Great Sand Dunes National Monument and Preserve 2003 Vascular Plant Inventory

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Knowledge to Go Places

I. Background

As part of its biological inventory program, the National Park Service (NPS) contracted the Colorado Natural Heritage Program (CNHP) in 2001-2004 to conduct a field inventory of vascular plants of Great Sand Dunes National Monument and Preserve (GRSA). Although detailed botanical research had been conducted in GRSA by H.N. Dixon (1999) and others, additional research was needed, particularly regarding the distribution of low elevation wetland, high elevation, rare, and non-native plants, and to augment the GRSA Herbarium collection.

A checklist of vascular plants of Great Sand Dunes National Monument (Dixon 1999) was developed over a 30-year period from 1969-1999, and documents about 406 taxa that occur in the Monument. This is one of the most thorough botanical inventories in all of Colorado. Given the thoroughness of this inventory, this checklist is considered to be comprehensive for the Monument. However, many of the species on the checklist are not represented in the GRSA Herbarium, many voucher specimens are housed at the Alamosa State College Herbarium (pers. comm. Dixon 2002).

On November 22, 2000 the boundaries of the Great Sand Dunes National Monument were expanded to include the Great Sand Dunes Preserve. The new boundaries added an additional 42,000 acres, encompassing a far greater elevation range, including six peaks over 13,000 feet, and additional habitats, including low elevation wetlands, sub-alpine, and alpine areas. Many of the species in the Preserve are not included on the Monument checklist (Dixon 1999), nor are they represented in the GRSA Herbarium (species list for GRSA Herbarium provided by Fred Bunch 2002).

At the start of our research in 2002 the GRSA Herbarium housed collections of 321 vascular plant species, and 406 species were included on the GRSA plant checklist (Dixon 1999). In the summer of 2002 we collected 111 plant species from the Monument and Preserve that had not previously been documented with voucher specimens at the GRSA Herbarium (Spackman Panjabi and Decker 2002). Our 2002 results are presented in our report, Great Sand Dunes National Monument and Preserve vascular plant inventory (Spackman Panjabi and Decker 2002). As we began the research presented in this report the GRSA Herbarium had specimens of 432 vascular plants, and the updated Master List for GRSA included 517 species (a merging of Dixon 1999 and Spackman Panjabi and Decker 2002).

Scope of work

This project documented the vascular plant composition at Great Sand Dunes National Monument and Preserve (GRSA). We objectively quantified inventory completeness for plants using a master list approach and plotting number of species observed against survey effort. Surveys targeted low elevation wetlands, high elevation, rare, and non-native plant species, and species for which the GRSA Herbarium lacked a voucher specimen.

II. Objectives

- Compile and review existing botanical data for the Great Sand Dunes National Monument and Preserve (GRSA).
- Document additional occurrence and distribution information for vascular plants at GRSA by collecting and identifying vascular plants that are not documented with herbarium specimens at the GRSA Herbarium.
- Objectively quantify inventory completeness for plants surveyed at GRSA.

III. Methods

We worked with the Great Sand Dunes National Monument and Preserve (GRSA) staff, particularly Fred Bunch and Phyllis Pineda Bovin, beginning in fall 2001, to plan and implement the project. This included scheduling site visits, permitting, and logistical assistance from park staff.

We used standard floristic survey methods, following methods employed by Colorado botanists in numerous similar studies (e.g., Maley 1994, Clark 1996, Freeman 2000). The surveys were based on subjective searches of a representation of all habitats, with the intent that previously undocumented species within the Monument and Preserve would be located and identified.

To determine specific places to target for our research we referred to geology, soil, vegetation and topographic maps to find areas in the Monument and Preserve that may support unusual habitats and therefore previously undocumented plants. To determine species to target for our research we referred to the plant checklist of the Great Sand Dunes National Monument (Dixon 1999), the University of Colorado Herbarium lists of plant species for Saguache and Alamosa counties (University of Colorado 2002), a draft annotated checklist of the vascular plants of the San Luis Basin (Dixon 2003), a working plant list for the Sangre de Cristo mountain range (Hogan 2000), the Colorado Natural Heritage Program lists of rare plant species for Saguache and Alamosa counties (Colorado Natural Heritage Program 2004), and the Colorado Department of Agriculture list of noxious weeds (Colorado Department of Agriculture 2003).

Field surveys were completed June 9 through August 15, 2003. We subjectively searched areas and habitats, distributing survey effort across the entire Monument and Preserve. Less emphasis was given to the Monument area, as requested by GRSA staff. We carried a master plant species list for the GRSA, and took voucher specimens when appropriate (either because they required further verification, or because we believed that a voucher specimen had not been collected for the GRSA Herbarium). We recorded survey effort and locations and compared these data with new specimens and the Master List (a merging of Dixon 1999 and Spackman Panjabi and Decker 2002) to estimate survey completeness.

We entered details regarding all specimens that we deposited at the GRSA Herbarium into the National Park Service Standard Collection Spreadsheet and delivered the spreadsheet to David Pillmore, NPS Inventory and Monitoring Computer Technician at David_Pillmore@nps.gov. Nomenclature follows that of Kartesz (1999) as modified by the PLANTS Database (USDA, NRCS 2004).

IV. Results

We spent approximately 173 person-hours surveying Great Sands Dunes National Monument and Preserve (GRSA) in 2003, collected 262 specimens, and verified 127 plant species that had not previously been documented with voucher specimens at the Monument Herbarium (Table 1). Two of the newly vouched taxa are considered to be rare in Colorado (Colorado Natural Heritage Program 2004). The globally rare *Cleome multicaulis* (Slender spiderflower) was previously known from the GRSA, and was documented with specimens at other herbaria, but was not included in the GRSA collection. The other rare taxon, *Hymenoxys helenoides* (Intermountain bitterweed), is a sterile hybrid resulting from a cross of two common taxa, *H. richardsonii* (Pingue) and *H. hoopesii* (Orange sneezeweed, Anderson et al. 1995). Seventeen of the newly vouched species are not native to Colorado (Weber and Wittmann 2001), and among these, one is included on the state list of noxious weeds, *Euphorbia esula* (Leafy spurge, Colorado Department of Agriculture 2003).

Table 1. Plant species collected in Great Sand Dunes National Monument and Preserve (GRSA) by Decker, Doyle, and Anderson in 2003 that had not previously been documented with voucher specimens at the GRSA Herbarium. Species are listed in alphabetical order by family. Rare species are underlined (Colorado Natural Heritage Program 2004). Species not native to Colorado are listed in bold (Weber and Wittmann 2001), with questions regarding species nativity indicated under comments. Nomenclature follows Kartesz (1999) as modified by the PLANTS Database (USDA, NRCS 2004). Where nomenclature differs from that of Weber and Wittmann (2001), the synonym is listed under comments.

Family	**Latin name**	**Common Name**	**Comments**
Apiaceae	*Oreoxis bakeri*	Baker's alpine parsley	
Asteraceae	*Agoseris aurantiaca*	Orange agoseris	
Asteraceae	*Agoseris glauca* var. *dasycephala*	Pale agoseris	
Asteraceae	*Anaphalis margaritacea*	Pearly everlasting	
Asteraceae	*Antennaria media*	Pussytoes	
Asteraceae	*Antennaria rosea*	Pink pussytoes	
Asteraceae	*Aster foliaceus* var. *apricum*	Alpine leafybract aster	Weber and Wittmann 2001: *Aster foliaceus*
Asteraceae	*Chaenactis douglasii*	Alpine dusty maiden	
Asteraceae	*Cirsium scopulorum*	Alpine thistle	
Asteraceae	*Erigeron coulteri*	Coulter's fleabane	
Asteraceae	*Erigeron eximius*	Sprucefir fleabane	
Asteraceae	*Erigeron peregrinus* ssp. *callianthemus*	Subalpine fleabane	
Asteraceae	*Erigeron subtrinervis*	Three-nerved fleabane	

Family	Latin name	Common Name	Comments
Asteraceae	*Hymenoxys helenioides*	Intermountain bitterweed	Rare species ranked G3G4Q by the Colorado Natural Heritage Program (2004). Weber and Wittmann 2001: *Picradenia helenioides*
Asteraceae	*Iva axillaries*	Povertyweed	
Asteraceae	*Senecio amplectens* var. *amplectens*	Showy alpine ragwort	Weber and Wittmann 2001: *Ligularia amplectens*
Asteraceae	*Senecio bigelovii* var.*hallii*	Hall's ragwort	
Asteraceae	*Senecio fremontii* var. *blitoides*	Fremont's butterweed	
Asteraceae	***Sonchus arvensis* ssp. *uliginosus***	**Sow thistle**	**Weber and Wittmann 2001: *Sonchus uliginosus***
Asteraceae	*Tonestus pygmaeus*	Dwarf goldenweed	
Betulaceae	*Betula occidentalis*	River birch	Weber and Wittmann 2001: *Betula fontinalis*
Brassicaceae	*Arabis* x*divaricarpa*	Spreadingpod rockcress	Weber and Wittmann 2001: *Boechera divaricarpa*
Brassicaceae	***Camelina microcarpa***	**False flax**	
Brassicaceae	***Capsella bursa-pastoris***	**Shepherd's purse**	
Brassicaceae	***Cardaria pubescens***	**Hairy whitetop**	
Brassicaceae	***Descurainia sophia***	**Flixweed**	
Brassicaceae	***Hutchinsia procumbens***	**Prostrate hutchinsia**	**Nativity is uncertain. Weber and Wittmann say non-native, others say native. Weber and Wittmann 2001 (West Slope Flora): *Hymenolobus procumbens***
Brassicaceae	*Rorippa alpina*	Alpine yellowcress	
Brassicaceae	***Rorippa nasturtium-aquaticum***	**Watercress**	**Nativity is uncertain. Weber and Wittmann 2001: *Nasturtium officinale***
Brassicaceae	***Thlaspi arvense***	**Field pennycress**	

Family	Latin name	Common Name	Comments
Cactaceae	*Echinocereus triglochidiatus*	Claret cup cactus	
Capparaceae	*Cleome multicaulis*	Slender spiderflower	Rare species ranked G2G3 by the Colorado Natural Heritage Program (2004).
Caryophyllaceae (Weber and Wittmann 2001: Alsinaceae)	*Arenaria lanuginosa* ssp. *saxosa*	Spreading sandwort	Weber and Wittmann 2001: *Spergulastrum lanuginosum*
Caryophyllaceae (Weber and Wittmann 2001: Alsinaceae)	*Minuartia obtusiloba*	Alpine sandwort	Weber and Wittmann 2001: *Lidia obtusiloba*
Caryophyllaceae (Weber and Wittmann 2001: Alsinaceae)	*Stellaria calycantha*	Chickweed	
Crassulaceae	*Rhodiola integrifolia*	King's crown	Weber and Wittmann 2001: *Tolmachevia integrifolia*
Cyperaceae	*Carex arapahoensis*	Arapaho sedge	
Cyperaceae	*Carex elynoides*	Blackroot sedge	
Cyperaceae	*Carex geophila*	White Mountain sedge	
Cyperaceae	*Carex heteroneura* var. *chalciolepis*	Holm sedge	Weber and Wittmann 2001: *Carex chalciolepis*
Cyperaceae	*Carex microptera*	Smallwing sedge	
Cyperaceae	*Carex norvegica* ssp. *stevenii*	Steven's sedge	
Cyperaceae	*Carex occidentalis*	Western sedge	
Cyperaceae	*Carex praegracilis*	Clustered field sedge	
Cyperaceae	*Carex rossii*	Ross' sedge	Weber and Wittmann 2001: *Carex brevipes*
Cyperaceae	*Carex simulata*	Analogue sedge	
Cyperaceae	*Eleocharis acicularis*	Spike sedge	
Cyperaceae	*Eleocharis palustris*	Spike sedge	Weber and Wittmann 2001: *Eleocharis macrostachya*
Cyperaceae	*Schoenoplectus acutus* var. *acutus*	Hardstem bulrush	Weber and Wittmann 2001: *Schoenoplectus lacustris* ssp. *acutus*
Cyperaceae	*Schoenoplectus pungens*	Threesquare	

Family	Latin name	Common Name	Comments
Cyperaceae	*Scirpus nevadensis*	Alkali bulrush	Weber and Wittmann 2001: *Amphiscirpus nevadensis*
Ericaceae	*Arctostaphylos uva-ursi*	Kinnikinnick	
Ericaceae	*Vaccinium myrtillus* var. *oreophilum*	Common blueberry	
Euphorbiaceae	***Euphorbia esula* var. *uralensis***	**Leafy spurge**	***Euphorbia esula* is listed on Colorado's noxious weed list. Weber and Wittmann 2001: *Tithymalus uralensis***
Fabaceae	*Astragalus scopulorum*	Rocky Mountain milkvetch	
Fabaceae	*Oxytropis sericea* x *lambertii*	White locoweed x Colorado locoweed	
Fabaceae	*Thermopsis divaricarpa*	Golden banner	
Fabaceae	*Trifolium attenuatum*	Rocky Mountain clover	
Dryopteridaceae	*Cystopteris fragilis*	Fragile fern	
Geraniaceae	*Geranium richardsonii*	Richardson's geranium	
Hydrophyllaceae	*Phacelia heterophylla*	Varileaf phacelia	
Juncaceae	***Juncus bufonius***	**Toad rush**	
Juncaceae	*Juncus drummondii*	Drummond's rush	
Juncaceae	*Juncus parryi*	Parry's rush	
Juncaceae	*Juncus saximontanus*	Rocky Mountain rush	
Juncaceae	*Luzula comosa*	Woodrush	
Juncaceae	*Luzula spicata*	Spiked woodrush	
Lamiaceae	*Dracocephalum parviflorum*	Dragonhead	
Lamiaceae	*Stachys pilosa* ssp. *pilosa*	Hedge nettle	Weber and Wittmann 2001: *Stachys palustris* ssp. *pilosa*
Liliaceae	*Veratrum tenuipetalum*	False hellebore	
Liliaceae (Weber and Wittmann 2001: Calochortaceae)	*Calochortus gunnisonii*	Mariposa lily	
Malvaceae	*Sidalcea neomexicana*	Checkerbloom	
Onagraceae	*Epilobium lactiflorum*	Willowherb	

Family	Latin name	Common Name	Comments
Onagraceae	*Oenothera pallida* ssp. *runcinata*	Pale evening-primrose	
Poaceae	*Achnatherum robustum*	Sleepy grass	
Poaceae	***Agropyron cristatum***	**Crested wheatgrass**	
Poaceae	***Agrostis exarata***	**Spike bentgrass**	**Nativity is uncertain**
Poaceae	***Alopecurus pratensis***	**Meadow foxtail**	
Poaceae	*Blepharoneuron tricholepis*	Pine dropseed	
Poaceae	*Calamagrostis purpurascens*	Purple reedgrass	
Poaceae	*Catabrosa aquatica*	Brookgrass	
Poaceae	*Cinna latifolia*	Drooping woodreed	
Poaceae	*Distichlis spicata*	Saltgrass	
Poaceae	*Elymus glaucus*	Blue wildrye	
Poaceae	*Festuca arizonica*	Arizona fescue	
Poaceae	*Festuca saximontana*	Fescue	
Poaceae	*Hierochloe hirta* ssp. *arctica*	Sweetgrass	
Poaceae	*Muhlenbergia montana*	Mountain muhly	
Poaceae	*Poa leptocoma*	Bog bluegrass	
Poaceae	***Poa pratensis***	**Kentucky bluegrass**	
Poaceae	*Spartina gracilis*	Alkali cordgrass	
Poaceae	*Sporobolus airoides*	Alkali sacaton	
Poaceae	***Thinopyrum intermedium***	**Intermediate wheatgrass**	
Polemoniaceae	*Collomia linearis*	Narrowleaf phlox	
Polemoniaceae	*Phlox gracilis* ssp. *gracilis*	Slender phlox	Weber and Wittmann 2001: *Microsteris gracilis*
Polygonaceae	*Oxyria digyna*	Alpine sorrel	
Polygonaceae	***Polygonum arenastrum***	**Oval-leaf knotweed**	
Polygonaceae	*Polygonum douglasii*	Douglas' knotweed	
Polygonaceae	*Polygonum polygaloides*	Milkwort knotweed	
Portulacaceae	*Claytonia lanceolata*	Spring beauty	
Portulacaceae	***Portulaca oleracea***	**Purslane**	
Potamogetonaceae	*Stuckenia pectinatus*	Pondweed	Weber and Wittmann 2001: *Potemogeton pectinatus*

Family	Latin name	Common Name	Comments
Pyrolaceae	*Pyrola asarifolia* ssp. *asarifolia*	Wintergreen	
Ranunculaceae	*Clematis hirsutissima* var.*scottii*	Sugarbowls	Weber and Wittmann 2001: *Coriflora scottii*
Ranunculaceae	*Ranunculus cardiophyllus*	Heartleaf buttercup	
Ranunculaceae	*Ranunculus eschscholtzii*	Subalpine buttercup	
Ranunculaceae	*Ranunculus macauleyi*	Rocky Mountain buttercup	
Ranunculaceae	*Ranunculus macounii*	Macoun's buttercup	
Ranunculaceae	*Ranunculus trichophyllus* var. *trichophyllus*	Water crowfoot	Weber and Wittmann 2001: *Batrachium trichophyllum*
Ranunculaceae (Weber and Wittmann 2001: Helleboraceae)	*Aquilegia elegantula*	Red columbine	
Ranunculaceae (Weber and Wittmann 2001: Helleboraceae)	*Delphinium ramosum*	Larkspur	
Ranunculaceae (Weber and Wittmann 2001: Helleboraceae)	*Trollius laxus* ssp. *albiflorus*	Globeflower	Weber and Wittmann 2001: *Trollius albiflorus*
Rosaceae	*Fragaria vesca* ssp. *bracteata*	Strawberry	
Rosaceae	*Geum macrophyllum*	Largeleaf avens	
Rosaceae	*Potentilla diversifolia*	Varileaf cinquefoil	
Rosaceae	*Potentilla hippiana*	Woolly cinquefoil	
Rosaceae	*Potentilla pulcherrima*	Soft cinquefoil	
Rosaceae	*Potentilla subjuga*	Cinquefoil	
Rosaceae	*Sibbaldia procumbens*	Sibbaldia	
Salicaceae	*Salix ligulifolia*	Strapleaf willow	
Salicaceae	*Salix monticola*	Mountain willow	
Saxifragaceae (Weber and Wittmann 2001: Parnassiaceae)	*Parnassia fimbriata*	Grass of Parnassus	
Scrophulariaceae	*Besseya plantaginea*	Kittentail	
Scrophulariaceae	*Pedicularis procera*	Giant lousewort	
Typhaceae	*Typha latifolia*	Broadleaf cattail	
Violaceae	*Viola labradorica*	Alpine violet	

Family	Latin name	Common Name	Comments
Violaceae	*Viola renifolia*	White violet	

Plant families with the most species new to the GRSA Herbarium included Asteraceae (19 new), Poaceae (19 new), Cyperaceae (15 new), Brassicaceae (9 new) and Ranunculaceae (9 new). These families are also some of the largest families for all of Colorado's plants.

During the approximately 173 hours we spent surveying the vascular flora of GRSA in 2003, we attempted to divide our time evenly between different habitat types and elevations found in the Monument and Preserve area. However, given the difficulty of accessing the alpine, we spent less time in the highest elevation areas, and given the relative ease of accessing the montane habitats, we spent more time in the middle elevation areas. Approximate time spent in each habitat and elevation range, and number of new species found is presented in Table 2. A map showing all collection points for 2002 and 2003 is presented in Appendix 1.

Table 2. Number of newly vouched plant species and hours spent at different habitats/elevations in Great Sand Dunes National Monument and Preserve in 2003.

Habitat	Approximate elevation	Time spent (estimate of survey effort)	Number of newly vouched plant species
Valley floor: Greasewood flats, Interdunal wetlands and streams.	7,500-8,000 feet	39 hours	23 species
Montane: Pinyon-Juniper woodlands, Aspen groves, Shrublands, Grasslands, Ruderal areas.	8,000-10,000 feet	85 hours	55 species
Subalpine: Spruce-Fir forests, Riparian areas, Grasslands, Ruderal areas.	10,000-11,500 feet	32 hours	30 species
Alpine: Cushion plant communities, Grasslands, Talus, Wetlands.	11,500-13,000 feet	17 hours	19 species
Total		**173 hours**	**127 new species**

We deposited a total of 221 specimens (including voucher specimens for the 127 species listed in Table 1) at the GRSA Herbarium in 2004. Copies of all of the specimen labels are presented in Appendix 2. These data are also tabulated in the NPS standard voucher specimen collection spreadsheet, which includes the following information: scientific name, date of collection,

observer, habitat, elevation, accession number, collection number, specimen location, and collection location.

Although *Cryptantha cinerea* var. *pusulosa* (James catseye) had been documented in the GRSA prior to our research, we identified two new locations for this globally rare plant species (Colorado Natural Heritage Program 2004). Occurrence records for this species at these locations are presented in Appendix 3.

A list of 604 vascular plant species known from the GRSA at the conclusion of this research is presented in Appendix 4 (2004 Master List of Vascular Plants at the GRSA). This list includes the plant checklist for the Monument (Dixon 1999), and all species documented by this research in 2002 (Spackman Panjabi and Decker 2002) and in 2003 (Table 1). Additional work is needed to assure consistent use of plant names for this new master list, particularly for the species documented prior to 2002. Although 604 vascular plant species have been documented for the GRSA, the herbarium houses specimens of just 559 species (321 collected pre-2002, 111 in 2002, and 127 in 2003). The 45 species that are not represented at the GRSA herbarium may be documented with specimens at other herbaria.

V. Discussion

At the conclusion of this project, the GRSA Master List for vascular plants contained 604 taxa, and 92% were represented by voucher specimens at the GRSA Herbarium. However, our research suggests that there are many more vascular plant species that remain to be documented from GRSA. Species lists compiled by other botanists working in the area (Dixon 2003, Hogan 2000) include hundreds of taxa that have not been documented from GRSA. A reasonable estimate is that 25-50% of these species are likely to occur on GRSA, and that up to 400 additional taxa could be collected from the Monument and Preserve (Table 3, Figure 2). If new taxa are collected at approximately the same rate as in the previous two years (average 119 new taxa per collection season), documenting 90% of the species present will require an additional two to three collecting seasons.

Table 3. Number of plant species known from GRSA compared with totals from other plant species lists from the San Luis Basin (Dixon 2003) and the Sangre de Cristo Mountains (Hogan 2000).

	Total species		
GRSA Master list	604		
		On GRSA Master List	Potential new
Dixon 2003	1287	567	720
Hogan 2000	385	257	128
Likely to be on GRSA (~25-50% of potential)	800-1000	--	200-400

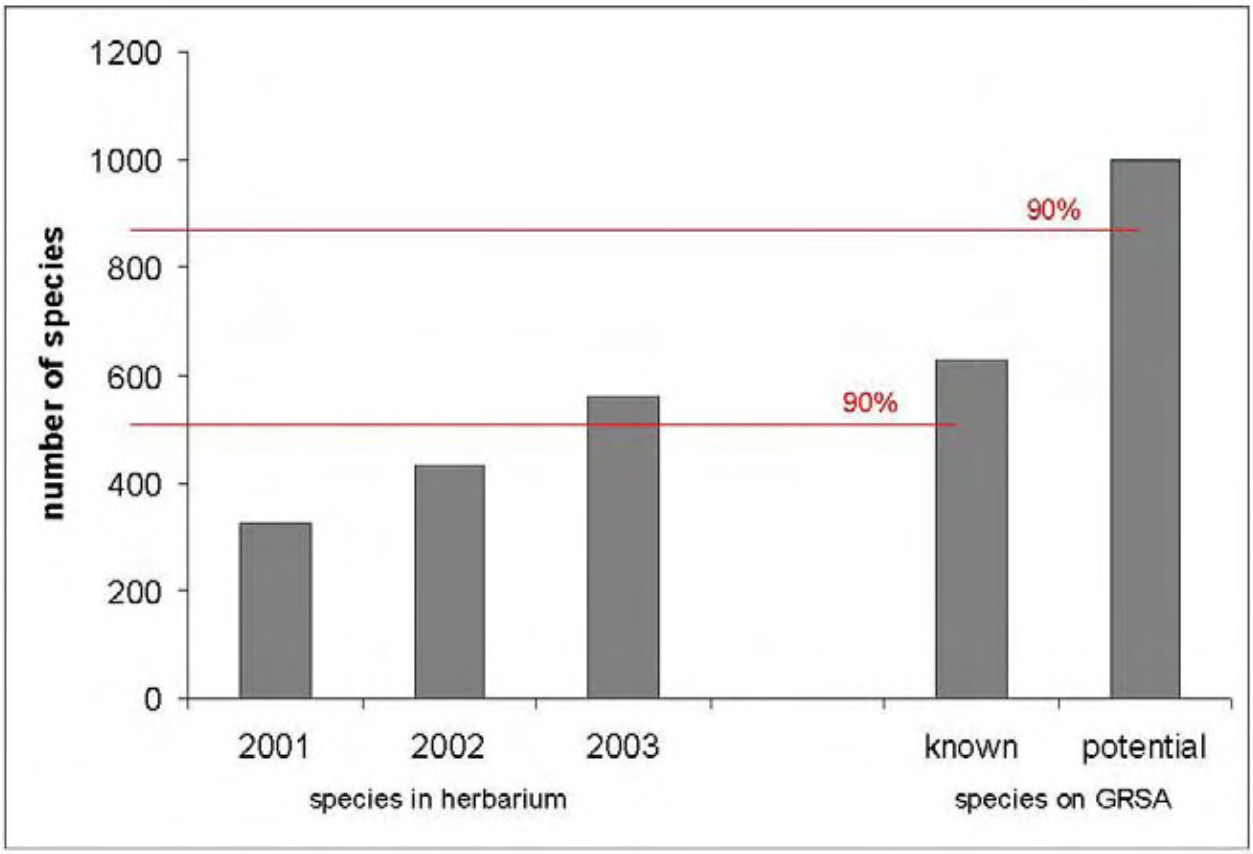

Figure 2. Number of plants species documented by year at the GRSA Herbarium. The number of "known" and "potential" species are based on the 2004 Master List of Vascular Plants at the GRSA (the merging of Dixon 1999, Spackman Panjabi and Decker 2002, and Table 1) and an estimated total based on the working lists for the Sangres (Hogan 2000) and the San Luis Basin (Dixon 2003).

VI. Recommendations

An updated checklist of vascular plants for GRSA would benefit GRSA managers and provide visitors with a more complete list of all of the plants known from the Monument and Preserve. A list of all species known from the GRSA at the conclusion of this research is presented in Appendix 4. Additional work is needed to assure consistent use of plant names. Also, 45 of the species listed are not represented in the GRSA Herbarium.

It is extremely likely that future surveys will find more plant species at GRSA. Locations of plants species not yet documented by this research could be found by searching specimen data at other herbaria, especially Adams State College in Alamosa (pers. comm. Dixon 2002) and University of Colorado in Boulder (University of Colorado Museum 2004). For example, the University of Colorado herbarium specimen database lists 676 herbarium specimens with Great Sand Dunes on the collection label (University of Colorado Museum 2004). Of these, 23 species are not included on the 2004 Master List (Appendix 4). Other species yet to be documented may also be listed in plot data collected by other researchers at GRSA (pers. comm. Bunch 2004).

An intensive survey for rare species, such as *Astragalus bodinii* (Bodin's milkvetch), *Draba grayana* (Gray's draba), D. *fladnizensis* (Arctic draba), and *Platanthera sparsiflora* var. *ensifolia* (Canyon bog orchid), could also identify new species for the Monument and Preserve. More intensive rare species surveys could also identify additional populations of rare plants already known from the GRSA such as *Draba smithii* (Smith's draba), *Cryptantha cinerea* var. *pustulosa* (James catseye), *Cleome multicaulis* (Slender spiderflower) and *Woodsia neomexicana* (New Mexico Cliff Fern, specimen housed at the University of Colorado Herbarium (Colorado Natural Heritage Program 2004)).

In particular, further inventory work is recommended to verify the specific locations of *Woodsia neomexicana* (New Mexico cliff fern). This species was documented in the Monument in the Mosca Creek drainage in 1954 (Spackman Panjabi and Decker 2002, Colorado Natural Heritage Program 2004), but has not been observed there or at any other location in the Monument since that time. *Potentilla ambigens* (Silkyleaf cinquefoil) is another rare species that warrants further inventory attention. This species was collected and identified by H.N. Dixon in 1984, but Dixon indicates that this record should probably be checked for accuracy (pers. comm. Dixon 2002).

Annual surveys targeting non-native invasive species would also be an important step toward protecting the natural resources of GRSA. Early detection of non-natives is one of the most cost effective and ecologically sensible defensive actions that land managers can take to manage and control weedy invaders (Colorado Department of Agriculture 2001). Numerous species that are not native to Colorado have been documented in GRSA (Appendix 4). Although all of these non-native species could present challenges, the following are of particular concern because they are known to be quite invasive and difficult to control: *Cirsium arvense* (Canada thistle), *Convolvulus arvensis* (Field bindweed), *Euphorbia esula* (Leafy spurge), *Melilotus officinalis* (Yellow sweetclover), and *Bromus tectorum* (Cheatgrass) (Whitson et al. 2000, Colorado Department of Agriculture 2003). These and other potentially troublesome weeds would likely arrive via roadways into the Monument and Preserve, and would likely be carried by cars, horses, and human foot traffic. Several non-natives were noted just outside of GRSA on the east side of Medano Pass.

Although the vascular flora of GRSA is being documented, the nonvascular flora remains poorly understood. Nonvascular species, particularly lichens, are highly sensitive biological indicators of environmental change and quality (McCune et al. 1998, St. Clair 1999). Thus, an assessment of the species richness and distribution of lichens, mosses and liverworts would provide GRSA with a powerful tool for monitoring the biological integrity of the area by establishing a baseline for future assessment.

To help assure the long-term protection of the biodiversity of GRSA, specific management for the protection of the locations that are known to support rare plant species would be an effective step. *Draba smithii* (Smith's draba) is a globally imperiled species that is only known from 16 locations in Colorado, and nowhere else in the world, which points to the significance of the two locations of this species at GRSA (Colorado Natural Heritage Program 2004). *Cleome multicaulis* (Slender spiderflower) is also globally rare, and is known from one location in GRSA (Colorado Natural Heritage Program 2004). Although the Slender spiderflower is also known from a fairly wide range continuing south into Mexico, the most vigorous populations known are found in the San

Luis Valley of Colorado (Colorado Natural Heritage Program 2004). *Cryptantha cinerea* var. *pustulosa* (James catseye) is another rare species that is known from four locations at GRSA (Colorado Natural Heritage Program 2004). This species is also known from New Mexico, Arizona, and Utah, but its status in the other states is not known. In Colorado, the James catseye is known from a total of seven locations, and four of these are in the GRSA. Monitoring the known populations of these species for any changes to the overall size, quality, and condition would help assure their long-term protection at GRSA. The sterile hybrid *Hymenoxys xhelenoides* (Intermountain bitterweed), collected in 2003 (Table 1, Appendix 3), is known from a few small, widely scattered populations in Colorado, Utah, Arizona, and New Mexico. The conservation attention that this entity warrants is questionable because it is a sterile hybrid, not a true species (Anderson et al. 1995). However, the Colorado Natural Heritage Program includes *H. xhelenoides* on a list of rare Colorado taxa, and tracks specific locations within the state.

In summary, although much has been done to document the flora of the GRSA, additional work is needed to:

- Produce an updated Master List
- Identify locations of undocumented species
- Implement management actions for rare and non-native species

CNHP Personnel

Botanist/Project Leader, Susan Spackman Panjabi: principal investigator and coordination of vascular plant inventory
Botanist/Ecologist, Georgia Doyle: conduct field research, plant identification, data analysis
Ecologist, Karin Decker: conduct field research, plant identification, GIS analyses, and map production
Botanist, David G. Anderson: conduct field research, plant identification
Science Information Manager, Jill Handwerk: responsible for input of data, and data queries from CNHP databases
Database Manager, Alison Loar: maintenance of databases, quality assurance of data entered in from the project, technical assistance to the botanists
GIS Specialist, Amy Lavender: quality assurance of data entered in from the project, GIS analyses
Botany Technician, Marisa Bunning: responsible for data entry and herbarium label production.

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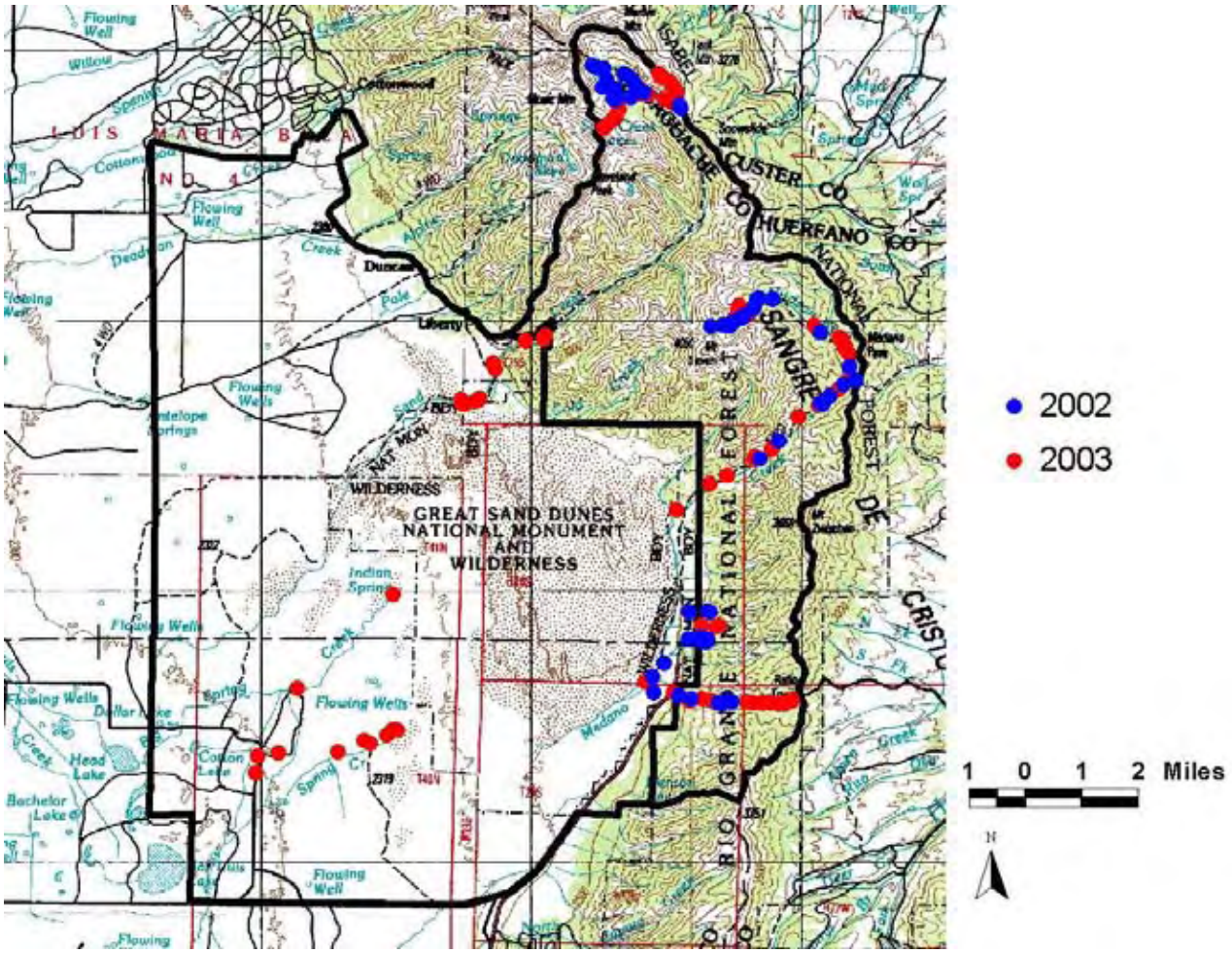
Appendix 1

Map showing collection locations of voucher specimens collected by Spackman Panjabi and Decker in 2002 and Doyle, Decker, and Anderson in 2003.



Appendix 2

Specimen labels for 221 voucher specimens deposited at the Great Sand Dunes National Monument Herbarium by Doyle, Decker, and Anderson 2004. Ninety-four specimens are for species that were not new to the GRSA Herbarium; therefore, they are not listed in Table 1.

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Schoenoplectus pungens (Vahl) Palla

Medano Ranch, Little Springs wetlands. Interdunal wetland, very common.

With: Schoenoplectus acutus, Eleocharis palustris, Pascopyrum smithii, Distichlis spicata.

Elevation: 7690 ft.
USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0445087, N4174862
K. Decker & G. Doyle KD03-01a 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Schoenoplectus acutus Muhl. ex Bigelow) A.& D. Löve

var. *acutus* (Muhl. ex Bigelow) A.& D.

Medano Ranch, Little Springs wetlands. Interdunal wetland.

With: Schoenoplectus pungens, Eleocharis palustris, Pascopyrum smithii, Distichlis spicata.

Elevation: 7690 ft.
USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0445087, N4174862
K. Decker & G. Doyle KD03-01b 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: G. Doyle

Distichlis spicata (L.) Greene

Medano Ranch, Little Springs wetlands. Interdunal wetland, common.

With: Schoenoplectus pungens, S. acutus, Eleocharis palustris, Pascopyrum smithii.

Elevation: 7690 ft.
USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0445087, N4174862
K. Decker & G. Doyle KD03-01e 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Scirpus nevadensis S. Wats.

Medano Ranch, near Little Spring. Graminoid meadow in sand.

With: Sarcobatus vermiculatus.

Elevation: 7670 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0444892, N4174841
K. Decker & G. Doyle KD03-02a 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Carex praegracilis W. Boott

Medano Ranch, near Little Spring Creek. Occasional.

With: Carex nebrascensis, Iris missouriensis, Argentina anserina, Ranunculus cymbalaria.

Elevation: 7650 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0444069, N4174327
K. Decker & G. Doyle KD03-03a 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: G. Doyle

Poa pratensis L.

Medano Ranch, near Little Spring Creek.

With: Carex nebrascensis, Iris missouriensis, Argentina anserina, Ranunculus cymbalaria.

Elevation: 7650 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0444069, N4174327
K. Decker & G. Doyle KD03-03c 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: G. Doyle

***Spartina gracilis* Trin.**

Medano Ranch, between ranch house and Little Spring. On two-track road.
With: Sarcobatus vermiculatus, Ericameria nauseosa, Distichlis spicata, Sporobolus airoides, Carex praegracilis.

Elevation: 7630 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0443847, N4174475
K. Decker & G. Doyle KD03-04b 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Primulaceae Det. by: G. Doyle

***Glaux maritima* L.**

Medano Ranch, Big Spring Creek at Indian Spring.
With: Eleocharis palustris, Puccinellia nuttalliana, Carex simulata, Hutchinsia procumbens.

Elevation: 7710 ft.
USGS Quadrangle: Sand Camp

UTM: Zone 13, E0444910, N4179863
K. Decker & G. Doyle KD03-05e 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Brassicaceae Det. by: G. Doyle

***Descurainia sophia* (L.) Webb ex Prantl**

Great Sand Dunes Preserve, Mosca Pass Trail. Below large meadow, south-facing slope, 5 X 5 m patch on hillside.

Elevation: 9550 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0458903, N4175834
K. Decker & G. Doyle KD03-09a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Brassicaceae Det. by: G. Doyle

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

Great Sand Dunes Preserve, Mosca Pass Trail.
With: Salix monticola, Populus tremuloides, Juniperus.

Elevation: 9440 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0458605, N4175860
K. Decker & G. Doyle KD03-10a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Rosaceae Det. by: G. Doyle

***Fragaria vesca* L.**
***ssp. bracteata* (Heller) Staudt**

Great Sand Dunes Preserve, Mosca Pass Trail. Aspen forest/ riparian.
With: Geranium, Rubus, Thalictrum, Galium, Symphoricarpos.

Elevation: 9380 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0458314, N4175852
K. Decker & G. Doyle KD03-11a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Ranunculaceae Det. by: G. Doyle

***Aquilegia elegantula* Greene**

Great Sand Dunes Preserve, Mosca Pass Trail. Aspen/ riparian.
With: Maianthemum, Symphoricarpos, Geranium, Viola canadensis.

Elevation: 9340 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0458016, N4175896
K. Decker & G. Doyle KD03-12a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cactaceae Det. by: G. Doyle

Echinocereus triglochidiatus Engelm.

Great Sand Dunes Preserve, Mosca Pass Trail. Rocky, south-facing slope.
With: Yucca, Cercocarpus montanus, Bromus tectorum, Opuntia.

Elevation: 9030 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0456758, N4175936
K. Decker & G. Doyle KD03-13a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: G. Doyle

Sporobolus airoides (Torr.) Torr.

Medano Ranch, Little Spring Creek Road. In middle of two-road track, bare ground.
With: Chrysothamnus, Sarcobatus vermiculatus.

Elevation: 7660 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0443824, N4174462
K. Decker & G. Doyle KD03-16a 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: G. Doyle

Catabrosa aquatica (L.) Beauv.

Medano Ranch, Little Spring Creek Road at old corral. Wet meadow within corral, creek meandering through, essentially untrampled compared to outside fence, extensive stand.
With: Calamagrostis stricta, Carex simulata, Mimulus sp., Rorippa nasturtium-aquaticum.

Elevation: 7640 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0442859, N4174039
K. Decker & G. Doyle KD03-17a 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: G. Doyle

Alopecurus pratensis L.

Medano Ranch, Little Spring Creek Road, first gate near ranch house. Ditch side.
With: Stellaria crassifolia.

Elevation: 7610 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0440683, N4173994
K. Decker & G. Doyle KD03-18a 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Stellaria longifolia Muhl. ex Willd.

Great Sand Dunes Preserve, Medano Pass Road, at and below site 2.3. Creekside with sedge. Petals deeply divided, 3 stigmas, 8 stamens.
With: Rumex acetosella, Salix eriocephala, Camelina microcarpa, Actaea rubra.

Elevation: 8920 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458961, N4185225
K. Decker & G. Doyle KD03-20a 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Brassicaceae Det. by: G. Doyle

Camelina microcarpa DC.

Great Sand Dunes Preserve, Medano Pass Road, at and below site 2.3.
With: Stellaria longifolia, Rumex acetosella, Salix eriocephala, Actaea rubra.

Elevation: 8920 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458961, N4185225
K. Decker & G. Doyle KD03-20d 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

***Antennaria rosea* Greene**

Great Sand Dunes Preserve, Mosca Pass summit. Aspen woodland, grassy understory.

With: Claytonia lanceolata.

Elevation: 9710 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459727, N4175939

K. Decker & G. Doyle KD03-06b 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Brassicaceae Det. by: G. Doyle

***Arabis ×divaricarpa* A. Nels.**

Great Sand Dunes Preserve, Mosca Pass Trail. Meadow in Aspen/mixed conifer. South-facing slope. (proposed species) [drummondii × holboellii]

With: Poa fendleriana, Phlox gracilis, Packera tridenticulata, Salix eriocephala, Erigeron flagellaris, Taraxacum.

Elevation: 9640 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459458, N4175816

K. Decker & G. Doyle KD03-07f 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Polemoniaceae Det. by: G. Doyle

***Phlox gracilis* (Hook.) Greene**

ssp. *gracilis*

Great Sand Dunes Preserve, Mosca Pass Trail. Rocky meadow.

With: Erigeron vetensis, Besseya plantaginea, Salix monticola, S. exigua.

Flower color: white

Elevation: 9640 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459372, N4175843

K. Decker & G. Doyle KD03-08a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Scrophulariaceae Det. by: G. Doyle

***Besseya plantaginea* (James) Rydb.**

Great Sand Dunes Preserve, Mosca Pass Trail. Rocky meadow, under limber pine.

With: Phlox gracilis, Erigeron vetensis, Salix monticola.

Elevation: 9640 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459372, N4175843

K. Decker & G. Doyle KD03-08c 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

***Actaea rubra* (Ait.) Willd.**

ssp. *arguta* (Nutt.) Hultén

Great Sand Dunes Preserve, Medano Pass Road, at and below site 2.3. In shady streamside.

With: Stellaria longifolia, Rumex acetosella, Salix eriocephala, Camelina microcarpa.

Elevation: 8920 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458961, N4185225

K. Decker & G. Doyle KD03-20e 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

***Ranunculus cardiophyllus* Hook.**

Great Sand Dunes Preserve, Medano Pass Road, at and below site 2.3.

With: Stellaria longifolia, Rumex acetosella, Salix eriocephala, Camelina microcarpa, Actaea rubra, Euphorbia esula, Oxypolis fendleri.

Elevation: 8920 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458961, N4185225

K. Decker & G. Doyle KD03-20g 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: G. Doyle

Hierochloe hirta (Schrank) Borbás

ssp. *arctica* (J. Presl) G. Weim.

Great Sand Dunes Preserve, Medano Pass Road, below old homestead.

With: Luzula comosa, Descurainia sp., Thlaspi arvense.

Elevation: 9300 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460708, N4186855

K. Decker & G. Doyle KD03-21b 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Brassicaceae Det. by: G. Doyle

Thlaspi arvense L.

Great Sand Dunes Preserve, Medano Pass Road, below old homestead.

With: Festuca sp., Hierochloe hirta, Luzula comosa, Descurainia sp.

Elevation: 9300 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460708, N4186855

K. Decker & G. Doyle KD03-21e 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Portulacaceae Det. by: G. Doyle

Portulaca oleracea L.

Great Sand Dunes National Monument, Sand Creek. Sandy channel.

With: Agrostis scabra.

Elevation: 7900 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0447990, N4187014

K. Decker & G. Doyle KD03-23a 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Onagraceae Det. by: G. Doyle

Oenothera pallida Lindl.

ssp. *runcinata* (Engelm.) Munz & W. Klein

Great Sand Dunes National Monument, Sand Creek. Flood plain, herbaceous bench.

With: Populus angustifolia, Clematis sp., Pascopyrum smithii, Juncus balticus, Phacelia alba, Aster sp., Gilia pinnatifida.

Elevation: 7950 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0448125, N4187150

K. Decker & G. Doyle KD03-25b 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Hydrophyllaceae Det. by: G. Doyle

Phacelia alba Rydb.

Great Sand Dunes National Monument, Sand Creek. Flood plain, herbaceous bench.

With: Populus angustifolia, Clematis sp., Gilia pinnatifida, Aster sp., Pascopyrum smithii, Juncus balticus, Oenothera pallida.

Elevation: 7950 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0448125, N4187150

K. Decker & G. Doyle KD03-25a 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polemoniaceae Det. by: G. Doyle

Gilia pinnatifida Nutt. ex Gray

Great Sand Dunes National Monument, Sand Creek. Flood plain, herbaceous bench.

With: Populus angustifolia, Clematis sp., Pascopyrum smithii, Juncus balticus, Aster sp., Phacelia alba.

Elevation: 7950 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0448125, N4187150

K. Decker & G. Doyle KD03-25c 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Betulaceae Det. by: G. Doyle

Betula occidentalis Hook.

Great Sand Dunes National Monument, Sand Creek bank.
With: Populus angustifolia, Juniperus scopulorum, Rosa sp.

Elevation: 8090 ft.
USGS Quadrangle: Liberty

UTM: Zone 13, E0448707, N4188206
K. Decker & G. Doyle KD03-26a 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Juncus bufonius L.

Great Sand Dunes National Monument, Sand Creek Trail. Below stock pond, on road, wet soil.
With: Muhlenbergia andina, Cerastium fontanum.

Elevation: 8110 ft.
USGS Quadrangle: Liberty

UTM: Zone 13, E0448652, N4188442
K. Decker & G. Doyle KD03-28c 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Liliaceae Det. by: G. Doyle

Calochortus gunnisonii S. Wats.

Great Sand Dunes Preserve, Medano Pass Road, below campsite 0.2. Roadside, aspen understory.
With: Rosa woodsii, Symphoricarpos, Thermopsis, Prunus, graminoids.

Elevation: 8600 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0456664, N4183984
K. Decker & G. Doyle KD03-29a 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Lamiaceae Det. by: G. Doyle

Stachys pilosa Nutt.
var. *pilosa*

Great Sand Dunes Preserve, Medano Pass Road, below campsite 0.2. Roadside, aspen understory.
With: Rosa woodsii, Symphoricarpos, Thermopsis, Prunus, graminoids.

Elevation: 8600 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0456664, N4183984
K. Decker & G. Doyle KD03-29b 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Geraniaceae Det. by: G. Doyle

Geranium richardsonii Fisch. & Trautv.

Great Sand Dunes Preserve, Medano Pass Road at Ford #5.
With: Populus tremuloides, Salix exigua, Poa pratensis, Equisetum arvense, Bromus anomalus.

Elevation: 8820 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458336, N4184850
K. Decker & G. Doyle KD03-30a 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

Clematis hirsutissima Pursh
var. *scottii* (Porter) Erickson

Great Sand Dunes Preserve, Medano Pass Road at site 3.2. Meadow, scattered aspen, mostly brome.
With: Hesperostipa comata, Chaenactis douglasii, Koeleria macrantha, Penstemon virgatus, Rumex acetosella.

Elevation: 9230 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459956, N4186427
K. Decker & G. Doyle KD03-31a 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polygonaceae Det. by: G. Doyle

***Rumex acetosella* L.**

Great Sand Dunes Preserve, Medano Pass Road at site 32.

With: Hesperostipa comata, Clematis hirsutissima, Chaenactis douglasii, Koeleria macrantha, Penstemon virgatus.

Elevation: 9230 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459956, N4186427

K. Decker & G. Doyle KD03-31e 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ericaceae Det. by: G. Doyle

***Vaccinium myrtillus* L.**

var. *oreophilum* (Rydb.) Dorn

Great Sand Dunes Preserve, Medano Lake Trail. Trailside.

With: Picea engelmannii.

Elevation: 11200 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458093, N4190210

K. Decker & G. Doyle KD03-32a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

***Antennaria rosea* Greene**

Great Sand Dunes Preserve, Medano Lake, north shore. Dry slope.

With: Salix brachycarpa, Festuca thurberi, Carex elynoides, C. arapahoensis, Agoseris aurantiaca.

Elevation: 11570 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457425, N4189831

K. Decker & G. Doyle KD03-33c 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Hydrophyllaceae Det. by: G. Doyle

***Phacelia heterophylla* Pursh**

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Dry slope, Engelmann spruce nearby, mixed grasses.

With: Vaccinium sp.

Flower color: white

Elevation: 11510 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457567, N4190084

K. Decker & G. Doyle KD03-35a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

***Sibbaldia procumbens* L.**

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps.

With: Senecio triangularis, Phleum alpinum, Juncus, Verbascum, Carex scopulorum, Mertensia.

Elevation: 11510 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418

K. Decker & G. Doyle KD03-36a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

***Trollius laxus* Salisb.**

ssp. *albiflorus* (Gray) A.& D. Löve & Kapoor

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps, in spruce shade.

With: Senecio triangularis, Phleum commutatum, Juncus, Verbascum, Carex scopulorum, Mertensia.

Elevation: 11510 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418

K. Decker & G. Doyle KD03-36f 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

***Ranunculus eschscholtzii* Schlecht.**

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps, in spruce shade. Sepals and petals different from each other.

With: Senecio triangularis, Phleum commutatum, Juncus, Verbascum, Carex scopulorum, Mertensia.

Flower color: waxy yellow

Elevation: 11510 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418

K. Decker & G. Doyle KD03-36g 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Onagraceae Det. by: G. Doyle

***Chamerion angustifolium* (L.) Holub**

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Dry, sunny slope. Krummholz.

With: Picea engelmannii, Vaccinium.

Elevation: 11480 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457770, N4190559

K. Decker & G. Doyle KD03-37a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polygonaceae Det. by: G. Doyle

***Oxyria digyna* (L.) Hill**

Great Sand Dunes Preserve, Medano Lake Trail. East facing, mesic.

With: Calamagrostis canadensis, Deschampsia caespitosa, Bistorta.

Elevation: 11250 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457770, N4190559

K. Decker & G. Doyle KD03-38e 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

***Antennaria media* Greene**

Great Sand Dunes Preserve, Medano Lake Trail. Avalanche area below the lake, north-facing slope, rocky and open.

With: Viola labradorica, Ranunculus macauleyi, Minuartia obtusiloba.

Elevation: 11330 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457899, N4190106

K. Decker & G. Doyle KD03-39a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Violaceae Det. by: G. Doyle

***Viola labradorica* Schrank**

Great Sand Dunes Preserve, Medano Lake Trail. Avalanche area below the lake, north-facing slope, rocky and open.

With: Antennaria media, Ranunculus macauleyi, Minuartia obtusiloba.

Elevation: 11330 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457899, N4190106

K. Decker & G. Doyle KD03-39b 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

***Ranunculus macauleyi* Gray**

Great Sand Dunes Preserve, Medano Lake Trail. Avalanche area below the lake, north-facing slope, rocky and open.

With: Antennaria media, Viola labradorica, Minuartia obtusiloba.

Elevation: 11330 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457899, N4190106

K. Decker & G. Doyle KD03-39c 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

***Minuartia obtusiloba* (Rydb.) House**

Great Sand Dunes Preserve, Medano Lake Trail. Avalanche area below the lake, north-facing slope, rocky and open.

With: Antennaria media, Viola labradorica, Ranunculus macauleyi.

Elevation: 11330 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457899, N4190106

K. Decker & G. Doyle KD03-39d 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Liliaceae Det. by: G. Doyle

***Veratrum tenuipetalum* Heller**

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6. Moist meadow, aspen woodland.

Elevation: 9640 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085

K. Decker & G. Doyle KD03-40a 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polemoniaceae Det. by: G. Doyle

***Collomia linearis* Nutt.**

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6. Dry meadow. Five petals, tubular flowers.

With: Astragalus alpinus, Lupinus argenteus, Festuca saximontana, Potentilla hippiana.

Flower color: purple

Elevation: 9640 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085

K. Decker & G. Doyle KD03-40b 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

***Astragalus alpinus* L.**

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6. Low growing, mat forming, in dry meadow. White flowers with purple on keel and top, black hairs on pods.

With: Collomia linearis, Festuca saximontana, Potentilla hippiana, Lupinus argenteus.

Elevation: 9640 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085

K. Decker & G. Doyle KD03-40c 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

***Lupinus argenteus* Pursh**

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6.

With: Collomia linearis, Festuca saximontana, Potentilla hippiana, Astragalus alpinus.

Flower color: White tinged with purple

Elevation: 9640 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085

K. Decker & G. Doyle KD03-40e 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polygonaceae Det. by: G. Doyle

***Polygonum douglasii* Greene**

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6. Five white petals, weedy.

With: Festuca saximontana, Potentilla hippiana, Astragalus alpinus, Lupinus argenteus.

Elevation: 9640 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085

K. Decker & G. Doyle KD03-40g 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Brassicaceae Det. by: G. Doyle

Cardaria pubescens **(C.A. Mey.) Jarmolenko**

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.1. Roadside.

With: Oxytropis sericea.

Elevation: 9610 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461794, N4188808

K. Decker & G. Doyle KD03-41a 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

Oxytropis sericea **Nutt.**

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.1. Roadside.

With: Cardaria pubescens.

Elevation: 9610 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461794, N4188808

K. Decker & G. Doyle KD03-41b 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: G. Doyle

Muhlenbergia montana **(Nutt.) A.S. Hitchc.**

Great Sand Dunes Preserve, Medano Pass Road. Open, sunny roadside.

With: Populus tremuloides, Pinus flexilis, Pascopyrum smithii, Heterotheca villosa, Penstemon, Oxytropis sericea, Danthonia parryi.

Elevation: 9410 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461145, N4187245

K. Decker & G. Doyle KD03-42b 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Nyctaginaceae Det. by: G. Doyle

Mirabilis linearis **(Pursh) Heimerl**

Great Sand Dunes Preserve, Sawmill Creek Canyon. Rocky, south-facing slope.

With: Stipa, Monarda pectinata, Heterotheca villosa, Cercocarpus.

Elevation: 8570 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0456377, N41787135

K. Decker KD03-43a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Saxifragaceae Det. by: G. Doyle

Parnassia fimbriata **Koenig**

Great Sand Dunes Preserve, Music Pass Trail. Sand Creek drainage.

Elevation: 11080 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454954, N41982075

K. Decker & D. G. Anderson KD03-46a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Apiaceae Det. by: G. Doyle

Pseudocymopterus montanus **(Gray) Coult. & Rose**

Great Sand Dunes Preserve, Music Pass Trail. Sand Creek drainage.

With: Danthonia intermedia, Potentilla pulcherrima, Astragalus alpinus.

Elevation: 11080 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454174, N4198524

K. Decker & D. G. Anderson KD03-47a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Apiaceae Det. by: G. Doyle

Osmorhiza depauperata Phil.

Great Sand Dunes Preserve, Lower Sand Creek Lake Trail.
With: Senecio amplectens, Erigeron coulteri.

Elevation: 11100 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454035, N4198409
K. Decker & D. G. Anderson KD03-48b 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Pteridaceae Det. by: G. Doyle

Cryptogramma acrostichoides R. Br.

Great Sand Dunes Preserve, Lower Sand Creek Lake, southwest side. Talus slope.
With: Cirsium scopulorum, Cystopteris fragilis.

Elevation: 11580 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0453180, N4197595
K. Decker & D. G. Anderson KD03-50a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Minuartia obtusiloba (Rydb.) Hou

Great Sand Dunes Preserve, ridge north of Music Pass. Rocky, open slope.
With: Pinus aristata, Lupinus, Heterotheca villosa, Antennaria.

Elevation: 11610 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455437, N4198339
K. Decker & D. G. Anderson KD03-53a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

Trifolium attenuatum Greene

Great Sand Dunes Preserve, ridge north of Music Pass. Rocky open slope in bristlecone.
With: Campanula, Frasera, Dasiphora floribunda, Heterotheca villosa.

Elevation: 12210 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455236, N4198748
K. Decker & D. G. Anderson KD03-54a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Crassulaceae Det. by: G. Doyle

Rhodiola integrifolia Raf.

Great Sand Dunes Preserve, ridge north of Music Pass. West-facing talus slope below ridge.
With: Arenaria fendleri, Castilleja haydenii, Poa glauca.

Elevation: 12440 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455146, N4198884
K. Decker & D. G. Anderson KD03-55a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Arenaria fendleri Gray var. *fendleri*

Great Sand Dunes Preserve, ridge north of Music Pass. West-facing talus slope below ridge.
With: Rhodiola integrifolia, Castilleja haydenii, Poa glauca.

Elevation: 12440 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455146, N4198884
K. Decker & D. G. Anderson KD03-55b 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Silene acaulis (L.) Jacq

var. *subacaulescens* (F.N. Williams) Fern. & St. John

Great Sand Dunes Preserve, ridge north of Music Pass. Boulder field below ridge.

With: Tonestus pygmaeus, Erigeron pinnatisectus, Trifolium dasyphyllum, Geum rossii.

Elevation: 12670 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454808, N4199091

K. Decker & D. G. Anderson KD03-56d 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

Geum rossii (R. Br.) Ser.

var. *turbinatum* (Rydb.) C.L. Hitchc.

Great Sand Dunes Preserve, ridge north of Music Pass. Boulder field below ridge.

With: Tonestus pygmaeus, Erigeron pinnatisectus, Trifolium dasyphyllum, Silene acaulis.

Elevation: 12670 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454808, N4199091

K. Decker & D. G. Anderson KD03-56e 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Minuartia obtusiloba (Rydb.) House

Great Sand Dunes Preserve, ridge north of Music Pass. Fellfield community below ridge.

With: Potentilla subjuga, Trifolium dasyphyllum, Pedicularis parryi.

Elevation: 12700 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454765, N4199158

K. Decker & D. G. Anderson KD03-57b 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

Trifolium dasyphyllum Torr. & Gray

Great Sand Dunes Preserve, ridge north of Music Pass Ridge. Fellfield community below ridge.

With: Potentilla subjuga, Minuartia obtusiloba, Pedicularis parryi.

Elevation: 12700 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454765, N4199158

K. Decker & D. G. Anderson KD03-57c 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Scrophulariaceae Det. by: G. Doyle

Pedicularis parryi Gray

Great Sand Dunes Preserve, ridge north of Music Pass Ridge. Fellfield community below ridge.

With: Potentilla subjuga, Minuartia obtusiloba, Trifolium dasyphyllum.

Flower color: yellow

Elevation: 12700 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454765, N4199158

K. Decker & D. G. Anderson KD03-57d 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Custer County

Rosaceae Det. by: G. Doyle

Dryas octopetala L.

ssp. *hookeriana* (Juz.) Hultén

Great Sand Dunes Preserve, ridge north of Music Pass Ridge. Ridge top, growing in rock hollows, mostly on east side but on top in some places.

Elevation: 12710 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454927, N4199014

K. Decker & D. G. Anderson KD03-58a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Anaphalis margaritacea (L.) Benth.

Great Sand Dunes Preserve, ridge north of Music Pass Ridge. Open bristlecone stand, rocky, disturbed by rodents.

With: Bromus ciliatus, Erigeron eximius.

Elevation: 11700 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455440, N4198426

K. Decker & D. G. Anderson KD03-60a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Apiaceae Det. by: G. Doyle

Oreoxis bakeri Coult. & Rose

Great Sand Dunes Preserve, ridge north of Music Pass Ridge. Open gravelly slope in downed wood, locally abundant, mat-forming, strong smell of parsley.

Elevation: 11460 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455547, N4197975

K. Decker & D. G. Anderson KD03-63a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ericaceae Det. by: G. Doyle

Orthilia secunda (L.) House

Great Sand Dunes Preserve, Medano Creek above trailhead. Spruce-fir understory near Medano Creek, mostly non-vegetated forest floor with heavy duff of needles and twigs.

With: Arnica cordifolia, Osmorhiza, Erigeron, Cinna latifolia, Trisetum spicatum.

Elevation: 9540 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461499, N4189366

K. Decker & D. G. Anderson KD03-64a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polygonaceae Det. by: G. Doyle

Polygonum arenastrum Jord. ex Boreau

Great Sand Dunes Preserve, Medano Lake trailhead. In road and parking area.

Elevation: 9680 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461580, N4189286

K. Decker & D. G. Anderson KD03-66a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Brassicaceae Det. by: G. Doyle

Cardaria pubescens (C.A. Mey.)

Great Sand Dunes Preserve, Medano Pass Road, above site 5.1. In fruit.

Elevation: 9610 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461794, N4188808

K. Decker & D. G. Anderson KD03-67a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

Delphinium ramosum Rydb.

Great Sand Dunes Preserve, Medano Pass Road, site 4.8. Grassy, aspen understory.

With: Senecio eremophilus.

Flower color: blue

Elevation: 9470 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461814, N4187796

K. Decker & D. G. Anderson KD03-68a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: G. Doyle

Thinopyrum intermedium (Host) Barkworth & D.R. Dewey

Great Sand Dunes Preserve, Medano Pass Road, near old homestead. Roadside.

With: Bromus inermis.

Elevation: 9370 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460815, N4186995

K. Decker & D. G. Anderson KD03-71a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Typhaceae Det. by: G. Doyle

Typha latifolia L.

Great Sand Dunes National Monument, near picnic area at dunes. Near parking lot and temporary Visitors Center.

With: Muhlenbergia asperifolia, Cyperus squarrosus, M. andina.

Elevation: 8070 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0454285, N4186627

K. Decker & D. G. Anderson KD03-73a 8/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Carex praegracilis W. Boott

Medano Ranch, between Little Spring and ranch house. On two-track road.

With: Sarcobatus vermiculatus, Ericameria nauseosa, Distichlis spicata, Sporobolus airoides, Spartina gracilis.

Elevation: 7630 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0443847, N4174475

K. Decker & G. Doyle KD03-04c 6/09/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Eleocharis palustris (L.) Roemer & J.A. Schultes

Medano Ranch, Big Spring Creek at Indian Spring. Dominant, 2 styles.

With: Puccinellia nuttalliana, Carex simulata, Hutchinsia procumbens, Glaux maritima.

Elevation: 7710 ft.

USGS Quadrangle: Sand Camp

UTM: Zone 13, E0444910, N4179863

K. Decker & G. Doyle KD03-05a 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex simulata Mackenzie

Medano Ranch, Big Spring Creek at Indian Spring.

With: Eleocharis palustris, Schoenoplectus pungens, Puccinellia nuttalliana, Hutchinsia procumbens, Glaux maritima.

Elevation: 7710 ft.

USGS Quadrangle: Sand Camp

UTM: Zone 13, E0444910, N4179863

K. Decker & G. Doyle KD03-05c 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Portulacaceae Det. by: G. Doyle

Claytonia lanceolata Pall. ex Pursh

Great Sand Dunes Preserve, Mosca Pass summit, boundary sign. Aspen woodland, grassy understory.

With: Antennaria rosea.

Elevation: 9710 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459727, N4175939

K. Decker & G. Doyle KD03-06a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

Packera tridenticulata **(Rydb.) W.A. Weber & A. Löve**

Great Sand Dunes Preserve, Mosca Pass Trail. Meadow in aspen, mixed conifer, south-facing slope.

With: Poa, Taraxacum, Phlox gracilis, Salix, Erigeron flagellaris, Poa fendleriana, Arabis ×divaricarpa.

Flower color: Yellow

Elevation: 9640

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459458, N4175816

K. Decker & G. Doyle KD03-07b 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

Erigeron flagellaris **Gray**

Great Sand Dunes Preserve, Mosca Pass Trail. Meadow in aspen, mixed conifer, south-facing slope.

With: Poa, Taraxacum, Phlox gracilis, Packera tridenticulata, Salix, Poa fendleriana, Arabis divaricarpa.

Flower color: white

Elevation: 9640

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459458, N4175816

K. Decker & G. Doyle KD03-07d 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

Thermopsis divaricarpa **A. Nels.**

Great Sand Dunes National Monument, Medano Creek below first crossing. Creekside, near old cabins at first crossing, pods straight.

With: Maianthemum stellatum, Carex occidentalis, Poa, Salix exigua.

Elevation: 8510 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0445442, N4182993

K. Decker & G. Doyle KD03-15a 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex occidentalis **Bailey**

Great Sand Dunes National Monument, Medano Creek below first crossing. Creekside, near old cabins at first crossing.

With: Thermopsis divaricarpa, Maianthemum stellatum, Poa, Salix exigua.

Elevation: 8510 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0445442, N4182993

K. Decker & G. Doyle KD03-15b 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Carex simulata **Mackenzie**

Medano Ranch, Little Spring Creek Road at old corral. Wet meadow within corral, creek meandering through, essentially untrampled compared to outside fence.

With: Catabrosa aquatica, Calamagrostis stricta, Mimulus, Rorippa nasturtium-aquaticum.

Elevation: 7640 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0442859, N4174039

K. Decker & G. Doyle KD03-17d 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Eleocharis acicularis **(L.) Roemer & J.A. Schultes**

Medano Ranch, Big Spring Creek meanders in Juncus/Carex meadow.

With: Stuckenia pectinatus, Ranunculus trichophyllus.

Elevation: 7610 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0441375, N4176382

K. Decker & G. Doyle KD03-19c 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Erigeron subtrinervis **Rydb. ex Porter & Britt.**

Great Sand Dunes National Monument, Sand Creek Trail.

With: Populus tremuloides, Populus angustifolia, Juniperus scopulorum.

Flower color: Purple rays

Elevation: 8250 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0449821, N4189273

K. Decker & G. Doyle KD03-27a 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

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

Great Sand Dunes Preserve, Medano Pass Road at site 3.2. Meadow, scattered aspens, mostly brome. White/cream disk flowers - no ray flowers.

With: Hesperostipa comata, Clematis hirsutissima, Koeleria macrantha, Penstemon unilateralis, Rumex acetosella.

Elevation: 9230 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459956, N4186427

K. Decker & G. Doyle KD03-31b 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Scrophulariaceae Det. by: G. Doyle

Penstemon unilateralis **Rydb.**

Great Sand Dunes Preserve, Medano Pass Road at site 3.2. Meadow, scattered aspens, mostly brome.

With: Hesperostipa comata, Clematis hirsutissima, Chaenactis douglasii, Koeleria macrantha, Rumex acetosella.

Elevation: 9230 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459956, N4186427

K. Decker & G. Doyle KD03-31d 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Agoseris aurantiaca **(Hook.) Greene**

Great Sand Dunes Preserve, Medano Lake, north shore. Dry slope.

With: Salix brachycarpa, Festuca thurberi, Carex elynoides, C. arapahoensis, Antennaria rosea.

Elevation: 11570 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457425, N4189831

K. Decker & G. Doyle KD03-33d 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex arapahoensis **Clokey**

Great Sand Dunes Preserve, Medano Lake, north shore. Dry slope. Tufted.

With: Salix brachycarpa, Festuca thurberi, Carex elynoides, Antennaria rosea, Agoseris aurantiaca.

Elevation: 11570 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457425, N4189831

K. Decker & G. Doyle KD03-33e 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Erigeron flagellaris **Gray**

Great Sand Dunes Preserve, ridge north of Music Pass.

Elevation: 11650 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455440, N4198385

K. Decker & D. G. Anderson KD03-61a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Erigeron peregrinus (Banks ex Pursh) Greene ssp. *callianthemus* (Greene) Cronq.

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps.

With: Senecio triangularis, Phleum alpinum, Juncus, Verbascum, Carex scopulorum, Mertensia.

Flower color: Purple rays/yellow disks

Elevation: 11510 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418

K. Decker & G. Doyle KD03-36d 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Arnica mollis Hook.

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps.

With: Senecio triangularis, Phleum alpinum, Juncus, Verbascum, Carex scopulorum, Mertensia.

Elevation: 11510 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418

K. Decker & G. Doyle KD03-36e 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

Potentilla diversifolia Lehm.

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps.

With: Senecio triangularis, Phleum alpinum, Juncus, Verbascum, Carex scopulorum, Mertensia.

Elevation: 11510 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418

K. Decker & G. Doyle KD03-36l 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex heteroneura W. Boott var. *chalciolepis* (Holm) F.J. Herm.

Great Sand Dunes Preserve, Medano Lake Trail. East-facing, mesic.

With: Calamagrostis canadensis, Deschampsia caespitosa, Polygonum.

Elevation: 11250 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457770, N4190559

K. Decker & G. Doyle KD03-38b 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

Potentilla hippiana Lehm.

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6. Dry meadow.

With: Collomia linearis, Astragalus alpinus, Festuca, Lupinus argenteus, Polygonum douglasii, Agoseris glauca.

Elevation: 9640 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085

K. Decker & G. Doyle KD03-40f 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

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

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6. Sunny, open meadow, gravelly.

With: Collomia linearis, Veratrum tenuipetalum, Astragalus alpinus, Festuca, Lupinus argenteus, Polygonum douglasii, Potentilla hippiana.

Flower color: yellow

Elevation: 9640 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085

K. Decker & G. Doyle KD03-40h 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

Oxytropis sericea Nutt. X

form. O. lamberii Pursh

Great Sand Dunes Preserve, Medano Pass Road. Open, sunny roadside. Tall stature of O. sericea, flower color of O. lambertii (purple).

With: Populus tremuloides, Pinus flexilis, Pascopyrum smithii, Heterotheca villosa, Penstemon, Muhlenbergia montana, Danthonia parryi.

Elevation: 9410 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461145, N4187247

K. Decker & G. Doyle KD03-42a 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Senecio pudicus Greene

Great Sand Dunes Preserve, Sawmill Creek Canyon. Near stream, but dry understory.

With: Abies concolor, Holodiscus, Jamesia.

Elevation: 8780 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0456895, N4178675

K. Decker KD03-44a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polygonaceae Det. by: G. Doyle

Polygonum polygaloides Wallich ex Meisn.

Great Sand Dunes Preserve, ridge north of Music Pass. On ridge in bristlecone stand, rocky.

With: Lupinus, Vaccinium.

Elevation: 11830 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455398, N455398

K. Decker & D. G. Anderson KD03-59a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Arenaria lanuginosa (Michx.) Rohrb.

ssp. *saxosa* (Gray) Maguire

Great Sand Dunes Preserve, ridge north of Music Pass. On ridge in bristlecone stand, rocky.

With: Lupinus, Vaccinium.

Elevation: 11830 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455398, N455398

K. Decker & D. G. Anderson KD03-59b 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Senecio eremophilus Richards.

var. *kingii* (Rydb.) Greenm.

Great Sand Dunes Preserve, Medano Pass Road, site 4.8. Grassy, aspen understory.

With: Delphinium ramosum.

Flower color: yellow

Elevation: 9470 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461814, N4187796

K. Decker & D. G. Anderson KD03-68b 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Artemisia dracunculus L.

Great Sand Dunes National Preserve, Medano Pass Road, roadside at Campsite 1.8.

Elevation: 8840 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458434, N4184891

K. Decker & D. G. Anderson KD03-72a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Cyperus squarrosus L.

Great Sand Dunes National Monument, near picnic area at dunes. Near parking lot and temporary Visitors Center. Annual.

With: Typha latifolia, Muhlenbergia asperifolia, M. andina.

Elevation: 8070 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0454285, N4176627

K. Decker & D. G. Anderson KD03-73c 8/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Pascopyrum smithii (Rydb.) A. Löve

Medano Ranch, Little Springs wetlands. Interdunal wetland, common.

With: Schoenoplectus acutus, S. lacustris, Eleocharis palustris, Distichlis spicata.

Elevation: 7690 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0445087, N4174862

K. Decker & G. Doyle KD03-01d 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Puccinellia nuttalliana (J.A. Schultes) A.S. Hitchc.

Medano Ranch, Big Spring Creek at Indian Spring.

With: Eleocharis palustris, Carex simulata, Hutchinsia procumbens, Glaux maritima, Schoenoplectus pungens.

Elevation: 7710 ft.

USGS Quadrangle: Sand Camp

UTM: Zone 13, E0444910, N4179863

K. Decker & G. Doyle KD03-05b 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Brassicaceae Det. by: W. Weber

Hutchinsia procumbens (L.) Desv.

Medano Ranch, Big Spring Creek at Indian Spring.

With: Eleocharis palustris, Puccinellia nuttalliana, Carex simulata, Glaux maritima, Schoenoplectus pungens.

Flower color: white

Elevation: 7710 ft.

USGS Quadrangle: Sand Camp

UTM: Zone 13, E0444910, N4179863

K. Decker & G. Doyle KD03-05d 6/9/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Salicaceae Det. by: G. Kittel

Salix ligulifolia (Ball) Ball ex Schneid.

Great Sand Dunes Preserve, Mosca Pass Trail. Meadow in aspen/mixed conifer. South-facing slope.

With: Poa, Taraxacum, Phlox gracilis, Packera tridenticulata, Erigeron flagellaris.

Elevation: 9640 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459458, N4175816

K. Decker & G. Doyle KD03-07c 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

Potentilla pulcherrima Lehm.

Great Sand Dunes Preserve, Music Pass Trail. Sand Creek drainage.

With: Pseudocymopterus montanus, Danthonia intermedia, Astragalus alpinus

Elevation: 11080 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454174, N4198524

K. Decker & D. G. Anderson KD03-47c 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Senecio amplectens Gray

var. *amplectens*

Great Sand Dunes Preserve, Lower Sand Creek Lake Trail.

With: Osmorhiza depauperata, Erigeron coulteri.

Elevation: 11100 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454035, N4198409

K. Decker & D. G. Anderson KD03-48a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Erigeron coulteri Porter

Great Sand Dunes Preserve, Lower Sand Creek Lake Trail.

With: Osmorhiza depauperata, Senecio amplectens.

Elevation: 11100 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454035, N4198409

K. Decker & D. G. Anderson KD03-48c 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex scopulorum Holm

Great Sand Dunes Preserve, Lower Sand Creek Lake - south side. Spruce fir understory. Rhizomatous.

With: Juncus drummondii, Calamagrostis canadensis, Vaccinium myrtillus.

Elevation: 11170 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0453323, N4197852

K. Decker & D. G. Anderson KD03-49a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Cirsium scopulorum (Greene) Cockerell ex Daniels

Great Sand Dunes Preserve, Lower Sand Creek Lake, southwest side. Talus slope.

With: Cryptogramma acrostichoides, Cystopteris fragilis.

Elevation: 11580 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0453180, N4197595

K. Decker & D. G. Anderson KD03-50c 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

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

Great Sand Dunes Preserve, Music Pass Trail. Seep below Music Pass.

With: Agrostis exarata, Senecio bigelovii, Symphyotrichum foliaceum, Juncus saximontanus, Artemisia franserioides.

Elevation: 11200 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455290, N4198058

K. Decker & D. G. Anderson KD03-52b 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Senecio bigelovii Gray

var. *hallii* Gray

Great Sand Dunes Preserve, Music Pass Trail. Seep below Music Pass.

With: Agrostis exarata, Packera fendleri, Symphyotrichum foliaceum, Juncus saximontanus, Artemisia franserioides.

Elevation: 11200 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455290, N4198058

K. Decker & D. G. Anderson KD03-52c 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Symphyotrichum foliaceum (DC.) Nesom var. *apricum* (Gray) Nesom

Great Sand Dunes Preserve, Music Pass Trail. Seep below Music Pass. Rays white with purple tinge, center yellow.

With: Agrostis exarata, Packera fendleri, Senecio bigelovii, Juncus saximontanus, Artemisia franserioides.

Elevation: 11200 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455290, N4198058

K. Decker & D. G. Anderson KD03-52d 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Artemisia franserioides Greene

Great Sand Dunes Preserve, Music Pass Trail. Seep below Music Pass.

With: Agrostis exarata, Packera fendleri, Senecio bigelovii, Symphyotrichum foliaceum, Juncus saximontanus.

Elevation: 11200 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455290, N4198058

K. Decker & D. G. Anderson KD03-52f 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Scrophulariaceae Det. by: G. Doyle

Castilleja haydenii (Gray) Cockerell

Great Sand Dunes Preserve, ridge north of Music Pass. West-facing talus slope below ridge.

With: Rhodiola integrifolia, Arenaria fendleri, Poa glauca.

Elevation: 12440 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455146, N4198884

K. Decker & D. G. Anderson KD03-55c 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Danthonia intermedia Vasey

Great Sand Dunes Preserve, Music Pass Trail. Sand Creek drainage.

With: Pseudocymopterus montanus, Astragalus alpinus, Potentilla pulcherrima.

Elevation: 11080 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454174, N4198524

K. Decker & D.G. Anderson KD03-47b 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Juncus drummondii E. Mey.

Great Sand Dunes Preserve, Lower Sand Creek Lake - south side. Spruce fir understory.

With: Carex scopulorum, Calamagrostis canadensis, Vaccinium myrtillus.

Elevation: 11170 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0453323, N4197852

K. Decker & D.G. Anderson KD03-49b 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Dryopteridaceae Det. by: G. Doyle

Cystopteris fragilis (L.) Bernh.

Great Sand Dunes Preserve, Lower Sand Creek Lake, southwest side. Talus slope.

With: Cryptogramma acrostichoides, Cirsium scopulorum.

Elevation: 11580 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0453180, N4197595

K. Decker & D.G. Anderson KD03-50b 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Agrostis exarata Trin.

Great Sand Dunes Preserve, Music Pass Trail. Seep below Music Pass.
With: Packera fendleri, Senecio bigelovii, Symphyotrichum foliaceum, Juncus saximontanus, Artemisia franserioides.

Elevation: 11200 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455290, N4198058
K. Decker & D.G. Anderson KD03-52a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: J. Wingate

Juncus saximontanus A. Nels.

Great Sand Dunes Preserve, Music Pass Trail. Seep below Music Pass.
With: Agrostis exarata, Packera fendleri, Senecio bigelovii, Symphyotrichum foliaceum, Artemisia franserioides.

Elevation: 11200 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455290, N4198058
K. Decker & D.G. Anderson KD03-52e 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Poa glauca Vahl
ssp. *rupicola* (Nash ex Rydb.) W.A. Weber

Great Sand Dunes Preserve, ridge north of Music Pass. West-facing talus slope below ridge.
With: Rhodiola integrifolia, Arenaria fendleri, Castilleja haydenii.

Elevation: 12440 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455146, N4198884
K. Decker & D.G. Anderson KD03-55d 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Bromus ciliatus L.

Great Sand Dunes Preserve, ridge north of Music Pass. Open bristlecone stand, rocky, disturbed by rodents.
With: Anaphalis margaritacea, Erigeron eximius.

Elevation: 11700 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455440, N4198426
K. Decker & D.G. Anderson KD03-60b 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Erigeron eximius Greene

Great Sand Dunes Preserve, ridge north of Music Pass. Open bristlecone stand, rocky, disturbed by rodents. Tall forb.
With: Anaphalis margaritacea, Bromus ciliatus.

Elevation: 11700 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455440, N4198426
K. Decker & D.G. Anderson KD03-60c 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Calamagrostis purpurascens R. Br.

Great Sand Dunes Preserve, ridge north of Music Pass. West-facing, sunny, rocky.
With: Minuartia.

Elevation: 11500 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0455445, N4198187
K. Decker & D.G. Anderson KD03-62a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Cinna latifolia (Trev. ex Goepp.) Griseb.

Great Sand Dunes Preserve, Medano Creek above trailhead. Spruce-fir understory near Medano Creek, mostly non-vegetated forest floor with heavy duff of needles and twigs.

With: Arnica cordifolia, Osmorhiza, Erigeron, Trisetum spicatum.

Elevation: 9540 ft.

USGS Quadrangle: Medano Peak

UTM: Zone 13, E0461499, N4189366

K. Decker & D.G. Anderson KD03-64b 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Trisetum spicatum (L.) Richter

Great Sand Dunes Preserve, Medano Creek above trailhead. Spruce-fir understory near Medano Creek, mostly non-vegetative forest floor with heavy duff of needles and twigs.

With: Arnica cordifolia, Osmorhiza, Erigeron.

Elevation: 9540 ft.

USGS Quadrangle: Medano Peak

UTM: Zone 13, E0461499, N4189366

K. Decker & D.G. Anderson KD03-64c 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Elymus glaucus Buckl.

Great Sand Dunes Preserve, Medano Creek above trailhead. Aspen understory.

With: Heracleum, Equisetum arvense, Geum macrophyllum.

Elevation: 9730 ft.

USGS Quadrangle: Medano Peak

UTM: Zone 13, E0461474, N4189358

K. Decker & D.G. Anderson KD03-65a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Achnatherum robustum (Vasey) Barkworth

Great Sand Dunes Preserve, Medano Pass Road. Aspen understory.

With: Heracleum, Equisetum arvense, Geum macrophyllum.

Elevation: 9390 ft.

USGS Quadrangle: Medano Peak

UTM: Zone 13, E0461558, N4187566

K. Decker & D.G. Anderson KD03-69a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Muhlenbergia asperifolia (Nees & Meyen ex Trin.) Parodi

Great Sand Dunes National Monument, near picnic area at dunes. Near parking lot and temporary Visitors Center.

With: Typha latifolia, Cyperus squarrosus, Muhlenbergia andina.

Elevation: 8070 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0454285, N4176627

K. Decker & D.G. Anderson KD03-73b 8/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Muhlenbergia andina (Nutt.) A.S. Hitchc.

Great Sand Dunes National Monument, near picnic area at dunes. Near parking lot and temporary Visitors Center.

With: Typha latifolia, Cyperus squarrosus, Muhlenbergia asperifolia.

Elevation: 8070 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0454285, N4176627

K. Decker & D.G. Anderson KD03-73d 8/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Juncus longistylis Torr.

Great Sand Dunes National Monument, Sand Creek Ranger Station. Floodplain of Sand Creek with sparse cottonwood. Six stamens.

With: Populus angustifolia, Juniperus scopulorum, Rosa woodsii, Muhlenbergia asperifolia, Equisetum arvense.

Elevation: 7920 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0447537, N4186916

G. Doyle & K. Decker GD03-01a 7/14/03

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Senecio spartioides Torr. & Gray var. *multicapitatus* (Greenm. ex Rydb.) Welsh

Great Sand Dunes National Monument, sand hills near Sand Creek Ranger Station. Two foot high shrub, yellow ray and disk flowers, few (generally 4) ray flowers, some notched at tip with 3 lobes. Common.

With: Achnatherum hymenoides, Psoralidium lanceolatum, Cryptantha cinerea var. pustulosa, Euphorbia brachycera.

Elevation: 7900 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0447419, N4187095

G. Doyle & K. Decker GD03-02a 7/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Euphorbiaceae Det. by: G. Doyle

Euphorbia brachycera Engelm.

Great Sand Dunes National Monument, near Sand Creek Ranger Station. Sand hills.

With: Achnatherum hymenoides, Psoralidium lanceolatum, Cryptantha cinerea var. pustulosa, Senenio spartioides var. multicapitatus.

Elevation: 7900 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0447419, N4187095

G. Doyle & K. Decker GD03-02b 7/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Boraginaceae Det. by: G. Doyle

Cryptantha cinerea (Greene) Cronq. var. *pustulosa* (Rydb.) Higgins

Great Sand Dunes National Monument, near Sand Creek Ranger Station. Sand hills.

With: Achnatherum hymenoides, Psoralidium lanceolatum, Senenio spartioides var. multicapitatus.

Elevation: 7900 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0447419, N4187095

G. Doyle & K. Decker GD03-02c 7/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Scrophulariaceae Det. by: G. Doyle

Penstemon caespitosus Nutt. ex Gray

Great Sand Dunes National Monument, Sand Creek Trail. Opening with conifer seedlings. Corolla purple with white throat, anther sacs glabrous.

With: Pseudotsuga menziesii, Abies concolor, Pinus flexilis, Populus angustifolia, Androsace septentrionalis, Thermopsis divaricarpa, Packera fendleri.

Elevation: 8030 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0450471, N4189342

G. Doyle & K. Decker GD03-03a 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Fabaceae Det. by: G. Doyle

Thermopsis divaricarpa A. Nels.

Great Sand Dunes National Monument, Sand Creek Trail. Opening with conifer seedlings. In fruit.

With: Pseudotsuga menziesii, Abies concolor, Pinus flexilis, Populus angustifolia, Androsace septentrionalis.

Elevation: 8030 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0450471, N4189342

G. Doyle & K. Decker GD03-03b 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

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

Great Sand Dunes National Monument, Sand Creek Trail. Opening with conifer seedlings. Yellow ray, yellow disk flowers, rays 6mm long, 5-8 ray flowers/head.

With: Pseudotsuga menziesii, Abies concolor, Pinus flexilis, Populus angustifolia, Androsace septentrionalis.

Elevation: 8030 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0450471, N4189342

G. Doyle & K. Decker GD03-03c 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Festuca saximontana Rydb.

Great Sand Dunes National Monument, Sand Creek Trail. Opening with conifer seedlings.

With: Pseudotsuga menziesii, Abies concolor, Pinus flexilis, Populus angustifolia, Androsace septentrionalis.

Elevation: 8030 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0450471, N4189342

G. Doyle & K. Decker GD03-03d 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Pyrolaceae Det. by: G. Doyle

Pyrola asarifolia Michx.

ssp. *asarifolia*

Great Sand Dunes National Monument, Sand Creek Trail. Creekside, shaded, beneath birch and conifers. Abundant within a 10 ft. square patch.

With: Betula occidentalis, Populus angustifolia, Cornus sericea, Geranium richardsonii.

Elevation: 8030 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0450578, N4189445

G. Doyle & K. Decker GD03-04b 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Trisetum spicatum (L.) Richter

Great Sand Dunes National Monument, Sand Creek Trail. Creekside, shaded, beneath birch and conifers. Membranous ligule, awns.

With: Betula occidentalis, Populus angustifolia, Cornus sericea, Geranium richardsonii.

Elevation: 8030 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0450578, N418944

G. Doyle & K. Decker GD03-04c 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Apiaceae Det. by: J. Wingate

Oxypolis fendleri (Gray) Heller

Great Sand Dunes National Monument, Sand Creek Trail. Creekside, shaded, beneath birch and conifers.

With: Geranium richardsonii, Betula occidentalis, Populus angustifolia, Cornus sericea.

Elevation: 8030 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0450578, N4189445

G. Doyle & K. Decker GD03-04d 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

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

Great Sand Dunes Preserve, ridge north of Music Pass. Boulder field below ridge.

With: Erigeron pinnatisectus, Trifolium dasyphyllum, Silene acaulis, Geum rossii.

Flower color: yellow

Elevation: 12670 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454808, N4199091

K. Decker & D. G. Anderson KD03-56a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Erigeron pinnatisectus (Gray) A. Nels.

Great Sand Dunes Preserve, ridge north of Music Pass. Boulder field below ridge. Dissected leaves.

With: Tonestus pygmaeus, Trifolium dasyphyllum, Silene acaulis, Geum rossii.

Flower color: purple

Elevation: 12670 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454808, N4199091

K. Decker & D. G. Anderson KD03-56b 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

Potentilla subjuga Rydb.

Great Sand Dunes Preserve, ridge north of Music Pass. Fellfield community below ridge.

With: Minuartia obtusiloba, Trifolium dasyphyllum, Pedicularis parryi.

Elevation: 12670 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0454765, N4199158

K. Decker & D. G. Anderson KD03-57a 8/13/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Poa fendleriana (Steud.) Vasey

Great Sand Dunes Preserve, Mosca Pass Trail. Meadow in aspen/mixed conifer. South-facing slope. Bunch grass.

With: Poa, Taraxacum, Phlox gracilis, Packera tridenticulata, Salix, Erigeron flagellaris.

Elevation: 9640 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459458, N4175816

K. Decker & G. Doyle KD03-07e 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

Erigeron vetensis Rydb.

Great Sand Dunes Preserve, Mosca Pass Trail. Rocky meadow.

With: Phlox gracilis, Besseya plantaginea.

Elevation: 9640 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459372, N4175843

K. Decker & G. Doyle KD03-08b 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Salicaceae Det. by: G. Kittel

Salix monticola Bebb

Great Sand Dunes Preserve, Mosca Pass Trail. Tall shrub.

With: Salix exigua.

Elevation: 9640 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459372, N4175843

K. Decker & G. Doyle KD03-08d 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Salicaceae Det. by: G. Kettel

Salix monticola Bebb

Great Sand Dunes Preserve, Mosca Pass Trail. Tall shrub.

With: Populus tremuloides, Juniperus.

Elevation: 9440 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0458605, N4175860

K. Decker & G. Doyle KD03-10b 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Carex geophila Mackenzie

Great Sand Dunes Preserve, Mosca Pass Trail. Dry.

Elevation: 9020 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0455936, N4175917
K. Decker & G. Doyle KD03-14a 6/10/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Caryophyllaceae Det. by: G. Doyle

Stellaria crassifolia Ehrh.

Medano Ranch, Little Spring Creek Road, first gate near ranch house. Ditch side.
With: Alopecurus pratensis.

Elevation: 7610 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0440683, N4173994
K. Decker & G. Doyle KD03-18b 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Ranunculaceae Det. by: G. Doyle

Ranunculus trichophyllus Chaix
var. *trichophyllus*

Medano Ranch, Big Spring Creek meanders in Juncus/Carex meadow.
With: Stuckenia pectinatus, Eleocharis acicularis.

Elevation: 7610 ft.
USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0441375, N4176382
K. Decker & G. Doyle KD03-19b 6/11/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Salicaceae Det. by: G. Kittel

Salix ligulifolia (Ball) Ball ex Schneid.

Great Sand Dunes Preserve, Medano Pass Road, at or below site 2.3. Tall shrub.
With: Stellaria longifolia, Rumex acetosella, Camelina microcarpa, Actaea rubra, Ranunculus cardiophyllus, Euphorbia esula, Oxypolis fendleri.

Elevation: 8920 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458961, N4185225
K. Decker & G. Doyle KD03-20h 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Euphorbiaceae Det. by: G. Kittel

Euphorbia esula L.
var. *uralensis* (Fisch. ex Link) Dorn

Great Sand Dunes Preserve, Medano Pass Road, at or below site 2.3. On sandy bank.
With: Stellaria longifolia, Rumex acetosella, Camelina microcarpa, Actaea rubra, Ranunculus cardiophyllus, Salix, Oxypolis fendleri.

Elevation: 8920 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458961, N4185225
K. Decker & G. Doyle KD03-20f 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Luzula comosa E. Mey.

Great Sand Dunes Preserve, Medano Pass Road, below old homestead.
With: Festuca idahoensis, Hierochloe hirta, Descurainia sp., Thlaspi arvense.

Elevation: 9300 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460708, N4186855
K. Decker & G. Doyle KD03-21c 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Violaceae Det. by: G. Doyle

Viola renifolia Gray

Great Sand Dunes Preserve, Medano Pass Road, at turnoff to Medano Lake trailhead.

Flower color: white

Elevation: 9550 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461674, N4188976

K. Decker & G. Doyle KD03-22a 6/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Agrostis scabra Willd.

Great Sand Dunes National Monument, Sand Creek. Sandy channel.

With: Portulaca oleracea.

Elevation: 7900 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0447990, N4187014

K. Decker & G. Doyle KD03-23b 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Muhlenbergia andina (Nutt.) A.S. Hitchc.

Great Sand Dunes National Monument, Sand Creek Trail. Below stock pond, on road, wet soil.

With: Cerastium fontanum, Juncus bufonius.

Elevation: 8110 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0448652, N4188442

K. Decker & G. Doyle KD03-28a 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Cerastium fontanum Baumg.

Great Sand Dunes National Monument, Sand Creek Trail. Below stock pond, on road, wet soil. Petals deeply lobed.

With: Muhlenbergia andina, Juncus bufonius.

Flower color: white

Elevation: 8110 ft.

USGS Quadrangle: Liberty

UTM: Zone 13, E0448652, N4188442

K. Decker & G. Doyle KD03-28b 7/15/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Koeleria macrantha (Ledeb.) J.A. Schultes

Great Sand Dunes Preserve, Medano Pass Road at site 3.2. Meadow, scattered aspen, mostly brome.

With: Chaenactis douglasii, Koeleria macrantha, Penstemon virgatus, Rumex acetosella, Hesperostipa comata.

Elevation: 9230 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459956, N4186427

K. Decker & G. Doyle KD03-31c 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Festuca thurberi Vasey

Great Sand Dunes Preserve, Medano Lake, north shore. Dry slope.

With: Salix brachycarpa, Carex elynoides, C. arapahoensis, Antennaria rosea, Agoseris aurantiaca.

Elevation: 11570 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457425, N4189831

K. Decker & G. Doyle KD03-33a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex elynoides Holm

Great Sand Dunes Preserve, Medano Lake, north shore. Dry slope.
With: Salix brachycarpa, Festuca thurberi, Antennaria rosea, Agoseris aurantiaca, Carex arapahoensis.

Elevation: 11570 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457425, N4189831
K. Decker & G. Doyle KD03-33b 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Juncus drummondii E. Mey.

Great Sand Dunes Preserve, Medano Lake Trail, below lake. Trailside, dry slope. Growing in clumps.
With: Salix brachycarpa.

Elevation: 11540 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457516, N4189952
K. Decker & G. Doyle KD03-34a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Juncus mertensianus Bong.

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps. Wet area, sunny, high species diversity.
With: Senecio triangularis, Phleum alpinum, Juncus, Verbascum, Carex scopulorum, Mertensia.

Elevation: 11510 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418
K. Decker & G. Doyle KD03-36b 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Juncus parryi Engelm.

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps. In drier area.
With: Senecio triangularis, Phleum alpinum, Juncus mertensianus, Verbascum, Carex scopulorum, Mertensia.

Elevation: 11510 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418
K. Decker & G. Doyle KD03-36c 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Onagraceae Det. by: G. Doyle

Epilobium lactiflorum Hausskn.

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps. Opposite leaves.
With: Senecio triangularis, Phleum alpinum, Juncus mertensianus, Verbascum, Carex scopulorum, Mertensia.
Flower color: white

Elevation: 11510 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418
K. Decker & G. Doyle KD03-36h 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex rossii Boott

Great Sand Dunes Preserve, Medano Lake Trail, east-facing ridge north of trail. Steep slope below granite outcrop with seeps.
With: Senecio triangularis, Phleum alpinum, Juncus mertensianus, Verbascum, Carex scopulorum, Mertensia.

Elevation: 11510 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457733, N4190418
K. Decker & G. Doyle KD03-36j 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: G. Doyle

Luzula spicata (L.) DC.

Great Sand Dunes Preserve, Medano Lake Trail. East-facing, mesic. Nodding.
With: Calamagrostis canadensis, Deschampsia caespitosa, Polygonum, Carex heteroneura, Elymus trachycaulus.

Elevation: 11250 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457770, N4190559
K. Decker & G. Doyle KD03-38a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Festuca saximontana Rydb.

Great Sand Dunes Preserve, Medano Pass Road, around campsite 5.6. Membranous ligule, <1 mm, bunch grass.
With: Collomia linearis, Veratrum tenuipetalum, Astragalus alpinus.

Elevation: 9640 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461685, N4189085
K. Decker & G. Doyle KD03-40d 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Danthonia parryi Scribn.

Great Sand Dunes Preserve, Medano Pass Road. Open, sunny roadside.
With: Populus tremuloides, Pinus flexilis, Pascopyrum smithii, Heterotheca villosa, Penstemon, Oxytropis, Muhlenbergia montana.

Elevation: 9410 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0461145, N4187247
K. Decker & G. Doyle KD03-42c 7/18/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Piptatherum micranthum (Trin. & Rupr.) Barkworth

Great Sand Dunes National Monument, Sand Creek Ranger Station. Dry upper floodplain of Sand Creek. Cottonwood overstory with sparse understory. Bunch grass. Membranous ligule.
With: Populus angustifolia, Poa pratensis, Chenopodium, Clematis.

Elevation: 7850 ft.
USGS Quadrangle: Liberty

UTM: Zone 13, E0447468, N4186956
G. Doyle & K. Decker GD03-05a 7/16/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Poa leptocoma Trin.

Great Sand Dunes Preserve, Medano Lake Trail.
With: Luzula parviflora, Aquilegia caerulea, Polemonium, Viola canadensis.

Elevation: 11050 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458271, N4190516
G. Doyle & K. Decker GD03-06a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Caryophyllaceae Det. by: G. Doyle

Stellaria calycantha (Ledeb.) Bong.

Great Sand Dunes Preserve, Medano Lake Trail. Beneath aspen and Engleman spruce. Five divided petals, 10 stamens.
With: Fragaria, Pedicularis procera.

Elevation: 10930 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460554, N4189852
G. Doyle & K. Decker GD03-07a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Scrophulariaceae Det. by: G. Doyle

Pedicularis procera Gray

Great Sand Dunes Preserve, Medano Lake Trail. Beneath aspen and Engleman spruce.

With: Fragaria, Stellaria calycantha.

Elevation: 10930 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460554, N4189852

G. Doyle & K. Decker GD03-07b 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Cirsium parryi (Gray) Petrak

Great Sand Dunes Preserve, Medano Lake Trail. In moist soil adjacent to creek, beneath Engelman spruce and Drummond's willow.

With: Luzula parviflora, Carex norvegica ssp. stevenii, C. microptera, Geum macrophyllum, Equisetum arvense, Calamagrostis canadensis.

Elevation: 10170 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460639, N4189677

G. Doyle & K. Decker GD03-08a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex norvegica Retz.

ssp. *stevenii* (Holm) E. Murr.

Great Sand Dunes Preserve, Medano Lake Trail. Trailside, in moist soil adjacent to creek, beneath Engelman spruce and Drummond's willow.

With: Luzula parviflora, Carex microptera, Geum macrophyllum Equisetum arvense, Calamagrostis canadensis.

Elevation: 10170 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460639, N4189677

G. Doyle & K. Decker GD03-08c 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ericaceae Det. by: G. Doyle

Arctostaphylos uva-ursi (L.) Spreng.

Great Sand Dunes Preserve, Medano Lake Trail. Growing on a boulder adjacent to creek, beneath Engelman spruce and Drummond's willow.

With: Luzula parviflora, Carex norvegica ssp. stevenii, C. microptera, Equisetum arvense, Calamagrostis canadensis.

Elevation: 10170 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460639, N4189677

G. Doyle & K. Decker GD03-08d 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex microptera Mackenzie

Great Sand Dunes Preserve, Medano Lake Trail. Trailside, in moist soil adjacent to creek, beneath Engelman spruce and Drummond's willow.

With: Luzula parviflora, Carex norvegica ssp. stevenii, Equisetum arvense, Calamagrostis canadensis.

Elevation: 10170 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460639, N4189677

G. Doyle & K. Decker GD03-08e 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

Geum macrophyllum Willd.

Great Sand Dunes Preserve, Medano Lake Trail. Trailside, in moist soil adjacent to creek, beneath Engelman spruce and Drummond's willow.

With: Luzula parviflora, Carex norvegica ssp. stevenii, C. microptera, Equisetum arvense, Calamagrostis canadensis.

Elevation: 10170 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0460639, N4189677

G. Doyle & K. Decker GD03-08f 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Rosaceae Det. by: G. Doyle

Geum macrophyllum Willd.

Great Sand Dunes Preserve, Medano Creek at campsite 2.3, beneath white fir and aspen.

With: Calamagrostis canadensis, Ranunculus macounii.

Elevation: 8910 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459008, N4185272

G. Doyle & K. Decker GD03-09a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Ranunculaceae Det. by: G. Doyle

Ranunculus macounii Britt.

Great Sand Dunes Preserve, Medano Creek at campsite 2.3, beneath white fir and aspen.

With: Calamagrostis canadensis, Geum macrophyllum.

Elevation: 8910 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459008, N4185272

G. Doyle & K. Decker GD03-09b 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Dryopteridaceae Det. by: G. Doyle

Cystopteris fragilis (L.) Bernh.

Great Sand Dunes Preserve, Medano Creek at campsite 2.3, beneath white fir and aspen.

With: Calamagrostis canadensis, Geum macrophyllum, Ranunculus macounii.

Elevation: 8910 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0459008, N4185272

G. Doyle & K. Decker GD03-09c 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Rudbeckia laciniata (L.) Bernh.

var. *ampla* (A. Nels.) Cronq.

Great Sand Dunes Preserve, Medano Creek at Ford #3. Tall forb, growing in willows.

Elevation: 8930 ft.

USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457339, N4184273

G. Doyle & K. Decker GD03-10a 7/17/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Fabaceae Det. by: G. Doyle

Astragalus scopulorum Porter

Great Sand Dunes National Monument, Mosca Trail, near trailhead. Climbing but without tentrils.

With: Heterotheca villosa, Salix.

Elevation: 8280 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0455336, N4176227

G. Doyle GD03-11a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

Erigeron subtrinervis Rydb. ex Porter & Britt.

Great Sand Dunes National Monument, Mosca Trail, near trailhead.

With: Populus tremuloides, Koeleria, Tragopogon.

Elevation: 8280 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0455336, N4176227

G. Doyle GD03-11b 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Onagraceae Det. by: G. Doyle

Oenothera coronopifolia Torr. & Gray

Great Sand Dunes Preserve, Mosca Trail. Dry, sunny slope. Petals white.
With: Achnatherum hymenoides, Yucca, Nassella viridula.

Elevation: 8025 ft.
USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0455846, N4175978
G. Doyle GD03-12a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Lamiaceae Det. by: G. Doyle

Dracocephalum parviflorum Nutt.

Great Sand Dunes Preserve, Mosca Pass Trail. Dry slope, trailside.
With: Prunus virginiana, Bromus tectorum.

Elevation: 9050 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0456896, N4175858
G. Doyle GD03-13a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Festuca arizonica Vasey

Great Sand Dunes Preserve, Mosca Pass Trail. Dry slope, opening beneath aspen, white fir.
With: Eriogonum alatum, Erysimum capitatum.

Elevation: 9080 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0457360, N4175889
G. Doyle GD03-14a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Polemoniaceae Det. by: G. Doyle

Collomia linearis Nutt.

Great Sand Dunes Preserve, Mosca Pass Trail. Dry slope, opening beneath aspen, white fir.
With: Eriogonum alatum, Erysimum capitatum.

Elevation: 9080 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0457360, N4175889
G. Doyle GD03-14e 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Agropyron cristatum (L.) Gaertn.

Great Sand Dunes Preserve, Mosca Pass Trail near parking lot at top of the pass. Aspen with understory of non-native grasses.
With: Bromus inermis, Poa pratensis.

Elevation: 9730 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459737, N4175952
G. Doyle GD03-15a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: H. Dixon

Hymenoxys helenioides (Rydb.) Cockerell

Great Sand Dunes Preserve, Mosca Pass Trail near pass. Sunny, dry meadow.
With: Hesperostipa comata, Hymenoxys richardsonii, H. hoopesii, Bromus inermis, Cirsium canescens, Koeleria macrantha.

Elevation: 9600 ft.
USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459737, N417952
G. Doyle & H. Dixon GD03-16a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Festuca arizonica Vasey

Great Sand Dunes Preserve, Mosca Pass Trail near pass. Sunny, dry meadow.

With: Hesperostipa comata, Hymenoxys richardsonii, H. hoopesii, Bromus inermis, Cirsium canescens, Koeleria macrantha.

.

Elevation: 9600 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0459737, N417952

G. Doyle GD03-16b 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Poaceae Det. by: J. Wingate

Bouteloua gracilis (Willd. ex Kunth) Lag. ex Griffiths

Great Sand Dunes Preserve, Mosca Pass Trail. Dry southwest-facing slope.

With: Holodiscus discolor, Achnatherum hymenoides.

.

Elevation: 8750 ft.

USGS Quadrangle: Mosca Pass

UTM: Zone 13, E0456381, N4176005

G. Doyle GD03-17a 7/19/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Capparidaceae Det. by: G. Doyle

Cleome multicaulis DC.

Medano Ranch, Little Spring Creek 2-track road. Open, seasonally wet.

With: Sarcobatus vermiculatus, Distichlis spicata.

Elevation: 7660 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0444689, N4174672

G. Doyle & K. Decker GD03-18a 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Potamogetonaceae Det. by: G. Doyle

Stuckenia pectinatus (L.) Boerner

Medano Ranch, Little Spring wetlands.

With: Schoenoplectus pungens, Eleocharis palustris.

Elevation: 7670 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0445072, N4174858

G. Doyle & K. Decker GD03-19a 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Eleocharis palustris (L.) Roemer & J.A. Schultes

Medano Ranch, Little Spring wetlands.

With: Schoenoplectus pungens.

Elevation: 7670 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0445072, N4174858

G. Doyle & K. Decker GD03-19b 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

Crepis runcinata (James) Torr. & Gray ssp. *runcinata*

Medano Ranch, Little Spring Creek road, gate near ranch house. Ditchside.

With: Alopecurus pratensis, Stellaria crassifolia.

Elevation: 7610 ft.

USGS Quadrangle: Zapata Ranch

UTM: Zone 13, E0440683, N4173994

G. Doyle & K. Decker GD03-20a 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Cyperaceae Det. by: G. Doyle

Scirpus nevadensis S. Wats.

Medano Ranch, Big Spring Creek meanders. Wet meadow.

With: Carex praegracilis, Eleocharis palustris, E. acicularis.

Elevation: 7610 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0441375, N4176382

G. Doyle & K. Decker GD03-21a 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Brassicaceae Det. by: G. Doyle

Rorippa nasturtium-aquaticum (L.) Hayek

Medano Ranch, Big Spring Creek meanders. Growing in creek. With seed pods.

With: Ranunculus trichophyllus, Stuckenia pectinatus, Eleocharis acicularis, E. palustris.

Elevation: 7610 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0441375, N4176382

G. Doyle & K. Decker GD03-21b 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Ranunculaceae Det. by: G. Doyle

Ranunculus trichophyllus Chaix var. trichophyllus

Medano Ranch, Big Spring Creek meanders. Growing in water.

With: Stuckenia pectinatus, Eleocharis acicularis, Rorippa nastastium-aquaticum.

Elevation: 7610 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0441375, N4176382

G. Doyle & K. Decker GD03-21c 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

Sonchus arvensis L.

ssp. *uliginosus* (Bieb.) Nyman

Medano Ranch, Medano-Zapata Ranch Road, just south of buildings. Milky sap.

With: Juncus balticus, Cleome.

Flower color: yellow

Elevation: 7590 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0439919, N4173863

G. Doyle & K. Decker GD03-22a 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Malvaceae Det. by: G. Doyle

Sidalcea neomexicana Gray

Medano Ranch, Medano-Zapata Ranch Road.

With: Juncus balticus, Plantago, Cleome serrulata, Chenopodium spp, Carex praegracilis, Iva axillaris.

Elevation: 7600 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0439812, N4173256

G. Doyle & K. Decker GD03-23a 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Chenopodiaceae Det. by: G. Doyle

Chenopodium album L.

Medano Ranch, Medano-Zapata Ranch Road.

With: Juncus balticus, Plantago, Cleome serrulata, Carex praegracilis, Iva axillaris.

Elevation: 7600 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0439812, N4173256

G. Doyle & K. Decker GD03-23c 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Alamosa County

Asteraceae Det. by: G. Doyle

Iva axillaris Pursh

Medano Ranch, Medano-Zapata Ranch Road.

With: Juncus balticus, Plantago, Cleome serrulata, Carex praegracilis.

Elevation: 7600 ft.

USGS Quadrangle: Medano Ranch

UTM: Zone 13, E0439812, N4173256

G. Doyle & K. Decker GD03-23d 7/20/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Polygonaceae Det. by: G. Doyle

Oxyria digyna (L.) Hill

Great Sand Dunes Preserve, southwest slope above Lower Sand Creek Lake. At base of northeast-facing rock fence.

With: Cirsium scopulorum, Aquilegia caerulea, Geum rossii.

Elevation: 11580 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0453113, N4197483

D. G. Anderson & K. Decker DA03-01a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Asteraceae Det. by: G. Doyle

Senecio fremontii Torr. & Gray

var. *blitoides* (Greene) Cronq.

Great Sand Dunes Preserve, southwest slope above Lower Sand Creek Lake. East-facing, 30 degree slope with turfy tundra among many cobbles. On a stablized lateral moraine below a cirque basin.

With: Deschampsia caespitosa, Juncus drummondii, Carex arapahoensis.

Elevation: 12400 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0452857, N4197245

D. G. Anderson & K. Decker DA03-03a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Deschampsia caespitosa (L.) Beauv.

Great Sand Dunes Preserve, Southwest slope above Lower Sand Creek Lake. East-facing, 30 degree slope with turfy tundra among many cobbles. On a stablized lateral moraine below a cirque basin.

With: Senecio fremontii, Juncus drummondii, Carex arapahoensis.

Elevation: 12400 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0452857, N4197245

D. G. Anderson & K. Decker DA03-03b 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Juncaceae Det. by: J. Wingate

Juncus drummondii E. Mey.

Great Sand Dunes Preserve, Southwest slope above Lower Sand Creek Lake. East-facing, 30 degree slope with turfy tundra among many cobbles. On a stablized lateral moraine below a cirque basin.

With: Senecio fremontii, Deschampsia caespitosa, Carex arapahoensis.

Elevation: 12400 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0452857, N4197245

D. G. Anderson & K. Decker DA03-03d 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Cyperaceae Det. by: G. Doyle

Carex arapahoensis Clokey

Great Sand Dunes Preserve, Southwest slope above Lower Sand Creek Lake. East-facing, 30 degree slope with turfy tundra among many cobbles. On a stablized lateral moraine below a cirque basin.

With: Senecio fremontii, Deschampsia caespitosa, Juncus drummondii.

Elevation: 12400 ft.

USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0452857, N4197245

D. G. Anderson & K. Decker DA03-03e 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Brassicaceae Det. by: G. Doyle

Rorippa alpina (S. Wats.) Rydb.

Great Sand Dunes Preserve, Cirque above Lower Sand Creek Lake. Muddy floor of cirque basin. This is the only species present on most of the area, ~500 individuals.

Elevation: 12500 ft.
USGS Quadrangle: Crestone Peak

UTM: Zone 13, E0452744, N4197162
D. G. Anderson & K. Decker DA03-4a 8/12/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Achnatherum scribneri (Vasey) Barkworth

Great Sand Dunes Preserve, rock outcrop west of site 1.8. In sandy soil of rock outcrop.
With: Muhlenbergia montana, Bromus tectorum, Cercocarpus montanus, Blepharoneuron tricholepis.

Elevation: 9000 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458316, N4184973
D. G. Anderson & K. Decker DA03-5a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Blepharoneuron tricholepis (Torr.) Nash

Great Sand Dunes Preserve, rock outcrop west of site 1.8. In sandy soil of rock outcrop.
With: Muhlenbergia montana, Bromus tectorum, Cercocarpus montanus, Achnatherum scribneri.

Elevation: 9000 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0458316, N4184973
D. G. Anderson & K. Decker DA03-5b 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Poaceae Det. by: J. Wingate

Piptatherum micranthum (Trin. & Rupr.)

Great Sand Dunes Preserve, Medano Creek Valley, near campsite 0.9.
With: Populus tremuloides, Picea pungens, Pseudotsuga menziesii.

Elevation: 8900 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457282, N4184281
D. G. Anderson & K. Decker DA03-6a 8/14/2003

Colorado Natural Heritage Program

Plants of Colorado

Saguache County

Boraginaceae Det. by: G. Doyle

Cryptantha cinerea (Greene) Cronq.
var. *pustulosa* (Rydb.) Higgins

Great Sand Dunes Preserve, Medano Creek Valley, near campsite 0.9. Rocky open slopes.
With: Populus tremuloides, Picea pungens, Pseudotsuga menziesii, Piptatherum micranthum.

Elevation: 8900 ft.
USGS Quadrangle: Medano Pass

UTM: Zone 13, E0457282, N4184281
D. G. Anderson & K. Decker DA03-6b 8/15/2003

Colorado Natural Heritage Program

Appendix 3

Previously undocumented element occurrence records for *Cryptantha cinerea* var. *pustulosa,* and *Hymenoxys helenoides* at GRSA (Colorado Natural Heritage Program 2004).

Element Occurrence Report

State Scientific Name *Cryptantha pustulosa* **EO ID** 11784

State Common Name Catseye **EO Code** PDBOR0A3K7 * 5

Basic Information

Higher Taxonomy PDBOR **Nation** US **State** CO

Shape ID 40050 **Element ID** 22340

Global Imperilment Rank G5TNR **State Imperilment Rank** S1

Basic EO Rank E - Verified extant (viability not assessed)

Occurrence Type Principal EO **Mapping Precision** S - Seconds

Principal EO ID (if a Sub-EO) - **Principal EO Number** -

CNHP Potential Conservation Area

Site ID	Site Code	Potential Conservation Area Name	EO Driving Biodiversity Rank
-	No Data	No Data	No

Locators

EO Directions

[Anderson and Decker 2003:] T26S R73W S12 NE1/4. Zone: 13, Northing: 4184281, Easting: 457282. Medano Pass Road near campsite 0.9. Elevation: 8700 ft.

Latitude 374824N **Longitude** 1052906W

County Name
Saguache (CO)

Watershed
13010003 - San Luis

Township/Range/Section (TRS)

Township/Range	Section	Meridian	TRS Note
026S073W	12	6P	

USGS 7.5 Minute Quadrangle

Quad Code	Quad Name
37105-G4	Medano Pass

Mapping Information

Estimated Representation Accuracy Very High (>95%)

Calculated Representation Accuracy -

Confidence Extent N - Confident full extent of EO is NOT known

Old Mapping Methodology No **Boundaries** Y - Yes **Mapping Precision** S - Seconds

Survey Information

Survey Site Name Medano Creek

Survey Type No Data **Surveyor** No Data

Survey Date 2003-08-15

First Observation 2003-08-15 **Last Observation** 2003-08-15

EO Data
No Data

Monitoring Needs
No Data

Research Needs
No Data

EO Rank

Basic EO Rank E - Verified extant (viability not assessed)

Origin Subrank None

EO Rank Date 01/14/2004

EO Rank Comment
No Data

Rank Considerations

Condition of EO No Data

Condition Cmnt No Data

Size of EO No Data

Size Rating No Data

Landscape Context No Data

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Element Occurrence Report

State Scientific Name *Cryptantha pustulosa* **EO ID** 11784

State Common Name Catseye **EO Code** PDBOR0A3K7 * 5

Landscape Context Rating No Data

Description

EO Type

No Data

General Description

[Anderson and Decker 2003:] Valley with Populus tremuloides, Picea pungens, and Pseudotsuga menzeisii. Growing on rocky open slope with Stipa and Oryzopsis micrantha. Elevation: 8700 ft.

Environment Comments

No Data

Protection/Management

U.S. Endangered Species Act Status None

State Protection Status (CDOW) None

Protection Comments

[Anderson and Decker 2003:] Within National Monument and Preserve.

Management Comments

[Anderson and Decker 2003:] Current management appears fine.

Additional Topics

General Comments

[CNHP:] Map provided by Anderson and Decker 2003.

Additional Topics

No Data

Documentation/Version

Reference Code	Citation	Primary
F03AND01COUS	Anderson, D. and K. Decker. 2003. Colorado Natural Heritage Program Field Survey of the Great Sand Dunes National Monument and Preserve.	Y

Specimen

Anderson, D. and K. Decker. 2003 Specimen (collection #DA-03-06) at Great Sand Dunes Herbarium.

Version Author No Data **Version Date**

Lead Responsibility No Data

Other Attributes

Min. Elevation	- **feet**	- **meters**
Max. Elevation	- **feet**	- **meters**
EO Observed Area	- **acres**	

Calculated Attributes

Attribute Name	Attribute Value
ACREAGE	0.482729
Ecoregion	COLORADO ROCKY MOUNTAINS
HECTARES	0.195354
LATITUDE_DD	37.8068
LONGITUDE_DD	-105.485
Land_Status	USFS
UTM_EASTING	457281.121846
UTM_NORTHING	4184280.897442
UTM_ZONE	13

Calculated Attributes and Locators generated in ArcView GIS
Land Status derived from Colorado Gap Analysis Land Status, 1998

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Element Occurrence Report

State Scientific Name *Cryptantha pustulosa* **EO ID** 11785

State Common Name Catseye **EO Code** PDBOR0A3K7 * 6

Basic Information

Higher Taxonomy PDBOR **Nation** US **State** CO

Shape ID 40057 **Element ID** 22340

Global Imperilment Rank G5TNR **State Imperilment Rank** S1

Basic EO Rank A - Excellent estimated viability

Occurrence Type Principal EO **Mapping Precision** S - Seconds

Principal EO ID (if a Sub-EO) - **Principal EO Number** -

CNHP Potential Conservation Area

Site ID	Site Code	Potential Conservation Area Name	EO Driving Biodiversity Rank
-	No Data	No Data	No

Locators

EO Directions

[Doyle and Decker 2003:] T25S R73W S31. Zone: 13, Northing: 4187095, Easting: 447419. Near Great Sand Dunes National Monument Sand Creek Ranger Station. North side of Sand Creek about 500 feet northwest of ranger station. Along both sides of the two-track road. Elevation: 7880 ft.

Latitude 374954N **Longitude** 1053553W

County Name
Saguache (CO)

Watershed
13010003 - San Luis

Township/Range/Section (TRS)

Township/Range	Section	Meridian	TRS Note
000X000X	00	XX	[CNHP:] TRS UNSURVEYED.

USGS 7.5 Minute Quadrangle

Quad Code	Quad Name
37105-G5	Liberty

Mapping Information

Estimated Representation Accuracy Very High (>95%)

Calculated Representation Accuracy -

Confidence Extent N - Confident full extent of EO is NOT known

Old Mapping Methodology No **Boundaries** Y - Yes **Mapping Precision** S - Seconds

Survey Information

Survey Site Name Sand Creek

Survey Type No Data **Surveyor** No Data

Survey Date 2003-07-14

First Observation 2003-07-14 **Last Observation** 2003-07-14

EO Data

[Doyle and Decker 2003:] Common.

Monitoring Needs

No Data

Research Needs

No Data

EO Rank

Basic EO Rank A - Excellent estimated viability

Origin Subrank None

EO Rank Date 07/14/2003

EO Rank Comment

[Doyle and Decker 2003:] Population not surveyed but likely extensive. Size: A, Plants not counted but area of occupancy/potential habitat at least 500 acres. Condition: A, little disturbance. Landscape context: A, little public access, newly acquired National Park Preserve.

Rank Considerations

Condition of EO No Data

Condition Cmnt No Data

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Element Occurrence Report

State Scientific Name *Cryptantha pustulosa* **EO ID** 11785

State Common Name Catseye **EO Code** PDBOR0A3K7 * 6

Size of EO No Data

Size Rating No Data

Landscape Context No Data

Landscape Context Rating No Data

Description

EO Type

No Data

General Description

[Doyle and Decker 2003:] Sparsley vegetated sand dunes with Psoralidium lanceolatum, Senecio multicapitatus and Oryzopsis hymenoides. Light exposure: full sun. Parent material: sand dunes. Elevation: 7880 ft.

Environment Comments

No Data

Protection/Management

U.S. Endangered Species Act Status None

State Protection Status (CDOW) None

Protection Comments

No Data

Management Comments

[Doyle and Decker 2003:] Current management appears to be fine. Exotic species: none noted in this area.

Additional Topics

General Comments

[CNHP:] Map provided by Doyle and Decker 2003.

Additional Topics

No Data

Documentation/Version

Reference Code	Citation	Primary
F03DOY02COUS	Doyle, G. 2003. Colorado Natural Heritage Program Vascular Plant Inventory of Great Sand Dunes National Monument and Preserve.	Y

Specimen

Doyle, G. and K. Decker. 2003. Specimen (collection #GD-03-02) at Great Sand Dunes Herbarium.

Version Author No Data **Version Date**

Lead Responsibility No Data

Other Attributes

Min. Elevation - **feet** - **meters**

Max. Elevation - **feet** - **meters**

EO Observed Area - **acres**

Calculated Attributes

Attribute Name	Attribute Value
ACREAGE	0.482729
Ecoregion	COLORADO ROCKY MOUNTAINS
HECTARES	0.195354
LATITUDE_DD	37.8316
LONGITUDE_DD	-105.598
Land_Status	PRIVATE
UTM_EASTING	447419.487151
UTM_NORTHING	4187094.711555
UTM_ZONE	13

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Element Occurrence Report

State Scientific Name	*Cryptantha pustulosa*	**EO ID**	11785
State Common Name	Catseye	**EO Code**	PDBOR0A3K7 * 6

Calculated Attributes and Locators generated in ArcView GIS
Land Status derived from Colorado Gap Analysis Land Status, 1998

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Element Occurrence Report

State Scientific Name *Picradenia helenioides* **EO ID** 11859

State Common Name Intermountain Bitterweed **EO Code** PDAST530A0 * 7

Basic Information

Higher Taxonomy PDAST **Nation** US **State** CO

Shape ID 42926 **Element ID** 22924

Global Imperilment Rank G3G4Q **State Imperilment Rank** S1

Basic EO Rank E - Verified extant (viability not assessed)

Occurrence Type Principal EO **Mapping Precision** S - Seconds

Principal EO ID (if a Sub-EO) - **Principal EO Number** -

CNHP Potential Conservation Area

Site ID	Site Code	Potential Conservation Area Name	EO Driving Biodiversity Rank
-	No Data	No Data	No

Locators

EO Directions

[Doyle and Dixon 2003:] T27S R72W S5. Zone: 13, Northing: 4175810, Easting: 459209. Great Sand Dunes National Monument and Preserve. Mosca Pass Trail, 1/2 mile west of Mosca Pass. Elevation: 9600 ft.

Latitude 374350N **Longitude** 1052747W

County Name
Alamosa (CO)

Watershed
13010003 - San Luis

Township/Range/Section (TRS)

Township/Range	Section	Meridian	TRS Note
027S072W	05	6P	

USGS 7.5 Minute Quadrangle

Quad Code	Quad Name
37105-F4	Mosca Pass

Mapping Information

Estimated Representation Accuracy High (>80%, <=95%)

Calculated Representation Accuracy -

Confidence Extent ? - Uncertain whether full extent of EO is known

Old Mapping Methodology No **Boundaries** Y - Yes **Mapping Precision** S - Seconds

Survey Information

Survey Site Name Mosca Pass

Survey Type No Data **Surveyor** No Data

Survey Date 2003-06-19

First Observation 2003-06-19 **Last Observation** 2003-06-19

EO Data

[Doyle and Dixon 2003:] Plants scattered, size of population not surveyed. Meadow covers about 20-40 acres. Flower: 100%.

Monitoring Needs

No Data

Research Needs

No Data

EO Rank

Basic EO Rank E - Verified extant (viability not assessed)

Origin Subrank None

EO Rank Date 04/08/2004

EO Rank Comment

[Dixon and Doyle 2003:] Size: meadow covers about 20-40 acres. Plants scattered, size of population not surveyed. Condition: B, smooth brome dominant in patches, evidence of past grazing. Landscape context: A, within National Park.

Rank Considerations

Condition of EO [Doyle and Dixon 2003:] Condition: B, smooth brome dominant in patches, evidence of past grazing.

Condition Cmnt No Data

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Element Occurrence Report

State Scientific Name *Picradenia helenioides* **EO ID** 11859

State Common Name Intermountain Bitterweed **EO Code** PDAST530A0 * 7

Size of EO [Doyle and Dixon 2003:] Size: meadow covers about 20-40 acres. Plants scattered, size of population not surveyed.

Size Rating No Data

Landscape Context [Doyle and Dixon 2003:] Landscape context: A, within National Park.

Landscape Context Rating No Data

Description

EO Type

No Data

General Description

[Dolye and Dixon 2003:] Trailside in sunny, dry meadow. Associated species: Hymenoxys richardsonii, Dugaldia hoopseii, Bromus inermis, Cirsium canescens, Koeleria macrantha and Festuca arizonica. Light exposure: full sun. Dominant plant community: grasses. Elevation: 9600 ft.

Environment Comments

No Data

Protection/Management

U.S. Endangered Species Act Status None

State Protection Status (CDOW) None

Protection Comments

No Data

Management Comments

[Dolye and Dixon 2003:] Exotic species: Bromus inermis.

Additional Topics

General Comments

CNHP:] Map provided by Dolye and Dixon 2003.

Additional Topics

No Data

Documentation/Version

Reference Code	Citation	Primary
F03DOY02COUS	Doyle, G. 2003. Colorado Natural Heritage Program Vascular Plant Inventory of Great Sand Dunes National Monument and Preserve.	Y

Specimen

Doyle, G. and H. Dixon. 2003. Specimen (collection GD 03-16a) at Great Sand Dunes Herbarium.

Version Author No Data **Version Date**

Lead Responsibility No Data

Other Attributes

Min. Elevation - **feet** - **meters**

Max. Elevation - **feet** - **meters**

EO Observed Area - **acres**

Calculated Attributes

Attribute Name	Attribute Value
ACREAGE	0.482729
Ecoregion	COLORADO ROCKY MOUNTAINS
HECTARES	0.195354
LATITUDE_DD	37.7305
LONGITUDE_DD	-105.463
Land_Status	USFS
UTM_EASTING	459208.950236
UTM_NORTHING	4175810.451921

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Element Occurrence Report

State Scientific Name	*Picradenia helenioides*	**EO ID**	11859
State Common Name	Intermountain Bitterweed	**EO Code**	PDAST530A0 * 7

UTM_ZONE 13

Calculated Attributes and Locators generated in ArcView GIS
Land Status derived from Colorado Gap Analysis Land Status, 1998

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Appendix 4

2004 Master List of Vascular Plants of the Great Sand Dunes National Monument and Preserve (GRSA). List of all vascular plants known from the GRSA as of 2004 including the plant checklist for the Monument (Dixon 1999), and all species documented by this research in 2002 (Spackman Panjabi and Decker 2002) and in 2003 (Table 1). Additional work is needed to assure consistent use of plant names for this new master list, particularly for the species documented prior to 2002. Species are listed in alphabetical order by family (Weber and Wittmann 2001). Non-native species are listed in bold (Weber and Wittmann 2001). Rare species are underlined (Colorado Natural Heritage Program 2004). An electronic copy of this list including additional information has been provided to GRSA Biologist, Phyllis Pineda Bovin.

Family (Weber and Wittmann 2001)	GRSA 2002	2002 collection	2003 collection	Latin name (Weber and Wittmann 2001)	Latin name (GRSA/PLANTS)	Common name
ACERACEAE	1			*Acer glabrum*	*Acer glabrum*	Rocky Mountain maple
AGAVACEAE	1			*Yucca glauca*	*Yucca glauca*	Yucca
ALLIACEAE	1			*Allium cernuum*	*Allium cernuum*	Nodding onion
ALLIACEAE	1	1		*Allium geyeri*	*Allium geyeri*	Geyer's onion
ALSINACEAE	1	1		***Cerastium fontanum***	***Cerastium fontanum***	**Mouse-ear chickweed**
ALSINACEAE	1			*Cerastium nutans var. brachypodum*	*Cerastium nutans*	Chickweed
ALSINACEAE				*Cerastium strictum*	*Cerastium arvense*	Mouse-ear
ALSINACEAE	1	1		*Eremogone fendleri*	*Arenaria fendleri var. fendleri*	Fendler sandwort
ALSINACEAE			1	*Lidia obtusiloba*	*Minuartia obtusiloba*	Alpine sandwort
ALSINACEAE			1	*Spergulastrum lanuginosum*	*Arenaria lanuginosa ssp. saxosa*	Spreading sandwort
ALSINACEAE			1	*Stellaria calycantha*	*Stellaria calycantha*	Chickweed
ALSINACEAE	1	1		*Stellaria crassifolia*	*Stellaria crassifolia*	Thickleaved chickweed
ALSINACEAE	1			*Stellaria longifolia*	*Stellaria longifolia*	Chickweed
AMARANTHACEAE	1			***Amaranthus blitoides***	***Amaranthus blitoides***	**Prostrate pigweed**
AMARANTHACEAE	1			***Amaranthus retroflexus***	***Amaranthus retroflexus***	**Rough pigweed**
ANACARDIACEAE	1			*Rhus aromatica trilobata and R a pilosissima*	*Rhus trilobata*	Skunkbush
APIACEAE	1	1		*Angelica grayi*	*Angelica grayi*	Gray's angelica
APIACEAE	1			*Cymopterus acaulis*	*Cymopterus acaulis*	Stemless cymopterus
APIACEAE	1			*Heracleum sphondylium ssp. montanum*	*Heracleum lanatum*	Cow parsnip
APIACEAE	1			*Ligusticum porteri*	*Ligusticum porteri*	Osha
APIACEAE	1			*Oreoxis alpina*	*Oreoxis alpina*	Alpine parsley
APIACEAE			1	*Oreoxis bakeri*	*Oreoxis bakeri*	Baker's alpine parsley
APIACEAE	1	1		*Osmorhiza depauperata*	*Osmorhiza depauperata*	Blunt-fruit sweet-cicely
APIACEAE	1			*Oxypolis fendleri*	*Oxypolis fendleri*	Cowbane
APIACEAE	1	1		*Pseudocymopterus montanus*	*Pseudocymopterus montanus*	Yellow mountain parsley
APOCYNACEAE	1			*Apocynum androsaemifolium*	*Apocynum androsaemifolium*	Dogbane
ASCLEPIADACEAE	1			*Asclepias speciosa*	*Asclepias speciosa*	Showy milkweed

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ASTERACEAE	1			*Achillea lanulosa*	*Achillea lanulosa*	Yarrow
ASTERACEAE				***Acroptilon repens***	***Acroptilon repens***	**Russian knapweed, hardheads**
ASTERACEAE			1	*Agoseris aurantiaca*	*Agoseris aurantiaca*	Orange agoseris
ASTERACEAE			1	*Agoseris glauca* ssp. *dasycephala*	*Agoseris glauca var. dasycephala*	Pale agoseris
ASTERACEAE	1			*Almutaster pauciflorus (in Aster)*	*Aster pauciflorus*	Few-flowered aster
ASTERACEAE	1			*Ambrosia acanthicarpa*	*Ambrosia acanthicarpa*	Bur-sage
ASTERACEAE			1	*Anaphalis margaritacea*	*Anaphalis margaritacea*	Pearly everlasting
ASTERACEAE			1	*Antennaria media*	*Antennaria media*	Pussytoes
ASTERACEAE	1			*Antennaria microphylla*	*Antennaria microphylla*	Littleleaf pussytoes
ASTERACEAE	1			*Antennaria parvifolia*	*Antennaria parvifolia*	Pussytoes
ASTERACEAE			1	*Antennaria rosea*	*Antennaria rosea*	Pink pussytoes
ASTERACEAE	1	1		*Antennaria umbrinella*	*Antennaria umbrinella*	Umber pussytoes
ASTERACEAE	1	1		*Arnica cordifolia*	*Arnica cordifolia*	Heartleaf arnica
ASTERACEAE	1	1		*Arnica mollis*	*Arnica mollis*	Hairy arnica
ASTERACEAE	1			*Artemisia carruthii*	*Artemisia carruthii*	Carruth sage
ASTERACEAE	1			*Artemisia franseriodes*	*Artemisia franseriodes*	Ragweed sage
ASTERACEAE	1			*Artemisia frigida*	*Artemisia frigida*	Fringed sage
ASTERACEAE	1			*Artemisia ludoviciana*	*Artemisia ludoviciana*	White sagebrush
ASTERACEAE	1	1		*Artemisia scopulorum*	*Artemisia scopulorum*	Alpine sagebrush
ASTERACEAE			1	*Aster foliaceus*	*Aster foliaceus var. apricum*	Alpine leafybract aster
ASTERACEAE	1			*Aster lanceolatus ssp. hesperius*	*Aster hesperius*	Marsh aster
ASTERACEAE	1			*Bahia dissecta*	*Bahia dissecta*	Yellow ragweed
ASTERACEAE	1			*Bidens cernua*	*Bidens cernua*	Nodding beggar-ticks
ASTERACEAE	1			*Brachyacatis frondosus*	*Brachyacatis frondosus*	Aster
ASTERACEAE	1			***Breea arvensis***	***Cirsium arvense***	**Canada thistle**
ASTERACEAE	1			*Brickellia grandiflora*	*Brickellia grandiflora*	Bricklebush
ASTERACEAE			1	*Chaenactis douglasii*	*Chaenactis douglasii*	Alpine dusty maiden
ASTERACEAE	1			*Chrysothamnus greenei*	*Chrysothamnus greenei*	Greene's rabbitbrush

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ASTERACEAE	1			*Chrysothamnus nauseosus*	*Chrysothamnus nauseosus*	Rubber rabbitbrush
ASTERACEAE				*Chrysothamnus parryi*	*Chrysothamnus parryi*	Parry's rabbitbrush
ASTERACEAE	1			*Chrysothamnus viscidiflorus*	*Chrysothamnus linifolius/viscidiflorus*	Rabbitbrush
ASTERACEAE	1	1		*Cirsium canescens*	*Cirsium canescens*	Platte thistle
ASTERACEAE	1			*Cirsium parryi*	*Cirsium parryi*	Parry's thistle
ASTERACEAE			1	*Cirsium scopulorum*	*Cirsium scopulorum*	Alpine thistle
ASTERACEAE	1			*Cirsium undulatum*	*Cirsium undulatum*	Wavyleaf thistle
ASTERACEAE	1			*Conyza canadensis*	*Conyza canadensis*	Horseweed
ASTERACEAE	1			*Cyclachaena xanthifolia*	*Iva xanthifolia*	Marshelder
ASTERACEAE	1	1		*Dugaldia hoopesii*	*Hymenoxys hoopesii*	Orange sneezeweed
ASTERACEAE				*Dyssodia papposa*	*Dyssodia papposa*	Fetid marigold
ASTERACEAE			1	*Erigeron coulteri*	*Erigeron coulteri*	Coulter's fleabane
ASTERACEAE				*Erigeron divergens*	*Erigeron divergens*	Spreading fleabane
ASTERACEAE	1	1		*Erigeron elatior*	*Erigeron elatior*	Tall fleabane
ASTERACEAE			1	*Erigeron eximius*	*Erigeron eximius*	Sprucefir fleabane
ASTERACEAE	1			*Erigeron flagellaris*	*Erigeron flagellaris*	Trailing fleabane
ASTERACEAE	1	1		*Erigeron melanocephalus*	*Erigeron melanocephalus*	Blackhead fleabane
ASTERACEAE			1	*Erigeron peregrinus ssp. callianthemus*	*Erigeron peregrinus ssp. callianthemus*	Subalpine fleabane
ASTERACEAE	1	1		*Erigeron pinnatisectus*	*Erigeron pinnatisectus*	Featherleaf fleabane
ASTERACEAE	1			*Erigeron speciosus*	*Erigeron specious*	Showy fleabane
ASTERACEAE			1	*Erigeron subtrinervis*	*Erigeron subtrinervis*	Three-nerved fleabane
ASTERACEAE	1			*Erigeron vetensis*	*Erigeron vetensis*	La Veta daisy
ASTERACEAE	1			*Gaillardia aristata*	*Gaillardia aristata*	Common blanketflower
ASTERACEAE	1			*Gnaphalium uliginosum*	*Gnaphalium exilifolium*	Slender cudweed
ASTERACEAE	1			***Gnaphalium uliginosum***	***Gnaphalium uliginosum***	**Cudweed**
ASTERACEAE	1			*Grindelia squarrosa*	*Grindelia squarrosa*	Gumweed
ASTERACEAE				*Gutierrezia sarothrae*	*Gutierrezia sarothrae*	Snakeweed
ASTERACEAE	1			*Helianthus petiolaris*	*Helianthus petiolaris*	Prairie sunflower
ASTERACEAE	1			*Heliomeris multiflora*	*Viguiera multiflora*	Golden-eye
ASTERACEAE	1	1		*Heterotheca canescens*	*Heterotheca canescens*	Ray goldaster
ASTERACEAE	1			*Heterotheca villosa*	*Heterotheca villosa*	Hairy golden-aster

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ASTERACEAE	1			*Hymenopappus filifolius*	*Hymenopappus filifolius*	Columbia cutleaf
ASTERACEAE			1	*Iva axillaris*	*Iva axillaris*	Povertyweed
ASTERACEAE	1			*Lactuca tatarica ssp. pulchella*	*Lactuca tatarica*	Blue lettuce
ASTERACEAE			1	*Ligularia amplectens*	*Senecio amplectens var. amplectens*	Showy alpine ragwort
ASTERACEAE			1	*Ligularia biglovii var. hallii*	*Senecio bigelovii var.hallii*	Hall's ragwort
ASTERACEAE	1			*Ligularia pudica*	*Senecio pudicus*	Tall nodding butterweed
ASTERACEAE	1			*Lygodesmia juncea*	*Lygodesmia juncea*	Skeletonweed
ASTERACEAE	1			*Machaeranthera canescens*	*Machaeranthera canescens*	Hoary aster
ASTERACEAE				*Machaeranthera pinnatifida*	*Haplopappus spinulosus*	Spiny goldenweed
ASTERACEAE	1			*Machaeranthera tanacetifolia*	*Machaeranthera tanacetifolia*	Tansy aster
ASTERACEAE	1			*Oligosporus caudatus*	*Artemisia campestris*	Wormwood
ASTERACEAE	1			*Oligosporus drancunculus*	*Artemisia drancunculus*	Wild tarragon
ASTERACEAE	1	1		*Oligosporus groenlandicus*	*Artemisia campestris var. borealis*	
ASTERACEAE	1	1		*Oreochrysum parryi*	*Oreochrysum parryi*	Parry's goldenrod
ASTERACEAE	1			*Packera dimorphophylla*	*Senecio dimorphophyllus*	Two-leaved butterweed
ASTERACEAE	1			*Packera fendleri*	*Packera fendleri*	Fendler senecio
ASTERACEAE	1			*Packera tridenticulata*	*Packera tridenticulatus*	Three-toothed groundsel
ASTERACEAE				*Packera werneriifolia*	*Senecio werneriifolius*	Rock butterweed
ASTERACEAE			1	*Picradenia helenioides*	*Hymenoxys helenioides*	Sneezeweed-Hymenoxys
ASTERACEAE	1			*Picradenia richardsonii*	*Hymenoxys richardsonii*	Pingue
ASTERACEAE	1			*Picradeniopsis oppositifolia*	*Bahia oppositifolia*	Plains bahia
ASTERACEAE	1			*Psilochenia runcinata*	*Crepis runcinata ssp. runcinata*	Hawksbeard
ASTERACEAE	1			*Rudbeckia ampla*	*Rudbeckia laciniata var. ampla*	Tall cone-flower
ASTERACEAE	1			*Rudbeckia hirta*	*Rudbeckia hirta*	Black-eyed Susan
ASTERACEAE	1			*Schkuhria neomexicana*	*Bahia neomexicana*	New Mexico bahia

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ASTERACEAE	1	1		*Senecio atratus*	*Senecio atratus*	Tall blacktip ragwort
ASTERACEAE	1			*Senecio eremophilus ssp. kingii*	*Senecio eremophilus var. kingii*	Ragweed groundsel
ASTERACEAE			1	*Senecio fremontii var. blitoides*	*Senecio fremontii var. blitoides*	Fremont's butterweed
ASTERACEAE	1	1		*Senecio multicapitatus*	*Senecio spartioides* var. *multicapitatus*	Broomlike ragwort
ASTERACEAE	1			*Senecio spartioides*	*Senecio spartioides*	Broom senecio
ASTERACEAE	1	1		*Senecio triangularis*	*Senecio triangularis .*	Arrowleaf groundsel
ASTERACEAE	1			*Seriphidium tridentatum*	*Artemisia tridentata*	Big sagebrush
ASTERACEAE	1			*Solidago multiradiata*	*Solidago multiradiata*	Mountain goldenrod
ASTERACEAE	1	1		*Solidago nana {S. simplex nana?}*	*Solidago nana*	Baby goldenrod
ASTERACEAE	1			*Solidago simplex var. simplex*	*Solidago spathulata*	Dwarf goldenrod
ASTERACEAE	1			*Solidago velutina*	*Solidago sparsiflora*	Few-flowered goldenrod
ASTERACEAE				***Sonchus oleraceus***	***Sonchus oleraceus***	**Sow thistle**
ASTERACEAE			1	**Sonchus uliginosus**	***Sonchus arvensis ssp. uliginosus***	**Sow thistle**
ASTERACEAE	1			*Stephanomeria pauciflora*	*Stephanomeria pauciflora*	Wirelettuce
ASTERACEAE	1			***Taraxacum officinale***	***Taraxacum officinale***	**Dandelion**
ASTERACEAE	1			*Tetradymia canescens*	*Tetradymia canescens*	Horsebrush
ASTERACEAE	1			*Tetraneuris acaulis*	*Hymenoxys acaulis*	Stemless hymenoxys
ASTERACEAE	1	1		*Tetraneuris brevifolia*	*Tetraneuris acaulis* var. *caespitosa*	Caespitose hymenoxys
ASTERACEAE	1			*Thelesperma filifolium*	*Thelesperma filifolium*	Greenthread
ASTERACEAE			1	*Tonestus pygmaeus*	*Tonestus pygmaeus*	Dwarf goldenweed
ASTERACEAE	1			*Townsendia exscapa*	*Townsendia exscapa*	Easter daisy
ASTERACEAE	1			***Tragopogon dubius* ssp. major**	***Tragopogon dubius***	**Salsify**
ASTERACEAE	1			*Trimorpha elongata (Erig. Key)*	*Erigeron acris*	Bitter fleabane
ASTERACEAE	1			*Trimorpha lonchophylla (Erig. Key)*	*Erigeron lonchophyllus*	Spearleaf fleabane

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ASTERACEAE	1			*Virgulaster ascendens (in Aster)*	*Aster ascendens*	Pacific aster
ASTERACEAE	1			*Ximenesina encelioides*	*Verbesina encelioides*	Golden crownbeard
ATHYRIACEAE			1	*Cystopteris fragilis*	*Cystopteris fragilis*	Fragile fern
BERBERIDACEAE				*Berberis fendleri*	*Berberis fendleri*	Fendler's barberry
BERBERIDACEAE				*Mahonia repens*	*Mahonia repens*	Oregon grape
BETULACEAE			1	*Betula fontinalis*	*Betula occidentalis*	River birch
BETULACEAE	1			*Alnus incana*	*Alnus incana*	Thinleaf alder
BORAGINACEAE	1			*Cryptantha fendleri*	*Cryptantha fendleri*	Fendler's hidden flower
BORAGINACEAE	1			*Hackelia floribunda*	*Hackelia floribunda*	False forget-me-not
BORAGINACEAE	1			*Lappula redowskii*	*Lappula redowskii*	Stickseed
BORAGINACEAE	1			*Lithospermum incisum*	*Lithospermum incisum*	Narrow-leaf puccoon
BORAGINACEAE	1			*Lithospermum multiflorum*	*Lithospermum multiflorum*	Many-flowered puccoon
BORAGINACEAE	1			*Mertensia ciliata*	*Mertensia ciliata*	Tall chimingbells
BORAGINACEAE	1			*Mertensia lanceolata*	*Mertensia lanceolata*	Narrow-leaf bluebells
BORAGINACEAE	1	1		*Oreocarya pustulosa*	*Cryptantha cinerea var. pustulosa*	San Juan cryptantha
BORAGINACEAE	1			*Oreocarya suffruticosa*	*Cryptantha jamesii*	James' hidden flower
BRASSICACEAE	1			*Arabis hirsuta*	*Arabis hirsuta*	Hairy rock cress
BRASSICACEAE			1	*Boechera divaricarpa*	*Arabis xdivaricarpa*	Spreadingpod rockcress
BRASSICACEAE				*Boechera drummondii*	*Arabis drummondii*	Drummond's rock cress
BRASSICACEAE				*Boechera fendleri*	*Arabis fendleri*	Fendler's rock cress
BRASSICACEAE			1	***Camelina microcarpa***	***Camelina microcarpa***	**False flax**
BRASSICACEAE			1	***Capsella bursa-pastoris***	***Capsella bursa-pastoris***	**Shepherd's purse**
BRASSICACEAE	1			*Cardamine cordifolia*	*Cardamine cordifolia*	Heartleaf bittercress
BRASSICACEAE			1	***Cardaria pubescens***	***Cardaria pubescens***	**Hairy whitetop**
BRASSICACEAE	1			*Descurainia incana*	*Descurainia richardsonii*	Tansy mustard
BRASSICACEAE	1			*Descurainia pinnata*	*Descurainia pinnata*	Tansy mustard
BRASSICACEAE			1	***Descurainia sophia***	***Descurainia sophia***	**Flixweed**
BRASSICACEAE	1			*Draba aurea*	*Draba aurea*	Whitlow grass
BRASSICACEAE	1			*Draba breweri var. cana*	*Draba lanceolata*	White draba
BRASSICACEAE	1	1		*Draba smithii*	*Draba smithii*	Smith's draba
BRASSICACEAE	1	1		*Draba streptocarpa*	*Draba streptocarpa*	Pretty whitlowgrass
BRASSICACEAE	1			*Erysimum asperum*	*Erysimum asperum*	Wallflower

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BRASSICACEAE	1	1		*Erysimum capitatum*	*Erysimum capitatum*	Western wallflower
BRASSICACEAE				*Erysimum inconspicuum*	*Erysimum inconspicuum*	Small-flowered wallflower
BRASSICACEAE			**1**	***Hymenolobus procumbens***	***Hutchinsia procumbens***	**Prostrate hutchinsia**
BRASSICACEAE	1			*Lepidium alyssoides*	*Lepidium montanum*	Peppergrass
BRASSICACEAE	1			*Lesquerella montana*	*Lesquerella montana*	Mountain bladderpod
BRASSICACEAE			1	***Nasturtium officinale***	***Rorippa nasturtium-aquaticum***	**Watercress**
BRASSICACEAE				*Noccaea montana*	*Thlaspi montanum*	Candytuft
BRASSICACEAE			1	*Rorippa alpina*	*Rorippa alpina*	Alpine yellowcress
BRASSICACEAE	1			*Rorippa sphaerocarpa*	*Rorippa sphaerocarpa*	Water cress
BRASSICACEAE				***Sisymbrium altissimum***	***Sisymbrium altissimum***	**Tumble mustard**
BRASSICACEAE			1	***Thlaspi arvense***	***Thlaspi arvense***	**Field pennycress**
CACTACEAE				*Corypantha vvivipara* var. vivipara	*Corypantha vivipara*	Ball cactus
CACTACEAE			1	*Echinocereus triglochidiatus*	*Echinocereus triglochidiatus*	Claret cup
CACTACEAE				*Echinocereus viridiflorus*	*Echinocereus viridiflorus*	Hen-and-chickens
CACTACEAE	1			*Opuntia polyacantha*	*Opuntia polyacantha*	Starvation prickly pear
CACTACEAE				*Pediocactus simpsonii*	*Pediocactus simpsonii*	Ball cactus
CALOCHORTACEAE			1	*Calochortus gunnisonii*	*Calochortus gunnisonii*	Mariposa lily
CAMPANULACEAE	1			*Campanula parryi*	*Campanula parryi*	Purple bellflower
CAMPANULACEAE	1			*Campanula rotundifolia*	*Campanula rotundifolia*	Harebell
CAMPANULACEAE	1			*Campanula uniflora*	*Campanula uniflora*	Arctic bellflower
CANNABACEAE	1			*Humulus lupulus ssp. americanus*	*Humulus lupulus*	Hops
CAPPARIDACEAE			1	*Cleome multicaulis*	*Cleome multicaulis*	Slender spiderflower
CAPPARIDACEAE	1			*Cleome serrulata*	*Cleome serrulata*	Rocky Mountain beeplant
CAPRIFOLIACEAE	1			*Distegia involucrata*	*Lonicera involucrata*	Twinberry
CAPRIFOLIACEAE	1			*Sambucus microbotrys*	*Sambucus microbotrys*	Red-berried elder
CAPRIFOLIACEAE	1			*Symphoricarpos rotundifolius*	*Symphoricarpos rotundifolius*	Round-leaf snowberry
CARYOPHYLLACEAE				*Gastrolychnis drummondii*	*Lychnis drummondii*	Campion

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CARYOPHYLLACEAE	1	1		*Silene acaulis* ssp. *subacaulescens*	*Silene acaulis* var. *subacaulescens*	Moss campion
CERATOPHYLLACEAE	1			*Ceratophyllum demersum*	*Ceratophyllum demersum*	Hornwort
CHENOPODIACEAE	1			*Atriplex canescens*	*Atriplex canescens*	4-wing saltbrush
CHENOPODIACEAE	1			*Bassia hyssopifolia*	*Corispermum hyssipifolium*	Bugseed
CHENOPODIACEAE	1			***Bassia sieversiana***	***Kochia scoparia***	**Kochia**
CHENOPODIACEAE	1	1		***Chenopodium album***	***Chenopodium album***	**White goosefoot**
CHENOPODIACEAE	1			*Chenopodium capitatum*	*Chenopodium capitatum*	Strawberry blite
CHENOPODIACEAE	1			*Chenopodium fremontii*	*Chenopodium fremontii*	Fremont goosefoot
CHENOPODIACEAE	1			***Chenopodium glaucum***	***Chenopodium glaucum***	**Pale lamb's-quarters**
CHENOPODIACEAE	1			*Chenopodium leptophyllum*	*Chenopodium leptophyllum*	Narrow-leaf goosefoot
CHENOPODIACEAE				*Chenopodium rubrum*	*Chenopodium rubrum*	Red goosefoot
CHENOPODIACEAE	1			*Corispermum americanum*	*Corispermum nitidum*	Bugseed
CHENOPODIACEAE	1			*Cycloloma atriplicifolium*	*Cycloloma atriplicifolium*	Winged pigweed
CHENOPODIACEAE	1			*Krascheninnikovia lanata*	*Ceratoides lanata*	Winterfat
CHENOPODIACEAE	1			*Monolepis nuttalliana*	*Monolepis nuttalliana*	Poverty weed
CHENOPODIACEAE	1			***Salsola australis***	***Salsola tragus***	**Russian thistle**
CHENOPODIACEAE				***Salsola collina***	***Salsola collina***	**Russian thistle**
CHENOPODIACEAE	1			*Sarcobatus vermiculatus*	*Sarcobatus vermiculatus*	Greasewood, Chico
CHENOPODIACEAE				*Suaeda calceoliformis*	*Suaeda calceoliformis*	Seepweed
CONVALLARIACEAE	1			*Maianthemum amplexicaule (Convallariaceae)*	*Smilacina racemosa* ssp. *amplexicaule*	False Solomon seal
CONVALLARIACEAE	1			*Maiatnhemum stellatum (Convallariaceae)*	*Smilacina stellata*	False Solomon seal
CONVOLVULACEAE	1			***Convolvulus arvensis***	***Convolvulus arvensis***	**Bindweed**
CORNACEAE	1			*Swida sericea*	*Cornus stolonifera*	Red osier dogwood
CRASSULACEAE	1			*Amerosedum lanceolatum*	*Sedum lanceolatum*	Yellow stonecrop
CRASSULACEAE	1	1		*Clementsia rhodantha*	*Rhodiola rhodantha*	Rose crown
CRASSULACEAE			1	*Tolmachevia integrifolia*	*Rhodiola integrifolia*	King's crown
CRYPTOGRAMMACEAE	1	1		*Cryptogramma acrostichoides*	*Cryptogramma acrostichoides*	American rockbrake

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CUPRESSACEAE	1			*Juniperus communis ssp. alpina*	*Juniperus communis*	Common juniper
CUPRESSACEAE	1			*Sabina scopulorum*	*Juniperus scopulorum*	Rocky Mountain juniper
CYPERACEAE			1	*Amphiscirpus nevadensis*	*Scirpus nevadensis*	Alkali bulrush
CYPERACEAE	1	1		*Carex albonigra*	*Carex albonigra*	Black-and-white sedge
CYPERACEAE	1	1		*Carex aquatilis*	*Carex aquatilis*	Water sedge
CYPERACEAE			1	*Carex arapahoensis*	*Carex arapahoensis*	Arapaho sedge
CYPERACEAE	1	1		*Carex bella*	*Carex bella*	Showy sedge
CYPERACEAE			1	*Carex brevipes*	*Carex rossii*	Ross' sedge
CYPERACEAE			1	*Carex chalciolepis*	*Carex heteroneura var. chalciolepis*	Holm sedge
CYPERACEAE				*Carex douglasii*	*Carex douglasii*	Douglas' sedge
CYPERACEAE	1	1		*Carex ebenea*	*Carex ebenea*	Ebony sedge
CYPERACEAE			1	*Carex elynoides*	*Carex elynoides*	Blackroot sedge
CYPERACEAE			1	*Carex geophila*	*Carex geophila*	White Mountain sedge
CYPERACEAE	1			*Carex interior*	*Carex interior*	Inland sedge
CYPERACEAE	1	1		*Carex lanuginosa*	*Carex pellita*	Woolly sedge
CYPERACEAE			1	*Carex microptera*	*Carex microptera*	Smallwing sedge
CYPERACEAE	1			*Carex nebrascensis*	*Carex nebrascensis*	Nebraska sedge
CYPERACEAE			1	*Carex norvegica ssp. stevenii*	*Carex norvegica ssp. stevenii*	Steven's sedge
CYPERACEAE	1	1		*Carex nova*	*Carex nova*	New sedge
CYPERACEAE			1	*Carex occidentalis*	*Carex occidentalis*	Western sedge
CYPERACEAE	1			*Carex pensylvanica ssp. heliophilia*	*Carex heliophilia*	Sun sedge
CYPERACEAE			1	*Carex praegracilis*	*Carex praegracilis*	Clustered field sedge
CYPERACEAE	1	1		*Carex scopulorum*	*Carex scopulorum*	Holm's Rocky Mountain sedge
CYPERACEAE			1	*Carex simulata*	*Carex simulata*	Sedge
CYPERACEAE	1			*Carex stenophylla*	*Carex stenophylla*	Narrow-leaf sedge
CYPERACEAE	1	1		*Carex utriculata*	*Carex utriculata*	Beaked sedge
CYPERACEAE	1			*Cyperus aristatus*	*Cyperus aristatus*	Flat sedge
CYPERACEAE			1	*Eleocharis acicularis*	*Eleocharis acicularis*	Spike sedge
CYPERACEAE			1	*Eleocharis macrostachya*	*Eleocharis palustris*	Spike sedge

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CYPERACEAE	1	1		*Eriophorum angustifolium*	*Eriophorum angustifolium*	Tall cottongrass
CYPERACEAE			1	*Schoenoplectus lacustris ssp. acutus*	*Schoenoplectus acutus var. acutus*	Hardstem bullrush
CYPERACEAE			1	*Schoenoplectus pungens*	*Schoenoplectus pungens*	Three-square
CYPERACEAE	1	1		*Scirpus microcarpus*	*Scirpus microcarpus*	Small-flowered tule
ELEAGNACEAE	1	1		*Shepherdia canadensis*	*Shepherdia canadensis*	Russet buffaloberry
EQUISETACEAE	1			*Equisetum arvense*	*Equisetum arvense*	Field horsetail
EQUISETACEAE	1			*Hippochaete laevigata*	*Equisetum laevigatum*	Scouring-rush
ERICACEAE			1	*Arctostaphylos uva-ursi*	*Arctostaphylos uva-ursi*	Kinnikinnick
ERICACEAE			1	*Vaccinium myrtillus var. oreophilum*	*Vaccinium myrtillus var. oreophilum*	Common blueberry
EUPHORBIACEAE	1			*Chamaesyce glyptosperma*	*Euphorbia glyptosperma*	Small spurge
EUPHORBIACEAE	1			*Chamaesyce serpyllifolia*	*Euphorbia serpyllifolia*	Thyme-leaved spurge
EUPHORBIACEAE	1			*Tithymalus brachycerus*	*Euphorbia brachycera*	Rocky Mountain spurge
EUPHORBIACEAE	1	1		***Tithymalus esula***	***Euphorbia esula* var. *esula***	**Leafy spurge**
EUPHORBIACEAE			1	***Tithymalus uralensis***	***Euphorbia esula var. uralensis***	**Leafy spurge**
FABACEAE	1			*Astragalus agrestis*	*Astragalus agrestis*	Milkvetch
FABACEAE	1	1		*Astragalus alpinus*	*Astragalus alpinus*	Alpine milkvetch
FABACEAE	1			*Astragalus ceramicus var. filifolius*	*Astragalus ceramicus*	Painted pod
FABACEAE				*Astragalus cronquistii*	*Astragalus cronquistii*	Purple milkvetch
FABACEAE			1	*Astragalus scopulorum*	*Astragalus scopulorum*	Rocky Mountain milkvetch
FABACEAE				*Glycyrrhiza lepidota*	*Glycyrrhiza lepidota*	Licorice root
FABACEAE	1	1		*Lupinus argenteus*	*Lupinus argenteus*	Silvery lupine
FABACEAE	1			*Lupinus pusillus*	*Lupinus pusillus*	Low lupine
FABACEAE	1			***Melilotus alba***	***Melilotus alba***	**White sweet clover**
FABACEAE				***Melilotus officinale***	***Melilotus officinalis***	**Yellow sweet clover**
FABACEAE	1			*Oxytropis deflexa*	*Oxytropis deflexa*	Pendant pod loco
FABACEAE				*Oxytropis lambertii*	*Oxytropis lambertii*	Colorado loco
FABACEAE	1			*Oxytropis sericea*	*Oxytropis sericea*	White loco
FABACEAE			1	*Oxytropis sericea x lambertii*	*Oxytropis sericea x lambertii*	White locoweed x Colorado locoweed

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FABACEAE	1			*Psoralidium lanceolatum*	*Psoralidium lanceolata*	Scurfpea
FABACEAE			1	*Thermopsis divaricarpa*	*Thermopsis divaricarpa*	Golden banner
FABACEAE	1			*Thermopsis rhombifolia*	*Thermopsis rhombifolia*	Golden banner
FABACEAE			1	*Trifolium attenuatum*	*Trifolium attenuatum*	Rocky Mountain clover
FABACEAE	1	1		*Trifolium dasyphyllum*	*Trifolium dasyphyllum*	Alpine clover
FABACEAE	1			***Trifolium pratense***	***Trifolium pratense***	**Red clover**
FABACEAE	1			***Trifolium repens***	***Trifolium repens***	**White Dutch clover**
FABACEAE				*Trifolium wormskioldii*	*Trifolium wormskjoldii*	Wormskjold's clover
FABACEAE	1			*Vicia americana*	*Vicia americana*	American vetch
FUMARIACEAE	1			*Corydalis aurea*	*Corydalis aurea*	Golden smoke
GENTIANACEAE	1	1		*Frasera speciosa*	*Frasera speciosa*	Green gentian
GENTIANACEAE	1	1		*Gentianaodes algida*	*Gentiana algida*	Whitish gentian
GENTIANACEAE				*Gentianella acuta*	*Gentianella acuta*	Felwort
GENTIANACEAE				*Pneumonanthe affinis*	*Gentiana affinis*	Blue gentian
GENTIANACEAE	1	1		*Swertia perennis .*	*Swertia perennis .*	Star gentian
GERANIACEAE	1			***Erodium cicutarium***	***Erodium cicutarium***	**Filaree**
GERANIACEAE	1			*Geranium caespitosum*	*Geranium caespitosum*	Common geranium
GERANIACEAE			1	*Geranium richardsonii*	*Geranium richardsonii*	White geranium
GROSSULARIACEAE	1			*Ribes aureum*	*Ribes aureum*	Golden currant
GROSSULARIACEAE	1			*Ribes cereum*	*Ribes cereum*	Wax currant
GROSSULARIACEAE	1			*Ribes leptanthum*	*Ribes leptanthum*	Trumpet gooseberry
GROSSULARIACEAE	1	1		*Ribes montigenum*	*Ribes montigenum*	Gooseberry currant
HALORAGACEAE	1			*Myriophyllum sibiricum*	*Myriophyllum exalbescens*	Water-milfoil
HELLEBORACEAE	1	1		*Aconitum columbianum*	*Aconitum columbianum*	Columbia monkshood
HELLEBORACEAE	1	1		*Actaea rubra* ssp. *arguta*	*Actaea rubra* ssp. *arguta*	Red baneberry
HELLEBORACEAE			1	*Aquilegia elegantula*	*Aquilegia elegantula*	Red columbine
HELLEBORACEAE	1	1		*Delphinium barbeyi*	*Delphinium barbeyi*	Subalpine larkspur
HELLEBORACEAE			1	*Delphinium ramosum*	*Delphinium ramosum*	Larkspur
HELLEBORACEAE				*Delphinium robustum*	*Delphinium robustum*	Robust larkspur
HELLEBORACEAE	1	1		*Psychrophila leptosepala*	*Caltha leptosepala*	White marsh marigold
HELLEBORACEAE			1	*Trollius albiflorus*	*Trollius laxus ssp. albiflorus*	Globeflower
HYDRANGIACEAE	1			*Jamesia americana*	*Jamesia americana*	Waxflower
HYDROPHYLLACEAE	1			*Hydrophyllum fendleri*	*Hydrophyllum fendleri*	Fendler's waterleaf

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HYDROPHYLLACEAE	1			*Phacelia alba*	*Phacelia alba*	Fiddleneck
HYDROPHYLLACEAE	1			*Phacelia denticulata*	*Phacelia denticulata*	Rocky Mountain phacelia
HYDROPHYLLACEAE			1	*Phacelia heterophylla*	*Phacelia heterophylla*	Varileaf phacelia
HYDROPHYLLACEAE	1	1		*Phacelia sericea*	*Phacelia sericea*	Purplefringe
IRIDACEAE	1			*Iris missouriensis*	*Iris missouriensis*	Wild iris
IRIDACEAE				*Sisyrinchium montanum*	*Sisyrinchium montanum*	Blue-eyed grass
JUNCACEAE	1			*Juncus arcticus*	*Juncus balticus*	Baltic rush
JUNCACEAE			1	*Juncus bufonius*	*Juncus bufonius*	Toad rush
JUNCACEAE			1	*Juncus drummondii*	*Juncus drummondii*	Drummond's rush
JUNCACEAE	1			*Juncus ensifolius*	*Juncus ensifolius*	Sword-leaved rush
JUNCACEAE	1	1		*Juncus longistylis*	*Juncus longistylis*	Longstyle rush
JUNCACEAE	1	1		*Juncus mertensianus*	*Juncus mertensianus*	Merten's rush
JUNCACEAE	1			*Juncus nodosus*	*Juncus nodosus*	Knotted rush
JUNCACEAE			1	*Juncus parryi*	*Juncus parryi*	Parry's rush
JUNCACEAE			1	*Juncus saximontanus*	*Juncus saximontanus*	Rocky Mountain rush
JUNCACEAE	1			*Juncus tenuis*	*Juncus tenuis*	Poverty rush
JUNCACEAE			1	*Luzula comosa*	*Luzula comosa*	Woodrush
JUNCACEAE	1	1		*Luzula parviflora*	*Luzula parviflora*	Millet woodrush
JUNCACEAE			1	*Luzula spicata*	*Luzula spicata*	Spiked woodrush
JUNCAGINACEAE	1			*Triglochin maritima*	*Triglochin maritimea*	Arrowgrass
JUNCAGINACEAE				*Triglochin palustris*	*Triglochin palustris*	Arrowgrass
LAMIACEAE			1	*Dracocephalum parviflorum*	*Dracocephalum parviflorum*	Dragonhead
LAMIACEAE				*Marrubium vulgare*	*Marrubium vulgare*	Horehound
LAMIACEAE	1			*Mentha arvensis*	*Mentha arvensis*	Wild mint
LAMIACEAE	1			*Monarda pectinata*	*Monarda pectinata*	Wild oregano
LAMIACEAE	1	1		*Prunella vulgaris*	*Prunella vulgaris*	Heal-all
LAMIACEAE				*Scutellaria galericulata ssp. epilobiifolia*	*Scutellaria galericulata*	Skull cap
LAMIACEAE			1	*Stachys palustris ssp. pilosa*	*Stachys pilosa ssp. pilosa*	Hedge nettle
LEMNACEAE	1			*Lemna minor*	*Lemna minor*	Duckweed
LINACEAE	1			*Adenolinum lewisii*	*Linum lewisii*	Blue flax
LOASACEAE	1			*Acrolasia albicaulis*	*Mentzelia albicaulis*	White-stem evening star

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LOASACEAE	1			*Nuttallia multiflora*	*Mentzelia multiflora*	Many-flowered evening star
MALVACEAE	1			*Sidalacea candida*	*Sidalacea candida*	White checkermallow
MALVACEAE			1	*Sidalcea neomexicana*	*Sidalcea neomexicana*	Checkerbloom
MALVACEAE	1			*Sphaeralcea coccinea*	*Sphaeralcea coccinea*	Orange globemallow
MELANTHIACEAE	1	1		*Anticlea elegans (Melanthiaceae)*	*Zigadenus elegans* ssp. *elegans*	Mountain deathcamas
MELANTHIACEAE			1	*Veratrum tenuipetalum*	*Veratrum tenuipetalum*	False hellebore
NYCTAGINACEAE	1			*Mirabilis multiflora*	*Mirabilis multiflora*	Wild four o'clock
NYCTAGINACEAE	1			*Mirabilis oxybaphoides*	*Mirabilis oxybaphoides*	Common four o'clock
NYCTAGINACEAE	1			*Oxybaphus linearis*	*Mirabilis linearis*	Umbrellawort
NYCTAGINACEAE	1			*Tripterocalyx micranthus*	*Tripterocalyx micranthus*	Sand verbena
ONAGRACEAE	1			*Camissonia minor*	*Cammisonia minor*	Small evening primrose
ONAGRACEAE	1			*Chamerion danielsii*	*Chamerion angustifolium*	Fireweed
ONAGRACEAE	1			*Epilobium ciliatum*	*Epilobium ciliatum*	Northern willowherb
ONAGRACEAE	1	1		*Epilobium hornemannii*	*Epilobium hornemannii*	Hornemann's willowweed
ONAGRACEAE			1	*Epilobium lactiflorum*	*Epilobium lactiflorum*	Willowherb
ONAGRACEAE	1			*Gaura coccinea*	*Gaura coccinea*	Scarlet gaura
ONAGRACEAE				*Gayophytum diffusum ssp. parviflorum*	*Gayophytum diffusum*	Baby's breath
ONAGRACEAE	1			*Oenothera albicaulis*	*Oenothera albicaulis*	White-stemmed evening primrose
ONAGRACEAE	1			*Oenothera caespitosa*	*Oenothera caespitosa*	Stemless evening primrose
ONAGRACEAE	1			*Oenothera coronopifolia*	*Oenothera coronopifolia*	Cutleaf evening primrose
ONAGRACEAE	1	1		*Oenothera elata* ssp. *hirsutissima*	*Oenothera elata* ssp. *hirsutissima*	Evening primrose
ONAGRACEAE			1	*Oenothera pallida ssp. runcinata*	*Oenothera pallida ssp. runcinata*	Pale evening-primrose
ONAGRACEAE				*Oenothera villosa*	*Oenothera villosa*	Common evening primrose
ORCHIDACEAE	1			*Corallorhiza maculata*	*Corallorhiza maculata*	Spotted coralroot
ORCHIDACEAE				*Corallorhiza striata*	*Corallorhiza striata*	Striped coralroot
ORCHIDACEAE	1			*Limnorchis hyperborea*	*Habenaria hyperborea*	Northern green bog-orchid
ORCHIDACEAE	1	1		*Spiranthes romanzoffiana*	*Spiranthes romanzoffiana*	Hooded ladies'-tresses
OROBANCHACEAE	1			*Orobanche multiflora*	*Orobanche multiflora*	Many-flowered broomrape

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PARNASSIACEAE			1	*Parnassia fimbriata*	*Parnassia fimbriata*	Grass of Parnassus
PINACEAE	1			*Abies concolor*	*Abies concolor*	White fir
PINACEAE	1			*Picea pungens*	*Picea pungens*	Colorado blue spruce
PINACEAE	1	1		*Picea engelmannii*	*Picea engelmannii*	Englemann's spruce
PINACEAE	1	1		*Pinus aristata*	*Pinus aristata*	Bristlecone pine
PINACEAE	1			*Pinus edulis*	*Pinus edulus*	Pinyon pine
PINACEAE	1			*Pinus flexilis*	*Pinus flexilis*	Limber pine
PINACEAE	1			*Pinus ponderosa ssp. scopulorum*	*Pinus ponderosa*	Ponderosa pine
PINACEAE	1			*Pseudotsuga menziesii*	*Pseudotsuga menziesii*	Douglas fir
PLANTAGINACEAE	1			*Plantago major*	*Plantago major*	Common plantain
POACEAE	1			*Achnatherum hymenoides*	*Oryzopsis hymenoides*	Indian rice-grass
POACEAE			1	*Achnatherum robustum*	*Achnatherum robustum*	Sleepy grass
POACEAE	1			*Achnatherum scribneri*	*Achnatherum scribneri*	Scribner's needlegrass
POACEAE			1	***Agropyron cristatum***	***Agropyron cristatum***	**Crested wheatgrass**
POACEAE			1	***Agrostis exarata***	***Agrostis exarata***	**Spike bentgrass**
POACEAE	1			*Agrostis scabra*	*Agrostis scabra*	Ticklegrass
POACEAE	1			***Agrostis stolonifera***	***Agrostis stolonifera***	**Redtop**
POACEAE	1			*Alopecurus aequalis*	*Alopecurus aequalis*	Shortawn foxtail
POACEAE			1	***Alopecurus pratensis***	***Alopecurus pratensis***	**Meadow foxtail**
POACEAE	1			*Andropogon hallii*	*Andropogon hallii*	Sand bluestem
POACEAE	1			***Anisantha tectorum***	***Bromus tectorum***	**Cheatgrass**
POACEAE	1	1		*Aristida purpurea*	*Aristida purpurea*	Three-awn
POACEAE			1	*Blepharoneuron tricholepis*	*Blepharoneuron tricholepis*	Pine dropseed
POACEAE	1			*Bouteloua curtipendula*	*Bouteloua curtipendula*	Side-oats grama
POACEAE	1			*Bromopsis canadensis*	*Bromus ciliatus*	Fringed brome
POACEAE	1	1		***Bromopsis inermis***	***Bromus inermis***	**Smooth brome**
POACEAE	1			*Bromopsis porteri*	*Bromus anomalus*	Nodding brome
POACEAE	1	1		*Bromopsis pumpelliana*	*Bromus inermis var. pumpellianus*	Pumpelly's brome
POACEAE	1			***Bromus japonicus***	***Bromus japonicus***	**Japanese chess**
POACEAE	1	1		*Calamagrostis canadensis*	*Calamagrostis canadensis*	Canada reedgrass
POACEAE			1	*Calamagrostis purpurascens*	*Calamagrostis purpurascens*	Purple reedgrass

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POACEAE	1			*Calamagrostis stricta*	*Calamagrostis stricta/neglecta*	Slimstem reedgrass
POACEAE	1			*Calamovilfa longifolia*	*Calamovilfa longifolia*	Prairie sandreed
POACEAE			1	*Catabrosa aquatica*	*Catabrosa aquatica*	Brookgrass
POACEAE	1	1		*Ceratochloa marginata*	*Bromus carinatus*	Mountain brome
POACEAE	1			*Chondrosum gracile*	*Bouteloua gracilis*	Blue grama
POACEAE				*Chondrosum hirsutum*	*Bouteloua hirsuta*	Blue grama
POACEAE			1	*Cinna latifolia*	*Cinna latifolia*	Drooping woodreed
POACEAE	1			*Critesion jubatum*	*Hordeum jubatum*	Foxtail barley
POACEAE	1			***Dactylis glomerata***	***Dactylis glomerata***	**Orchardgrass**
POACEAE	1	1		*Danthonia intermedia*	*Danthonia intermedia*	Timber oatgrass
POACEAE	1	1		*Danthonia parryi*	*Danthonia parryi*	Parry's oatgrass
POACEAE	1	1		*Deschampsia cespitosa*	*Deschampsia caespitosa*	Tufted hairgrass
POACEAE				*Diplanchne fascicularis*	*Leptochloa fascicularis*	Sprangletop
POACEAE			1	*Distichlis stricta*	*Distichlis spicata*	Salt grass
POACEAE	1			*Elymus elymoides*	*Sitanion hystrix*	Squirreltail
POACEAE			1	*Elymus glaucus*	*Elymus glaucus*	Blue wildrye
POACEAE	1			*Elymus lanceolatum*	*Agropyron dasystachyum*	Thickspike wheatgrass
POACEAE	1	1		*Elymus scribneri*	*Elymus scribneri*	Scribner's wild rye
POACEAE	1	1		*Elymus trachycaulus*	*Elymus trachycaulus/Agropyron trachycaulum*	Slender wheatgrass
POACEAE			1	*Festuca arizonica*	*Festuca arizonica*	Arizona fescue
POACEAE	1			***Festuca ovina (not in Weber)***	***Festuca ovina***	**Sheep fescue**
POACEAE			1	*Festuca saximontana*	*Festuca saximontana*	Fescue
POACEAE	1	1		*Festuca thurberi*	*Festuca thurberi*	Thurber's fescue
POACEAE	1			*Glyceria grandis*	*Glyceria grandis*	Manna grass
POACEAE	1			*Hesperostipa comata*	*Stipa comata*	Needle-and-thread
POACEAE			1	*Hierochloe hirta ssp. arctica*	*Hierochloe hirta ssp. arctica*	Sweetgrass
POACEAE	1			*Koeleria macrantha*	*Koeleria macrantha*	Junegrass
POACEAE	1			*Leymus triticoides*	*Elymus triticoides*	Creeping wildrye
POACEAE	1			*Monroa squarrosa*	*Munroa squarrosa*	False buffalo grass

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POACEAE	1			*Muhlenbergia andina*	*Muhlenbergia andina*	Muhly
POACEAE	1			*Muhlenbergia asperifolia*	*Muhlenbergia asperifolia*	Alkali muhly
POACEAE	1			*Muhlenbergia minutissima*	*Muhlenbergia minutissima*	Minutissima
POACEAE			1	*Muhlenbergia montana*	*Muhlenbergia montana*	Mountain muhly
POACEAE	1			*Muhlenbergia pungens*	*Muhlenbergia pungens*	Sandhill muhly
POACEAE	1			*Pascopyrum smithii*	*Pascopyrum smithii*	Western wheatgrass
POACEAE	1	1		*Phleum commutatum*	*Phleum alpinum*	Alpine timothy
POACEAE	1			***Phleum pratense***	***Phleum pratense***	**Timothy grass**
POACEAE	1			*Piptatherum micranthum*	*Piptatherum micrantha*	Littleseed rice-grass
POACEAE	1			*Poa fendleriana ssp. longiligula*	*Poa fendeleriana*	Mutton grass
POACEAE	1	1		*Poa glauca* ssp. *rupicola*	*Poa glauca* ssp. *rupicola*	Timberline bluegrass
POACEAE			1	*Poa leptocoma*	*Poa leptocoma*	Bog bluegrass
POACEAE	1	1		*Poa nemoralis* ssp. *interior*	*Poa nemoralis* ssp. *interior*	Inland bluegrass
POACEAE	1			*Poa pattersonii*	*Poa pattersonii*	Patterson bluegrass
POACEAE			1	***Poa pratensis***	***Poa pratensis***	**Kentucky bluegrass**
POACEAE	1			*Puccinellia airoides*	*Puccinellia nuttaliana*	Alkali grass
POACEAE	1	1		*Redfieldia flexuosa*	*Redfieldia flexuosa*	Blowout grass
POACEAE			1	*Spartina gracilis*	*Spartina gracilis*	Alkali cordgrass
POACEAE				*Sphenopholis obtusata*	*Sphenopholis obtusata*	Wedge-grass
POACEAE			1	*Sporobolus airoides*	*Sporobolus airoides*	Alkali sacaton
POACEAE	1			*Sporobolus cryptandrus*	*Sporobolus cryptandrus*	Sand dropseed
POACEAE			1	***Thinopyrum intermedium***	***Thinopyrum intermedium***	**Intermediate wheatgrass**
POACEAE	1	1		*Trisetum montanum*	*Trisetum spicatum*	Mountain trisetum
POLEMONIACEAE	1			*Aliciella pinnatifida (in Gilia)*	*Gilia pinnatifida*	Pinnate-leaf gilia
POLEMONIACEAE			1	*Collomia linearis*	*Collomia linearis*	Narrowleaf phlox
POLEMONIACEAE	1			*Gilia micromeria*	*Gilia leptomeria*	Gilia
POLEMONIACEAE	1			*Ipomopsis aggregata*	*Ipomopsis aggregata*	Scarlet gilia
POLEMONIACEAE	1			*Ipomopsis longiflora*	*Ipomopsis longiflora*	Blue gilia
POLEMONIACEAE	1			*Leptodactylon pungens*	*Leptodactylon pungens*	Prickly gilia
POLEMONIACEAE			1	*Microsteris gracilis*	*Phlox gracilis ssp. gracilis*	Slender phlox

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POLEMONIACEAE	1	1		*Phlox condensata*	*Phlox condensata*	Dwarf phlox
POLEMONIACEAE	1			*Polemonium foliosissimum*	*Polemonium foliosissimum*	Leafy Jacob's ladder
POLEMONIACEAE	1	1		*Polemonium pulcherrimum ssp. delicatum*	*Polemonium pulcherrimum ssp. delicatum*	Jacob's-ladder
POLEMONIACEAE	1	1		*Polemonium viscosum*	*Polemonium viscosum*	Sticky Jacob's-ladder
POLYGONACEAE	1			***Acetosella vulgaris***	***Acetosella vulgaris***	**Bitter dock**
POLYGONACEAE	1	1		*Bistorta bistortoides*	*Polygonum bistortoides*	American bistort
POLYGONACEAE	1	1		*Bistorta vivipara*	*Polygonum viviparum*	Alpine bistort
POLYGONACEAE	1			*Eriogonum cernuum*	*Eriogonum cernuum*	Nodding eriogonum
POLYGONACEAE	1			*Eriogonum effusum*	*Eriogonum effusum*	Bushy eriogonum
POLYGONACEAE	1	1		*Eriogonum flavum*	*Eriogonum flavum*	Alpine golden buckwheat
POLYGONACEAE	1			*Eriogonum jamesii*	*Eriogonum jamesii*	James' eriogonum
POLYGONACEAE	1			*Eriogonum microthecum var. simpsoni*	*Eriogonum simpsoni*	Simpson's buckwheat
POLYGONACEAE			1	*Oxyria digyna*	*Oxyria digyna*	Alpine sorrel
POLYGONACEAE	1			*Persicaria amphibia*	*Persicaria amphibia*	Water buckwheat
POLYGONACEAE				*Persicaria pensylvanica*	*Polygonum pensylvanicum*	Pennsylvania knotweed
POLYGONACEAE			1	***Polygonum arenastrum***	***Polygonum arenastrum***	**Devil's shoelaces**
POLYGONACEAE			1	*Polygonum douglasii*	*Polygonum douglasii*	Douglas' knotweed
POLYGONACEAE			1	*Polygonum polygaloides*	*Polygonum polygaloides*	Knotweed
POLYGONACEAE	1			*Pterogonum alatum*	*Eriogonum alatum*	Winged eriogonum
POLYGONACEAE	1			*Rumex maritimus ssp. fueginus*	*Rumex maritimus*	Golden dock
POLYGONACEAE	1			*Rumex triangulivalvis*	*Rumex triangulivalvus*	Dock
POLYGONACEAE	1			*Rumex venosus*	*Rumex venosus*	Wild begonia
PORTULACACEAE			1	*Claytonia lanceolata*	*Claytonia lanceolata*	Springbeauty
PORTULACACEAE	1			*Portulaca halimoides*	*Portulaca halimoides*	Silkcotton purslane
PORTULACACEAE			1	*Portulaca oleracea*	*Portulaca oleracea*	Purslane
POTAMOGETONACEAE	1			*Potamogeton foliosus*	*Potamogeton foliosus*	Leafy pondweed
POTAMOGETONACEAE			1	*Potemogeton pectinatus*	*Stuckenia pectinatus*	Pondweed
PRIMULACEAE	1			*Androsace septentrionalis*	*Androsace septentrionalis*	Rock jasmine
PRIMULACEAE	1			*Dodecatheon pulchellum*	*Dodecatheon pulchellum*	Shooting star
PRIMULACEAE	1			*Glaux maritima*	*Glaux maritima*	Sea milkwort
PYROLACEAE	1			*Orthilla secunda*	*Orthilia secunda*	One-sided pyrola

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PYROLACEAE	1	1		*Moneses uniflora*	*Moneses uniflora*	Single delight
PYROLACEAE			1	*Pyrola rotundifolia ssp. asarifolia*	*Pyrola asarifolia ssp. asarifolia*	Wintergreen
RANUNCULACEAE	1	1		*Aquilegia coerulea*	*Aquilegia caerulea*	Colorado blue columbine
RANUNCULACEAE	1			*Atragene columbiana*	*Clematis columbiana*	Rock clematis
RANUNCULACEAE				*Atragene occidentalis*	*Clematis occidentalis*	Rocky Mountain clematis
RANUNCULACEAE			1	*Batrachium trichophyllum*	*Ranunculus trichophyllus var. trichophyllus*	Water crowfoot
RANUNCULACEAE	1			*Clematis ligusticifolia*	*Clematis ligusticifolia*	Western virgin's bower
RANUNCULACEAE	1			*Coriflora hirsutissima*	*Clematis hirsutissima*	Sugarbowls
RANUNCULACEAE			1	*Coriflora scottii*	*Clematis hirsutissima var.scottii*	Sugarbowls
RANUNCULACEAE	1			*Halerpestes cymbalaria ssp. saximontana*	*Ranunculus cymbalaria*	Shore buttercup
RANUNCULACEAE	1			*Hecatonia sclerata*	*Ranunculus scleratus*	Blister buttercup
RANUNCULACEAE	1			*Pulsatilla ludoviciana*	*Pulsatilla patens* ssp. *multifida*	Cutleaf anemone
RANUNCULACEAE			1	*Ranunculus cardiophyllus*	*Ranunculus cardiophyllus*	Heartleaf buttercup
RANUNCULACEAE			1	*Ranunculus eschscholtzii*	*Ranunculus eschscholtzii*	Subalpine buttercup
RANUNCULACEAE			1	*Ranunculus macauleyi*	*Ranunculus macauleyi*	Rocky Mountain buttercup
RANUNCULACEAE			1	*Ranunculus macounii*	*Ranunculus macounii*	Macoun's buttercup
ROSACEAE	1	1		*Acomastylis rossii* var. *turbinatum*	*Geum rossii* var. *turbinatum*	Ross avens
ROSACEAE	1			*Amelanchier alnifola*	*Amelanchier alnifola*	Serviceberry
ROSACEAE	1			*Amelanchier alnifolia form pumila*	*Amelanchier pumila*	Smooth serviceberry
ROSACEAE	1			*Argentina anserina*	*Potentilla anserina*	Silverweed
ROSACEAE	1			*Cercocarpus montanus*	*Cercocarpus montanus*	Mountain mahogany
ROSACEAE	1			*Crataegus rivularis*	*Crataegus rivularis*	River hawthorn
ROSACEAE	1	1		*Dryas octopetala* ssp. *hookeriana*	*Dryas octopetala* ssp. *hookeriana*	Hooker's mountain-avens
ROSACEAE	1			*Fallugia paradoxa*	*Fallugia paradoxa*	Apache plume
ROSACEAE			1	*Fragaria vesca ssp. bracteata*	*Fragaria vesca ssp. bracteata*	Wild strawberry

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ROSACEAE	1			*Fragaria virginiana* ssp. *glauca*	*Fragaria virginia* ssp. *glauca*	Virginia strawberry
ROSACEAE			1	*Geum macrophyllum*	*Geum macrophyllum*	Largeleaf avens
ROSACEAE	1			*Holodiscus discolor*	*Holodiscus dumosus*	Mountain spray
ROSACEAE	1			*Oreobatus deliciosus*	*Rubus deliciosus*	Boulder raspberry
ROSACEAE	1			*Padus virginiana ssp. melanocarpa*	*Prunus virginiana*	Chokecherry
ROSACEAE	1	1		*Pentaphylloides floribunda*	*Dasiphora floribunda*	Shrubby cinquefoil
ROSACEAE	1			*Physocarpus monogynus*	*Physocarpus monogynus*	Ninebark
ROSACEAE	1			*Potentilla ambigens*	*Potentilla ambigens*	Cinquefoil
ROSACEAE	1			*Potentilla biennis*	*Potentilla biennis*	Biennial cinquefoil
ROSACEAE			1	*Potentilla diversifolia*	*Potentilla diversifolia*	Varileaf cinquefoil
ROSACEAE	1			*Potentilla gracilis*	*Potentilla gracilis*	Soft cinquefoil
ROSACEAE			1	*Potentilla hippiana*	*Potentilla hippiana*	Woolly cinquefoil
ROSACEAE	1			*Potentilla norvegica*	*Potentilla norvegica*	Norway cinquefoil
ROSACEAE	1			*Potentilla pensylvanica*	*Potentilla pensylvanica*	Prairie cinquefoil
ROSACEAE	1			*Potentilla plattensis*	*Potentilla plattensis*	Platte cinquefoil
ROSACEAE			1	*Potentilla pulcherrima*	*Potentilla pulcherrima*	Soft cinquefoil
ROSACEAE			1	*Potentilla subjuga*	*Potentilla subjuga*	Cinquefoil
ROSACEAE	1			*Rosa sayi*	*Rosa sayi*	Prickly rose
ROSACEAE	1			*Rosa woodsii*	*Rosa woodsii*	Wood's rose
ROSACEAE	1			*Rubus idaeus ssp. melanolasius*	*Rubus idaeus*	Wild raspberry
ROSACEAE			1	*Sibbaldia procumbens*	*Sibbaldia procumbens*	Sibbaldia
RUBIACEAE	1			*Galium septentrionale*	*Galium boreale*	Northern bed-straw
RUBIACEAE	1	1		*Galium triflorum*	*Galium triflorum*	Sweet bedstraw
SALICACEAE	1			*Populus angustifolia*	*Populus angustifolia*	Narrowleaf cottonwood
SALICACEAE	1			*Populus tremuloides*	*Populus tremuloides*	Aspen
SALICACEAE	1			*Salix bebbiana*	*Salix bebbiana*	Bebb's willow
SALICACEAE	1	1		*Salix brachycarpa*	*Salix brachycarpa*	Shortfruit willow
SALICACEAE	1			*Salix drummondiana*	*Salix drummondiana*	Drummond's willow
SALICACEAE	1			*Salix drummondiana*	*Salix subcoerulea*	Blue willow
SALICACEAE	1			*Salix exigua*	*Salix exigua*	Coyote willow
SALICACEAE			1	*Salix ligulifolia*	*Salix ligulifolia*	Strapleaf willow

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SALICACEAE	1			*Salix lucida ssp.caudata*	*Salix caudata*	Tailed willow
SALICACEAE			1	*Salix monticola*	*Salix monticola*	Mountain willow
SALICACEAE	1	1		*Salix nivalis*	*Salix nivalis*	Snow willow
SALICACEAE	1	1		*Salix petrophila*	*Salix petrophila*	Alpine willow
SALICACEAE	1	1		*Salix planifolia*	*Salix planifolia*	Plainleaf willow
SALICACEAE	1			*Salix pseudomonticola*	*Salix pseudomonticola*	Park willow
SANTALACEAE	1			*Comandra umbellata*	*Comandra umbellata*	Toadflax
SAXIFRAGACEAE	1	1		*Ciliaria austromontana*	*Saxifraga bronchialis*	Spotted saxifrage
SAXIFRAGACEAE	1			*Ciliaria austromontana*	*Saxifraga bronchialis* ssp. *austromontana*	Matted saxifrage
SAXIFRAGACEAE	1			*Heuchera parvifolia*	*Heuchera parvifolia*	Alum-root
SAXIFRAGACEAE	1	1		*Micranthes odontoloma*	*Saxifraga odontoloma*	Brook saxifrage
SCROPHULARIACEAE			1	*Besseya plantaginea*	*Besseya plantaginea*	Kittentail
SCROPHULARIACEAE	1	1		*Castilleja haydenii*	*Castilleja haydenii*	Hayden's Indian paintbrush
SCROPHULARIACEAE	1			*Castilleja integra*	*Castilleja integra*	Orange paintbrush
SCROPHULARIACEAE	1			*Castilleja linariifolia*	*Castilleja linariaefolia*	Wyoming paintbrush
SCROPHULARIACEAE	1	1		*Castilleja occidentalis*	*Castilleja occidentalis*	Western Indian paintbrush
SCROPHULARIACEAE	1	1		*Castilleja rhexiifolia*	*Castilleja rhexiifolia*	Splitleaf Indian paintbrush
SCROPHULARIACEAE	1			*Mimulus floribundus*	*Mimulus floribundus*	Many-flowered mimulus
SCROPHULARIACEAE	1			*Mimulus glabratus*	*Mimulus glabratus*	Smooth monkey flower
SCROPHULARIACEAE	1			*Orthocarpus luteus*	*Orthocarpus luteus*	Yellow owl clover
SCROPHULARIACEAE	1	1		*Pedicularis groenlandica*	*Pedicularis groenlandica*	Elephanthead lousewort
SCROPHULARIACEAE	1	1		*Pedicularis parryi*	*Pedicularis parryi*	Parry's lousewort
SCROPHULARIACEAE			1	*Pedicularis procera*	*Pedicularis procera*	Giant lousewort
SCROPHULARIACEAE	1			*Penstemon angustifolius*	*Penstemon angustifolius*	Narrow-leaf penstemon
SCROPHULARIACEAE	1			*Penstemon barbatus var. torey*i	*Penstemon barbatus*	Red penstemon
SCROPHULARIACEAE	1			*Penstemon caespitosus*	*Penstemon cespitosus*	Crandall's penstemon
SCROPHULARIACEAE	1	1		*Penstemon hallii*	*Penstemon hallii*	Hall's beardtongue
SCROPHULARIACEAE	1			*Penstemon secundiflorus*	*Penstemon secundiflorus*	Sidebells penstemon
SCROPHULARIACEAE	1			*Penstemon virgatus ssp. asa-gray*i	*Penstemon unilateralis*	Oneside penstemon
SCROPHULARIACEAE	1	1		*Penstemon whippleanus*	*Penstemon whippleanus*	Dark beardtongue

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SCROPHULARIACEAE	1			*Scrophularia lanceolata*	*Scrophularia lanceolata*	Scrophularia
SCROPHULARIACEAE	1			***Verbascum thapsus***	***Verbascum thapsus***	**Mullein**
SCROPHULARIACEAE	1			*Veronica americana*	*Veronica americana*	American brooklime
SCROPHULARIACEAE	1			*Veronica catenata*	*Veronica catenata*	Speedwell
SCROPHULARIACEAE	1	1		*Veronica nutans*	*Veronica wormskjoldii*	American alpine speedwell
SCROPHULARIACEAE	1			*Veronica peregrina* ssp. *xalapenis*	*Veronica peregrina*	Purslane speedwell
SCROPHULARIACEAE	1			*Veronicastrum serpyllifolium* ssp. *humifusum*	*Veronica serpyllifolia*	Thyme-leaved speedwell
SELAGINELLACEAE	1			*Selaginella densa*	*Selaginella densa*	Common club moss
SELAGINELLACEAE				*Selaginella weatherbiana*	*Selaginella weatherbiana*	Weatherby's club moss
SINOPTERIDACEAE	1	1		*Argyrochosma fendleri*	*Argyrochosma fendleri*	Fendler's false cloak fern
SINOPTERIDACEAE	1			*Cheilanthes feei*	*Cheilanthes feei*	Slender lip fern
SINOPTERIDACEAE	1			*Cheilanthes fendleri*	*Notholaena fendleri*	Zigzag fern
SOLANACEAE	1			*Solanum physalifolium var. nitidibaccatum*	*Solanum physalifolium/sarachoides*	Nightshade
SOLANACEAE	1			*Solanum triflorum*	*Solanum triflorum*	Cut-leaf nightshade
THALICTRACEAE	1	1		*Thalictrum fendleri (Thalictraceae)*	*Thalictrum fendleri*	Meadow rue
TYPHACEAE			1	*Typha latifolia*	*Typha latifolia*	Broadleaf cattail
ULMACEAE	1			***Ulmus pumila***	***Ulmus pumila***	**Siberian elm**
URTICACEAE	1			*Urtica gracilis*	*Urtica dioica*	Stinging nettle
UVULARIACEAE	1	1		*Streptopus fassettii*	*Streptopus amplexifolius* var. *chalazatus*	Tubercle twistedstalk
VALERIANACEAE	1			*Valeriana capitata ssp. acutiloba*	*Valeriana acutiloba/capitata*	Sharpleaf valerian
VERBENACEAE	1			*Verbena macdougalii*	*Verbena macdougalii*	MacDougal's verbena
VERBENACEAE	1			*Verbena bracteata*	*Verbena bracteata*	Large-bracted verbena
VIOLACEAE			1	*Viola labradorica*	*Viola labradorica*	Alpine violet
VIOLACEAE			1	*Viola renifolia*	*Viola renifolia*	White violet
VIOLACEAE	1			*Viola scopulorum*	*Viola canadensis*	White violet
VIOLACEAE				*Viola adunca*	*Viola adunca*	Blue violet

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WOODSIACEAE	1			*Woodsia oregana ssp. cathcartiana*	*Woodsia oregana*	Oregon woodsia
	431	111	127			
			320	in GRSA herbarium pre-2002		
	total =		558	species in GRSA herbarium		
			604	species on the GRSA list		