

FLORISTIC SURVEY OF THE SANGRE DE CRISTO WILDERNESS AND ENVIRONS (COLORADO, U.S.A.)

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ABSTRACT

The Sangre de Cristo Wilderness Area with its 226,445 acres is the third largest Wilderness Area in Colorado. It spans areas of the northern Sangre de Cristo Range in the southern Rocky Mountains, with elevations extending from 8,000 to 14,000 feet and vegetation ranging from piñon/juniper woodlands to alpine tundra.

Over 7,000 vouchered specimens largely housed at the Rocky Mountain Herbarium in Laramie, Wyoming (RM) [4,322], and the University of Colorado Herbarium in Boulder, Colorado (COLO) [2,133] were consulted for report. Seven hundred twenty (720) taxa are reported from the study area, with 75 families and 310 genera represented. Predominantly a Western North American flora 40.6% with 292 spp., it is followed by 13.1% of the taxa being native to North America with 94 spp. The Southern Rockies contribute an additional 13.1% with 94 spp. (10 of these taxa being restricted to Colorado). Fifteen species fully tracked by the Colorado Natural Heritage Program (CNHP 2011) were documented from the study area with four of these considered globally imperiled (G1 or G2) with the majority of these having an alpine distribution. Non-native species accounted for 4.0% of the flora (29 spp.), a reflection of the high elevation environment and wilderness qualities of the region. There are no species listed as threatened or endangered under the Endangered Species Act in the area.

RESUMEN

El Área Silvestre Sangre de Cristo con sus 226,445 acres es la tercera Área Silvestre más grande de Colorado. Abarca áreas del norte de la Cordillera Sangre de Cristo en el sur de las Montañas Rocosas, con elevaciones que se extienden de 8,000 a 14,000 pies y vegetación, que va desde bosques de pinos/enebros hasta tundra alpina.

Para obtener un informe, se consultaron más de 7000 especímenes registrados, en su mayoría alojados en el Herbario Rocky Mountain en Laramie, Wyoming (RM) [4322], y en el Herbario de la Universidad de Colorado en Boulder, Colorado (COLO) [2133]. Se reportan setecientos veinte (720) taxones del área de estudio, con 75 familias y 310 géneros representados. Predominante la flora occidental de América del Norte 40,6% con 292 spp., le sigue un 13,1% de los taxones nativos de América del Norte con 94 spp. Las Montañas Rocosas del Sur contribuyen con un 13,1% adicional con 94 spp. (10 de estos taxones están restringidos a Colorado). Quince especies rastreadas completamente por el Programa de Patrimonio Natural de Colorado (CNHP 2011) fueron documentadas en el área de estudio y cuatro de ellas se consideraron en peligro a nivel mundial (G1 o G2), la mayoría de estas tienen una distribución alpina. Las especies no autóctonas representaron el 4,0% de la flora (29 spp.), un reflejo del entorno de gran altitud y las cualidades silvestres de la región. No hay especies catalogadas como amenazadas o en peligro de extinción bajo la Ley de Especies en Peligro de Extinción en el área.

INTRODUCTION

The Sangre de Cristo Wilderness Area with its 226,445 acres is the third largest wilderness area in Colorado. Located in the south-central region of the state, the wilderness stretches 70 miles from Poncha Pass in the north (N38°25'W106°05') to La Veta Pass in the south (N37°35'W105°12'), and makes up the northern stretch of the greater Sangre de Cristo Mountains that reach to Santa Fe, New Mexico (N35°47'W105°47'). The wilderness area is jointly managed by the Rio Grande and Pike-San Isabel National Forests and since the Great Sand Dunes National Park and Preserve Act of 2000, the National Park Service (Fig. 1).

The northern Sangre de Cristo are relatively dry mountains, with elevations extending from 8,000 to 14,000 feet and vegetation ranging from piñon/juniper woodlands to alpine tundra. Geologically complex, this section of the Sangres is a fault-block range predominantly marked by Paleozoic sediments and Precambrian metamorphics, and most recently shaped by Pleistocene glaciation.

Climate/Weather.—The Sangre de Cristo range is marked by a continental mountain climate, with cold winters and moderately cool summers. Situated in the rain shadow of the San Juan Mountains to the west, the

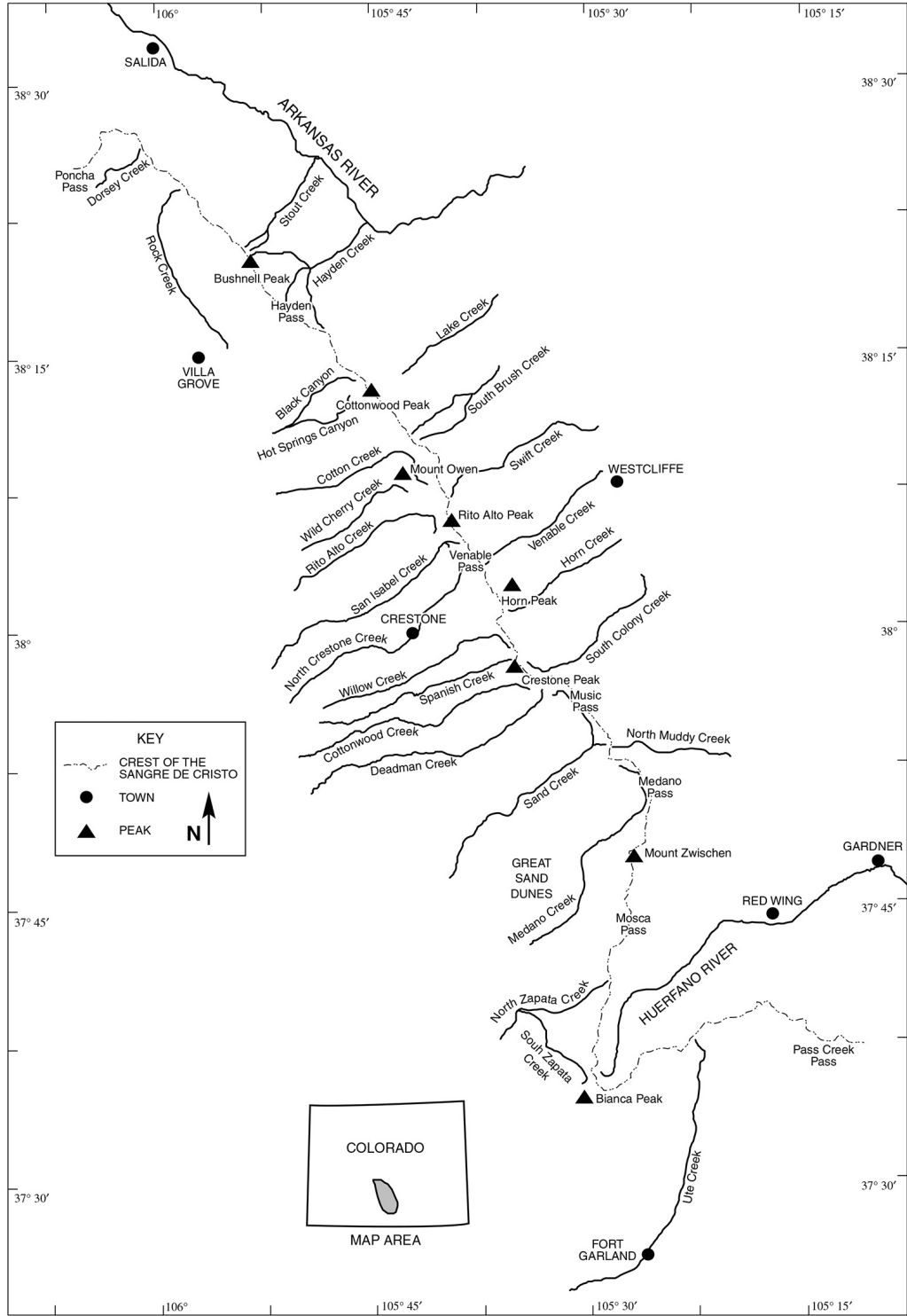


Fig. 1. Sangre de Cristo Wilderness Area.

study area receives less rain and snow than the San Juans or Colorado's more central mountains to the northwest.

Climate data from the Western Regional Climate Center (<http://www.wrcc.dri.edu/summary>) only captures data from surrounding population centers [Crestone, Great Sand Dunes, Red Wing, Salida, Westcliffe] at about 8,000 feet, recording an annual average of 12.65 inches. Most of this precipitation falls as rain during the growing season, with a late summer, monsoonal peak.

With its steep altitudinal gradient, the study area undoubtedly receives significantly greater moisture than these data indicate—two to three times these amounts seem quite likely for the higher elevations in the mountains. In addition, there may be more of a monsoonal impact, or an “upslope” effect, on the east side of the range. The difference between annual precipitation data for Crestone in the San Luis Valley on the west side (13.12”) and Westcliffe in the Wet Mountain Valley on the east side (15.42”) lends some credence to this observation.

Finally, it might be noted that the range is known for its summer storms marked by dramatic lightning and heavy downpours, and that desicating winds are not uncommon in the drier months.

Geology/Physiography.—The Sangre de Cristos are a fault-block range akin to the Teton Range of Wyoming and the Sierra Nevada of California. While the wilderness area is predominantly formed from Paleozoic sediments in its central reaches, the area is also marked by Precambrian metamorphics and granites, as well as a complex structural genesis and the sculpting of multiple glaciations.

a) Precambrian Basement Rocks: Precambrian gneiss (1.8 bya) formed by the metamorphism of large igneous intrusions make up much of the range east of the Great Sand Dunes, the bulk of the Blanca Peak massif to the south, and the area north of Villa Grove on the west side (Lindsey 2010). Subsequent (younger) Precambrian intrusions (1.5 bya) “are exposed along the west side of the range north and south of Crestone, and in the headwaters of Sand Creek west of Marble Mountain.” (ibid.)

b) Paleozoic Sedimentary Rock: The backbone of the study area is largely composed of late Paleozoic (300–250 mya) sedimentary rocks that make up the Minturn and Sangre de Cristo formations. These formations are more than two miles thick in stretches of the range north of the Sand Dunes (Lindsey 2010). Like the Maroon and Fountain formations of the Elk Mountains and Front Range, the source of the non-marine sediments was the Ancestral Rocky Mountains that rose over 300 mya and were surrounded by shallow seas in a world where the great continent of Gondwana had not yet broken up and present-day ‘Colorado’ was near the equator.

The Minturn Formation (300 mya) preserves a record of advancing and receding seaways that lay adjacent to the Ancestral Rockies, with limestones and sandstones marking the rise and fall of sea level. The limestones of Marble Mountain are members of the Minturn. Limestones on the northeast side of the Sangres, east of Bushnell Peak, are from earlier (400 mya) in the Paleozoic (Tweto 1979).

The younger Sangre de Cristo Formation (250 mya) formed as a result of regional uplift (Uncompahgre-San Luis Uplift) that accelerated erosion from highlands to the west, carrying sediments into the surrounding seaway. Some of the coarsest material was deposited as submarine mudflows nearest the uplift, and these form the Crestone Conglomerate Member of the formation. The highest mountains in the central part of the range, including the eponymous Crestone Needle and Crestone Peak, are made up of this rock.

At the time of the uplift (250 mya) the freshly eroded sediment composed of chemically unstable minerals began to react with groundwater carried from the flanks of the Ancestral Rockies. This reaction mobilized iron in the minerals and crystallized into the red iron oxide, hematite, giving the rocks their reddish cast. Hence, the source of the Spanish appellation “Sangre de Cristo” or “blood of Christ.”

c) Laramide Orogeny and Uplift: The present-day Rocky Mountains began to form during the Laramide orogeny 80–40 mya. During this time the Sangres were subject to complex faulting and folding, but it was during the formation of the Rio Grande Rift (25 mya) that the range was rapidly uplifted and the present mountain landscape began to take shape (Reed in Fielder 2004). Bounded on the west by the Sangre de Cristo

Fault and on the east by the Alvarado Fault, the Sangres were uplifted as a more-or-less singular block, with the adjacent San Luis and Wet Mountain Valleys dropping concurrent with the uplift.

d) Pleistocene Glaciation: Repeated glaciation and extensive stream erosion over the past 2 mya provided the finishing touches on the mountains we see today. Due to prevailing winds and differences in the size of catchment basins, glaciation was more extensive on the east side of the range, where glacial tongues during the height of Ice Ages reached all the way to the Wet Mountain Valley's floor (8,000 feet). On the west side, glaciers more commonly extended down to about 10,000 feet (Reed in Fielder 2004).

The last major glaciers disappeared from the range about 10,000 years ago. The deep U-shaped valleys, sculpted cirque basins, narrow ridges, and sharp horns of the Sangres are all characteristic of glacially carved mountains. Less dramatic, but no less telling, are morainal landforms and alluvial outwash that mark the glacial margins and lower elevations.

Vegetation and Ecological Community Structure.—The study area centers upon the Sangre de Cristo Wilderness Area and includes its immediate environs even if they fall outside the statutory boundaries. As such, the area extends from 8,000 feet at its lower boundary to 14,000 feet upon the highest peaks. The vegetation across such a steep gradient is markedly diverse, with various habitat types compressed within short horizontal distances. Along with the effects of elevation on temperature and moisture, the vegetation is also influenced by aspect, drainage patterns, varied substrates, and disturbance.

The annotated species list uses four general terms for the zonation in the Sangres: *lower elevation* generally refers to areas below 8,500 feet characterized by piñon/juniper/oak woodlands; *montane* is equivalent to the zone between 8,500 and 10,000 feet marked by Douglas-fir, aspen, and ponderosa pine; *subalpine* ranges from 9,500 to 12,500 feet (treeline) with spruce/fir; and *alpine* is usually above 12,000 feet.

a) A typical transect from trailhead to summit often starts along a *lower elevation* stream, bordered with cottonwood (*Populus angustifolia* James), exiting from a narrow canyon. Aspen (*P. tremuloides* Michx.) and blue spruce (*Picea pungens* Engelm.) are typically present along the drainage, as well as an understory of shrubs (*Rosa blanda* Aiton, *Betula occidentalis* Hook., *Cornus sericea* L., *Symphoricarpos rotundifolius* A. Gray) and herbaceous plants. South facing slopes are typically a mosaic of piñon/juniper woodlands (*Pinus edulis* Engelm./*Juniperus scopulorum* Sarg.), shrublands of oak (*Quercus gambelii* Nutt.), and mountain-mahogany (*Cercocarpus montanus* Raf.). Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco) usually dominate north facing slopes at these lower elevations, with white fir (*Abies concolor* A. Murray) and aspen more evident in the canyon bottoms. Ponderosa pine (*Pinus ponderosa* Douglas) is more common on the east side of the range than on the west side where it is relatively infrequent.

b) As one climbs higher into the *montane* drainages, *Pseudotsuga* forests replace south facing woodlands and shrublands, large stands of aspen become dominant, and in the more northerly canyons on the east side, stands of lodgepole pine (*Pinus contorta* Douglas) are found. Lodgepole is at the southern extent of its range at these latitudes, and on the west side of the range is only known from upper Dorsey Creek. With this paucity of lodgepole, aspen becomes the primary successional species, and the extensive stands of this singular species are a significant feature of the Sangres' ecology. Its deciduous habit nurtures a lush understory, deeper soils, and a diverse suite of plant and animal species.

c) Aspen can remain dominant into the *subalpine*, but Engelmann spruce (*Picea engelmannii* Parry) is the more characteristic species. Bristlecone pine (*Pinus aristata* Engelm.) and limber pine (*P. flexilis* James) become more evident, although the latter is not uncommon at lower elevations. With their extravagant shapes and forms these two pines often form picturesque scenes at treeline—an emblematic habitat of the Southern Rocky Mountains. Moist forests of spruce/fir (*Abies bifolia*) while not uncommon, are less abundant in the northern Sangre de Cristos than in other Colorado ranges. Similarly, krummholz may be less extensive in the study site than in other mountain areas. On the other hand, sizeable willow carrs (*Salix brachycarpa* Nutt./*S. planifolia* Pursh) are a familiar vegetation in the upper subalpine and lower alpine. And, as in other ranges of the Rockies, subalpine meadows are among the most species-rich vegetation types in the study area.

d) The *alpine* of the northern Sangres is vast and varied, with ten peaks over 14,000 feet. Dry tundra with its dense turf of graminoids and perennial forbs seems to be the most common vegetation type above treeline. This vegetation typically intermingles with bedrock and scree, fell-fields, wet meadows, dwarf-shrublands, and subalpine meadow systems that reach into the alpine zone. Among the latter, meadows dominated by *Festuca thurberi* Vasey ex Rothrock are particularly notable in the lower alpine.

METHODS AND RESULTS

a) **Collections and Dataset:** This inventory of the vascular flora of the Sangre de Cristo Wilderness and its proximate environs is based upon 7,298 vouchered specimens housed at the Rocky Mountain Herbarium in Laramie, Wyoming (RM) [4,322], the University of Colorado Herbarium in Boulder, Colorado (COLO) [2,134], and the Great Sand Dunes Herbarium at the Great Sand Dunes National Park and Preserve, Colorado (GRSA) [842]. While these institutions each hold additional collections from locations near the study area, a key criterion for inclusion in the data set was a minimal elevation of 8,000 feet.

The vast majority of these collection were made between 1998 and 2010 through the efforts of Brian Elliott (3,218 collections), Ron Hartman (569), Charity Hall (339), and B.E. Nelson (195) at RM (Elliott 2000); Tim Hogan (1,269) at COLO; and smaller collections at the Charles Mauer Collection (CS) in Fort Collins; and the Great Sand Dunes Herbarium at the Great Sand Dunes National Park and Preserve (GRSA). An estimate of days-in-the-field has Hogan and Elliott working 85 and 30 days respectively. Other notable collections include Glenn Bean's (1950s) from Great Sand Dunes at GRSA (266) and COLO (84); W.A. Weber's (1950s) from the Lake of the Clouds at COLO (110); Francis Ramaley's (1930s) from the San Luis Valley between Crestone and the Sand Dunes at COLO (246); L. Baltzell's (1970) from "west of Westcliffe" at COLO (121); and Hobart Dixon's from the Great Sand Dunes at GRSA (138).

Seven hundred and twenty (720) taxa are reported from the study area, with 75 families and 310 genera represented. The largest families include Asteraceae (132 taxa), Poaceae (74), Cyperaceae (44), Brassicaceae (36), and Fabaceae (35). The largest genera are *Carex* (41), *Erigeron* (20), *Poa* (14), *Potentilla* (13), *Penstemon* (12), and *Salix* (11) (Table 1).

b) **Sensitive Species:** Fifteen species fully tracked by the Colorado Natural Heritage Program (CNHP 2011) were documented from the study area (Table 2). Four of these—*Delphinium alpestre* Rydb., *Draba grayana* (Rydb.) Hitchcock, *Draba smithii* Gilg ex Schulz, *Saussurea weber* Hultén—globally imperiled, meaning they are either G1 or G2 in the CNHP ranking system (Neely 2009). Eleven of the sensitive species are alpine in their distribution. There are no species listed as threatened or endangered under the Endangered Species Act in the area.

Phytogeography.—Geographic circumscriptions were determined for the 720 species from the Sangres using various floras (Ackerfield 2015; Weber & Wittmann 2012 (2001); FNA 1993+; Harrington 1954; Hartman & Nelson 2001; Hultén 1968; Snow 2009) and web sites (USDA 2011). Predominantly a Western North American flora 40.6% with 292 spp., it is followed by 13.1% of the taxa being native to North America with 94 spp (Table 3). The Southern Rockies contribute an additional 13.1% with 94 spp. (10 of these taxa being restricted to Colorado).

Oroboreal is a phytogeographic term describing a distribution stretching across the northern tier of North America and extending south along the western cordilleras and eastern Appalachian, accounting for 8.9% and 64 spp. In addition, as an alpine mountain range, the Sangres harbors a circumboreal flora with 8.8% and 63 spp.

TABLE 1. Floristic synopsis.

Families	75
Genera	310
Species (incl. subspecies)	720
Native	691
Non-native	29
Largest Families:	
Asteraceae	132
Poaceae	68
Cyperaceae	43
Brassicaceae	36
Fabaceae	35
Largest Genera:	
<i>Carex</i>	41
<i>Erigeron</i>	20
<i>Poa</i>	14
<i>Potentilla</i>	13
<i>Penstemon</i>	12
<i>Salix</i>	11

TABLE 2. Sensitive species (CNHP 2011).

<i>Asplenium trichomanes-ramosum</i>	G4/S1	<i>Mertensia alpina</i>	G4?/S1
<i>Delphinium alpestre</i>	G2/S2	<i>Minuartia stricta</i>	G5/S1
<i>Draba fladnizensis</i>	G4/S2S3	<i>Neoparrya (Aletes) lithophila</i>	G3/S3
<i>Draba grayana</i>	G2/S2	<i>Oreocarya pustulosa</i>	G5/S1
<i>Draba porsildii</i>	G3G4/S1	<i>Oxytropis parryi</i>	G5/S1
<i>Draba smithii</i>	G2/S2	<i>Saussurea weberi</i>	G2G3/S2
<i>Draba streptobrachia</i>	G3/S3	<i>Stellaria irrigua</i>	G4?/S2
<i>Hypoxis hirsuta</i>	G4?/S1		

Less than 6.3% (45 spp.) of the flora is of southwestern affinity, while less than 2.9% (21 spp.) is from the Great Plains. The non-native flora accounts for 4.0% of the flora (29 spp.), reflecting the high elevation of the study area and the wilderness qualities of the habitat.

DISCUSSION

This report is based upon a data set of over 7,000 voucher specimens documenting 720 taxa in the Sangre de Cristo Wilderness and immediate environs of south-central Colorado. While a ratio of five to ten specimens per taxa is good for a floristic inventory, there are undoubtedly more species to be documented from the study area.

Many records are based upon a single record and in some instances these specimens should be more closely examined. In other cases additional collections should be sought. A disproportionate number of these records come from the periphery of the wilderness, but are included to document their presence at this point in time. Climate disruption and other factors can lead to a resorting of species, and voucher specimens may offer future students of the flora objective evidence of these changes.

a) Notes on taxa of interest:

- Delphinium alpestre:** Recognized as a G2/S2 taxon by CNHP (2011), it is viewed by Weber and Wittmann as a dwarfed alpine form of *D. ramosum* “that may prove to be distinct” (Weber & Wittmann 2012, p. 225). In the Sangres this is a striking larkspur of the high mountains that is not uncommon. As a Southern Rockies endemic, known only from northern New Mexico and southern Colorado, it is a singular plant of the study area.
- Draba smithii:** A G2/S2 species restricted to southern Colorado is felt to be relatively secure in the Sangres based upon 14 specimens. Nevertheless, it remains a narrow endemic deserving careful conservation measures. It appears to be more common on the west side of the range, with collections extending from Mosca Pass (Alamosa Co.) to Rito Alto Creek (Saguache Co.). Collections on the east side come from the upper Huerfano Basin and from the vicinity of Alvarado campground (Custer Co.).
- Pinus “strobiformis” Engelm.:** This taxon has been noted by various botanists on south-facing slopes in the lower reaches of drainages on the west side of the range. David Cooper collected a specimen (#2012) as such in 1991. Hobart Dixon indicates that it may be an excurrent form of *P. flexilis* (pers. com.). And Diane Tomback, an authority on the ecology of western “white pines,” recognizes “something is different” about these populations (pers. com.). It clearly deserves a closer look.
- Saussurea weberi:** This was one of the most exciting finds over the course of the survey. Two specimens (Hogan 4963, 5048) come from a single site on the east side of Marble Mt. at 12,600 ft (Custer Co.). Previously unknown from the Sangres, these collections extend the range of this sensitive alpine species (G2/G3S2) from the Mosquito Range 80 miles to the north, and is the southernmost record in

TABLE 3. Geographic Distribution of Taxa in the Sangre de Cristo Wilderness and environs.

Distribution	Percentage	Number
Western North America	40.6	292
North America	13.1	94
Southern Rockies	13.1	94
Oroboreal	8.9	64
Circumboreal	8.8	63
Southwestern N.A.	6.3	45
Great Plains	2.9	21
Cosmopolitan	1.8	13
Eastern North America	0.7	5
Non-native	4.0	29
Total	100	720

North America. Other calcareous sites in the Sangre alpine (e.g. Bushnell Lakes area) should be surveyed for this taxon.

Valeriana arizonica: This species is relatively unknown in Colorado. COLO only holds nine records in its collection, seven of which came from this study. These records all come from the west side of the range from Cotton Creek in the north (Saguache Co.) to Zapata Creek in the south (Alamosa Co.). This taxon, which may sometimes be conflated with *V. acutiloba* Rydb., should be more thoroughly examined and perhaps tracked by CNHP.

b) Notes on areas of interest:

Bushnell Lake area: As a high altitude site with limestone geology, this area is deserving of further study. Talus below the lake is the only site from which *Anemone parviflora* Michx. is documented in the study, and *Asplenium trichomanes-ramosum* L. was only collected here and at another high elevation calcareous site on Marble Mountain. There may also be several species of *Botrychium* in the area (Scott Smith, pers. com.). The higher slopes above the lake have not been thoroughly searched, nor is it known how far the limestone extends into the upper alpine.

Huerfano Basin: This area in the shadow of Blanca Peak's northeast face appears to be one of the more mesic areas in the wilderness and is likely to turn up additional records for the Sangre flora. It also provides good access to Zapata Ridge—a five mile expanse of dry tundra that runs along the crest of the range and the source of several records not vouchered elsewhere (e.g. *Blepharoneuron tricholepis* (Torr.) Nash; *Ivesia gordonii* (Hook.) Torr. & A. Gray; *Oxytropis parryi* A. Gray).

Marble Mountain: As the calcareous high-altitude site where *Saussurea weberi* was found, this area is likely to hold other rare taxa. Our only record for *Oxytropis podocarpa* comes from the same site as the *Saussurea*. Hogan approached the peak from Music Pass to the south, but it might be fruitful to come in from the easterly ridges/drainages to the east.

Rainbow Trail (northeast): The stretch of the Rainbow Trail north of Hayden Creek campground is the site for Colorado's four species of *Corallorhiza*, several species of *Pyrola*, including *P. picta*, and *Aralia nudicaulis* L. This lower elevation (8,000'), mixed forest site may hold these taxa due to its northeast facing aspect, a position that allows it to 'catch' more of these species. In combination with Bushnell Lake (above), this area might be worth further study.

Sand Creek: Upper Sand Creek appears to be another pocket in the wilderness that catches a fair amount of moisture. A series of fens north of the upper lakes and proximate to the trail, give indications of being rich wetland sites. A selection of seldom collected species from the study area found here include *Artemisia laciniata* Willd. ssp. *parryi* (A. Gray) Weber, *Carex canescens* L., *Eriophorum angustifolium* Honckeny, *Spiranthes romanoffiana* Cham., and *Triglochin maritima* L.

West Side Drainages: The drainages on the San Luis Valley side of the range continued to offer up new records throughout the survey. The notes on *Draba smithii*, *Pinus* "strobiformis," and *Valeriana arizonica* (above) gives some indication of their richness. The discovery of *Lilium philadelphicum* L. at 10,000' in Cotton Creek was a notable surprise. And the sole collections of such species as *Carex hassei* Bailey, *Hedysarum occidentale* Greene, and *Pedicularis crenulata* Benth. ex A. DC. from the west side of the study area point to the need to be out early in the season to voucher novelties.

CONCLUSION

Species inventories such as floristic surveys play a critical role in our understanding of biodiversity. Voucher specimens serve as objective evidence of a particular species at a particular place at a particular time—"without a voucher it is just hearsay." Collectively, inventories grounded in specimens are the basis for our understanding of species distribution, abundance, and taxonomic affinity. This documentation of species diversity is essential to the more inclusive study of biodiversity that ranges from genetic diversity within and between populations to the diversity of habitats and ecosystems across the landscape.

Protected natural areas serve an important role in the protection of biodiversity. As the third largest wilderness area in Colorado, the northern Sangre de Cristos are an important node of conservation in the Southern Rockies. While compromised in part by the narrowness of their east-west extent and their fragmentation by several roads, the Sangres serve an essential function as a north-south corridor of connectivity and as part of a broader network of natural areas surrounding the statutory wilderness. On the west side of the range The Great Sand Dunes National Park and Preserve Act of 2000 linking lands managed by the Forest Service, National Park Service, Fish and Wildlife Service, and the Nature Conservancy was one of the most

significant conservation actions in Colorado's recent history. On the east side of the range, several large ranches and the relatively undeveloped Wet Mountain Valley serve a similar, if less secure, conservation role.

It is hoped the floristic checklist presented here (Appendix 1) will contribute to our understanding, protection, and appreciation of a core portion of the greater Sangre de Cristo region in the Southern Rocky Mountains.

APPENDIX 1

SANGRE DE CRISTO WILDERNESS AREA SPECIES LIST

Nomenclature begins with Jennifer Ackerfield's Flora Colorado (2015), but is informed by a variety of other sources including Weber and Wittman (2012), Hartman and Nelson (2001), Snow (2009) and Flora of North America (1993+); relevant synonymy is provided. Brief ecological notes pertaining to the species distribution and abundance in the study area are followed by a geographic circumscription.

Geographically the statutory Wilderness Area is bounded by Poncha Pass to the north and La Veta Pass to the south. The Culebra Range is not included in this study.

Lower elevation generally refers to areas below 8500 feet characterized by piñon/juniper/oak woodlands; *Montane* is equivalent to the zone between 8500 and 10,000 feet marked by ponderosa pine and Douglas-fir; *Subalpine* ranges from 9500 to 12,500 feet (treeline) with spruce/fir; and *Alpine* is usually above 12,000 feet.

Qualitative abundance scale: abundant, common, not uncommon, scattered, uncommon, # of collection(s).

Oroboreal is a phytogeographic term describing a distribution stretching across the northern tier of North America and extending south along the western cordilleras and the eastern highlands.

FERNS AND FERN ALLIES

Argyroschisma fendleri (Kunze) Windham-LIPFERN [*Notholaena* f.]. Specimens from Great Sand Dunes (Mosca Pass trail); rock crevices. Southern Rockies. [Spackman & Decker sn GRSA.]

Asplenium trichomanes-ramosum L.—SPLEENWORT [*A. viride*]. Uncommon; limestone at higher elevations. North America (oroboreal). [Hogan 4527]

Athyrium filix-femina (L.) Roth—Found growing along edge of Hayden Creek; Fremont Co; 8,275'. Circumboreal. [Scott Smith 393 COLO]

Botrychium echo W.H. Wagner—Sangre de Cristo Range, Music Pass. Mixed forests, soils and rocks composed of granites and conglomerates; elev. 11,408 ft. UTM 13 NAD83, E0455578 N4197954. Southern Rockies. [Scott Smith 419 COLO]

Botrychium × hesperium (Maxon & R.T. Clausen) Wagner & Lellinger—Sangre de Cristo Range, Music Pass. Mixed forests, soils and rocks composed of granites and conglomerates; elev. 11,408 ft. UTM 13 NAD83, E0455578 N4197954. Western N.A. [Scott Smith 420 COLO]

Botrychium lanceolatum (S.G. Gmel.) Ångstr.—Sangre de Cristo Range, Music Pass. Mixed forests, soils and rocks composed of granites and conglomerates; elev. 11,408 ft. UTM 13 NAD83, E0455578 N4197954. Oroboreal. [Scott Smith 421 COLO]

Botrychium spathulatum W.H. Wagner—Sangre de Cristo Range, N of Hayden Pass. Calcareous talus fields at Bushnell Lake; Fremont Co. UTM 13S WGS84 E0424057 N4245453; elev. 11,120 ft. [Scott Smith 224 COLO]

Botrychium tunux Stensvold & Farrar.—Sangre de Cristo Range. Calcareous talus fields at Bushnell Lake; Fremont Co. UTM 13S WGS84 E0423685 N4245200; elev. 11,120 ft. [Scott Smith 223]

[**Botrychium** spp.—Other species of *Botrychium* (*B. minganense*, *B. pinnatum*, et al.) have been collected by Scott Smith south of the study area near Trinchera Peak at 11,000 ft. (Huerfano Co.) and might be expected in the Sangre de Cristo Wilderness.]

Cheilanthes feei T. Moore—A couple specimens from margins of the study area. North America. [Elliot 10471 RM]

Cheilanthes fendleri Hook.—One specimen from Great Sand Dunes (Mosca Pass Trail). Southwestern N.A. [Sushan sn COLO]

Cryptogramma acrostichoides R. Br.—ROCK BRAKE. [*C. crispa* var.

acrostichoides]. Not uncommon among rocks at higher elevations. Western N.A. (Asia) [Hogan 4470, 4569]

Cystopteris fragilis (L.) Bernh.—BRITTLEFERN. Common in shade of rocks and cliffs throughout the area. North America. [Hogan 3664]

Cystopteris reevesiana Lellinger—BRITTLEFERN. Common in shade of rocks and cliffs throughout the area. Southwestern N.A. [Hogan 4574, 4754]

Dryopteris cristata (L.) A. Gray—Found growing along edge of Hayden Creek; Fremont Co; 8,275'. Eastern N.A. [Scott Smith 438, 439 COLO]

Dryopteris filix-mas (L.) Schott—Found growing along edge of Hayden Creek; Fremont Co; 8,275'. Western N.A. [Scott Smith 392 COLO]

Equisetum arvense L.—HORSETAIL. Common along watercourses below 10,000'. North America. [McHenry 04-10 COLO]

Equisetum hyemale L. var. **affine** (Engelm.) A.A. Eaton—SCOURING-RUSH. [*Hippochaete hyemalis*]. Moist areas at middle elevations. North America. [Elliot 6803 RM]

Equisetum laevigatum A. Braun—SCOURING-RUSH. [*Hippochaete laevigata*]. Moist sites at middle elevations; perhaps more common than *E. hyemale*. North America. [Hogan 4548]

Gymnocarpium dryopteris (L.) Newman—OAKFERN. One specimen from south of wilderness boundary; riparian habitat, 8600'; Costilla Co. North America. [(Elliot 8720a RM)]

Polystichum lonchitis (L.) Roth—HOLLYFERN. One specimen from stand of *Picea pungens*, 11,000'; Huerfano Co. North America (oroboreal). [Yeatts 2170 COLO]

Pteridium aquilinum (L.) Kuhn ssp. **lanuginosum** Hultén—BRACKEN One specimen found on margin of study area in mixed forest at 8500'; Fremont Co. Cosmopolitan. [Hogan 4866]

Selaginella densa Rydb.—Common *Selaginella* from lower elevations to alpine. Western N.A. [Hogan 3508]

Selaginella mutica D.C. Eaton—One specimen from rocky site at 9,000'; southern end of study area; Huerfano Co. Southwestern N.A. [Hartman 64881 RM]

Selaginella scopulorum Maxon—One specimen from rocky site at 11,400'; east side of wilderness; Custer Co. Western N.A. [(McHenry 04-14 COLO)]

Selaginella weatherbiana Tryon—Two specimens from Mosca

Pass trail in Great Sand Dunes at 8,000'. Southern Rockies. [Shusan sn COLO]

Woodsia neomexicana Windham–Sangre de Cristo Range. Growing in mixed Aspen, Bristlecone Pine, & *Pseudotsuga menziesii* on limestone substrate, final turn below Bushnell

Lakes; elev. 10,920'; Fremont Co. UTM 13S NAD83, E0424480 N4246078. Southwestern N.A. [Scott Smith 410 COLO]

Woodsia oregana D.C. Eaton ssp. *cathartiana* (B.L. Rob.) Windham–The common *Woodsia* from piñon/juniper to alpine. North America. [Hogan 2551]

GYMNOSPERMS

CUPRESSACEAE Cypress Family

Juniperus communis L. var. *depressa* Pursh–COMMON JUNIPER. Shrub of forest understory, common. North America. [Hogan 4502]

Juniperus scopulorum Sarg.–ROCKY MOUNTAIN JUNIPER. [*Sabina* s.]. Common at lower elevations in wilderness. Western N.A. [Elliott 1494 RM]

PINACEAE Pine Family

Abies bifolia A. Murray–SUBALPINE FIR. [*A. lasiocarpa*]. Subdominant tree with *Picea engelmannii* in subalpine forests. Both varieties *arizonica* and *bifolia* occur, with var. *arizonica* perhaps tending toward lower elevations than var. *bifolia*. Western N.A. [Weber 5887]

Abies concolor (Gordon & Glend.) Lindl. ex Hildebr.–WHITE FIR. Common near streams below 10,000'. Southwestern N.A. [Elliott 4572 RM]

Picea engelmannii Parry–ENGELMANN SPRUCE. Dominant tree in subalpine forests. Western N.A. [Hogan 4622]

Picea pungens Engelm.–BLUE SPRUCE. Usually occurring along stream courses at moderate elevations, records from the alpine are suspect. Western N.A. (Rocky Mountains). [Elliott 5471 RM]

Pinus aristata Engelm.–BRISTLECONE PINE. Common at higher elevations to treeline. Southern Rockies. [Hogan 3741, 4454]

Pinus contorta Douglas var. *latifolia* Engelm.–LODGEPOLE PINE. Scattered on east side of wilderness, largely absent on western side (one collection from upper Dorsey Creek); at southernmost end of its range in the Sangres. Western N.A. (Northwestern). [Hogan 4730, 4781]

Pinus edulis Engelm.–PIÑON PINE. Dominant with *Juniperus scopulorum* at lowermost elevations in wilderness. Southwestern N.A. [Elliott 1498 RM]

Pinus flexilis James–LIMBER PINE. Common from mid-elevations to treeline. Western N.A. [Hogan 3744]

Pinus ponderosa Douglas var. *scopulorum* Engelm.–PONDEROSA PINE. Scattered at lower elevations in wilderness; seldom if ever forming pure stands. Western N.A. [Lederer 98–44 COLO]

Pinus cf. *strobiformis* Engelm.–MEXICAN WHITE PINE. A problematic taxon in west side drainages at lower elevations; not always clearly distinguishable from *P. flexilis*, but recognized by many observers as “something different.” Deserving closer study. Southwestern N.A. [Hogan 3745, 3778b]

Pseudotsuga menziesii (Mirb.) Franco var. *glauca* (Mayr) Franco–DOUGLAS FIR. Dominant tree in lower subalpine, often mixed with *Populus tremuloides*. Western N.A. [Hartman 64912 RM]

ANGIOSPERMS

ACERACEAE (see Sapindaceae)

ADOXACEAE Moschatel Family

Sambucus racemosa L. var. *microbotrys* (Rydb.) Kearney & Peebles [*S. microbotrys*].–Common understory shrub from lower elevation to treeline. Western N.A. [Hogan 1821, 2558, 3342]

AGAVACEAE Agave Family

Yucca glauca Nutt.–Rocky sites in lower elevation and montane forested zone. Great Plains. [Gillett 12140 COLO]

ALLIACEAE Onion Family

Allium cernuum Roth–NODDING ONION. Common wild onion of lower elevations. North America. [Hogan 1934, 3392, 3596]

Allium geyeri S. Watson–GEYER'S ONION. Common wild onion of higher elevations. Western N.A. [Hogan 1294, 3699, 5031]

ALSINACEAE (see Caryophyllaceae)

AMARANTHACEAE Amaranth Family (see also Chenopodiaceae)

Amaranthus retroflexus L.–One specimen near roadside proximate to wilderness. Alien. [Elliott 4705 RM].

ANACARDIACEAE Sumac Family

Rhus trilobata Nutt.–SKUNKBRUSH. [*Rhus trilobata*]. Scattered in piñon/juniper woodlands. Western N.A. [Hogan 4805, 4841]

APIACEAE/UMBELLIFERAE Parsley Family

Aletes anisatus (A. Gray) W.L. Theob. & C.C. Tseng– [*Cymopterus a.*; *Pteryxia a.*]. Uncommon at timberline in the wilderness. Southern Rockies (Colorado). [Hogan 3774, 5044.]

Angelica grayi (J.M. Coult. & Rose) J.M. Coult. & Rose–GRAY'S

ANGELICA. Not uncommon in mesic sites in subalpine and alpine. Southern Rockies. [Hogan 3440; Weber 5861]

Cicuta douglasii (DC) J.M. Coult. & Rose–One historical collection from vicinity of Orient Mine. Western N.A. [Ramaley 15131 COLO]

Conioselinum scopulorum (A. Gray) J.M. Coult. & Rose–HEMLOCK PARSLEY. Moist sites in the subalpine; late summer anthesis. Southern Rockies. [Hogan 3600, 3792, 5097]

Cymopterus acaulis (Pursh) Raf.–Uncommon in piñon/juniper. Western N.A. (interior). [Hogan 2533]

Cymopterus alpinus A. Gray–ALPINE PARSLEY. [*Oreoxis a.*]. Dry tundra and upper subalpine. Southern Rockies. [Hogan 2799, 4508, 4460, 5069]

Cymopterus bakeri (J.M. Coult. & Rose) Jones–ALPINE PARSLEY [*Oreoxis b.*]. Common on dry tundra; a denizen of the Sangre de Cristo and San Juan mountains in Colorado and New Mexico. Southern Rockies. [Hogan 1332, 3324, 3721, 4614, 4928]

Cymopterus lemmonii (J.M. Coult. & Rose) Dorn–MOUNTAIN PARSLEY [*Pseudocymopterus montanus*]. The common yellow umbel of the mountains. Southern Rockies. [Hogan 1808, 4871; Weber 5904]

Heracleum maximum Bartr.–COW PARSNIP [*H.sphondylium*; *H.lanatum*]. Moist sites and riparian in subalpine. North America (Asia). [Hogan 3583]

Ligusticum porteri J.M. Coult. & Rose–OSHA. Common in aspen stands; a popular species amongst herbalists. Southern Rockies. [Hogan 1823, 3790, 4554]

Neoparrya lithophila Mathias [*Aletes l.*].–Two specimens collected from Methodist Mt., just north of wilderness. Southern Rockies. [Hartman 66137; Elliott 9066 RM]

Osmorhiza chilensis Hook. & Arnott–SWEET CICELY. Not as common as *O. depauperata*; mesic forested sites. Western N.A. [South America]. [Elliott 2463, 4526]

Osmorhiza depauperata Phil.–SWEET CICELY. Common in forests throughout wilderness. Western N.A. (oroboreal). [Hogan 1803, 4550]

Oxypolis fendleri (A. Gray) Heller–COWBANE. Common in moist sites and streamsides in the subalpine. Southern Rockies. [Hogan 1303, 1829, 3619, 4970, 5108; Weber 5860]

Sanicula marilandica L.–BLACK SNAKEROOT. One historical collection from “7 miles west of Westcliffe”. North America (eastern). [Baltzell 186 COLO]

Zizia aptera (A. Gray) Fernald–A species of wet meadows in the Wet Mountain Valley; likely in similar sites on the east side of the wilderness. North America. [Baltzell 167 COLO]

APOCYNACEAE Dogbane Family

Apocynum androsaemifolium L.–SPREADING DOGBANE. Mesic sites at lower elevations. North America. [Hogan 3684]

ARALIACEAE Ginseng Family

Aralia nudicaulis L.–WILD SARSAPARILLA. Collections from east side of wilderness in mesic sites at lower elevations. North America (eastern). [Hogan 5120]

ASTERACEAE/COMPOSITAE Sunflower Family

Achillea millefolium L. var. *lanulosa* (Nutt.) Piper–YARROW. [*A. lanulosa*]. Very common from montane into the alpine. Western N.A. [Hogan 3581, 3629; Weber 5897]

Agoseris aurantiaca (Hook.) Greene–FALSE DANDELION. [vars. *aurantiaca* and *purpurea*]. Not uncommon in subalpine and lower alpine. Western N.A. [Hogan 1299, 3545]

Agoseris glauca (Pursh) Raf.–FALSE DANDELION. Not uncommon in montane and subalpine. Western N.A. [Hogan 3541; Weber 5812]

Anaphalis margaritacea (L.) Benth. & Hook.–PEARLY EVERLASTING. A late season composite of meadows and forest openings in the montane; seldom collected in study area. North America. [Elliott 4996 RM]

Antennaria anaphaloides Rydb.– [*Antennaria pulcherrima* ssp. *anaphaloides*]. Scattered collections from lower alpine. Western N.A. [Hogan 3479, 5043]

Antennaria marginata Greene–This *Antennaria* without tomentum on the upper leaf surface can be difficult to distinguish from *A. neglecta* and *A. howellii*. One or more of these green leafed taxa are frequent in the montane and lower subalpine in the study area. North America. [Hogan 4863]

Antennaria media Greene [*A. alpina*].–A species of the alpine and subalpine. Western N.A. [Hogan 3517, 3550]

Antennaria microphylla Rydb.–A common *Antennaria* from lower elevations to upper subalpine. Western N.A. [Elliott 8869 RM]

Antennaria parvifolia Nutt.–Very common throughout the forested zones of the wilderness. Western N.A. [Hogan 1788, 2546, 2566, 4605]

Antennaria rosea Greene–Common throughout the wilderness area, into the alpine. Western N.A. [Hogan 3362, 3492, 3544, 4461, 4848, 5015]

Antennaria umbrinella Rydb.–Common alpine *Antennaria*. Western N.A. [Hogan 3443, 3496, 3700, 4464, 4899]

Arnica cordifolia Hook.–HEARTLEAF ARNICA. Very common *Arnica* of drier forests. Western N.A. [Hogan 1835, 3575, 3708, 4859]

Arnica mollis Hook.–HAIRY ARNICA. Common subalpine *Arnica*. Western N.A. [Hogan 4572; Weber 5824]

Arnica parryi A. Gray Two collections from moist subalpine site in

upper Sand Creek; Saguache Co. Western N.A. (Hogan 5084; Elliott 8940 RM)

Artemisia campestris L. var. *pacifica* (Nutt.) Peck–WESTERN SAGEWORT. [*Oligosporus pacificus*]. A sage of lower elevations. Western N.A. [Elliott 4737 RM; Hartman 63929 RM]

Artemisia campestris L. var. *purshii* (Hook.) Cronquist [*A. borealis*; *Oligosporus groenlandicus*].–An alpine sage, not as common as *Artemisia scopulorum*. North America (oroboreal). [Hogan 3459, 4938, 5103, 5054]

Artemisia dracunculus L.–WILD TARRAGON. [*Oligosporus dracunculus*]. A sage of lower elevations. Western N.A. (oroboreal). [Hartman 63908 RM]

Artemisia franseroides Greene–Common in montane and lower subalpine forests. Southwestern N.A. [Hogan 1471, 4555]

Artemisia frigida Willd.–FRINGED SAGE. Lower elevations, often associated with disturbed habitat. Circumboreal. [Hogan 3469]

Artemisia laciniata Willd. ssp. *parryi* (A. Gray) W.A. Weber [*A. parryi*].–Two collections from gravelly sites proximate to upper Sand Creek and S. Colony Creek in subalpine. Western N.A. (Rocky Mountains). [Hogan 5072; Elliott 5485 RM]

Artemisia ludoviciana Nutt.–Not uncommon throughout the elevational gradient. North America. [Hogan 3794]

Artemisia michauxiana Besser–Two records from wilderness area at higher elevations on east side. Western N.A. [Schooley sn COLO; Elliott 9380 RM]

Artemisia scopulorum A. Gray–ALPINE SAGE. Common sage of the tundra. Western N.A. [Hogan 1328, 3433, 3476, 5049; Weber 5846]

Artemisia tridentata Nutt. var. *vaseyana* (Rydb.) Boivin–MOUNTAIN SAGEBRUSH. [*Seriphidium vaseyanum*]. Collections from margins of study area. Western N.A. [Elliott 9079 RM]

Aster [see *Symphyotrichum*]

Bahia dissecta (A. Gray) Britton [*Amauriopsis d.*].–Drier sites at lower elevations; scattered. Southwestern N.A. [Hogan 4716]

Brickellia grandiflora (Hook.) Nutt.–Blooms in late summer at middle elevations; scattered. Western N.A. [Hogan 3776, 5098]

Chaenactis douglasii (Hook.) Hook. & Arn var. *alpina* A. Gray [*C. alpina*].–Uncommon (overlooked?) on alpine screes. Western N.A. [Hogan 3409]

Chaenactis douglasii (Hook.) Hook. & Arn. var. *douglasii* [*C. douglasii*].–Scattered along the margins of the wilderness at lower elevations. Western N.A. [Elliott 8188 RM]

Chrysothamnus [see also *Ericameria*]

Chrysothamnus viscidiflorus (Hook.) Nutt.–Not uncommon in piñon/juniper/oak woodlands at lower elevations of study area. Western N.A. [Hogan 3786]

Cirsium arvense (L.) Scop.–CANADIAN THISTLE. [*Breca a.*]. A few collections from lower elevations at margin of wilderness. Non-native. [Elliott 4551 RM]

Cirsium canescens Nutt.–PRAIRIE THISTLE. Several collections from lower elevations at margin of wilderness. Great Plains. [Hogan 3602]

Cirsium funkiae Ackerfield–MOUNTAIN THISTLE. [*C. scopulorum*]. Common and dramatic thistle of the subalpine and lower alpine. Western N.A. (northern Rockies). [Hogan 3447]

Cirsium parryi (A. Gray) Petrak–Common thistle of the montane and subalpine. Southern Rockies. [Hogan 3777, 4478, 4725]

Cirsium undulatum (Nutt.) Spreng.–A few collections from lower elevations at margin of wilderness. Western N.A. [Elliott 6774, 8241 RM]

Crepis nana Richardson–ALPINE HAWKSBEARD. [*Askellia n.*]. One

- specimen at COLO from "above Rainbow Lakes." Western N.A. (oroboreal). [Gillett 12134 COLO]
- Dieteria bigelovii** (A. Gray) Greene—TANSY ASTER [*Machaeranthera* b.]. This is a problematic genus with numerous circumscriptions and attendant synonymy—more recent treatments place many of the taxa into *Dieteria* and *Xanthisma* (FNA). Treated here in the broader sense to include *M. patersonii*, this taxon is scattered throughout the study area, with most collections from lower elevations. Southern Rockies. [Hogan 3557, 4717]
- Ericameria discoidea** (Nutt.) Nesom [*Macronema d.*].—Several specimens from northeastern aspect of wilderness around 11,000'. Western N.A. [Hogan 4538, 4577, 5121]
- Ericameria nauseosa** (Pallas ex Pursh) G.L. Nesom & Baird [*Chrysothamnus n.*].—Margins of the wilderness at lower elevations, several purported varieties present. Western N.A. [Elliott 4729; Hartman 63985 RM]
- Ericameria parryi** (A. Gray) G.L. Nesom & Baird [*Chrysothamnus p.*].—Margins of the wilderness at lower elevations, several purported varieties present. Western N.A. [Hogan 3784, 3796]
- Erigeron acris** L. [*E. nivalis*; *Trimorpha elongata*].—Two records reported from margin of study area. Western N.A. [Hartman 63956, 66179 RM]
- Erigeron canus** A. Gray—A couple records from lower elevations. Great Plains. [Baltzell 108 COLO]
- Erigeron compositus** Pursh—Not uncommon in the subalpine and lower alpine. Western N.A. (oroboreal). [Hogan 3340, 4887]
- Erigeron coulteri** Porter—Common fleabane of subalpine forests and meadows, blooming in late summer. Western N.A. [Hogan 3580, 4989, 4998, 5073, 5114; Weber 5856]
- Erigeron divergens** Torr. & A. Gray—Seldom collected, lower elevations. Western N.A. [Elliott 4719 RM]
- Erigeron elatior** (A. Gray) Greene—Moist, subalpine forests; scattered. Southern Rockies. [Hogan 3767, 4477, 4596; Weber 5816]
- Erigeron eximius** Greene—Not uncommon in montane zone. Southern Rockies. [Hogan 3613, 4480]
- Erigeron flagellaris** A. Gray—Very common in drier sites below 10,000'. Western N.A. [Hogan 1786, 2543, 3359, 4820, 4951]
- Erigeron formosissimus** Greene—Scattered in drier sites below treeline. Western N.A. (Rocky Mountains). [Hogan 3488, 3768, 4448, 4476; Weber 5909]
- Erigeron glacialis** (Nutt.) A. Nelson var. *glacialis* [*Erigeron peregrinus*].—Common in moist subalpine meadows. Western N.A. [Hogan 1446, 3655, 4570, 5107]
- Erigeron grandiflorus** Hook.—Alpine tundra. Western N.A. (Rocky Mountains). [Hogan 4566, 4811]
- Erigeron leiomerus** A. Gray—Scattered, typically upon unstable scree and rockslides. Western N.A. (Rocky Mountains). [Hogan 1789, 2537, 3403; Weber 5834]
- Erigeron melanocephalus** (A. Nelson) A. Nelson—Moist sites in alpine and upper subalpine. Southern Rockies. [Hogan 1326, 3444, 4985; Weber 5821]
- Erigeron pinnatisectus** (A. Gray) A. Nelson—Common in drier alpine sites. Southern Rockies. [Hogan 1292, 2788, 3275, 4506, 4897]
- Erigeron pumilus** Nutt.—Lower elevations of wilderness. Western N.A. [Hogan 2531]
- Erigeron simplex** Greene—Here treated as distinct from *E. grandiflorus* in which it has been subsumed in recent treatments (FNA); more common and in similar habitats. Western N.A. [Hogan 1314, 2797, 3323, 3552, 4898, 5095; Weber 5853]
- Erigeron subtrinervis** Rydb.—Common in drier, forested sites in the montane and subalpine. Western N.A. [Hogan 1935, 3391, 3546, 3595]
- Erigeron vagus** Payson—One specimen from Mt. Lindsey; alpine. Western N.A. [Elliott 10937 RM]
- Erigeron vetensis** Rydb.—Very common on dry sites from lower elevation to subalpine. Southern Rockies. [Hogan 3353, 4516, 4849]
- Erigeron vreelandii** Greene—One specimen from mixed forest at 9,000' near Crestone. A taxon suspiciously close to the more common *E. subtrinervis*. Southwestern N.A. [Hogan 1470]
- Gaillardia aristata** Pursh—BLANKETFLOWER. Scattered on open sites in lower elevation forests. Western N.A. (interior). [Hogan 4718]
- Gutierrezia sarothrae** (Pursh) Britton & Rusby—SNAKEWEED. Lower elevations on margins of study area. Western N.A. [Elliott 4732, 10431 RM]
- Helianthus annuus** L.—Not uncommon along roads; sandy soils. Cosmopolitan. [Hogan 3605]
- [*Helianthella parryi* A. Gray (Culebras)—Not collected, but to be expected in coniferous forests. Southern Rockies.]
- Helianthella quinquenervis** (Hook.) A. Gray—Not uncommon in montane and subalpine. Western N.A. [Hogan 4537, 4801, 4968; Weber 5873]
- Helianthus petiolaris** Nutt.—Common at lower elevations in sandy soils on west side of study area. Western N.A. [Hogan sn; Elliott 4709 RM]
- Helianthus pumilus** Nutt.—Not uncommon in lower elevation woodlands and forests. Southern Rockies. [Hogan 4520]
- Helianthus rigidus** (Cass.) Desf. ssp. *subrhomboides* (Rydb.) Heiser [*H. pauciflorus* ssp. *subrhomboides*].—One specimen from mixed forest at 9,000' on east side. Great Plains. [Hogan 4720]
- Heliomeris multiflora** Nutt.—Common at lower elevations sites; flowering in late summer. Western N.A. [Hogan 1931, 4719, 5878; Weber 5878]
- Heterotheca pumila** (Greene) Semple—Alpine and subalpine meadows and tundra. Southern Rockies. [Hogan 3457, 3534, 4747, 4973]
- Heterotheca villosa** (Pursh) Shinnars [*sensu lato*].—A taxon of bewildering variability to which numerous names have been attached (*H. foliosa*; *H. horrida*). Common and widely scattered in the wilderness and surrounds. Western N.A. [Hogan 1937]
- Hieracium albiflorum** Hook. [*Chlorocrepis albiflora*].—One specimen from east side of Hayden Pass in mixed stand of aspen and *Pseudotsuga*. Western N.A. (oroboreal). [Elliott 8171 RM]
- Hieracium triste** Willd. ex Spreng. [*Chlorocrepis tristis*; *Hieracium gracile*].—Not uncommon in subalpine forests. Western N.A. [Hogan 3543, 5074]
- Hymenopappus filifolius** Hook. [includes vars. *cinereus* and *polycephalus*].—Common at lower elevations in piñon/juniper and montane. Great Plains (southern). [Hogan 2528, 4624]
- Hymenopappus flavescens** A. Gray var. *flavescens*—One specimen from piñon/juniper woodland at 8,000' near Zapata Falls. Great Plains (southern). [Elliott 4725 RM]
- Hymenoxys brandegeei** (Porter) ex A. Gray [*Rydbergia b*; *Tetraneuris b.*].—Common in dry, alpine tundra. Southern Rockies. [Hogan 2433, 2790, 3327, 3405, 3427, 4511, 4532; Weber 15212]
- Hymenoxys grandiflora** (Torr. & A. Gray) Parker [*Rydbergia g*; *Tetraneuris g.*].—Uncommon on tundra; a more northern species than *R. brandegeei*. Western N.A. (Rocky Mountains). [Elliott 9027, 9454 RM]

- Hymenoxys hoopesii** (A. Gray) Rydb. SNEEZEWEED. [*Dugaldia h.*; *Helenium h.*].—Moist sites in the subalpine. Western N.A. [Hogan 3547, 4965]
- Hymenoxys richardsonii** (Hook.) Cockerell [*Picradenia r.*].—Lower elevation woodlands and shrublands. Southwestern N.A. [Hogan 3390]
- Krigia biflora** (Walter) S.F. Blake.—An eastern species; rare in Colorado. Two specimens at COLO.: “six miles SW of Westcliffe, moist open mesa, 7,900’;” and “seven miles W of Westcliffe, low area, 8,300’” Custer Co. To be looked for in wilderness. Eastern N.A. [Baltzell 167, 201 COLO]
- Lactuca canadensis** L.—LETTUCE. One specimen from mixed conifers along Rainbow Trail on east side of study area. North America. [Elliott 4547 RM]
- Liatris punctata** Hook. Uncommon in study area; a specimen from piñon/juniper/oak woodland at 9,000’ in Hot Springs Canyon. Great Plains. [Hogan 3780]
- [*Ligularia* spp.—This genus is treated as the infrageneric *Amplectens* group in FNA (2006), and may not be the final taxonomic word on the taxa of *Senecios* with nodding heads. I have chosen to retain *Ligularia* offered provisionally by Weber and Wittmann (2001) because it is such a distinctive and important group in the Rocky Mt. flora.]
- Ligularia amplectens** (A. Gray) W.A. Weber var. **amplectens** [*Senecio amplectens* var. *amplectens*].—Common *Ligularia* of subalpine and lower alpine. Southern Rockies. [Hogan 1444, 3498, 4585, 4982; Weber 5864]
- Ligularia bigelovii** (A. Gray) W.A. Weber var. **hallii** [*Senecio bigelovii*].—Common in the subalpine zone. Southern Rockies. [Hogan 1451, 3485, 4760; Weber 5865]
- Ligularia holmii** (Greene) W.A. Weber [*Senecio amplectens* var. *holmii*].—Not uncommon on tundra and scree. Western N.A. (Rocky Mountains). [Hogan 3521, 3527, 4575]
- Ligularia pudica** (Greene) W.A. Weber [*Senecio pudicus*].—Scattered throughout montane zone. Southern Rockies. [Hogan 4486, 4759, 4953; Weber 5875]
- Ligularia taraxacoides** (A. Gray) W.A. Weber [*Senecio taraxacoides*].—Uncommon on the highest peaks. Southern Rockies. [Hogan 4954, 4960; Weber 15211]
- Microseris nutans** (Hook.) Sch. Bip.—One specimen from piñon/juniper woodland at 8,000’ near Zapata Falls. Western N.A. [Elliott 4744]
- Oreochrysum parryi** (A. Gray) Rydb.—PARRY’S GOLDENROD. [*Haplopappus p.*; *Solidago p.*]. Common understory plant throughout the forested zone. Southern Rockies. [Hogan 1469, 3537, 4485, 4595, 4974; Weber 5885]
- Packera crocata** (Rydb.) W.A. Weber & Á. Löve [*Senecio c.*].—Scattered in moist sites at higher elevations. Western N.A. (Rocky Mountains). [Hogan 1310, 1339, 3654, 5080]
- Packera dimorphophylla** (Greene) W.A. Weber & Á. Löve var. **dimorphophylla** [*Senecio d.*].—Scattered in dry sites at higher elevations. Western N.A. (Rocky Mountains). [Hogan 4571; Weber 5827]
- Packera fendleri** (A. Gray) W.A. Weber & Á. Löve [*Senecio f.*].—Common in dry sites throughout the montane and subalpine. Southern Rockies. [Hogan 1441, 1787, 3372, 3412, 3555, 4474, 4855; Weber 5883]
- Packera neomexicana** (A. Gray) W.A. Weber & Á. Löve var. **mutabilis** [*Senecio n.*].—Scattered throughout montane forests. Southern Rockies. [Hogan 1825]
- Packera oödes** (Rydb.) W.A. Weber [*Senecio o.*].—Scattered throughout montane forests. Western N.A. (Rocky Mountains). [Elliott 4102, 4181 RM]
- Packera pseud aurea** (Rydb.) W.A. Weber & Á. Löve var. **flavula** [*Senecio p.*].—Moist sites at lower elevations. Southern Rockies. [Hogan 3687]
- Packera streptanthifolia** (Greene) W.A. Weber & Á. Löve [*Senecio s.*].—A few specimens from montane forests. Western N.A. [Weber 5895; Elliott 4999 RM]
- Packera tridenticulata** (Rydb.) W.A. Weber & Á. Löve [*Senecio t.*].—Common at lower elevations in the wilderness. Great Plains. [Hogan 1824, 2525, 2549, 3691, 4816]
- Packera wernerifolia** (A. Gray) W.A. Weber & Á. Löve [*Senecio w.*].—A variable taxon, widespread, but more common at higher elevations. Western N.A. [Hogan 1341, 3341, 4606, 4854, 4915, 5004, 5052; Weber 5840]
- Pericome caudata** A. Gray Two specimens from rocky sites in forested zones of Saguache Co. Southwestern N.A. [Hogan 3775, 5099]
- Rudbeckia ampla** A. Nelson [*Rudbeckia laciniata* L. var. *ampla*].—Streamsides at lower elevations. Western N.A. (interior). [Hogan 4497, 4763]
- Rudbeckia hirta** L. var. **pulcherrima** Farw.—A couple collections from dry ponderosa pine forests in Custer Co., 9,000’ North America. [Hogan 4740]
- Saussurea weberi** Hultén—Two specimens (Hogan 4963, 5048) from east side of Marble Mt. at 12,600’; Custer Co. Previously unknown from the Sangres, these collections extend the range of this sensitive alpine species (G2/G3S2) from the Mosquito Range 80 miles north, and is the southernmost record in North America. Other calcareous sites in the Sangre alpine (eg. Bushnell Lakes area) should be surveyed for this taxon. Western N.A. (Rocky Mountains). [Hogan 4963, 5048]
- Senecio atratus** Greene—Talus and other disturbed sites, subalpine and alpine; common. Southern Rockies. [Hogan 1452, 3749, 4751, 4967; Weber 5815]
- Senecio crassulus** A. Gray—Subalpine forests and meadows; apparently infrequent in study area. Western N.A. [Hogan 4753]
- Senecio eremophilus** Richardson var. **kingii** (Greenm.) G.W. Douglas & Ruyle—Douglas—Disturbed sites in forested zone, montane and subalpine. Southern Rockies. [Hogan 3630, 4787]
- Senecio fremontii** Torr. & A. Gray ssp. **blitoides** (Greene) Cronquist—Talus and scree, alpine and upper subalpine; not uncommon. Southern Rockies. [Hogan 1467, 3524, 3772; Weber 5843]
- Senecio integerrimus** Nutt. var. **exaltatus** (Nutt.) Cronquist—Meadows and forests in the montane; only a few collections from area. Western N.A. [Hartman 64906 RM]
- Senecio serra** Hook. var. **admirabilis** (Greene) A. Nelson—Two collections from Rainbow Trail north of Hayden Creek. Southern Rockies. [Elliott 4552, 4593 RM]
- Senecio spartioides** Torr. & A. Gray [*S. spartioides* var. *multicapitus*].—Infrequent at lower elevations of study area, late season. Western N.A. [Lederer 96-155 COLO; Elliott 4723 RM]
- Senecio triangularis** Hook.—Common along subalpine stream-sides. Western N.A. [Hogan 1449, 3618; Weber 5825]
- Senecio wootonii** Greene—Collections from forested zone on east side of range. Southwestern N.A. [Hogan 3574, 4518, 5010]
- Solidago missouriensis** Nutt.—Scattered at lower elevations. North America. [Elliott 4524, Nelson 44144 RM]
- Solidago multiradiata** Aiton—Open sites from lower elevations to alpine. Western N.A. (oroboreal). [Hogan 4790; Weber 5899]
- Solidago simplex** Kunth [A problematic taxon, close to *S. multiradiata*, and inclusive in this treatment of Weber and Wittmann’s alpine *S. simplex* var. *nana*. FNA does not recog-

- nize var. *nana* as present in Colorado, and many of our alpine *Solidagos* may end up placed into *S. multiradiata*.—For the time being in this treatment, *S. simplex* is the most common *Solidago* of the study area, ranging across the elevational gradient. North America (oroboreal). [Hogan 1460, 3518, 3536, 3651, 4565]
- Solidago speciosa*** Nutt. var. ***pallida*** (Porter) Semple—One specimen, Hayden Pass Creek, Saguache County. Great Plains. [Hartman 63953 RM]
- Solidago velutina*** DC.—Uncommon at lower elevations. Western N.A. [Elliott 9747 RM]
- Stephanomeria pauciflora*** (Torr.) A. Nelson—One specimen sandy soils in piñon/juniper at 8,400' south of Crestone. Southwestern N.A. [Hogan 3607]
- Symphytotrichum foliaceum*** (DC.) Nesom [*Aster foliacues*].—Montane and subalpine forests. Western N.A. [Elliott 4525a, 5042 RM]
- Symphytotrichum laevis*** (L.) Á. Löve & D. Löve [*Aster laevis*].—A montane species, one specimen (Elliott 4531) from Rainbow Trail; Fremont Co. North America. [Elliott 4531 RM]
- Symphytotrichum spathulatum*** (Lindl.) Nesom [*Aster spathulatus*].—One specimen (Hartman 63936) from oak woodlands on west side of range. Western N.A. [Hartman 63936 RM]
- Taraxacum ceratophorum*** (Ledebour) DC. [*T. ovinum*].—Not uncommon on the high mountains. Western N.A. (oroboreal). [Hogan 3472, 3529]
- Taraxacum officinale*** G. H. Weber ex Wiggers—COMMON DANDELION [includes *T. erythrospermum*]. Scattered from lower elevations to treeline. Cosmopolitan. [Hogan 3705, 4602]
- Taraxacum scopulorum*** (A. Gray) Rydb. [*T. lyratum* of lit.].—Infrequent on the high peaks. Western N.A. (oroboreal). [Hogan 3430, 4812]
- Tetradymia canescens*** DC.—Piñon/juniper and oak woodlands. Western N.A. [Hogan 3797, 4776]
- Tetraneuris acaulis*** (Pursh) Greene var. ***acaulis*** [*Hymenoxys acaulis*].—Common in dry habitats at lower elevations. (This circumscription includes collections of vars. *acaulis* and *arizonica*). Western N.A. (Rocky Mountains). [Hogan 3351]
- Tetraneuris acaulis*** (Pursh) Greene var. ***caespitosa*** A. Nelson [*Tetraneuris brevifolia*].—Common on dry sites in tundra and upper subalpine. Western N.A. (Rocky Mountains). [Hogan 1318, 1345, 2438, 2789, 3530, 4515, 4559]
- Thelesperma filifolium*** (Hook.) A. Gray—Occasionally collected in piñon/juniper and oak woodlands. Great Plains. [Elliott 4697, Hall 1181 RM]
- Tonestus pygmaeus*** (Torr. & A. Gray) A. Nelson—Common on rocky, alpine tundra. Southern Rockies. [Hogan 3465, 3502, 4813, 4978; Weber 5837]
- Townsendia exscapa*** (Richardson) Porter—Historical collections from Great Sand Dunes area. Western N.A. (interior). [Bean, L. 51-7 COLO]
- Tragopogon dubius*** Scop.—Common weed of lower elevations. Non-native. [Elliott 8225, Hall 1164 RM]
- Tragopogon pratensis*** L.—Occasional weed of more mesic sites than *T. dubius*. Non-native. [Baltzell 162 COLO]
- Ximenesia encelioides*** Cav. [*Verbesina e.*].—Ruderal weed at lower elevations. Cosmopolitan. [Hogan s.n.]
- BERBERIDACEAE Barberry Family**
- Berberis repens*** Lindl. OREGON GRAPE. [*Mahonia r.*].—Not uncommon understory plant of middle elevation forests. Western N.A. [Lederer 97-152 COLO; Elliott 8239, 9287 RM]
- BETULACEAE Birch Family**
- Alnus incana*** (L.) Moench ssp. ***tenuifolia***—ALDER. Along stream-banks at middle elevations. Western N.A. [Hogan 3627, 4499]
- Betula occidentalis*** Hook.—RIVER BIRCH. [*B. fontinalis*]. Scattered along streams at middle elevations. Western N.A. [Hogan 2567, 3610, 4869]
- BORAGINACEAE Borage Family (see also Hydrophyllaceae)**
- Cryptantha crassiseppala*** (Torr. & A. Gray) Greene—A couple specimens from margins of study area in piñon/juniper zone on west side of range. Southwestern N.A. [Erdman 105 COLO]
- Cryptantha fendleri*** (A. Gray) Greene—Scattered in drier sites at lower elevations on west side of range. Western N.A. [Hogan 4771]
- Eritrichum nanum*** (Vill.) Schrad. ex Gaud. var. ***elongatum*** (Rydb.) Cronquist—ALPINE FORGET-ME-NOT [*E. aretioides*]. Common cushion plant of dry tundra. Western N.A. [Hogan 1344, 3698, 3719, 4507, 4615; Weber 5839]
- Hackelia besseyi*** (Rydb.) J.L. Gentry—Specimens reported from subalpine forests. Southwestern N.A. [Elliott 9760; Hartman 63988 RM]
- Hackelia floribunda*** (Lehm.) I. M. Johnston—Specimens from montane zone. Western N.A. [Elliott 7868, 9715 RM]
- Lappula occidentalis*** (S. Watson) Greene var. ***occidentalis*** [*L. redowskii*].—Commonly collected at lower elevations of study area; dry, disturbed sites. Cosmopolitan (native). [Hogan 2532]
- Lithospermum incisum*** Lehm.—Piñon/juniper and oak woodlands; early season; not uncommon. North America. [Hogan 2526, 4817]
- Lithospermum multiflorum*** Torr. ex A. Gray—Higher elevation and perhaps more abundant than *L. incisum*. Southwestern N.A. [Hogan 1790, 3677]
- Mertensia alpina*** (Torr.) G. Don—Two specimens, one from 13,600' on California Peak, and the other from the summit of Mt. Lindsey at 14,000'. Perhaps a broader circumscription than Weber & Wittmann describe. Western N.A. (Rocky Mountains). [Yeatts 2159 COLO; Elliott 9625 RM]
- Mertensia ciliata*** (James ex Torr.) G. Don—Common species of subalpine streams and wetlands. Western N.A. [Hogan 1300; Lederer 97-158 COLO]
- Mertensia lanceolata*** (Pursh) A. DC.—Widespread and common. [A form w/ ovate leaves described by Rydberg in 1901 from Spanish Pks. as *M. ovata*, is not uncommon at higher elevations in the Sangres]. Western N.A. (interior). [Hogan 1815, 2434, 3439, 4845, 5087]
- Mertensia oblongifolia*** (Nutt.) G. Don—A few specimens from the alpine at RM. Western N.A. [Elliott 9354, 9592, 9468 RM]
- [*Mertensia ovata* Rydb.—A form with ovate leaves described by Rydberg in 1901 from Spanish Pks. is not uncommon at higher elevations in the Sangres. Filed with *M. lanceolata* at COLO, this may as easily be placed with *M. oblongifolia* or *M. viridis*, three spp. that are very similar and intergrade throughout their range.]
- [*Mertensia viridis* (A. Nelson) A. Nelson [*M. lanceolata* var. *viridis*].—Not uncommon on the high peaks. Western N.A.]
- Oreocarya thysiflora*** Greene [*Cryptantha thysiflora*].—Drier sites below 9,000'; scattered. Great Plains. [Elliott 8202, 9048 RM]
- Oreocarya pustulosa*** Rydb. [*Cryptantha cinerea* var. *pustulosa*].—Common in sandy soils of piñon/juniper zone between Crestone and Great Sand Dunes. Southwestern N.A. [Hogan 2528, 3604]

BRASSICACEAE/CRUCIFERAE Mustard Family

Alyssum alyssoides (L.) L.—Roadsides and trailheads at lower elevations. Non-native. [Hogan 4880]

Alyssum parviflorum Fisch. ex M. Bieb. var. **micranthum** (C.A. Mey.) Dorn—One specimen from a stand of spruce and bristlecone at 9,000' in Huerfano County. Non-native. [Elliott 3490 RM]

Arabis hirsuta (L.) Scop.—Scattered in mid-elevation forests. North America. [Hogan 3367, Weber 5868]

[*Boechera*—This genus is currently being revised by Windham and Al-Shehbaz. Names and synonymy provided will hopefully be a guide through the shifting nomenclature.]

Boechera drummondii (A. Gray) Löve & Löve [*Arabis d.*; *B. stricta* (Graham) Al-Shehbaz].—Common throughout forests of the Sangres. North America (oroboreal). [Hogan 1309, 3487, 4874]

Boechera fendleri (S. Watson) W.A. Weber var. **spatifolia** [*Arabis f.*; *B. spatifolia* Windham & Al-Shehbaz].—Common throughout forests of study area; perhaps more common below 9,500'. Southern Rockies. [Hogan 1806, 4835, 4873]

Boechera lignifera (A. Nelson) W.A. Weber [*Arabis l.*].—A few collections from the piñon/juniper zone near Crestone. Western N.A. (interior). [Hogan 2536]

Boechera pendulina (Greene) W.A. Weber—One specimen in oak/sage at 8700'; Saguache Co. Recently segregated from *B. demissa* with which it has been included. Western N.A. [Elliott 7909 RM]

Boechera pinetorum (Tidestrom) Windham & Al-Shehbaz [*Arabis p.*; *A. (Boechera) divaricarpa* var. *pinetorum*].—Known from of few specimens from margins of the study area. Western N.A. [Nelson 44247a; Hartman 66194 RM]

Camelina microcarpa DC.—Only a couple specimens of this cosmopolitan weed from the study area. Non-native. [Elliott 8232 RM]

Capsella bursa-pastoris (L.) Medik.—SHEPHERD'S PURSE. Scattered collections from roads and trailheads. Non-native. [Hogan 3634]

Cardamine cordifolia A. Gray—Common along forest streams. Western N.A. [Hogan 1301; Weber 5870]

Descurainia californica (A. Gray) O.E. Schulz—Uncommon in forests and woodlands at lower elevations. Western N.A. [Elliott 4550; Hartman 63904 RM]

Descurainia incisa (Engelm. ex A. Gray) Britton—Scattered across similar habitats as *D. incana*; not always distinguishable from each other. Western N.A. [Hogan 2534, 3368, 3713; Weber 5876]

Descurainia pinnata (Walter) Britton—A few collections from lower elevations. North America. [Elliott 8235 RM]

Descurainia ramosissima Rollins—A couple specimens from piñon/juniper zone on west side. Southern Rockies (Colorado). [Hogan 3603]

Draba aurea Vahl ex Hornem.—As Weber & Wittmann (2001) say, "widespread and abundant throughout the mountains." Western N.A. (oroboreal). [Hogan 1298, 1800, 3374, 3740, 4463, 4814; Weber 5886]

Draba breweri Watson var. **cana** (Rydb.) Rollins [*D. lanceolata*].—One specimen at GRSA (Dixon sn) reported from ridge between Little Medano and Medano canyons (specimen not examined). Western N.A. (oroboreal).]

Draba crassifolia Graham—Not uncommon in the alpine. Western N.A. (oroboreal). [Hogan 3436, 3446a, 3735b; Weber 5829]

Draba fladnizensis Wulfen var. **pattersonii** (O.E. Schulz) Rollins—Rocks and moist ledges in the high mountains. Southern Rockies. [Hogan 4764; Yeatts 3040 COLO; Elliott 9439 RM]

Draba grayana (Rydb.) C.L. Hitchc.—Specimens from the highest peaks (5 records of this G2/S2 species from the Sangres). Southern Rockies (Colorado). [Hogan 3735a, 4930, 4959, 5051, 5053; Yeatts 2168 COLO]

Draba porsildii G. A. Mulligan var. **porsildii**—Two specimens from the high mountains; a species more common in the arctic and disjunct here. Some *Draba* specialists put this into *D. fladnizensis* var. *pattersonii*. Western N.A. (Rocky Mts.). [Elliott 10956, 11059 RM]

Draba smithii Gilg ex O.E. Schulz—A southern Colorado endemic (G2S2), flowering most commonly in the aspen zone in the early season (14 herbarium records from Sangres). Southern Rockies (Colorado). [Hogan 1841, 3338, 3373, 4611, 4844]

Draba streptobrachia Price—Three records, all from South Zapata Lk., "mesic alpine meadow, 12000 ft.". Southern Rockies (Colorado). [Hogan 3432, 3446c, 4903]

Draba streptocarpa A. Gray—Not uncommon in the upper subalpine and alpine. Southern Rockies. [Hogan 5301, 5396; Yeatts 2162 COLO; Elliott 3720, 8847b RM]

Erysimum capitatum (Douglas ex Hook.) Greene—WALLFLOWER [Includes: vars. *argillosum*, *capitatum*, *nivale*]. Widespread and common across the Sangres. This taxon is likely to be more narrowly circumscribed in upcoming FNA treatments. North America. [Hogan 1325, 1796, 2564, 3395, 3738, 4840; Weber 5902]

Lepidium alyssoides A. Gray var. **alyssoides** [*L. montanum*].—Scattered at lower elevations in the study area. Southwestern N.A. [Hogan 4923]

Lepidium densiflorum Schrad.—Margins of study area, associated with disturbed sites; a native species with 'weedy' habits. North America. [Hogan 2545]

Lepidium ramosissimum A. Nelson—A few collections from disturbed sites at lower elevations. Western N.A. (oroboreal). [Hartman 63935, 63964 RM]

Noccaea fendleri (A. Gray) Holub ssp. **glauca** (Nelson) Al-Shehbaz & Koch [*N. montana*; *Thlaspi m.*].—A widespread species, most commonly collected at higher elevations in the Sangres. Western N.A. [Hogan 1335, 3332, 3669; Weber 5820]

Physaria floribunda Rydb. var. **floribunda**—Uncommon in the Sangres with collections from piñon/oak savanna, aspen zone, and alpine. Southern Rockies. [Hogan 3694, 4826]

Physaria montana (A. Gray) Greene [*Lesquerella m.*].—Fairly common in montane forests and woodlands. Great Plains (western). [Hogan 4819, 5012]

[*Rorippa* spp.—Several species of *Rorippa* have been reported from the Sangres, each from a single specimen. A taxon in need of further work in the area.]

Sisymbrium altissimum L.—Ruderal mustard know from a few collections at lower elevations in the study area. Non-native. [Elliott 3098, 9087, Hartman 64793 RM]

Thelypodium integrifolium (Nutt.) Endl.—One specimen from Zapata Falls area. Southern Rockies. [Elliott 4706 RM]

Thlaspi arvense L.—Alien mustard from lower elevations, scattered. Non-native. [Elliott 7723, 7891, 8221]

Transberingia bursifolia (DC) Al-Shehbaz & O'Kane [*Halimolobos virgata*].—One specimen from oak woodlands at ca. 9,000'; North Rock Creek; Saguache Co. Western N.A. [Hartman 63892 RM]

CACTACEAE Cactus Family

Echinocereus triglochidiatus Engelm. [*E. coccineus*].—Specimens from lower elevations on west side of wilderness. Southwestern N.A. [Elliott 864 RM]

Opuntia polyacantha Haw.—The only prickly-pear reported from the study area; lower elevations. Western N.A. [Elliott 863, 9115 RM]

Pediocactus simpsonii (Engelm.) Britton & Rose—Specimens from the piñon/juniper zone. Western N.A. [Elliott 413 RM]

CALOCHORTACEAE (see Mariposa)

CAMPANULACEAE Bellflower Family

Campanula parryi A. Gray—Scattered along riparian areas in montane. Western N.A. (Rocky Mountains). [Hogan 3635, 4545]

Campanula rotundifolia L.—Very common throughout wilderness. North America. [Hogan 3594, 3628]

Campanula uniflora L.—A diminutive harebell of the tundra; not uncommon. Circumboreal. [Hogan 1464, 3428, 4692]

CANNABACEAE Hops Family

Humulus neomexicanus Rydb.—A couple specimens from lower margins of study area. North America. [Elliott 2503 RM]

CAPPARACEAE Caper Family

Cleome serrulata Pursh—A common plant of the San Luis Valley, appearing along the margins of the study area on the west side. North America. [Nighswonger 1448 COLO]

CAPRIFOLIACEAE Honeysuckle Family

Linnaea borealis L.—TWINFLOWER. Signature species of moist spruce forests; scattered in study area. Placed in Linnaeaceae in recent treatments. Circumboreal. [Hogan 4780; Weber 5884]

Lonicera involucrata (Richardson) Banks ex Spreng. [*Distegia* i.].—Scattered in mixed forests, montane and subalpine, often in mesic sites. Western N.A. (oroboreal). [Hogan 1826, 3710, 4525, 4838]

Symphoricarpos rotundifolius A. Gray [Including *S. oreophilus*].—Common in montane forests. Southwestern N.A. [Hogan 1784, 3354, 4891]

CARYOPHYLLACEAE Pink Family

Arenaria lanuginosa (Michx.) Rohrb. var. *saxosa* (A. Gray) Maguire [*Spergularium lanuginosum* ssp. *saxosum*].—Montane and subalpine forests; most collections from vicinity of Music Pass. Southwestern N.A. [Hogan 5067, 5070; Weber 5879]

Cerastium arvense L. ssp. *strictum* (L.) Ugbor. [*C. strictum*].—Common throughout study area. North America. [Hogan 1312, 3505a, 4567, 4603]

Cerastium beeringianum Cham. & Schtdl. ssp. *earlei*.—On the highest peaks. Western N.A. [Hogan 4807]

Eremogone fendleri (A. Gray) Ikonn. [*Arenaria f.*].—Very common throughout the wilderness. Southwestern N.A. [Hogan 1293, 3371, 3737, 4904]

Minuartia obtusiloba (Rydb.) House [*Arenaria o.*; *Lidia o.*].—A common species of dry alpine tundra. Western N.A. [Hogan 1324, 2436, 3330, 3551, 5068; Weber 5848]

Minuartia rubella (Wahlenb.) Hiern [*Tryphane r.*].—Unstable sites in the alpine. Circumboreal. [Hogan 3474, 3765; Weber 5858]

Minuartia stricta (Sw.) Hiern [*Alsianthe s.*].—One specimen “ca 0.5 mi W of Iron Nipple”; alpine, 12000'. Circumboreal. [Elliott 11048a RM]

Paronychia pulvinata A. Gray—Dry fellfields on high peaks; seldom collected. Southern Rockies. [Hogan 1336, 3736, 4929]

Silene acaulis L. ssp. *subcaulescens* (F.N. Williams) Hultén—MOSS CAMPION Common cushion plant of tundra. Circumboreal. [Hogan 1323; Elliott 9003, 9872 RM]

Silene drummondii Hook. var. *striata* (Rydb.) Bocquet [*Gastrolychnis d.*].—Scattered on drier sites throughout area. Western N.A. [Hogan 3358, 4451; Weber 5851]

Silene hitchguirei Bocquet [*Gastrolychnis apetal* ssp. *uralensis*].—One specimen from east slope of Humboldt Peak. Circumboreal. [Elliott 5562 RM]

Silene scouleri Hook. ssp. *hallii* (S. Watson) C.L. Hitchc. & Maguire—A couple specimens from forested zone on east side of study area. Western N.A. [Elliott 5490 RM]

Silene vulgaris (Moench) Garcke—One specimen from Fremont County in oak woodland. Non-native. [Hartman 63746 RM]

Stellaria irrigua Bunge—Widely scattered from montane into alpine; not uncommon. Western N.A. [Hogan 3712, 4808, 4976, 5060; Weber 5828, 5869]

Stellaria longifolia Muhl. ex Willd.—A few records from lower elevations. North America. [Bean 51-59 COLO]

Stellaria longipes Goldie—Common chickweed from montane to alpine. Western N.A. (oroboreal). [Hogan 3480, 4517, 4885, 5065]

Stellaria sanjuanensis M.T. Sharples & E. Tripp—A few collections from above 13,000'. Southern Rockies (Siberia) [Hogan 5088]

CELASTRACEAE Stafftree Family

Paxistima myrsinites (Pursh) Raf.—MOUNTAINLOVER A couple collections from mixed conifer forests from ca. 9,000'. Western N.A. [Nelson 44242 RM]

CHENOPODIACEAE (see Amaranthaceae)

Atriplex canescens (Pursh) Nutt. var. *canescens*—FOUR-WING SALT BUSH. A few records from piñon/juniper zone on west side of study area. Western N.A. [Elliott 4742 RM]

Chenopodium atrovirens Rydb.—A few records from subalpine zone. Western N.A. [Hogan 3509]

Chenopodium capitatum (L.) Asch. var. *parvicapitatum* S.L. Welsh—Two collections from Willow Creek drainage on west side of study area; Saguache Co. Western N.A. [Elliott 9709, 9766 RM]

Chenopodium foliosum (Moench) Asch.—Disturbed areas in the montane zone. Non-native. [Hogan 4738]

Chenopodium leptophyllum (Moq.) Nutt. ex S. Watson—Records from vicinity of Great Sand Dunes. Western N.A. [Cooper 2396 COLO]

Chenopodium pratericola Rydb.—Scattered across elevation gradient. North America. [Elliott 9026 RM]

Krascheninnikovia lanata (Pursh) Meeuse & Smit [*Ceratoides l.*; *Eurotia l.*].—A few records from lower elevations. Western N.A. [Hogan 3798]

Monolepis nuttalliana (Schultes) Greene—Scattered in moist sites at lower elevations. Western N.A. [Hartman 63947 RM]

CONVALLARIACEAE (see Ruscaceae)

CONVOLVULACEAE Morning-glory Family

Convolvulus arvensis L.—A couple records from margin of study area on east side. Non-native. [Elliott 4589]

CORNACEAE Dogwood Family

Cornus sericea L. var. *sericea* [*C. stolonifera*; *Swida s.*].—Common along montane streambanks. North America. [Hogan 1844, 3679]

CRASSULACEAE Stonecrop Family

Sedum lanceolatum Torr. [*Amerosedum l.*].—Common throughout the mountains. Western N.A. [Hogan 3748]

Rhodiola integrifolia Raf. [*Sedum i.*; *Tolmachevia i.*].—Not uncommon in moist sites in the subalpine and alpine. Western N.A. [Hogan 4601, 4612]

Rhodiola rhodantha (A. Gray) Jacobsen [*Clementsia r.*; *Sedum r.*].—Scattered in wet sites in the subalpine and lower alpine. Western N.A. (Rocky Mountains). [Hogan 3662, 3760; Weber 5845]

CYPERACEAE Sedge Family

- Carex albonigra** Mack.—BLACK AND WHITE SEDGE. Not uncommon in the tundra. Western N.A. [Hogan 3514; Weber 15200]
- Carex aquatilis** Wahlenb.—WATER SEDGE. Common in subalpine wet sites. Circumboreal. [Hogan 2440, 4599]
- Carex arapahoensis** Clokey—ARAPAHO SEDGE. A few records from dry tundra in vicinity of Great Sand Dunes. Southern Rockies. [Hogan 4947]
- Carex aurea** Nutt.—GOLDEN SEDGE. One specimen reported from “below San Isabel Lake” in GRSA herbarium. North America. [A. Gray & Copeland sn]
- Carex bella** L.H. Bailey—SHOWY SEDGE. Common in moist sites in the subalpine. Western N.A. [Hogan 1302, 3376, 4594, 4755; Weber 15205]
- Carex canescens** L.—One specimen reported from “below San Isabel Lake” in GRSA herbarium and another from mesic site in upper Sand Creek drainage. Cosmopolitan. [Hogan 5081]
- Carex chalciolepis** T. Holm [*C. heteroneura* var. *chalciolepis*].—Common in alpine and subalpine. Western N.A. (Rocky Mountains). [Hogan 3437, 3671, 4458, 4935, 4984; Weber 15199]
- Carex disperma** Dewey—Seldom collected, moist sites below treeline. Circumboreal. [Hogan 3615, 3625]
- Carex douglasii** Boott—One specimen from northern end of study area in oak zone. Western N.A. [Hogan 4829]
- Carex ebenea** Rydb. EBONY SEDGE. Common in subalpine and lower alpine. Southern Rockies. [Hogan 3535, 3653, 4589, 4981; Weber 15203]
- Carex egglestonii** Mack.—One specimen from Bushnell Lake; Fremont Co. Western N.A. [Elliott 4689 RM]
- Carex elynoides** Holm.—Common in dry sites, subalpine and alpine. Western N.A. (Rocky Mountains). [Hogan 2795, 3321, 3523, 4926, 5092]
- Carex geophila** Mack.—Scattered understory sedge of dry, montane forests. Southwestern N.A. [Hogan 1811, 2562, 3378, 4731]
- Carex geyeri** Boott—ELK SEDGE. Apparently not common (undercollected?) in area; a forest understory sedge. Western N.A. [Hogan 4467]
- Carex hassei** L.H. Bailey—One specimen in moist site in lower Cotton Creek drainage at 8600'; Saguache Co. Western N.A. [Hogan 5030]
- Carex haydeniana** Olney—A few collections from subalpine meadows and dry tundra. Western N.A. [Elliott 5123, 5481, 8885 RM]
- Carex heteroneura** W. Boott—Collections from the higher mountains at RM herbarium. Neither FNA nor Weber & Wittmann (2001) recognize this taxon in Colorado; other names that may apply include *C. atrata*, *C. epapillosa*, *C. heteroneura* var. *brevisquama*. Western N.A. [Elliott 9455, 9620 RM]
- Carex inops** L.H. Bailey ssp. *heliophila* (Mack.) Crins—SUN SEDGE. [*C. pensylvanica* ssp. *heliophila*]. Early season sedge of lower elevations. North America (interior). [Hogan 1798, 4836]
- Carex lanuginosa** Michx. [*C. lasiocarpa* ssp. *americana* and *C. peltata* are applied to this taxon in FNA].—Specimens from margins of study area. North America. [Hartman 64789 RM]
- Carex microptera** Mack.—Not uncommon in moist to dry sites in the montane and subalpine. Western N.A. [Elliott 2373, 5197 RM]
- Carex nebrascensis** Dewey—A few collections from wet sites at lower elevations in study area. Western N.A. [Elliott 7739, 7914 RM]
- Carex nelsonii** Mack.—One specimen at COLO from Hermit Lake area; wet tundra. Western N.A. (Rocky Mountains). [Gillett 12155]
- Carex nigricans** C.A. Mey.—A few collections from wet sites near 12,000' in study area. Western N.A. [Hogan 3450, 4994]
- Carex micropoda** C.A. Mey [*C. crandallii*; *C. pyrenaica*].—One specimen from alpine E of Blanca Peak. Western N.A. [Elliott 11094 RM]
- Carex norvegica** Retz. ssp. *steverii* (Holm) Dorn [*C. stevenii*].—Moist sites in subalpine forests. Western N.A. (Rocky Mountains). [Hogan 3624; Weber 5866]
- Carex nova** L.H. Bailey—Common in wet sites, subalpine and alpine. Western N.A. (Rocky Mountains). [Hogan 1311, 4588, 4964, 5001; Weber 15202]
- Carex obtusata** Lilj.—One specimen from dry alpine ridge N of California Peak (Hogan 3482); Alamosa Co. North America (oroboreal). [Hogan 3482]
- Carex occidentalis** L.H. Bailey—WESTERN SEDGE. Common in drier sites in montane and subalpine. Western N.A. [Hogan 1799, 2446, 3785, 4828]
- Carex pachystachya** Cham. ex Steud.—A couple collections from subalpine forests. Western N.A. [Elliott 5060 RM; Weber 15204]
- [*C. pensylvanica* ssp. *heliophila*].—See *C. inops* ssp. *pensylvanica*.
- Carex perglobosa** Mack.—One specimen from barren site near summit of Rito Alto Pk at 13,750'; Custer/Saguache Co. Southern Rockies (Colorado and the La Sal Mts. Of Utah). [Hogan 5002]
- Carex phaeocephala** Piper—A couple collections from the alpine. Western N.A. [Hogan 3659]
- Carex pityophila** Mack.—One collection from “meadows and forests” at 9,500' [*C. pityophila*, *C. geophila*, and *C. rossii*, can be problematic to differentiate]. Southern Rockies. [Hartman 64910 RM]
- Carex praegracilis** Boott—Not uncommon in montane forests. North America. [Elliott 6794, 8228, 9770 RM]
- Carex rossii** Boott—One record at GRSA herbarium from Medano Lk. Trail. Western N.A. [Decker & Doyle sn]
- Carex rupestris** All. ssp. *drummondiana* (Dewey) Holub—Two specimens from dry alpine sites N of California Peak and N of Music Pass. Western N.A. (Rocky Mts.) [Hogan 3467, 4927]
- Carex saxatilis** L. ssp. *laxa* (Trautv.) Kalela—One specimen from subalpine wetland in upper Sand Creek at 11,250'; Saguache Co. Circumboreal. [Hogan 5082]
- Carex scopulorum** Holm—MOUNTAIN SEDGE. Common in wet sites in the subalpine and alpine. Western N.A. [Hogan 3449, 3643, 4581, 4600, 4991]
- Carex siccata** Dewey [*C. foenea* of lit.].—Common in drier sites from montane to subalpine. North America (oroboreal). [Hogan 3400, 3484, 3695, 4946, 4952, 5035]
- Carex utriculata** Boott—Not uncommon in wetlands at lower elevations. North America. [Hogan 3598; Elliott 5064 RM]
- Carex vallicola** Dewey—Two specimens from lower elevations on E side of wilderness. Western N.A. [Elliott 4567 RM]
- Carex vernacula** L.H. Bailey—Two specimens from moist subalpine sites at N end of study area; Saguache Co. Western N.A. [Hogan 4995; Yeatts 3612 COLO]
- Eriophorum angustifolium** Honck.—COTTONGRASS. [*E. polystachion*]. Uncommon, subalpine sedge of meadows and pond margins. Circumboreal. [Hogan 5000, 5078]
- Eriophorum gracile** Koch ex Roth—Sand Creek Trail in mixed subalpine forest on granite substrate; growing in wetlands along both sides of trail; Saguache Co. 11, 287'. Circumboreal. [Scott Smith 423 COLO]
- Kobresia myosuroides** (Vill.) Fiori & Paoli—Common on dry tundra. Circumboreal. [Hogan 1465, 3506, 3648, 3757, 4742, 4943]

CYPRIPEDIACEAE (see Orchidaceae)

ELAEAGNACEAE Oleaster Family

Shepherdia canadensis (L.) Nutt.—A not uncommon shrub of dry forests below 10,000' in the wilderness. North America (oroboreal). [Hogan 1822, 3692, 4862; Weber 5891]

ERICACEAE Heath Family (Including Monotropaceae, Pyrolaceae)

Arctostaphylos uva-ursi (L.) Spreng.—KINNIKINNIK; BEARBERRY. Scattered in drier forests below 10,000' in study area. Circumboreal. [Hogan 3375, 4475]

Chimaphila umbellata (L.) W.P.C. Barton ssp. **occidentalis** (Rydb.) Hultén—Uncommon in montane mixed forests; only known from east side of wilderness. Western N.A. (circumboreal). [Hogan 4539; Lederer 96-158 COLO]

Moneses uniflora (L.) A. Gray—Not uncommon in moist *Picea* forests in the subalpine. Circumboreal. [Hogan 3497, 3616, 4779, 5111, 5062, 5111; Weber 5871]

Orthilia secunda (L.) House [*Pyrola*; *Ramischia*].—Not uncommon in mixed forests in the montane and subalpine. Circumboreal. [Hogan 3591, 4483, 4723, 5064; Weber 5892, 5907]

Pterospora andromedea Nutt.—PINEDROPS. Scattered in dry montane coniferous forests. North America. [Hogan 4726]

Pyrola chlorantha Sw.—Not uncommon in mixed forests in the montane and subalpine. Circumboreal. [Hogan 4540, 4783; Weber 5908]

Pyrola minor L.—Moist sites in subalpine forests; uncommon. Circumboreal. [Hogan 3622, 5063]

Pyrola picta Smith—Several collections from dry montane forests on east side of study area (Fremont Co.). Western N.A. [Hogan 4542, 4553, 4851]

Pyrola asarifolia Michx.—Moist sites in the montane and lower subalpine; not common. North America (oroboreal). [Hogan 3592, 4732, 5026]

Vaccinium myrtillus L.—BLUEBERRY. The common *Vaccinium* of the study area. Western N.A. [Hogan 4782]

Vaccinium scoparium Leiberg ex Coville—Collections from higher elevations than *V. myrtillus*; not common. Western N.A. [Hogan 3707]

EUPHORBIACEAE Spurge Family

Chamaesyce serpillifolia (Pers.) Small—A couple collections from montane zone. North America. [Elliott 9693 RM]

Euphorbia brachycera Engelm. [*Tithymalus* b.].—Common native spurge in the piñon/juniper zone. Western N.A. (interior). [Hogan 2539, 5019]

Euphorbia esula L. var. **uralensis** (Fisch. ex Link) Dorn [*Tithymalus* u.].—A noxious weed collected along Rainbow Trail, N. of Alvarado Campground. A couple reports from Sand Dunes. Non-native. [Elliott 9269 RM]

FABACEAE Pea Family

Astragalus agrestis Douglas ex G. Don—Fairly common at lower elevations in study area. Circumboreal. [Hogan 3357]

Astragalus alpinus L.—Broadly distributed from montane to lower alpine, but more common at higher elevations. Circumboreal. [Hogan 3490, 5071]

Astragalus drummondii Douglas ex Hook.—Common dryland species of lower elevations. Western N.A. [Hogan 1933, 3360, 4824]

Astragalus hallii A. Gray—Dry forests; uncommon. Southern Rockies. [Hogan 3413, 4890]

Astragalus laxmannii Jacq. var. **robustior** (Hook.) Barneby & S.L. Welsh [*A. adsurgens* var. *robustior*].—Not uncommon throughout montane zone. Circumboreal. [Hogan 4729; Weber 5903]

Astragalus miser Douglas var. **oblongifolius** (Rydb.) Cronquist—Mountain meadows and forest openings. Western N.A. (interior). [Hall 1231 RM]

Astragalus parryi A. Gray—Mixed forests and woodlands, montane. Southern Rockies. [Hogan 4785, 4830; Weber 5882]

Astragalus scopulorum Porter—Not uncommon from lower woodlands up into mixed forests. Southwestern N.A. [Hogan 2809, 4466, 4791]

Astragalus tenellus Pursh—A few scattered records from forested sites. Western N.A. [Hogan 4465]

Glycyrrhiza lepidota Pursh—Two records from vicinity of Hayden Creek Campground; Fremont Co. Western N.A. [Hogan 4557]

Hedysarum occidentale Greene—One specimen from upper Cotton Creek Trail in aspen stand at 10,400'; Saguache Co. Western N.A. (Rocky Mts.). [Hogan 5036]

Lupinus argenteus Pursh—Common lupine of the Sangres, from lower montane through subalpine. Western N.A. [Hogan 3515, 3696; Weber 5811]

Lupinus caudatus Kellogg [*L. argenteus* var. *heteranthus*].—One specimen from sage flats at 10,000'; Saguache Co. Western N.A. [Hogan 3641]

Lupinus kingii S. Watson—Scattered collections from sandy soils of piñon/juniper zone between Crestone and Great Sand Dunes. Southwestern N.A. [Hogan 3609]

Lupinus parviflorus Nutt. [*L. argenteus* var. *parviflorus*].—A couple collections from montane zone, Saguache Co. Western N.A. (interior). [Hogan 1443, 3638]

Lupinus pusillus Pursh—Not uncommon from sandy soils of piñon/juniper zone, San Luis Valley. Western N.A. [Hogan 2529]

Medicago lupulina L.—Scattered at lower elevation trailheads and roadsides. Non-native. [Elliott 4541 RM]

Melilotus officinalis (L.) Pallas—Scattered at lower elevation trailheads and roadsides. Non-native. [Elliott 8224 RM]

Oxytropis lambertii Pursh—PURPLE LOCOWEED. Common at lower elevations of study area. Great Plains. [Hogan 3364, 4551]

Oxytropis parryi A. Gray—One specimen (Hogan 3466), dry alpine ridge N of California Pk., 12,000'; Alamosa Co. Western N.A. [Hogan 3466]

Oxytropis podocarpa A. Gray—Two specimens from east side of Marble Mt. at 12,600'; Custer Co. Western N.A. (Rocky Mts./oroboreal). [Hogan 4961, 5045]

Oxytropis sericea Nutt.—WHITE LOCOWEED. Common in the montane zone of study area. (These specimens annotated based upon maculate keel; atypically high elevation for the taxon.) Western N.A. (interior). [Hogan 3507, 5105]

Oxytropis splendens Douglas ex Hook.—One specimen, dry alpine ridge N of California Pk., 12,000'; Alamosa Co. Western N.A. (Rocky Mts./oroboreal). [Hogan 3471, 5103]

Oxytropis viscida Nutt. [*O. borealis* var. *viscida*].—One specimen, east face of Eagle Peak, alpine slopes and timberline; Custer Co. Western N.A. (oroboreal). [Elliott 4204 RM]

Psoralidium lanceolatum (Pursh) Rydb.—Collections from sandy soils of piñon/juniper zone between Crestone and Great Sand Dunes. Western N.A. [Elliott 6763]

Thermopsis montana Nutt. var. **divaricarpa** (A. Nelson) Dorn [*T. divaricarpa*].—Common golden banner of lower elevations. Western N.A. (Rocky Mts.). [Hogan 3397, 4821]

Thermopsis montana Nutt. var. **montana**—More common in the montane zone. Western N.A. [Hogan 3377, 4784; Weber 5894]

Thermopsis rhombifolia (Nutt. ex Pursh)—A few collections from piñon/juniper zone, Saguache Co. Great Plains. [Elliott 832 RM]

Trifolium attenuatum Greene—Not uncommon in upper subalpine and alpine. Southern Rockies. [Hogan 2787, 4750, 4944]
Trifolium dasyphyllum Torr. & A. Gray—More common than *T. attenuatum* at higher elevations. Western N.A. (Rocky Mts.). [Hogan 1320, 3406, 3728, 4618]

Trifolium nanum Torr.—Dwarf clover of the high peaks; not uncommon. Western N.A. (Rocky Mts.). [Hogan 1321, 4505, 4616]

Trifolium parryi A. Gray—Moist alpine and upper subalpine. Western N.A. (Rocky Mts.). [Hogan 3500]

Trifolium pratense L.—RED CLOVER. Common along roads and trails. Non-native. [Hogan 4735]

Trifolium repens L.—WHITE DUTCH CLOVER. Common along roads and trails. Non-native. [Hogan 4736]

Vicia americana Muhl. ex Willd.—Scattered collections along lower margins of study area. North America. [Hartman 64816 RM]

FAGACEAE Oak Family

Quercus gambelii Nutt.—SCRUB OAK. Signature species of lower elevation woodlands. Southwestern N.A. [Hogan 3681, 3788]

FUMARIACEAE Fumitory Family

Corydalis aurea Willd. var. **aurea**—Scattered in mixed forests in the montane. North America. [Hogan 1820, 4739]

Corydalis aurea Willd. var. **occidentalis** Engelm. ex A. Gray [*C. curvisiliqua* ssp. *occidentalis*].—Less common and at lower elevations than *C. aurea*. North America (interior). [Hogan 2550]

GENTIANACEAE Gentian Family

Fraseria speciosa Douglas ex Griseb.—GREEN GENTIAN. Meadows and openings from montane to lower alpine; common. Western N.A. [Hogan 3704, 4531]

Gentiana algida Pallas—ARCTIC GENTIAN. [*Gentianodes a.*]. Alpine; a late season harbinger of autumn. Western N.A. (Rocky Mts/Asia). [Hogan 3520, 3751, 5005]

Gentiana parryi Engelm.—BOTTLE GENTIAN. [*G. calycosa* of lit.; *Pneumonanthe p.*]. Subalpine and lower alpine; scattered. Southern Rockies. [Hogan 3554, 3761, 4979]

Gentiana prostrata Haenke—SIBERIAN GENTIAN. [*Chondrophylla p.*]. Moist tundra on the high peaks; seldom collected. Circumboreal. [Hogan 1468, 3505d, 3526]

Gentianella acuta (Michx.) Hiitonen—LITTLE GENTIAN [*G. amarelle* var. *acuta*]. Not uncommon in moist sites; subalpine to lower alpine. Circumboreal. [Hogan 3553, 3597, 3652, 3750, 4761, 5079; Weber 5867]

Gentianopsis barbellata (Engelm.) Iltis—FRINGED GENTIAN. [*Gentiana b.*]. Subalpine and lower alpine; uncommon. Southern Rockies. [Hogan 3528, 3556, 3799, 5123]

Swertia perennis L.—STAR GENTIAN. Wet sites in the subalpine and lower alpine; common. Circumboreal. [Hogan 1459, 3642, 3752, 4579, 4999; Weber 5838]

GERANIACEAE Geranium Family

Geranium caespitosum James ex Torr.—Drier sites in the montane; common. Southwestern N.A. [Hogan 1832]

Geranium richardsonii Fisch. & Trautv.—Moist sites at higher elevations than *G. caespitosum*; common. Western N.A. [Hogan 3676; Elliott 6782, 9794 RM]

Geranium viscosissimum Fisch. & C.A. Mey.—One specimen, near Hayden Creek Campground, 8,100'; Fremont Co. Western N.A. [Elliott 8189 RM]

GROSSULARIACEAE Currant/Gooseberry Family

Ribes cereum Douglas—WAX CURRANT. Common from piñon/juniper woodland through montane. Western N.A. [Hogan 3347, 4823]

Ribes coloradense Coville [*R. laxiflorum*].—A few specimens from moist subalpine sites on west side of range. Southern Rockies. [Hogan 3706, 4598]

Ribes inerme Rydb.—Moist sites, montane; scattered. Western N.A. [Elliott 4546]

Ribes leptanthum A. Gray—Dry sites at lower elevations; not uncommon. Southwestern N.A. [Hogan 2556, 3346, 4833]

Ribes montigenum McClatchie—Subalpine forests and lower alpine; common. Western N.A. [Hogan 1827, 3343, 4522]

HELLEBORACEAE (See Ranunculaceae)

HYDRANGEACEAE Hydrangea Family

Jamesia americana Torr. & A. Gray—WAXFLOWER Common on drier sites in montane forested zone. Southwestern N.A. [Hogan 1819, 2444, 3385, 4892]

HYDROPHYLLACEAE Waterleaf Family

Hydrophyllum fendleri (A. Gray) A. Heller—Not uncommon in middle elevation forests. Western N.A. [Hogan 1830, 3584, 4481]

Phacelia alba Rydb.—A few specimens from lower elevations in Saguache Co. Southern Rockies. [Elliott 9691 RM]

Phacelia hastata Douglas ex Lehm.—One specimen (Hogan 4758) from treeline at Venable Lakes, 11,500'; Custer Co. Western N.A. [Hogan 4758]

Phacelia heterophylla Pursh—Scattered in subalpine forests. Western N.A. [Elliott 8930, 9304 RM]

Phacelia sericea (Graham ex Hook.) A. Gray—Common in rocky sites in the subalpine and alpine. Western N.A. [Hogan 1342, 3703, 3773, 5096]

HYPOXIDACEAE Yellow Stargrass Family

[Hypoxis hirsuta] (L.) Coville—Not known from the study area, but one specimen (Rocchio 04FJR01) at COLO from the Brush Creek Fen, a Colorado State Natural Area, proximate to the area, as well as a historical collection (1888) from Westcliffe (Eastwood sn); Custer Co. A rare species in Colorado (GSS1). Eastern N.A.]

IRIDACEAE Iris Family

Iris missouriensis Nutt.—Common in wet meadows in San Luis and Wet Mt. valleys in early summer; one specimen from Lily Lake Trail at 10,750' in wilderness. Western N.A. [Hogan 3576]

JUNCACEAE Rush Family

Juncus arcticus Willd. [*J. ater*; *J. balticus*].—Moist areas at lower elevations, scattered. North America (cosmopolitan). [Hogan 2565]

Juncus castaneus Sm.—One specimen (Weber 15206) "in mossy runoff of spring in subalpine forest," Hermit Lake Trail, 11,500'; Custer Co. Circumboreal. [Weber 15206]

Juncus drummondii E. Meyer—Not uncommon upper subalpine and alpine. Western N.A. [Hogan 3538, 4912, 4983]

Juncus ensifolius Wikstr. [*J. saximontanus*].—One record from mixed conifer along the Rainbow Trail; Fremont Co.; probably not so uncommon. Western N.A. [Elliott 4579 RM]

[Juncus longistylis] Torr.—Reports from vicinity of Great Sand Dunes at lower elevations. Western N.A. (oroboreal).]

Juncus mertensianus Bongard—Common rush of wet sites in the subalpine. Western N.A. [Hogan 3665, 4993]

Juncus parryi Engelm.—A couple collections from the alpine. Western N.A. [Elliott 11045 RM]

Luzula comosa Meyer—A couple collections from the montane. Western N.A. [Elliott 2468 RM]

Luzula parviflora (Ehrh.) Desv.—Common woodrush of subalpine. Circumboreal. [Hogan 1447, 1828, 4573, 4977, 5075, 5112]

Luzula spicata (L.) A. DC.—Common in upper subalpine and alpine. Circumboreal. [Hogan 3426, 3513, 3670, 4561, 5090]

JUNCAGINACEAE Arrowgrass Family

Triglochin maritima L.—One specimen (Hogan 5083) from upper Sand Creek, 11,250'; Saguache Co. Cosmopolitan. [Hogan 5083]

LAMIACEAE Mint Family

Dracocephalum parviflorum Nutt.—Scattered in montane zone. North America. [Elliott 9253, 9713 RM]

Mentha arvensis L.—Several specimens from Great Sand Dunes area. Cosmopolitan. [Elliott 4746 RM]

Monarda fistulosa L. var. *menthifolia* (Graham) Fernald—Two specimens from mixed conifer forest below 9,000' on east side of range. Western N.A. [Elliott 4072, 4530 RM]

Monarda pectinata Nutt.—Not uncommon in the piñon/juniper zone. Southwestern N.A. [Hogan 3588, 3606]

Prunella vulgaris L.—Specimen reported from Lily Lake Trail as "abundant on trail, but only place seen;" Huerfano Co. Scattered reports from margins of study area. Cosmopolitan. [Hogan 5115; Yeatts 2171]

Scutellaria brittonii Porter—SKULLCAP Several specimens from lower elevation at northeast end of study area in mixed forests; an early season plant, perhaps overlooked by collectors. Southern Rockies. [Hogan 4494, 4879, 5014]

Stachys palustris L. ssp. *pilosa* (Nutt.) Epling [*S. pilosa*].—A few records from wet sites at lower margins of study area. North America. [Elliott 8727a]

LILIACEAE Lily Family (see also Agavaceae, Alliaceae, Convallariaceae, Calochortaceae, Melanthiaceae, Uvulariaceae)

Calochortus gunnisonii Watson—MARIPOSA LILY. Scattered throughout the forested zones, from 9,000 to 11,000'. Western N.A. (interior). [Hogan 3631, 4469; Weber 5817]

Lilium philadelphicum L.—WOOD LILY. One record (Hogan 5037) from moist seep in Cotton Creek at 10,000'; Saguache Co.—an unexpected occurrence on west side of range. North America. [Hogan 5037]

Lloydia serotina (L.) Rchb.—ALPINE LILY A not uncommon species of the alpine tundra. Circumboreal. [Hogan 1334, 3722, 4529, 4907]

Prosartes trachycarpa Watson [*Disporum* t.].—Two specimens from N-facing slopes in moist *Picea* forests, drainages of Stout and Garner creeks (Fremont & Saguache Co. respectively) ca. 9,000'. An early season species, likely overlooked. Western N.A. [Hogan 4876, 5100]

Streptopus amplexifolius (L.) DC. [*S. fassettii*].—Montane and subalpine forests by streams; not uncommon. Western N.A. (oroboreal). [Hogan 3791]

LINACEAE Flax Family

Linum lewisii Pursh [*Adenolinum* l.].—Scattered early season collections at lower elevations. Western N.A. [Weber 5911; Elliott 9275 RM]

LOASACEAE Loasa Family

Mentzelia multiflora (Nutt.) A. Gray [*Nuttallia* m.].—Sandy sites on west side of range in piñon/juniper zone. Southwestern N.A. [Hogan 3787]

Mentzelia speciosa Osterhout [*Nuttallia* o.].—One specimen from

vicinity of Zapata Falls in piñon/juniper zone; Alamosa Co. Southern Rockies. [Elliott 4733 RM]

MALVACEAE Mallow Family

Iliamna rivularis (Douglas) Greene—One specimen from north face of Methodist Mt., 9,300'; Chaffee Co. Western N.A. [Elliott 9080]

Sidalcea candida A. Gray—Moist sites in the montane zone; scattered. Western N.A. (Rocky Mountains). [Hogan 4762]

Sidalcea neomexicana A. Gray—A couple records from moist sites below 9,000' on west side of range. Western N.A. [Erdman 84 COLO]

Sphaeralcea coccinea (Nutt.) Rydb.—COPPER MALLOW. Not uncommon in piñon/juniper zone. Western N.A. [Hogan 7888]

MELANTHIACEAE False Hellebore Family

Veratrum californicum T. Durand—CORN HUSK LILY. [*V. tenuipetalum*]. Moist sites in the subalpine and lower alpine; scattered. Southern Rockies. [Hogan 3764, 4587]

Zigadenus elegans Pursh [*Anticlea* e.].—Moist sites in the subalpine and lower alpine; common. Western N.A. (oroboreal). [Hogan 2784, 3435, 4530, 4793, 4918; Weber 5900]

MONTIACEAE Miner's Lettuce Family

Claytonia lanceolata Pursh—One report from "Mosca Pass Summit, aspen woodland, grassy understory", 9,750'; Alamosa Co. Western N.A. [Decker & Doyle sn CSU]

Claytonia megarhiza (A. Gray) Parry ex Watson—A signature species of the high mountains. Western N.A. [Hogan 3725; Elliott 9418, 9893 RM]

Lewisia pygmaea (A. Gray) B.L. Rob. [*Oreobroma* p.].—A couple collections from open subalpine sites; a small plant often overlooked. Western N.A. [Hogan 3578; Elliott 3722 RM]

NYCTAGINACEAE Four-O'Clock Family

Abronia fragrans Nutt. ex Hook.—One specimen (Hogan 4625) from sandy site in piñon/juniper; Huerfano Co. Great Plains. [Hogan 4625]

Mirabilis linearis (Pursh) Heimerl [*Oxybaphus* l.].—Not uncommon at lower elevations in piñon/juniper and oak woodlands. North America (central). [Hogan 3590]

Mirabilis multiflora (Torr.) A. Gray—A few collections from piñon/juniper zone in vicinity of Great Sand Dunes and Zapata Falls. Southwestern N.A. [Hogan 3345]

Tripterocalyx micranthus (Torr.) Hook.—Sandy sites in piñon/juniper zone between Crestone and Great Sand Dunes. Western N.A. [Elliott 7512 RM]

ONAGRACEAE Evening-Primrose Family

Chamerion angustifolium (L.) Holub var. *canescens* (Alph. Wood) N.H. Holmgren—FIREWEED. [*C. danielsii*; *Epilobium* a.]. Mixed forests in the upper montane and subalpine; not uncommon. Circumboreal. [Hogan 3763]

Circaea alpina L.—One specimen (Elliott 9337) from alpine "near Comanche Lk." at 12,000'; Custer Co.—an unusually high altitude for the species. Circumboreal. [Elliott 9337 RM]

Epilobium anagallidifolium Lam.—Two specimens, one (Hartman 63959) from Hayden Pass Creek, 9,250'; and one (Hogan 4987) from moist alpine site in Riro Alto drainage, 11,900'; Saguache Co. Circumboreal. [Hogan 4987]

Epilobium brachycarpum C. Presl—A few collections from montane zone. Western N.A. (oroboreal). [Elliott 5008 RM]

Epilobium ciliatum Raf.—A few collections from the montane. North America. [Elliott 4521 RM]

Epilobium clavatum Trelease—One specimen "along the road to Hermit Lake", spruce/fir at 11,400'; Custer Co. Western N.A. [Elliott 3690 RM]

Epilobium hornemannii Rchb. –A few records from the subalpine. Circumboreal. [Hogan 3626, 5056]

Epilobium lactiflorum Hausskn. –One specimen from seep in *Picea* forest near Music Pass, 10,700'; Custer Co.; with another report from similar site in Great Sand Dunes Preserve, Saguache Co. Circumboreal. [Hogan 5059]

Epilobium saximontanum Hausskn. –Moist sites throughout the mountains; scattered. Western N.A. [Hogan 4798]

Gaura coccinea Nutt. ex Pursh [*Oenothera suffrutescens*]. –A species of dry sites at lower elevations; scattered. Western N.A. [Elliott 8939 RM]

Gayophytum diffusum Torr. & A. Gray –Drier sites in the piñon/juniper and montane. Western N.A. [Hogan 2535, 4773]

Oenothera albicaulis Pursh –Not uncommon in sandy soils of the piñon/juniper between Crestone and Great Sand Dunes. Great Plains. [Hogan 2530]

Oenothera cespitosa Nutt. ssp. **macroglottis** (Rydb.) W.L. Wagner, Stockh., & W.M. Klein –Not uncommon in the piñon/juniper and montane. Southern Rockies. [Hogan 1818]

Oenothera coronopifolia Torr. & A. Gray –Common in the piñon/juniper and montane. Western N.A. (interior). [Hogan 4775]

Oenothera elata H.B.K. ssp. **hirsutissima** (A. Gray ex S. Watson) Cronquist [*O. hookeri*]. –Scattered records from moist sites in the montane. Western N.A. [Hogan 4578]

ORCHIDACEAE Orchid Family

Calypso bulbosa (L.) Oakes –An early season orchid of shaded forest sites, probably more common than few collections indicate. Circumboreal. [Hogan 4842, 4877, 5020]

Coeloglossum viride (L.) Hartman –Two specimen from mesic forests in the lower subalpine; Custer Co. Circumboreal. [Hogan 5024; Elliott 5038a RM]

Corallorhiza maculata Raf. –Drier montane forest understory; common. North America. [Hogan 3688, 4543; Weber 5888]

Corallorhiza striata Lindl. –Understory of Douglas fir/aspens; uncommon (overlooked?). Western N.A. (oroboreal). [Hogan 1812, 2548, 4544, 4870]

Corallorhiza trifida (L.) Chatelain –Montane sites; uncommon (overlooked?). Circumboreal. [Hogan 2560, 4496]

Corallorhiza wisteriana Conrad Dry montane forests; most commonly collected on east side of range. North America (eastern). [Hogan 4541, 4852, 5018]

Cypripedium parviflorum Salisb. var. **pubescens** (Willd.) Knight [*C. calceolus* ssp. *pubescens*]. –Not known from the study area, but a specimen at COLO from "7 miles west of Westcliffe". The Brush Creek Fen in the same vicinity is a Colorado State Natural Area that harbors a healthy population. A sensitive species in Colorado (G452). North America. [Baltzell 178 COLO]

Goodyera oblongifolia Raf. –Not uncommon in montane and lower subalpine forest understory on east side of Sangres. Western N.A. (oroboreal). [Hogan 4721; Weber 5910]

Listera cordata (L.) R. Br. –Moist, subalpine *Picea* forests; scattered. Circumboreal. [Hogan 3623, 5055]

Platanthera aquilonis Sheviak [*Habenaria hyperborea*; *Limnorchis h.*]. –Bog orchid of moist sites in the montane; scattered. North America (oroboreal). [Hogan 3614, 4734, 4969, 5032]

Platanthera huronensis (Nutt.) Lindl. [*Habenaria hyperborea* var. *huronensis*; *Limnorchis hyperborea* var. *huronensis*]. –One specimen from Lily Lake area in "subalpine wetland" at 10,500'; Huerfano Co. North America (oroboreal). [Hogan 3569]

Platanthera obtusata (Banks ex Pursh) Lindl. [*Habenaria o.*; *Lysella o.*]. –One specimen from Dorsey Creek in "moist *Picea* forest" at 10,500'; Saguache Co. Circumboreal. [Hogan 3617]

Platanthera purpurascens (Rydb.) Sheviak & W.F. Jenn. [*Habenaria saccata*; *Limnorchis stricta*; *P. stricta*]. –Moist sites in montane and subalpine; scattered. Southern Rockies. [Hogan 4498, 5116]

Platanthera tescamnis Sheviak & W.F. Jenn. [*Limnorchis ensifolia*; *Platanthera sparsiflora* var. *laxiflora*]. –One specimen (Rondeau 97-094) at COLO of this recently described species from vicinity of Valley View Hot Springs in "*Populus angustifolia*/*Quercus gambelii* riparian" habitat at 8,460'; Saguache Co. Western N.A. (interior). [Rondeau 97-094]

Spiranthes romanzoffiana Cham. –One report from upper and lower Sand Creek Lakes at 11,290'. UTM 13S NAD83 E04535 N41992; Saguache Co. North America (oroboreal). [S. Smith 422]

OROBANCHACEAE Broom-Rape Family

Aphyllon fasciculatum (Nutt.) Torr. & A. Gray [*Orobanche f.*]. –Scattered collections from early season in dry forests. Western N.A. [Hogan 4881]

Aphyllon uniflorum (L.) Torr. & A. Gray [*Orobanche u.*]. –One collection from "cascades below Horseshoe Lake", 12,300'; Custer Co. North America. [Schooley sn at COLO]

Castilleja haydenii (A. Gray) Cockerell [ORO]. –A striking paintbrush, not uncommon on dry tundra in the Sangres. Southern Rockies. [Hogan 2786, 3408, 3503, 4745, 4942, 5104; Weber 15210]

Castilleja integra A. Gray [ORO]. –Common paintbrush in open sites of piñon/juniper and lower montane. Southwestern N.A. [Hogan 3352, 3639, 4818]

Castilleja linariifolia Benth. [ORO]. –Common in piñon/juniper and lower montane. Western N.A. [Hogan 1817, 3356, 3396; Weber 5893]

Castilleja miniata Douglas ex Hook. [ORO]. –Subalpine forests and openings; not uncommon. Western N.A. (oroboreal). [Hogan 1844, 3632, 4608]

Castilleja occidentalis Torr. [ORO]. –Mesic sites in the subalpine and alpine; common. Western N.A. (Rocky Mountains). [Hogan 1315, 1457, 2435, 3501, 4580, 5046; Weber 5852]

Castilleja rhexiifolia Rydb. [ORO]. –Apparently uncommon in the Sangres; alpine. Western N.A. (Rocky Mountains). [Elliott 5094 RM]

Castilleja sulphurea Rydb. [ORO]. –Scattered in the subalpine. Western N.A. (Rocky Mountains). [Hogan 3486]

[*Pedicularis bracteosa* ssp. *paysoniana* A Rocky Mountain species notable for its absence in the Sangres.]

Pedicularis canadensis L. ssp. **fluviatilis** [ORO]. –One specimen from "North Colony Creek drainage, in *Pseudotsuga*/*Populus tremuloides* forest at 9,800 ft."; Custer Co. Southern Rockies (the subspecies of this Eastern N.A. taxon). [Hogan 2780]

Pedicularis crenulata Benth. in A. DC. [ORO]. –One specimen from moist site along lower Cotton Creek Trail, 8600'; Saguache Co. Western N.A. (Rocky Mountains). [Hogan 5029]

Pedicularis groenlandica Retz. [ORO]. –ELEPHANTELLA. Common in moist meadows in the subalpine. Western N.A. (oroboreal). [Hogan 2798, 3657; Weber 5823]

Pedicularis parryi A. Gray [ORO]. –Common on dry alpine and subalpine sites. Western N.A. (Rocky Mountains). [Hogan 1456, 2785, 3404, 3478, 4564, 4945; Weber 5842]

Pedicularis procera A. Gray [ORO]. –Common lousewort in understory of mixed forests in the montane and subalpine. Southern Rockies. [Hogan 4479, 4552; Weber 5905]

PARNASSIACEAE Grass-of-Parnassus Family

Parnassia fimbriata K.D. Koenig –Subalpine streams, seeps, and springs; scattered. Western N.A. [Hogan 3756, 4733, 4996]

PHYRMACEAE Lopseed Family

Mimulus guttatus DC. [PHR].—Moist sites in the montane and subalpine; common. Western N.A. [Hogan 1814, 3620; Weber 5819]

Mimulus tilingii Regel var. **tilingii** [PHR].—A few collections from subalpine seeps. Western N.A. [Hogan 5066] [Unverified reports of *Mimulus floribundus* and *M. glabratus* from Great Sand Dunes]

PLANTAGINACEAE Plantain Family

Besseyia alpina (A. Gray) Rydb. [PTG].—Common in the high mountains. Southern Rockies. [Hogan 2428, 3717, 3730, 3766, 4513]

Besseyia plantaginea (James) Rydb. [PTG].—Scattered, usually on drier sites in the montane. Southern Rockies. [Hogan 4757, 4875, 5017]

Chionophila jamesii Benth. [PTG].—Scattered on the high mountains. Southern Rockies. [Hogan 1466, 3499]

Collinsia parviflora Douglas [PTG].—Only a few collections from the study area; a diminutive species of montane forests, likely overlooked in the early season. Western N.A. (oroboreal). [Douglas 54-71 COLO]

Penstemon angustifolius Nutt. ex Pursh var. **caudatus** (A. Heller) Rydb. [PTG].—A few collections from sandy sites in the piñon/juniper zone. Great Plains. [Hogan 4623]

Penstemon auriberbis Pennell [PTG].—A couple collections from lower elevation margins of study area. Southern Rockies. [Hartman 64708 RM]

Penstemon barbatus (Cav.) Roth [PTG].—Not uncommon in mixed forests from lower elevations through the montane. Southwestern N.A. [Hogan 1440, 3383, 4893; Weber 5896]

Penstemon crandallii A. Nelson [PTG].—Scattered in openings of mixed forests from lower elevations to upper montane. Southern Rockies. [Hogan 3381, 5042; Weber 5874]

[**Penstemon degeneri** Crosswh. [PTG].—A G2S2 species; three specimens (Hartman 63958, 63992 and Elliott 3702 at RM) of this narrow endemic from north end of the Sangres, near 9,000'; Chaffee and Fremont counties. Southern Rockies (Colorado). [*Carol English, a student of the group, is quite sure these are misidentifications of the more widely distributed P. griffinii.*]

Penstemon griffinii Nelson [PTG].—A few collections from north end of Sangres; montane zone. Southwestern N.A. [Hogan 3633, 4770, 5039]

Penstemon hallii A. Gray [PTG].—Not uncommon species of dry tundra sites. Southern Rockies (Colorado). [Hogan 2781, 3759, 3771, 5006]

Penstemon harbourii A. Gray [PTG].—One specimen (Elliott 3820 from south side of Rito Alto Pk. on barren substrate; 13,000'; Saguache Co. Southern Rockies (Colorado). [Elliott 3820 RM]

Penstemon secundiflorus Benth. [PTG].—Scattered collections from montane. Southern Rockies. [Hogan 4865]

Penstemon strictus Benth. [PTG].—Scattered collections from lower elevations to upper montane. Western N.A. (Rocky Mts.) [Hogan 3586, 3636, 3746, 4468, 5028, 5041]

Penstemon virens Pennell ex Rydb. [PTG].—An early season *Penstemon* from the montane zone; scattered collections. Southern Rockies. [Hogan 5016; Weber 5880, 5913]

Penstemon virgatus A. Gray ssp. **asa-grayi** Crosswh. [PTG].—Common in dry, montane sites. Southern Rockies. [Hogan 3348, 3585, 4774, 5038; Weber 5889]

Penstemon whippleanus A. Gray [PTG].—Perhaps the most common *Penstemon* of the montane and subalpine mountains. Western N.A. (Rocky Mountains). [Hogan 1313, 3401, 3448, 4582, 4921; Weber 5857, 15141, 15209]

Plantago major L. [PTG].—A few collections from lower elevation trailheads and trailsides. Non-native. [Elliott 4563, 7908 RM]

Veronica americana Schwein. ex Benth. [PTG].—Moist sites in the mountains; scattered. North America. [Hogan 3683]

Veronica catenata Pennell [PTG].—Moist sites in the lower mountains; a few collections. Cosmopolitan. [Elliott 7898, 8791a RM]

Veronica wormskjoldii Roem. & Schultes [PTG].—Common in moist subalpine meadows and lower alpine. Western N.A. [Hogan 1327, 3570, 3658, 4909, 4986, 5057, 5077; Weber 5832]

Veronicastrum serpyllifolium L. ssp. **humifusum** (Dicks.) W.A. Weber [PTG]. [*Veronica*].—Muddy ground, montane and subalpine few collections. North America. [Elliott 3617, 7720 RM]

POACEAE Grass Family

Achnatherum hymenoides (Roem. & Schult.) Barkworth-INDIAN RICEGRASS. [*Oryzopsis h.*]. Common below 9,000', particularly on the San Luis Valley side of the wilderness. Western N.A. [Hogan 1936, 2540, 3388]

Achnatherum lettermanii (Vasey) Barkworth [*Stipa l.*].—One specimen from oak woodlands at 9,000' in Saguache Co. Western N.A. [Hartman 63923 RM]

Achnatherum nelsonii (Scribn.) Barkworth [*Stipa n.*].—A few collections from montane sites at northern end of study area Western N.A. [Hogan 3637, 4868, 4878]

Achnatherum robustum (Vasey) Barkworth [*Stipa r.*].—A couple collections from openings in aspen and limber pine forests; Saguache Co. Southwestern N.A. [Hogan 3800]

Agropyron cristatum (L.) Gaertn.—CRESTED WHEATGRASS. [*A. desertorum*]. Trailheads and roadsides at lower elevations; not abundant. Non-native. [Elliott 3104, 6776 RM]

Agrostis exarata Trin.—A couple records from moist sites in the mountains, Saguache Co. Western N.A. [Hogan 4796]

Agrostis gigantea Roth.—One record (Hogan 3789) along trail in Hot Springs Canyon, piñon/juniper/oak at 9,200'; Saguache Co. Non-native. [Hogan 3789]

Agrostis scabra Willd.—Scattered across the forest zone. North America. [Hogan 3519, 4471a]

Agrostis stolonifera L.—Lower elevations; a few records. Non-native. [Elliott 4569 RM]

Anthoxanthum hirtum (Schränk.) Schouten & Veldkamp. [*Hierochloë hirta*]. SWEETGRASS.—Scattered collections from lower alpine. Western N.A. (oroboreal). [Hogan 3512, 3573, 3697, 4568, 5076]

Blepharoneuron tricholepis (Torr.) Nash—Two specimens from alpine meadows, uncommon. Southwestern N.A. [Hogan 3548, 5226]

Bouteloua gracile (Kunth) Lag. BLUE GRAMA. [*Chondrosium g.*].—Common in woodlands below 9,000'. Western N.A. [Hogan 3781]

Bromus carinata Hook. & Arnott [*Ceratochloa c.*].—One record reported from Medano Lake Trail at 11,200'. Non-native. [Spackman & Decker sn CSU]

Bromus ciliatus L. [*Bromopsis canadensis*].—Common brome of subalpine forests. North America (oroboreal). [Hogan 1307, 1445, 3593, 4593]

Bromus inermis Leyss. SMOOTH BROME. [*Bromopsis i.*].—Scattered, often along roads and near trailheads. Non-native. [Hogan 4453]

Bromus lanatipes (Shear) Rydb. [*Bromopsis l.*].—Scattered at lower elevations. Southwestern N.A. [Hogan 4556]

Bromus porteri (J.M. Coult.) Nash [*Bromopsis p.*].—Uncommon (overlooked) in montane forests and openings. Western N.A. (interior). [Hogan 3397]

- Bromus pumpellianus** Scribn. [*Bromopsis p.*].—Scattered in the subalpine. Native counterpart to *B. inermis*. Western N.A. (oroboreal). [Hogan 2804, 3460, 3562, 4972]
- Bromus tectorum** L.CHEATGRASS. [*Anisantha t.*].—Lower elevation trailheads and roads. Non-native. [Elliott 1384, 1484 RM]
- Calamagrostis canadensis** (Michx.) P. Beauv.—Moist sites from montane to upper subalpine; not uncommon. North America. [Hogan 3599, 3667, 5007]
- Calamagrostis purpurascens** R. Br.—Dry sites in the subalpine and lower alpine; common. Western N.A. (oroboreal). [Hogan 3463, 3646, 4452, 4472, 4741; Weber 5813]
- Cinna latifolia** (Trevir. ex Göpp.) Griseb.—One record reported from Medano Creek in spruce/fir at 9,500'. Circumboreal. [Decker & Anderson sn CSU]
- Dactylis glomerata** L.—ORCHARDGRASS. Specimens from roadsides and motorized trails; scattered. Non-native. [B.E. Nelson 44188, 44253 RM]
- Danthonia intermedia** Vasey—OATGRASS. Upper subalpine and lower alpine, often in moist sites; not uncommon. Western N.A. (oroboreal). [Hogan 3647, 3755, 3762, 4592, 4966]
- Danthonia parryi** Scribn.—Dry openings in montane and subalpine; not uncommon. Western N.A. [Hogan 2792, 2805, 3365, 3532, 4895]
- Deschampsia cespitosa** (L.) P. Beauv.—Common in moist sites in upper subalpine and lower alpine. Circumboreal. [Hogan 1462, 3645, 3693, 4562, 4913, 4980]
- Elymus elymoides** (Raf.) Swezey [including vars. *brevifolius* and *elymoides*] (*E. longifolius*).—Common dryland grass, lower elevations of wilderness. Western N.A. [Hogan 3384, 3560, 4799; Weber 5877]
- Elymus glaucus** Buckley—A couple specimens from aspen stands in montane zone. Western N.A. (oroboreal). [Elliott 4566 RM]
- Elymus lanceolatus** (Scribn. & Smith) Gould—Scattered collections from lower reaches of study area. Western N.A. [Hartman 63905, 63973 RM]
- Elymus scribneri** (Vasey) Jones—Common on dry tundra and upper subalpine. Western N.A. [Hogan 1454, 2793, 3455b, 3561, 3666, 4931]
- Elymus trachycaulus** (Link) Gould—Subalpine forests and meadows; not uncommon. North America. [Hogan 3494, 3559, 4591, 4797, 4948]
- Festuca arizonica** Vasey—Not uncommon in montane forests. Southwestern N.A. [Hogan 1442, 3366, 3389, 4728, 4792, 4802, 4849]
- Festuca brachyphylla** Schultes ssp. *coloradensis* Fred.—Common on dry tundra. Distinguished from *F. saximontana* largely by its shorter stature, and higher elevation habitat. Western N.A. [Hogan 3464, 3754, 4471b, 4558, 4941, 5085]
- Festuca idahoensis** Elmer—A few specimens from forested zone; apparently not as common as *F. arizonica*. Western N.A. [Hogan 5033; Weber 5898]
- Festuca minutiflora** Rydb.—Scattered on tundra of high peaks. Western N.A. [Hogan 4806]
- Festuca rubra** L.—One specimen from near top of Methodist Mt. at north end of Sangres. North America. [Hartman 66245 RM]
- Festuca saximontana** Rydb.—Subalpine and alpine; scattered. Distinguished from *F. brachyphylla* by its taller habit, and somewhat lower habitat. Western N.A. (oroboreal). [Hogan 2802, 3495, 3451, 3455a, 3468, 3649]
- Festuca thurberi** Vasey—Common on open slopes in the subalpine and lower alpine. Southern Rockies. [Hogan 1453, 1942, 2442, 2803, 3380, 4752, 4886]
- Glyceria striata** (Lam.) Hitchc. var *stricta*—A few specimens from moist area at lower elevations. North America. [Hogan 4500]
- Helictotrichon mortonianum** (Scribn.) Henrard—One specimen from east face of Eagle Peak, alpine slopes; Custer Co. Southern Rockies. [Elliott 4210 RM]
- Hesperostipa comata** (Trin. & Rupr.) Barkworth [*Stipa c.*].—Not uncommon in piñon/juniper and lower margins of study area. Western N.A. [Hogan 1930]
- Koeleria macrantha** (Ledebour) Schultes—JUNEGRASS. Common montane species. North America. [Hogan 1938, 3393]
- Muhlenbergia montana** (Nutt.) Hitchc.—Not uncommon in dry forests and woodlands in the montane. Western N.A. [Hogan 1941, 3779, 4727]
- [*Muhlenbergia* spp.—Several species of *Muhlenbergia* are cited from the Great Sand Dunes area including *M. andina*; *M. asperifolia*; *M. minutissima*; *M. pungens*; and *M. richardsonis*. These records are based on one or two records and have not been examined, but should be looked for in the area.]
- Nassella viridula** (Trin.) Barkworth [*Stipa v.*].—A few records from the montane zone. Great Plains. [Elliott 7919 RM]
- Oryzopsis asperifolia** Michx.—Scattered in montane forests. North America (oroboreal). [Hogan 1810, 4872, 5021]
- Pascopyrum smithii** (Rydb.) Löve—WESTERN WHEATGRASS. (*Elymus s.*). One specimen from margin of study area at 8,800' in piñon/juniper, Saguache Co. North America. [Elliott 3101 RM]
- Phleum alpinum** L.—ALPINE TIMOTHY. [*P. commutatum*]. Common in moist sites, subalpine and lower alpine. Circumboreal. [Hogan 1305, 3539, 4590, 4988]
- Phleum pratense** L.—Moist sites in montane and lower subalpine; not uncommon. Non-native. [Hogan 3793]
- Piptatherum micranthum** (Trin. & Rupr.) Barkworth [*Oryzopsis m.*].—Not uncommon in dry, montane forests. Western N.A. [Hogan 1939, 2541]
- Poa abbreviata** R. Br. ssp. *pattersonii* (Vasey) Á. Löve, D. Löve, & B.M. Kapoor—Snowmelt sites in the alpine. Western N.A. (circumboreal) [Elliott 8960, 9618, 9879 RM]
- Poa alpina** L.—Common in the subalpine and lower alpine. Circumboreal. [Hogan 1297, 3668, 3753, 4949]
- Poa arctica** R. Br. ssp. *grayana* Á. Löve, D. Löve, & B.M. Kapoor—A few specimens from the high peaks. Western N.A. (Rocky Mountains). [Hogan 5093]
- Poa cusickii** Vasey ssp. *epilis* (Scribn.) W.A. Weber—A couple collections from lower alpine. Western N.A. [Hogan 3549, 4560]
- Poa fendleriana** (Steud.) Vasey—Common and widespread from piñon/juniper to treeline. Western N.A. [Hogan 1296, 2443, 2542, 3489, 4936]
- Poa glauca** Vahl ssp. *rupicola* (Nash) W.A. Weber—Dry sites in subalpine and alpine; common. Western N.A. [Hogan 2801, 3510, 3661, 4744, 4925, 5086]
- Poa interior** Rydb. [*P. nemoralis* ssp. *interior*].—Dry sites in subalpine and alpine; scattered. Western N.A. (oroboreal). [Hogan 2445, 2806, 3453]
- Poa leptocoma** Trin.—One specimen (Hogan 4997) from a marshy subalpine sites near Rito Alto Lk.; Saguache Co. Western N.A. [Hogan 4997]
- Poa lettermanii** Vasey—One specimen from dry alpine tundra at 12,000'; Alamosa Co. Western N.A. [Hogan 3407]
- Poa palustris** L.—Moist sites in the montane; uncommon (seldom collected?). Circumboreal. [Hogan 3399]
- Poa pratensis** L. s.l. [including *P. agassizensis*].—Widespread and common at lower elevations. *P. agassizensis*, a taxon of drier sites, is said to be a native species by Weber & Wittmann; some of the records from the Sangres probably belong in this taxon. Non-native. [Hogan 3689, 4501]

Poa reflexa Vasey & Scribn.—A few collections from the subalpine zone. Western N.A. [Hogan 1304]

Poa secunda J. Presl [*P. juncifolia*].—Scattered throughout the wilderness. Western N.A. (oroboreal). [Hogan 3493, 5091]

Poa tracyi Vasey—One specimen from subalpine seep near Music Pass, 10,700'; Custer Co. Southern Rockies. [Hogan 5058]

Sporobolus cryptandrus (Torr.) A. Gray—Common dropseed of piñon/juniper. North America. [Hogan 3608, 3783]

Thinopyrum intermedium (Host) Barkworth & D.R. Dewey [*Elymus hispidus*].—Scattered at lower elevations of study area near roads and trailheads. Non-native. [Elliott 9729 RM]

Trisetum montanum Vasey [Perhaps better placed in *T. canescens* Buckley or as a subspecies of *T. spicatum*].—A few specimens from aspen and other moist sites in the montane. Southern Rockies. [Hogan 4549, 4737, 4795; Weber 5901]

Trisetum spicatum (L.) K. Richt. [Including ssp. *alaskanum* and *congdonii*].—Common in drier sites in the subalpine and alpine. Circumboreal. [Hogan 1455, 3491, 4450, 4583, 4746, 4810]

POLEMONIACEAE Phlox Family

Aliciella pinnatifida (Nutt. ex A. Gray) J.M. Porter [*Gilia p.*].—Scattered throughout the mountains on gravels and sands. Western N.A. (interior). [Hogan 1791, 3461]

Collomia linearis Nutt.—Scattered sites in the montane and subalpine. North America. [Hogan 4786]

Ipomopsis aggregata (Pursh) V.E. Grant ssp. *collina*—SCARLET GILIA. Common gilia of the montane. Southern Rockies (ssp.). [Hogan 1792, 3355, 3394]

Ipomopsis longiflora (Torr.) V.E. Grant—Sandy sites between Crestone and Great Sand Dunes. Great Plains. [Hogan 3601]

Leptosiphon nuttallii (A. Gray) J.M. Porter & L.A. Johnson ssp. *nuttallii* [*Linanthesrum n.*].—Not uncommon in subalpine along the Venable/Commanche loop, Custer Co., but not collected elsewhere. Western N.A. [Hogan 4749]

Linanthus pungens (Torr.) J.M. Porter & L.A. Johnson [*Leptodactylon p.*].—Not uncommon on dry sites in piñon/juniper and montane. Western N.A. [Hogan 4777, 4831]

Microsteris gracilis (Douglas ex Hook.) Greene—A couple specimens from montane; a diminutive species frequently overlooked. Western N.A. [Hogan 4850]

Phlox condensata (A. Gray) E. Nelson—Common on dry tundra in the alpine. Southwestern N.A. [Hogan 1343, 2432, 3481, 3718]

Phlox multiflora Nelson—A few collections from the Hermit Road, Custer Co. Western N.A. [Elliott 2513 RM]

Phlox pulvinata (Wherry) Cronquist [*P. sibirica* ssp. *p.*].—A few collections from alpine near the Crestones. Western N.A. [Elliott 8912, 9610, 9845 RM]

Polemonium brandegeei (A. Gray) Greene—Cliffs and boulders in the subalpine; collections from the southern end of wilderness; scattered. Western N.A. (Rocky Mountains). [Hogan 3339, 4610, 4922]

Polemonium confertum A. Gray—Collections from the alpine. This taxon is sometimes conflated with *P. viscosum*. Southern Rockies (Colorado). [Hogan 3522, 3716, 4510]

Polemonium foliosissimum A. Gray—Infrequent in mesic sites in the montane. Western N.A. (Rocky Mountains). [Hogan 3587]

Polemonium pulcherrimum Hook. ssp. *delicatum*—Common understory species of the subalpine. Western N.A. [Hogan 1308, 3336, 3709; Weber 5822]

Polemonium viscosum Nutt.—Common denizen of alpine tundra. Western N.A. [Hogan 1330; Weber 5854]

POLYGONACEAE Knotweed Family

Bistorta bistortoides (Pursh) Small [*Polygonum b.*].—Common in subalpine meadows and alpine. Western N.A. [Hogan 1306, 3701]

Bistorta vivipara (L.) Gray [*Polygonum b.*].—Moist alpine tundra; not uncommon. Western N.A. (oroboreal). [Hogan 1458, 2796, 3656, 4563; Weber 5841]

Eriogonum alatum Torr. [*Pterogonum a.*].—Open sites in the piñon/juniper and lower montane; not uncommon. Great Plains (southern). [Hogan 1932, 3349]

Eriogonum flavum Nutt. ssp. *chloranthum* (Greene) S. Stokes [*E. arcuatum* var. *xanthum*; *E. flavum* var. *flavum*].—Not uncommon on the alpine tundra. Southern Rockies (Colorado). [Hogan 3456, 4748, 4939]

Eriogonum jamesii Benth. var. *jamesii*—A species of lower elevations for which its common name, James's antelope sage, is a fitting appellation; not uncommon. Great Plains (southern). [Hogan 3640, 3782]

Eriogonum umbellatum Torr. [incl. vars. *aureum* & *umbellatum*].—Scattered in the piñon/juniper and montane. Western N.A. (interior). [Hartman 63938 RM]

Oxyria digyna (L.) Hill—Cliffs and rocky crevices in the alpine; not uncommon. Circumboreal. [Hogan 3431, 4514; Weber 5831]

Polygonum aviculare L. [*P. arenastrum*].—Scattered in the montane. Cosmopolitan. [Hogan 4772; Elliott 9692 RM]

Polygonum douglasii Greene—A few collections from the Picea zone. Western N.A. (oroboreal). [Elliott 10966 RM]

Polygonum sawatchense Small—Apparently more common and widespread than *P. douglasii* into which it is subsumed by some authors. Western N.A. [Elliott 5489 RM]

Rumex acetosella L. [*Acetosella vulgaris*].—Moist sites along roads and trails; scattered. Cosmopolitan. [Hogan 5025]

[**Rumex spp.**—Several species are cited in the spreadsheet based upon single specimens—a closer look is warranted.]

PORTULACACEAE (See Purslane)

PRIMULACEAE Primrose Family

Androsace chamaejasme Host ssp. *lehmanniana* (Spreng.) Hultén—Common cushion plant of the dry tundra. Western N.A. (Rocky Mountains and Arctic). [Hogan 1316, 2429, 3320, 4512, 4896; Weber 5849]

Androsace septentrionalis L.—Very common throughout the mountains. Circumboreal. [Hogan 1333, 1801, 1839, 2538, 3724]

Dodecatheon pulchellum (Raf.) Merrill—SHOOTINGSTAR. [*Primula pauciflora* var. *pauciflora*]. Common along streams from montane to subalpine. Western N.A. [Hogan 1836, 3743, 4536, 4853; Weber 5814]

Primula angustifolia Torr.—ALPINE PRIMROSE. Common species of the high mountains. Southern Rockies. [Hogan 1337, 2430, 3326, 3726, 4613]

Primula parryi A. Gray—PARRY'S PRIMROSE. Not uncommon along subalpine streamsides. Western N.A. (Rocky Mountains). [Hogan 2437; Elliott 5085 RM]

PYROLACEAE (See Ericaceae)

RANUNCULACEAE Buttercup Family (Including Helleboraceae)

Aconitum columbianum Nutt. ex Torr. & A. Gray—MONKSHOOD. Wet sites in the subalpine; not uncommon. Western N.A. [Hogan 3577, 3690, 4597, 5110]

Actaea rubra (Aiton) Willd.—Mixed forests, montane and subalpine; not uncommon. Western N.A. (oroboreal). [Hogan 1804, 2561]

Anemone multifida Poir.-Dry forested sites; not uncommon. North America (oroboreal). [Hogan 3568, 4447, 4526]

Anemone parviflora Michx.-One specimen open site below Bushnell Lake, limestone, 11,000'; Fremont Co. Southern extent of its range in the Sangres. Western N.A. (oroboreal). [Hogan 4528]

Anemone patens L. var. **multifida**-PASQUE FLOWER. [*Pulsatilla ludoviciana*]. Early season flower of dry forests; uncommon (seldom collected?). Western N.A. [Hogan 4607]

Aquilegia coerulea James ex Torr.-COLORADO COLUMBINE. Open sites from montane to alpine; common. Western N.A. (Rocky Mountains). [Hogan 3402, 3702, 4521, 4883; Weber 5833]

Aquilegia elegantula Greene Moist subalpine forests; uncommon. Southern Rockies. [Hogan 3567, 4621]

Caltha leptosepala DC.-MARSH-MARIGOLD. [*Psychrophila* l.]. Wet meadows, subalpine and alpine; common. Western N.A. [Hogan 3331; Elliott 5089 RM]

Clematis columbiana (Nutt.) Torr. & A. Gray [*Atragane* c.]-Dry forests; flowers in early season, uncommon or rarely collected. Western N.A. [Hogan 4856]

Clematis hirsutissima Pursh var. **scottii** (Porter) R.O. Erickson-LEATHERFLOWER. [*Coriflora scottii*]. Not uncommon in dry, mixed forests below 9,500'; early season. Western N.A. (interior). [Hogan 5013]

Delphinium alpestre Rydb. [*D. ramosum* var. *alpestre*].-Scattered on the dry tundra. A species of special concern (G2S2). Southern Rockies. [Hogan 3458, 3533, 4456, 4575]

Delphinium barbeyi (Huth) Huth-Moist *Picea* forests; common. Southern Rockies. [Hogan 1448, 4482; Weber 5859]

Delphinium ramosum Rydb.-Moist sites, montane and subalpine; scattered. Southern Rockies. [Hogan 3563, 3747, 4484]

Ranunculus cardiophyllus Hook.-One report from Medano Pass Road, Great Sand Dunes, 9,000'; Saguache Co. Western N.A. (Rocky Mountains). [Decker & Doyle sn CSU]

Ranunculus cymbalaria Pursh [*Halerpestes* c.]-Seeps and riparian areas at lower elevations; scattered. Circumboreal. [Hogan 4546]

Ranunculus eschscholtzii Schldl.-One report from Medano Lake Trail, Great Sand Dunes, seeps at 11,500'; Saguache Co. Western N.A. [Decker & Doyle sn CSU]

Ranunculus inamoenus Greene-Common buttercup of moist areas in subalpine and lower alpine. Western N.A. [Hogan 1837, 3337, 4620, 4910]

Ranunculus macauleyi A. Gray-An endemic species of the high mountains; common in the Sangres. Southern Rockies. [Hogan 1338, 2431]

Ranunculus macounii Britton-Collections from montane streambanks; uncommon. North America (oroboreal). [Elliott 9690 RM]

Ranunculus pedatifidus Sm. var. **affinis**-One collection "from Horseshoe Lake up to Hermit Pass", 12,000'; Custer Co. Circumboreal. [Elliott 3718]

Thalictrum alpinum L.-A diminutive plant of moist tundra; scattered (probably overlooked). Circumboreal. [Hogan 3425, 4902]

Thalictrum fendleri Engelm. ex A. Gray-Forests and meadows, montane through subalpine; common. Western N.A. [Hogan 3572; Elliott 5148, 9739 RM]

Trollius albiflorus (A. Gray) Rydb.-GLOBEFLOWER. Moist sites, subalpine and alpine; scattered. At the southern extent of its range in the Sangres. Western N.A. (northern). [Weber 5862; Elliott 8924 RM]

RHAMNACEAE Buckthorn Family

Ceanothus fendleri A. Gray-Low-lying shrub of piñon/juniper and montane; not uncommon. Southwestern N.A. [Hogan 4519, 4789, 4864]

ROSACEAE Rose Family

Amelanchier alnifolia Nutt.-SERVICEBERRY Scattered in montane forests; scattered. Western N.A. (oroboreal). [Hogan 2569, 4861]

Cercocarpus montanus Raf.-MOUNTAIN-MAHOGANY Common shrub of piñon/juniper and montane woodlands. Western N.A. [Hogan 1793, 3350, 4834]

Dryas octopetala L. ssp. **hookeriana** (Juz.) Hultén-A species of the high mountains; often associated with limestone in the Sangres. Western N.A. (circumboreal). [Hogan 4455, 4533, 4940; Weber 5855]

Fallugia paradoxa (Don) Endl.-APACHE PLUME. Western margin of study area at lower elevations. Southwestern N.A. [Hogan 3673]

Frageria vesca L.-Common in mesic forest understory, montane and subalpine. North America. [Hogan 1805, 4846]

Frageria virginiana P. Miller-Common in dry forest understory, montane and subalpine. North America. [Hogan 1843, 4847]

Geum aleppicum Jacq.-Uncommon; a couple collections from low elevation riparian areas (Wild Cherry Creek), northern Saguache Co. North America. [Hogan 3682]

Geum macrophyllum Willd.-Not uncommon along montane streambanks. Western N.A. (oroboreal). [Hogan 3611, 3582a]

Geum rossii (R. Br.) Ser. ssp. **turbatum** (Rydb.) C.L. Hitch.-ALPINE AVENS [*Acomastylis* r. var. t.]. Common species of rocky alpine tundra. Western N.A. [Hogan 1319, 3325]

Holodiscus dumosus (Nutt. ex Hook.) Heller [*H. discolor*].-Rocky sites in the montane; common. Southwestern N.A. [Hogan 3386, 4724]

Ivesia gordonii (Hook.) Torr. & A. Gray-Two specimens "alpine ridge N of California Pk. Gravelly site east of point 12,330"; Alamosa Co. Western N.A. [Hogan 3516, 5106]

Physocarpus monogynus (Torr.) J.M. Coul.-NINEBARK. Not uncommon in mixed montane forests. Western N.A. (Rocky Mountains). [Hogan 1783, 3685, 4503]

Potentilla concinna Richardson var. **concinna**-Broadly distributed on dry sites in the mountains. Western N.A. [Hogan 1833, 3322, 3727, 4617]

Potentilla fissa Nutt. [*Drymocallis* f.].-Not uncommon in dry montane forests. Western N.A. (Rocky Mountains). [Hogan 4804]

Potentilla fruticosa Pursh-SHRUBBY CINQUEFOIL [*Dasiphora* f.; *Pentaphylloides* f.]. Common in moist sites from montane to treeline. Circumboreal. [Hogan 2808]

Potentilla gracilis Douglas-One specimen (Hogan 3582b), from seep in aspen forest, upper Huerfano, 10,200'; Huerfano Co. Western N.A. (oroboreal). [Hogan 3582b]

Potentilla glaucophylla Lehm. [*P. diversifolia*].-Common, subalpine and alpine. Western N.A. (oroboreal). [Hogan 1295, 3328, 3335, 3542, 3731, 4920]

Potentilla hippiana Lehm.-Not uncommon on dry sites, montane and subalpine. Western N.A. (oroboreal). [Hogan 3369]

Potentilla hookeriana Lehm.-A few collections (Elliott) from tundra of the high peaks (may be misidentifications of *P. uniflora*). Circumboreal. [Hogan 3786, 9423]

Potentilla ovina Macoun-One collection from dry alpine tundra NNW of Music Pass, 12,600'; Custer/Saguache Co. Western N.A. (Rocky Mountains). [Hogan 4937]

Potentilla pensylvanica L. Scattered collections, mostly from lower elevations. North America. [Hogan 3511, 3686]

Potentilla pulcherrima Lehm. [*P. gracilis* var. *pulcherrima*].—Common from dry sites in the montane and subalpine. Western N.A. [Hogan 2807, 3540, 4473]

Potentilla saximontana Rydb. [*P. rubricaulis*].—A species of the high peaks; scattered. North America (Rocky Mts./northern). [Elliott 3818, 5547, 9595 RM]

Potentilla subgorodkovii Jurtzev [*P. uniflora*].—One specimen, from fellfield at 13,200' on Mt. Owen; Saguache Co. Western N.A. (northern). [Hogan 3739]

Potentilla subjuga Rydb.—Collections from treeline and lower alpine; scattered. Western N.A. (Rocky Mountains). [Hogan 3473, 4509]

Prunus americana Marshall—WILD PLUM. A couple collections from gulches at lower margins of study area, Fremont Co. Eastern N.A. [Elliott 8181, 8218 RM]

Prunus virginiana L. ssp. **melanocarpa** (A. Nelson) Roy L. Taylor & MacBryde—CHOKECHERRY [*Padus* v.]. Shaded sites in montane forests; not uncommon. Western N.A. [Hogan 1795, 2554, 4825]

Rosa acicularis Lindl. [*R. sayi*].—Mixed forests, montane. North America (northern). [B.E. Nelson 44193, 44207 RM]

Rosa blanda Aiton [*R. nutkana*; *R. woodsii*].—The common wild rose from lower elevations to subalpine. Western N.A. (oroboreal). [Hogan 3381, 3678]

Rubus deliciosus Torr.—BOULDER RASPBERRY [*Oreobatus* d.]. Piñon/juniper and montane zone; not uncommon. Southern Rockies. [Hogan 1785, 2555, 4815, 4812]

Rubus idaeus L. [including ssp. *aculeatissimus* and *melanolasius*] RASPBERRY.—The common raspberry of the mountains. Circumboreal. [Hogan 1809]

Sibbaldia procumbens L.—Moist tundra; not uncommon. Circumboreal. [Hogan 1329, 3333, 4908]

RUBIACEAE Madder Family

Galium boreale L. ssp. **septentrionale** [*G. septentrionale*].—Common in montane mixed forests. Circumboreal. [Hogan 4449, 5011]

Galium triflorum Michx.—Scattered collections from mixed forests in the montane. Circumboreal. [Hogan 4495]

RUSACEAE Butcher's Broom Family

Maianthemum racemosa (L.) Link **amplexicaule** (Nutt.) LaFrankie [*M. amplexicaule* ssp. *racemosa*; *Smilacina* a.].—Common throughout the montane and lower subalpine forests zone. Western N.A. [Hogan 1794, 2559]

Maianthemum stellatum (L.) Link [*Smilacina* s.].—Common in the montane zone. North America. [Hogan 1816, 3379]

SALICACEAE Willow Family

Populus angustifolia James—NARROWLEAF COTTONWOOD. Along streams at lower elevations in the wilderness; signature species of these rich avian habitats. Western N.A. [Elliott 838, 1479 RM]

Populus tremuloides Michx.—ASPEN. Common, often dominant, in montane zone, particularly on the west side of range where lodgepole is largely absent. North America. [Hogan 4794]

Salix bebbiana Sarg.—Streamsides in the montane and lower subalpine; not uncommon. Circumboreal. [Hogan 2563, 4800]

Salix brachycarpa Nutt.—Common in subalpine willow thickets along streams; sometimes confused (lumped) w/ *S. glauca*, a species of higher elevation. Western N.A. (oroboreal). [Hogan 3650, 4919]

Salix drummondiana Barratt ex Hook.—Common streamside willow, montane and lower subalpine. Western N.A. [Hogan 3410, 3778, 4803, 4889, 5023]

Salix exigua Nutt.—Scattered records from lower elevation, often sandy, streamsides. Western N.A. [Elliott 5056, 6802 RM]

Salix glauca L. var. **villosa**—Andersson Snow melt basins at and above timberline, often with *S. planifolia*. Western N.A. [Hogan 4523; Weber 5826]

Salix lasiandra Benth.—A few records from lower elevation streamsides. Western N.A. [Elliott 7922 RM]

Salix monticola Pursh—Subalpine wetlands from montane streamsides. Southern Rockies. [Hogan 3579, 4843]

Salix nivalis Hook. [*S. reticulata* ssp. *nivalis*; *S. reticulata* ssp. *nana*].—Not uncommon species of moist tundra; sometimes sympatric with *S. arctica*. Western N.A. [Hogan 1461, 3644, 3770, 4535; Weber 5830]

Salix petrophila [*S. arctica* ssp. *petraea*].—A species of the tundra and upper subalpine. Western N.A. [Hogan 1463, 4534]

Salix planifolia Pursh—Subalpine wetlands. Western N.A. (oroboreal). [Hogan 1340, 1838, 4916]

Salix scouleriana Barratt ex Hook.—A willow of upland sites, not uncommon in the Sangres. Western N.A. [Hogan 1834]

SANTALACEAE Sandalwood Family

Comandra umbellata (L.) Nutt. ssp. **pallida** (A. DC.) Piehl—Not uncommon in piñon/juniper and montane woodlands. Western N.A. [Hogan 3361, 3398]

SAPINDACEAE Soapberry Family [Aceraceae]

Acer glabrum Torr.—MOUNTAIN MAPLE. Streamsides and shaded slopes at middle elevations; common. Western N.A. [Hogan 3344, 3680]

SAXIFRAGACEAE Saxifrage Family

Heuchera hallii (L.) A. Gray—Growing in Aspen, Bristlecone Pine, & *Pseudotsuga menziesii* on limestone substrate, final turn below Bushnell Lakes; 10,920'; Fremont Co. [Scott Smith 406 COLO]

Heuchera parvifolia Nutt. ex Torr. & A. Gray—Very common throughout the wilderness. Western N.A. [Hogan 2552, 2800, 3442, 3660, 3733, 4459, 4857, 4911]

Lithophragma tenellum Nutt.—One specimen from "top of Little Sheep Mt." at SE margin of study area, 9500'; Huerfano Co. An early season taxon likely overlooked by collectors. Western N.A. [Hartman 64889]

Micranthes odontoloma (Piper) Heller [*Saxifraga* o.].—Common along subalpine streamsides. Western N.A. [Hogan 3621, 4504, 4975, 5109]

Micranthes oregana (Howell) Small [*Saxifraga* o.].—One record from alpine site at 12,000' near the Iron Nipple; Huerfano Co. Western N.A. [Elliott 11050 RM]

Micranthes rhomboidea (Greene) Small [*Saxifraga* r.].—Common alpine plant in the Sangres. Western N.A. (Rocky Mountains). [Hogan 1322, 1840, 3329, 3729, 4905]

[*Mitella* spp. Notable for their absence.]

Saxifraga adscendens L. [*Muscaria* a.].—One specimen collected from Venable Falls, "moist rocks in moss near creek," at 10,800'; Custer Co. Western N.A. (northern). [Lederer 97-155b COLO]

Saxifraga bronchialis L. var. **austromontana** (Wiegand) M. Peck [*Ciliaria* a.].—Widely distributed and common from the upper montane to alpine. Western N.A. [Hogan 1450, 1831, 4882; Weber 5835]

Saxifraga cernua L.—A few records from moist sites in the high mountains. Circumboreal. [Hogan 3505c, 4958]

Saxifraga cespitosa L. [*Muscaria delicatula*].—A species of rocky tundra on the highest peaks. Circumboreal. [Hogan 3723, 4957; Weber 5850, 15213]

Saxifraga chrysantha A. Gray [*Hirculus serpyllifolius* var. c.].—Scattered on highest peaks; perhaps less common and on moister sites than *H. platysepalus*. Western N.A. (Rocky Mountains). [Hogan 3525, 4956, 5050; Weber 5836]

Saxifraga flagellaris Willd. ssp. **crandallii** (Gand.) Hultén [*Hirculus platysepalus* ssp. *crandallii*].—Scattered on the highest peaks. Western N.A. (Rocky Mountains). [Hogan 2782, 3504, 3734]

Saxifraga rivularis L. [*S. debilis*; *S. hyperborea*].—Moist sites in the subalpine and alpine. (Some records of *S. rivularis* from the Sangres may apply to *S. hyperborea* ssp. *debilis*.) Circumboreal. [Hogan 2439, 3438, 4809]. [According to FNA (Vol. 8), "For Colorado. Weber appears to have applied the name *S. rivularis* to what we call *S. hyperborea*, and *S. hyperborea* ssp. *debilis* to what we call *S. debilis*".]

SCROPHULARIACEAE Figwort Family (Including Orobanchaceae, Phrymaceae, Plantaginaceae)

Verbascum thapsus L. [SCR].—Scattered collections from lower elevations proximate to roads and trailheads. Non-native. [Elliott 2478, 4090, 4702, 4561 RM]

THALICTRACEAE (See Ranunculaceae)

URTICACEAE Nettle Family

Urtica dioica L. var. **occidentalis** S. Watson [*U. gracilis*].—Scattered in moist sites in the mountains. North America. [Elliott 9284, 9823, 9835 RM]

UVULARIACEAE (See Liliaceae)

VALERIANACEAE Valerian Family

Valeriana acutiloba Rydb.—Moist, open sites from montane to lower alpine; not uncommon. Western N.A. [Hogan 3571, 3742, 4462, 4524, 4901]

Valeriana arizonica A. Gray—Uncommon *Valeriana* collected in drainages on west side of wilderness between Cotton Creek and South Zapata; shaded montane sites. Southwestern N.A. [Hogan 1797, 2557, 3363, 4839, 4888, 5034]

Valeriana edulis Nutt.—Montane to lower alpine; scattered. Western N.A. (and Great Lakes region). [Hogan 3462]

Valeriana occidentalis A. Heller—Moist sites, montane and sub-alpine; scattered. Western N.A. [Elliott 3659, 3681, 4585, 5502 RM]

VIOLACEAE Violet Family

Viola adunca Sm.—Collections from montane to the alpine; not uncommon. Western N.A. (oroboreal). [Hogan 3334, 4900]

Viola biflora L.—A few collections from moist sites in the lower alpine; disjunct from Canada and Alaska. Circumboreal. [Hogan 2783, 3429]

Viola canadensis L. ssp. **scopulorum** (A. Gray) House [*V. scopulorum*].—Common forest violet of the montane zone. Southern Rockies. [Hogan 1802, 4604, 4837, 4860]

Viola sororia Willd. [*V. nephrophylla*].—A few collections from moist, montane sites at north end of range. North America. [Elliott 7931 RM]

ACKNOWLEDGMENTS

It is a pleasure to recognize the many people who have helped me throughout this work. I have worked under three curators while rostered at the University of Colorado Herbarium: William Weber, Tom Ranker, and Erin Tripp. Each of them has been nothing but encouraging with my work in the Sangres. Erin in particular has been a valued academic mentor in recent years. My fellow collection managers, past and present—J. Ryan Allen, Dina Clark, and Nan Lederer—have been similarly supportive and helpful in ways too many to enumerate. The University of Colorado Museum of Natural History has been a home for over 30 years, providing refuge from an often chaotic world.

Friends at Crestone Mountain Zen Center have similarly nourished my love of the Sangres. Initially I found my way up the shoe-string canyons and into the watersheds that rise above the monastery grounds. Over time, my feet have carried me the length of the range, and an intimacy has grown with the forests and tundra, the wildlife, and the mountains hidden in mountains. In my role as a botanist at the University of Colorado Museum of Natural History, I studied the flora and vegetation. A bird list grows, I read geology monographs, and letters are written on behalf of protecting wild nature in the Sangres. Along the way I have gotten lost, fallen into creeks, harassed by mosquitoes, and scared to distraction by thunder and lightning. Untold nights have been passed on the ground.

Comments from reviewers Jennifer Ackerfield (KHD) and Ross McCauley (FLD) improved this report, and I am grateful for their astute observations and remarks.

Finally, my wife, Eleni K. Arapkiles, has been a steady companion throughout it all.

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