTION COMMENTS: NO EXOTICS OBSERVED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-01

SPECIES: BOTRYCHIUM ECHO

SURVEYSITE: NIPPLE MOUNTAIN

COUNTY: ARCHULETA

QUADRANGLE: BLACKHEAD PEAK

LEGAL: 035N001E SECTION: 1

ELEMENT OCCURRENCE RANK: E

ELEMENT OCCURRENCE COMMENTS: COUNTED 100+ BOTRYCHIUMS, (2 PEOPLE, 2.5 HOURS), OF WHICH THE MAJORITY APPEARED TO BE B. HESPERIUM. OTHERS IDENTIFIED BY PETER ROOT FROM OUR COLLECTIONS INCLUDE B. HESPERIUM, B. ECHO (DISSECTED), AND POSSIBLE B. PINNATUM AND B. PALLIDUM. PROBABLY MANY MORE IN LARGER AREA. SPECIMENS IDENTIFIED BY PETER ROOT AND PETER ZIKA.

GENERAL DESCRIPTION: OLD CLEAR-CUT AREA, WITH YOUNG SPRUCE. ASSOC. SPP. INCLUDE: FRAGARIA VIRGINIANA, NOCCAEA MONTANA, ANDROSACE SEPTENTRIONALIS, PTERIDIUM AQUILINUM VAR. PUBESCENS, TRAUTVETTERIA CAROLINIENSIS, EPILOBIUM ANGUSTIFOLIUM, CORYDALIS CASEANA, PENSTEMON WHIPPLEANUS, CIRSIUM PARRYI.

ELEVATION: 10,360 TO 10,480 FT.

MANAGEMENT AND PROTECTION COMMENTS: NO EXOTICS OBSERVED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-01

SPECIES: BOTRYCHIUM HESPERIUM

SURVEYSITE: NIPPLE MOUNTAIN

COUNTY: ARCHULETA

QUADRANGLE: BLACKHEAD PEAK

LEGAL: 035N001E SECTION: 1

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: COUNTED 100+ BOTRYCHIUMS, (2 PEOPLE, 2.5 HOURS), OF WHICH THE MAJORITY APPEARED TO BE B. HESPERIUM, PROBABLY ONLY 10 OR SO B. MINGANENSE, PROBABLY MANY MORE IN LARGER AREA. SPECIMENS IDENTIFIED BY PETER ROOT AND PETER ZIKA.

GENERAL DESCRIPTION: OLD CLEAR-CUT AREA, WITH YOUNG SPRUCE. ASSOC. SPP. INCLUDE: FRAGARIA VIRGINIANA, NOCCAEA MONTANA, ANDROSACE SEPTENTRIONALIS, PTERIDIUM AQUILINUM VAR. PUBESCENS, TRAUTVETTERIA CAROLINIENSIS, EPILOBIUM ANGUSTIFOLIUM, CORYDALIS CASEANA, PENSTEMON WHIPPLEANUS, CIRSIUM PARRYI.

ELEVATION: 10,360 TO 10,480 FT.

MANAGEMENT AND PROTECTION COMMENTS: NO EXOTICS OBSERVED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-01

SPECIES: DRABA SMITHII

SURVEYSITE: EAST FORK SAN JUAN RIVER

COUNTY: ARCHULETA

QUADRANGLE: WOLF CREEK PASS

LEGAL: 036N001E SECTION: 5

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: ABOUT 200 CLUMPS OF PLANTS OBSERVED. MOST ABUNDANT AT SMALL SEEP AT WEST END OF OCCURRENCE AND ABOVE FISHING ACCESS ROAD JUST BEFORE BRIDGE AT EAST END OF OCCURRENCE, BUT SCATTERED ALONG ENTIRE MAPPED AREA, BOTH IN WET AREAS AND UNDER SHRUBS IN SCREE. PLANTS IN FRUIT.

GENERAL DESCRIPTION: DEEP NARROW CANYON OF EAST FORK OF SAN JUAN RIVER. ASSOC. SPP: PERICOME CAUDATA, CHEILANTHES FEEI, CYSTOPTERIS FRAGILIS, MOSSES, HETEROTHECA VILLOSA, BRICKELLIA GRANDIFLORA, AGASTACHE PALLIDIFLORA, FRAGARIA VESCA, POA RETRORSA, TOXICODENDRON RYDBERGII, EREMOGONE FENDLERI, CORNUS SERICEA, GERANIUM CESPITOSUM, GILIA PINNATIFIDA, HELIOMERIS MULTIFLORA, OXALIS VIOLACEA, THALICTRUM FENDLERI

ELEVATION: 8,000 FT TO 8,200 FT

MANAGEMENT AND PROTECTION COMMENTS: PLANTS CLOSE TO ROAD MAY BE VULNERABLE TO ROAD MAINTENANCE ACTIVITIES.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-11

SPECIES: WOODSIA NEOMEXICANA

SURVEYSITE: WILLIAMS CREEK TRAIL

COUNTY: HINSDALE

QUADRANGLE: CIMARRONA PEAK

LEGAL: 038N003W SECTION: 4

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: ONLY A FEW CLUMPS IN CREVICES
OF ROCK OUTCROP.

GENERAL DESCRIPTION: ON FIRST LARGE ROCK OUTCROP INSIDE
WILDERNESS BOUNDARY ON WEST SIDE OF TRAIL. ASSOC. SPP:
CYSTOPTERIS FRAGILIS, OXALIS SP., DRABA AUREA, OSMORHIZA
DEPAUPERATA, MELICA PORTERI, MUHLENBERGIA MONTANA,
LINANTHASTRUM NUTTALLII, POTENTILLA OVINA, HIERACIUM FENDLERI,
PINUS FLEXILIS, HETEROTHECA VILLOSA, ARTEMISIA LUDOVICIANA,
CAMPANULA ROTUNDIFOLIA, PERGULASTRUM LANUGINOSUM, PINUS
STROBIFORMIS.

ELEVATION: 8757 FT

MANAGEMENT AND PROTECTION COMMENTS: WITHIN WEMINUCHE
WILDERNESS NO MANAGEMENT NEEDS NOTED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-11

SPECIES: GOODYERA REPENS

SURVEYSITE: INDIAN CREEK TRAIL

COUNTY: HINSDALE

QUADRANGLE: CIMARRONA PEAK

LEGAL: 038N003W SECTION: 3

ELEMENT OCCURRENCE RANK: A

ELEMENT OCCURRENCE COMMENTS: SEVERAL HUNDRED PLANTS IN
FLOWER UNDER TREES. CONDITION A; LANDSCAPE CONTEXT B (CLOSE TO
TRAIL, CAMPING AREA)

GENERAL DESCRIPTION: LEVEL AREA UNDER TREES NEAR INDIAN CREEK,
WITH ORTHILIA SECUNDA, PYROLA ROTUNDIFOLIA, GALIUM TRIFLORUM,
MONESES UNIFLORA, MOSSES AND LICHENS.

ELEVATION: 8920 FT

MANAGEMENT AND PROTECTION COMMENTS: WEMINUCHE WILDERNESS
SOME CAMPING AND HIKING USE AT SITE

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-27

SPECIES: BOTRYCHUM LUNARIA

SURVEYSITE: WOLF CREEK PASS

COUNTY: MINERAL

QUADRANGLE: WOLF CREEK PASS

LEGAL: 037N002E SECTION: 5

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: SIZE: D; COUNTED ONLY 3 PLANTS.
CONDITION B. SOME HERBIVORY ON FRONDS. LANDSCAPE CONTEXT A.
NOT FOUND IN BARE AREAS.

GENERAL DESCRIPTION: PICEA ENGELMANNII CLEARCUT, NORTH
FACING SLOPE, WITH NEW TREES ABOUT 3 FT. TALL, WITH MOSS,
SIBBALDIA, FRAGARIA VIRGINIANA, SPARSE GRASSES AND SEDGES. ALSO
BOTRYCHUM PINNATUM.

ELEVATION: 10,800 FT TO 10,920 FT

MANAGEMENT AND PROTECTION COMMENTS: NO MANAGEMENT NEEDS
NOTED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-27

SPECIES: BOTRYCHIUM PINNATUM.

SURVEYSITE: WOLF CREEK PASS

COUNTY: ARCHULETA

QUADRANGLE: WOLF CREEK PASS

LEGAL: 037N002E SECTION: 5

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: SIZE: D; COUNTED ONLY 3 PLANTS.
CONDITION B. SOME HERBIVORY ON FRONDS. LANDSCAPE CONTEXT A.
NOT FOUND IN BARE AREAS.

GENERAL DESCRIPTION: PICEA ENGELMANNII CLEARCUT, NORTH
FACING SLOPE, WITH NEW TREES ABOUT 3 FT. TALL, WITH MOSS,
SIBBALDIA, FRAGARIA VIRGINIANA, SPARSE GRASSES AND SEDGES. ALSO
BOTRYCHIUM LUNARIA.

ELEVATION: 10,800 FT TO 10,920 FT

MANAGEMENT AND PROTECTION COMMENTS: NO MANAGEMENT NEEDS
NOTED

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-28

SPECIES: CAREX RETRORSA

SURVEYSITE: NAVAJO PEAK TRAIL

COUNTY: ARCHULETA

QUADRANGLE: CHROMO

LEGAL: 033N002E SECTION: 17

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: SIZE: B.. CONDITION: A; LANDSCAPE CONTEXT: C (SOME EXOTICS PRESENT). NOT COUNTED, BUT COMMON; PLANTS FORMING LARGE CLUMPS.

GENERAL DESCRIPTION: WETLAND IN OPENING IN SPRUCE-FIR FOREST. ASSOC. SPP: ALOPECURUS AEQUALIS, ASTER FOLIACEUS, BIDENS CERNUA, CALAMAGROSTIS CANADENSIS, CAREX MICROPTERA, CAREX UTRICULATA, CIRSIUM ARVENSE, ELEOCHARIS ACICULARIS, ELEOCHARIS PALUSTRIS, EPILOBIUM CILIATUM, EQUISETUM ARVENSE, GALIUM TRIFIDUM, GLYCERIA ELATA, JUNCUS BALTICUS, LEMNA SP., MENTHA ARVENSIS, POA PRATENSIS, RANUNCULUS GMELINII, RORIPPA PALUSTRIS SSP. HISPIDA, RUDBECKIA AMPLA, SALIX DRUMMONDIANA, SIDDALCEA CANDIDA, VERATRUM TENUIPETALUM

ELEVATION: 9280 FT

MANAGEMENT AND PROTECTION COMMENTS: EXOTIC SPP. PRESENT: CIRSIUM ARVENSE, BIDENS CERNUM, POA PRATENSIS. WITHIN SOUTH SAN JUAN WILDERNESS

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-08-31

SPECIES: CAREX RETRORSA

SURVEYSITE: OPAL LAKE

COUNTY: ARCHULETA

QUADRANGLE: ELEPHANT HEAD ROCK

LEGAL: 034N002E SECTION: 9

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: SIZE C; CONDITION B; LANDSCAPE
CONTEXT B. NOT COUNTED. PLANTS IN LARGE CLUMPS.

GENERAL DESCRIPTION: WETLAND ALONG SHORELINE OF SMALL LAKE.
ASSOC. SPP: AGOSERIS GLAUCA; AGROSTIS SCABRA, AGROSTIS GIGANTEA,
ALOPECURUS AEQUALIS, CAREX MICROPTERA, CAREX UTRICULATA,
CIRSIIUM ARVENSE, GLYCERIA ELATA, HABENARIA HYPERBOREA,
HELIOMERIS MULTIFLORA, JUNCUS TRACYI, LEPIDIUM DENSIFLORUM,
MENTHA ARVENSIS, MERTENSIA CILIATA, PERSICARIA LAPATHIFOLIA,
URTICA GRACILIS

ELEVATION: 9200 FT

MANAGEMENT AND PROTECTION COMMENTS: SOME CIRSIIUM ARVENSE.
POPULAR EASY HIKING DESTINATION. ADJACENT TO SOUTH SAN JUAN
WILDERNESS

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-09-06

SPECIES: CRYPTOGRAMMA STELLERI

SURVEYSITE: EAST FORK SAN JUAN RIVER

COUNTY: ARCHULETA

QUADRANGLE: WOLF CREEK PASS

LEGAL: 036N001E SECTION: 5

ELEMENT OCCURRENCE RANK: B

ELEMENT OCCURRENCE COMMENTS: SIZE: B. NOT COUNTED, BUT 100+ PLANTS OBSERVED, AND EXPECTED ALL ALONG CLIFF IN SIMILAR HABITAT. CONDITION: A. LANDSCAPE CONTEXT A. SEVERAL SUB-POPULATIONS UNDER SMALL (ABOUT 1 FOOT DEEP) OVERHANGS IN ROCK OUTCROPS. NOT FOUND IN DEEPER ALCOVES WHERE THERE IS LESS LIGHT, OR IN SHALLOWER ONES WITH LESS PROTECTION.

GENERAL DESCRIPTION: CLIFF FACES ON STEEP NORTH FACING SLOPES ABOVE EAST FORK SAN JUAN RIVER. MOIST, WITH LUXURIANT MOSS AND LIVERWORT COVER TO 6 INCHES THICK. ASSOC. SPP: GOODYERA REPENS, GOODYERA OBLONGIFOLIA, CILARIA AUSTROMONTANA, CYSTOPTERIS FRAGILIS, PAXISTIMA MYRSINITES, ARTEMISIA FRANSERIOIDES, CORNUS SERICEA, HIPPOCHAETE HYEMALIS, RHODIOLA INTEGRIFOLIA, ERIGERON EXIMIUS, GERANIUM RICHARDSONII, MAIANTHEMUM AMPLEXICAULE, LINNAEA BOREALIS, PYROLA ROTUNDIFOLIA, GALIUM TRIFLORUM, ACER GLABRUM, PSEUDOTSUGA MENZIESII, HEUCHERA PARVIFLORA, ORTHILIA SECUNDA, SELAGINELLA UNDERWOODII

ELEVATION: 8000 FT TO 8200 FT

MANAGEMENT AND PROTECTION COMMENTS: NO EXOTICS. DIFFICULT TO ACCESS, SO NO DIRECT HUMAN IMPACTS.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-09-07

SPECIES: HIPPOCHAETE VARIEGATA

SURVEYSITE: KENNEY FLATS

COUNTY: ARCHULETA

QUADRANGLE: EDITH

LEGAL: 033N001E SECTION: 12

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: SIZE C. SMALL POPULATION;
CONDITION: B. PLANT LOOK HEALTHY. LANDSCAPE CONTEXT D. VERY
DISTURBED STOCK POND, MOSTLY MUD AND WEEDY SPECIES. AREA HAS
SOME GOOD CONDITION UPLANDS, BUT MUCH OF LOWER DRAINAGES
HEAVILY DOMINATED BY MADIA GLOMERATA NOT COUNTED, BUT
PROBABLY 100+ PLANTS

GENERAL DESCRIPTION: WEEDY, DISTURBED SOIL AROUND STOCK POND
IN PONDEROSA PINE/GRASSLAND COMMUNITY.

ELEVATION: 7800 FT

MANAGEMENT AND PROTECTION COMMENTS: AREA HAS MUCH MADIA
GLOMERATA. OTHER EXOTICS INCLUDE POA PRATENSIS, MELILOTUS
OFFICINALIS, PHLEUM PRATENSE, TARAXACUM OFFICINALIS,
MATRICARIA PERFORATA (ALONG ROAD)

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-11

SPECIES: ERIGERON PHILADELPHICUS

SURVEYSITE: FIRST FORK ROAD SEEP

COUNTY: ARCHULETA

QUADRANGLE: CHIMNEY ROCK

LEGAL: 034N004W SECTION: 5

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: SIZE: C; CONDITION: B; LANDSCAPE
CONTEXT B.ESTIMATE 25+ INDIVIDUALS.

GENERAL DESCRIPTION: SEEP IN PONDEROSA PINE-DOUGLAS FIR
COMMUNITY. SEEP EXTENDS FROM ROAD TO NEAR TOP OF RIDGE.
ASSOC. SPP: EPIPACTIS GIGANTEA, LIMNORCHIS ENSIFOLIA, BETULA
OCCIDENTALIS, SALIX MONTICOLA, CORNUS SERICEA, POPULUS
ANGUSTIFOLIA, JUNIPERUS SCOPULORUM, HIPPOCHAETE HYEMALIS,
EQUISETUM ARVENSE, TOXICODENDRON RYDBERGII, BERBERIS
FENDLERI, ALNUS INCANA, CLEMATIS LIGUSTICIFOLIA, VIOLA
CANADENSIS, JUNCUS LONGISTYLIS, EPILOBIUM ANGUSTIFOLIUM,
MAIANTHEMUM STELLATUM, CAREX AUREA, PRUNELLA VULGARIS,
MONARDA FISTULATA, SALIX LIGULIFOLIA, JUNCUS BALTICUS, DISTEGIA
INVOLUCRATA, JUNCUS NODOSUS, J. TENUIS, AGROSTIS STOLONIFERA,
POA PRATENSIS. . A FEW CIRSIUM VULGARE, AND CIRSIUM ARVENSE.

ELEVATION: 6800 FT

MANAGEMENT AND PROTECTION COMMENTS: POWERLINE RUNS
THROUGH SITE. POWER COMPANY HAD CLEARED LARGE SWATH OF
TREES UNDER POWERLINE ON 7-11-01, AND PILED BRANCHES OVER WET
AREAS. FOREST SERVICE PERSONNEL WERE NOTIFIED AND REMOVED
BRANCHES. SOME CIRSIUM ARVENSE AND C. VULGARE IN SITE.

OWNER: SAN JUAN NATIONAL FOREST

SURVEY DATE: 2001-07-13

SPECIES: POLYPODIUM HESPERIUM

SURVEYSITE: UPPER PIEDRA CANYON

COUNTY: ARCHULETA

QUADRANGLE: OAK BRUSH RIDGE

LEGAL: 036N003W SECTION: 3

ELEMENT OCCURRENCE RANK: C

ELEMENT OCCURRENCE COMMENTS: SMALL POPULATION SMALL GROUP OF FERNS AT BASE OF LARGE BOULDER ON PIEDRA CREEK TRAIL.

GENERAL DESCRIPTION: ROCK OUTCROPS ALONG TRAIL, ON EAST SIDE OF PIEDRA

RIVER. ASSOC. SPP. INCLUDE CYSTOPTERIS REEVESIANA, MAIANTHEMUM STELLATUM, GALIUM BOREALE. ADJACENT DRY HILLSIDE WITH OAK AND OTHER MIXED SHRUBS.

ELEVATION: 7600 FT

MANAGEMENT AND PROTECTION COMMENTS: FAIRLY HEAVILY USED TRAIL

OWNER: SAN JUAN NATIONAL FOREST

Appendix II

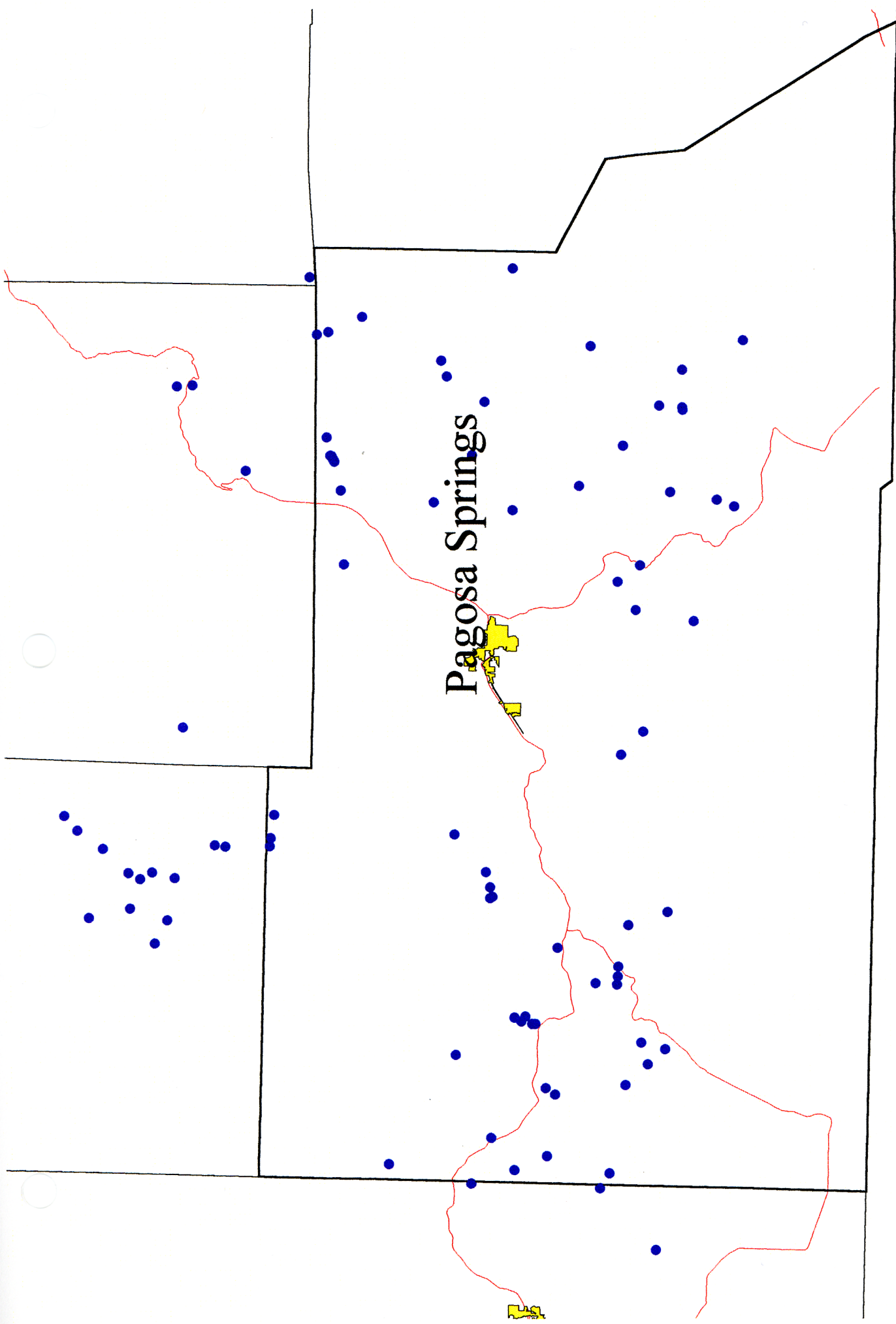
Species Lists by Survey Site San Juan National Forest, 2001

(Note: non-native species are in blue or bold type)

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6. First Fork Road
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12. Boone Creek
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20. Echo Canyon Road
21. Rito Blanco headwaters
22. Relay Station Road
23. Spring Creek Rd (CR 537) (La Plata County)
24. Spring Creek Rd (FR756)
25. Spring Creek Rd, at Astragalus oocalycis location
26. Ute Campground
27. Lange Canyon (FR 132)
28. Bear Wallow Creek, Spruce Spring and adjacent uplands (FR 135A)
29. Yellowjacket Pass
30. Sheep Cabin Creek, Blanco Basin Road
31. Blanco River
32. Turkey Mountain, Eight Mile Mesa Road
33. Eight Mile Mesa
34. Pine Piedra stock trail
35. Blanco River Campground
36. Indian Creek (Ute Road)
37. Buckles Lake Trail
38. Pollito Canyon
39. Burns Canyon
40. Snow Springs, burned area
41. Snow Springs, wetland
42. Seep, First Fork Rd.
43. O'Neal Hill Botanical Area

44. Piedra Falls trail
45. Fawn Gulch, Coal Creek Trail
46. Upper Piedra River Canyon
47. Little Sand Creek
48. Quartz Meadows
49. Upper Quartz Creek Road
50. East Fork of San Juan River, cliffs above river
51. East Fork campground
52. Quartz Creek Trail
53. Jackson Mountain
54. Quartz Lake Trail
55. Crater Creek
56. V-Rock Trail
57. Nipple Mountain clearcut
58. Williams Lake, Teal Campground
60. Williams Creek Trailhead
61. Williams Creek Trail
62. Indian Creek Trail
63. Poison Park Trail
64. Lakebed Road
65. Williams Lake, north end
66. Williams Lake, south end
67. Piedra Road at Hinsdale County line
68. Piedra and Williams Creek Roads
69. Piedra Road East
70. Piedra Creek
71. Weminuche Creek, seep
72. Wolf Creek Pass, Continental Divide Trail
73. Wolf Creek Pass, Lobo Overlook
74. Treasure Falls
75. Sand Creek
76. Navajo Peak Trail
77. Buckles Lake wetlands
78. Harris Lake
79. Fish Creek Trail, Gunshot Pass
80. Opal Lake Trail
81. East Fork San Juan River, north side above bridge
82. East Fork San Juan R. south side below bridge
83. Aspen Spur Road
84. County Road 335
85. Kenney Flats



Locations of Plant Species Lists Prepared 2001

1.

Survey date: 6-8-01

Survey Site: Lower Piedra Campground

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S5

Site description: Pinus ponderosa/Quercus gambelii montane forest and riparian

Rare plants located at site: none

Species observed at site:

Acer negundo
Achillea lanulosa
Alnus incana
Alyssum sp.
Amelanchier alnifolia
Antennaria sp.
Arabis sp.
Artemisia ludoviciana
Aster glaucodes
Berberis fendleri
Betula occidentalis
Bromus inermis
Bromus tectorum
Carex utriculata
Cercocarpus montanus
Chenopodium sp.
Chrysothamnus nauseosus
Cirsium arvense
Cirsium vulgare
Clematis ligusticifolia
Cornus stolonifera
Crataegus macrantha var. occidentalis
Dactylis glomerata
Eleocharis palustris
Equisetum arvense
Erigeron speciosus
Galium triflorum
Geranium caespitosum
Glycyrrhiza lepidota
Heterotheca villosa
Equisetum hyemale (Hippochaete)
Juniperus scopulorum
Lactuca serriola
Lathyrus leucanthus

Lithospermum multiflorum
Lonicera involucrata (Distegia)
Lupinus caudatus
Mahonia repens
Maianthemum stellatum
Medicago sativa
Mentha arvensis
Pascopyrum smithii
Penstemon barbatus
Penstemon strictus
Pinus ponderosa
Poa bulbosa
Poa pratensis
Populus angustifolia
Prunus virginiana
Pseudotsuga menziesii
Quercus gambelii
Ranunculus sp.
Rhus trilobata
Ribes inerme
Rosa woodsii
Rudbeckia ampla
Salix exigua
Salix monticola
Salix sp.
Shepherdia argentea
Stipa comata
Taraxacum officinale
Thalictrum fendleri
Toxicodendron rydbergii
Tragopogon dubius
Trifolium sp.
Typha latifolia

2.

Survey date: 6-8-01

Survey Site: Chimney Rock Archaeological site, east entrance

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S21

Site description: Scattered Juniperus scopulorum with mixed shrubs and grasses

Rare plants located at site: Astragalus proximus (AA005)

Species observed at site:

Achillea lanulosa

Agropyron cristatum

Aristida purpurea

Artemisia dracunculus (Oligosporus)

Artemisia frigida

Asclepias subverticillata

Aster glaucodes

Astragalus proximus

Berberis fendleri

Bouteloua gracilis

Bromus inermis

Bromus tectorum

Calochortus nutallii

Camelina microcarpa

Chaetopappa ericoides

Chrysothamnus nauseosus

Cirsium tracyi

Cryptantha suffruticosa

Elymus junceus

Eriogonum racemosum

Geranium caespitosum

Helianthus annuus

Heterotheca villosa

Hymenopappus filifolius

Juniperus scopulorum

Lactuca serriola

Lithospermum multiflorum

Medicago officinalis

Mentzelia sp.

Oenothera cespitosa

Oenothera coronopifolia

Opuntia fragilis

Oryzopsis hymenoides

Pascopyrum smithii

Pediocactus sp.

Penstemon barbatus

Prunus virginiana

Quercus gambelii

Ribes aureum

Sphaeralcea coccinea

Stipa comata

Tetraneuris ivesiana

Tragopogon dubius

3.

Survey date: 6-9-01

Survey Site: Turkey Creek Road (FR 615A), at end of road

USGS quadrangle: Pargin Mountain

Legal description: T34N R5W S34; GPS: 4114480N; 288916E

Site description: Upland site, opening in Ponderosa pine/Gambel oak community

Rare plants located at site: Astragalus oocalycis (AA006)

Photo 7

Species observed at site:

Allium acuminatum

Artemisia tridentata ssp. vaseyana

Astragalus oocalycis

Astragalus sp.

Bromus tectorum

Castilleja sp.

Cirsium tracyi

Helianthus annuus

Juniperus scopulorum

Koeleria macrantha

Lomatium grayi

Melilotus officinalis

Penstemon glabrescens

Phlox longifolia

Pinus edulis

Pinus ponderosa

Psilochenia sp.

Quercus gambelii

Sphaeralcea coccinea

Tetraneuris ivesiana

Tragopogon dubius

Trifolium sp.

Wyethia X magna

4.

Survey date: 6-9-01

Survey Site: Turkey Creek along dry creek, downstream from site 3, near NF boundary

USGS quadrangle: Pargin Mountain

Legal description: T34N R5W S35

Site description: Ponderosa pine/Gambel oak community with Populus angustifolia

Rare plants located at site: none

Species observed at site:

Achillea lanulosa

Agropyron cristatum

Allium acuminatum

Alyssum sp.

Amelanchier alnifolia

Berberis fendleri

Bromus tectorum

Camelina microcarpa

Carduus nutans

Chrysothamnus nauseosus

Cirsium tracyi

Clematis ligusticifolia

Crataegus sp.

Descurainia sp.

Erigeron flagellaris

Eriogonum racemosum

Galium boreale

Glycyrrhiza lepidota

Iris missouriensis

Juniperus scopulorum

Lathyrus eucosmus

Lepidium perfoliatum

Lupinus ammophilus

Maianthemum stellatum

Medicago lupulina

Melilotus officinalis

Oenothera cespitosa

Opuntia fragilis

Oryzopsis hymenoides

Pascopyrum smithii

Peraphyllum ramosissimum

Pinus ponderosa

Plantago major

Poa pratensis

Populus angustifolia

Potentilla hippiana

Prunus virginiana

Purshia tridentata

Quercus gambelii

Rhus trilobata

Rosa woodsii

Shepherdia argentea

Sisymbrium altissimum

Symphoricarpos oreophilus

Taraxacum officinale

Thalictrum fendleri

Toxicodendron rydbergii

Verbena bracteata

Vicia americana

5.

Survey date: 6-9-01

Survey Site: Chimney Rock Visitor's Center

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S20

Site description: Scattered Juniperus scopulorum with mixed shrubs and grasses

Rare plants located at site: Astragalus proximus (AA005 sub)

Species observed at site:

Achillea lanulosa

Agropyron cristatum

Alyssum sp.

Artemisia frigida

Artemisia ludoviciana

Artemisia tridentata ssp. tridentata

Aster glaucodes

Astragalus proximus

Bouteloua gracilis

Bromus inermis

Bromus tectorum

Chrysothamnus viscidiflorus

Cirsium tracyi

Delphinium ramosum

Descurainia sp.

Erigeron speciosus

Eriogonum racemosum

Erysimum capitatum

Glycyrrhiza lepidota

Heterotheca villosa

Juniperus scopulorum

Koeleria macrantha

Lactuca serriola

Lappula redowskii

Lithospermum multiflorum

Lupinus sp. (annual)

Maianthemum stellatum

Medicago sativa

Melilotus officinalis

Pascopyrum smithii

Pediocactus simpsonii

Phleum pratense

Pinus ponderosa

Poa pratensis

Quercus gambelii

Rhus trilobata

Rosa woodsii

Scornaria pinnatifida?

Sonchus uliginosus

Stipa comata

Taraxacum officinale

Tetraneuris ivesiana

Tragopogon dubius

6.

Survey date: 06-08-01

Survey Site: First Fork Road, opposite Lower Piedra CG

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S35

Site description: Pinus ponderosa/Quercus gambelii community

Rare plants located at site: none

Species observed at site:

Acer glabrum

Amelanchier alnifolia

Antennaria marginata

Aristida purpurea

Artemisia ludoviciana

Aster glaucodes

Berberis fendleri

Bouteloua gracilis

Bromus tectorum

Carex pitiophila

Ceanothus fendleri

Cercocarpus montanus

Chaenactis douglasii

Clematis ligusticifolia

Erigeron flagellaris

Eriogonum alatum (Pterogonum)

Eriogonum sp.

Fendlera rupicola

Fragaria vesca

Fragaria virginiana

Heterotheca villosa

Heuchera parvifolia

Koeleria macrantha

Opuntia fragilis

Oryzopsis hymenoides

Osmorhiza sp.

Oxybaphus sp.

Paxistima myrsinites

Penstemon barbatus

Pinus ponderosa

Poa sp.

Populus angustifolia

Prunus virginiana

Pseudotsuga menziesii

Purshia tridentata

Quercus gambelii

Ribes sp.

Rosa woodsii

Senecio neomexicanus (Packera)

Symphoricarpos oreophilus

Tetrandeum ivesiana

Townsendia sp.

Toxicodendron rydbergii

Vicia americana

7.

Survey date: 6-10-01

Survey Site: Devil's Creek, FR 628 at locked gate (Canyon Sand and Gravel)

USGS quadrangle: Chris Mountain

Legal description: T35N R3W S32

Site description: Mixed conifer forest

Rare plants located at site: none

Species observed at site:

Abies concolor

Acer negundo

Achillea lanulosa

Alnus incana

Amelanchier alnifolia

Apocynum cannabinum

Arctium minus

Bromus inermis

Cardaria sp.

Carex geyeri

Ceanothus fendleri

Clematis ligusticifolia

Comandra umbellata

Cornus sericea

Crataegus macrantha var. occidentalis

Dactylis glomerata

Equisetum arvense

Erigeron flagellaris

Galium boreale

Geranium richardsonii

Iris missouriensis

Leucanthemum vulgare

Ligusticum porteri

Lomatium dissectum

Lupinus caudatus

Mahonia repens

Maianthemum stellatum

Medicago lupulina

Medicago sativa

Pascopyrum smithii

Paxistima myrsinites

Pinus ponderosa

Plantago major

Poa pratensis

Populus angustifolia

Potentilla sp.

Prunus virginiana

Pseudotsuga menziesii

Pteridium aquilinum

Quercus gambelii

Ribes sp.

Rosa woodsii

Salix monticola

Symphoricarpos oreophilus

Taraxacum officinale

Thalictrum fendleri

Toxicodendron rydbergii

Tragopogon dubius

Trifolium pratense

Vicia americana

8.

Survey date: 6-10-01

Survey Site: Chris Mountain Road, FR 628.

USGS quadrangle: Chris Mountain

Legal description: T35N R3W S28. GPS: 303567E; 4126888N

Site description: Ponderosa pine/Gambel oak forest

Rare plants located at site: none

Photos 10 and 11

Species observed at site:

Achillea lanulosa

Allium geoyi

Amelanchier alnifolia

Antennaria marginata

Antennaria rosea

Apocynum cannabinum

Arctostaphylos uva-ursi

Artemisia ludoviciana

Bromus inermis

Carex geoyi

Cerastium strictum

Collinsia parviflora

Collomia linearis

Delphinium ramosum

Potentilla arguta ssp. *arguta* (*Drymocallis*)

Erigeron flagellaris

Erythronium grandiflorum

Festuca arundinacea

Galium boreale

Gayophytum sp.

Geranium caespitosum

Hieracium fendleri (*Chlorocrepis*)

Lithospermum multiflorum

Mahonia repens

Oreobrama nevadensis

Pinus ponderosa

Plantago major

Poa fendleriana

Poa pratensis

Quercus gambelii

Rosa woodsii

Rumex sp.

Senecio neomexicanus (*Packera*)

Symphoricarpos oreophilus

Viola sp.

Wyethia arizonica

9.

Survey date: 6-10-01

Survey Site: Chris Mountain, near summit

USGS quadrangle: Chris Mountain

Legal description: T35N R3W S23; GPS 306509E 4129264N

Site description: Mixed conifer forest, wet meadow, and reservoir

Rare plants located at site: none

Species observed at site:

Abies concolor

Achillea lanulosa

Amelanchier alnifolia

Antennaria marginata

Antennaria rosea

Arnica cordifolia

Carex geyeri

Collinsia parviflora

Collomia linearis

Comandra umbellata

Delphinium ramosum

Erigeron flagellaris

Erythronium grandiflorum

Fragaria virginiana

Frasera speciosa

Galium boreale

Goodyera oblongifolia

Mahonia repens

Nocca montana

Paxistima myrsinites

Penstemon strictus

Pinus ponderosa

Poa pratensis

Populus tremuloides

Pseudocymopterus montanus

Pseudostellaria jamesiana

Pseudotsuga menziesii

Pteridium aquilinum

Quercus gambelii

Sedum lanceolatum

Senecio neomexicanus (Packera)

Symphoricarpos oreophilus

Thalictrum fendleri

Trifolium longipes

Wet meadow:

Epilobium sp.

Iris missouriensis

Poa pratensis

Thermopsis montana

Trifolium longipes

At reservoir:

Alisma triviale

Bromus inermis

Callitriche verna

Eleocharis palustris

Juncus balticus

Salix exigua

10.

Survey date: 6-10-01

Survey Site: Piedra campground Road, FR 621

USGS quadrangle: Chimney Rock

Legal description: quadrangle T34N R4W S8

Site description: Pinus ponderosa forest next to barren shale

Rare plants located at site: Astragalus proximus (AA007)

Species observed at site:

Achillea lanulosa

Alyssum sp.

Artemisia frigida

Artemisia ludoviciana

Artemisia vaseyana

Aster glaucodes

Astragalus proximus

Bromus tectorum

Carex geyeri

Cercocarpus montanus

Chaenactis douglasii

Chaetopappa ericoides

Chrysothamnus nauseosus

Cirsium pulchellum

Cirsium tracyi

Delphinium ramosum

Descurainia incisa subsp. fillipes

Dracocephalum parviflorum

Elymus longifolius

Erigeron flagellaris

Eriogonum racemosum

Fendlera rupicola

Gutierrezia sarothrae

Heterotheca villosa

Juniperus scopulorum

Koeleria macrantha

Lappula redowskii

Lepidium montanum

Lomatium dissectum

Mahonia repens

Maianthemum stellatum

Melilotus officinalis

Opuntia fragilis

Oryzopsis hymenoides

Pascopyrum smithii

Pinus ponderosa

Poa fendleriana

Poa pratensis

Pseudotsuga menziesii

Psilochenia intermedia

Purshia tridentata

Quercus gambelii

Rhus trilobata

Ribes sp.

Stipa comata

Symphoricarpos oreophilus

Taraxacum officinale

Tragopogon dubius

Turritis glabra

Wyethia X magna

11.

Survey date: 6-10-01

Survey Site: Piedra Campground Road, FR 621

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S8

Site description: steep, barren shale slopes

Rare plants located at site: none

Species observed at site:

Asclepias asperula

Cercocarpus montanus

***Cirsium calcareum* var. *puchellum* (type locality)**

Eriogonum lonchophyllum

Purshia tridentata

Rhus glabra

12.

Survey date: 6-11-01

Survey Site: Boone Creek

USGS quadrangle: Edith

Legal description: T33N R1W S13

Site description: Streambank of Boone Creek

Rare plants located at site: Viola pedatifida (AA008)

Photo 1

Species observed at site:

Achillea lanulosa

Antennaria rosea

Artemisia ludoviciana

Carex sp.

Cirsium vulgare

Collomia linearis

Erigeron flagellaris

Eriogonum alatum (Pterogonum)

Eriogonum racemosum

Heuchera parvifolia

Lithospermum multiflorum

Lupinus caudatus

Mahonia repens

Medicago lupulina

Mentha arvensis

Pascopyrum smithii

Pinus ponderosa

Poa pratensis

Populus angustifolia

Potentilla sp.

Quercus gambelii

Rosa woodsii

Senecio neomexicanus (Packera)

Sidalcea neomexicana

Trifolium longipes

Trifolium hybridum

Viola pedatifida

13.

Survey date: 6-11-01

Survey Site: Valle Seco

USGS quadrangle: Serviceberry Mountain

Legal description: T33N R1W S6, 7; GPS: 322854E 4110673N; 6968 ft.

Site description: Sagebrush meadow at end of road and barren hillside above

Rare plants located at site: Astragalus oocalycis, Phlox caryophylla

PhotoAA 2-2, 3

Species observed at site:

Agropyron cristatum

Artemisia ludoviciana

Artemisia tridentata ssp. vaseyana

Astragalus haydenianus

Astragalus lonchocarpus

Astragalus oocalycis

Calochortus nuttallii

Carex sp.

Cymopterus purpureus

Elymus elymoides

Erigeron flagellaris

Eriogonum alatum (Pterogonum)

Eriogonum lonchophyllum

Heterotheca villosa

Juncus balticus

Juniperus scopulorum

Koeleria macrantha

Lomatium dissectum

Lomatium grayi

Lotus wrightii

Lupinus kingii

Opuntia fragilis

Oryzopsis hymenoides

Pascopyrum smithii

Penstemon glabrescens

Phlox caryophylla

Pinus ponderosa

Poa compressa

Poa pratensis

Rosa woodsii

Rumex sp.

Sphaeralcea coccinea

Stipa comata

Stipa nelsonii (Achnatherum)

Tetrandeum ivesiana

Townsendia incana

Trifolium sp.

Turritis glabra

14.

Survey date: 6-12-01

Survey Site: Archuleta Creek

USGS quadrangle: Lone Tree Canyon

Legal description: T34N R4W S35

Site description: Mixed forest Uplands at National Forest - Ute boundary

Rare plants located at site: none

Species observed at site:

Achillea lanulosa

Agoseris auriantica

Artemisia ludoviciana

Berberis fendleri

Bromus inermis

Carex geyeri

Cirsium arvense

Cirsium tracyi

Clematis ligusticifolia

Comandra umbellata

Cornus stolonifera

Corydalis aurea

Dracocephalum parviflorum

Erigeron flagellaris

Erigeron speciosus

Eriogonum racemosum

Festuca arizonica

Fragaria virginiana

Galium septentrionale

Geum triflorum (*Erythrocoma*)

Ipomopsis aggregata

Iris missouriensis

Juniperus scopulorum

Lathyrus leucanthus

Lotus wrightii

Lupinus caudatus

Mahonia repens

Maianthemum stellatum

Medicago lupulina

Medicago sativa

Oenothera cespitosa

Pascopyrum smithii

Pinus ponderosa

Poa pratensis

Populus angustifolia

Populus tremuloides

Potentilla sp.

Prunus virginiana

Pseudocymopterus montanus

Pseudotsuga menziesii

Quercus gambelii

Rosa woodsii

Salix exigua

Symphoricarpos oreophilus

Taraxacum officinale

Tragopogon dubius

Verbascum thapsus

Vicia americana

15.

Survey date: 6-12-01

Survey Site: Archuleta Mesa

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S26

Site description: North slope and tributary canyon

Rare plants located at site: none

Species observed at site:

Abies concolor
Acer glabrum
Acer negundo
Achillea lanulosa
Allium acuminatum
Castilleja chromosa
Allium cernuum
Amelanchier alnifolia
Amelanchier utahensis
Androsace septentrionalis
Antennaria marginata
Antennaria rosea
Aquilegia sp.
Aristida purpurea
Arnica cordifolia
Artemisia ludoviciana
Asclepias asperula
Aster glaucodes
Aster sp.
Astragalus flexuosus
Berberis fendleri
Bouteloua gracilis
Brickellia californica
Brickellia grandiflora
Bromus hordeaceus
Bromus tectorum
Calochortus nuttallii
Campanula rotundifolia
Carex geyeri
Carex sp.
Ceanothus fendleri
Cercocarpus montanus
Chaenactis douglasii
Clematis ligusticifolia
Cornus stolonifera
Cymopterus purpureus
Descurainia sp.
Draba sp.
Elymus elymoides
Erigeron divergens
Erigeron flagellaris
Eriogonum alatum (Pterogonum)
Eriogonum jamesii
Fendlera rupicola
Festuca arizonica
Fragaria vesca

Frasera speciosa
Galium septentrionale
Geranium caespitosum
Gutierrezia sarothrae
Helianthus multiflorus
Heterotheca villosa
Heuchera parvifolia
Hilaria jamesii
Hymenopappus filifolius
Juniperus scopulorum
Koeleria macrantha
Lotus wrightii
Lupinus caudatus
Lupinus kingii
Mahonia repens
Maianthemum racemosum
Mertensia brevistyla
Mimulus floribundus
Noccaea montana
Opuntia fragilis
Opuntia phaeocantha (spineless)
Oryzopsis hymenoides
Osmorhiza depauperata
Paxistima myrsinites
Penstemon barbatus
Penstemon glabrescens
Pinus edulis
Pinus ponderosa
Poa fendleriana
Populus angustifolia
Prunus virginiana
Pseudocymopterus montanus
Pseudotsuga menziesii
Purshia tridentata
Quercus gambelii
Ribes cereum
Rosa woodsii
Salix exigua
Senecio neomexicanus (Packera)
Solidago velutina
Sphaeralcea coccinea
Stipa comata
Symphoricarpos oreophilus
Tetrandeum ivesiana
Thalictrum fendleri
Thermopsis montana

Townsendia cf. glabella
Toxicodendron rydbergii
Verbascum thapsus
Vicia americana

Viola adunca
Wyethia arizonica
Yucca baccata

16.

Survey date: 6-17-01

Survey Site: Fossett Gulch Road

USGS quadrangle: Pargin Mountain

Legal description: T34N R5W S11, 14

Site description: shale slopes in Pinus ponderosa/Quercus gambelii community.

Rare plants located at site: none

Species observed at site:

Achillea lanulosa
Allium cernuum
Amelanchier alnifolia
Androsace septentrionalis
Antennaria marginata
Arabis perenans
Aristida purpurea
Artemisia ludoviciana
Asclepias asperula
Aster sp.
Bouteloua gracilis
Brickellia californica
Bromus sp.
Carex geyeri
Carex sp.
Ceanothus fendleri
Cercocarpus montanus
Chaetopappa ericoides
Cirsium tracyi
Comandra umbellata
Crataegus sp.
Descurainia richardsonii
Elymus elymoides
Erigeron divergens
Erigeron flagellaris
Eriogonum alatum (Pterogonum)
Eriogonum racemosum
Fragaria virginiana
Galium septentrionale
Geranium caespitosum
Heterotheca villosa
Juniperus scopulorum
Koeleria macrantha
Lepidium sp.
Lithospermum

Lotus wrightii
Lupinus caudatus
Mahonia repens
Maianthemum stellatum
Melilotus officinalis
Muhlenbergia montana
Opuntia fragilis
Opuntia phaeocantha
Oryzopsis hymenoides
Pascopyrum smithii
Paxistima myrsinites
Penstemon barbatus
Penstemon glabrescens
Penstemon strictus
Pinus edulis
Pinus ponderosa
Poa pratensis
Prunus virginiana
Pseudocymopterus montanus
Pseudotsuga menziesii
Purshia tridentata
Quercus gambelii
Rosa woodsii
Stipa comata
Symphoricarpos oreophilus
Tetraneuris ivesiana
Thermopsis montana
Townsendia incana
Toxicodendron rydbergii
Tragia ramosa
Tragopogon dubius
Vicia americana
Wyethia arizonica
Yucca baccata

17.

Survey date: 06-17-01

Survey Site: Pole Gulch trail

USGS quadrangle: Pargin Mountain

Legal description: T34N R5W S15

Site description: Pinus ponderosa/Quercus gambelii community

Rare plants located at site: none

Species observed at site: (Additions to Fossett Gulch species list only)

Allium acuminatum

Allium cernuum

Bromus inermis

Carex geyeri

Ceanothus fendleri

Collomia linearis

Ipomopsis aggregata

Lomatium grayi

Lotus wrightii

Lupinus ammophilus

Lupinus kingii

Populus tremuloides

Psilochenia intermedia

Pteridium aquilinum var. pubescens

Senecio neomexicanus (Packeria)

Townsendia incana

Trifolium longipes

Verbascum thapsus

18.

Survey date: 6-17-01

Survey Site: Turkey Creek Road (FR 616A) (Goose Creek)

USGS quadrangle: Pargin Mountain

**Legal description: T34N R5W S21, 28; UTM: 287865.6; 4151511.7
6742 ft.**

Site description: Large sagebrush meadow openings in Ponderosa Pine/Gambel oak forest

**Rare plants located at site: Astragalus oocalycis (AA002), Phlox caryophylla (AA003)
photos 7, 8.**

Species observed at site:

Allium acuminatum
Androsace septentrionalis
Antennaria dimorpha
Artemisia nova
Astragalus bisulcatus
Astragalus oocalycis
Astragalus scopulorum
Bromus sp.
Chrysothamnus depressus
Cirsium tracyi
Collinsia parviflora
Erigeron flagellaris
Erigeron speciosus
Eriogonum racemosum
Gayophytum diffusum
Helianthus annuus
Koeleria macrantha
Lupinus kingii
Melilotus officinalis
Opuntia fragilis
Pascopyrum smithii
Phlox caryophylla
Sphaeralcea coccinea
Stipa nelsonii (Achnatherum)
Tetraneuris ivesiana

19.

Survey date: 6-18-01

Survey Site: Chimney Rock Archaeological Area, upper parking area, trail to lower ruins, along ridge

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S17

Site description: Pinyon-Juniper/Gambel oak community

Rare plants located at site: none

Species observed at site:

Agropyron cristatum

Allium acuminatum

Alyssum parviflorum

Amelanchier alnifolia

Amelanchier utahensis

Arabis perennans

Aristida purpurea

Artemisia carruthii

Artemisia frigida

Artemisia ludoviciana

Artemisia tridentata ssp. vaseyana

Asclepias asperula

Aster sp.

Astragalus flexuosus

Astragalus sp.

Atriplex canescens

Bouteloua gracilis

Brickellia californica

Brickellia grandiflora

Bromus commutatus

Bromus inermis

Bromus japonicus

Bromus tectorum

Castilleja chromosa

Castilleja linariifolia

Cercocarpus montanus

Chaetopappa ericoides

Chrysothamnus nauseosus

Cirsium tracyi

Comandra umbellata

Convolvulus arvensis

Cylindropuntia whippleyi

Elymus elymoides

Eriogonum jamesii

Eriogonum lonchophyllum

Eriogonum racemosum

Erodium cicutarium

Fendlera rupicola

Gutierrezia sarothrae

Heliomeris multiflora

Heterotheca villosa

Hilaria jamesii

Hymenopappus filifolius

Juniperus scopulorum

Koeleria macrantha

Lactuca serriola

Lepidium sp.

Lomatium grayi

Lupinus ammophilus

Lupinus kingii

Medicago sativa

Melilotus officinalis

Opuntia fragilis

Opuntia phaeocantha

Oryzopsis hymenoides

Oxybaphus linearis

Pascopyrum smithii

Penstemon barbatus

Penstemon glabrescens

Picea engelmannii

Pinus edulis

Pinus ponderosa

Poa fendleriana

Poa secunda

Polygonum douglasii

Populus angustifolia

Prunus virginiana

Pseudotsuga menziesii

Psilochenia intermedia

Purshia tridentata

Quercus gambelii

Rhus trilobata

Ribes cereum

Rosa woodsii

Sisymbrium altissimum

Sphaeralcea coccinea

Sphaeralcea fendleri

Symphoricarpos oreophilus

Tetrameuris ivesiana

Townsendia incana

Tragopogon dubius

Trifolium hybridum

Verbascum thapsus

Wyethia arizonica

Yucca baccata

Yucca harrimanniae

19b.

Survey date: 6-18-01

Survey Site: Chimney Rock Archaeological Area, shale slopes

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S20; 295269.7E; 41116850.7 N. 6624 ft.

Site description: Pinyon-juniper and oak with black sage on barren dark gray shale slopes

Rare plants located at site: *Astragalus proximus* (AA005)

photos 13, 14.

Species observed at site:

Apocynum cannabinum

Artemisia nova

Asclepias asperula

Berberis fendleri

Bouteloua gracilis

Calochortus nuttallii

Chaenactis douglasii

Chaetopappa ericoides

Cryptantha sp.

Erigeron speciosus

Eriogonum jamesii

Eriogonum lonchophyllum

Eriogonum racemosum

Fendlera rupicola

Helianthus annuus

Heuchera parvifolia

Hilaria jamesii

Hymenopappus filifolius

Juniperus scopulorum

Lithospermum multiflorum

Oryzopsis hymenoides

Pascopyrum smithii

Pinus edulis

Pinus ponderosa

Prunus virginiana

Purshia tridentata

Quercus gambelii

Rhus trilobata

Rosa woodsii

Solidago sp.

Stipa comata

Symphoricarpos oreophilus

Townsendia sp.

Toxicodendron rydbergii

Tragia ramosa

Tragopogon dubius

20.

Survey date: 6-18

Survey Site: Echo Canyon Road

USGS quadrangle: Jackson Mountain

Legal description: T35N, R1W, S24, N ½; UTM: 331418E; 41124697.7 N 8274 ft.

Site description: Ponderosa pine/Gambel oak forest

Rare plants located at site: none

Species observed at site:

Achillea lanulosa

Agoseris glauca

Amelanchier utahensis

Artemisia ludoviciana

Arabis perennans

Bromus inermis

Carex geyeri

Ceanothus fendleri

Cirsium tracyi

Collomia linearis

Comandra umbellata

Dactylis glomerata

Delphinium ramosum

Erigeron flagellaris

Eriogonum racemosum

Festuca arizonica

Heterotheca villosa

Ligusticum porteri

Mahonia repens

Penstemon strictus

Pinus ponderosa

Poa fendleriana

Poa pratensis

Potentilla pulcherrima

Pseudocymopterus montanus

Quercus gambelii

Rosa woodsii

Senecio neomexicanus (Packer)

Tragopogon dubius

Trifolium longipes

Vicia americana ssp. *minor*

Wyethia arizonica

21.

Survey date: 6-18-01

Survey Site: Rito Blanco headwaters, FR 663

USGS quadrangle: Blackhead Peak

Legal description: T35N R1E S9; UTM 335374.3 E; 4127990.2 N; 8645 ft

Site description: Aspen/Douglas fir forest and riparian of small stream

Rare plants located at site: none

Species observed at site:

Abies concolor

Achillea lanulosa

Allium textile

Alnus incana ssp. *tenuifolia*

Arnica cordifolia

Bromus ciliatus

Bromus inermis

Carex aquatilis

Carex microptera

Castilleja sp.

Dactylis glomerata

Delphinium barbeyi

Delphinium nuttallianum

Dodecatheon pulcherrimum

Dugaldia hoopsii

Equisetum arvense

Erigeron flagellaris

Erigeron speciosus

Fragaria virginiana

Frasera speciosa

Galium septentrionale

Geranium richardsonii

Geum macrophyllum var. *perincisum*

Heracleum lanatum

Iris missouriensis

Lathyrus leucanthus

Leucanthemum vulgare

Ligusticum porteri

Mahonia repens

Maianthemum stellatum

Maianthemum racemosum ssp. *amplexicaule*

Mertensia ciliata

Mimulus guttatus

Osmorhiza depauperata

Pedicularis racemosa

Picea engelmannii

Poa pratensis

Populus tremuloides

Potentilla sp.

Prunus virginiana

Pseudocymopterus montanus

Pseudotsuga menziesii

Ranunculus sp.

Ribes inerme

Ribes montigenum

Rosa woodsii

Rudbeckia ampla

Sambucus racemosa

Saxifraga odontoloma (*Micranthes*)

Senecio triangularis

Symphoricarpos oreophilus

Taraxacum officinale

Thalictrum fendleri

Thermopsis montana

Nocca montana

Trifolium pratense

Trifolium sp.

Veratrum tenuipetalum

Vicia americana ssp. *minor*

Viola adunca

Viola canadensis

22.

Survey date: 6-19-01

Survey Site: Relay Station Road near radio towers

USGS quadrangle: Baldy Mt

Legal description: T35N R5W S31

Site description: East facing slopes with Gambel oak shrubland and openings

Rare plants located at site: Astragalus oocalycis (AA023)

Species observed at site:

Allium acuminatum
Amelanchier utahensis
Arenaria congesta (Eremogene)
Artemisia ludoviciana
Artemisia tridentata ssp. vaseyana
Astragalus flexuosus
Astragalus oocalycis
Arabis perennans
Arabis sp.
Bromus inermis
Carex geeyeri
Chrysothamnus nauseosus
Cirsium tracyi
Comandra umbellata
Convolvulus arvensis
Clematis hirsutissima (Coriflora)
Delphinium ramosum
Elymus elymoides
Erigeron flagellaris
Erigeron speciosus
Eriogonum alatum (Pterogonum)
Eriogonum racemosum
Galium septentrionale
Ipomopsis aggregata
Lactuca serriola
Lathyrus leucanthus
Linum lewisii
Lomatium grayi

Lupinus caudatus
Mahonia repens
Medicago sativa
Melilotus officinalis
Pascopyrum smithii
Penstemon glabrescens
Penstemon strictus
Pinus ponderosa
Poa fendleriana
Poa pratensis
Polygonum douglasii
Potentilla hippiana
Potentilla pulcherrima
Prunus virginiana
Pseudotsuga menziesii
Psilochenia intermedia
Purshia tridentata
Quercus gambelii

Stipa nelsonii (Achnatherum)
Symphoricarpos oreophilus
Taraxacum officinale
Townsendia incana
Tragopogon dubius
Trifolium hybridum
Trifolium longipes
Vicia americana ssp. minor
Wyethia arizonica

23.

Survey date: 6-19-01

Survey Site: Spring Creek Road (CR 537) by National Forest boundary, La Plata County

USGS quadrangle: Bayfield

Legal description: T34N R6, S31

Site description: Pinyon-juniper/Artemisia community

Rare plants located at site: Astragalus oocalycis (AA013), Phlox caryophylla (AA012)

Photo 17

Species observed at site:

Agropyron cristatum

Alyssum parviflorum

Artemisia tridentata ssp. vaseyana

Asclepias asperula

Astragalus oocalycis

Bouteloua gracilis

Bromus commutatus

Bromus inermis

Bromus tectorum

Cercocarpus montanus

Chaetopappa ericoides

Chrysothamnus depressus

Chrysothamnus nauseosus

Cymopterus purpureus

Elymus elymoides

Erigeron speciosus

Eriogonum jamesii

Eriogonum racemosum

Fendlera rupicola

Heterotheca villosa

Hilaria jamesii

Hymenoxys richardsonii (Picradenia)

Ipomopsis congesta

Juniperus scopulorum

Koeleria macrantha

Lomatium grayi

Lupinus ammophilus

Lupinus kingii

Melilotus officinalis

Mirabilis multiflora

Opuntia phaeocantha

Opuntia polyacantha

Oryzopsis hymenoides

Pascopyrum smithii

Penstemon glabrescens

Penstemon sp. (cf breviculus)

Peraphyllum ramosissimum

Pinus edulis

Purshia tridentata

Quercus gambelii

Rhus trilobata

Salsola sp.

Sphaeralcea coccinea

Stipa comata

Tetrandeum ivesiana

Xanthium strumarium

Yucca harrimanniae

24.

Survey date: 6-19-01

Survey Site: Spring Creek Road (FR 756), past radio towers, by Piedra stock drive

USGS quadrangle: Bayfield

Legal description: T34N R6W S27

Site description: Gambel oak-Chokecherry shrubland

Rare plants located at site: Astragalus oocalycis (AA013), Phlox caryophylla (AA012)

Photo 16

Species observed at site:

Abies concolor

Achillea lanulosa

Amelanchier utahensis

Arabis drummondii

Bromus inermis

Campanula rotundifolia

Carex geyeri

Delphinium sp.

Erigeron flagellaris

Erigeron speciosus

Eriogonum racemosum

Festuca thurberi

Galium boreale septentrionale

Lathyrus leucanthus

Ligusticum porteri

Mahonia repens

Pascopyrum smithii

Penstemon strictus

Phacelia heterophylla

Poa pratensis

Populus tremuloides

Potentilla sp.

Prunus virginiana

Pseudocymopterus montanus

Pseudostellaria jamesiana

Pteridium aquilinum

Quercus gambelii

Rosa woodsii

Symphoricarpos oreophilus

Taraxacum officinale

Thalictrum fendleri

Tragopogon dubius

Vicia americana ssp. *minor*

Viola adunca

25.

Survey date: 6-19-01

Survey Site: Spring Creek Road at upper limit of Astragalus oocalycis population

USGS quadrangle: Pargin Mountain

Legal description: T34N R6W S23; UTM 279439.2 E; 4115470.9 N; 7290 ft.

Site description: Disturbed roadside in Ponderosa pine/Gambel oak

Rare plants located at site: Astragalus oocalycis (AA013), Phlox caryophylla (AA012)

Species observed at site:

Achillea lanulosa

Allium acuminatum

Artemisia ludoviciana

Aster glaucodes

Astragalus bisulcatus

Bromus inermis

Bromus tectorum

Carex geeyeri

Chrysothamnus nauseosus

Cirsium tracyi

Convolvulus arvensis

Cymopterus purpureus

Dactylis glomerata

Erigeron flagellaris

Erigeron speciosus

Erodium cicutarium

Eriogonum alatum (Pterogonum)

Ipomopsis aggregata

Lathyrus leucanthus

Lupinus caudatus

Mahonia repens

Melilotus officinalis

Pascopyrum smithii

Penstemon glabrescens

Phlox caryophylla

Pinus ponderosa

Prunus virginiana

Quercus gambelii

Symphoricarpos oreophilus

Taraxacum officinale

Vicia americana ssp. minor

Wyethia X magna

Yucca harrimanniae

26.

Survey date: 6-20-01

Survey Site: Ute Campground

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S14, E 1/2; UTM 297854.6 E; 4121379.5 N. 6844 ft.

Site description: Clearings in Ponderosa Pine/Gambel oak community, level to gentle south slope

Rare plants located at site: *Astragalus oocalycis* (AA019)

Photo 19.

Species observed at site:

Achillea lanulosa

Allium acuminatum

Alyssum parviflorum

Amelanchier utahensis

Androsace septentrionalis

Antennaria dimorpha

Aristida purpurea

Artemisia carruthii

Artemisia frigida

Artemisia ludoviciana

Artemisia nova

Aster glaucodes

Bouteloua gracilis

Bromus commutatus

Calochortus nuttallii

Carex geyeri

Castilleja linariifolia

Cercocarpus montanus

Chrysothamnus depressus

Chrysothamnus viscidiflorus

Cirsium tracyi

Comandra umbellata

Cymopterus purpureus

Elymus elymoides

Erigeron divergens

Erigeron flagellaris

Eriogonum jamesii

Eriogonum racemosum

Eriogonum umbellatum

Fendlera rupicola

Festuca arizonica

Gutierrezia sarothrae

Heliomeris multiflora

Heterotheca villosa

Hymenopappus filifolius

Juniperus scopulorum

Koeleria macrantha

Lepidium sp.

Lotus wrightii

Lupinus ammophilus

Mahonia repens

Opuntia fragilis

Opuntia polyacantha

Oryzopsis hymenoides

Pascopyrum smithii

Pediocactus simpsonii

Penstemon glabrescens

Penstemon strictus

Pinus edulis

Pinus ponderosa

Poa fendleriana

Poa secunda

Psilochenia intermedia

Purshia tridentata

Quercus gambelii

Rhus trilobata

Rosa woodsii

Sphaeralcea coccinea

Stipa comata

Symphoricarpos oreophilus

Tetraneuris ivesiana

Townsendia incana

Toxicoscordion venenosum

Tragia ramosa

Tragopogon dubius

Wyethia arizonica

27.

Survey date: 6-20-01

Survey Site: Lange Canyon, FR 132

USGS quadrangle: Baldy Mountain

Legal description: T35N R6W S25

Site description: Sagebrush meadow within Ponderosa pine/Gambel oak community

Rare plants located at site: Astragalus oocalycis (AA016), Phlox caryophylla (AA017)

Photo 29, of habitat.

Species observed at site:

Allium acuminatum

Antennaria dimorpha

Artemisia ludoviciana

Artemisia nova

Artemisia tridentata ssp. *vaseyana*

Astragalus flavus

Chrysothamnus depressus

Chrysothamnus nauseosus

Erigeron speciosus

Eriogonum racemosum

Koeleria macrantha,

Lomatium grayi

Poa secunda

28.

Survey date: 6-20-01

Survey Site: Bear Wallow Creek, Spruce Spring and adjacent uplands (FR135A)

USGS quadrangle: Baldy Mountain

Legal description: T35N R5W S6; UTM: 281320 E; 4134376.6 N; 8602 ft.

Site description: Mixed conifer and aspen forest with wet areas

Rare plants located at site: none

Species observed at site:

Abies concolor

Acer glabrum

Achillea lanulosa

Allium textile

Amelanchier alnifolia

Antennaria marginata

Antennaria parviflora

Apocynum cannabinum

Aquilegia coerulea

Arctostaphylos uva-ursi

Bromus inermis

Carex geyseri

Carex microptera

Collinsia parviflora

Comandra umbellata

Cornus sericea

Dactylis glomerata

Delphinium nuttallianum

Epilobium hornemannii

Epilobium lactiflorum

Erigeron flagellaris

Erigeron speciosus

Fragaria virginiana

Frasera speciosa

Galium septentrionale

Geranium richardsonii

Iris missouriensis

Lathyrus leucanthus

Ligusticum porteri

Mahonia repens

Maianthemum racemosum

Marrubium vulgare

Moeringia macrophylla

Osmorhiza depauperata

Pascopyrum smithii

Paxistima myrsinites

Pedicularis sp.

Penstemon strictus

Phacelia heterophylla

Pinus ponderosa

Plantago major

Poa fendleriana

Poa pratensis

Populus angustifolia

Populus tremuloides

Potentilla pulcherrima

Prunus virginiana

Pseudocymopterus montanus

Pseudotsuga menziesii

Pteridium aquilinum var. pubescens

Quercus gambelii

Rosa woodsii

Rubus parviflorus (Rubacer)

Rubus idaeus

Senecio neomexicanus (Packera)

Solidago sp.

Streptopus fassettii

Symphoricarpos oreophilus

Taraxacum officinale

Thermopsis montana

Nocca montana

Toxicoscordion venenosum

Trifolium hybridum

Veratrum tenuipetalum

Vicia americana ssp. minor

Viola adunca

Viola canadensis

29.

Survey date: 06-17-01

Survey Site: Yellowjacket Pass

USGS quadrangle: Baldy Mountain

Legal description: T35N R5W S32

Site description: Hillside above Yellowjacket Pass, with *Quercus gambelii*, mixed shrubs

Rare plants located at site: Negative search for *Astragalus proximus* 1951 record

Species observed at site:

Achillea lanulosa

Allium acuminatum

Allium cernuum

Amelanchier alnifolia

Antennaria sp.

Aristida purpurea

Artemisia ludoviciana

Bromus commutatus

Bromus inermis

Bromus tectorum

Calochortus nuttallii

Carex geyeri

Chrysothamnus depressus

Cirsium tracyi

Comandra umbellata

Clematis hirsutissima (Coriflora)

Elymus elymoides

Eriogonum alatum (Pterogonum)

Galium septentrionale

Gayophytum ramosissimum

Juniperus scopulorum

Koeleria macrantha

Lathyrus leucanthus

Ligusticum porteri

Lomatium grayi

Lotus wrightii

Lupinus kingii

Mahonia repens

Maianthemum stellatum

Melilotus officinalis

Oryzopsis hymenoides

Pascopyrum smithii

Paxistima myrsinites

Penstemon glabrescens

Pinus edulis

Pinus ponderosa

Poa fendleriana

Potentilla pulcherrima

Psilochenia intermedia

Purshia tridentata

Quercus gambelii

Sphaeralcea coccinea

Symphoricarpos oreophilus

Townsendia incana

Toxicoscordion venenosum

Tragopogon dubius

Wyethia arizonica

30.

Survey date: 6-21-01

Survey Site: Sheep Cabin Creek, Blanco Basin Road

USGS quadrangle:

Legal description: UTM 333263.2; 4119728.3; 7506 ft.

Site description: Riparian along small creek

Rare plants located at site: none

Species observed at site:

Alnus incana

Carex utriculata

Cicuta douglasii

Cirsium arvense

Eleocharis palustris

Equisetum arvense

Festuca arizonica

Galium septentrionale

Juncus balticus

Lupinus caudatus

Populus angustifolia

Potentilla hippiana

Rorippa nasturtium-aquaticum

Rosa woodsii

Salix lasiandra

Salix monticola

Scrophularia lanceolata

Trifolium hybridum

Veronica americana

Veronica catenata

31.

Survey date: 6-21-01

Survey Site: Blanco River

USGS quadrangle: Harris Lake

Legal description: T34N R1E S16

Site description: Riparian along Rio Blanco River

Rare plants located at site: none

Species observed at site:

Achillea lanulosa

Alnus incana

Antennaria parvifolia

Apocynum sp.

Artemisia ludoviciana

Astragalus nuttallianus

Barbarea vulgaris

Bromus inermis

Bromus tectorum

Carex microptera

Cirsium vulgare

Collinsia parviflora

Crataegus sp.

Equisetum arvense

Equisetum hyemale (Hippochaete)

Erigeron divergens

Erigeron flagellaris

Erigeron speciosus

Galium septentrionale

Glycyrrhiza lepidota

Platanthera hyperborea

Heterotheca villosa

Juncus balticus

Juncus sp.

Lepidium montanum

Leucanthemum vulgare

Lonicera involucrata (Distegia)

Lupinus caudatus

Maianthemum stellatum

Medicago lupulina

Medicago sativa

Melilotus officinalis

Mimulus guttatus

Pascopyrum smithii

Penstemon strictus

Picea pungens

Pinus ponderosa

Poa pratensis

Polemonium pulcherrimum

Populus angustifolia

Prunus virginiana

Pseudocymopterus montanus

Pseudotsuga menziesii

Quercus gambelii

Rosa woodsii

Rudbeckia ampla

Rumex acetosella (Acetosella vulgaris)

Salix exigua

Salix monticola

Senecio neomexicanus (Packera)

Solidago sp.

Streptopus fassettii

Symphoricarpos oreophilus

Taraxacum officinale

Trifolium pratense

Trifolium repens

Verbascum thapsus

Vicia americana

Viola adunca

32.

Survey date: 6-21-01

Survey Site: Turkey Mountain, Eight Mile Mesa Road

USGS quadrangle: Serviceberry Mountain

Legal description: T34N R1W S16; UTM: 325890.0; 4116552.1; 7470 ft.

Site description: Barren shale slopes, disturbed roadsides in Ponderosa pine zone

Rare plants located at site: Phlox caryophylla (AA021), Lesquerella pruinosa, (AA020) Astragalus missouriensis ssp. humistrata (AA022)

Species observed at site:

Achillea lanulosa	Linum lewisii
Artemisia carruthii	Lupinus caudatus
Artemisia dracunculus (Oligosporus)	Mahonia repens
Artemisia frigida	Medicago sativa
Artemisia ludoviciana	Melilotus officinalis
Astragalus bisulcatus	Oenothera cespitosa
Astragalus missouriensis var. humistratus	Oryzopsis hymenoides
Bouteloua gracilis	Pascopyrum smithii
Bromus inermis	Penstemon glabrescens
Chrysothamnus nauseosus	Penstemon strictus
Cirsium arvense	Phlox caryophylla
Cirsium tracyi	Pinus ponderosa
Comandra umbellata	Poa pratensis
Clematis hirsutissima (Coriflora)	Potentilla hippiana
Dugaldia hoopesii	Potentilla pulcherrima
Erigeron flagellaris	Pseudocymopterus montanus
Erigeron speciosus	Psilochenia intermedia
Eriogonum alatum (Pterogonum)	Quercus gambelii
Eriogonum racemosum	Rosa woodsii
Festuca arizonica	Stipa comata
Galium septentrionale	Stipa nelsonii (Achnatherum)
Geum triflorum (Erythrocoma)	Symphoricarpos oreophilus
Heterotheca villosa	Taraxacum officinale
Ipomopsis aggregata	Townsendia incana
Iris missouriensis	Toxicodendron rydbergii
Juniperus scopulorum	Tragopogon dubius
Koeleria macrantha	Vicia americana
Lathyrus leucanthus	Wyethia arizonica
Lesquerella pruinosa	

33.

Survey date: 6-22-01

Survey Site: Eight Mile Mesa

USGS quadrangle: Serviceberry Mountain

Legal description: T34N R1W S19

Site description: Ponderosa pine/mixed grasses

Rare plants located at site: none

Photos 3-1, 2, 3.

Species observed at site:

Achillea lanulosa

Alyssum parviflorum

Amelanchier utahensis

Antennaria marginata

Artemisia ludoviciana

Bromus inermis

Bromus tectorum

Carex sp.

Ceanothus fendleri

Cirsium tracyi

Collinsia parviflora

Collomia linearis

Erigeron flagellaris

Eriogonum racemosum

Festuca arizonica

Galium septentrionale

Heterotheca villosa

Juniperus scopulorum

Koeleria macrantha

Lupinus ammophilus

Lupinus caudatus

Melilotus officinalis

Pascopyrum smithii

Penstemon strictus

Pinus ponderosa

Poa fendleriana

Poa pratensis

Quercus gambelii

Rumex crispus

Stipa comata

Symphoricarpos oreophilus

Tragopogon dubius

Vicia americana

Wyethia arizonica

34.

Survey date: 6-23-01

Survey Site: Pine-Piedra stock driveway, starting at gate at road end

USGS quadrangle: Pargin Mountain

Legal description: T34N R5W S18

Site description: Ponderosa pine, mixed conifers and shrubs

Rare plants located at site: Astragalus oocalycis (AA023)

Species observed at site:

Abies concolor

Acer glabrum

Achillea lanulosa

Allium acuminatum

Allium cernuum

Amelanchier alnifolia

Antennaria marginata

Antennaria parviflora

Arabis perennans

Arenaria congesta (Eremogene)

Arnica cordifolia

Artemisia dracunculus (Oligosporus)

Artemisia ludoviciana

Artemisia nova

Aster glaucodes

Astragalus flavus

Astragalus flexuosus

Astragalus oocalycis

Bromus inermis

Calochortus nuttallii

Campanula rotundifolia

Carduus nutans

Carex geyeri

Cercocarpus montanus

Chaenactis douglasii

Chrysothamnus depressus

Cirsium tracyi

Clematis ligusticifolia

Collinsia parviflora

Collomia linearis

Comandra umbellata

Dactylis glomerata

Delphinium nuttallianum

Elymus elymoides

Epilobium sp.

Erigeron flagellaris

Erigeron speciosus

Eriogonum alatum (Pterogonum)

Eriogonum racemosum

Eriogonum umbellatum

Festuca arizonica

Fragaria virginiana

Galium septentrionale

Gayophytum diffusum

Geum macrophyllum

Heliomeris multiflora

Heterotheca villosa

Heuchera parvifolia

Ipomopsis aggregata

Iris missouriensis

Juniperus scopulorum

Koeleria macrantha

Lathyrus leucanthus

Ligusticum porteri

Linum lewisii

Lomatium dissectum

Lomatium grayi

Lotus wrightii

Lupinus caudatus

Maianthemum racemosum ssp. amplexicaule

Maianthemum stellatum

Medicago sativa

Mertensia brevistyla

Muhlenbergia montana

Oenothera cespitosa

Oryzopsis hymenoides

Osmorhiza occidentalis

Pascopyrum smithii

Paxistima myrsinites

Penstemon glabrescens

Penstemon strictus

Phacelia heterophylla

Pinus edulis

Pinus ponderosa

Poa pratensis

Potentilla hippiana

Potentilla pulcherrima

Prunus virginiana

Pseudocymopterus montanus

Pseudostellaria jamesiana

Pseudotsuga menziesii

Psilochenia intermedia

Pteridium aquilinum var. pubescens

Purshia tridentata

Quercus gambelii

Rosa woodsii

Solidago spathulata

Stipa comata

Stipa nelsonii (Achnatherum)

Symphoricarpos oreophilus

Taraxacum officinale

Tetraneuris ivesiana
Thalictrum fendleri
Thermopsis montana
Townsendia incana
Tragopogon dubius

Trifolium longipes
Vicia americana
Viola adunca
Wyethia arizonica

35.

Survey date: 6-24-01

Survey Site: Blanco River Campground, Rio Blanco Road.

USGS quadrangle: Serviceberry Mountain

Legal description: T34N R1E S31

Site description: Riparian zone of Blanco River, with *Picea pungens*, *Populus angustifolia*, and *Salix* spp.

Rare plants located at site: none

Species observed at site:

Acer glabrum

Achillea lanulosa

Alnus incana

Artemisia ludoviciana

Berberis fendleri

Bromus inermis

Cirsium arvense

Cirsium vulgare

Cornus sericea

Dactylis glomerata

Epilobium sp.

Equisetum arvense

Geranium richardsonii

Glycyrrhiza lepidota

Heracleum lanatum

Juniperus scopulorum

Leucanthemum vulgare

Lonicera involucrata (Distegia)

Maianthemum stellatum

Medicago lupulina

Melilotus officinalis

Picea pungens

Pinus ponderosa

Poa pratensis

Populus angustifolia

Populus tremuloides

Pentaphylloides floribunda

Prunus virginiana

Rosa woodsii

Rudbeckia ampla

Rumex crispus

Salix exigua

Salix lasiandra

Salix monticola

Shepherdia argentea

Taraxacum officinale

Thermopsis montana

Trifolium repens

36.

Survey date: 6-24-01

Survey Site: Indian Creek (Ute Road)

USGS quadrangle: Devil Mountain, Baldy Mountain

Legal description: T35N R5W S24

Site description: Large wet meadow and dry perimeter within Ponderosa pine community

Rare plants located at site: none

Species observed at site:

Achillea lanulosa

Artemisia ludoviciana

Arabis drummondii

Carduus nutans

Carex microptera

Carex utriculata

Cirsium arvense

Epilobium angustifolium

Erigeron flagellaris

Galium septentrionale

Geranium richardsonii

Geum macrophyllum

Iris missouriensis

Juncus balticus

Juncus sp.

Koeleria macrantha

Lemna sp.

Poa pratensis

Potentilla pulcherrima

Ranunculus gmelinii

Salix monticola

Sidalcea neomexicana

Symphoricarpos oreophilus

Trifolium hybridum

Veratrum tenuipetalum

Verbasum thapsus

Veronica americana

37.

Survey date: 6-24-01

Survey Site: Buckles Lake

USGS quadrangle: Harris Lake

Legal description: T34N R1E S35

Site description: Trail through Ponderosa pine forest and around lake

Rare plants located at site: none

Species observed at site:

Abies concolor

Achillea lanulosa

Antennaria sp.

Arnica cordifolia

Carex aquatilis

Carex microptera

Carex utriculata

Castilleja miniata

Cerastium strictus

Cirsium arvense

Delphinium nuttallianum

Dugaldia hoopsii

Eleocharis palustris

Erigeron flagellaris

Festuca thurberi

Fragaria virginiana

Galium septentrionale

Geranium richardsonii

Geum macrophyllum

Geum triflorum (Erythrocoma)

Iris missouriensis

Lathyrus leucanthus

Ligusticum porteri

Maianthemum stellatum

Mentha arvensis

Mimulus guttatus

Noccaea montana

Osmorhiza depauperata

Pedicularis sp.

Persicaria amphibia

Platanthera saccata (Platanthera, Limnorchis)

Poa compressa

Poa pratensis

Populus tremuloides

Potentilla hippiana

Pseudocymopterus montanus

Ranunculus longirostis (Batrachium circinatum)

Symphoricarpos oreophilus

Taraxacum officinale

Thalictrum fendleri

Thermopsis montana

Trifolium repens

Veratrum tenuipetalum

Vicia americana

Viola adunca

Viola canadensis

38.

Survey date: 6-25-01

Survey Site: Pollito Canyon

USGS quadrangle: Oakbrush Hill

Legal description: T34N R2W S29

Site description: Ponderosa pine/Gambel oak forest with clearings

Rare plants located at site: Castilleja lineata (AA025)

Photos 3-21-25

Species observed at site:

Achillea lanulosa

Alyssum parviflorum

Artemisia ludoviciana

Astragalus bisulcatus

Astragalus lonchocarpus

Atriplex canescens

Bromus ciliatus

Bromus inermis

Bromus tectorum

Carex geyeri

Carex sp.

Castilleja linariifolia

Castilleja lineata

Chrysothamnus nauseosus

Cirsium tracyi

Collinsia parviflora

Descurainia sp.

Elymus elymoides

Erigeron flagellaris

Eriogonum racemosum

Festuca arizonica

Geum triflorum (Erythrocoma)

Glycyrrhiza lepidota

Heterotheca villosa

Ipomopsis aggregata

Iris missouriensis

Juniperus scopulorum

Koeleria macrantha

Lactuca serriola

Melilotus officinalis

Pascopyrum smithii

Penstemon glabrescens

Penstemon strictus

Pinus ponderosa

Poa pratensis

Potentilla hippiana

Potentilla pulcherrima

Pseudocymopterus montanus

Pseudotsuga menziesii

Psilochenia intermedia

Quercus gambelii

Rhus trilobata

Ribes cereum

Ribes sp.

Rosa woodsii

Rumex crispus

Salix exigua

Sphaeralcea coccinea

Stipa nelsonii (Achnatherum)

Symphoricarpos oreophilus

Tetraneuris ivesiana

Townsendia incana

Tragopogon dubius

Verbasum thapsus

Vicia americana

39.

Survey date: 6-25-01

Survey Site: Burns Canyon (FR 649)

USGS quadrangle: Oakbrush Hill

Legal description: T34N R2W S19

Site description: Mixed conifer and aspen forest

Rare plants located at site: none

Species observed at site (additions to Pollito Canyon list only):

Abies concolor

Acer glabrum

Acer negundo

Amelanchier alnifolia

Androsace septentrionalis

Apocynum sp.

Calochortus nuttallii

Campanula rotundifolia

Castilleja linariifolia

Ceanothus fendleri

Clematis ligusticifolia

Collomia linearis

Convolvulus arvensis

Cornus sericea

Crataegus rivularis

Dactylis glomerata

Delphinium nuttallianum

Descurainia sp.

Equisetum arvense

Eriogonum alatum (Pterogonum)

Galium septentrionale

Geranium richardsonii

Juncus balticus

Lathyrus leucanthus

Leucanthemum vulgare

Ligusticum porteri

Lomatium sp.

Lupinus caudatus

Medicago sativa

Oryzopsis hymenoides

Osmorhiza depauperata

Pedicularis procera

Penstemon barbatus

Pinus edulis

Populus angustifolia

Populus tremuloides

Prunus virginiana

Pseudotsuga menziesii

Pteridium aquilinum var. pubescens

Purshia tridentata

Rhus trilobata

Ribes sp.

Rubus parviflorus (Rubacer)

Stipa comata

Thermopsis montana

Typha latifolia

Verbascum thapsus

Wyethia arizonica

40.

Survey date: 6-26-01

Survey Site: Snow Springs, burned area

USGS quadrangle: Chris Mountain

Legal description: T35N R3W S32

Site description: Ponderosa pine forest burned in 1996 wildfire. Seeded.

Rare plants located at site: none

Species observed at site:

Bottom of drainage:

Achillea lanulosa
Allium cernuum
Allium textile
Amelanchier alnifolia
Antennaria parvifolia
Apocynum sp.
Artemisia ludoviciana
Aster sp.
Arabis drummondii
Brickellia grandiflora
Bromus ciliatus
Bromus inermis
Bromus tectorum
Carduus nutans
Carex geyeri
Ceanothus fendleri
Cirsium arvense
Cirsium tracyi
Cirsium vulgare
Collomia linearis
Comandra umbellata
Crataegus erythropoda
Dactylis glomerata
Elymus trachycaulus
Epilobium angustifolium
Epilobium ciliatum
Erigeron divergens
Erigeron flagellaris
Erigeron formosissimus
Erigeron speciosus
Eriogonum racemosum
Festuca arizonica
Festuca thurberi
Fragaria virginiana
Galium septentrionale
Gayophytum ramosissimum
Geranium richardsonii

Top of hill (additional spp.):

Androsace septentrionalis
Campanula rotundifolia
Ceanothus fendleri (abundant on top, less oak)
Nocca montana

Heliomeris multiflora
Ipomopsis aggregata
Iris missouriensis
Koeleria macrantha
Lathyrus leucanthus
Ligusticum porteri
Lomatium dissectum
Lotus wrightii
Lupinus caudatus
Mahonia repens
Maianthemum stellatum
Oryzopsis hymenoides
Pascopyrum smithii
Penstemon glabrescens
Phacelia heterophylla
Phleum pratense
Pinus ponderosa (small, planted)
Poa compressa
Poa pratensis
Potentilla pulcherrima
Prunus virginiana
Pseudocymopterus montanus
Psilochenia intermedia
Quercus gambelii
Rosa woodsii
Rubus idaeus
Senecio neomexicanus (Packera)
Solidago canadensis
Stipa comata
Stipa nelsonii (Achnatherum)
Symphoricarpos oreophilus
Taraxacum officinale
Thalictrum fendleri
Toxicodendron rydbergii
Tragopogon dubius
Verbascum thapsus
Vicia americana
Wyethia arizonica

Paxistima myrsinites
Penstemon glabrescens
Solidago sp.

41.

Survey date: 6-26-01

Survey Site: Snow Springs, wetland

USGS quadrangle: Chris Mountain

Legal description: T35N R3W S32

Site description: Ponderosa pine forest burned in 1996 wildfire. Seeded.

Rare plants located at site: none

Wetland and pond:

Abies concolor

Alisma triviale

Barbarea orthoceras

Carex canescens

Carex microptera

Carex praegracilis

Carex stipata

Carex utriculata

Cirsium vulgare

Collinsia parviflora

Eleocharis palustris

Erigeron speciosus

Geum macrophyllum

Hordeum jubatum

Hordeum brachyantherum

Iris missouriensis

Juncus balticus

Leucanthemum vulgare

Lithospermum ruderales

Mentha arvensis

Osmorhiza occidentalis

Phalaris arundinacea

Populus tremuloides

Potamogeton gramineus

Pseudotsuga menziesii

Pteridium aquilinum var. *pubescens*

Rudbeckia ampla

Salix ligulifolia

Senecio sp.

Sidalcea neomexicana

Sium suave

Sparganium angustifolium

Thermopsis montana

Trifolium pratense

Veratrum tenuipetalum

42.

Survey date: 7-11-01

Survey Site: Seep, First Fork Road

USGS quadrangle: Chimney Rock

Legal description: T34N R4W S5

Site description: Seep on hillside within *Pinus ponderosa*/*Quercus gambelii* comm. On east side of Piedra R. **Directions:** from Highway 160, take FR 622 (First Fork Rd.) north. Continue 1.3 mi., about 0.1 mi. north of FS gate at NF boundary, by sign curves next 13 miles. GPS: 292326; 4124226; 6542 ft. Seep comes down to road from near top of ridge. First *Epipactis gigantea* and *Limnorchis ensifolia* about 50 ft. above road. Birch branches dumped by power co. have been moved by FS. A few plants of *Cirsium arvense* and *C. vulgare* present.

Limnorchis ensifolia: 350+ plants

Epipactis gigantea: 500+ plants.

Rare plants located at site: AA027 (*Limnorchis ensifolia*); AA026 (*Epipactis gigantea*); AA049

Erigeron philadelphicus

Species observed at site:

Agrostis stolonifera

Alnus incana

Berberis fendleri

Betula occidentalis

Carex aurea

***Cirsium arvense*.**

Cirsium vulgare

Clematis ligusticifolia

Cornus sericea

Epilobium angustifolium

Epipactis gigantea

Equisetum arvense

Equisetum hyemale (*Hippochaete*)

Erigeron philadelphicus (coll.)

Juncus balticus

Juncus longistylis

Juncus nodosus

Juncus tenuis

Juniperus scopulorum

Limnorchis ensifolia

Lonicera involucrata (*Distegia*)

Maianthemum stellatum

Monarda fistulosa

***Poa pratensis*.**

Populus angustifolia

Prunella vulgaris

Salix ligulifolia

Salix monticola

Toxicodendron rydbergii

Viola canadensis

43.

Survey date: 7-11-01

Survey Site: O'Neal Hill, *Lesquerella pruinosa* monitoring site

USGS quadrangle: Oakbrush Ridge

Legal description: T37N R3W S 1, 2

Site description: Grazed pasture with grasses and forbs. Mosaic of patches dominated by *Pyrrocoma crocea*, *Solidago* sp., and *Heterotheca villosa*. *Lesquerella* in late fruit.

Rare plants located at site: AA028 (*Lesquerella pruinosa*)

Species observed at site:

Achillea lanulosa

Alopecurus aequalis

Antennaria rosea

Artemisia frigida

Carex aquatilis

Carex utriculata

Castilleja sulphurea

Cirsium arvense

Cirsium scariosum

Cirsium tracyi

Elymus trachycaulus

Erigeron flagellaris

Erigeron glabellus

Erigeron subtrinervis

Festuca arizonica

Heterotheca villosa

Hymenopappus newberryi

Juncus balticus

Lesquerella pruinosa

Linaria vulgaris

Muhlenbergia richardsonis

Pentaphylloides floribunda

Poa compressa

Poa pratensis

Potentilla hippiana

Potentilla pulcherrima

Pyrrocoma crocea

Solidago nana

Stipa viridula (*Nassella*)

Valeriana edulis

44.

Survey date: 7-11-01

Survey Site: Piedra Falls trail

USGS quadrangle: Pagosa Peak

Legal description: T38N R2W S32

Site description: Montane forest, riparian and wet mossy areas by falls

Rare plants located at site: none (possible *Woodsia neomexicana*, but too few to collect)

Species observed at site:

Abies concolor
Acer glabrum
Acer glabrum forma *trisectum*
Actaea rubra
Alnus incana
Amelanchier alnifolia
Anaphalis margaritacea
Antennaria marginata
Apocynum androsaemifolium
Aquilegia elegantula
Brickellia grandiflora
Carex sp. Coll
Cirsium arvense
Cirsium parryi
Corallorrhiza maculata
Cornus sericea
Cystopteris fragilis
Dryopteris felix-mas
Epilobium angustifolium
Epilobium sp.
Equisetum hyemale (*Hippochaete*)
Erigeron eximius
Erigeron flagellaris
Erigeron formosissimus
Erigeron speciosus
Fragaria vesca
Galium triflorum
Geranium caespitosum
Geranium richardsonii
Goodyera oblongifolia
Hedysarum occidentale
Heracleum lanatum
Heterotheca villosa
Juncus longistylis

Juncus tenuis
Juniperus communis
Limnorchis saccata (L. *stricta*)
Lithospermum incisum
Maianthemum racemosum ssp. *amplexicaule*
Maianthemum stellatum
Mertensia ciliata
Mimulus guttatus
Oryzopsis asperifolia
Oryzopsis micrantha
Osmorhiza depauperata
Osmorhiza occidentalis
Paxistima myrsinites
Phleum pratense
Picea pungens
Pinus ponderosa
Poa pratensis
Populus angustifolia
Populus tremuloides
Pseudotsuga menziesii
Pyrola minor
Pyrola picta
Quercus gambelii
Ribes wolfii
Rosa woodsii
Rubus parviflorus (*Rubacer*)
Rubus idaeus
Sambucus racemosa
Senecio atratus
Shepherdia canadensis
Symphoricarpos oreophilus
Thalictrum fendleri
Viola canadensis
Woodsia neomexicana (?) (too few to collect)

45.

Survey date: 7-13-01

Survey Site: Fawn Gulch, Coal Creek Trail

USGS quadrangle: Jackson Mountain

Legal description: T36N R1W S36

Site description: Wet forest of *Abies concolor* and *Populus tremuloides*, with some pasture grasses.

Narrow riparian zone along Coal Creek. Many butterflies.

Rare plants located at site: none

Species observed at site:

<i>Abies concolor</i>	<i>Maianthemum stellatum</i>
<i>Acer glabrum</i>	<i>Medicago lupulina</i>
<i>Achillea lanulosa</i>	<i>Medicago sativa</i>
<i>Actaea rubra</i>	<i>Mertensia ciliata</i>
<i>Allium</i> sp.	<i>Mimulus guttatus</i>
<i>Alnus incana</i>	<i>Muhlenbergia montana</i>
<i>Amelanchier alnifolia</i>	<i>Noccaea montana</i>
<i>Antennaria rosea</i>	<i>Osmorhiza occidentalis</i>
<i>Aquilegia elegantula</i>	<i>Oxypolis fendleri</i>
<i>Arnica cordifolia</i>	<i>Pascopyrum smithii</i>
<i>Artemisia ludoviciana</i>	<i>Paxistima myrsinites</i>
<i>Bromus ciliatus</i>	<i>Pedicularis procera</i>
<i>Bromus inermis</i>	<i>Penstemon strictus</i>
<i>Campanula rotundifolia</i>	<i>Phleum pratense</i>
<i>Carex geyeri</i>	<i>Picea pungens</i>
<i>Cirsium arvense</i>	<i>Plantago major</i>
<i>Cirsium parryi</i>	<i>Poa pratensis</i>
<i>Cirsium scariosum</i>	<i>Populus angustifolia</i>
<i>Cornus sericea</i>	<i>Populus tremuloides</i>
<i>Crataegus</i> sp.	<i>Potentilla</i> sp.
<i>Dactylis glomerata</i>	<i>Prunella vulgaris</i>
<i>Dracocephalum parviflorum</i>	<i>Prunus virginiana</i>
<i>Dugaldia hoopsii</i>	<i>Pseudocymopterus montanus</i>
<i>Elymus glaucus</i>	<i>Pseudotsuga menziesii</i>
<i>Epilobium angustifolium</i>	<i>Pteridium aquilinum</i> var. <i>pubescens</i>
<i>Equisetum arvense</i>	<i>Pyrola</i> sp.
<i>Erigeron coulteri</i>	<i>Quercus gambelii</i>
<i>Erigeron eximius</i>	<i>Ribes montigenum</i>
<i>Erigeron flagellaris</i>	<i>Rosa woodsii</i>
<i>Erigeron speciosus</i>	<i>Rubus parviflorus</i> (Rubacer)
<i>Fragaria virginiana</i>	<i>Rubus idaeus</i>
<i>Galium septentrionale</i>	<i>Rudbeckia ampla</i>
<i>Geranium richardsonii</i>	<i>Rumex crispus</i>
<i>Helianthella quinquenervis</i>	<i>Salix drummondiana</i>
<i>Heliomeris multiflora</i>	<i>Salix scouleriana</i>
<i>Heracleum lanatum</i>	<i>Sambucus racemosa</i>
<i>Iris missouriensis</i>	<i>Sidalcea neomexicana</i>
<i>Juncus balticus</i>	<i>Sorbus scopulina</i>
<i>Lathyrus leucanthus</i>	<i>Stipa nelsonii</i> (Achnatherum)
<i>Leucanthemum vulgare</i>	<i>Streptopus fassettii</i>
<i>Ligusticum porteri</i>	<i>Symphoricarpos oreophilus</i>
<i>Lonicera involucrata</i> (Distegia)	<i>Taraxacum officinale</i>
<i>Mahonia repens</i>	<i>Thalictrum fendleri</i>
<i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i>	<i>Tragopogon dubius</i>

Trifolium pratense
Trifolium sp.
Vicia americana

Viola canadensis
Wyethia arizonica
Zigadenus elegans (Anticlea)

46.

Survey date: 7-13-01

Survey Site: Upper Piedra River canyon

USGS quadrangle: Oak Brush Ridge

Legal description: T36N R3W S3

Site description: Moist area at base of cliffs on east side of Piedra River by Archuleta-Hinsdale county line, and along Piedra trail to south.

Rare plants located at site: AA051, Polypodium hesperium

Species observed at site:

Achillea lanulosa

Aconitum columbianum

Actaea rubra

Agrostis stolonifera

Alnus incana

Amelanchier alnifolia

Androsace septentrionalis

Anemone cylindrica

Angelica ampla

Antennaria marginata

Antennaria rosea

Apocynum androsaemifolium

Aquilegia elegantula

Arctium minus

Artemisia carruthii

Artemisia dracunculoides (Oligosporus)

Artemisia ludoviciana

Athyrium filix-femina

Berberis fendleri

Bromus porteri

Bromus inermis

Campanula rotundifolia

Cardamine cordifolia

Carex geyeri

Carex vallicola

Castilleja sulphurea

Chenopodium album

Chrysothamnus nauseosus

Cirsium calceareum var. *pulchellum*

Cirsium parryi

Corallorrhiza maculata

Cornus sericea

Corydalis aurea

Cystopteris reevesiana

Dactylis glomerata

Danthonia parryi

Elymus macounii

Elytrigia repens

Epilobium angustifolium

Equisetum arvense

Eremogone fendleri

Erigeron divergens

Erigeron eximius

Erigeron ursinus

Eriogonum alatum (Pterogonum)

Festuca arizonica

Festuca thurberi

Fragaria vesca

Fragaria virginiana

Galium septentrionale

Galium triflorum

Geranium caespitosum

Geranium richardsonii

Geum macrophyllum

Habenaria hyperborea

Heracleum lanatum

Heterotheca villosa

Heuchera parvifolia

Humulus lupulus

Hypericum formosum

Ipomopsis aggregata

Juncus balticus

Juniperus communis

Koeleria macrantha

Ligusticum porteri

Linaria vulgaris

Lithospermum multiflorum

Lonicera involucrata (Distegia)

Mahonia repens

Maianthemum racemosum ssp. *amplexicaule*

Maianthemum stellatum

Medicago lupulina

Melica porteri

Mertensia lanceolata

Mertensia lanceolata

Mimulus guttatus

Oryzopsis hymenoides

Oryzopsis micrantha

Oxybaphus comatus

Pentaphylloides floribunda

Phacelia heterophylla

Phleum pratense

Picea pungens

Poa pratensis

Polypodium hesperium

Potentilla hippiana

Prunella vulgaris

Psilochenia acuminata

Psilochenia acuminata

Quercus gambelii

Ribes leptanthum
Rosa woodsii
Rubus parviflorus (Rubacer)
Rubus idaeus
Rudbeckia ampla
Salix exigua
Salix lasiandra
Sedum rhodanthum (Clementsia)
Senecio neomexicanus (Packera)
Stipa comata
Taraxacum officinale

Thalictrum fendleri
Toxicoscordion venenosum
Tragopogon dubius
Trifolium pratense
Trifolium sp.
Trisetum spicatum
Urtica gracilis
Valeriana edulis
Verbascum thapsus
Vicia americana
Viola adunca

47.

Survey date: 7-15-01

Survey Site: Little Sand Creek (Hinsdale County)

USGS quadrangle: Bear Mountain|Granite Lake

Legal description: T38N R4W S 27

Site description: Riparian area of Little Sand Creek tributary in Pinus ponderosa zone. List below includes additions from second site visit on 8-15-01.

Rare plants located at site: none

Species observed at site:

Abies lasiocarpa
Achillea lanulosa
Aconitum columbianum
Agrostis sp.
Allium textile
Alnus incana
Amelanchier alnifolia
Anaphalis margaritacea
Antennaria marginata
Antennaria rosea
Aquilegia elegantula
Arnica cordifolia
Polygonum bistortoides
(Bistorta)
Calamagrostis canadensis
Caltha leptosepala
(Psychrophila)
Campanula rotundifolia
Cardamine cordifolia
Carex aquatilis
Carex microptera
Castilleja miniata
Cirsium parryi
Dactylis glomerata
Dugaldia hoopsii
Elymus glaucus
Epilobium angustifolium
Epilobium ciliatum
Epilobium lactiflorum
Equisetum arvense
Erigeron coulteri
Erigeron eximius
Erigeron speciosus
Erythronium grandiflorum

Fragaria virginiana
Galium septentrionale
Gentianella heterosepala
Geranium richardsonii
Geum macrophyllum
Glyceria striata
Goodyera oblongifolia
Habenaria saccata
Heracleum lanatum
Hieracium fendleri
(Chlorocrepis)
Hieracium gracile
Juniperus communis
Lathyrus leucanthus
Ligusticum porteri
Lonicera involucrata
(Distegia)
Luzula parviflora
Mahonia repens
Maianthemum racemosum
ssp. amplexicaule
Maianthemum stellatum
Mertensia ciliata
Mertensia franciscana
Mimulus guttatus
Mitella pentandra
Noccaea montana
Oryzopsis asperifolia
Osmorhiza depauperata
Oxypolis fendleri
Paxistima myrsinites
Pedicularis groenlandica
Pedicularis racemosa

Phleum pratense
Picea engelmannii
Picea pungens
Poa annua
Poa fendleriana
Populus tremuloides
Potentilla hippiana
Prunella vulgaris
Pseudocymopterus montanus
Pseudotsuga menziesii
Pyrola rotundifolia
Rosa woodsii
Rubus parviflorus (Rubacer)
Rubus idaeus
Rudbeckia ampla
Saxifraga odontoloma
Senecio crassulus
Senecio pseudoaurea
(Packera)
Senecio triangularis
Senecio wootonii (Packera)
Solidago spathulata
Spergulastrum lanuginosum
Streptopus fassettii
Taraxacum officinale
Trautvetteria caroliniensis
Trifolium repens
Vaccinium myrtillus
Veratrum tenuipetalum
Veronica nutans
Vicia americana
Viola adunca
Zigadenus elegans (Anticlea)

48.

Survey date: 7-26-01

Survey Site: Quartz Meadow

USGS quadrangle: Elwood Pass, Wolf Creek Pass

Legal description: T36N R2E S4, 9

Site description: *Festuca thurberi* meadow near trailhead, grazed, somewhat disturbed.

Rare plants located at site: none

Species observed at site:

Achillea lanulosa

Agrostis scabra

Alopecurus pratensis

Bromus ciliatus

Bromus inermis

Campanula parryi

Campanula rotundifolia

Chenopodium sp.

Cirsium parryi

Dugaldia hoopsii

Erigeron subtrinervis

Festuca thurberi

Fragaria virginiana

Geum triflorum (*Erythrocoma*)

Ipomopsis aggregata

Linaria vulgaris

Pentaphylloides floribunda (*Potentilla fruticosa*)

Phleum alpinum

Poa pratensis

Potentilla pulcherrima

Senecio eremophilus

Taraxacum officinale

Tragopogon dubius

Trifolium repens

Veratrum tenuipetalum

49.

Survey date: 7-26-01

Survey Site: Quartz Creek Road north of Quartz Meadow

USGS quadrangle: Wolf Creek Pass

Legal description: T36N R2E S5

Site description: Aspen and spruce-fir forest and openings north of Quartz Meadow, with patches of *Populus tremuloides*/*Pteridium aquilinum* var. *pubescens* plant association. Lightly grazed.

Rare plants located at site: none

Species observed at site:

Abies lasiocarpa
Achillea lanulosa
Agoseris aurantiaca
Agrostis scabra
Anaphalis margaritacea
Androsace septentrionalis
Antennaria marginata
Arnica cordifolia
Bromus porteri
Campanula rotundifolia
Carex geyeri
Carex sp.
Cirsium parryi
Dactylis glomerata
Descurainia richardsonii
Erigeron eximius
Erigeron subtrinervis
Fragaria virginiana
Galium septentrionale
Geranium richardsonii
Helianthella quinquenervis
Juniperus communis
Koeleria macrantha
Mahonia repens
Osmorhiza depauperata
Phleum pratense
Picea pungens
Poa pratensis
Populus tremuloides
Potentilla pulcherrima
Prunella vulgaris
Pseudocymopterus montanus
Pteridium aquilinum var. *pubescens*
Symphoricarpos oreophilus
Thalictrum fendleri
Trifolium repens
Trisetum spicatum
Vicia americana
Viola adunca
Viola canadensis

50.

Survey date: 7-26-01

Survey Site: East Fork San Juan River

USGS quadrangle: Wolf Creek Pass

Legal description: T36N R1E S5

Site description: Moist, mossy, north-facing cliffs above East Fork of San Juan River. Negative search for *Cryptogramma stelleri*.

Rare plants located at site: AA030 *Goodyera repens*

Species observed at site:

Acer glabrum

Actaea rubra

Alnus incana

Athyrium filix-femina

Clematis ligusticifolia

Cornus sericea

Cystopteris fragilis

Galium triflorum

Geranium richardsonii

Goodyera oblongifolia

Goodyera repens

Linnaea borealis

Lonicera involucrata (Distegia)

Mahonia repens

Maianthemum stellatum

Melica porteri

Mimulus guttatus

Muhlenbergia montana

Oryzopsis micrantha

Picea pungens

Pinus strobiformis

Populus angustifolia

Pyrola minor

Pyrola rotundifolia

Ribes montigenum

Rosa woodsii

Sorbus scopulina

Streptopus fassettii

Trisetum spicatum

51.

Survey date: 7-26-01

Survey Site: East Fork Campground

USGS quadrangle: Saddle Mountain, Jackson Mountain

Legal description: T36N R1E S7

Site description: Pinus ponderosa forest and riparian area east of Loop Road campsites.

Rare plants located at site: none

Species observed at site:

Abies concolor	Erigeron speciosus	Plantago major
Achillea lanulosa	Fragaria virginiana	Poa pratensis
Agrostis sp.	Galium septentrionale	Populus angustifolia
Alnus incana	Gayophytum diffusum	Populus tremuloides
Alopecurus aequalis	Geranium richardsonii	Prunus virginiana
Amelanchier alnifolia	Geum macrophyllum	Pseudocymopterus montanus
Anemone cylindrica	Glyeria elata	Pseudostellaria jamesiana
Antennaria marginata	Goodyera oblongifolia	Pseudotsuga menziesii
Antennaria rosea	Heliomeris multiflora	Quercus gambelii
Apocynum androsaemifolium	Heracleum lanatum	Rorippa palustris ssp. hispida
Arctostaphylos uva-ursi	Heterotheca villosa	Rosa woodsii
Artemisia dracunculus	Hieracium fendleri	Rubus parviflorus (Rubacer)
(Oligosporus)	(Chlorocrepis)	Rudbeckia ampla
Artemisia ludoviciana	Ipomopsis aggregata	Salix drummondiana
Aster bracteolatus	Juniperus communis	Salix eriocephala var.
Aster foliaceus	Koeleria macrantha	ligulifolia
Berberis fendleri	Lathyrus leucanthus	Salix exigua
Arabis sp.	Linaria vulgaris	Salix lasiandra
Brickellia grandiflora	Lithospermum multiflorum	Salix monticola
Bromus porteri	Lonicera involucrata	Senecio eremophilus
Campanula rotundifolia	(Distegia)	Senecio neomexicanus
Carex geyeri	Lupinus caudatus	(Packera)
Ceanothus fendleri	Mahonia repens	Senecio wootonii (Packera)
Chenopodium album	Maianthemum racemosum	Solidago canadensis
Cornus sericea	ssp. amplexicaule	Solidago simplex
Dactylis glomerata	Maianthemum stellatum	Solidago velutina
Elymus elymoides	Mimulus guttatus	Stipa nelsonii (Achnatherum)
Elymus glaucus	Oreochrysum parryi	Streptopus fassettii
Epilobium hornemannii	Oxypolis fendleri	Symphoricarpos oreophilus
Equisetum arvense	Paxistima myrsinites	Taraxacum officinale
Equisetum hyemale	Phleum pratense	Thalictrum fendleri
(Hippochaete)	Picea pungens	Vicia americana
Erigeron eximius	Pinus ponderosa	Viola canadensis
Erigeron flagellaris	Pinus strobiformis	

52.

Survey date: 7-27-01

Survey Site: Quartz Creek Trail, wilderness boundary to falls

USGS quadrangle: Summit Peak

Legal description: T36N R2E S15, 16, 22

Site description: Shady spruce-fir/*Vaccinium* community along Quartz Creek Trail. *Goodyera repens* at 345596E, 4137507N, 8976 ft., 50+ individuals. *Cryptogramma stelleri* at waterfall, just past creek crossing, 200+ individuals. The only non-natives observed were a few red clover plants along lower end of trail.

Rare plants located at site: AA031, *Goodyera repens*; AA032, *Cryptogramma stelleri*

Species observed at site:

<i>Abies lasiocarpa</i>	<i>Geranium richardsonii</i>	<i>Pseudocymopterus montanus</i>
<i>Acer glabrum</i>	<i>Geum rossii</i>	<i>Pseudotsuga menziesii</i>
<i>Achillea lanulosa</i>	<i>Glyceria striata</i>	<i>Pteridium aquilinum</i> var.
<i>Aconitum columbianum</i>	<i>Goodyera oblongifolia</i>	<i>pubescens</i>
<i>Actaea rubra</i>	<i>Goodyera repens</i>	<i>Pyrola rotundifolia</i>
<i>Agastache pallidiflora</i>	<i>Hedysarum occidentale</i>	<i>Sedum integrifolium</i>
<i>Agoseris aurantiaca</i>	<i>Heracleum lanatum</i>	(<i>Rhodiola</i>)
<i>Alnus incana</i>	<i>Heterotheca villosa</i>	<i>Ribes montigenum</i>
<i>Amelanchier alnifolia</i>	<i>Juncus drummondii</i>	<i>Ribes wolfii</i>
<i>Anaphalis margaritacea</i>	<i>Juncus</i> sp.	<i>Rorippa palustris</i> ssp. <i>hispida</i>
<i>Androsace septentrionalis</i>	<i>Juniperus communis</i>	<i>Rosa woodsii</i>
<i>Antennaria rosea</i>	<i>Lathyrus eucosmus</i>	<i>Rubus parviflorus</i> (<i>Rubacer</i>)
<i>Aquilegia coerulea</i>	<i>Ligusticum porteri</i>	<i>Rubus ideaeus</i>
<i>Arctostaphylos uva-ursi</i>	<i>Linnaea borealis</i>	<i>Rumex crispus</i>
<i>Arnica cordifolia</i>	<i>Lonicera involucrata</i>	<i>Salix drummondiana</i>
<i>Artemisia ludoviciana</i>	<i>Mahonia repens</i>	<i>Sambucus racemosa</i>
<i>Artemisia michauxiana</i>	<i>Maianthemum racemosum</i>	<i>Saxifraga bronchialis</i> ssp.
<i>Brickellia californica</i>	ssp. <i>amplexicaule</i>	<i>austromontana</i>
<i>Bromus canadensis</i>	<i>Maianthemum stellatum</i>	<i>Saxifraga cernua</i>
<i>Campanula rotundifolia</i>	<i>Melica porteri</i>	<i>Saxifraga odontoloma</i>
<i>Cardamine cordifolia</i>	<i>Mertensia ciliata</i>	<i>Senecio amplexens</i> var.
<i>Carex bella</i>	<i>Mimulus guttatus</i>	<i>holmii</i> (<i>Ligularia holmii</i>)
<i>Carex ebenea</i>	<i>Moneses uniflora</i>	<i>Senecio atratus</i>
<i>Carex microptera</i>	<i>Oreochrysum parryi</i>	<i>Senecio crassulus</i>
<i>Castilleja linariifolia</i>	<i>Orthilia secunda</i>	<i>Senecio eremophilus</i>
<i>Chamerion subdentatum</i>	<i>Oryzopsis micrantha</i>	<i>Senecio fremontii</i> var.
<i>Cirsium parryi</i>	<i>Osmorhiza depauperata</i>	<i>blitoides</i>
<i>Cryptogramma stelleri</i>	<i>Oxalis violacea</i>	<i>Senecio serra</i>
<i>Cystopteris fragilis</i>	<i>Oxyria digyna</i>	<i>Senecio wootonii</i> (<i>Packera</i>)
<i>Draba aurea</i>	<i>Paxistima myrsinites</i>	<i>Shepherdia canadensis</i>
<i>Draba helleriana</i>	<i>Penstemon harboursii</i>	<i>Sorbus scopulina</i>
<i>Elymus glaucus</i>	(watchlisted)	<i>Stellaria umbellata</i>
<i>Elymus glaucus</i>	<i>Picea engelmannii</i>	<i>Symphoricarpos oreophilus</i>
<i>Epilobium angustifolium</i>	<i>Picea pungens</i>	<i>Thalictrum fendleri</i>
<i>Epilobium hornemannii</i>	<i>Pinus flexilis</i>	<i>Trifolium brandegei</i>
<i>Erigeron compositus</i>	<i>Poa annua</i>	<i>Trifolium pratense</i>
<i>Erigeron eximius</i>	<i>Polemonium pulcherrimum</i>	<i>Trisetum spicatum</i>
<i>Erigeron leiomeris</i>	<i>Polygonum bistortoides</i>	<i>Vaccinium myrtillus</i>
<i>Fragaria vesca</i>	(<i>Bistorta</i>)	<i>Vaccinium scoparium</i>
<i>Fragaria virginiana</i>	<i>Populus tremuloides</i>	<i>Vicia americana</i>
<i>Frasera speciosa</i>	<i>Populus tremuloides</i>	<i>Viola adunca</i>
<i>Galium triflorum</i>	<i>Potentilla hippiana</i>	<i>Viola canadensis</i>
<i>Gentianella heterosepala</i>	<i>Prunella vulgaris</i>	<i>Woodsia oregana</i>

53.

Survey date: 7-28-01

Survey Site: Jackson Mountain, Turkey Creek tributary

USGS quadrangle: Jackson Mountain

Legal description: T36N R1W S9, 10

Site description: Muddy stream, grazed. 327306E, 4137303N, 7818 ft. and mixed conifer/aspen forest, 326990E; 4137966N; 7861 ft.

Rare plants located at site: none

Species observed at site:

Stream:

Abies concolor

Geum aleppum

Pinus ponderosa

Populus tremuloides

Pseudotsuga menziesii

Quercus gambelii

Rudbeckia ampla

Veratrum tenuipetalum

Mixed conifer/aspen forest

Abies concolor

Achillea lanulosa

Amelanchier alnifolia

Artemisia ludoviciana

Arabis drummondii

Bromus canadensis

Bromus inermis

Calochortus gunnisonii

Campanula parryi

Campanula rotundifolia

Carex geyeri

Castilleja sulphurea

Chenopodium album

Cirsium arvense

Collomia linearis

Dactylis glomerata

Draba aurea

Dugaldia hoopsii

Erigeron flagellaris

Erigeron speciosus

Festuca thurberi

Fragaria virginiana

Frasera speciosa

Galium septentrionale

Geranium richardsonii

Koeleria macrantha

Lathyrus leucanthus

Ligusticum porteri

Lupinus caudatus

Madia glomerata

Mahonia repens

Maianthemum racemosum ssp. *amplexicaule*

Maianthemum stellatum

Nocca montana

Osmorhiza depauperata

Phacelia heterophylla

Picea pungens

Poa pratensis

Polygonum douglasii

Populus tremuloides

Potentilla pulcherrima

Prunella vulgaris

Prunus virginiana

Pseudocymopterus montanus

Pseudotsuga menziesii

Pteridium aquilinum var. *pubescens*

Quercus gambelii

Ribes inerme

Rosa woodsii

Rubus idaeus

Rudbeckia ampla

Solidago simplex

Stipa nelsonii (*Achnatherum*)

Streptopus fassettii

Symphoricarpos oreophilus

Taraxacum officinale

Thalictrum fendleri

Tragopogon dubius

Trifolium repens

Veratrum tenuipetalum

Verbascum thapsus

Vicia americana

Viola canadensis

54.

Survey date: 7-29-01

Survey Site: Quartz Lake Trail, trailhead to switchbacks

USGS quadrangle: Blackhead Peak

Legal description: T35N R1E S2

Site description: A: Open meadow and stream below switchbacks, and B: forested slopes above.

Moist *Abies lasiocarpa* community with *Trautvetteria* and other tall forbs, including *Heracleum lanatum*, *Ligusticum porteri*, and *Rubacer parviflora*. Some alpine species coming down into forested area. Also, C: tundra on ridge and trail to Quartz Lake.

Rare plants located at site: none

Species observed at site:

A: Open meadow and stream:

Abies lasiocarpa
Achillea lanulosa
Aconitum columbianum
Agastache pallidiflora
Agoseris aurantiaca
Agoseris glauca
Anaphalis margaritacea
Calochortus gunnisonii
Campanula rotundifolia
Carex bella
Carex festivella
Castilleja miniata
Cirsium parryi
Corydalis caseana
Delphinium barbeyi
Dugaldia hoopsii
Elymus glaucus
Elymus trachycaulus
Epilobium hornemannii
Erigeron coulteri
Erigeron elatior
Erigeron eximius
Erigeron flagellaris
Festuca thurberi
Fragaria virginiana
Frasera speciosa
Geranium richardsonii
Helianthella quinquenervis
Heliomeris multiflora
Heracleum lanatum
Juncus longistylis
Juniperus communis
Lathyrus leucanthus
Senecio bigelovii (Ligularia)
Senecio pudica (Ligularia)
Ligusticum porteri
Linanthastrum nuttallii

Lonicera involucrata (Distegia)
Mertensia ciliata
Mimulus guttatus
Noccaea montana
Oreochrysum parryi
Oxypolis fendleri
Pedicularis procera
Pedicularis racemosa
Penstemon whippleanus
Phacelia heterophylla
Phleum alpinum (P. commutatum)
Phleum pratense
Picea engelmannii
Picea pungens
Platanthera hyperborea
Poa pratensis
Poa reflexa
Polemonium coeruleum ssp. *amygdalinum*
Polygonum douglasii
Populus tremuloides
Potentilla pulcherrima
Pseudocymopterus montanus
Ribes montigenum
Ribes wolfii
Rosa woodsii
Sambucus racemosa
Senecio atratus
Senecio eremophilus
Senecio serra
Solidago simplex
Symphoricarpos oreophilus
Taraxacum officinale
Trautvetteria caroliniensis
Vaccinium myrtillus
Veratrum tenuipetalum
Vicia americana

B: Forested slopes and openings above switchbacks (species in addition to those above)

Angelica pinnata	Senecio amplexans var. amplexans (Ligularia amplexans)
Antennaria parvifolia	Luzula parviflora
Arnica cordifolia	Maianthemum stellatum
Bromus porteri	Osmorhiza depauperata
Caltha leptosepala (Psychrophila)	Pedicularis procera
Campanula parryi	Polemonium pulcherrimum
Deschampsia cespitosa	Sedum integrifolium (Rhodiola)
Draba helleriana	Saxifraga odontoloma
Epilobium angustifolium	Senecio oodes (Packera)
Erigeron melanocephalus	Stellaria umbellata
Erigeron peregrinus	Trautvetteria caroliniensis
Festuca brachyphylla	Trifolium brandegei
Glyceria striata	Veronica nutans
Ipomopsis aggregata ssp. formosissima	

C: Rocky ridge and tundra

(Additions only)

Anemone multifida	Oxyria digyna
Antennaria media	Pedicularis groenlandica
Aquilegia coerulea	Penstemon harboursi
Arnica rydbergii	Phacelia sericea
Artemisia arctica	Poa alpina
Carex chalciolepis	Podistera eastwoodiae
Carex ebenea	Polygonum bistortoides (Bistorta)
Carex illota	Potentilla nivea
Carex nelsonii	Potentilla subjugata
Carex nigricans	Primula parryi
Carex pyrenaica	Ranunculus alismaefolius
Carex vernacula	Ranunculus macauleyi
Castilleja occidentalis	Rumex densiflorus
Cerastium beeringianum	Salix arctica
Cirsium scopulorum	Salix brachycarpa
Cystopteris fragilis	Salix glauca var. villosa
Descurainia richardsonii	Salix planifolia
Draba breweri	Salix reticulata
Draba crassifolia	Saxifraga bronchialis ssp. austromontana
Erigeron compositus	(Cilaria austromontana)
Erigeron pinnatisectus	Saxifraga cernua
Erigeron simplex	Saxifraga hyperborea ssp. debilis
Galium septentrionale	Saxifraga rhomboidea
Gentiana parryi (Pneumonanthe)	Senecio dimorphophylla
Gentianopsis thermalis	Senecio fremontii var. blitoides
Geum rossii	Senecio soldanella (Ligularia)
Heterotheca villosa	Sibbaldia procumens
Heuchera parvifolia	Silene acaulis
Juncus drummondii	Solidago nana
Juncus parryi	Taraxacum ovinum
Juncus parryi	Trifolium attenuatum
Luzula spicata	Trisetum spicatum
Mertensia brevistyla	Valeriana capitata
Minuartia obtusiloba (Lidia)	Viola labradorica
Oreobrama pygmaea	

55.

Survey date: 7-30-01

Survey Site: Crater Creek

USGS quadrangle: Elwood Pass

Legal description: T36N R3E S1, 2 | T37N R2E S31

Site description: Spruce-fir forest along pack trail. 9200 ft. to 10,600 ft. Photos 22, 23

Rare plants located at site: none

Species observed at site:

<i>Abies lasiocarpa</i>	<i>Osmorhiza depauperata</i>
<i>Actaea rubra</i>	<i>Oxypolis fendleri</i>
<i>Agrostis</i> sp.	<i>Oxyria digyna</i>
<i>Aquilegia elegantula</i>	<i>Parnassia fimbriata</i>
<i>Arabis</i> sp.	<i>Paxistima myrsinites</i>
<i>Brickellia grandiflora</i>	<i>Pedicularis racemosa</i>
<i>Bromus canadensis</i>	<i>Penstemon whippleanus</i>
<i>Campanula rotundifolia</i>	<i>Phacelia heterophylla</i>
<i>Cardamine cordifolia</i>	<i>Picea engelmannii</i>
<i>Carex phaeocephala</i>	<i>Platanthera</i> sp.
<i>Castilleja linariifolia</i>	<i>Polygonum bistortoides</i> (Bistorta)
<i>Castilleja sulphurea</i>	<i>Populus tremuloides</i>
<i>Cirsium parryi</i>	<i>Potentilla pulcherrima</i>
<i>Cirsium scopulorum</i>	<i>Pteridium aquilinum</i> var. <i>pubescens</i>
<i>Cystopteris fragilis</i>	<i>Pyrola minor</i>
<i>Draba aurea</i>	<i>Pyrola rotundifolia</i>
<i>Elymus glaucus</i>	<i>Sedum integrifolium</i> (Rhodiola)
<i>Epilobium</i> sp.	<i>Ribes inerme</i>
<i>Equisetum arvense</i>	<i>Ribes wolfii</i>
<i>Erigeron eximius</i>	<i>Rubus parviflorus</i> (Rubacer)
<i>Erigeron simplex</i>	<i>Rubus ideaeus</i>
<i>Erigeron peregrinus</i>	<i>Rudbeckia ampla</i>
<i>Fragaria virginiana</i>	<i>Salix drummondiana</i>
<i>Frasera speciosa</i>	<i>Salix monticola</i>
<i>Galium septentrionale</i>	<i>Salix planifolia</i>
<i>Geranium richardsonii</i>	<i>Sambucus racemosa</i>
<i>Glyceria elata</i>	<i>Saxifraga odontoloma</i>
<i>Goodyera oblongifolia</i>	<i>Sedum rhodanthum</i> (Clementsia)
<i>Heracleum lanatum</i>	<i>Senecio serra</i>
<i>Heterotheca villosa</i>	<i>Senecio atratus</i>
<i>Senecio amplexans</i> (<i>Ligularia amplexans</i>)	<i>Senecio eremophilus</i>
<i>Senecio bigelovii</i> (<i>Ligularia</i>)	<i>Senecio fremontii</i> var. <i>blitoides</i>
<i>Listera cordata</i>	<i>Senecio wootonii</i> (Packera)
<i>Lonicera involucrata</i> (<i>Distegia</i>)	<i>Solidago simplex</i>
<i>Luzula spicata</i>	<i>Streptopus fassettii</i>
<i>Mertensia ciliata</i>	<i>Taraxacum officinale</i>
<i>Mimulus guttatus</i>	<i>Thalictrum fendleri</i>
<i>Mitella pentandra</i>	<i>Trisetum spicatum</i>
<i>Nocca montana</i>	<i>Vaccinium myrtillus</i>
<i>Oreochrysum parryi</i>	<i>Vaccinium scoparium</i>
<i>Orthilia secunda</i>	<i>Zigadenus elegans</i> (<i>Anticlea</i>)

56.

Survey date: 7-31-01

Survey Site: V-Rock Trail

USGS quadrangle: Harris Lake

Legal description: T33N R1E S1, 2; T33N R2E S6; T34N R1E S 35, 36; T34N R2E S 31.

Site description: Spruce-fir forest

Rare plants located at site: none

Species observed at site:

Abies concolor
Achillea lanulosa
Agoseris aurantiaca
Agrostis sp.
Anaphalis margaritacea
Aquilegia coerulea
Arnica cordifolia
Bromus porteri
Bromus canadensis
Bromus inermis
Campanula rotundifolia
Capsella bursa-pastoris
Carex bella
Carex foenea
Carex microptera
Carex pachystachya
Carex praegracilis
Castilleja linariifolia
Castilleja sulphurea
Chenopodium leptophyllum
Cirsium parryi
Collomia linearis
Dactylis glomerata
Delphinium barbeyi
Dugaldia hoopsii
Elymus glaucus
Elymus trachycaulus
Epilobium angustifolium
Erigeron coulteri
Erigeron flagellaris
Festuca thurberi
Fragaria virginiana
Galium septentrionale
Geranium richardsonii
Helianthella quinquenervis

Heracleum lanatum
Ipomopsis aggregata var. Formosissima
Juncus confusus
Koeleria macrantha
Lathyrus leucanthus
Ligusticum porteri
Maianthemum stellatum
Oreochrysum parryi
Osmorhiza depauperata
Paxistima myrsinites
Phleum alpinum
Phleum pratense
Plantago major
Poa pratensis
Populus tremuloides
Potentilla pulcherrima
Potentilla pulcherrima X hippiana
Pseudocymopterus montanus
Ranunculus uncinatus
Rubus parviflorus (Rubacer)
Sambucus racemosa
Solidago simplex
Stipa nelsonii (Achnatherum)
Symphoricarpos oreophilus
Taraxacum officinale
Thalictrum fendleri
Thermopsis montana
Tragopogon dubius
Trifolium repens
Trisetum spicatum
Vaccinium myrtillus
Veratrum tenuipetalum
Viola adunca
Viola canadensis
Zigadenus elegans (Anticlea)

57.

Survey date: 8-01-01

Survey Site: Nipple Mountain clearcut

USGS quadrangle: Blackhead Peak

Legal description: T35N R1E S1

Site description: Clearcut area with regrowth of spruce about 3-5 ft. tall. See photo taken from Quartz Lake Trail. County >100 Botrychiums found. Searched 2.5 hours, 2 people. Probably many more would be found with additional search time.

Rare plants located at site: AA033 Botrychium minganense; AA035 Botrychium hesperium; AA034 Botrychium echo

Species observed at site:

Androsace septentrionalis

Botrychium hesperium

Botrychium pinnatum

Cirsium parryi

Corydalis caseana

Epilobium angustifolium

Fragaria virginiana

Noccaea montana

Penstemon whippleanus

Pteridium aquilinum var. *pubescens*

Trautvetteria caroliniensis

58.

Survey date: 8-01-01

Survey Site: East Fork San Juan River (north side, below bridge)

USGS quadrangle: Wolf Creek Pass

Legal description: T36N R1E S5 (334541E, 4138717N, 7753 ft.)

Site description: South facing cliffs, both dry sites and in seep above East Fork San Juan River. 87

Draba smithii plants near bridge, 33 more across from pullout downstream.

Rare plants located at site: AA036, Draba smithii

Species observed at site: (not complete list)

Agastache pallidiflora

Cornus sericea

Geranium caespitosum

Gilia pinnatifida (some growing from rock crevices, similar to G. penstemonoides)

Heliomeris multiflora

Oxalis sp.

Oxalis violacea

Pericome caudata

Thalictrum fendleri

59.

Survey date: 8-08-01

Survey Site: Williams Lake, Teal Campground

USGS quadrangle: Cimarrona

Legal description: T38N R3W S19

Site description: Pinus ponderosa/Danthonia parryi community, with most of Danthonia replaced by Bromus inermis

Rare plants located at site: none

Species observed at site:

Achillea lanulosa

Antennaria sp.

Artemisia dracunculus (Oligosporus)

Artemisia ludoviciana

Aster sp.

Bromus inermis

Campanula rotundifolia

Carex utriculata

Ceanothus fendleri

Cirsium scariosum

Dactylis glomerata

Danthonia parryi

Dugaldia hoopsii

Elymus elymoides

Elymus trachycaulus

Erigeron flagellaris

Erigeron subtrinervis

Festuca arizonica

Galium septentrionale

Geum triflorum (Erythrocoma)

Ipomopsis aggregata ssp. formosissima

Iris missouriensis

Juncus balticus

Lepidium densiflorum

Linaria vulgaris

Machaeranthera bigelovii

Madia glomerata

Mahonia repens

Muhlenbergia montana

Penstemon strictus

Pentaphylloides floribunda

Phleum pratense

Pinus ponderosa

Polygonum arenastrum

Populus tremuloides

Potentilla hippiana

Potentilla sp. (rivalis?)

Pyrrocoma crocea

Quercus gambelii

Rosa woodsii

Solidago nana

Stipa comata

Stipa nelsonii (Achnatherum)

Symphoricarpos oreophilus

Taraxacum officinale

Valeriana edulis

Veratrum tenuipetalum

Vicia americana

60.

Survey date: 8-11-01

Survey Site: Williams Creek trailhead

USGS quadrangle: Cimarrona

Legal description: T38N R3W S9

Site description: Meadow with willow carr

Rare plants located at site: none

Species observed at site:

Bromus porteri

Carex atherodes

Machaeranthera bigelovii var. *bigelovii* (*M. pattersonii*)

Mentha arvensis

Poa palustris

Salix drummondiana

Salix monticola

Salix sp. (*boothii*?)

Sidalcea candida

61.

Survey date: 8-11-01

Survey Site: Williams Creek trail, from wilderness boundary to Indian Creek trail

USGS quadrangle: Cimarrona

Legal description: T38N R3W S3, 4; T38N R3W S34, 35

Site description: A: Moist mixed conifer forest, with some rock outcrops; and B: meadow at intersection of Indian Creek trail.

Rare plants located at site: AA037, *Woodsia neomexicana*

Species observed at site:

A: Mixed conifer forest

<i>Abies concolor</i>	<i>Epilobium hornemannii</i>
<i>Abies lasiocarpa</i>	<i>Epilobium lactiflorum</i>
<i>Acer glabrum</i>	<i>Equisetum arvense</i>
<i>Achillea lanulosa</i>	<i>Erigeron coulteri</i>
<i>Aconitum columbianum</i>	<i>Erigeron eximius</i>
<i>Actaea rubra</i>	<i>Erigeron flagellaris</i>
<i>Agrostis idahoensis</i>	<i>Erigeron peregrinus</i>
<i>Agrostis scabra</i>	<i>Erigeron speciosus</i>
<i>Agrostis sp.</i>	<i>Festuca arizonica</i>
<i>Alnus incana</i>	<i>Festuca thurberi</i>
<i>Amelanchier alnifolia</i>	<i>Fragaria vesca</i>
<i>Antennaria marginata</i>	<i>Fragaria virginiana</i>
<i>Arabis sp.</i>	<i>Galium septentrionale</i>
<i>Arnica cordifolia</i>	<i>Galium triflorum</i>
<i>Artemisia franserioides</i>	<i>Gayophytum sp.</i>
<i>Artemisia ludoviciana</i>	<i>Geranium caespitosum</i>
<i>Aster ascendens</i>	<i>Geranium richardsonii</i>
<i>Brickellia grandiflora</i>	<i>Geum macrophyllum</i>
<i>Brickellia sp.</i>	<i>Glyceria striata</i>
<i>Bromus ciliatus</i>	<i>Goodyera oblongifolia</i>
<i>Bromus tectorum</i>	<i>Heliomeris multiflora</i>
<i>Campanula rotundifolia</i>	<i>Heracleum lanatum</i>
<i>Carex geyeri</i>	<i>Heterotheca villosa</i>
<i>Ceanothus fendleri</i>	<i>Hieracium gracile</i>
<i>Cerastium sp.</i>	<i>Juniperus communis</i>
<i>Chenopodium album</i>	<i>Koeleria macrantha</i>
<i>Cirsium parryi</i>	<i>Lathyrus leucanthus</i>
<i>Collomia linearis</i>	<i>Lepidium sp.</i>
<i>Corallorrhiza striata</i>	<i>Ligusticum porteri</i>
<i>Cornus sericea</i>	<i>Linanthastrum nuttallii</i>
<i>Cynoglossum officinale</i>	<i>Linnaea borealis</i>
<i>Cystopteris fragilis</i>	<i>Mahonia repens</i>
<i>Danthonia parryi</i>	<i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i>
<i>Delphinium barbeyi</i>	<i>Maianthemum stellatum</i>
<i>Deschampsia cespitosa</i>	<i>Melica porteri</i>
<i>Descurainia incana</i>	<i>Mertensia ciliata</i>
<i>Disporum trachycarpum</i>	<i>Mimulus guttatus</i>
<i>Lonicera involucrata</i> (Distegia)	Mosses collected
<i>Draba sp. (aurea?)</i>	<i>Muhlenbergia montana</i>
<i>Dugaldia hoopsii</i>	<i>Noccaea montana</i>
<i>Elymus elymoides</i>	<i>Oreochrysum parryi</i>
<i>Elymus glaucus</i>	<i>Osmorhiza depauperata</i>
<i>Elymus trachycaulus</i>	<i>Orthilia secunda</i>
<i>Epilobium angustifolium</i>	<i>Oxalis sp.</i>

Paxistima myrsinites
Phacelia heterophylla
Phacelia sericea
Phleum pratense
Picea engelmannii
Pinus ponderosa
Pinus strobiformis (abundant)

Plantago major

Poa fendleriana
Poa pratensis
Polemonium pulcherrimum
Polygonum douglasii
Populus angustifolia
Populus tremuloides
Potentilla hippiana
Potentilla ovina
Potentilla pulcherrima
Pseudocymopterus montanus
Pseudotsuga menziesii
Pteridium aquilinum var. pubescens
Pterospora andromedea
Pyrola picta
Pyrola rotundifolia
Quercus gambelii
Ribes cereum
Ribes inerme
Ribes montigenum
Ribes wolfii
Rosa woodsii
Rubus parviflorus (Rubacer)

B: Meadow by Indian Creek Trail intersection

Agoseris glauca
Aster foliaceus
Cirsium scariosum
Castilleja sulphurea
Veratrum tenuipetalum
Allium sp.
Deschampsia cespitosa
Carex microptera
Carex aquatilis
Caltha leptosepala (Psychrophila)
Rumex sp.
Sidalcea neomexicana
Mosses collected
Rorippa palustris ssp. hispida
Sidalcea candida
Calamagrostis canadensis
Viola adunca
Veronica serpyllifolia var. humifusa (Veronicastrum)

Rubus idaeus
Rudbeckia ampla
Saxifraga bronchialis ssp. austromontana
(Cilaria austromontana)
Senecio eremophilus
Senecio oodes (Packera)
Senecio serra
Senecio sp.
Senecio wootonii (Packera)
Shepherdia canadensis
Silene drummondii
Sium suave
Sambucus racemosa
Solidago simplex
Solidago spathulata
Spergulastrum lanuginosum
Streptopus fassettii
Symphoricarpos oreophilus
Taraxacum officinale
Thalictrum fendleri
Trifolium pratense
Trifolium repens
Vaccinium myrtillus
Verbascum thapsus
Vicia americana
Viola canadensis
Woodsia neomexicana
Woodsia neomexicana
Zigadenus elegans (Anticlea)

62.

Survey date: 8-11-01

Survey Site: Indian Creek Trail

USGS quadrangle: Cimarrona Peak

Legal description: T37N R3W S3 (Goodyera location GPS: 306851; 4158575; 8757 FT.)

Site description: Moist spruce-fir forest and riparian along Indian Creek with *Picea pungens*, *Salix* spp. Some camping impacts, but no exotics observed.

Rare plants located at site: AA038, *Goodyera repens*

Species observed at site:

Androsace septentrionalis

Antennaria rosea

Bahia dissecta

Carex sp.

Draba sp.

Goodyera repens

Heterotheca villosa

Heuchera parvifolia

Ipomopsis aggregata

Senecio pudica (*Ligularia*)

Moneses uniflora

Orthilia secunda

Picea pungens

Pyrola rotundifolia

Salix drummondiana

Salix monticola

Salix scouleriana

Senecio crassulus

Trifolium repens

63.

Survey date: 8-12-01

Survey Site: Poison Park Trail

USGS quadrangle: Granite Lake

Legal description: T38N R3W S11, 12, 13, and 14

Site description: A: Meadow at trailhead, B: mixed conifer forest with *Pseudotsuga menziesii*, *Populus tremuloides*, *Picea engelmannii*; C: riparian along tributary stream at trail crossing; D: meadow adjacent to private land on Weminuche Creek; E: private land at fenceline. Notable fenceline contrast, with no bunchgrasses present on private.

Rare plants located at site: none

Species observed at site:

Meadow at trailhead:

Achillea lanulosa
Bromus sp.
Campanula rotundifolia
Carex microptera
Carex utriculata
Castilleja sulphurea
Chenopodium album
Collomia linearis
Dugaldia hoopsii
Erigeron subtrinervis
Festuca thurberi
Fragaria virginiana
Galium septentrionale
Hordeum brachyantherum
Iris missouriensis

Madia glomerata

Oenothera sp.

Phleum pratense

Plantago major

Poa pratensis

Potentilla pulcherrima

Prunella vulgaris

Rumex sp.

Sidalcea candida

Stipa nelsonii (*Achnatherum*)

Taraxacum officinale

Tragopogon dubius

Trifolium pratense

Veratrum tenuipetalum

B: Forested area

Abies concolor
Acer glabrum
Achillea lanulosa
Aconitum columbianum
Agoseris glauca
Alnus incana
Amelanchier alnifolia
Androsace septentrionalis
Artemisia franserioides
Artemisia ludoviciana
Aster foliaceus
Athyrium felix-femina
Bromus porteri
Carduus nutans
Carex geyeri
Cirsium parryi
Cornus sericea
Cystopteris fragilis
Delphinium barbeyi
Descurainia incana
Elymus glaucus
Epilobium angustifolium
Erigeron elatior
Erigeron eximius
Festuca thurberi

Fragaria virginiana
Frasera speciosa
Galium septentrionale
Galium triflorum
Gentianella heterosepala
Geranium richardsonii
Geum macrophyllum
Helianthella quinquenervis
Heracleum lanatum
Lathyrus leucanthus
Ligusticum porteri
Mahonia repens
Maianthemum racemosum ssp. *amplexicaule*
Maianthemum stellatum
Melica porteri
Melilotus officinalis
Mertensia ciliata
Mosses collected
Noccaea montana
Oreochrysum parryi
Osmorhiza depauperata
Oxalis sp.
Oxalis violacea
Pedicularis procera
Phacelia heterophylla

Picea engelmannii
Picea pungens
Plantago major
Poa pratensis
Polemonium coeruleum
Polemonium pulcherrimum
Polygonum douglasii
Populus tremuloides
Potentilla pulcherrima
Pseudocymopterus montanus
Pseudotsuga menziesii
Pteridium aquilinum var. pubescens
Ribes montigenum
Rorippa palustris ssp. hispida
Rosa woodsii
Rubacer parvifolia
Rubus idaeus

C: At stream crossing

(Picea engelmannii/Acer glabrum comm.)
Acer glabrum
Agrostis stolonifera
Alnus incana
Athyrium felix-femina
Bromus canadensis
Cinna latifolia
Cornus sericea
Epilobium hornemannii
Equisetum arvense
Fragaria vesca

D: Meadow next to private land:

Acer negundo
Achillea lanulosa
Agoseris aurantiaca
Artemisia ludoviciana
Dugaldia hoopsii
Erigeron flagellaris
Erigeron speciosus
Festuca arizonica
Festuca thurberi
Iris missouriensis
Phleum pratense
Potentilla hippiana
Rudbeckia ampla
Stipa nelsonii (Achnatherum)
Stipa viridula (Nassella)

E: Private land over fence, heavily grazed:

Achillea lanulosa
Erigeron flagellaris
Erigeron subtrinervis
Iris missouriensis
Potentilla pulcherrima
Taraxacum officinale

Rudbeckia ampla
Salix scouleriana
Sambucus racemosa
Senecio eremophilus
Stellaria sp.
Streptopus fassettii
Symphoricarpos oreophilus
Taraxacum officinale
Thalictrum fendleri
Trifolium repens
Veronica serpyllifolia var. humifusa
(Veronicastrum)
Vicia americana
Viola adunca
Viola canadensis
Viola sp.
Zigadenus elegans (Anticlea)

64.

Survey date: 8-12-01

Survey Site: Lakebed Road, Unnamed Lake

USGS quadrangle: Granite Lake

Legal description: T38N R3W S24

Site description: Wetland surrounding small lake in mixed conifer and aspen forest. Negative search for Botrychiums along road.

Rare plants located at site: none

Species observed at site:

Carex utriculata

Equisetum arvense

Oxalis violacea

Typha latifolia

65.

Survey date: 8-12-01

Survey Site: Williams lake, north end by boat ramp

USGS quadrangle: Cimarrona Peak

Legal description: T38N R3W S19

Site description: Extensive wetland with sedges and bulrushes

Rare plants located at site: AA039 *Rana pipiens*

Species observed at site:

Carex utriculata

Eleocharis palustris

Scirpus microcarpus

66.

Survey date: 8-12-01

Survey Site: Williams Lake, south end by dam

USGS quadrangle: Cimarrona Peak

Legal description: T38N R3W S19

Site description: Wetland at south end of lake with some willows

Rare plants located at site: none

Species observed at site:

Carex aquatilis

Carex bebbii

Carex utriculata

Galium septentrionale

Mentha arvensis

Ranunculus sp.

Rumex crispus

Salix monticola

Typha latifolia

Glyceria grandis

67.

Survey date: 8-14-01

Survey Site: Piedra Road at Hinsdale County line

USGS quadrangle: Oakbrush Ridge

Legal description: T37N R3W S4, 5

Site description: West facing slope, excellent condition grassland with Parry oatgrass and Arizona fescue. Photos 19, 20. Bunchgrasses occur mainly on slopes, with more Artemisia ludoviciana on benches. Appears to be lightly grazed. Few exotics. Community continues on other side of drainage to east and is patchy throughout large area.

Rare plants located at site: AA040, Danthonia parryi grassland

Species observed at site:

Achillea lanulosa
Agrostis sp.
Amelanchier alnifolia
Antennaria rosea
Artemisia carruthii
Artemisia ludoviciana
Aster foliaceus
Campanula rotundifolia
Castilleja sulphurea
Cirsium tracyi
Danthonia parryi
Dugaldia hoopsii
Erigeron flagellaris
Erigeron subtrinervis
Eriogonum alatum (Pterogonum)
Eriogonum racemosum
Festuca arizonica
Festuca thurberi
Geranium caespitosum
Geum triflorum (Erythrocoma)
Heterotheca villosa
Ipomopsis aggregata ssp. formosissima
Juncus balticus
Koeleria macrantha
Lathyrus leucanthus
Linum lewisii
Lupinus caudatus
Mahonia repens
Mosses and lichens
Orthocarpus luteus
Pentaphylloides floribunda (Potentilla fruticosa)
Poa pratensis
Potentilla hippiana
Rosa woodsii
Solidago nana
Toxicoscordion venenosum
Tragopogon dubius

68.

Survey date: 8-15-01

Survey Site: Piedra Creek Road at Williams Creek Road

USGS quadrangle: Oakbrush Ridge

Legal description: T37N R3W S33

Site description: A: Grassland with *Danthonia parryi* and *Festuca thurberi*, and B: adjacent sedge meadow

Rare plants located at site: AA040, *Danthonia parryi* grassland

Species observed at site:

A: grassland

Achillea lanulosa

Antennaria rosea

Artemisia ludoviciana

Campanula rotundifolia

Danthonia parryi (30%)

Elymus trachycaulus

Equisetum hyemale (*Hippochaete*)

Erigeron flagellaris

Erigeron subtrinervis

Festuca arizonica (5%)

Festuca thurberi (30%)

Geum triflorum (*Erythrocoma*)

Juniperus communis

Koeleria macrantha

Poa pratensis

Potentilla hippiana

Potentilla pulcherrima

Rumex sp.

Stipa nelsonii (*Achnatherum*)

Stipa viridula (*Nassella*)

Taraxacum officinale

B: Wet area on north side of road:

Agrostis sp.

Carex aquatilis

Carex bebbii

Carex utriculata

Epilobium sp.

Phleum pratense

69.

Survey date: 8-15-01

Survey Site: Piedra Road East

USGS quadrangle: Oakbrush Ridge

Legal description: T37N R3W S9

Site description: A: Danthonia parryi-Festuca thurberi meadow on east side of Piedra Road

GPS: 304745; 4151503. Community extends to trees, west to creek in openings in Populus tremuloides-Picea pungens-Pinus ponderosa matrix. Photos 21 and 22. B: nearby similar grassland with no bunchgrasses. Photo 23. See EOR for additional sub-populations of this community. Photos 28, 29.

Rare plants located at site: AA040 Danthonia parryi grassland (sub)

Species observed at site:

Achillea lanulosa

Artemisia ludoviciana 10%

Danthonia parryi 50%

Dugaldia hoopsii

Elymus trachycaulus

Erigeron flagellaris

Erigeron subtrinervis

Festuca thurberi 10%

Geum triflorum (Erythrocoma)

Iris missouriensis

Potentilla hippiana

Solidago nana

Taraxacum officinale

B: Nearby similar meadow without Festuca arizonica and Danthonia parryi

Achillea lanulosa

Artemisia ludoviciana 25%

Bromus inermis

Calochortus gunnisonii

Campanula rotundifolia

Cirsium scariosum 1-5%

Elymus elymoides

Elymus trachycaulus

Erigeron flagellaris

Erigeron subtrinervis

Eriogonum racemosum

Festuca arizonica (trace)

Geum triflorum (Erythrocoma)

Koeleria macrantha

Melilotus officinalis

Penstemon strictus

Phleum pratense

Poa compressa 30%

Potentilla hippiana

Pyrrocoma crocea

Rosa woodsii

Stipa nelsonii (Achnatherum)

70.

Survey date: 8-15-01

Survey Site: Piedra Creek riparian

USGS quadrangle: Oakbrush Ridge

Legal description: T37N R3W S9

Site description: Riparian area along Piedra Creek at pullout from Piedra Creek Road, opposite site 69.

Rare plants located at site: none

Agrostis sp.

Alnus incana

Artemisia franserioides

Carex aquatilis

Carex bebbii

Carex utriculata

Geum macrophyllum

Phleum pratense

Poa pratensis

Populus angustifolia

Salix exigua

Salix monticola

Taraxacum officinale

Trifolium pratense

71.

Survey date: 8-15-01

Survey Site: Seep, FR 631 east of Weminuche Creek

USGS quadrangle: Bear Mountain

Legal description: T38N R4W S35

Site description: Seep in hillside above road, just east of National Forest boundary

Rare plants located at site: none

Species observed at site: (not a complete list)

Carex bebbii

Carex deweyana

Mimulus guttatus

Moss (collected)

Picea engelmannii

72.

Survey date: 8-27-01

Survey Site: Wolf Creek Pass, Continental Divide Trail

USGS quadrangle: Wolf Creek Pass

Legal description: T37N R2E S5

Site description: Clearcut in *Picea engelmannii*/*Vaccinium myrtillus* forest, north facing slope.

Young trees about 3 ft. tall.

Rare plants located at site: AA041, *Botrychium lunaria*; AA042 *Botrychium pinnata*

Species observed at site:

Achillea lanulosa
Agoseris glauca
Angelica pinnata
Antennaria parvifolia
Arnica cordifolia
Arnica mollis
Botrychium pinnatum
Botrychium lunaria
Bromus canadensis
Bromus sp.
Calamagrostis canadensis
Carex microptera
Carex sp.
Castilleja sulphurea
Delphinium barbeyi
Elymus glaucus
Erigeron coulteri
Erigeron eximius
Erigeron speciosus
Fragaria virginiana
Gentianella heterosepala
Geranium richardsonii
Senecio amplexans (Ligularia)
Senecio bigelovii (Ligularia)
Senecio pudica (Ligularia)
Luzula parviflora
Lycopodium sp.
Mertensia ciliata
Moss (collected)
Oreochrysum parryi
Osmorhiza depauperata
Pedicularis racemosa
Phleum alpinum (*P. commutatum*)
Picea engelmannii
Poa reflexa
Potentilla pulcherrima
Ribes montigenum
Salix brachycarpa
Salix planifolia
Sibbaldia procumbens
Trisetum spicatum
Vaccinium myrtillus
Veronica nutans

73.

Survey date: 8-27-01

Survey Site: Wolf Creek Pass, Lobo Overlook

USGS quadrangle: Wolf Creek Pass

Legal description: T38N R2E S32

Site description: A: Tundra area at treeline and B: on road to overlook. Many plants unidentifiable due to lateness of season.

Rare plants located at site: none

Species observed at site:

A: at overlook

Achillea lanulosa

Agoseris glauca

Antennaria rosea

Carex elynoides

Carex microptera

Castilleja occidentalis

Deschampsia cespitosa

Elymus trachycaulus

Erigeron subtrinervis

Gentiana parryi (*Pneumonanthe*)

Hymenoxys grandiflora (*Rydbergia*)

Juncus drummondii

Minuartia obtusiloba (*Lidia*)

Pedicularis groenlandica

Phleum pratense

Picea engelmannii

Poa alpina

Polygonum bistortoides (*Bistorta*)

Polygonum viviparum

Potentilla pulcherrima

Potentilla sp.

Ribes montigenum

Salix arctica

Salix brachycarpa

Salix planifolia

Sedum lanceolatum

Senecio atratus

Sibbaldia procumbens

Trifolium sp.

Trisetum spicatum

Veronica nutans

B: On road to Lobo overlook:

Campanula rotundifolia

Cirsium parryi

Gentianopsis thermalis (collected)

Ligusticum porteri

Limnorchis saccata

Moss, collected

Oreochrysum parryi

Picea engelmannii

74.

Survey date: 8-27-01

Survey Site: Treasure Falls

USGS quadrangle: Saddle Mountain, Wolf Creek Pass

Legal description: T37N R1E S15, 16

Site description: Moist hillside along trail to Treasure Falls, mixed conifer forest with many shrub species.

Rare plants located at site: none

Species observed at site:

Abies concolor
Acer glabrum
Alnus incana
Amelanchier alnifolia
Apocynum sp.
Artemisia franserioides
Cornus sericea
Lonicera involucrata (Distegia)
Fragaria vesca
Mahonia repens
Maianthemum stellatum
Orthilia secunda
Paxistima myrsinites
Picea engelmannii
Populus tremuloides
Prunus virginiana
Pseudotsuga menziesii
Quercus gambelii
Ribes wolfii
Rosa woodsii
Rubus parviflorus (Rubacer)
Rubus idaeus
Shepherdia canadensis
Sorbus scopulina
Streptopus fassettii
Symphoricarpos oreophilus
Thalictrum fendleri
Vaccinium myrtillus

75.

Survey date: 8-27-01

Survey Site: Sand Creek

USGS quadrangle: Wolf Creek Pass

Legal description: T36N R1E S3, 4

Site description: A: Riparian area of Sand Creek above confluence with East Fork San Juan River.

Populus angustifolia/Alnus incana community; and B: cliff faces above creek. Negative search for Draba smithii

Rare plants located at site: none

Species observed at site:

A: riparian

Agrostis sp.

Alnus incana

Deschampsia cespitosa

Lonicera involucrata (Distegia)

Festuca arizonica

Hieracium gracile

Ipomopsis aggregata

Juniperus communis

Machaeranthera bigelovii

Maianthemum stellatum

Picea pungens

Populus angustifolia

Ribes sp.

Salix drummondiana

Salix exigua

Salix monticola

B: On cliff faces:

Arctostaphylos uva-ursi

Cystopteris fragilis

Heterotheca villosa

Heuchera parvifolia

Melica porteri

Moss (collected)

Poa reflexa

Saxifraga bronchialis ssp. austromontana (Cilaria austromontana)

Sedum integrifolium (Rhodiola)

76.

Survey date: 8-28-01

Survey Site: Navajo Peak trail

USGS quadrangle: Chromo

Legal description: T33N R2E S7, 8, 17, 20

Site description: Forested areas of mixed conifers and aspen with snowberry understory; Several small lakes, and some grassy openings. Note some very bad infestations of *Cirsium arvense* around and between ponds. Exclosure in overgrazed meadow east of Little Navajo Creek was not too different from surrounding area, but with more *Poa pratensis*, *Taraxacum officinale*, *Vicia americana* and *Stipa nelsonii* (*Achnatherum*).

Rare plants located at site: AA043, *Carex retrorsa*; AA044 *Rana pipiens*

Species observed at site:

A: trailhead to wilderness boundary:

Abies concolor
Achillea lanulosa
Actaea rubra
Antennaria rosea
Arnica cordifolia
Bromus ciliatus
Bromus inermis
Carex bebbii
Castilleja miniata
Cirsium arvense (in meadow openings and by stock ponds)
Cirsium parryi
Dactylis glomerata
Delphinium barbeyi
Lonicera involucrata (Distegia)
Dugaldia hoopsii
Elymus glaucus
Epilobium angustifolium
Erigeron eximius
Erigeron speciosus
Fragaria virginiana
Galium septentrionale
Gentianella heterosepala
Gentianella heterosepala
Geranium richardsonii
Lathyrus leucanthus
Ligusticum porteri

Machaeranthera bigelovii
Maianthemum stellatum
Moss (collected)
Oreochrysum parryi
Pedicularis racemosa
Phleum pratense
Picea engelmannii
Plantago major
Poa pratensis
Polygonum douglasii
Populus tremuloides
Potentilla pulcherrima
Pseudocymopterus montanus
Pseudotsuga menziesii
Pteridium aquilinum var. *pubescens*
Rubus parviflorus (Rubacer)
Sambucus racemosa
Senecio eremophilus
Stipa viridula (Nassella)
Symphoricarpos oreophilus
Taraxacum officinale
Thalictrum fendleri
Tragopogon dubius
Trifolium pratense
Trifolium repens
Vicia americana
Viola canadensis

B: Wetland just past forest boundary (photo 2):

Alopecurus aequalis
Aster foliaceus
Bidens cernua
Calamagrostis canadensis
Carex microptera
Carex retrorsa
Carex utriculata
Cirsium arvense
Eleocharis acicularis
Eleocharis palustris
Epilobium ciliatum
Equisetum arvense

Galium trifidum
Glyceria elata
Juncus balticus
Lemna sp.
Mentha arvensis
Poa pratensis
Ranunculus gmelinii
Rorippa palustris ssp. *hispida*
Rudbeckia ampla
Salix drummondiana
Sidalcea candida
Veratrum tenuipetalum

C: On trail, in *Populus tremuloides*/mesic forb community, with *Festuca thurberi* in openings

Abies concolor
Aconitum columbianum
Alnus incana
Angelica sp.
Campanula rotundifolia
Cardamine cordifolia
Carex atherodes
Carex utriculata
Eleocharis palustris
Erigeron flagellaris
Festuca thurberi
Frasera speciosa
Glyceria sp.
Heliomeris multiflora
Heracleum lanatum

Hordeum brachyantherum
Madia glomerata
Maianthemum racemosum ssp. *amplexicaule*
Mertensia ciliata
Mimulus guttatus
Pedicularis procera
Populus tremuloides
Ribes montigenum
Rosa woodsii
Senecio serra
Senecio triangularis
Silene drummondii
Sium suave
Vaccinium myrtillus
Veronica catenata

D: *Festuca thurberi* meadow

Aster foliaceus
Castilleja sulphurea
Dugaldia hoopsii
Elymus trachycaulus
Erigeron speciosus
Festuca thurberi
Frasera speciosa
Heliomeris multiflora

Linum lewisii
Madia glomerata
Phleum pratense
Poa pratensis
Potentilla pulcherrima
Psilochenia sp.
Stipa viridula (Nassella)
Veratrum tenuipetalum

E: Wetland, small pond:

Alopecurus aequalis
Calamagrostis canadensis
Carex sp. (bebbii?)
Carex utriculata
Castilleja sulphurea
Cirsium parryi
Collomia linearis
Descurainia sp.
Eleocharis palustris
Geum macrophyllum
Glyceria sp.
Iris missouriensis

Lemna sp.
Senecio pudica (Ligularia)
Mentha arvensis
Orthocarpus luteus
Gentiana parryi (Pneumonanthe)
Ranunculus (aquatic)
Salix planifolia
Sidalcea candida
Sium suave
Stipa nelsonii (Achnatherum)
Valeriana edulis
Veratrum tenuipetalum

F: Little Navajo Creek:

Alnus incana
Heracleum lanatum
Penstemon strictus
Picea engelmannii
Picea pungens

Populus tremuloides
Salix drummondiana
Salix monticola
Symphoricarpos oreophilus

F: Pond and adjacent wetland:

Carex utriculata
Eleocharis palustris
Helianthus rigidus
Lemna sp.

G: Trail upstream of Navajo Creek crossing:

Artemisia ludoviciana

Carduus nutans

Carex geyeri

Gayophytum ramosissimum

Gentianella heterosepala

Senecio bigelovii (*Ligularia*)

Pyrrocoma clementis

Rumex sp.

Streptopus fassettii

77.

Survey date: 8-29-01

Survey Site: Buckles Lake Wetlands

USGS quadrangle: Harris Lake

Legal description: T34N R1E S35

Site description: A: Wetlands at south end of Buckles Lake. Photo 3; B: forested area between Buckles and Harris Lakes, *Populus tremuloides*/*Festuca thurberi* community; also some wet areas in drainages. Grazed and weedy between bunches of Thurber fescue; and C: *Populus tremuloides*-*Abies concolor*/mesic forb community

Rare plants located at site: none

Species observed at site:

A: wetlands

Alnus incana

Calamagrostis canadensis

Caltha leptosepala (*Psychophila*)

Carex sp.

Carex utriculata

Cirsium arvense

Eleocharis sp.

Gentianopsis thermalis

Mosses (collected)

Pedicularis groenlandica

Salix planifolia

Swertia perenne

B: between Buckles and Harris Lakes:

Achillea lanulosa

Carex microptera

Carex utriculata

Cirsium arvense

Cirsium parryi

Dugaldia hoopsii

Festuca thurberi

Fragaria virginiana

Hordeum brachyantherum

Iris missouriensis

Juncus sp.

Pentaphylloides floribunda

Phleum pratense

Plantago major

Poa pratensis

Populus tremuloides

Taraxacum officinale

Trifolium repens

Veratrum tenuipetalum

C: *Populus tremuloides*-*Abies concolor*/mesic forb comm.

Abies concolor

Achillea lanulosa

Actaea rubra

Agoseris aurantiaca

Arnica cordifolia

Bromus porteri

Campanula rotundifolia

Carex geyeri

Cirsium parryi

Erigeron eximius

Fragaria virginiana

Galium septentrionale

Geranium richardsonii

Lathyrus leucanthus

Maianthemum stellatum

Osmorhiza depauperata

Picea engelmannii

Poa pratensis

Populus tremuloides

Pseudocymopterus montanus

Stipa sp.

Taraxacum officinale

Thermopsis montana

Vicia americana

Viola canadensis

78.

Survey date: 8-29-01

Survey Site: Harris Lake

USGS quadrangle: Harris Lake

Legal description: T34N R1E S26

Site description: Lake with abundant smartweed, and surrounding wetlands. Some unusual exotics present.

Rare plants located at site: none

Species observed at site:

Alopecurus aequalis

Arnica latifolia

Bidens cernua (Int. Flora: up to 2400 m. This is 9400 ft)

Calamagrostis canadensis

Carex utriculata

Cirsium arvense

Cirsium vulgare

Eleocharis palustris

Gnaphalium uliginosum (Filaginella)

Lactuca tatarica var. *pulchella* (L. *pulchella*)* (upper end of lake, with *Bidens*)

Mentha arvensis

Persicaria amphibia

Typha latifolia

79.

Survey date: 8-30-01

Survey Site: Fish Creek Trail, Gunshot Pass

USGS quadrangle: Summit Peak

Legal description: T35N R2E S24

Site description: A: Fish Creek trail on steep north facing hillsides through spruce-fir forest with Trautvetteria understory; B: tundra below Gunsight Pass; and C: rock outcrops along trail.

Rare plants located at site: AA-- Picea engelmannii/Trautvetteria caroliniensis

Species observed at site:

A: forested slopes (not a complete list)

Abies lasiocarpa

Trautvetteria caroliniensis

B: tundra

Agoseris aurantiaca

Antennaria sp.

Artemisia scopulorum

Caltha leptosepala (*Psychrophila*)

Campanula rotundifolia

Cardamine cordifolia

Carex microptera

Castilleja occidentalis

Cerastium beeringianum

Danthonia intermedia

Deschampsia cespitosa

Dugaldia hoopsii

Erigeron coulteri

Erigeron peregrinus

Erigeron pinnatisectus

Festuca brachyphylla

Geum rossii

Juncus drummondii

Juncus sp. (collected)

Mertensia ciliata

Mimulus guttatus

Minuartia obtusiloba (*Lidia*)

Noccaea montana

Oreochrysum parryi

Pedicularis groenlandica

Pedicularis parryi

Phleum alpinum (*P. commutatum*)

Poa alpina

Polygonum bistortoides (*Bistorta*)

Polygonum viviparum

Potentilla sp.

Salix arctica

Salix brachycarpa

Salix planifolia

Saxifraga rhomboidea

Sedum integrifolium (*Rhodiola*)

Sedum lanceolatum

Selaginella sp.

Senecio amplexans (*Ligularia*)

Senecio crassulus

Senecio neomexicanus (*Packera*)

Senecio pudica (*Ligularia*)

Senecio sp. (collected)

Sibbaldia procumbens

Trifolium sp.

Trisetum spicatum

Vaccinium myrtillus

Veronica nutans

Viola labradorica

C: Rock outcrop area, about 1/2 way up trail

Aquilegia coerulea

Cystopteris fragilis

Draba streptocarpa

Ligusticum porteri

Saxifraga bronchialis ssp. *austromontana* (*Cilaria austromontana*)

Sedum integrifolium (*Rhodiola*)

Ribes wolffii

Senecio crassulus

Trailhead: *Matricaria perforata*

80.

Survey date: 8-31-01

Survey Site: Opal Lake Trail

USGS quadrangle: Harris Lake, Elephant Head Rock

Legal description: T34N R2E S 8, 9

Site description: Mixed spruce-fir and aspen forest with *Symphoricarpos oreophilus*. 9200 ft. A: trail and small pond near trailhead; B: along White Creek; C: beaver ponds

Rare plants located at site: AA046, *Carex retrorsa*

Species observed at site:

A: Trail and small pond near trailhead:

Abies concolor
Acer glabrum
Achillea lanulosa
Actaea rubra
Amelanchier alnifolia
Antennaria parviflora
Artemisia franserioides
Aster foliaceus
Bromus ciliatus
Bromus inermis
Campanula rotundifolia
Carex atherodes
Carex sp. Collected
Castilleja sulphurea
Chenopodium sp.
Cirsium arvense
Cirsium parryi
Cirsium vulgare
Collomia linearis
Cornus sericea
Lonicera involucrata (Distegia)
Dugaldia hoopsii
Elymus glaucus
Elymus trachycaulus
Epilobium angustifolium
Epilobium ciliatum
Equisetum arvense
Equisetum hyemale (Hippochaete)
Erigeron eximius
Erigeron flagellaris
Erigeron speciosus
Festuca thurberi
Fragaria vesca
Fragaria virginiana
Galium septentrionale
Galium trifidum var. *brevipes*
Geranium richardsonii
Glyceria striata
Goodyera oblongifolia
Helianthella quinquenervis
Heracleum lanatum
Hydrophyllum fendleri
Juniperus communis
Lathyrus leucanthus

Lemna sp.
Senecio bigelovii (Ligularia)
Linnaea borealis
Machaeranthera bigelovii
Mahonia repens
Maianthemum racemosum ssp. *amplexicaule*
Maianthemum stellatum
Melandrium dioicum
Mosses coll.
Noccaea montana
Orthilia secunda
Osmorhiza depauperata
Paxistima myrsinites
Picea engelmannii
Picea pungens
Poa pratensis
Polygonum douglasii
Populus tremuloides
Potentilla pulcherrima
Pteridium aquilinum var. *pubescens*
Pyrola picta
Pyrola rotundifolia
Ribes wolfii
Rosa woodsii
Rubus parviflorus (Rubacer)
Rubus idaeus
Rubus idaeus
Rudbeckia ampla
Salix exigua
Salix monticola
Salix scouleriana
Sambucus racemosa
Sidalcea candida
Sparganium minimum
Stipa nelsonii (Achnatherum)
Streptopus fassettii
Symphoricarpos oreophilus
Taraxacum officinale
Thalictrum fendleri
Tragopogon dubius
Trifolium repens
Typha latifolia
Vaccinium myrtillus
Valeriana edulis

Veratrum tenuipetalum
Verbascum thapsus

B: Along White Creek:

Alnus incana
Anaphalis margaritacea
Calamagrostis canadensis
Carex utriculata
Lonicera involucrata (Distegia)
Epilobium hornemannii
Fraseria speciosa
Glyceria elata
Glyceria striata
Juncus tracyi
Ligusticum porteri
Mimulus guttatus

C: At beaver ponds and lake:

Aconitum columbianum
Agoseris glauca
Agrostis scabra
Agrostis gigantea
Alopecurus aequalis
Androsace septentrionalis
Aster ascendens
Ranunculus sp.
Brickellia grandiflora
Carex microptera
Carex retrorsa
Carex utriculata
Cirsium arvense
Danthonia parryi
Epilobium hornemannii
Erigeron subtrinervis
Galium trifidum
Galium triflorum
Geranium richardsonii
Glyceria elata
Glyceria pauciflora (Torreyochloa)

Vicia americana
Viola canadensis

Phleum pratense

Picea engelmannii
Pneumonanthe parryi
Poa palustris
Polygonum sp.
Rumex sp.
Salix drummondiana
Salix monticola
Veronica americana
Veronica serpyllifolia var. humifusa
(Veronicastrum)

Gnaphalium uliginosum (Filaginella)
Platanthera hyperborea
Heliomeris multiflora
Juncus tracyi
Koeleria macrantha
Lepidium densiflorum
Mentha arvensis
Mertensia ciliata
Mimulus guttatus
Pedicularis procera
Persicaria lapathifolia (lake shore)
Potentilla hippiana
Pseudotsuga menziesii
Salix planifolia
Senecio atratus
Senecio triangularis
Shepherdia canadensis
Solidago spathulata
Trifolium pratense
Urtica gracilis
Viola canadensis

81.

Survey date: 9-06-01

Survey Site: East Fork San Juan River, north side above bridge

USGS quadrangle: Wolf Creek Pass

Legal description: T36N R1E S5

Site description: A: steep, shrub-covered, south facing slope above East Fork San Juan River, east of bridge. *Draba smithii* in cliff crevices, at base of outcrops, and under shrubs in scree between outcrops; B: adjacent forested area; C: riparian along East Fork by bridge.

Rare plants located at site: AA036, *Draba smithii* sub-population

Species observed at site:

A: steep slopes and rock outcrops

Agastache pallidiflora

Brickellia grandiflora

Cheilanthes feei

Cystopteris fragilis

Draba smithii

Arenaria fendleri (Eremogene)

Fragaria vesca

Heterotheca villosa

Mosses (collected)

Poa retrorsa

Toxicodendron rydbergii

B: Adjacent forested area: (not complete list)

Abies concolor

Ageratina herbacea

Amelanchier alnifolia

Antennaria sp.

Arctostaphylos uva-ursi

Bahia dissecta

Berberis fendleri

Blepharoneuron tricholepis

Erigeron divergens

Mahonia repens

Mosses collected

Muhlenbergia montana

Paxistima myrsinites

Pinus strobiformis

Pseudotsuga menziesii

Quercus gambelii

Symphoricarpos oreophilus

C: Riparian area at bridge

Acer glabrum

Alnus incana

Aster foliaceus

Bromus inermis

Cornus sericea

Equisetum arvense

Linaria vulgaris

Machaeranthera bigelovii

Picea pungens

Populus angustifolia

Ribes sp.

Rosa woodsii

Rudbeckia ampla

Salix exigua

Salix monticola

Solidago sp.

Verbascum thapsus

82.

Survey date: 9-06-01

Survey Site: East Fork San Juan River, cliffs on south side of river

USGS quadrangle: Wolf Creek Pass

Legal description: T36N R1E S5

Site description: Steep, moist, north facing cliffs with luxuriant cover of mosses and shade-tolerant species. *Cryptogramma stelleri* in crevices under shallow rock overhangs (about 1 foot deep, not in deeper overhangs).

Rare plants located at site: AA047, *Cryptogramma stelleri*; AA030, *Goodyera repens*

Species observed at site:

Abies concolor
Acer glabrum
Actaea rubra
Amelanchier alnifolia
Arnica cordifolia
Artemisia franserioides
Cirsium parryi
Cornus sericea
Cryptogramma stelleri
Cystopteris fragilis
Draba aurea
Erigeron eximius
Equisetum hyemale (*Hippochaete*)
Fragaria vesca
Galium trifidum
Galium triflorum
Geranium richardsonii
Geranium richardsonii
Goodyera repens
Heuchera parvifolia
Linnaea borealis
Lycopodium sp.
Maianthemum racemosum ssp. *amplexicaule*
Mertensia ciliata
Orthilia secunda
Osmorhiza depauperata
Oxalis sp.
Paxistima myrsinites
Pinus strobus
Populus tremuloides
Pseudotsuga menziesii
Pyrola rotundifolia
Sedum integrifolium (*Rhodiola*)
Riccia (liverwort)
Rosa woodsii
Rubus parviflorus (*Rubacer*)
Saxifraga bronchialis ssp. *austromontana* (*Cilaria austromontana*)
Selaginella underwoodii
Shepherdia canadensis
Vaccinium myrtillus

83.

Survey date: 9-06-01

Survey Site: Aspen Spur Road

USGS quadrangle: Blackhead Peak

Legal description: T35N R2E S14

Site description: Spruce-aspen forest, small clearcuts and natural openings, along old logging road.

Negative search for Botrychiums. (Habitat looks good, with young spruces 2-8 ft. tall, *Fragaria virginiana* present. Clearcuts with dense *Populus tremuloides*. Signs of cattle and horse use, as well as deer, elk, grouse.

Rare plants located at site: none

Species observed at site:

Abies concolor

Achillea lanulosa

Agoseris glauca

Agrostis stolonifera

Alnus incana

Anaphalis margaritacea

Androsace septentrionalis

Antennaria parviflora

Artemisia franserioides

Athyrium felix-femina

Bromus ciliatus

Bromus inermis

Campanula rotundifolia

Calamagrostis canadensis

Carex lanuginosa

Castilleja miniata

Cirsium arvense

Collomia linearis

Dactylis glomerata

Lonicera involucrata (Distegia)

Elymus glaucus

Epilobium angustifolium

Erigeron eximius (pink here, white at other sites)

Fragaria virginiana

Galium triflorum

Geranium caespitosum

Geranium richardsonii

Gnaphalium uliginosum (Filaginella)

Goodyera oblongifolia

Platanthera hyperborea

Heracleum lanatum

Hydrophyllum fendleri

***Elytrigia intermedia* (Thinopyrum)**

Juncus tracyi

Lathyrus leucanthus

Leucanthemum vulgare

Senecio pudica (Ligularia)

Ligusticum porteri

Machaeranthera bigelovii

***Madia glomerata* (in road)**

Moss (collected)

Noccaea montana

Orthilia secunda

Osmorhiza depauperata

Oxypolis fendleri

Pedicularis procera

Pedicularis racemosa

Phleum pratense

Picea engelmannii

Plantago major

Poa pratensis

Polygonum douglasii

Populus angustifolia

Populus tremuloides

Pseudotsuga menziesii

Pteridium aquilinum var. *pubescens*

Ribes montigenum

Ribes wolfii

Rorippa nasturtium-aquaticum

Rubacer parvifolia

Salix scouleriana

Sambucus racemosa

Senecio crassulus

Senecio eremophilus

Senecio serra

Senecio triangularis

Stipa viridula (Nassella)

Taraxacum officinale

Thalictrum fendleri

Trifolium repens

Vaccinium myrtillus

Veratrum tenuipetalum

Veronica serpyllifolia var. *humifusa*

(*Veronicastrum*)

Vicia americana

Also, Along Mill Creek Road: *Iva xanthifolia*

84.

Survey date: 9-07-01

Survey Site: County Road 335 (Lower Rio Blanco)

USGS quadrangle: Serviceberry Mountain

Legal description: T34N R1W S22

Site description: Mancos shale hills near intersection of Hwy. 84

Rare plants located at site: none

Species observed at site:

Achillea lanulosa
Amelanchier utahensis
Artemisia frigida
Artemisia ludoviciana
Aster ascendens
Aster falcatus
Aster foliaceus
Astragalus sp.
Chrysothamnus depressus
Chrysothamnus nauseosus
Danthonia parryi
Elymus elymoides
Eriogonum alatum (Pterogonum)
Eriogonum lonchophyllum
Eriogonum racemosum
Gilia subnuda
Glycyrrhiza lepidota
Helianthus rigidus
Heliomeris multiflora
Heterotheca villosa
Juniperus scopulorum
Lactuca serriola
Mahonia repens
Melilotus officinalis
Oryzopsis hymenoides
Pinus ponderosa (sparse)
Potentilla hippiana
Prunus virginiana
Quercus gambelii
Rhus glabra
Rhus trilobata
Rosa woodsii
Shepherdia argentea
Stipa viridula (Nassella)
Symphoricarpos oreophilus
Townsendia incana
Tragopogon dubius
Trifolium repens

Also, Roadside on CR 335: Mentzelia laciniata (Nuttallia)

85.

Survey date: 9-07-01

Survey Site: Kenney Flats

USGS quadrangle: Edith

Legal description: T33N R1W S12; T33N R1E S7

Site description: *Pinus ponderosa* pine community with large grassy meadows, less *Quercus gambelii* than in most sites, but quality of understory is patchy. Some good stands of *Festuca arizonica*, *Stipa comata*, *Oryzopsis hymenoides*, *Muhlenbergia montana* and *Blepharoneuron tricholepis*. However, also *Bromus inermis* and *Poa pratensis*. Bad infestations of *Madia glomerata* in broad swales. Photos 18, 19, 20.

Rare plants located at site: AA048, *Equisetum variegatum* (Hippochaete)

Species observed at site:

Achillea lanulosa
Antennaria sp.
Artemisia carruthii
Artemisia franserioides
Aster foliaceus
Blepharoneuron tricholepis
Carex geeyeri
Ceanothus fendleri
Chenopodium sp.
Collomia linearis
Elymus elymoides
Equisetum variegatum (Hippochaete)
Erigeron flagellaris
Erigeron speciosus
Eriogonum racemosum
Festuca arizonica
Glycyrrhiza lepidota
Helianthus rigidus
Heliomeris multiflora
Heterotheca villosa
Koeleria macrantha
Lupinus caudatus
Madia glomerata
Mahonia repens
Melilotus officinalis
Muhlenbergia montana
Orthocarpus luteus
Pascopyrum smithii
Phleum pratense
Pinus ponderosa
Poa pratensis
Polygonum douglasii
Potentilla hippiana
Quercus gambelii
Rosa woodsii
Stipa comata
Taraxacum officinale
Tragopogon dubius
Vicia americana

Along road: ***Matricaria perforata***

Appendix III.

Species list for San Juan National Forest, Archuleta County

This list includes all plants documented at sites on the San Juan National Forest in Archuleta and Hinsdale counties where species lists were prepared during the field season of 2001. It does not represent a complete list for the forest or for the counties. Nomenclature follows Kartesz (1994), with synonyms (mostly from Weber 2001) in parentheses, with some exceptions for names that are commonly known, where the more familiar name is listed first. Common names are from PLANTS (USDA 2001), except when more commonly used names are known. Exotic species are in red type.

<i>Abies concolor</i>	White fir
<i>Abies lasiocarpa</i>	Subalpine fir
<i>Acer glabrum</i> forma <i>trisectum</i>	Rocky Mountain Maple
<i>Acer glabrum</i>	Rocky Mountain Maple
<i>Acer negundo</i> (<i>Negundo aceroides</i>)	Box elder
<i>Acetosella vulgaris</i> (see <i>Rumex</i>)	
<i>Achillea lanulosa</i>	Yarrow
<i>Achnatherum</i> (see <i>Oryzopsis</i>)	
<i>Achnatherum</i> (see <i>Stipa</i>)	
<i>Acomastylis</i> (see <i>Geum</i>)	
<i>Aconitum columbianum</i>	Monk's hood
<i>Actaea rubra</i>	Baneberry
<i>Agastache pallidiflora</i>	Giant hyssop
<i>Ageratina herbacea</i>	Fragrant snakeroot
<i>Agoseris aurantiaca</i>	Orange false dandelion
<i>Agoseris glauca</i>	Pale false dandelion
<i>Agropyron cristatum</i>	Crested wheatgrass
<i>Agrostis gigantea</i>	Redtop
<i>Agrostis idahoensis</i>	Idaho bentgrass
<i>Agrostis scabra</i>	Rough bentgrass
<i>Agrostis stolonifera</i>	Creeping bentgrass
<i>Alisma triviale</i>	Northern water plantain
<i>Allium acuminatum</i>	Tapertip onion
<i>Allium cernuum</i>	Nodding onion
<i>Allium geayi</i>	Geyer's onion
<i>Allium textile</i>	Textile onion
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Thinleaf alder
<i>Alopecurus aequalis</i>	Shortawn foxtail
<i>Alopecurus pratensis</i>	Meadow foxtail
<i>Alyssum parviflorum</i>	Small alyssum
<i>Ambrosia trifida</i>	Ragweed
<i>Amelanchier alnifolia</i>	Saskatoon serviceberry
<i>Amelanchier utahensis</i>	Utah serviceberry
<i>Anaphalis margaritacea</i>	Pearly everlasting
<i>Androsace septentrionalis</i>	Rock jasmine
<i>Anemone cylindrica</i>	Candle anemone
<i>Anemone multifida</i>	Red windflower
<i>Angelica ampla</i>	Giant angelica
<i>Angelica pinnata</i>	Small leaf angelica
<i>Anisantha</i> (see <i>Bromus</i>)	
<i>Antennaria dimorpha</i>	Low pussytoes
<i>Antennaria marginata</i>	Whitemargin pussytoes
<i>Antennaria media</i>	Rocky Mountain pussytoes
<i>Antennaria parvifolia</i>	Small leaf pussytoes
<i>Antennaria rosea</i>	Rosy pussytoes

<i>Antennaria</i> sp.	Pussytoes
<i>Anticlea</i> (see <i>Zigadenus</i>)	
<i>Apocynum androsaemifolium</i>	Spreading dogbane
<i>Apocynum cannabinum</i>	Indian hemp
<i>Aquilegia coerulea</i>	Colorado blue columbine
<i>Aquilegia elegantula</i>	Western red columbine
<i>Arabis drummondii</i> (<i>Boechea</i>)	Drummond's rockcress
<i>Arabis perennans</i>	Perennial rockcress
<i>Arabis</i> sp.	Rockcress sp.
<i>Arctium minus</i>	Burdock
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick
<i>Arenaria congesta</i> (<i>Eremogene</i>)	Desert sandwort
<i>Arenaria fendleri</i> (<i>Eremogene</i>)	Fendler's sandwort
<i>Arenaria lanuginosa</i> (see <i>Spergulastrum</i>)	
<i>Aristida purpurea</i>	Purple threeawn
<i>Arnica cordifolia</i>	Heartleaf arnica
<i>Arnica latifolia</i>	Broadleaf arnica
<i>Arnica mollis</i>	Hairy arnica
<i>Arnica rydbergii</i>	Rydberg's arnica
<i>Artemisia arctica</i>	Boreal sagebrush
<i>Artemisia carruthii</i>	Carruth's sagewort
<i>Artemisia dracunculus</i> (<i>Oligosporus</i>)	Wormwood
<i>Artemisia franserioides</i>	Ragweed sagebrush
<i>Artemisia frigida</i>	Fringed sagewort
<i>Artemisia ludovicana</i>	Louisiana sagewort
<i>Artemisia michauxiana</i>	Michaux's sagebrush
<i>Artemisia nova</i> (<i>Serephidium</i>)	Black sagebrush
<i>Artemisia scopulorum</i>	Alpine sagebrush
<i>Artemisia tridentata</i> ssp. <i>tridentata</i> (<i>Serephidium</i>)	Big sagebrush
<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> (<i>Serephidium</i>)	Mountain big sagebrush
<i>Asclepias asperula</i>	Spider milkweed
<i>Asclepias subverticillata</i>	Whorled milkweed
<i>Aster ascendens</i>	Chile aster
<i>Aster bracteolatus</i>	Bracted aster
<i>Aster falcatus</i>	Cluster aster
<i>Aster foliaceus</i>	Leafybract aster
<i>Aster glaucodes</i>	Gray aster
<i>Astragalus bisulcatus</i> var. <i>haydenianus</i> (<i>A. haydenianus</i>)	Hayden's milkvetch
<i>Astragalus flavus</i>	Yellow milkvetch
<i>Astragalus flexuosus</i>	Flexile milkvetch
<i>Astragalus iodopetalus</i>	Violet milkvetch
<i>Astragalus lonchocarpus</i>	Rushy milkvetch
<i>Astragalus missouriensis</i> var. <i>humistratus</i>	Missouri milkvetch
<i>Astragalus nuttallianus</i>	Smallflowered milkvetch
<i>Astragalus oocalycis</i>	Arboles milkvetch
<i>Astragalus praelongus</i>	Stinking milkvetch
<i>Astragalus proximus</i>	Aztec milkvetch
<i>Astragalus scopulorum</i>	Rocky Mountain milkvetch
<i>Athyrium felix-femina</i>	Common ladyfern
<i>Atriplex canescens</i>	Four-wing saltbush
<i>Bahia dissecta</i>	Ragleaf bahia
<i>Barbarea orthoceras</i>	American yellowrocket
<i>Barbarea vulgaris</i>	Garden yellowrocket
<i>Batrachium</i> (see <i>Ranunculus</i>)	
<i>Berberis fendleri</i>	Colorado barberry
<i>Betula occidentalis</i>	Water birch

Bidens cernua	Nodding beggartick
Bistorta (see Polygonum)	
Blepharoneuron tricholepis	Pine dropseed
Boechera (see Arabis)	
Botrychium hesperium	Western moonwort
Botrychium lunaria	Common moonwort
Botrychium pinnatum	Northern moonwort
Bouteloua gracilis	Blue grama
Breea (see Cirsium)	
Brickellia californica	California brickelbush
Brickellia grandiflora	Tasselflower brickelbush
Bromopsis (see Bromus)	
Bromus anomalus (Bromopsis porteri)	Nodding brome
Bromus canadensis (Bromopsis); Bromus ciliatus	Canadian brome
Bromus commutatus	Meadow brome
Bromus hordeaceus	Soft brome
Bromus inermis	Smooth brome
Bromus japonicus	Japanese brome
Bromus lanatipes (Bromopsis)	Wooly brome
Bromus sp.	Brome
Bromus tectorum (Anisantha)	Cheatgrass
Calamagrostis canadensis	Bluejoint
Callitriche verna	Water starwort
Calochortus gunnisonii	Gunnison's mariposa lily
Calochortus nutallii	Sego lily
Caltha leptosepala (Psychrophila)	Marsh marigold
Camelina microcarpa	Littlepod falseflax
Campanula parryi	Parry's harebell
Campanula rotundifolia	Harebell
Capsella bursa-pastoris	Shepherd's purse
Cardamine cordifolia	Bittercress
Cardaria sp.	White top
Carduus nutans	Musk thistle
Carex aquatilis	Water sedge
Carex atherodes	Slough sedge
Carex aurea	Golden sedge
Carex bebbii	Bebb's sedge
Carex bella	Showy sedge
Carex canescens	Silvery sedge
Carex ebenea	Ebony sedge
Carex elynoides	Blackroot sedge
Carex foenea	Dryspike sedge
Carex geyeri	Elk sedge
Carex heteroneura var. chaldeolepis (C. chaldeolepis)	Holm sedge
Carex illota	Sheep sedge
Carex lanuginosa	Wooly sedge
Carex microptera	Smallwing sedge
Carex nelsonii	Nelson's sedge
Carex nigricans	Black alpine sedge
Carex pachystachya	Chamisso sedge
Carex phaeocephala	Dunhead sedge
Carex pitiophila (C. geophila)	White mountain sedge
Carex praegracilis	Clustered field sedge
Carex pyrenaica	Pyrenean sedge
Carex retrorsa	Knotsheath sedge
Carex sp.	Sedge, unidentified sp.

Carex stipata
Carex utriculata
Carex vallicola
Carex vernacula
Castilleja chromosa
Castilleja linariifolia
Castilleja lineata
Castilleja miniata
Castilleja occidentalis
Castilleja sulphurea
Ceanothus fendleri
Cerastium beeringianum
Cerastium strictum
Cercocarpus montanus
Chaenactis douglasii
Chaetopappa ericoides
Chamerion (see *Epilobium*)
Chenopodium album
Chenopodium leptophyllum
Chlorocrepis (see *Hieracium*)
Chrysothamnus depressus
Chrysothamnus nauseosus
Chrysothamnus viscidiflorus
Cicuta douglasii
Cilaria (see *Saxifraga*)
Cinna latifolia
Cirsium arvense (Breea)
Cirsium calcareum var. *pulchellum*
Cirsium parryi
Cirsium scariosum
Cirsium scopulorum
Cirsium tracyi
Cirsium vulgare
Clematis hirsutissima (Coriflora)
Clematis ligusticifolia
Clementia (see *Sedum*)
Collinsia parviflora
Collomia linearis
Comandra umbellata
Convolvulus arvensis
Corallorrhiza maculata
Corallorrhiza striata
Coriflora (see *Clematis*)
Cornus sericea
Corydalis aurea
Corydalis caseana
Crataegus erythropoda
Crataegus macrantha var. *occidentalis*
Crataegus rivularis
Crepis (see *Psilochenia*)
Cryptantha sp.
Cryptantha suffruticosa
Cryptogramma stelleri
Cylindropuntia whippleyi (*Opuntia*)
Cymopterus purpureus
Cynoglossum officinale

Prickly sedge
 Beaked sedge
 Valley sedge
 Native sedge
 Common Indian paintbrush
 Wyoming Indian paintbrush
Marshmeadow Indian paintbrush
 Scarlet Indian paintbrush
 Western Indian paintbrush
 Sulphur Indian paintbrush
 Fendler's buckbrush
 Bering chickweed
 Field chickweed
 Mountain mahogany
 Douglas' dustymaiden
 Rose heath, sand aster

 Lambs quarters
 Narrowleaf goosefoot

 Longflower rabbitbrush
 Rubber rabbitbrush
 Green rabbitbrush
 Water hemlock

 Drooping woodreed
Canada thistle
 Cainville thistle
 Parry's thistle
 Stemless thistle
 Mountain thistle
 Tracy's thistle
Bull thistle
 Hairy clematis, sugarbowls
 Western white clematis

 Blue-eyed Mary
 Mountain trumpet
 Bastard toadflax
Bindweed
 Summer coralroot
 Hooded coralroot

 Red-osier dogwood
 Golden smoke
 Sierra corydalis
 Cerro hawthorn
 Hawthorn
 River hawthorn

 Cat's eye
 James' catseye
 Slender rockbrake
 Whipple cholla
 Purple springparsley
 Houndstongue

Cystopteris fragilis	Brittle bladderfern
Cystopteris reevesiana	Reeves' bladderfern
Dactylis glomerata	Orchard grass
Danthonia intermedia	Timber oatgrass
Danthonia parryi	Parry's oatgrass
Delphinium barbeyi	Tall larkspur
Delphinium nuttallianum	Nuttall's larkspur
Delphinium ramosum	Mountain larkspur
Deschampsia cespitosa	Tufted hairgrass
Descurainia incana	Mountain tansymustard
Descurainia richardsonii	Richardson's tansymustard
Descurainia incisa subsp. fillipes	Tansy mustard
Disporum trachycarpum	Roughfruit fairybells
Distegia (see Lonicera)	
Dodecatheon pulcherrimum	Shooting star
Draba aurea	Golden whitlowgrass
Draba breweri	Cushion whitlowgrass
Draba crassifolia	Snowbed whitlowgrass
Draba helleriana	Heller's whitlowgrass
Draba smithii	Smith's whitlowgrass
Draba streptocarpa	Pretty whitlowgrass
Dracocephalum parviflorum	American dragonhead
Drymocallis (see Potentilla)	
Dryopteris felix-mas	Male fern
Dugaldia hoopsii	Orange sneezeweed
Echinocereus triglochidiatus	Claret cup
Eleocharis acicularis	Needle spikerush
Eleocharis palustris	Common spikerush
Elymus elymoides	Bottlebrush squirreltail
Elymus glaucus	Blue wildrye
Elymus junceus	Russian wildrye
Elymus longifolius	Longleaf wildrye
Elymus macounii	Macoun's barley
Elymus trachycaulus	Slender wheatgrass
Elytrigia intermedia (Thinopyrum)	Intermediate wheatgrass
Elytrigia repens	Creeping quackgrass
Epilobium angustifolium (Chamerion danielsii)	Fireweed
Epilobium ciliatum	Hairy willowherb
Epilobium hornemannii	Hornemann's willowherb
Epilobium lactiflorum	Milkflower willowweed
Epilobium latifolium (Chamerion subdentatum)	Dwarf fireweed
Epipactis gigantea	Helleborine
Equisetum arvense	Field horsetail
Equisetum hyemale (Hippochaete)	Scouringrush horsetail
Equisetum variegatum (Hippochaete)	Variegated scouringrush
Eremogone (see Arenaria)	
Erigeron compositus	Cutleaf daisy
Erigeron coulteri	Coulter's daisy
Erigeron divergens	Spreading fleabane
Erigeron elatior	Tall fleabane
Erigeron eximius	Sprucefir fleabane
Erigeron flagellaris	Trailing fleabane
Erigeron formosissimus	Beautiful fleabane
Erigeron glabellus	Streamside fleabane
Erigeron leiomeris	Rockslide fleabane
Erigeron melanocephalus	Blackhead fleabane

Erigeron peregrinus
Erigeron philadelphicus
Erigeron pinnatisectus
Erigeron simplex
Erigeron speciosus
Erigeron subtrinervis
Erigeron ursinus
Eriogonum alatum (Pterogonum)
Eriogonum jamesii
Eriogonum lonchophyllum
Eriogonum racemosum
Eriogonum umbellatum
Erodium cicutarium
Erysimum capitatum
Erythronium grandiflorum
Fendlera rupicola
Festuca arizonica
Festuca arundinacea
Festuca brachyphylla
Festuca saximontana
Festuca thurberi
Filaginella (see *Gnaphalium*)
Fragaria vesca
Fragaria virginiana
Frasera speciosa
Galium boreale (G. septentrionale)
Galium trifidum
Galium triflorum
Gastrolychnis (see *Silene*)
Gayophytum diffusum
Gayophytum ramosissimum
Gentianella heterosepala
Gentianopsis thermalis
Geranium caespitosum
Geranium richardsonii
Geranium viscosissimum
Geum aleppicum
Geum macrophyllum
Geum rossii (Acomastylis)
Geum triflorum (Erythrocoma)
Gilia pinnatifida
Gilia subnuda
Glyceria elata
Glyceria grandis
Glyceria striata
Glycyrrhiza lepidota
Gnaphalium uliginosa (Filaginella)
Goodyera oblongifolia
Goodyera repens
Grindelia arizonica
Gutierrezia sarothrae
Habenaria (see *Limnorchis*)
Hedysarum occidentale
Helianthella quinquenervis
Helianthus annuus
Helianthus rigidus

Subalpine fleabane
 Philadelphia fleabane
 Featherleaf fleabane
 Onestem fleabane
 Aspen fleabane
 Threenerve fleabane
 Bear River fleabane
 Winged buckwheat
 James' buckwheat
 Spearleaf buckwheat
 Redroot buckwheat
 Sulphur buckwheat
Stork's bill
 Wallflower
 Dogtooth lily
 Cliff fendlerbush
 Arizona fescue
Tall fescue
 Alpine fescue
 Rocky Mountain fescue
 Thurber fescue

 Woodland strawberry
 Virginia strawberry
 Green gentian
 Northern bedstraw
 Threepetal bedstraw
 Fragrant bedstraw

 Spreading groundsmoke
 Pinyon groundsmoke
 Autumn dwarfgentian
 Rocky Mountain fringed gentian
 Pineywoods geranium
 Richardson's geranium
 Sticky geranium
 Yellow avens
 Largeleaf avens
 Alpine avens
 Prairie smoke
 Sticky gilia
 San Juan gilia
 Tall mannagrass
 American mannagrass
 Fowl mannagrass
 American licorice
 Cudweed
 Western rattlesnake plantain
 Lesser rattlesnake plantain
 Arizona gumweed
 Broom snakeweed

Western sweetvetch
 Five nerve little sunflower
 Common sunflower
 Stiff sunflower

<i>Heliomeris multiflora</i>	Showy goldeneye
<i>Heracleum lanatum</i>	Cow parsnip
<i>Heterostipa</i> (see <i>Stipa</i>)	
<i>Heterotheca villosa</i>	Hairy golden aster
<i>Heuchera parvifolia</i>	Littleleaf alumroot
<i>Hieracium fendleri</i> (<i>Chlorocrepis</i>)	Yellow hawkweed
<i>Hieracium gracile</i> (<i>Chlorocrepis tristis</i> ssp. <i>gracilis</i>)	Slender hawkweed
<i>Hilaria jamesii</i>	Galleta grass
<i>Hippochaete hyemalis</i>	Scouringrush horsetail
<i>Hordeum brachyantherum</i>	Meadow barley
<i>Hordeum jubatum</i>	Foxtail barley
<i>Humulus lupulus</i>	Common hops
<i>Hydrophyllum fendleri</i>	Fendler's waterleaf
<i>Hymenopappus filifolius</i>	Fineleaf hymenopappus
<i>Hymenopappus newberryi</i>	Newberry's hymenopappus
<i>Hymenoxys grandiflora</i> (<i>Rydbergia</i>)	Old man of the mountain
<i>Hymenoxys richardsonii</i> (<i>Picradenia</i>)	Pingue hymenoxys
<i>Hypericum formosum</i>	St. Johnswort
<i>Ipomopsis aggregata</i> var. <i>formosissima</i>	Scarlet skyrocket
<i>Ipomopsis aggregata</i>	Skyrocket gilia
<i>Ipomopsis</i> cf. <i>congesta</i>	Ballhead gilia
<i>Iris missouriensis</i>	Rocky Mountain iris, blue flag
<i>Iva xanthifolia</i>	Giant sumpweed
<i>Juncus balticus</i>	Baltic rush
<i>Juncus confusus</i>	Colorado rush
<i>Juncus drummondii</i>	Drummond's rush
<i>Juncus longistylis</i>	Longstyle rush
<i>Juncus nodosus</i>	Jointed rush
<i>Juncus parryi</i>	Parry's rush
<i>Juncus tenuis</i>	Dudley's rush
<i>Juncus tracyi</i>	Tracy's rush
<i>Juniperus communis</i>	Common juniper
<i>Juniperus scopulorum</i> (<i>Sabina</i>)	Rocky Mountain juniper
<i>Koeleria macrantha</i>	Junegrass
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lactuca tatarica</i> var. <i>pulchella</i> (<i>L. pulchella</i>)	Blue lettuce
<i>Lappula redowskii</i>	Stickseed
<i>Lathyrus eucosmus</i>	Sweet pea
<i>Lathyrus leucanthus</i>	White peavine
<i>Lemna</i> sp.	Duckweed
<i>Lepidium densiflorum</i>	Common pepperweed
<i>Lepidium montanum</i>	Mountain pepperweed
<i>Lepidium perfoliatum</i>	Clasping pepperweed
<i>Lesquerella pruinosa</i>	Pagosa bladderpod
<i>Leucanthemum vulgare</i>	Oxeye daisy
<i>Lewisia</i> (see <i>Oreobrama</i>)	
<i>Lidia</i> (see <i>Minuartia</i>)	
<i>Ligularia</i> (see <i>Senecio</i>)	
<i>Ligusticum porteri</i>	Osha
<i>Limnorchis ensifolia</i> (<i>Platanthera sparsiflora</i> , <i>Habenaria</i>)	Canyon bog orchid
<i>Limnorchis hyperborea</i> (<i>Habenaria</i> , <i>Platanthera</i>)	Northern green orchid
<i>Limnorchis saccata</i> (<i>L. stricta</i> ; <i>Habenaria</i> , <i>Platanthera</i>)	Modoc bog orchid
<i>Linanthastrum nuttallii</i> (<i>Linanthus</i>)	Nuttall's desert trumpets
<i>Linaria vulgaris</i>	Butter and eggs
<i>Linnaea borealis</i>	Twinflower
<i>Linum lewisii</i>	Blue flax

<i>Listera cordata</i>	Heartleaf twayblade
<i>Lithospermum incisum</i>	Narrowleaf puccoon
<i>Lithospermum multiflorum</i>	Many-flowered puccoon
<i>Lithospermum ruderales</i>	Western gromwell
<i>Lomatium dissectum</i>	Fernleaf biscuitroot
<i>Lomatium grayi</i>	Gray's biscuitroot
<i>Lonicera involucrata</i> (Distegia)	Twinberry honeysuckle
<i>Lotus wrightii</i>	Wright's deervetch
<i>Lupinus ammophilus</i>	Sand lupine
<i>Lupinus argenteus</i> ssp. <i>ingratus</i>	Silvery lupine
<i>Lupinus caudatus</i>	Tallcup lupine
<i>Lupinus kingii</i>	King's lupine
<i>Luzula parviflora</i>	Heath woodrush
<i>Luzula spicata</i>	Spiked woodrush
<i>Machaeranthera bigelovii</i> var. <i>bigelovii</i> (M. <i>pattersonii</i>)	Bigelow's tansyaster
Madia glomerata	Mountain tarweed
<i>Mahonia repens</i>	Oregon grape
<i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i> (M. <i>amplexicaule</i>)	Western solomonseal
<i>Maianthemum racemosum</i>	Feathery false solomonseal
<i>Maianthemum stellatum</i>	Starry false solomonseal
Marrubium vulgare	Horehound
Matricaria perforata	Chamomile
<i>Medicago lupulina</i>	Black medic
Medicago sativa	Alfalfa
<i>Melandrium dioicum</i> (Silene)	Red catchfly
<i>Melica porteri</i>	Porter's oniongrass
Melilotus officinalis	Yellow sweet clover
<i>Mentha arvensis</i>	Field mint
<i>Mentzelia laciniata</i> (Nuttallia)	Cutleaf blazingstar
<i>Mertensia brevistyla</i>	Shortstyle bluebells
<i>Mertensia ciliata</i>	Mountain bluebells
<i>Mertensia franciscana</i>	Franciscan bluebells
<i>Mertensia lanceolata</i>	Lanceleaf bluebells
<i>Micranthes</i> (see <i>Saxifraga</i>)	
<i>Mimulus floribundus</i>	Many-flowered monkeyflower
<i>Mimulus guttatus</i>	Seep monkeyflower
<i>Minuartia obtusiloba</i> (Lidia)	Twinflower sandwort
<i>Mirabilis</i> (see <i>Oxybaphus</i>)	
<i>Mirabilis multiflora</i>	Colorado four o'clock
<i>Mitella pentandra</i>	Fivestamen miterwort
<i>Mitella stauropetala</i>	Smallflower miterwort
<i>Moeringia macrophylla</i>	Largeleaf sandwort
<i>Monarda fistulosa</i>	Beebalm, wild bergamot, wild oregano
<i>Moneses uniflora</i>	Single delight
<i>Muhlenbergia montana</i>	Mountain muhly
<i>Muhlenbergia richardsonis</i>	Mat muhly
<i>Muhlenbergia wrightii</i>	Spike muhly
<i>Negundo aceroides</i> (See <i>Acer negundo</i>)	
Nepeta cataria	Catnip
<i>Noccaea montana</i> (Thlaspi)	Pennycress
<i>Nuttallia</i> (see <i>Mentzelia</i>)	
<i>Oenothera caespitosa</i>	Tufted evening primrose
<i>Oenothera coronopifolia</i>	Crownleaf evening primrose
<i>Oligosporus</i> (see <i>Artemisia</i>)	
<i>Opuntia fragilis</i>	Brittle pricklypear
<i>Opuntia phaeocantha</i>	Tulip pricklypear

<i>Opuntia polyacantha</i>	Hairspine pricklypear
<i>Oreobrama nevadensis</i> (Lewisia)	Nevada bitterroot
<i>Oreobrama pygmaea</i> (Lewisia)	Pigmy bitterroot
<i>Oreochrysum parryi</i> (Solidago)	Parry's goldenrod
<i>Orthilia secunda</i>	One-sided wintergreen
<i>Orthocarpus luteus</i>	Yellow owlclover
<i>Oryzopsis asperifolia</i>	Roughleaf ricegrass
<i>Oryzopsis hymenoides</i> (Achnatherum)	Indian ricegrass
<i>Oryzopsis micrantha</i> (Piptatherum)	Littleseed ricegrass
<i>Osmorhiza depauperata</i>	Sweet cicely
<i>Osmorhiza occidentalis</i>	Western sweetroot
<i>Oxalis dilenii</i>	Dillen's oxalis
<i>Oxalis violacea</i>	Violet woodsorrel
<i>Oxybaphus comatus</i> (Mirabilis nyctaginea)	Heartleaf four o'clock
<i>Oxybaphus linearis</i> (Mirabilis)	Narrowleaf four o'clock
<i>Oxypolis fendleri</i>	Fendler's cowbane
<i>Oxyria digyna</i>	Alpine mountain sorrel
<i>Packera</i> (see <i>Senecio</i>)	
<i>Parnassia fimbriata</i>	Fringed grass of Parnassus
<i>Pascopyrum smithii</i>	Western wheatgrass
<i>Paxistima myrsinites</i>	Mountain lover
<i>Pedicularis groenlandica</i>	Elephanthead lousewort
<i>Pedicularis parryi</i>	Parry's lousewort
<i>Pedicularis procera</i>	Giant lousewort
<i>Pedicularis racemosa</i>	Sickletop lousewort
<i>Pediocactus simpsonii</i>	Simpson hedgehog cactus
<i>Penstemon barbatus</i>	Beardlip penstemon
<i>Penstemon glabrescens</i> (<i>P. fremontii</i> , var. <i>glabrescens</i>)	Fremont's penstemon
<i>Penstemon harboursi</i>	Harbour's penstemon
<i>Penstemon strictus</i>	Rocky Mountain penstemon
<i>Penstemon whippleanus</i>	Whipple's penstemon
<i>Pentaphylloides</i> (see <i>Potentilla</i>)	
<i>Pentaphylloides floribunda</i>	Shrubby cinquefoil
<i>Peraphyllum ramosissimum</i>	Squaw apple
<i>Pericome caudata</i>	Mountain leaftail
<i>Persicaria amphibia</i> (<i>Polygonum amphibinum</i> var. <i>emersum</i>)	Longroot smartweed
<i>Persicaria lapathifolia</i> (<i>Polygonum</i>)	Curlytop knotweed
<i>Phacelia heterophylla</i>	Varileaf Phacelia
<i>Phacelia sericea</i>	Purple fringe
<i>Phalaris arundinacea</i>	Reed canarygrass
<i>Phleum alpinum</i> (<i>P. commutatum</i>)	Alpine timothy
<i>Phleum pratense</i>	Meadow timothy
<i>Phlox caryophylla</i>	Pagosa phlox
<i>Phlox longifolia</i>	Longleaf phlox
<i>Picea engelmannii</i>	Engelmann spruce
<i>Picea pungens</i>	Blue spruce
<i>Pinus edulis</i>	Pinyon pine
<i>Pinus flexilis</i>	Limber pine
<i>Pinus ponderosa</i>	Ponderosa pine
<i>Pinus strobiformis</i>	Southwestern white pine
<i>Piptatherum</i> (see <i>Oryzopsis</i>)	
<i>Plantago major</i>	Common plantain
<i>Plantago patagonica</i>	Wooly plantain
<i>Platanthera</i> (see <i>Limnorchis</i>)	
<i>Platanthera hyperborea</i> (<i>Limnorchis</i> , <i>Habenaria</i>)	Northern green orchid
<i>Platanthera stricta</i> (<i>Habenaria saccata</i> , <i>Limnorchis saccata</i>)	Modoc bog orchid

Poa alpina	Alpine bluegrass
Poa annua	Annual bluegrass
Poa bulbosa	Bulbous bluegrass
Poa compressa	Canada bluegrass
Poa fendleriana	Muttongrass
Poa palustris	Fowl bluegrass
Poa pratensis	Kentucky bluegrass
Poa reflexa	Nodding bluegrass
Poa secunda	Sandberg bluegrass
Podistera eastwoodiae	Eastwood's podistera
Polemonium caeruleum ssp. amygdalinum	(P. occidentale) Western polemonium
Polemonium pulcherrimum	Jacob's ladder
Polygonum amphibinum (see Persicaria)	
Polygonum arenastrum	Ovalleaf knotweed
Polygonum bistortoides (Bistorta)	American bistort
Polygonum douglasii	Douglas' knotweed
Polygonum lapathifolium (see Persicaria)	
Polygonum viviparum (Bistorta)	Alpine bistort
Polypodium hesperium	Western polypody
Populus angustifolia	Narrowleaf cottonwood
Populus deltoides ssp. wislizenii	Rio Grande cottonwood
Populus tremuloides	Quaking aspen
Potamogeton gramineus	Variable leaf pondweed
Potentilla arguta ssp. arguta (Drymocallis)	Tall cinquefoil
Potentilla floribunda (Pentaphylloides floribunda)	Shrubby cinquefoil
Potentilla hippiana	Wooly cinquefoil
Potentilla nivea	Snow cinquefoil
Potentilla ovina	Sheep cinquefoil
Potentilla pulcherrima X hippiana	Hybrid
Potentilla pulcherrima	Beautiful cinquefoil
Potentilla subjuga	Colorado cinquefoil
Primula parryi	Parry's primrose
Prunella vulgaris	Common selfheal
Prunus virginiana	Chokecherry
Pseudocymopterus montanus	Mountain parsley
Pseudostellaria jamesiana	Tuber starwort
Pseudotsuga menziesii	Douglas fir
Psilochenia acuminata (Crepis)	Longleaf hawksbeard
Psilochenia intermedia (Crepis)	Limestone hawksbeard
Psychrophila (see Caltha)	
Pteridium aquilinum var. pubescens	Bracken fern
Pterogonum (see Eriogonum)	
Pterospora andromedea	Woodland pinedrops
Purshia tridentata	Antelope bitterbrush
Pyrola minor	Snowline wintergreen
Pyrola picta	Pictureleaf wintergreen
Pyrola rotundifolia (P. asarifolia)	Liverleaf wintergreen
Pyrrocoma clementis	Tranquil goldenweed
Pyrrocoma crocea.	Curlyhead goldenweed
Quercus gambelii	Gambel oak
Ranunculus alismifolius	Plantainleaf buttercup
Ranunculus gmelinii	Gmelin's buttercup
Ranunculus longirostis (Batrachium circinatum)	Longbeak buttercup
Ranunculus macauleyi	Rocky Mountain buttercup
Ranunculus uncinatus	Hooked buttercup
Rhamnus smithii	Smith's buckthorn

Rhodiola (see Sedum)	
Rhus glabra	Smooth sumac
Rhus trilobata (Rhus aromatica ssp. trilobata)	Skunkbush sumac
Rhus trilobata (Rhus aromatica ssp. trilobata, forma simplicifolia)	
Ribes aureum	Golden currant
Ribes cereum	Wax currant
Ribes inerme	Whitestem gooseberry
Ribes leptanthum	Trumpet gooseberry
Ribes montigenum	Gooseberry currant
Ribes wolfii	Wolf's currant
Rorippa nastutium-aquaticum	Watercress
Rorippa palustris ssp. hispida	Hispid yellowcress
Rosa woodsii	Woods' rose
Rubacer (see Rubus)	
Rubus idaeus	American red raspberry
Rubus parviflorus (Rubacer)	Thimbleberry
Rudbeckia ampla (R. laciniata var. ampla)	Cutleaf coneflower
Rumex acetosella (Acetosella vulgaris)	Sheep sorrel
Rumex crispus	Curly dock
Rumex densiflorus	Denseflowered dock
Rydbergia (see Hymenoxys)	
Sabina (see Juniperus)	
Salix arctica	Arctic willow
Salix brachycarpa	Barrenground willow
Salix drummondiana	Drummond's willow
Salix eriocephala var. ligulifolia	Strapleaf willow
Salix exigua	Coyote willow
Salix glauca var. villosa	Grayleaf willow
Salix lasiandra (S. lucida var. lasiandra)	Pacific willow
Salix monticola	Rocky Mountain willow
Salix planifolia	Planeleaf willow
Salix reticulata	Snow willow
Salix scouleriana	Scouler's willow
Salsola sp.	Russian thistle
Sambucus racemosa	Elderberry
Saxifraga bronchialis ssp. austromontana	(Cilaria austromontana) Matted saxifrage
Saxifraga cernuua	Nodding saxifrage
Saxifraga hyperborea ssp. debilis (S. rivularis)	Weak saxifrage
Saxifraga odontoloma (Micranthes)	Brook saxifrage
Saxifraga rhomboidea (Micranthes)	Diamond leaf saxifrage
Scirpus microcarpus	Panicled bulrush
Scrophularia lanceolata	Lanceleaf figwort
Sedum integrifolium (Rhodiola)	King's crown
Sedum lanceolatum	Spearleaf stonecrop
Sedum rhodanthum (Clementsia)	Rose crown
Senecio amplexens var. amplexens (Ligularia amplexens)	Showy alpine groundsel
Senecio amplexens var. holmii (Ligularia holmii)	Holm's ragwort
Senecio atratus	Blacktip ragwort
Senecio bigelovii (Ligularia)	Hall's ragwort
Senecio crassulus	Thickleaf groundsel
Senecio dimorphophylla	Splitleaf groundsel
Senecio eremophilus	Desert groundsel
Senecio fremontii var. blitoides	Dwarf mountain ragwort
Senecio neomexicanus (Packera)	New Mexican groundsel
Senecio oodes (Packera)	Rocky Mountain groundsel
Senecio pseudoaureus (Packera)	Falsegold groundsel

Senecio pudicus (Ligularia)	Bashful groundsel
Senecio serra	Butterweed groundsel
Senecio soldanella (Ligularia)	Colorado ragwort
Senecio triangularis	Arrowleaf groundsel
Senecio wootonii (Packera)	Wooton's ragwort
Serephidium (see Artemisia)	
Shepherdia argentea	Silver buffaloberry
Shepherdia canadensis	Russet buffaloberry
Sibbaldia procumens	False strawberry
Sidalcea candida	White checkermallow
Sidalcea neomexicana	New Mexican checkermallow
Silene (see Melandrium)	
Silene acaulis	Moss campion
Silene drummondii (Gastrolychnis)	Drummond's campion
Sisymbrium altissimum	Tall tumbledustard, Jim Hill mustard
Sium suave	Hemlock waterparsnip
Solidago canadensis	Canada goldenrod
Solidago nana	Baby goldenrod
Solidago parryi (see Oreochrysum)	
Solidago simplex (S. spathulata)	Mt. Albert goldenrod
Solidago velutina	Threenerve goldenrod
Sonchus uliginosus (S. arvensis ssp. uliginosus)	Moist sowthistle
Sorbus scopulina	Greene mountain ash
Sparganium angustifolium	Narrowleaf burreed
Sparganium minimum	Small burreed
Spergulastrum lanuginosum (Arenaria)	Spreading sandwort
Sphaeralcea coccinea	Scarlet globemallow
Sphaeralcea fendleri	Fendler's globemallow
Stellaria umbellata	Umbrella starwort
Stipa comata (Hesperostipa)	Needle and thread
Stipa nelsonii (Achnatherum)	Nelson's needlegrass
Stipa viridula (Nassella)	Green needlegrass
Streptopus fassettii	Twisted stalk
Swertia perennis	Star gentian
Symphoricarpos oreophilus (S. rotundifolius)	Snowberry
Taraxacum officinale	Common dandelion
Taraxacum ovinum (T. officinale ssp. ceratophorum)	Fleshy dandelion
Tetaneuris ivesiana	Ives' fournered daisy (Actinea)
Thalictrum fendleri	Fendler's meadowrue
Thermopsis montana	Golden banner
Thinopyrum (see Elytrigia)	
Thlaspi (see Noccaea)	
Thlaspi montanum (Noccaea)	Alpine pennycress
Townsendia glabella	Gray's townsend daisy
Townsendia incana	Hoary townsendia
Toxicodendron rydbergii	Poison ivy
Toxicoscordion venenosum (Zigadenus)	Meadow deathcamas
Tragia ramosa	Branched noseburn
Tragopogon dubius	Yellow salsify
Tragopogon porrifolius	Meadow salsify
Trautvetteria caroliniensis	Carolina bugbane
Trifolium attenuatum	Rocky Mountain clover
Trifolium brandegei	Brandegee's clover
Trifolium hybridum	Alsike clover
Trifolium longipes	Longstalk clover
Trifolium pratense	Red clover

Trifolium repens

Trisetum spicatum

Turritis glabra (Arabis)

Typha latifolia

Urtica gracilis (U. dioica ssp. gracilis)

Vaccinium myrtillus

Vaccinium scoparium

Valeriana capitata (V. acutiloba)

Valeriana edulis

Veratrum tenuipetalum

Verbascum thapsus**Verbena bracteata**

Veronica americana

Veronica catenata (V. anagallis-aquatica)

Veronica nutans (V. wormskjoldii)

Veronica serpyllifolia var. humifusa (Veronicastrum) Brightblue speedwell

Vicia americana

Viola adunca

Viola canadensis

Viola labradorica

Viola pedatifida

Woodsia neomexicana

Woodsia oregana

Wyethia arizonica

Wyethia X magna

Xanthium strumarium

Yucca baccata

Yucca harrimanniae

Zigadenus (see Toxicoscordion)

Zigadenus elegans (Anticlea)

White clover

Spike trisetum

Tower rockcress

Broadleaf cattail

Nettle

Whortleberry

Grouse whortleberry

Sharpleaf valerian

Edible valerian

False hellebore

Common mullein**Bigbract verbena**

American speedwell

Water speedwell

American alpine speedwell

American vetch

Hookedspur violet

Canada violet

Alpine violet

Prairie violet

New Mexican cliff fern

Oregon cliff fern

Arizona mulesears

Mules ears hybrid

Rough cocklebur

Banana yucca

Spanish bayonet

Mountain deathcamas