Vascular Flora of the Powderhorn & La Garita Wilderness Areas and Adjacent Lands

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B.S. Warren Wilson College, 2015

A thesis submitted to the Faculty of the Graduate School of the University of Colorado in partial fulfillment of the requirement for the degree of Master's of Science in Museum and Field Studies.

2024

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Abstract

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The Vascular Flora of the Powderhorn & La Garita Wilderness Areas and Adjacent Lands.

Thesis directed by Associate Professor and Herbarium Curator Dr. Erin Manzitto-Tripp

In the northeast San Juan Mountains of southwest Colorado lie the Powderhorn and La Garita Wilderness Areas, full of high peaks and alpine plateaus bordered by volcanic hoodoos, vast forests, and arid steppe. A floristic inventory was performed to describe and catalog the vascular plant diversity of these Wilderness Areas, as well as adjacent analogous habitat. Unique habitats and places lacking previous collections were targeted using an ad-hoc method to generate as complete a species list as possible. Forty-nine collecting days over the summers of 2022 and 2023 yielded a total of 1,232 plant voucher collections documenting 607 unique taxa in 266 genera and 75 plant families. The survey resulted in 21 new county records and 57 newly recorded species occurrences to the study area. Fifteen non-native species were found, four of which are on Colorado's Noxious Weed Species List. Native species account for 97.5% of the total taxa documented. Novel locations for 21 species of rare and sensitive taxa monitored for conservation were discovered, including a new population of the narrowly endemic *Aliciella sedifolia*, expanding its known range significantly. An annotated checklist of each species found is included for land management agencies, researchers, conservation groups, and the public. The information therein will serve as a useful reference when making conservation decisions about the future of these incredible and remote landscapes, as well as provide distribution information on the taxa collected.

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I. Introduction

The Powderhorn and La Garita Wilderness Areas are located in southwestern Colorado and form the northeastern corner of the San Juan Mountain range (Fig. 1). This survey includes these two Wilderness Areas as well as adjacent lands with analogous habitat (Fig. 2). The inventoried area is measured at approximately 771,800 acres and ranges from to its high point of San Luis Peak at 14,019 ft ASL to its lowest reach at 8,045 ft ASL near the town of Powderhorn (Fig. 2). In the center of the surveyed region, the La Garita peaks occupy the highest elevations. High alpine mesas and tundra covered plateaus radiate in each direction outward from the La Garita peaks. These mesas form a uniquely large expanse of flat-topped mountains over 12,000 ft (Photo 1). Indeed, these large flat mountains allow the Cannibal and Calf Creek Plateaus to boast the largest unbroken alpine expanse in the contiguous United States (United States Department of Agriculture: Powderhorn Wilderness Recreation Area 2023). Below this zone are endless subalpine and montane forests interspersed with intermountain meadow parks. The lower elevations are dominated by dry shrublands with big sagebrush (*Artemisia tridentata* ssp*. wyomingensis* and ssp. *vaseyana*) or open grasslands with fringed sage (*Artemisa frigida*) peeking out of white volcanic ash soils. Bizarre volcanic breccia outcrops and cliffs are scattered throughout, displaying the region's violent volcanic past. In select areas, there are extensive systems of extraordinary hoodoos and volcanic cliff bands, such as Wheeler Geologic Area and throughout the Cochetopa Hills and Saguache Park.

Floristic inventory research is critical to understand distribution of taxa, to provide information on sensitive species for more effective conservation, and to generate baseline species presence data in the event of future disturbance (Warsh et al. 2023). Habitat

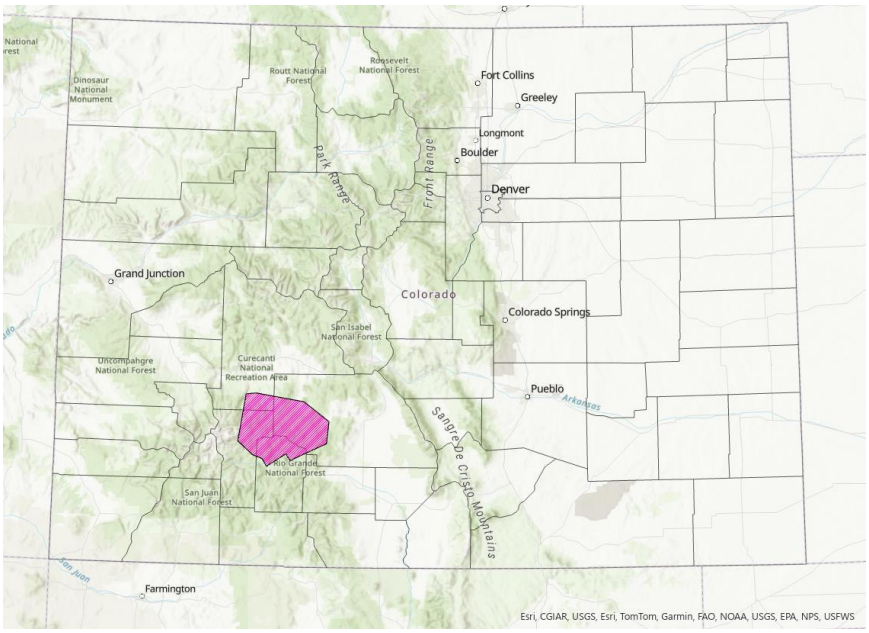

Fig. 1 Surveyed area relative to the state of Colorado in black and pink

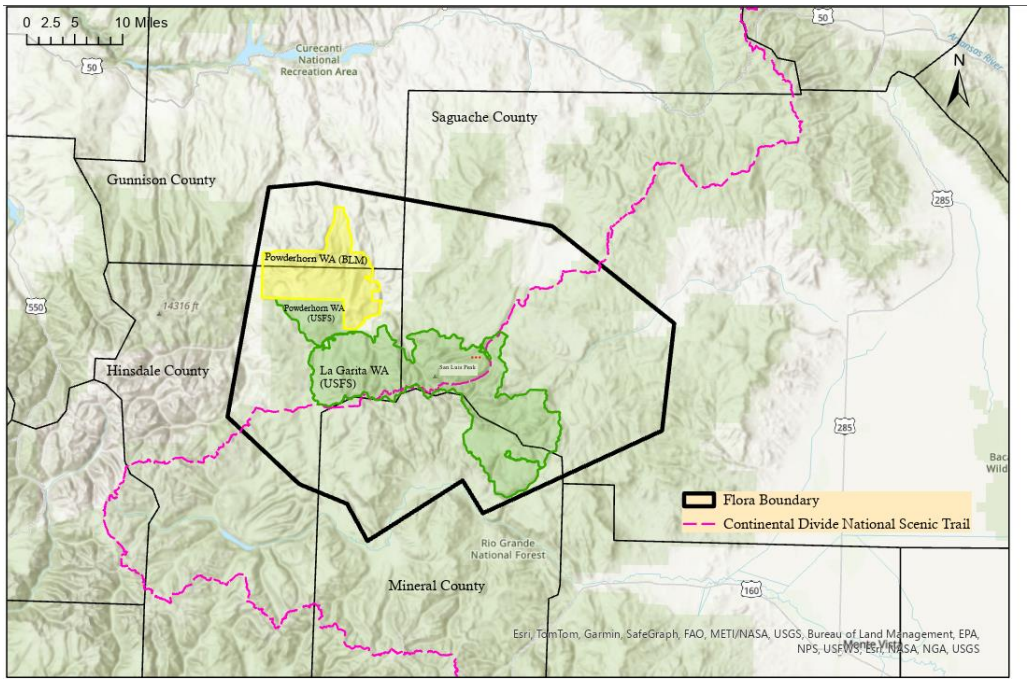

Fig. 2 The boundaries of the floristic inventory are shown in thick black. The survey is bounded with a northern border by a curve in Highway 149 where the town of Powderhorn lies, this northern extent follows a line east to a northeast boundary just shy of Highway 114. Highway 149 forms the western border until around Lake San Cristobal, where it jogs south to include Jarosa Mesa, and then rejoins Highway 149 as it follows the Rio Grande River. The southeastern extent is the border of Rio Grande County, where the boundary encompasses some of the eastern La Garita Mountains. The northern ¾ of the Powderhorn Wilderness is managed by the Bureau of Land Management and is shaded in yellow. The entire La Garita Wilderness and southern ¼ of the Powderhorn Wilderness is managed by the United States Forest Service and are shown in green. The section of the La Garita Wilderness north of the Continental Divide is managed by the Gunnison National Forest, and the southern section is managed by Rio Grande National Forest. Sections of four counties are included in the surveyed area: Gunnison, Hinsdale, Mineral, and Saguache

destruction and subsequent loss of biodiversity is a global threat and conservation is critical everywhere on Earth. Specifically relevant to this project, high-elevation areas are at a greater threat from climatic shifts than other areas, and warming is putting alpine plants around the planet at risk for extinction at increasingly rapid rates (Nomoto & Alexander 2021). Climate change has already led to new species interactions and assemblages that challenge biodiversity conservation in cold environments (Rew et al. 2020). Floristic inventories serve as a snapshot in ecological time, documenting *what* is *where* and *when*, and this information can catalyze better management or monitoring of dynamics in our natural world.

Biological collections inform countless scientific endeavors, from providing material for molecular phylogenetics and evolutionary ecology to supplying invaluable morphological and phenological information (Funk 2018). Specimens resulting from floristic inventories contribute baseline material to further botanical research across many disciplines. They also add greatly to our knowledge of species distribution and habitat specificity. Collective knowledge of the distribution of taxa is ever-growing and should be perpetually added to as habitat dynamics shift from changing climates. The contributions from past and future botanical surveys cannot be overstated.

The Powderhorn and La Garita Wilderness Areas and adjacent lands were initially chosen due to the relatively few collections compared to neighboring areas. To the south and west, other parts of the San Juan Mountains have been more extensively surveyed for floristics, as represented by the herbarium specimens. The Elk Mountains to the north have even more robust collection history due to their proximity to Rocky Mountain Biological Laboratory. A floristic survey specific to this area has never been completed, although

excellent and notable larger floras have overlapped sections of it (Arnett 2002; Barrell 1969; Flaig 2006). This project is unique among these past efforts in choosing to delineate this as a contiguous region.

II. Survey Area Geography

The surveyed area measures approximately 771,800 acres and spans an elevational range of over 6,000 feet, ranging from ca. 8,000 to 14,100 feet ASL (Figures 1 & 2). The area was chosen with the hypothesis it would be a floristic region unto itself – generally forming a region of similar species composition but including pockets of surprising and strange habitats within. Outside of the Wilderness Area, the boundaries were guided by including analogous terrain and ecology, as well as places of interesting habitat and little previous collection effort.

Arnett's *Floristic inventory of the southern Gunnison Basin and the southeastern Uncompahgre Basin, Colorado* includes the northern section of this project, as well as a significant area beyond to the north and west, and west into eastern Ouray County (Arnett 2002). Jeanette Flaig completed *A vascular plant inventory of the eastern San Juan Mountains and vicinity in southern Colorado* in 2007, which covers a section in the southern end of this survey as well as south to the New Mexican border. Joseph Barrell in 1969 published *Flora of the Gunnison Basin: Gunnison, Saguache, and Hinsdale Counties, Colorado; a study in the distribution of plants,* which provided some collections in the area in question, but largely focused on the northern section of the Gunnison Basin. Each of these past efforts provided much valuable understanding of this region. However, with any floristic survey both areal and species gaps inevitably remain (Sharples 2017).

The last inventory effort (Arnett 2002) that overlapped with the bulk of the acreage included in my inventory was completed before the arrival of the spruce bark beetle (*Dendroctonus rufipennis* Kirby). This infestation has drastically changed the landscape in the elevational zone dominated by Engelmann spruce (*Picea engelmannii*) into what it looks like today where miles of forest stretch where every tree is standing dead. Prior to launching this project, regional herbarium databases were searched to identify areas with collecting gaps so these could be targeted for survey (Southwest Environmental Information Network Portal 2023). These gaps guided the boundaries of this inventory, as well as where to focus collection points within. Some gaps within my own collections are due to avoidance of places with more historical collection pressure from these past floristic inventories (Fig. 3).

III. Geology

An explosive past of repeated volcanic eruptions dominates the geologic history of the Powderhorn, La Garita, and adjacent lands. The study area resides entirely within the San Juan Volcanic Field (SJVF; Fig. 4), which is characterized by large-scale Tertiary pyroclastic lava flows (Bachmann et al. 2002). Violent extrusive eruptions occurred repeatedly between 31 and 24 MYA, overlaying ancestral Rocky Mountains, forming the latest episode of the Laramide Orogeny (Lipman et al. 1970). Late stages of eruption placed hydrothermal veins of gold, silver, and other ores – laying the treasures later to be extracted by the San Juan mining boom millions of years in the future. The SJVF contains 18 to 20 identified calderas, and recent studies by the USGS delineated 6 within this study area (Fig 4). A caldera is a large depression formed from a volcanic eruption and subsequent

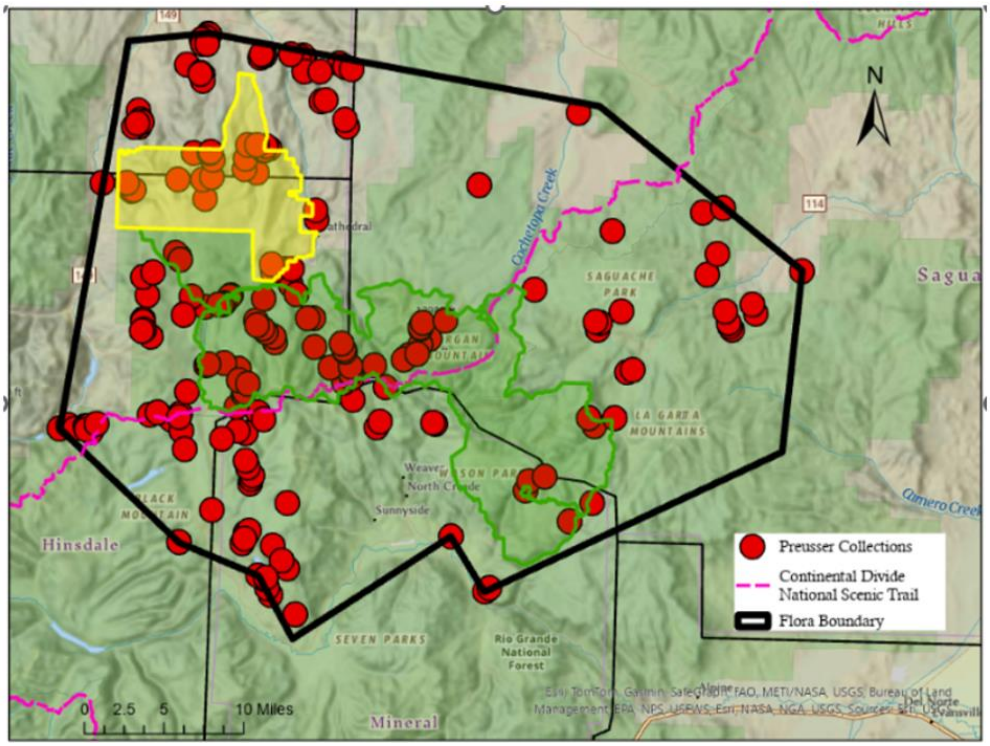

Fig. 3 Collection sites from 2023 and 2023

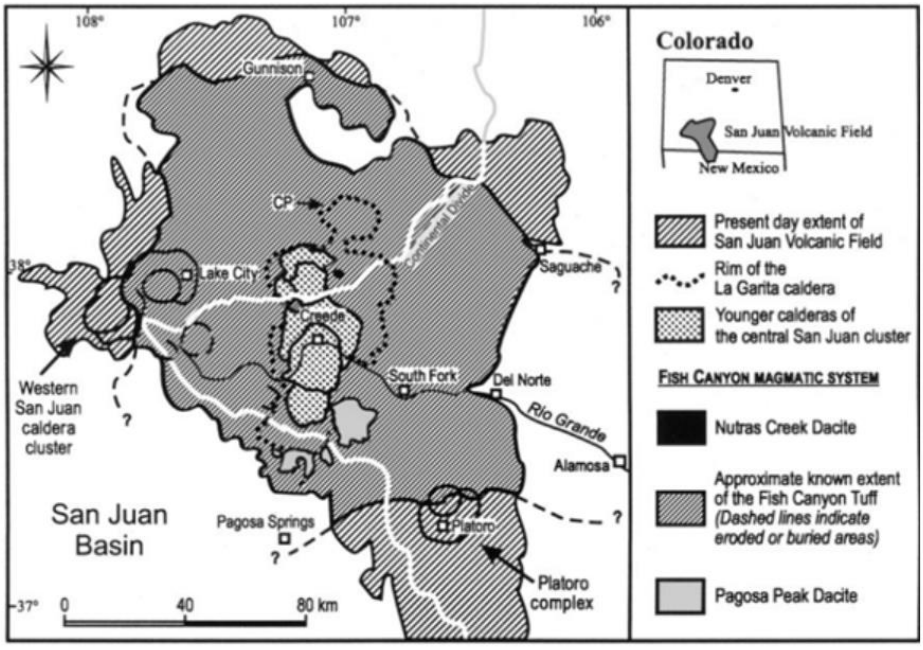

Fig. 4. San Juan Volcanic Field. Bachmann et al. 2001. The San Juan Volcanic Field and associated caldera geography.

collapse. The magma present underneath the volcano is expelled, in this case explosively. When the magma chamber empties, less material is inside to support the volcano, and as a result, the sides and top of the volcano collapse inward (Blair & Gillam 2011).

The La Garita Caldera, the largest in the surveyed area, is responsible for the greatest pyroclastic flow on Earth ever documented (Parfitt 2008). This Fish Canyon Tuff eruption resulted in an estimated volume of 5000 cubic km of welded tuff volcanic ash flows in the early stages of the SJVF at 28.1 MYA (Yellowstone Volcano Observatory 2023). Some geologists consider this to be one of the most explosive eruptions in Earth's history (Parfitt, 2008). The resulting Fish Canyon Tuff rock type can be found through most of Colorado and into New Mexico (Yellowstone Volcano Observatory 2023). The Fish Canyon Tuff has been extensively studied and used as an example for thermochronology fission track dating (Gleandow et al. 2015). The Fish Canyon Tuff is a common rock type throughout the surveyed area, and dramatic outcroppings of this rock type can be seen all around it, notably in the Wheeler Geologic Area. Numerous subsequent eruptions placed the other abundant volcanic rock types found throughout the inventoried zone

Breccia, tuff, andesitic and rhyolitic volcanic rock dominate the surface geology of the La Garita, Powderhorn, and adjacent lands (Fig. 5). The predominant rock type in the study area is a welded tuff characterized by the aforementioned Fish Canyon formation, as well as massive unsorted and unconsolidated volcanic breccias that are common and often present rock fall hazards. Tuff is light and porous volcanic rock that is essentially solidified ash (Schminke 2008). The Fish Canyon Tuff is made up mostly of ignimbrite, which are pumice pieces that created by pyroclastic flows (Blair & Gillam 2011).

Fig. 5. Volcanic breccias, tuffs, and hoodoos are common throughout the La Garita Wilderness Area and adjacent lands.

Cochetopa Caldera in Saguache County had its own eruption pattern that created copious amounts of volcanic ash. In much of the Cochetopa Hills, one can find an excellent example of a unique soil type with white tuffaceous pumice fragments. This light-colored ashy soil is home to a few rare and endemic plant species, such as *Oreocarya weberi* and *Eriogonum coloradense*. Glaciers crept over the San Juans throughout the Pleistocene and carved large basins and valleys throughout the landscape (Blair & Gillam 2011). These glaciers and other weathering patterns acted on the large volcanic deposits and flattened these large plateaus we see today.

Many uncommon specialist plants have been found to prefer calcareous soil types (Cottle, 2002). A few areas of travertine and dolomitic parent material were prioritized for survey work. Around the area of the town of Creede are carbonate and travertine deposits from the ancient lakebed of "Lake Creede" (Bethke & Hay 2000), and these were targeted for seeking specialist plants.

IV. Climate

Five weather and snow telemetry (SNOTEL) stations are found around the Powderhorn and La Garita regions: Cochetopa Pass, Creede, Moon Pass, Slumgullion Pass, and Santa Maria Reservoir. Precipitation and temperature trends are trackable by reviewing data recorded for the monthly normals from 2006-2020 by the National Environmental Satellite, Data, and Information Service (NESDIS), National Oceanic & Atmospheric Administration (NOAA), and Nation Center Environmental Information (NCEI).

Summer monsoon thunderstorms in the San Juan Mountains typically occur in July and August and can be very unpredictable, often with lightning strikes and hail. Snowstorms account for a significant part of the precipitation of this area. Both snowstorms and monsoons typically dump more precipitation in higher elevations as shown by comparing close weather stations. Santa Maria Reservoir at 9,827 ft ASL recorded a mean of 15.9 inches of annual precipitation between 2006 and 2020. However, only about 20 miles away is the Slumgullion Pass SNOTEL station at 11,400 ft, which recorded an average of 24.5 inches of precipitation in those years. Similarly, the Creede station at 8,624 ft reports annual mean precipitation of 14.7 inches, and the adjacent Moon Pass station at 11,140 ft records 20.3 inches. The eastern and northern edges of the

surveyed area towards Cochetopa Pass and the town Powderhorn also receives less precipitation than the central high mountains. Cochetopa Pass weather station records an annual average of 16.7 inches of precipitation, similar to the Powderhorn weather station's 16.8 inches. The wettest month of the year with the largest number of inches of precipitation at these survey stations could be February, March, or July.

Throughout the surveyed area, the highest average monthly daily high temperature is in July, while the average minimum daily low is in January. Santa Maria Reservoir recording 72.1 degrees Fahrenheit and dipping to an average daily low in January of 2 degrees Fahrenheit. The Creede station reports the lowest minimum monthly average yearly temperature as -9 degrees Fahrenheit, to its maximum monthly average high as 79.1 in July.

Data gleaned from National Weather Service (NWS) stations, SNOTEL stations, and Parameter-Elevation Regressions on Independent Slopes Model (PRSM) around the San Juans indicate a statistically significant increase in mean daily minimum temperatures since 1910 (Ranwala & Miller 2011). NWS and SNOTEL stations also recorded more rapid warming from 1990-2005, showing an increase of about 1 degree Celsius per decade in those 15 years (Ranwala & Miller 2011).

V. Land Use History

"The Shining Mountains," as the San Juan Mountains are called by the Utes, were prime spring and summer hunting grounds for Ute people for centuries. The Utes traveled across the landscape on foot for many generations, and on horseback after the Pueblo Revolt of 1680 (Gulliford, 2011). Several 5,000-year-old Paleo Indian sites have been found near Poncha Pass at the northern edge of the San Luis Valley, to the northeast of the

Powderhorn, La Garita, and adjacent lands. The Moache, Capote, and Wiminuche were bands of Utes that occupied the San Juans as well as the San Luis Valley for an estimated 500 years before white settlers arrival (Gulliford 2011). The higher elevation areas were critical spring and summer hunting grounds and generally less used in the deep winter snows. Cochetopa means "pass of the buffalo," an insight into what the wildlife may have looked like years past.

Spanish settlers first came to Santa Fe in today's New Mexico and trading began with Utes and other tribes of the area. In the mid 1700's, a small but momentous piece of silver was traded to a Spaniard by a Ute at Abiquiu (Gulliford 2011). This was a catalyst for an expedition north into Ute territory by the Spanish. Following this, the San Juan Mountains remained little visited by Europeans on record, although Spanish miners secretly entered the mountain range to mine without taxes on their discoveries, as well as trappers who could avoid trapping licenses in a place completely unregulated by laws (Gulliford 2011). Over time, these Spanish explorers continued to venture into the San Luis Valley and the San Juans, explaining why there is a mix of Ute and Spanish names that exist here today.

After the war of 1848, the United States officially owned the San Juan Mountains and military explorers began arriving to map and describe the new land acquisition. The Colorado gold rush brought prospectors into the new territory, but the Ute Treaty of 1868 secured all of Western Colorado for the six bands of the Ute tribe. Ratified to be "final and forever," this treaty included the entire western third of the then Colorado territory to the Utah border, in exchange for the Central Rockies to belong to the new white settlers and U.S. government. Indian agencies were established, and the Los Pinos Indian Agency, an

especially important historical site found on the eastern end of this floristic survey, was set to disperse annual gifts to the Tabeguache Utes in exchange for the land (O'Rourke 1980).

In 1871, with the discovery of gold in the Silverton area, the U.S. government began to survey the mineral resources of the San Juans heavily. As Civil War veterans flocked to the San Juans seeking riches, the treaty of 1868 did not seem to fit the United States government's needs anymore. A particularly important event in the history of the San Juan Mountains and the floristic area in question was when Felix Brunot and road builder Otto Mears negotiated the Brunot Treaty, or the San Juan Cession, with Ute Chief Ouray in 1874 (Gulliford 2011). With this treaty, the Utes agreed to release ownership of the mountaintops and high country where the minerals were often located, but the tribe could keep the lower hunting grounds in the valleys. Through miscommunication or fraud, the Utes believed they were only selling the peaks with this treaty, but it resulted in the United States taking ownership of the entire San Juan range. This forced the Utes further south and away from their traditional summer mountain hunting grounds. The United States promised to locate Chief Ouray's lost son as an incentive for the signing of this treaty, and this promise proved empty (Gulliford 2011).

Cannibal Plateau, in today's Powderhorn Wilderness, is named after Colorado's most famous alleged man-eater, Alferd Packer. Packer and his party were attempting a midwinter crossing of the San Juan Mountains when they got lost near Lake City in the winter of 1874. Bodies were found with potential evidence of human butchery at the bottom of Slumgullion Pass the following summer (Curry 2022). Packer had already been arrested on suspicion of murder and cannibalism. The plateau, about 8 miles to the North, was named to commemorate the event.

By the late 1800's, forest conservation was recognized as a national issue. The National Forest system was established in 1891, and under the administration of the General Land Office in the Department of the Interior (Bates 1992). In Colorado, farmers were glad of government protection from wildfires, miners were ensured steady timber, and cattle ranchers were able to preserve rangeland from sheep overuse (USFS, Rio Grande National Forest History and Culture). Much of the Powderhorn Wilderness, La Garita Wilderness, and adjacent lands were what was considered the Cochetopa Forest Reserve until 1905, when the Gunnison National Forest was set aside. The Rio Grande National Forest was created from the San Juan and Cochetopa Forest in 1908 (USFS, Rio Grande National Forest History).

The La Garita Wilderness was designated as a Wilderness Area by Congress in 1964. The Powderhorn Wilderness was designated in 1993 (Bureau of Land Management, Powderhorn Wilderness Area). Wheeler Geologic Area was named a national monument in 1908 – Colorado's first (Whitmore, Colorado Encyclopedia), it then lost that status and became part of the Rio Grande National Forest in 1950. The area was unregulated and often vulnerable to vandalism until 1993, when the La Garita Wilderness Area was expanded to include it (Whitmore, Colorado Encyclopedia).

A. Current Land Use and Disturbance

The spruce beetle (*Dendroctonus rufipennis*) is a native bark beetle that has dramatically affected the Powderhorn and La Garita, creating vast expanses of forest where every mature tree stands dead (Fig. 7). This is a disturbance of an extreme scale and is likely shifting plant community dynamics. Furthermore, this dry lumber can provide a considerable fuel load and significantly increase the risk of a potentially enormous forest

fire (Colorado State Forest Service Insect and Disease Update 2013). Data produced from this floristic survey may prove valuable in the case that a fire later sweeps through the area (Warsh et al. 2023). Restoration efforts following such an event would require information on species composition and future researchers would rely on baseline data to compare plant community changes.

Fig. 6 Top row and bottom left: examples of spruce-beetle kill and large alpine plateaus above. Bottom right: aspen woodland habitat.

Mining, especially around the town of Creede, has been a significant force on this landscape. Today many historic and active mines are scattered around the surveyed area there. Hunting and fishing are common throughout the surveyed area and areas outside of the Wilderness Area see off-highway vehicle (OHV) use and dispersed camping. An

important event for the Powderhorn and La Garita Wilderness Areas and Adjacent Lands the official establishment of the Colorado Trail in 1988 (Colorado Trail Foundation 2023). Hikers and horseback riders arrived to complete the 567 miles from Durango to Denver, bringing these little-visited and remote places far from roads more human activity. The most visitation to these Wilderness Areas is traffic on the Continental Divide and Colorado Trails. Backpackers frequent this trail throughout the summer months, and bike packers will take an adjacent route that generally follows the path of the CDT/CT avoiding the Wilderness Area and its rules against mechanized travel. The surveyed area includes segments 18-22 of the Colorado Trail's 28 segments (see Fig. 3). Backpackers typically stick to the trail while hiking but will camp off it. The Continental Divide Trail does not yet see the same traffic as other Mexico to Canada trails, but it is a disturbance source that could see more visitation in the future.

Domestic sheep grazing has been a long-standing practice in both the Powderhorn and La Garita. In and around the La Garita Wilderness and surrounding lands, there is the "ole" La Garita Stock Driveway, which was used for generations to bring sheep from the San Luis Valley to higher elevation summer grazing near Silverton (United States Forest Service: La Garita Stock Driveway 2023). This stock driveway as well as other routes are still used by grazing permittees to bring sheep to many places in the Wilderness Area and adjacent places. There are two BLM permitted sheep allotments in the Powderhorn Wilderness Area: West Powderhorn and Devil's Lake Bureau of Land Management Sheep Environmental Impact Statement 2019). On the southern USFS managed section of the Powderhorn Wilderness, a separate sheep allotment exists. Cattle grazing also is common throughout the surveyed area, typically lower in elevation than these sheep allotments.

This section of the Continental Divide and Colorado Trail is often referred to as “cow country” by thru-hikers and will sometimes be skipped by hikers for more “glamorous” terrain.

VI. Wildlife

Three animal species of conservation concern are present or expected to be present within the surveyed area: the Uncompahgre fritillary butterfly, boreal toad, and Canada lynx (U.S. Fish & Wildlife Service Environmental Conservation Online System 2023). The Uncompahgre fritillary butterfly (*Boloria improba acrocnema*) is a federally endangered species, a narrow endemic with a range close to this survey area, but not documented within its boundaries (U.S. Fish & Wildlife Service Environmental Conservation Online System 2023). Land agencies are actively concerned about locating new populations (USFWS Environmental Conservation Online System 2023). All known UFB populations are associated with large patches of snow willow (*Salix reticulata* var. *nana)* above 12,400 ft, and found primarily on northeast facing slopes, which provide the coolest and wettest alpine microhabitat available in the San Juans (U.S. Fish & Wildlife Service Environmental Conservation Online System 2023). One area, Baldy Cinco, has already been identified by the Colorado Natural Heritage Program as potential habitat for the Uncompahgre fritillary and is adjacent to its current documented range. Hospitable habitats with extensive snow willow and suitable aspects were noted while during the fieldwork for this flora and are shown in Fig. 7.

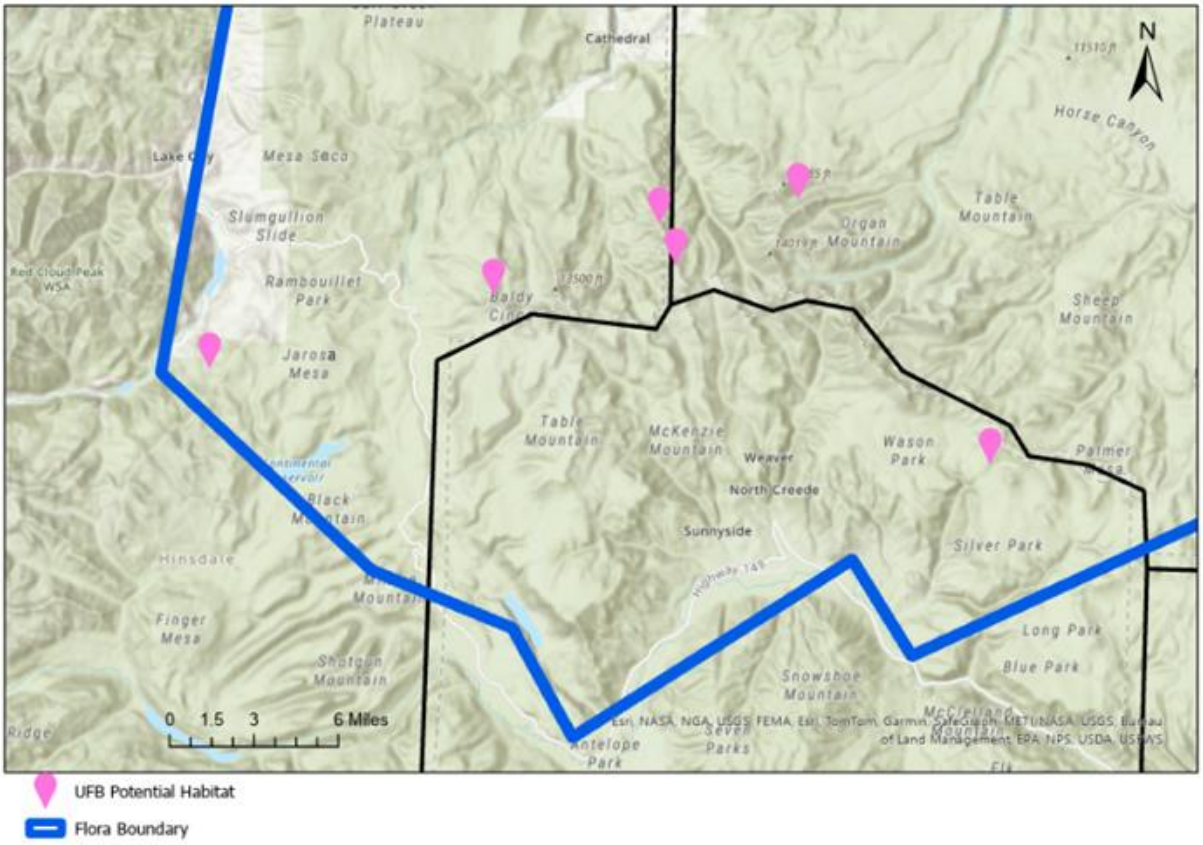

Fig. 7. Potential habitat for the Uncompahgre fritillary butterfly located by noting presence of snow willow (*Salix reticulata* L.var. *nana* Andersson) on north to northeast facing aspects above 12,400 ft ASL.

The boreal toad (*Anaxyrus boreas boreas*), considered endangered in the state of Colorado, is also found in the San Juan Mountains (Colorado Parks and Wildlife Species Profile: Boreal Toad 2023). These toads rely on wetlands from subalpine to alpine elevations, often thriving in beaver-ponded areas (CPW 2023). A few beaver affected areas with ponds that could support boreal toad were also recorded in this project including Tumble Creek, Rambouillet Creek, the West Fork of Powderhorn Creek, and Phoenix Park.

Canada Lynx (*Lynx canadensis*) is found throughout North America in boreal places (USFWS Canada Lynx Overview). It is currently listed as threatened under the Endangered Species Act and was extirpated from Colorado until reintroduction efforts by Colorado

Parks and Wildlife in the 1990's (Colorado Parks and Wildlife). Lynx thrive in large forests of spruce-fir. The Powderhorn and La Garita Wilderness Areas and adjacent lands house lots of spruce-fir forest, although the beetle kill is significant.

VII. Methods

The overarching goal of this inventory was to document the plant diversity of this area by way of voucher collection. Each specimen was collected in flower or fruit with root material (where feasible) and pressed for later identification. Habitat data and location were recorded. My driving objective was to generate at least one voucher of every taxon present within the area, including sub-specific entities. The "ad-hoc" method was used to locate and collect as many unique taxa as possible (Gordon & Newton 2006). This is sometimes described as "expert-based wandering" or the "meander search strategy" (Goff et al. 1982).

All collection points are shown in Fig. 3. Avoidance of private land often guides the boundaries where there is not an obvious demarcation. As previously mentioned, some areal gaps in the Preusser collections shown in Fig. 3 are a result of lending less effort on surveying places with more past floristic attention. Instead, areas with few or no previous collections were prioritized, as well as interesting or unique habitat types. Past collection efforts were judged by referencing digitized herbarium specimens using the Southwest Environmental Information Network Data Portal (SEINet Data Portal 2023). General habitat zones were identified to tactically visit all present habitats.

The first field season began in May 2022 and continued to early September 2022, consisting of a total of 24 field days. Because of a heavy snowpack and later snow melt, the 2023 field season began in June and lasted until early September 2023, consisting of a total

of 25 collecting field days. Plants were collected ideally in flower or fruit, pressed, dried, and mounted into herbarium specimen format. Care was taken to produce museum quality herbarium specimens with as many intact physiologic structures as possible. Each collection was given a collection number, habitat information was recorded, and location data was documented with a GPS unit.

During the non-collecting months of the year, I identified each collection to species or subspecies/variety. The written resources primarily used for this include *Colorado Flora, Eastern and Western Slopes* (Weber & Wittman 2012), *Flora of Colorado* (Ackerfield 2023), *Intermountain Flora: Vascular Flora of the Intermountain West* (Cronquist et al 2012), and *Flora of North America* (FNA Editorial Committee 1993 +). All plant vouchers listed in the attached plant list were accessioned into the University of Colorado Herbarium (COLO). Taxonomy and nomenclature in the below checklist refers to the accepted names on the Plants of the World (POWO) database (Plants of the World – Royal Botanic Gardens Kew 2024). Specimens were digitized and these digital records are accessible through multiple online databases, including the SEINet Online Portal and the University of Colorado Digital Database.

VIII. Results and Discussion

The floristic inventory conducted herein resulted in the collection of 1,232 vouchers of plant specimens, documenting 606 unique taxa of plants in 266 genera in 75 plant families (Appendix 1). Twenty-one new county records were collected as can be determined from online digitized resources such as the SoRo and SEINet Portals (Table 1 & Appendix 1). Fifty-seven newly recorded species were added to the study area, which highlights the nature of gaps in prior understanding of the area. These taxa newly collected

in the area are noted in the plant list in Appendix A. Native species account for 97.5% of the total taxa documented. The most speciose plant family was the Asteraceae with 107 species, followed by the Poaceae with 50 species. The most speciose genus was *Carex*, which was home to 36 species, while the second-most speciose was *Erigeron* with 16 species. Unavoidably, some common taxa were missed and not collected in this effort such as *Artemisia tridentata* ssp*. wyomingensis, Opuntia polyacantha, and Pascopyrum smithii,* as I was waiting to collect them at a certain flowering stage and accidently kept missing them. However, these are taxa that are well understood in the survey area and have multiple observances and collection data from other researchers.

Table 1. New County Records	
Scientific Name	**County**
Alopecurus geniculatus L.	Saguache
Artemisia arctica Less.	Hinsdale
Astragalus molybdenus Barneby	Hinsdale
Berteroa incana L.	Saguache
Boechera drepanoloba (Greene) Windam & Al-Shehbaz	Hinsdale
Boechera pallidifolia (Rollins) W.A. Weber	Gunnison
Carex fuliginosa Schkuhr.	Mineral
Dryas octopetala L. *var. hookeriana* (Juz.) Breit	Saguache
Hymenopappus newberryi (A. Gray) I.M. Johnst.	Hinsdale
Opuntia fragilis (Nutt.) Haw	Gunnison
Pericome caudata A. Gray	Mineral
Physaria rollinsii G.A. Mulligan	Saguache
Potentilla bicrenata Rydb.	Gunnison
Pseudostellaria jamesiana (Torr.) W.A. Weber & R.L. Hartman	Saguache
Symphyotrichum foliaceum (A. Gray) G.L. Nesom *var. apricum* (A. Gray) G.L. Nesom	Hinsdale
Taraxacum scopulorum (A. Gray) Rydb.	Mineral
Tonestus lyallii (A. Gray) A. Nelson	Hinsdale

The travertine deposits of ancient Lake Creede were targeted for collection, however, no particularly unusual taxa were found there. An area of dolomitic parent material found in the Iron Hill area near the town of Powderhorn was also surveyed for notable taxa and calcareous specialists, but none were found. It was apparent that this area has had logging activity and used by cattle ranchers for years, so it is possible that notable plant taxa could have been present at one time but are now absent or less abundant.

A. Sensitive and Rare Species

The Colorado Natural Heritage Program (CNHP) tracks 619 vascular plant taxa for conservation and serves as "the central repository for information on rare species and natural communities in the state" (CNHP Rare Plant Guide Online 2023). Some of the 619 species are fully tracked while others are watchlisted for conservation concerns. Colorado Parks and Wildlife (CPW) and United States Fish and Wildlife Service (USFWS) also track certain species in accordance with a State Wildlife Action Plan (SWAP) and has two tiers for severity of potential threat to the Species of Greatest Conservation Need (SGCN) (Colorado Parks and Wildlife State Wildlife Action Plan 2015). The Bureau of Land Management and United States Forest Service also have their own tracking methods and respective species of concern. Twenty-one species of rare plants monitored by the Colorado Natural Heritage Program were found in the survey and are shown in Table 3 (Colorado Natural Heritage Program 2023). These species are often of concern to multiple agencies and are marked as such. Three of these notable taxa are discussed here while the full list is shown in Table 3.

Table 2. Rare and Sensitive Species Taxa collected in the floristic inventory of the Powderhorn & La Garita Wilderness Areas and adjacent lands tracked by Colorado Natural Heritage Program, Colorado Parks and Wildlife, Bureau of Land Management and United State Forest Service. All information provided by Colorado Natural Heritage Program Rare Plant Guide (2023).
The global (G) and state (S) ranking system is as follows: Critically Imperiled (G/S1), Imperiled (G/S2), Vulnerable (G/S3), Apparently Secure (G/S4), Secure (G/S5).

Scientific Name	Common Name	Global Rank	State Rank CNHP/NatureServe	Other Conservation Status	CNHP Tracking Status
Aliciella penstemonoides	Black Canyon gilia	G3	S3	-	Fully Tracked
Aliciella sedifolia	Stonecrop gilia	G1	S1	SWAP Tier 1, USFS	Fully Tracked
Artemisia parryi	Parry's wormwood	G3	S3	-	Fully Tracked
Asclepias hallii	Hall's milkweed	G3	S3	-	Fully Tracked
Astragalus anisus	Gunnison milkvetch	G3	S3	SWAP Tier 2, BLM	Fully Tracked
Astragalus iodopetalus	violet milkvetch	G3	S2	SWAP Tier 2, USFS	Fully Tracked
Boechera crandallii	Crandall's rockcress	G3G4	S3S4	SWAP Tier 2, BLM	Watchlisted Only
Boechera gunnisoniana	Gunnison's rockcress	G3	S2	-	Fully Tracked
Botrychium minganense	Mingan's moonwort	G5	S3	-	Watchlisted Only
Carex leporinella	Sierra hare sedge	G5	S2	-	Fully Tracked
Chionophila jamesii	Rocky Mountain snowlover	G4	S3S4	-	Watchlisted Only
Draba fladnizensis	arctic draba	G5	S3	-	Watchlisted Only
Draba smithii	Smith whitlow-grass	G2	S3	SWAP Tier 2, USFS	Fully tracked
Draba streptobrachia	twisted draba	G3	S3	-	Fully tracked

Eriogonum coloradense	Colorado wild buckwheat	G3	S3	SWAP Tier 2, BLM	Fully Tracked
Oreocarya weberi	Weber's cat's- eye	G3	S3	-	Fully Tracked
Oxytropis parryi	Parry's crazy- weed	G5	S1	-	Fully Tracked
Physaria rollinsii	Rollins' twinpod	G1G2	S1S2	SWAP Tier 1	Fully Tracked
Stellaria irrigua	Altai chickweed	G4	S3	-	Watchlisted Only
Townsendia rothrockii	Rothrock townsend-daisy	G3	S3	SWAP Tier 2	Fully Tracked
Xanthisma coloradoense	Colorado tansy -aster	G3	S3	USFS	Fully Tracked

Aliciella sedifolia is a very narrow endemic ranked globally critically imperiled (G1) by NatureServe, and it is considered critically imperiled (S1) in Colorado (Anderson 2004). The type locality was discovered and the species described in 1892 by Purpus. It had not been seen for over 100 years, when a new population was discovered in 1995 (Anderson 2004). There are four other known populations of this species, and they are all within about 15 miles of each other, in the mountains west of Lake City, Colorado. This new fifth population located by this survey is ca. 26 air miles away from the rest and provides a considerable range expansion for such a narrow endemic. All habitats located thus far have been in gravelly tuffaceous volcanic ridges in high alpine and this new population corroborates this habitat affinity. Human generated erosion could threaten this plant in the coming years in these sensitive habitats. This population, found in the La Garita Wilderness

managed by the Gunnison National Forest, should be monitored due to its relative proximity to the Colorado and Continental Divide Trails.

Eriogonum coloradense (Fig. 8) is a Colorado endemic with a unique distribution limited to a small area of the central mountains of Colorado, spanning about five counties. It is most abundant in the Gothic area and is often found there in talus in the alpine and subalpine. Contrastingly, in the Cochetopa Hills, its southernmost extent, it is found in dry sagebrush and volcanic ash meadows at much lower elevation, from around 9,200-9,500 ft. (Flora of North America 1993+) The population located by this survey is farther south than other populations recorded and was found in a montane rockfield at 9,800 feet, slightly higher than the other Saguache County collections. This population comprised an approximately 10 x 12 ft. patch containing approximately 30 individuals. At time of collection, cows were in the same allotment. The Rio Grande National Forest manages this section, and it is considered G3 globally and S3 in the state of Colorado and is classified as Vulnerable.

Fig. 8 The endemic *Eriogonum coloradense* Small - Colorado buckwheat.

Oxytropis parryi is ranked S1 in the state of Colorado, as Critically Imperiled (CNHP 2023). This survey located the second population of this species in the Cochetopa Hills as can be judged from herbarium records, adding to its few disjunct populations from around the state.

B. Other Notable Collections

As previously mentioned, the Elk Mountains and the rest of the San Juan Mountains had much more extensive floristic coverage and higher number herbarium specimens generated due to more collection pressure, from Rocky Mountain Biological Laboratory and other efforts. Range maps for many higher elevation taxa had a fairly large gap within and surrounding the Powderhorn and La Garita Wilderness Areas, even though there exist miles of suitable habitat within my survey area. This project served to fill in the gaps for some alpine and subalpine species whose ranges were known previously primarily from the remainder of the San Juans as well as the Elk Mountains. A few examples of such taxa include *Erigeron vagus* and *Juncus mertensianus*. The 69 new taxa added to the survey area illustrates that this survey helped to expand the understanding of the range of these species and fill in previous gaps in floristic knowledge.

A notable find that was not a rare plant or county record was *Pinus edulis.* Pinyon-juniper forests are common near the town of Saguache, but I was unable to find herbarium records of this species as far north into Saguache County as one of my collections in California Gulch.

A large portion of the La Garita and the Cochetopa Hills were inventoried during the final stages of collecting when time allotted for fieldwork was expiring. As such, they likely require additional inventory to ensure no taxa were inadvertently omitted, especially owing to their uniqueness and number of endemic taxa.

C. Invasive Species

Fifteen non-native species were found, four of which are on Colorado's Invasive Species List (Table 2). Non-native species are relatively uncommon and tend to occur where cattle and cars travel. The focus of collection on the Wilderness Areas also may account for less non-native taxa as they provide many obstacles to travel and are remote.All of the alien taxa are native to Eurasia, as is typical with Colorado invasive plant species. One occurrence of *Berteroa incana* was documented as a new county record to Saguache County and is currently on the Colorado Noxious Species Watchlist (Colorado Dept. of Agriculture, Noxious Species Watchlist).

Table 3. Noxious Weed Species

Scientific Name	Colorado Noxious Weed Listing Rank
Berteroa incana (L.) DC.	Watchlist
Bromus tectorum L.	C
Carduus nutans L.	B
Cirsium arvense (L). Scop.	B
Hyoscyamus niger (L.)	B

D. Habitat Types

Plant community descriptions can under-represent their complexity (Colorado Natural Heritage Program Rare Plant Field Guide 2023). In each habitat type, common species are listed, but there are many species assemblages that are not described in this

format. While there are generally common communities, aspect, soil type, and microclimate dynamics play a major role in making each area unique. Each habitat description comes with the caveat that things are often much more complex. The species lists in these habitat descriptions that follow are far from exhaustive and the plant list attached will give more in-depth information on each taxon.

Montane Forest

The forests from approximately 8,000 ft to 10,000 ft are composed of only a few species of dominant overstory trees. In some areas there are open ponderosa parks (*Pinus ponderosa*), with an understory that commonly includes *Artemisia tridentata* ssp*. vaseyana, Erigeron speciosus, Lupinus sericeus,* and *Poa secunda.* Douglas-fir, lodgepole, and aspen forests are also found in these elevations. Lodgepole pine (*Pinus contorta* var. *latifolia*) forests are often very dense and often occupy steeper terrain. In some areas, many of the lodgepole forests have been logged previously. Typical associates of all of these montane forests include *Antennaria parvifolia, Arctostaphylos uva-ursi, Berberis repens, Carex geyeri, Carex siccata, Festuca arizonica, Juniperus communis, Penstemon caespitosus, Potentilla hippiana, Rosa woodsii,* and *Shepherdia canadensis.*

Bristlecone Pine Forest

Rocky Mountain bristlecone pine trees (*Pinus aristata*) occupy a range of habitats throughout the survey area from montane to timberline. The large expanses of Rocky Mountain bristlecone dominant forests in the montane zone are one of the ecological commonalities throughout the surveyed area, as opposed to the relative infrequence of this forest type in adjacent areas. These trees can have extremely long life spans, with the oldest in Colorado estimated to be 2,500 years old (Ranne et al., 1997). Bristlecone forests within

the surveyed area usually occupy drier portions of montane environments that occur between ~8,000-10,500 ft. The understory species recorded in these forests often include *Artemisia frigida, Koeleria macrantha, Achnatherum hymenoides, Muhlenbergia montana, Geranium richardsonii, Mertensia lanceolata, Ribes cereum, Rosa woodsii, Antennaria microphylla, Potentilla hippiana, Hymenoxys richardsonii,* and *Heuchera parvifolia. Pseudotsuga menziesii, Pinus contorta,* and *Populus tremuloides* can all be co-dominant in these elevations as well. Ponderosa (*Pinus ponderosa*) and bristlecone open montane parks often mix in Saguache County and there are also aspen forest and Douglas-fir forests where bristlecone is sub-dominant. A few bristlecone forests were found around timberline, such as in the Nutras Creek area of Saguache County. Other species found in this high elevation bristlecone forest include *Abies lasiocarpa, Picea engelmannii, Dasiphora fruticosa, Festuca thurberi, Frageria virginiana,* and *Koeleria macrantha.*

Riparian and Wetland Montane & Subalpine

Streams and creeks of many sizes flow throughout the study area, creating habitat for moisture-dependent species. Many species that prefer this habitat overlap from montane to subalpine ecosystems. These species include *Alnus incana, Alopecurus aequalis, Cardamine cordifolia, Carex aquatilis, Carex vesicaria, Carex utriculata, Conioselinum scopulorum, Dasiphora fruticosa, Epilobium ciliatum, Iris missouriensis, Juncus arcticus, Lonicera involucrata, Mertensia ciliata, Populus angustifolia, Rumex densiflorus, Salix monticola, Salix drummondiana,* and *Salix planifolia.*

Riparian and Wetland Alpine

This habitat type refers to the areas with standing or slowmoving water as well as near streams or springs when above timberline. Some species commonly found here

include *Bistorta bistortoides, Caltha leptosepala, Cardamine cordifolia, Carex albonigra, Carex atrosquama, Carex scopulorum, Deschampsia cespitosa, Geum rossii, Mertensia ciliata, Primula parryi, Rhodiola rhodantha, Salix planifolia,* and *Senecio triangularis.*

Alpine Xeric Tundra

These drier alpine sites are often rocky. Plant life is frequently smaller in stature and more stunted than in meadows with more water. This habitat type can be found in high mountain passes, slopes of peaks, or large flat expanses on abundant plateaus and mesas (Fig. 9). Common plant elements include *Achillea millefolium, Artemisia scopulorum, Bistorta bistortoides, Festuca brachyphylla, Hymenoxys grandiflora, Kobresia myosuroides, Phacelia sericea, Phlox condensata, Potentilla glaucophylla, Poa arctica, Saxifraga flagellaris,* and *Trisetum spicatum.*

Fig. 9 Aerial photo of an example of one of the many alpine plateaus.

Alpine Willow Carr and Mesic Meadows

Flat areas or more gentle slopes create more soil development in the alpine and form mesic meadows. Willow carrs are very common above and near timberline where there are not large talus fields. They can be enormous and span miles, with some breaks

and patches in between where smaller taxa flourish. The plant communities within the willow carrs are often similar to the mesic meadows without willows. Aspect also will shift the plant life. The primary willow species in these alpine carrs are *Salix brachycarpa, Salix planifolia,* and *Salix wolfii,* varying with dispersal and moisture. A large amount of diversity is found here in these two similar and often adjacent habitats. More frequent species include *Achillea millefolium, Agrostis variabilis, Antennaria corymbosa, Artemisia scopulorum, Bistorta bistortoides, Carex chalciolepis, Castilleja occidentalis, Castilleja rhexifolia, Deschampsia cespitosa, Festuca saximontana* var*. saximontana, Erigeron coulteri, Erigeron grandiflorus, Geum rossii, Luzula spicata, Mertensia franciscana, Micranthes rhomboidea, Noccaea fendleri, Pedicularis sudetica* ssp. *scopulorum, Penstemon whippleanus, Poa alpina, Poa arctica, Podagrostis humilis, Polemonium confertum, Potentilla glaucophylla, Sibbaldia procumbens, Solidago multiradiata, Rhodiola integrifolia, Trisetum spicatum***,** and *Veronica wormskjodii.*

Talus and Scree

Some plants are specialists at thriving in rockier environments in scree or talus and this habitat absolutely commands a description of its own due to its prevalence on the landscape. In the alpine these include *Angelica grayi, Aquilegia coerulea, Chaenactis douglasii, Cirsium scopulorum, Claytonia megarhiza, Festuca brachyphylla, Oxyria digenia, Penstemon hallii, Penstemon harbourii, Senecio fremontii,* and *Senecio soldanella.* In lower elevations, one may find *Erigeron acris, Artemisia laciniata* ssp*. parryi, Phacelia bakeri, and Ribes cereum.*

Cliffs and Outcrops

The ample and widespread outcrops of volcanic breccias and tuffaceous cliffs create abundant habitat for cliff dwellers. Distinct taxa from lower elevation cliffs differ from cliffs in the subalpine and alpine. These species assemblages also differ from inhabitants of talus and scree. In the montane region, some common species found near or on cliffs are *Bromus lanatipes, Draba aurea, Holodiscus discolor, Rhus trilobata var. trilobata, Heterotheca villosa, Hackelia floribunda, Prunus virginiana,* and *Woodsia oregana.* In the subalpine and alpine, the more common species include *Cystopteris fragilis, Erigeron pinnatisectus, Erysimum capitatum, Smelowskia americanum,* and *Saxifraga bronchialis.*

Subalpine Forests

Spruce and Spruce-fir Forests: Engelmann spruce (*Picea engelmanni*) certainly dominates the subalpine zone throughout the surveyed area. The vast majority of the spruce forests are standing dead trees from spruce bark beetles or spruce budworm. *Picea engelmannii* is the dominant tree in this forest type, in some places subalpine fir (*Abies lasiocarpa*) is sub or co-dominant. Living spruce forest habitat type is still present in some pockets of the surveyed area but was found to be relatively rare in the summers of 2022 and 2023. Some minor differences in taxa are apparent through observation between the living and dead forests, but it is difficult to determine significant differences in community without quantitative data. However, most of the notable discrepancies lie in the robustness of the understory in the dead spruce-fir forests, especially in woody understory species. In some places, red elderberry (*Sambucus racemosa*) can be the dominant green and living component of this forest when the entire overstory is dead. Common species in spruce and spruce-fir forest include *Abies lasiocarpa, Achillea millefolium, Arnica cordifolia, Carex*

siccata, Chamerion angustifolium, Elymus trachycaulus, Festuca thurberi, Fragaria virginiana, Juniperus communis, Koeleria macrantha, Luzula parviflora, Oreochrysum parryi, Orthilia secunda, Picea engelmannii, Polemonium pulcherrimum, Poa fendleriana, Sambucus racemosa, Trifolium parryi, and *Vaccinium myrtillus.*

Subalpine Aspen Forests and Woodland: This habitat type is very common in the subalpine, only subdominant to spruce-fir forests, and often co-mingling. The understory species often overlap from spruce to aspen forests. In this context, woodland refers to a less dense canopy cover than a forest providing less shade, and slightly different habitat assemblages result (Fig. 6). In aspen woodlands common plants include *Allium geyeri, Antennaria parvifolia, Arnica cordifolia, Bromus porteri, Calochortus gunnisoniana, Carex siccata, Koeleria macrantha, Lupinus sericeus, Ribes wolfii, and Zigadenus elegans.*

Volcanic Ash and Tuff

Found across the elevational range of the survey, this habitat type is characterized by its very light colored, ashy soils. From observation, these seem to have an erosional pattern of sloughing that selects for certain taxa, as well as the assumed unique mineral content that might select for specialists. Localities such as near Chimney Rock in the Cochetopa Hills, Mineral Creek, Mineral Mountain of Hinsdale County are a few examples of this habitat type. Common species include *Astragalus kentrophyta, Chamaerodos erecta, Eriogonum alatum, Hedysarum occidentale, Mertensia lanceolata, Phacelia bakeri,* and sometimes *Oreocarya weberi.* This soil type in the Cochetopa Hills also creates a plant community in the steppe or submontane zone that is unique from the big sagebrush steppe. Plants in these intermountain parks from ~7,500-10,000 ft often feature a steppe habitat

with *Artemisia frigida* as more dominant as well as *Allium geyeri, Carex duriuscula, Festuca arizonica, Hymenoxys richarsonii, Oxytropis sericea, Potentilla hippiana,* and *Poa fendleriana.*

Big Sagebrush Steppe

Joseph Barrell (1969) describes the "submontane" zone of the Gunnison Basin as somewhat similar to the alpine zone, as a place where the "trees contract." The Gunnison basin is unique in this respect, as big sagebrush (*Artemisia tridentata*) steppe occupies an elevational band that is covered in pinyon-juniper forest in much of the state. Barrell hypothesizes that the botany of the basin floor today is similar what it was before the melting of the glaciers 10,000 years ago, due to the climate of the Gunnison Valley typically staying much colder than its neighbors. Wyoming big sagebrush *(Artemisia tridentata* subsp. *wyomingensis)* blankets much of the lower and drier steppe areas and mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana)* accounts for a lot of the slightly higher sagebrush hills that integrate with douglas-fir, ponderosa, aspen, bristlecone, or lodgepole forests. The surveyed area did not include the large expanses of the "sea of sage" of the Gunnison Valley, but this habitat type is nonetheless still significant across the landscape. There are many nuances within this habitat type, i.e., certain assemblages that vary with aspect, soil type, rock cover, and more. A general overview of common plants in this steppe ecology includes *Achnatherum hymenoides, Achnatherum pinetorum, Elymus elymoides, Erigeron vetensis, Festuca arizonica, Gutierrezia sarothrae, Linanthus pungens, Opuntia polyacantha, Phlox hoodii, Poa secunda,* and *Sphaeralcea coccinea.*

Widespread Generalists

The following taxa were noted to be successful generalists throughout elevations and across multiple habitats: *Achillea millefolium, Aquilegia coerulea, Chaenactis douglasii,*

Geum rossii, Koeleria macrantha, Mertensia lanceolata, Noccaea fendleri, Pinus aristata, Rhodiola integrifolia, Sambucus racemosa, Saxifraga bronchialis, and *Sedum lanceolatum.* These were all found from either sagebrush steppe into the alpine, or at least from the montane into alpine.

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X. Appendix A: Plant Checklist

Annotated Vascular Plant Checklist of the Powderhorn & La Garita Wilderness Areas and Adjacent Lands

The following checklist is organized first by major taxonomic groups (ferns and fern allies, gymnosperms, and angiosperms), and then alphabetically by family, genus, species, and trinomial if relevant. Habitat descriptions refer to where the representative voucher for that species was collected but will also include information from my field observations. Similarly, frequency is based on my collections and encounters throughout the collecting seasons. Each taxon is referenced with a corresponding collection number or numbers; multiple numbers indicate multiple collections. All collections without designated collector names are solo Preusser collections, but those with associate collectors are listed as such (i.e. [Preusser & Andrews 1444]). The counties, habitat, and elevations in feet above sea level are listed where collected. However, the taxon may also be present in the other counties, habitat, or altitude. The counties are abbreviated GUN (Gunnison), HIN (Hinsdale), MIN (Mineral), and SAG (Saguache). The side of the Continental Divide where the specimen was collected is also noted with E (East) or W (West), and again only denotes where the taxa were collected in this survey, not where the range extends. The elevational ranges show the range of where the taxon was collected in this particular survey. Non-native taxa are denoted with an (A) after the epithet to distinguish is alien. Taxa not before found in the survey area are labeled as such after the last authority and an asterisk (*). Rare plants tracked or watchlisted by the Colorado Natural Heritage program are noted as *Rare. There are some species that are new to the survey area, but not a new county record. The inverse is also true where a collection could represent a county record, but previous collections could have been found within the survey area in the past. County records are noted next to the collection number.

Ferns and Fern Allies

Aspleniaceae

Asplenium trichomanes L. ssp. *trichomanes* *New to survey area

Cliff crevice, open montane woodland. 9,500'. SAG, E. [Preusser & Ellis 1095]

Cystopteridaceae

Cystopteris fragilis (L.) Bernh.

Cliff crevice, overhanging shallow cave. 12,000'. HIN, W. [1193]

Cystopteris reevesiana Lellinger

Cliffside, shady forests, riparian. 9,400-9,800'. HIN, W. [671, 703]

Equisetaceae

Equisetum arvense L.

Streamsides. 9,000'. GUN, W. [152]

Ophioglossaceae

Botrychium minganense Victorin *New to survey area *Rare

Volcanic ash soil near rock outcrop. 11,200'. MIN, E. [1149]

Polypodiaceae

Dryopteris filix-mas (L.) Schott *New to survey area

Cliff crevice; open montane woodland. 9,500'. SAG, E. [Preusser & Ellis 1094, Preusser & Ellis 1097]

Pteridaceae

Argyrochosma fendleri (J. Sm.) Windham

Cliff crevices. 9,300'. HIN, W. [896]

Cryptogamma acrostichoides R. Br.

Talus field, rocky slopes. 9,400-10,400'. MIN, SAG, E&W. [Preusser et al. 832, Preusser & Most 952]

Myriopteris gracilis Fée

Found on travertine boulder. 9,000'. MIN, E. [1160]

Woodsiaceae

Woodsia oregana D.C. Eaton ssp. *cathcartiana* (B.L. Rob.) Windham

Cliff crevices. 10,800-12,200'. HIN, MIN, E&W. [512, 307]

Woodsia scopulina D.C. Eaton *New to survey area

Under overhanging cliff. 11,200'. MIN, E. [1155]

Gymnosperms

Cupressaceae

Juniperus communis L.

Common understory shrub in forests. 9,300'. GUN, W. [73]

Juniperus scopulorum Sarg.

Dry hillside in steppe and montane. 8,500'. GUN, W. [89]

Pinaceae

Abies bifolia A. Murray

Common in subalpine forests to timberline, especially with Engelman spruce. 9,200'. GUN, W. [72]

Picea engelmanii Parry ex Engelman

Common in subalpine forests to timberline. 9,500'. GUN, W. [97]

Picea pungens Engelm.

Typically forests near riparian areas. 8,700'. GUN, W. [35]

Pinus aristata Engelm.

Dry montane forests to timberline. 9,100'. GUN, W. [29]

Pinus contorta Dougl. ex Loud. var. *latifolia* Engelm. ex S. Watson

Montane and subalpine forests, typically lower than spruce-fir. 10,100'. GUN, W. [153]

Pinus edulis Engelm. *New to survey area

Infrequent; montane forests and rock outcrop. 9,400'. SAG, E. [Ellis & Preusser 1102]

Pinus flexilis James

Infrequent, montane forests. Found in primarily bristlecone forest. 9,600'. SAG, E. [1070]

Pinus ponderosa Douglas ex P. Lawson & C. Lawson var. *scopulorum* Engelm.

Montane areas, sometimes forming open parks or woodlands. 9,500'. GUN, W. [93]

Pseudotsuga menziesii (Mirbel) Franco var. *glauca* (Beissn.) Mayr)

Common, woodland and montane forests. 9,500'. GUN, W. [96]

Angiosperms

Aceraceae

Acer glabrum Torr. var. *glabrum*

Infrequent in the survey area, shady douglas-fir forest. 9,900'. MIN, E. [Preusser et al. 833]

Adoxaceae

Adoxa moschatellina L.

Infrequent, moist spruce-fir forests. 11,000'. GUN, W. [933]

Sambucus racemosa L. var. *microbotrys* (Rydb.) Kearn. & Peeb.

Common across habitats with sufficient moisture, often forests and near streams. 7,600-11,400'. GUN, HIN, W. [37, 206]

Amaranthaceae

Bassia scoparia (L.) A.J. Scott ssp. *scoparia* (A)

Disturbed sites. 10,000'. SAG, E. [Preusser & Ellis 808]

Blitum capitatum L.

Disturbed sites, native annual. 10,000-10,500' SAG, HIN, E&W. [738, Preusser & Ellis 1122]

Chenopodium atrovirens Rydb.

Disturbed areas, forest opening, sometimes riparian adjacent. 10,400' HIN, W. [684]

Chenopodium fremontii S. Watson.

Disturbed sites, native annual. 9,000-9,500'. HIN, MIN, E&W. [811]

Chenopodium hians Standl.

Disturbed sites, native annual. 10,000'. SAG, E. [1073]

Chenopodium leptophyllum (Moq.) Nutt. ex S. Watson.

Common across many habitats from sagebrush to montane. 9,500-11,000'. HIN, E&W. [364, 522]

Chenopodium overi Aellen

Montane, forest openings, often under douglas-fir. 9,500'. HIN, W. [344]

Krascheninnikovia lanata (Pursh) Meeuse & Smit

Arid shrub and grassland. 9,100'. SAG, E. [Preusser & Ellis 1123, 1210]

Amaryllidaceae

Allium acuminatum Hook. *New to surveyed area.

Dry meadow. 10,400'. SAG, E. [925]

Allium cernuum Roth.

Less frequent, woodland. [Preusser & Brodar 668]

Allium geyeri S. Watson var. *geyeri*

Common across habitats, sagebrush to timberline. 9,800-12,150'. SAG, E&W. [498, 1063]

Allium geyeri S. Watson var. *tenerum* M.E. Jones

Common across habitats, sagebrush to timberline. 9,700-10,300'. GUN, HIN, W. [155, 174, 410, Preusser et al. 853]

Anacardiaceae

Rhus trilobata Nutt. var. *trilobata*

Montane and sagebrush; cliffside, loose rock. 8,400'. GUN, W. [76]

Apiaceae

Angelica ampla A. Nelson *New to survey area

Infrequent, wetland. 10,400'. HIN, W. [Preusser & Casini 1023]

Angelica grayi (Coult. & Rose) Coult. & Rose

Common, alpine & subalpine, often in talus. 10,000-12,100'. HIN, SAG, E&W. [375, Preusser & Brodar 621, 630, 857]

Conioselinum scopulorum (A. Gray) J.M. Coult & Rose

Common in wet areas; especially streamside riparian. 10,000-12,000'. HIN, MIN, E&W. [409, 579, 616, 1196]

Heracleum maximum Bartr. *New to survey area

Common riparian montane. 8,500'. MIN, E. [1178]

Lomatium triternatum (Pursh) J.M. Coult. & Rose var. platycarpum (Torr.) Boivin *New to survey area. Infrequent, forest openings montane. 9,700'. GUN, W. [136]

Oreoxis alpina (A. Gray) J.M. Coult & Rose

Common, dry sites; montane to alpine, often rocky terrain or talus above timberline. 8,500-12,400'. HIN, MIN, SAG, E&W. [Preusser et al. 842, 915, 1062, 1189, 1207]

Oreoxis bakeri J.M. Coult & Rose

Subalpine and alpine. 10,200-12,800'. HIN, MIN, E&W. [923]

Osmorhiza depauperata Phil.

Wet subalpine. 9,900'. HIN, W. [367]

Oxypolis fendleri (A. Gray) Heller

Wet, streamside. 9,500-10,300'. HIN, W. [336, 481]

Podistera eastwoodiae (J.M. Coult. & Rose) Mathias & Constance

Subalpine, alpine. 12,000-12,300'. HIN, MIN, E&W. [244]

Pseudocymopterus montanus (A. Gray) J.M. Coult. & Rose

Common, open woodland. 8,900-12,300'. GUN, HIN, MIN, E&W. [47, 65, 171, 265, 296, Preusser et al. 848]

Apocynaceae

Apocynum x floribundum Greene

Montane forest openings. 10,000'. HIN, W. [529]

Asclepias hallii A. Gray *Rare

Infrequent, rocky soil in steppe or lower montane. 8,400-8,100'. GUN, MIN, E&W. [162, 903, 1181]

Asparagaceae

Maianthemum stellatum (L). Link

Common, forest floor, or moist areas near streams. 7,600-9,000'. GUN, W. [39]

Asteraceae

Achillea millefolium L.

Very common across habitats, all elevations. 11,000'. HIN, W. [173]

Agoseris aurantiaca (Hook.) Greene var. *aurantiaca*

Common, from sagebrush to subalpine & alpine meadows. 11,000-12,100'. HIN, MIN, E&W. [217, 242, 308, 726]

Agoseris glauca (Pursh) Raf. var. *dasycephala* (Torr & A. Gray) Jeps

Common, from sagebrush to subalpine and alpine. 10,000- 11,600'. HIN, MIN, E. [523, 747]

Agoseris parviflora (Nutt.) D. Dietr.

Across habitats from sagebrush to subalpine. 8,400'. GUN, W. [83]

Anaphalis margaritacea (L.) Benth. & Hook. *New to survey area

Rich moist forests, meadows, and openings, especially spruce-fir. 11,300'. HIN, W. [1190]

Antennaria anaphaloides Rydb. *New to survey area

Infrequent, drier forests, forest openings; montane meadows. 9,300'. GUN, W. [42]

Antennaria corymbosa E.E. Nelson

Relatively common in moist to wet areas, riparian or willow carr adjacent to subalpine. 10,500- 12,300'. HIN, MIN, E&W. [228, 235, 250, 282, 418, 954]

Antennaria microphylla Rydb.

Common, in open forests or meadows; from sagebrush to subalpine. 9,400-9,700'. [139, Preusser & Ellis 1101]

Antennaria parvifolia Nutt.

Common, open forests and meadows in montane. 9,000-10,200'. GUN, HIN, W. [26, 45, 112, 343, 359, 433]

Antennaria rosea Greene

Common, open forests and meadows from montane to timberline. 9,500-11,500'. GUN, HIN, W. [51, 233, 361, 378, 552

Antennaria umbrinella Rydb.

Open meadows and forests to timberline. 11, 800'. MIN, E. [740]

Arnica chamissonis Less.

Mesic slopes to meadows, montane to subalpine. 10,300'. HIN, E. [789]

Arnica cordifolia Hook.

Very common, shady forests across elevations to timberline. 11,300'. HIN, E. [218]

Arnica parryi Gray

Forests to low alpine, found in wet ponded area. 10,400'. HIN, W. [690]

Artemisia arctica Less.

Drier and rocky alpine meadows. 10,200-12,000'. HIN, MIN, E&W. [718* New to Hinsdale, 1215* New to Mineral]

Artemisia campestris L. var. *purshii* (Hook.) Cronquist syn. *A. borealis* Pall.

Common in subalpine and alpine; meadows and rocky ridges. 9,800' [1038, 1079]

Artemisia carruthii Alph. Wood ex J.H. Carruth

Infrequent; dry slopes. 9,800'. SAG, E. [1055]

Artemisia dracunculus L.

Rocky and dry slopes; other dry places across elevations to subalpine; especially near roads. 8,400-10,300. GUN, HIN, W. [525, 891]

Artemisia franserioides Greene

Common, shady forest with open floors to near timberline. [10,300-10,900'. HIN, W. [502, 511]

Artemisia frigida Willd.

Very common, open shrub and grasslands or meadows, usually drier habitat. Typically below ~10,500 ft. 9,200-10,200'. HIN, MIN, E&W. [356, 470]

Artemisia ludoviciana Nutt.

Drier open meadows up to montane elevations. 10,000'. MIN, E. [Preusser et al., 817]

Artemisia michauxiana Besser

Rocky forest openings to alpine. 10,800'. HIN, W. [741]

Artemisia parryi A. Gray *Rare

Rocky slopes and cliffside. 10,000'. MIN, E. [Preusser et al. 829]

Artemisia scopulorum A. Gray

Common in dry tundra in the alpina. 12,000'. HIN, W. [236]

Artemisia tridentata Nutt. ssp. *wyomingensis* (Beetle & A. L. Young) S.L. Welsh

Common and widespread in the area; steppe. No Preusser collections due to ample previous *collections.

Artemisia tridentata Nutt. ssp. *vaseyana* (Rydb.) Beetle

Common and widespread: steppe to almost timberline, especially in intermountain parks and adjacent to forests. 10,000'. SAG, E. [1119]

Brickellia grandiflora (Hook.) Nutt.

Rocky places and cliffside. 10,100'. MIN, E. [710 Preusser & Brodar]

Carduus nutans L. (A)

Introduced & invasive. Colorado Noxious Weed List B. Disturbed places/rangeland; open meadows. 8,800'. GUN, W. [759]

Chaenactis douglasii (Hook.) Hook. & Arn. var. *alpina* A. Gray

Rocky slopes from subalpine to alpine. [85, 1064]

Chaenactis douglasii (Hook.) Hook. & Arn. var. *douglasii*

Common in dry and rocky areas, especially in sagebrush or montane. 8,500-9,800'. [774]

Chrysothamnus viscidiflorus (Hook.) Nutt. var. *viscidiflorus*

Common in steppe shrublands and sagebrush. 10,100'. MIN, E. [708]

Cirsium arvense (L.) Scop. (A)

Introduced and invasive. Colorado Noxious Weed List B. Disturbed places. 9,600'. HIN, W. [Preusser & Broder 649]

Cirsium griseum (Rydb.) K. Schum. var. *griseum*

Mesic meadow. 8,800'. GUN, W. [748]

Cirsium parryi (A. Gray) Petr.

Common, subalpine to alpine; sometimes in wetter areas. 9,400-11,000'. GUN, HIN, MIN, SAG, E&W. [534, 620, 1118]

Cirsium scariosum Nutt.

Common in wetter areas, to alpine. 10,500'. HIN, W. [681]

Cirsium scopulorum (Greene) Cockerell

Rocky meadows and scree. 11,300-11,900'. HIN, MIN, E&W. [319, 572]

Cirsium undulatum (Nutt.) Spreng *New to survey area

Lower steppe, sagebrush, open montane; gravelly or sandy soil. 8,400'. GUN, W. [889]

Crepis atribarba A. Heller

Dry aspen woodland. 9,700'. MIN, E. [720a* New to Mineral County}

Crepis occidentalis Nutt. ssp. *occidentalis* *New to survey area

Sagebrush, dry open and rocky. 8,500. GUN, W. [906]

Crepis runcinata (E. James) Torr. & A Gray ssp. *glauca* (Nutt) Babcock & Stebbins

Moist meadow near riparian. 9,000'. GUN, W. [772]

Dieteria bigelovii (A. Gray) D.R. Morgan /R.L. Hartm. var. *bigelovii*

Rocky or dry habitats; meadows from sagebrush to subalpine; roadsides. 9,800'. HIN, SAG, E&W. [670, 1056]

Ericameria parryi (A. Gray) G.L. Nesom & G.I. Baird var. *parryi*

Common in sagebrush steppe or grass/shrublands. 9,400'. MIN, E. [701]

Erigeron acris L.

Meadows to rocky scree; montane to timberline. 9,400-11,500'. GUN, HIN, SAG, E&W. [446, 998, 1131]

Erigeron canus A. Gray

Open forests. 9,900'. MIN, E. [Preusser & Andrews 816]

Erigeron coulteri Porter

Common in forests and subalpine meadows. 10,800-12,100'. HIN, MIN, E&W. [176, 225, Preusser & Brodar 642, 1200]

Erigeron elatior (A. Gray) Greene

Common in forests and subalpine to alpine meadows and outcrops. 10,900-11,500'. HIN, SAG, E&W. [386, 791, 1087]

Erigeron eximius Greene

Aspen and conifer forests. 10,000-11,100'. HIN, W. [388, 658]

Erigeron flagellaris A. Gray

Sunny and drier areas; sagebrush, montane, subalpine. 9,100-10,400'. HIN, SAG, E&W. [496, 1142]

Erigeron formosissimus Greene

Common in meadows and forests; montane to subalpine. 10,100-11,900'. HIN, W. [451, 537, 540, 551, Preusser & Casini 1013]

Erigeron glacialis (Nutt.) A. Nelson

Common in meadows and forests; montane to alpine, generally moist areas. 11,800-12,000'. HIN, W. [395, 981]

Erigeron grandiflorus Hook.

Common in meadows, especially tundra; higher montane to alpine. 11,700-12,300'. HIN, MIN, E&W. [246, 270, 287, Preusser & Brodar 631, Preusser et al. 851]

Erigeron leiomerus A. Gray

Rocky slopes and tundra, scree; subalpine to alpine. 10,300-12,300'. MIN, SAG, E. [845 Preusser et al., Preusser & Most 946, 1150]

Erigeron pinnatisectus (A. Gray) A. Nelson

Common on rock outcrops, cliffside, scree, rocky tundra. 10,300-12,300'. HIN, MIN, SAG, E&W. [299, 397, Preusser et al. 847, 945]

Erigeron pumilus Nutt.

With sagebrush 8,000'. GUN, W. [4]

Erigeron speciosus (Lindl.) DC.

Common in montane forests, occasionally in sagebrush; to subalpine. 9,200-9,600'. HIN, W. [339, 480]

Erigeron subtrinervis Rydb. ex. Porter & Britton

Common forests and meadows; to timberline. 10,100-10,500'. HIN, W. [536, 692]

Erigeron vagus Payson *New to survey area

Infrequent in high alpine talus and scree. 13,100'. SAG, E. [867* New to Saguache County]

Erigeron vetensis Rydb.

Common in meadows, typically drier and sunnier habitats and rocky areas; from sagebrush to subalpine. 9,200-11,100'. GUN, HIN, W. [23, 67, 166, 191, 193, 1068]

Gnaphalium exilifolium A. Nelson

Wet areas. 10,100'. MIN, E. [Preusser et al. 828]

Gnapthalium uliginosum L. (A)

Introduced. Wet areas. 10,500'. MIN, E. [1204]

Grindelia hirsutula Hook & Arn. var. *decumbens* (Greene)

Meadows and open forests; sagebrush to montane. 9,400’ MIN, E. [700]

Helianthella parryi A. Gray

Forests, meadows, sometimes roadsides in compacted soil, or cliffside; montane to subalpine 9,100-9,900’. MIN, SAG, E. [1098, 1127, 1182]

Helianthella quinquenervis (Hook.) A. Gray

Open forests and meadows. 10,000’. SAG, E. [1120]

Heterotheca pumila (Greene) Semple

Common across habitats to alpine. 9,500-10,800’. HIN, E&W. [349]

Heterotheca villosa (Pursh) Shinners var. nana (A. Gray) Semple

Common across habitats; often dry or rocky areas. 8,400-9,100’. GUN, MIN, E&W. [163, 1188]

*Hymenopappus newberryi (*A. Gray) I.M. Johnston

Loose scree, gullies, open forests. 8,500-9,300’. GUN, HIN, W. [113, 475]

Hymenothrix dissecta (A. Gray) B.G. Baldwin

Open forests; especially montane. 10,000-10,200’. MIN, SAG, E. [711, 1121]

Hymenoxys grandiflora (Torr. & A. Gray ex A. Gray) Parker

Common, especially in alpine tundra. 10,900-12,200’. HIN, MIN, E &W. [254, 294, 381]

Hymenoxys hoopesii (A. Gray) Bierner

Moist forests and near streams. 11,500-12,000’. HIN, MIN, E&W. [322, 566]

Hymenoxys richardsonii (Hook.) Cockerell var. *floribunda* (A. Gray) Parker

Open areas; grassland, shrubland, sagebrush; sometimes ponderosa and bristlecone parks. 9,200-9,700’. HIN, W. [460, 465]

Lactuca tartarica (L.) C.A. Mey. var. pulchella (Pursh) Breitung

Open hillside and meadows. 10,100’. MIN, E. [Preusser & Brodar 707]

Oreochrysum parryi (A. Gray) Rydb.

Very common in forests; to timberline. 9,700-12,600’. HIN, SAG, E&W. [505, 533, Preusser & Brodar 657, 1031]

Packera cana (Hook.) W.A. Weber & Á. Löve

Common across habitats; sagebrush to subalpine. 11,000’ HIN, W. [167]

Packera crocata W.A. Weber & Á. Löve

Wetter meadows and riparian, mostly observed in montane in this survey. 9,300-10,000’ E & W. [704]

Packera fendleri (A. Gray) W.A. Weber & Á. Löve

In loose rock and gravel; montane and hoodoos. 9200’. HIN, W. [477]

Packera neomexicana (A. Gray) W.A. Weber & Á. Löve var. *mutabilis* (Greene) W.A. Weber & Á. Löve

Dry steppe and forests; montane to subalpine. 8,500-10,900’. GUN, HIN, W. [86, 514]

Packera pseudaurea W.A. Weber & Á. Löve var. *flavula* (Greene) W.A. Weber & Á. Löve

Streamsides and moist meadows. 9,000’. GUN, W. [768]

Packera streptanthifolia (Greene) Weber & Á. Löve

Common across habitats to subalpine. 9,000-11,100’. GUN, HIN, W. [60, 110, 167]

Packera werneriifolia (A. Gray) W.A. Weber & Á. Löve

Common across habitats; sagebrush to alpine, especially drier and rocky places. 9,300-12,900’. GUN, HIN, MIN, SAG, E&W. [62, 360, 729, 1032]

Pericome caudata A. Gray *New to survey area

Rocky cliffside. 9,100'. MIN, E. [1184 *New to Mineral County].

Pyrrocoma uniflora (Hook.) Greene var. *uniflora*

Relatively common in meadows from montane to alpine. 11,400-12,000'. HIN, W. [251, 391, 546]

Rudbeckia laciniata L. var. *ampla* (A. Nelson) Cronquist *New to survey area

Montane, streamside 8,500'. MIN, E. [1176]

Senecio amplectens A. Gray var. *amplectans*

Meadows, sometimes wet places; subalpine and alpine. 11,800-12,800'. HIN, SAG, E&W. [396, 1194]

Senecio bigelovii (A. Gray) var. *hallii* (A. Gray)

Meadows and forests; subalpine. 11,300-12,200'. HIN, MIN, E&W. [575, Preusser et al., 852]

*Senecio crassulu*s A. Gray

Mostly in alpine meadows and especially willow carr gaps, also subalpine. 12,000'. HIN, W. [256]

Senecio eremophilus Richardson var. *kingii* (Rydb.) Greenm.

Rocky forest opening below cliff. 9,100'. MIN, E. [1183]

Senecio fremontii Torr. & A. Gray var. *biltoides (*Greene) Cronquist

Rocky places, especially in the alpine, but also subalpine. 12,000'. HIN, W. [Preusser & Brodar 624]

Senecio integerrimus Nutt.

Common, typically in sunnier areas; across elevations, but more often subalpine to alpine. 9,300-11,200'. GUN, HIN, W. [387, 874]

Senecio pudicus Greene

Rocky outcrops and slopes; especially montane and subalpine. 10,000'. HIN, SAG, E&W. [667, 1144]

Senecio soldanella A. Gray

Typically alpine; rocky places and scree. 13,000'. HIN, W. [Preusser & Brodar 615]

Senecio spartioides Torr. & A. Gray

Montane areas, drier and open forests or meadows. 9,000'. MIN, SAG, E. [1076, 1164]

Senecio triangularis Hook.

Common in wet areas, or occasionally in rocky filled drainages; subalpine to alpine. 10,200-13,000'. HIN, MIN, E&W. [253, 320, 574, Preusser & Brodar 612, 714]

Senecio wootonii Greene

Subalpine, open aspen forest. 11,500'. MIN, E. [963]

Solidago cf. *velutina* DC.

Montane near stream. 8,500' MIN, E. [1177]

Solidago multiradiata Ait. var. *scopulorum* A. Gray

Common, in forests and meadows; from montane to alpine. 8,800-12,100'. GUN, HIN, W. [392, Preusser & Brodar 646, Preusser & Brodar 648, 756]

Solidago nana Nutt. *New to survey area

Open lodgepole woodland. 9,800' SAG, E. [1126]

Solidago simplex Kunth. var. *simplex*

Common, in forests and meadows; from montane to alpine can hybridize with the previous. 10,000-12,200'. HIN, W. [259, 422, 576, 1010]

Symphyotrichum foliaceum *New to survey area

Subalpine forest. 11,400', HIN, W. [560]

Symphyotrichum spathulatum (Lindl.) G.L. Nesom

Wet and mesic meadows; subalpine. 9,000-10,200'. HIN, MIN, E&W. [510, 538, 807]

Taraxacum ceratophorum (Ledeb.) DC.

Open subalpine to alpine meadows; rocky places. 12,300-12,500'. MIN, SAG, E. [Preusser & Casini 1030 *New to Saguache County, Preusser et al. 839]

Taraxacum officinale F.H. Wigg. (A)

Introduced, very common. Throughout survey area to subalpine, especially where cattle and sheep graze. 9,000-12,100'. GUN, MIN, E&W. [123, 968]

Taraxacum scopulorum (A. Gray) Rydb

Subalpine forest to alpine. 11,400'. MIN, E. [960* New to Mineral County]

Tetraneuris acaulis (Pursh) Greene

Dry places, especially in sagebrush and open montane parks, but can be found into the alpine. [8]

Tonestus lyallii (A. Gray) A. Nelson

Alpine upland. 12,000'. HIN, W. [979* New to Hinsdale County]

Tonestus pygmaeus (Torr. & A. Gray) A. Nelson

Rocky alpine areas and tundra. 12,300-13,000'. MIN, E. [581, Preusser et al. 846]

Townsendia exscapa (Richardson) Porter

Open montane forest. 9,000'. GUN, W. [107]

Townsendia rothrockii A. Gray ex Rothrock

Spruce-fir forest, meadow, close to alpine. 12,000'. HIN, W. [985]

Tragopogon dubius Scop. (A)

Introduced. Disturbed areas, open meadows in steppe and forest adjacent. 8,500'. GUN, W. [87]

Xanthisma coloradoense (A. Gray) D.R. Morgan & R.L. Hartm. *Rare

Open and flat mountain park meadow. 10,000'. HIN, E. [953]

Berberidaceae

Berberis repens L.

Common, especially in montane forests with douglas-fir, ponderosa, aspen. 9,000'. GUN, W. [2]

Betulaceae

Alnus incana (L.) Moench ssp. *tenuifolia* (Nutt.) Brietung

Common, streamsides and wet areas; typically montane elevations. 9,200'. GUN, W. [131]

Boraginaceae

*Eritrichium nanum (*Vill.) Schrad. ex Gaudin var. *elongatum* (Rydb) Cronquist

Tundra meadow. 12,300'. HIN, W. [582]

Hackelia floribunda (Lehm.) I.M. Johnst.
Often near cliffs and rock outcrops; montane. 9,100-9,900'. SAG, MIN, E. [931, 1136]
Lappula occidentalis var. *cupulata* (S. Watson) Greene
Open forests and sometimes in disturbed soil; montane to subalpine. 9,000- 9,700'. GUN, MIN, E&W. [109, 362, 723, 1074]
Lithospermum multiflorum Torr ex. A. Gray
Infrequent in open douglas-fir montane forest. Collection from dolomitic soil. 9,100'. GUN, W. [102]
Mertensia bakeri Greene
Sunny montane slopes. 9400'. HIN, W. [894]
Mertensia ciliata (James ex Torr.) G. Don
Common in forests and moist areas, streamsides from montane to alpine. Often forming large patches. 9700-12,115'. GUN, HIN, MIN, SAG, E&W. [154, 208, 310, 485]
Mertensia coriacea A. Nels.
Higher subalpine forests; bristlecone and aspen, also open alpine upland. 11,100-12,000'. HIN, SAG, E&W. [947, 977]
Mertensia franciscana Heller.
Common in forests and moist areas, especially near streams from montane to subalpine. 9500-12,000'. HIN, W. [255, 353, 413, 445]
Mertensia lanceolata DC. var. *lanceolata*
Common throughout habitats, typically lower elevations than the next var.; in sagebrush and montane. 7720'. GUN, W. [40]
Mertensia lanceolata DC. var. *nivalis* (S. Watson) L.C. Higgins
Common in subalpine forests and alpine, various habitats. 9200-11800'. HIN, MIN, E &W. [219, 474, 733]
Oreocarya bakeri Greene.
Dry meadows around sagebrush. 8500'. GUN, W. [81]
Oreocarya weberi (I.M. Johnst.) W.A. Weber *Rare
Dry meadows; mountain big sagebrushand grasslands. 9,800-10,100'. SAG, E. [Preusser & Most 937, 1061]

Brassicaceae

Alyssum desertorum Stapf. (A) *New to survey area
Disturbed areas, often near cattle rangeland. 8,550-10,350'. GUN, HIN, E&W. [11, 797]
*Berteroa incana (*L.) DC. (A)*New to survey area
Introduced. Infrequent; in disturbed compacted soil. 9,800'. SAG, E. [1128*New to Saguache County]
Boechera consanguinea (Greene) Windham & Al-Shehbaz *New to survey area
Dry douglas-fir and aspen woodland. 9,500'. HIN, W. [332]
Boechera crandallii (B.L. Robinson) W.A. Weber *Rare
Dry south facing hillsides; montane forests. 9,200-9600'. GUN, W. [27, 55]
Boechera drepanoloba (Green) Windam & Al-Shehbaz
Spruce woodland and open patches of alpine willow carr. 11,500-12,000'. HIN, W. [257,

443]

Boechera fendleri (S. Watson) W.A. Weber

Ponderosa and/or Douglas-fir forest, drier hillsides. 9,500'. GUN, HIN, W. [56, 351]

Boechera grahamii (Lehm.) Windham & Al Shehbaz *New to survey area

Open ponderosa and sagebrush. 9,000.' GUN, W. [7]

Boechera gunnisoniana (Rollins) W.A. Weber *Rare

Dry douglas-fir and ponderosa park. 9,300.' GUN, W. [25]

Boechera lemmonii (S. Watson) W.A. Weber

Rocky outwash in alpine. 11,700.' MIN, E. [Preusser & Brodar 731]

*Boechera lignifera (*A. Nelson) W.A. Weber * New to survey area

Dry douglas-fir and ponderosa park. 9,600.' GUN, W. [54]

Boechera oxylobula (Greene) W.A. Weber

Dry shrubby slopes and open douglas-fir woodlands. 8,800-9,600'. GUN, HIN, W. [91, 103, 358]

Boechera pallidifolia (Rollins) W.A. Weber *New to survey area

Dry douglas-fir and ponderosa woodland. 8,000-9,600'. GUN, W [58, 104]

Boechera retrofracta (Graham) Love & Love

Ponderosa and sagebrush park. 9,000'. GUN, W [10, 11]

Boechera stricta (Graham) Al-Shehbaz

Common in forests. 9,000-9,800'. GUN, HIN, W. [57, 134, Preusser & Brodar 656]

Capsella bursa-pastoris (L.) Medik. (A)

Wet meadow. 10,500'. [785]

Cardamine cordifolia A. Gray

Very common, along streams and in wetlands. From shady forested streams to willow cars and alpine wet meadows and streams. 9,000-12,250'. [119, 156, 214, 273]

Caulanthus crassicaulis (Torr.) S. Watson *New to survey area

Infrequent in sagebrush and dry hillsides. 8,500'. GUN, W. [88]

Chorispora tenella (Pall.) DC (A)

Disturbed areas, particular collection streamside near cattle. 9,000'. GUN, W. [146]

Descurainia incana (Bernh. ex Fisch. & C.A. Mey.) Dorn

Common, meadows from moist to dry, sometimes in forests from montane to subalpine. 8,900-11,300'. GUN, HIN, W. [197, 354, 696, 777]

Descurainia incisa (Engelm.) Britt. ssp. *incisa*

Disturbed area, once roadside in montane, once in periodically wet area in the alpine. 9,100-12,250'. MIN, SAG, E. [289, 1080]

Draba albertina Greene

Wet meadows and streamside. 9,000-11,100'. GUN, HIN, W. [142, 180]

Draba aurea Vahl ex Hornem.

Common and widespread, found in a wide variety of habitats from cliff side to stream adjacent. 9,500-12,100'. [267, 309, 352, 436, 499, 1110]

Draba cana Rydb. *New to survey area

Gravelly slopes and rocky outwashes, alpine. 11,700-12,000'. HIN, MIN, E&W. [732, 980]

Draba crassifolia Graham

Gentle slope; spruce forest in subalpine. 11,400'. MIN, E. [1223]

Draba fladnizensis Wulfen *Rare

Alpine; various habitats, from wet to dry, often gravelly or rocky. 11,400- 13,046'. HIN, MIN, E&W. [627, 961]

Draba smithii Gilg ex O.E. Schulz *Rare

Under rock overhang. Rare plant monitored by Colorado Natural Heritage Program. 10,900'. MIN, E. [1146]

Draba spectabilis Greene

Streamside in montane willow carr. 9,200'. GUN, W. [128]

Draba streptobrachia R.A. Price *Rare

Alpine and subalpine, various habitat; volcanic tuff ash soil, willow carr, spruce forest 11,300-12,100'. HIN, W. [224, Preusser & Brodar 636]

Erysimum capitatum (Douglas ex Hook.) Greene

Common across habitat in sunnier and often rocky places; montane to alpine. 9,000-12,100'. GUN, MIN, E&W. [1, 302, 965] Copper colored corolla morph collected #965.

Lepidium alyssoides A. Gray

Open meadow hillside; montane. 9,400'. MIN, E. [698]

Lepidium montanum Nuttall.

Open montane forests and in dry shurb or grasslands. 8,800-10,000'. GUN, HIN, MIN, E&W. [111, 478, 820]

Lepidium ramosissimum A. Nelson

Roadside. 9,700'. HIN, W. [678]

Noccoa fendleri (A. Gray) Holub ssp. *glauca* (A. Nelson) Al-Shehbaz & M. Koch

Very common in subalpine forests as well as in the alpine in moist places. 10,200-12,700'. GUN, HIN, MIN, E&W. [158, 290, 456, 591, 637, Preusser & de Sobrino 885]

Physaria floribunda Rydb.

Open douglas-fir forest, dry. 9,100'. GUN, W. [100]

Physaria montana (A. Gray) Greene

Open, dry, rocky meadows. 10,100- 10, 400'. SAG, E. [926, 939]

Physaria rollinsii G.A. Mulligan *New to survey area *Rare

In light colored volcanic ash soil, bristlecone pine woodland. 10,000'. SAG, E. [1071]

Rorippa alpina (S. Watson) Rydb. *New to survey area

Disturbed places, wetland and below high-water mark of a lake; native annual. 9,000-11,000'. MIN, E. [810, 1174]

Smelowskia americana

Alpine, rocky outcrops and willow carr meadows. 12,100-13,100'. HINS, W. [607, 647]

Sysimbrium altissimum L. (A.)

Introduced. Compacted soil of dirt road. 10,900'. MIN, E. [1148]

Sisymbrium linifolium (Nutt.) Nutt. ex Torr. & A. Gray

Open douglas-fir woodland. 9,100'. GUN, W. [99]

Thlaspi arvense L.

Mesic meadow. 8,800'. GUN, W. [751]

Turritus glabra L.

Vegetated pocked of rocky talus, subalpine. 11,500'. GUN, W. [1000]

Cactaceae

Echinocereus triglochidiatus Engelm. *New to survey area

Dry S facing hillside. 8,500'. GUN, W. [92]

Opuntia fragilis (Nutt.) Haw. *New to survey area

Dry S facing slope, red soil. 8,500'. GUN, W. [911* New to Gunnison County]

Pediocactus simpsonii (Engelm.) Britton & Rose

Dry slopes. 8,500'. GUN, W. [907]

Campanulaceae

Campanula parryi A. Gray var. *parryi*

Drier montane to subalpine slope. 10,300'. HIN, W. [573]

Campanula rotundifolia L.

Common in multiple habitats, moist or dry. 9,800-10,500'. HIN, SAG. [423, 530, 1054]

Campanula uniflora L.

Open grassy meadow. 10,800'. HIN, W. [516]

Cannabaceae

Humulus neomexicanus (A. Nelsom & Cockerell) Rydb.

Near cliffs and rock outcrops or fencelines. 9,100'. MIN, E. [1185]

Caprifoliaceae

Linnea borealis L. var. *longiflora* Torr.

Shady forests or woodlands, aspen and spruce. 9,900-10,300'. HIN, W. [369, 578]

Lonicera involucrata Banks ex Spreng

In moist areas, streamside, wet depressions, or willow carr to alpine. 9,200'. GUN, W. [71, 133, 904]

Symphoricarpos rotundifolius A. Gray

Drier areas. 8,500'. GUN, W. [904]

Caryophyllaceae

Arenaria lanuginosa (Michx.) Rohrb. var. *saxosa* (A. Gray) Zarucchi, R.L. Hartm. & Rabeler

Rocky alpine, in snowmelt streambed. 12,200'. SAG, E. [1083]

Cerastium arvense L. ssp. *strictum* Gaudin

Common, especially in the subalpine. 11,000-11,500'. HIN, SAG, E&W. [175, 553, 554, 949, 1088]

Cerastium beeringianum Cham. & Schltdl.

Common in multiple habitats, often in wet places. 10,200-12,200'. GUN, HIN, MIN, E&W. [175, 300, Preusser & Sobrino 884, 1088]

Cherleria biflora (L.) A.J. Moore & Dillenb.

Forested slope. MIN, E. 11,400'. [957]

Cherleria obtusiloba (Rydb.) A.J. Moore & Dillenb.
Flat upland tundra. 12,300'. HIN, W. [Preusser & Brodar 584]
Eremegone fendleri
Rock outcrop, mountane to high alpine. 9,600-13,000'. SAG, E. [Preusser & Casini 1043, Preusser & Ellis 1099]
Moehringia macrophylla (Hook.) Torr. *New to survey area
Moist area next to a small stream. 10,000' SAG, E. [Preusser & Most 936]
Paronychia sessiflora Nutt.
Rocky and dry hillside. 9,600'. HIN, W. [898]
Pseudostellaria jamesii (Torr.) W.A. Weber & R.L. Hartm. *New to survey area
Cliffside. 9,200'. SAG, E. [1139* New to Saguache County]
Sagina saginoides (L.) H. Karst.
Scree, volcanic ash, and riparian. 10,400-12,800'. HIN, SAG, E&W. [1011, Preusser & Casini 1016, 1035]
Silene acaulis (L.) Jacq.
Rock outcrop. 12,000'. MIN, E. [306]
Silene drummondii Hook. ssp. *striata* (Rydb.) J.K. Morton
Spruce forest. 11,800', HIN, W. [268]
Silene hitchguirei Bocq.
Scree and alpine meadow. 12,400-14,000'. MIN, SAG, E. [742, 863]
Silene menziesii Hook.
Forest floor, shady hillsides. 10,300'. HIN, W. [518]
Silene scouleri Hook.
Open woodland with sagebrush and blue spruce. 9,000'. GUN, W. [770]
Stellaria irrigua Bunge *Rare
Rocky alpine. 12,500'. SAG, E. [1084]
Stellaria longipes Goldie ssp. *longipes*
Common, open woodlands, forests, wet meadows. 9,400-11,400'. GUN, HIN, E&W. [74, 226, 437, 787]
Stellaria sanjuanensis (Greene ex Rydb.) M.T. Sharples and E.A. Tripp
Steep, rocky, outwash. 11,800'. MIN, E. [728]
Stellaria umbellata Turcz.
Alpine meadow. 12,300'. SAG, E. [Preusser & DeSobrino 1052]

Cornaceae
Cornus sericea L. ssp. *sericea*
Mesic and wetter areas, sometimes fence lines and roadside. 8,500-8,800'. HIN, SAG, E&W. [900, 1212]

Crassulaceae
Rhodiola integrifolia Raf.
Common across habitats, sometimes near water. 10,100-12,300'. HIN, MIN, E&W. [234, 277, 730, 920]

Rhodiola rhodantha (A. Gray) Jacobsen
Wet places, especially in the alpine. 12,200'. MIN, E. [286]
Sedum lanceolatum Torr.
Across habitats from sagebrush to alpine. 11,000-11,500'. HIN, W. [169, 547]

Cyperaceae
Carex albonigra Mack.
Streamside. 11,100-11,500'. GUN, SAG, E&W. [999, 1089]
Carex aquatilis Wahl.
Common, wet areas. 8,700-10,500'. GUN, HIN, SAG, E&W. [204a, 416, 901a, Preusser & Ellis 1100]
Carex arapahoensis Clokey
Wet meadow. 11,000'. HIN, W. [181]
Carex atrosquama Mackenzie
Common in tundra and meadows. 11,400-12,300'. MIN, E. [275, 959]
Carex aurea Nutt.
Streamside. 10,400-10,500'. HIN, W. [483, 788]
Carex bella Bailey
Gentle subalpine slope. 11,300'. HIN, W. [221]
Carex canescens L. ssp. *canescens*
Dry talus. 12,100'. HIN, W. [1009]
Carex chalciolepis Holm
Meadows, alpine and subalpine. 11,700-12,500'. HIN, W. [227, 454, 603]
Carex disperma Dewey
Saturated soil in stagnant water. 10,100'. HIN, W. [440]
Carex douglasii Boott.
Roadside. 9,100'. SAG, E. [1078]
Carex duruiscula C.A. Mey.
Dry areas, sometimes compacted soils. 9,100-9,300'. GUN, HIN, W. [19, 521]
Carex ebenea Rydb.
Shady forests, wet areas. 10,300-11,400'. HIN, W. [376, 569]
Carex elynoides Holm
Alpine, gravelly meadow. 12,000'. HIN, W. [984]
Carex fuliginosa Schkuhr. *New to survey area
Flat tundra, streamside. 12,300'. MIN, E. [285]
Carex geyeri Boott
Woodland slopes. 9,700-10,000'. GUN, W. [138, Preusser & De Sobrino 879]
Carex haydeniana Olney
Spruce-fir forest. 11,000'. GUN, W. [989]
Carex illota Bailey
Flat meadow adjacent to stream. 12,300'. MIN, E. [281]
Carex inops L.H. Bailey ssp. *heliophila* (Mack.) Crins
South facing slopes. 8,500-9,000'. GUN, HIN, W. [14, 901]

Carex cf. *leporinella* Mack.
Swamp, slow moving water. 11,500'. GUN, W. [882]
Carex macloviana d'Urv.
Upland on dry hillside. 10,500'. HIN, W. [402]
Carex nova Bailey
Wet meadow. 11,300'. HIN, W. [202]
Carex obtusata Lilj.
Wet depression on sunny hillside. 12,700'. HIN, W. [590]
Carex pachystachya Cham. ex Steud.
Streamside. 10,500'. HIN, E. [415]
Carex pellita Willd.
Wet depression and slow-moving water. 10,000-10,500'. HIN, MIN, E&W. [417, Preusser et al. 30]
Carex petasata Dewey
Meadow. 10,000'. MIN, E. [Preusser et al. 823]
Carex phaeocephala Piper
Meadow and wet depressions. 12,100-12,700'. HIN, SAG, E&W. [Preusser & Brodar 596, 1082]
Carex praticola Rydb.
Riparian and forest. 9,700-10,000'. HIN, W. [366, 679]
Carex rossii Boott
Forest meadow. 12,000'. HIN, W. [Preusser & Casini 1003]
Carex saxatilis L.
Wet sloping meadow near spruce forest. 11,300'. HIN, W. [204]
Carex scopulorum Holm
Common, streamsides and meadows, especially in alpine. 10,500-12,400'. HIN, MIN, SAG, E&W. [310a, 276, 405, Preusser & De Sobrino 1053, 1225]
Carex siccata Dewey
Common, forests and meadows, often upland. 9,000-12,400'. GUN, HIN, MIN, E&W. [15, 50, 210, 229, 444, 583, 725, 849, 956],
Carex stevenii (T. Holm) Kalela
Streamside, riparian. 10,300-10,500'. HIN, W. [484, 685]
Carex tahoensis Smiley * New to survey area
Riparian. 10,000'. HIN, W. [673]
Carex utriculata Stokes
Riparian, sometimes in slow or stagnant water. 9,700-10,500'. HIN, W. [404, 675, Preusser & Casini 1017]
Carex vesicaria L.
Common, wetlands, roots often submerged. 10,000-11,000'. GUN, HIN, W. [508, 793, Preusser & De Sobrino 877, Preusser & De Sobrino 878]
Eleocharis parvula (Roem. & Schult.) Link ex Bluff, Nees & Schauer *New to survey area
Riparian. 10,400'. HIN, W. [Preusser & Casini 1019]
Eleocharis quinqueflora (Hartm.) O. Schwarz

Riparian. 10,400'. HIN, W. [Preusser & Casini 1022]

Kobresia myosuroides (Vill.) Fiori & Paol.

Meadow with willows. 11,800'. SAG, E. [858]

Elaegnaceae

Sheperdia canadensis Nutt.

Woodlands and forests. 9,600-10,300'. GUN, HIN, W. [61, 377]

Ericaceae

Arctostaphylos uva-ursi (L.) Spreng.

Understory in montane forests. 9,300'. GUN, W. [24]

Moneses uniflora (L.) A. Gray

Shady boulder field. 11,000'. HIN, W. [379]

Orthilia secunda (L.) House

Forest floor. 9,700-10,800'. HIN, W. [438, Preusser & Brodar 655]

Pyrola asarifolia Michx.

Forest floor. 9,700-10,000'. HIN, W. [368, Preusser & Brodar 652]

Pyrola chlorantha Sw.

Forest floor. 9,500'. HIN, W. [335]

Vaccinium cespitosum Michx.

Common, alpine tundra meadows and talus. 12,100-12,400'. HIN, MIN, E&W. [314, 633, Preusser et al. 841]

Vaccinium myrtillus L.

Forests and streamside. 10,900-11,800'. HIN, E&W. [269, 790]

Euphorbiaceae

Euphorbia brachycera Engelm.

Sagebrush and montane, often compacted. 9000'. GUN, MIN, E&W. [116, 1162]

Fabaceae

Astragalus agrestis Douglas ex G. Don.

Open slope. 10,100'. SAG, E. [Preusser & Most 942]

Astragalus alpinus L.

Common across habitats. 8,900-12,200'. GUN, HIN, W. [64, 159, 432, 645, 1008]

Astragalus anisus M.E. Jones *Rare

Rare but locally common closer to Gunnison Basin. Open steppe meadow. 8,500'. GUN, W. [115]

Astragalus aretoides (M.E. Jones) Barnaby *New to survey area

Steep slope, in white ashy soil. 9,200'. HIN, W. [476]

Astragalus convallarius Greene

Open woodlands. 9,000-9,300'. GUN, W. [43, 106]

Astragalus drummondii Douglas ex Hook

Dry slope. 8,500'. GUN, W. [1213]

Astragalus hallii A. *Gray* var. *hallii*
Sunnier hillsides and open woodlands. 8,400-10,600'. GUN, MIN, SAG, E&W. [812, 892, 950]
Astragalus iodopetalus (Rydb.) Barneby *Rare
Open douglas-fir forest. Dolomitic parent material. 9,100'. GUN, W. [101]
Astragalus kentrophyta A. Gray var. *tegetarius* (S. Watson) Dorn
In light volcanic ash soil, montane slope. 10,000'. SAG, E. [1072]
Astragalus molybdenus Barneby *New to survey area
Dry talus. 12,100'. HIN, W. [Preusser & Casini 1004* New to Hinsdale County]
Astragalus parryi Gray *Rare
Dry slope. 8,500'. GUN, W. [1220]
Astragalus robbinsii (Oakes) A. Gray var. *minor* (Hook.) Barneby
Forested hillside. 10,300'. HIN, W. [500]
Hedysarum occidentale Greene
Dry slopes. 9,200-9,600'. HIN, W. [334, 473]
Lathyrus laetivirens Greene ex Rydb.
Common in forests and woodlands. 9,700'. GUN, W. [135]
Lotus wrightii (A. Gray) Greene *New to survey area
Infrequent. Dry sagebrush steppe. 8,500'. GUN, W. [908]
Lupinus argenteus Pursh var. *rubricaulis* (Greene) S.L. Welsh
Wet meadow. 11,100'. HIN, W. [183]
Lupinus kingii S. Watson
Uncommon, dry steppe iron soil. 8,500'. GUN, W. [909]
Lupinus sericeus Pursh
Sagebrush and open woodlands, 9,100-9,400'. GUN, HIN, MIN, E&W. [20, 720, 919]
Medicago sativa L. (A)
Open ponderosa park. 9,000'. MIN, E. [1163]
Oxytropis deflexa (Pall.) DC var. *deflexa*
Rocky outwash. 11,800'. MIN, E. [739]
Oxytropis lambertii Pursh
Semi-shaded meadows. 10,300-10,500'. HIN, SAG, E&W. [495, 951]
Oxytropis lambertii Pursh x. *sericea* ined.
Woodland. 9,500'. HIN, W. [333]
Oxytropis parryi A. Gray *Rare
Dry flat area in volcanic ash soil. 10,100'. SAG, E. [938]
Oxytropis sericea Nutt. var. *sericea*
Open meadow. 10,400'. SAG, E. [924]
Oxytropis splendens Douglas ex Hook.
Open forest and woodland. 10,000–10,500'. HIN, W. [401, 665]
Thermopsis rhombifolia (Nutt. ex Pursh) Nutt. ex Richardson
Creekside. 9,000'. HIN, W. [899]
Trifolium dasyphyllum Torr. & A. Gray
Common, subalpine and alpine, often in scree. 11,800-13,000'. HIN, MIN, E&W. [324, Preusser & Brodar 609, Preusser et al. 843]

Trifolium longipes Nutt.
Streamside and wet meadow. 9,00-11,100'. GUN, HIN, E&W. [145, 165, 794]
Trifolium nanum Torr.
Alpine and subalpine upland. 12,000-12,300'. HIN, MIN, E&W. [Preusser et al. 844, 976]
Trifolium parryi A. Gray
Meadows and forests; alpine to subalpine. 11,400-12,700'. HIN, SAG, E&W. [394, 548, 595, 859]
Trifolium repens L. (A)
Shady slopes. 10,300-11,000'. HIN, W. [385, 486]
Trifolium wormskjoldii Lehm. var. *wormskjoldii*
Streamside. 9,400'. SAG, E. [1134]
Vicia americana Muhl. ex Willd. var. *americana*
Aspen forest. 8,800'. SAG, E. [1113]

Gentianaceae
Comastoma tenellum (Rottb.) Toyok
Alpine meadow. 12,300- 2,500'. MIN SAG, E. [743, Preusser & De Sobrino 1048]
Frasera speciosa Douglas ex Griseb.
Open woodland. 10,100'. SAG, E. [Preusser & Most 941]
Gentiana affinis Griseb.
Open mesic meadow. 9,800'. SAG, E. [1124]
Gentiana algida Pall.
Alpine meadows. 12,300-12,500'. MIN, E. [Preusser et al. 837, 1157]
*Gentianella amarell*a (L.) Börner ssp. *heterosepala* (Engelm.) Holub
Moist places, forests, alpine willow carr. 10,100-11,600'. HIN, W. [439, 567]
Gentiana amarella (L.) Börner *s*sp. *acuta (Michx.) J.M. Gillet*
Moist places, forests. 9,700-10,500'. HIN, E&W. [617, 653, 783]
Gentiana parryi Engelm.
Meadows and open woodlands. 10,000-11,600'. HIN, MIN, E&W. [662, 724, 792]
Gentiana prostrata Haenke
Tundra. 12,200'. HIN, W. [Preusser & Brodar 638]
Gentianopsis barbellata (Engelm.) Iltis
Rocky forest. 11,900'. SAG, E. [Preusser et al., 855]
Gentianopsis detonsa (Rottb.) Ma var. *elegans* (A. Nelson) N. Holmgren
Moist meadow. 11,000'. HIN, E. [795]
Gentianopsis thermalis (Kuntze) Iltis.
Wet meadows, wetland. 10,900-12,200'. MIN, E. [291, 1167]
Swertia perennis L.
Wet areas. 10,400-11,000'. HIN, MIN, E&W. [694, 1171]

Geraniaceae
Geranium richardsonii Fisch. & Trautv.
Common throughout habitats; forests, near streams, scree. 9,000-10,100'. GUN, W. [122,

143, 427]

Grossulariaceae

Ribes cereum Douglas

Common in sagebrush and montane; dry hillsides. 8,700-10,200'. GUN, HIN, W. [34, 532]

Ribes inerme Rydb.

Woodlands, moist places. 9,000-10,400' GUN, HIN, W. [147, 501. 676, 669]

Ribes lacustre (Persoon) Poiret

Forests, boulder field. 9,900-11,900'. HIN, MIN, SAG, E&W. [383, 856, Preusser et al. 834]

Ribes laxiflorum Pursh

Spruce-fir forest. 11,000'. GUN, W. [987]

Ribes montigenum McClatchie

Spruce-fir forest. 11,300'. HIN, W. [223]

Ribes wolfii Rothr.

Woodlands and forest. 10,300-11,000'. GUN, HIN, W. [373, 994]

Hydrophyllaceae

Phacelia bakeri (Brand) J. F. Macbr

In loose soils or talus. 10,200-13,200'. HIN, MIN, SAG, E&W. [717, 866, 1025, 1037]

Phacelia glandulosa Nutall.

Talus area. 9,400'. MIN, E. [Preusser et al. 835]

Phacelia sericea (Graham ex Hook.) A. Gray var. *sericea*

Rocky areas. 12,100'. MIN, E. [305]

Iridaceae

Iris missouriensis Nutt.

Wet areas, especially in montane. 9,000' GUN, W. [120]

Juncaceae

Juncus arcticus Willd. var. *balticus* (Willd.) Trautv.

Meadows or woodland. 9,200-10,500'. HIN, W. [467, 693]

Juncus drummondii E. Mey.

Alpine meadows, wet areas. 11,800-12,400'. SAG, E. [Preusser & Casini 1028, Preusser & Casini 1029, Preusser & De Sobrino 1049]

Juncus mertensianus Bong. *New to survey area

Wetland near beaver pond. 10,500'. MIN, E. [1203]

Luzula parviflora (Ehrh.) Desv.

Common in streamsides and wetter forests. 9,600-11,400'. GUN, HIN, W. [209, Preusser & De Sobrino 881, Preusser & De Sobrino 886]

Luzula spicata (L.) DC

Alpine meadows. 12,100-12,300'. SAG, E. [Preusser & De Sobrino 1050, 1081]

Lamiaceae

Draconcephalum parviflorum Nutt.

Roadside in wetter area. 10,100'. HIN, W. [543]

Mentha arvensis L.

Adjacent to riparian. 8,800'. GUN, W. [757]

Liliaceae

Calochortus gunnisonii S. Watson

Common across habitats, especially woodlands, forest openings, and meadows. [527, 663]

Gagea serotina (L.) Ker Gawl.

In spruce-fir forests, relatively uncommon. 11,000'. HIN, W. [975]

Linaceae

Linum lewisii Pursh

Meadows. 9,200-10,200'. HIN, W. [462, 535]

Loasaceae

Mentzelia albicaulis

Montane and steppe, rocky slopes. 8,500'. HIN, W. [912]

Mentzelia rusbyi Wooton

Montane, rocky slopes. 8,500-9,100'. HIN, MIN, E&W. [1161, 1206]

Malvaceae

Sidalcea candida A. Gray

Wet meadows, wetland, riparian. 8,800'. GUN, W. [750]

Sphaeralcea coccinea (Nutt.) Rydb.

Steppe, drier places. 8,600'. GUN, W. [161]

Melanthiaceae

Anticlea elegans (Pursh) Rydb.

Common, forests and meadows. 10,000-11,900'. GUN, MIN, E&W. [325, Preusser & De Sobrino 876]

Montiaceae

Claytonia megarhiza (A. Gray) Parry ex S. Watson

Common in talus and scree in the alpine. 12,700-13,600'. [860, Preusser & Casini 1033, 1195]

Lewisia pygmaea (A. Gray) B. L. Rob.

Alpine tundra. 12,300-13,000'. HIN, W. [Preusser & Brodar 608, Preusser & Brodar 635]

Nyctaginaceae

Mirabilis linearis var. *subhispida*

Montane slopes. 9,700-10,200'. HIN, MIN, E&W. [674, 706]

Onagraceae

Chamerion angustifolium (L.) Holub

Very common. Forests and meadows, across habitats. 9,800-10,400'. HIN, SAG, E&W. [503, 1060]

Chamerion latifolium (L.) Holub

Infrequent, rocky above dry creek bed. 9,800'. SAG, E. [1060]

Epilobium brachycarpum C. Presl.

Near spring in forest. 11,100'. GUN, W. [996]

Epilobium hornemannii Rchb. var. *hornemannii*

Common in wet places. 10,300-10,500'. HIN, W. [408, 437]

Epilobium saximontanum Hausskn.

Common in wet places. 10,100-11,400'. HIN, W. [207, 435]

Epilobium ciliatum Raf. var. *gladulosum* (Lehm.) Dorn.

Common in wet places. 10,900-11,200'. HIN, MIN, E. [800, 1152, 1168]

Gayophytum diffusum Torr. & A. Gray ssp. *parviflorum* F.H. Lewis & Szweyk.

Dry slopes, in steppe. 8,500'. GUN, W. [902]

Oenothera caespitosa Nutt. var. *caespitosa*

Dry hillsides, sometimes disturbed or compacted soil. 10,500-11,400'. HIN, E&W. [261, 782]

Oenothera caespitosa Gillies ex. Hooker & Arnott var. *marginata* (Nuttall) W.L. Wagner et al.

Dry hillsides, sometimes disturbed or compacted soil. 7,000-11,400'. GUN, HIN, W. [38, 261, 664]

Oenothera coronopifolia Torrey & Gray

Dry hillsides, sometimes disturbed or compacted soil- roadsides. GUN, MIN, E&W. 8,400-10,000'. GUN, MIN, E&W. [818, 888]

Oenothera elata Kunth var. *hirsutissima* (A. Gray ex S. Watson) W. Dietr.

Rocky soil or talus. 9,400'. MIN, E. [Preusser et al. 836]

Orchidaceae

Plantathera aquilonis Sheviak

Infrequent, wetlands. 10,900'. MIN, E. [1169]

Platanthera huronensis Nutt. *New to survey area

Infrequent, wetlands. 10,300'. HIN, W. [Preusser & Casini 1026]

Orobanchaceae

Aphyllon fasciculatum (Nutt.) Torr. & A. Gray

Steppe and montane, meadows and scree. 8,900-9,400'. GUN, HIN, W. [771, 918]

Castilleja chromosa A. Nelson *New to survey area

Sagebrush and open woodlands. 9,00-9,200'. GUN, W. [16,151]

Castilleja integra A. Gray

Open woodland. 8,900'. GUN, W. [5]

Castilleja linariifolia Beth.

Forests and woodlands. HIN, W. [577, 659]

Castilleja miniata Douglas ex Hook.

Common across habitats to timberline. 9,700-12,000'. GUN, HIN, MIN, E&W. [140, 248, 371, 1156]

Castilleja occidentalis Torr.

Common in subalpine forests and in alpine tundra or willow carrs. HIN, MIN, SAG, E&W. 11,400-13,100'. [239, 550, 745, 1040]

Castilleja occidentalis x rhexifolia ined.

Hybridization, often when populations of C. occidentalis and C. rhexifolia are spatially close to one another. Alpine tundra, subalpine forests. HIN, MIN, E&W. 11,300-12,200'. [312, 315, 570, 744]

Castilleja rhexifolia Rydb.

Alpine tundra, subalpine forests. 11,500-12,000'. HIN, MIN, E&W. [231, 321, 393, 561]

Orthocarpus luteus Nuttall.

Sagebrush steppe. 8,900'. GUN, W. [775]

Pedicularis groenlandica Rutz.

Wet places, subalpine and alpine. 11,300-12,500'. HIN, W. [198, 600]

Pedicularis parryi A. Gray

Flat tundra meadow. 12,000'. HIN, W. [243]

Pedicularis procera A. Gray

Woodland and forest. 10,200-11,400'. HIN, W. [459, 568]

Pedicularis scopulorum A. Gray

Alpine wet meadows and willow carrs. 11,500-12,300'. MIN, E. [293, 562]

Papaveraceae

Corydalis aurea Willd. ssp. *aurea*

In shady or moist forests. 9,200'. GUN, W. [129]

Phrymaceae

Erythranthe guttata (DC.) G. L. Nesom

In moist places, wetlands to waterfalls. GUN, HIN, MIN, E&W. [776, 1198, 1199, 1221]

Plantaginaceae

Besseya alpina (A. Gray) Rydberg

Rocky alpine. 11,900-13,100'. HIN, SAG, E&W. [Preusser & Brodar 623, Preusser & Casini 1039]

Callitriche palustris L.

Wetland, nearly submerged. 10,900'. MIN, E. [1170]

Chionophila jamesii Benth. *Rare

Infrequent, alpine gravelly ridges. 12,700'-13,100'. HIN, SAG, E&W. [Preusser & Brodar 604, Preusser & Casini 1036]

Penstemon barbatus A. Gray var. *torreyi* (Benth.) A. Gray

Dry montane and hillsides, open forests. 8,500-9,600'. HIN, W. [916, 342]

Penstemon caespitosus Nutt. ex A. Gray var. caeistosus

Common, in sagebrush and in drier forests. One collection from higher than other documented ranges (11,790). 8,400-11,800'. GUN, MIN, E&W. [80, 727]

Penstemon crandallii A. Nelson var. *glabrescens* (Pennell) C.C. Freeman

Sunny forest breaks or meadows. 9,200-10,000'. GUN, HIN, W. [261, Preusser & De Sobrino 875]

Penstemon griffinii A. Nelson

Above mesic meadow. 9,300'. SAG, E. [Preusser & Ellis 1108]

Penstemon hallii A. Gray

Subalpine and alpine, in scree or gravelly forests and meadows. 11,400-13,000'. HIN, MIN, E&W. [398, 445, 625, 967, 970, 982]

Penstemon harbourii A. Gray

Scree and talus in the alpine. 11,900-13,200'. HIN, MIN, SAG, E&W. [323. 868, 967, 983]

Penstemon rydbergii A. Nelson

Common, meadows and open forest. 11,900'. MIN, E. [323]

Penstemon strictus Benth.

Common, meadows and forests in montane and steppe. 10,300'. HIN, W. [372]

Penstemon teucriodes Greene

Open woodland hillside. 10,300'. HIN, W. [374]

Penstemon virgatus A. Gray var. *asa-grayi* (Crosswh.) Dorn

Drier montane meadow. 9,400' SAG, E. [1138]

Penstemon whippleanus A. Gray

Common, subalpine forests and alpine tundra meadows. 10,400-12,000'. HIN, MIN, SAG. E&W. [249, 303, 304, 449, 686, Preusser & Casini 1002, Preusser & De Sobrino 1047, 1151]

Synthyris plantaginea (E. James) Benth *New to survey area

Open montane forest, in bristlecone. 9,500'. SAG, E. [Preusser & Ellis 1111]

Veronica americana Schwein. ex Benth

Riparian, wetland, sometimes with submerged roots. 9,400-10,600'. HIN, SAG, E&W. [781, 1020, 1132]

Veronica anagallis-aquatica L.

Wetland, instanding water. 10,200'. GUN, W. [Preusser & De Sobrino 883]

Veronica peregrina L. ssp. *xalapensis* (Kunth) Pennell

Riparian, wetland, sometimes with submerged roots. 10,400-10,800. HIN, MIN, E&W. [509, Preusser & Casini 1018, 1202]

Veronica serpyllifolia L. var. *humifusa* (Dicks.) Syme

Moist forests, riparian. 10,000-11,000'. HIN, SAG, E&W.

Veronica wormskjoldii Roem. & Schultes

Alpine and subalpine, often in meadows and willow carrs. 11,300-11,600'. HIN, W. [213, 564]

Plantago major L. (A)

Disturbed places, often in wet places or with compacted soil. 9,000-9,200'. GUN, SAG, E&W.

[184, 1143]

Poaceae

Achnatherum hymenoides (Roem. & Schult.) Barkworth

Open, sunny and dry places, especially near sagebrush. 8,400'. GUN, W. [78]

Achnatherum pinetorum (M.E. Jones) Barkworth

Dry steppe and woodland slopes. 10,100'. MIN, E. [Preusser et al., 827]

Agrostis variabilis Rydberg

Alpine meadow. 12,200'. HIN, W. [Preusser & Brodar 644]

Alopecurus aequalis Sobol.

Wetlands and riparian. 10,100-10,300'. HIN, W. [442, 492]

Alopecurus geniculatus L. * New to survey area

Wetland in stagnant water. 9,400'. SAG, E. [1137* New to Saguache County]

Alopecurus pratensis L. (A)

Introduced. Streamsides in montane and subalpine. 9,000-10,300'. GUN, HIN, W. [141. 580]

Anthoxanum nitens (Weber) Y. Schouten & Veldkamp

Subalpine forest. 11,300'. MIN, E. [955]

Beckmannia syzigachne (Steud.) Fernald

In a seasonally wet depression. 10,100'. MIN, E. [Preusser et al. 822]

Blepharoneuron tricholepis

Meadows, edges of forest. 10,000-10,500'. HIN, MIN, E&W. [695, Preusser et al., 825]

Bouteloua gracilis (Kunth) Lag. ex Griffiths

Drier areas, steppe and lower montane. 9,200'. HIN, W. [520]

Bromus ciliatus L.

Open woodland. 10,000'. HIN, W. [661]

Bromus inermis Leyss. (A)

Introduced. Roadsides. 10,100'. HIN, W. [541]

Bromus lanatipes (Shear) Rydb.

Meadows, rocky areas. 8,800-10,500'. GUN, HUN, MIN, E&W. [421, 754. 1187]

Bromus porteri (J.M. Coul.) Nash.

Meadows, forests, sometimes in moist places. 11,000'. HIN, W. [190]

Bromus tectorum L. (A)

Introduced. Disturbed places, often in steppe and lower montane; grazing allotments. Relatively infrequent in surveyed area. 8,500'. GUN, W. [90]

Calamagrostis canadensis (Michaux) Palisot de beauvois

Common in wet areas and riparian. 10,500-11,000'. HIN, MIN, E. [799, 1205]

Catabrosa aquatica (L.) P. Beauv

Streamside. 10,300'. HIN, W. [493].

Danthonia parryi Scribn.

Dry hillsides, meadows and woodlands. 10,000-10,500'. HIN, W. [400, 660]

Deschampsia brevifolia R. Brown

Subalpine meadow. 11,800'. HIN, W. [1012]

Deschampsia cespitosa (L.) P. Beauv

Common, wet areas. 10,100-12,200'. HIN, MIN, E&W. [177, 212, 278, 311, 426. 283]

Elymus elymoides (Raf.) Swezey

Common in steppe and lower montane woodlands. 8,400-10,000'. GUN, HIN, MIN, E&W. [79, 363, 466, 519, 666, 760, 814]

Elymus glaucus Buckley ssp. *glaucus* *New to survey area

Moist hillside in forest. 10,200'. HIN, W. [524]

Elymus scribneri

Alpine, in tundra and streamside. 12,400-13,600'. HIN, SAG, E&W. [862]

Elymus trachycaulus (Link) Gould ex Shinners

Common across habitats from steppe to alpine. 8,800-13,500'. GUN, HIN, MIN, SAG, E&W. [194, 542, 643, 764, 765, Preusser et al. 854, 921]

Festuca arizonica Vasey

Dry areas in steppe and open woodlands. 9,200-10,200'. HIN, SAG, E&W. [347, 479, Preusser & Most 940]

Festuca brachyphylla Schult. ex J.A. & J.H. Schultes ssp. *coloradensis* Frederiksen

Wet meadow in subalpine. 11,000'. HIN, W. [192]

Festuca idahonesis Elmer

Open meadow/intermountain park. 11,800'. HIN, W. [452]

Festuca saximontana Rydb. var. *saximontana*

Across many habitats, typically in meadows. 9,900-12,100'. HIN, SAG, E&W. [640, 934]

Festuca thurberi Vasey

Common on forest edges, slopes, and meadows. HIN, W. [262]

Glyceria striata (Lam.) Hitchc.

Wet meadows. 8,800'. GUN, W. [762]

Helictotrichon mortonianum (Scribn.) Henr.

Cobbly spruce forest. 11, 400'. HIN, W. [557]

Hesperostipa comata (Trin. & Rupr.) Barkworth

Dry meadows in steppe. 8,400'. GUN, W. [890]

Koeleria macrantha (Ledebour) Shultes.

Common across habitats; meadows and woodlands. 9,400-10,500'. GUN, HIN, MIN, E&W. [52, 348, 403, 826]

Muhlenbergia filiculmis Vasey

Sunny meadow. 9,200'. HIN, W. [468]

Muhlenbergia montana (Nutt.) Hitchc.

Open hillside. 10,400'. HIN, W. [691]

Phleum alpinum L.

Wet areas. 10,500-12,300'. HIN, MIN, E&W. [182, 279, 420]

Piptatherum micranthum (Trin. & Rupr.) Thurb.

Montane woodlands. 9,500'. HIN, W. [345]

Poa alpina

Wet tundra meadow. 12,100'. MIN, E. [Preusser et al., 850]

Poa arctica R. Brown

Tundra and subalpine forests. 10,400-11,800'. HIN, MIN, E&W. [687, 746]

Poa cusickii Vasey
Rocky forest. 11,000'. HIN, W. [384]
Poa fendleriana (Steudel) Vasey
Found across many habitats; sagebrush, open woodlands, spruce forests. 8,900-11,300'. GUN, HIN, W. [6,12, 18, 108, 196, 215]
Poa interior Rydb.
Aspen forest, meadow. 9,900-10,100'. HIN, MIN, E&W. [365, 654, 824]
Poa secunda J. Presl ssp. *secunda*
Common across altitudes, usually in dry areas. 9,000-11,100'. GUN, HIN, W. [3, 68, 164]
Poa tracyi Vasey *New to survey area
Forested hillside. 9,500. HIN, W. [346]
Podagrostis humilis (Vasey) Bjorkman
Alpine meadows. 11,000-12,300'. HIN, MIN, E&W. [179, 280]
Trisetum spicatum (L.) Richter
Forests and meadows. HIN, W. [545, 688, 802]
Trisetum wolfii Vasey *New to survey area
Wet meadow. 10,900'. MIN, E. [1174]

Polemoniaceae
Aliciella penstemonoides (M.E. Jones) J.M. Porter *Rare
Cliff bands, locally abundant. 9,100-10,300'. HIN, MIN, E&W. [922, 1180]
Aliciella pinnatifida (Nutt. ex A. Gray) J. M. Porter
Dry places, often in loose soils. 9,200-10,000'. HIN, MIN, E&W. [471, Preusser et al. 819]
Aliciella sedifolia (Brandegee) J.M. Porter *New to survey area *Rare
Very rare. Gravelly and sandy ridge. 13,000'. HIN, W. [Preusser & Brodar 606]
Collomia linearis Nutt.
Shady meadow. 9,100'. SAG, E. [778, 1140]
Ipomopsis aggregata (Pursh) V.E. Grant ssp. *aggregata*
Dry slopes, sagebrush and montane. 9,200-10,300'. GUN, HIN, W. [66, 497]
Linanthus pungens (Torr.) J.M. Porter & L.A. Johnson
In dry places, especially sagebrush. 8,400'. GUN, W. [77]
Phlox austromontana Cov.
Open woodland. 9,400'. GUN, W. [44]
Polemonium brandegeei (A. Gray) Greene
Montane rock outcrop. 9,400'. SAG, E. [Preusser & Ellis 1103]
Phlox condensata (A. Gray) E.E. Nelson
Tundra and open slopes. 10,100-12,300'. MIN, SAG, E. [292, Preusser & Most 943]
Polemonium confertum A. Gray
Alpine tundra; meadows and ridges. 11,000-13,000'. HIN, W. [189, Preusser & Brodar 628]
Polemonium occidentale Greene ssp. *occidentale*
Wet areas, springs and standing water. 10,500-11,100'. HIN, MIN, E&W. [406, 962]
Polemonium pulcherrimum Hook. ssp. *delicatum* (Rydb.) Cronquist
Common, especially in spruce forests; often at the edge of stands. 11,300-11,800'. HIN, W. \

[220, 271]

Polemonium viscosum Nutt.

Alpine tundra; meadows and ridges. 11,700-13,000'. HIN, W. [252, 453, 589]

Polygonaceae

Bistorta bistortoides Pursh

Common alpine meadows, in wet areas. 10,500-11,100'. HIN, W. [172, 419]

Bistorta vivipara (L.) A. Gray

Streamsides, riparian, sometimes in talus. 9,900-11,200'. HIN, SAG, E&W. [389, 490, 784, 932]

Eriogonum alatum Torr.

Flat dry meadows. 9,900'. SAG, E. [927]

Eriogonum coloradense Small *Rare

Gravelly intermountain park next to a large boulder field. 9,700'. SAG, E. [1067]

Eriogonum flavum Nutt.

Gravelly gullies, scree. 8,500-12,300'. HIN, SAG, E&W. [865, 914]

Eriogonum lonchophyllum Torr. & A. Gray

Sagebrush meadows. 8,400'. GUN, W. [893]

Eriogonum racemosum Nutt.

Sagebrush and blue spruce open woodland. 9,000'. GUN, W. [769]

Eriogonum umbellatum Torr. var. *umbellatum*

Common across habitats, drier slopes. 8,500'. GUN, W. [905]

Oxyria digyna (L.) Hill

Rocky areas; scree and boulder fields. 11,100-11,900'. HIN, MIN, E&W. [317, 390]

Polygonum aviculare L.

In compacted soil in dirt road. 9,800'. SAG, E. [1069]

Polygonum sawatchense Small ssp. *sawatchense* *New to survey area

Disturbed area in montane. 10,500'. HIN, W. [803]

Rumex densiflorus Osterh.

Forming large patches; streamsides. 10,800-11,400'. HIN, W. [199, 506]

Rumex occidentalis S. Watson

Hillsides, often in wet areas. 8,800-9,800'. GUN, SAG, E&W. [752, 1056]

Rumex triangulivalvis (Damser) Rech. f.

Meadows, roadsides. 8,800-9,700'. GUN, HIN, W. [677, 758]

Primulaceae

Androsace septentrionalis L.

Very common across habitats; sagebrush, forests, and alpine. 9,400-12,400'. GUN, HIN, MIN, SAG, E&W. [17, 53, 230, 327, 585, 930]

Primula parryi A. Gray

Wet areas, alpine. 11,600-12,500'. HIN, MIN, E&W. [284, Preusser & Brodar 601, Preusser & Brodar 618]

Primula pauciflora (Durand) A.R. Mast & Reveal

Wet meadow. 10,800'. HIN, W. [515]

Ranunculaceae

Aconitum columbianum Nutt.
Common in wet areas. 10,300-11,600'. HIN, W. [370, 565]

Actaea rubra (Aiton) Willd.
Wet forest and talus. 10,200-12,100'. MIN, E. [716, 969]

Anemone multifida Poir.
Open forests and woodlands. 8,800-11,900'. GUN, MIN, E&W. [105, 326]

Anemone patens L. var. *multifida* Pritz. *New to survey area
Montane ponderosa park. 9,200'. GUN, W. [28]

Aquilegia coerulea James var. *coerulea*
Variable habitat, often in rock piles. 11,300-12,200'. HIN, MIN, E&W. [222, 311, 399]

Aquilegia elegantula Greene
Shady forests. 9,300'. GUN, W. [63]

Caltha chionophila Greene
Wet subalpine and alpine meadows. 11,000-12,200'. HIN, MIN, E&W. [168, 201, 313]

Clematis columbiana (Nutt.) Torr. & A. Gray
Open woodlands. 9,400-9,700'. GUN, W. [48, Preusser & De Sobrino 887]

Delphinium barbeyi (Huth) Huth
Wetter areas; subalpine and alpine. 11,800-12,100'. HIN, MIN, E&W. [318, Preusser & Brodar 639]

Delphinium nuttallianum Pritz *New to survey area
Dry hillside. 10,900'. HIN, W. [Preusser & Brodar 619]

Delphinium ramosum Rydb.
Slopes often near creeks. 9,800-10,200'. HIN, SAG, E&W. [526, 1059]

Ranunculus aquatilis L. var. *diffusus* With.
Riparian sometimes submerged. 9,400-10,000'. MIN, SAG, E. [705, Preusser et al. 831, Preusser & Ellis 1105]

Ranunculus hyperboreus R. Br.
Streamside, saturated soil. 10,100'. HIN, W. [441]

Ranunculus inamoenus Greene var. *inamoenus*
Common across habitats. 9,200-13,000'. GUN, HIN, W. [132, 160, 211, 260, 588, 801]

Ranunculus macauleyi A. Gray
Snow melt patch in alpine. 12,800'. SAG, E. [Preusser & Casini 1034]

Ranunculus pedatifidus SM. var. *affinis* (R. Br.) L.D. Benson
Rocky tundra. 13,500'. SAG, E. [861]

Ranunculus ranunculinus (Nutt.) Rydb. *New to survey area
Open woodland. 9,400'. GUN, W. [Preusser & De Sobrino 869]

Thalictrum alpinum L.
Alpine meadows, riparian in forests. 9,400-12,300'. SAG, E. [Preusser & De Sobrino 1051, Preusser & Ellis 1104]

Thalictrum fendleri Engelm. ex A. Gray

Common in wetter areas and forests. 8,800-12,100'. [70, 148, 186 ,712, 763, 964, 1147]

Thalictrum sparsiflorum Turczaninov

Open meadow. 10,300'. HIN, W. [798]

Rosaceae

Amelanchier alnifolia (Nutt.) Nutt. ex M. Roem. var. *utahensis* (Koehne) M.E. Jones

Drier areas. 8,300'. GUN, W. [36]

Argentina anserina (L.) Rydb.

Disturbed areas, often near wet places. HIN, MIN, E&W. 9,700-10,300'. [494, 719]

Dasiphora fruticosa (L.) Rydb.

Common in wet places or wet adjacent places across altitudes. 11,300'. HIN, W. [263]

Fragaria virginiana Duchesne

Very common in forests to alpine. 9,500'. GUN, W. [59]

Frageria vesca L

In forests. 10,200'. MIN, E. [713]

Geum macrophyllum Willd. var. *perincisum* (Rydb.) Raup

Wet meadow. 11,300'. HIN, W. [200]

Geum rossii (R. Br.) Ser. var. *turbinatum* (Rydb.) C.L. Hitch.

Very common, across habitats subalpine to alpine. 9,500-11,200'. GUN, HIN, W. [897, 997]

Geum triflorum Pursh

Meadows across altitudes. 9,300-11,000'. GUN, HIN, W. [188, Preusser & De Sobrino 873]

Holodiscus dumosus (Nutt. ex Hook) A. Heller

Rocky outcrops. 8,500'. HIN, W. [913]

Potentilla bicrenata Rydb.

Open sagebrush meadow. 9,100'. GUN, W. [22]

Potentilla concinna Richardson var. *concinna*

Common, dry open areas across altitudes. 9,100-12,400'. GUN, HIN, MIN, E&W. [21, 95, 586, 737, 966, 1006, 1007]

Potentilla glaucophylla Lehm. var. *glaucophylla*

Subalpine forest and alpine meadows. 11,000'. GUN, W. [988]

Potentilla gracilis Douglas ex Hook. var. *elmeri* (Rydb.) Jeps.

Meadows and forests. 10,500'. HIN, W. [412]

Potentilla gracilis Douglas ex Hook. var. *fastigiata* (Nutt.) S. Watson

Very common, meadows and forests. 11,300-12,000'. HIN, W. [232, 240, 455, 555, 571]

Potentilla hippiana Lehmann

Common, dry places, often in montane woodlands and sagebrush steppe. 9,200-9,600'. GUN, HIN, E&W.

Potentilla norvegica L.

Shady, often near streams or wet depressions. 8,800-10,100'. GUN, HIN, MIN, E&W. [672, 749, 821]

Potentilla pennsylvanica L.

Sunny meadows, rocky areas. 9,200-11,700'. HIN, MIN, E&W. [469, 736]

Potentilla plattensis Nutt.

Streamsides and drainages. 9,000-10,300'. GUN, HIN, W. [489, 767]

Potentilla pulcherrima Lehm.

Common, meadows and forests.9,700-11,100'. GUN, HIN, W. [137, 178, 513, Preusser & De Sobrino 880]

Prunus virginiana L. var. *melanocarpa* (A. Nelson) Sarg.

Rocky places in montane and steppe. 8,400'. GUN, W. [75]

Purshia tridentata (Pursh) DC

Open meadows, with sagebrush. 8,400'. GUN, W. [82]

Rosa woodsii Lindl.

Very common throughout habitats, often in woodlands and above streams. HIN, W. [241, 424, 544].

Rubus idaeus L. var. *strigosus* (Michx.) Maxim

Adjacent to streams, often forming thickets. 9,00-10,200'. GUN, MIN, E&W. [149, 715]

Sibbaldia procumbens L.

Alpine and subalpine, in various habitat. 11,800'. HIN, W. [266]

Dryas octopetala L. var *hookeriana* (Juz.) Breit

Rocky tundra, on slopes and ridges. 11,900-12,800'. HIN, SAG, E&W. [1045* New to Saguache County, 1191]

Rubiaceae

Galium boreale L.

Various habitat in sagebrush and montane forests. 8,500-9,000'. GUN, W. [761, 773, 910]

Galium trifidum L. var. *subbiflorum*

Wet areas across altitudes. 9,400-10,900'. HIN, MIN, SAG, E&W. [Preuser & Casini 1015, 1021, 1172, 1136]

Salicaceae

Populus angustifolium James

Riparian, steppe into montane. 9,500'. HIN, W. [337]

Populus tremuloides Michx.

Very common, typically above lower sagebrush steppe to subalpine, forming large colonies. HIN, W. [337]

Salix bebbiana Sarg.

Near streams. 9,000-12,100'. GUN, HIN, MIN. [117, 118, 651, 871, 895, 971]

Salix brachycarpa Nutt. var. *brachycarpa*

Common, subalpine and alpine wet areas; forming carrs. 10,900-12,000'. HIN, W. [245, 805]

Salix drummondiana Barrat ex Hook.

Near streams. 8,800-10,900'. GUN, HIN, MIN. [32, 125, 338, 425, 1201]

Salix eriocephala Michx. var. *watsonii* (Bebb) Dorn

Wet areas. 10,400'. HIN, W. [683]

Salix geyeriana Andersson

Streamsides. 8,700-10,200'. GUN, HIN, W. [30, 31, 531]

Salix glauca L.
Common, wet areas. 9,000-11,500'. GUN, HIN, W. [549, 779]
Salix lasiandra Benth. var. *lasiandra* *New to survey area
Streamsides. 8,900- 9,500'. SAG, GUN, E&W. [766, Preusser & Ellis 1107]
Salix monticola Bebb.
Streamsides. 10,100'. HIN, W. [429, 431]
Salix petrophila Rydb.
Tundra and ridges. 12,000-13,000'. HIN, W. [Preusser & Brodar 632, Preusser & Casini 1042]
Salix planifolia Pursh
Common, wet areas; subalpine to alpine. 10,400-12,300'. HIN, MIN, E&W. [203, 272, 448, 682]
Salix reticulata L. var. *nana* Andersson
Tundra and ridges. 11,100-11,900'. HIN, MIN, E&W. [316, 340]
Salix wolfii Bebb. var. *wolfii*
Wet areas. 10,500'. HIN, W. [407]

Saxifragaceae
Heuchera parvifolia Nutt.
Common in dry and rocky areas. 10,800-12,200'. HIN, MIN, E&W. [295, 517]
Micranthes odontoloma (Piper) A. Heller
Wetlands and small streams. 11,800'. HIN, W. [Preusser & Casini 1027]
Micranthes rhomboidea (Greene) Small
Montane woodlands to alpine tundra. 9,400-12,000'. GUN, HIN, W. [41, 238]
Saxifraga bronchialis L. var. *austromontana* (Wiegland) Piper
Common, rock outcrops or mossy hills throughout forests and alpine. 11,800'. MIN, E. [328]
Saxifraga cernua L
Rocky alpine tundra. 12,000'. HIN, W. [978]
Saxifraga chrysantha A. Gray
Alpine rocky tundra. 13,000'. HIN, W. [Preusser & Brodar 610]
Saxifraga flagellaris Willd. ssp. *crandallii* (Gandog.) Hulten
Rocky alpine meadows. 12,100'. MIN, E. [297]
Saxifraga rivularis L.
Wet areas in forests, rocky alpines and cliffs. 11,300-13,000'. HIN, MIN, E&W. [Preusser & Brodar 593, 605, 735, 958, 1153, 1192]

Scrophulariaceae
Scrophularia lanceolata Pursh
Rocky scree. 10,600'. GUN, W. [995]

Solanaceae
Solanum triflorum Nutt.
Shady area near riparian, disturbed. 8,800'. GUN, W. [755]

Hyocyamus nigra L. (A)

Introduced. Roadside. 9,100'. SAG, E. [1075]

Urticaceae

Urtica dioica L. ssp. *gracilis* (Aiton) Selandar

Adjacent to streams. 9,000'. GUN, W. [121]

Valerianaceae

Valeriana acutiloba Rydb.

Common in meadows. GUN, HIN, W. 9,200-11,800'. [126, 264]

Valeriana edulis Nutt.

Common in meadows and woodland gaps. 9,200-12,200'. HIN, MIN, E&W. [301, 464, 697, 972]

Valeriana occidentalis A. Heller

Near streams and meadows. 9,700'. GUN, W. [157]

Violaceae

Viola adunca J. Sm.

Sunny hillsides, forests, alpine. 9,300-13,000'. GUN, HIN, W. [594, Preusser & De Sobrino 872]

Viola canadensis L. *New to survey area

Moist forest. 9,300'. GUN, W. [69]