

FLORISTIC STUDIES IN NORTH CENTRAL NEW MEXICO, U.S.A.
THE TUSAS MOUNTAINS AND THE JEMEZ MOUNTAINS

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ABSTRACT

This paper represents the first of two contributions that cover the floristic diversity in north central New Mexico. The area encompasses the Tusas Mountains and the Jemez Mountains (including Sierra Nacimiento) of the Carson National Forest and Santa Fe National Forest. Also included is Bandelier National Monument, Valles Caldera National Preserve, Bureau of Land Management (Taos District), and other federal, state, and private lands west of the Rio Grande. The second paper will discuss the floristics of the portions of the two forests and periphery to the east of the Rio Grande, thus primarily the Sangre de Cristo Range. The goal of this two-part series is to enumerate results of the most intensive floristic inventory ever conducted in New Mexico. Here, we report on 19,929 numbered collections of vascular plants (the sum for the entire area covering more than 3.7 million acres is 35,857 new collections). A total of 1,384 unique taxa, including 93 infraspecifics and 10 hybrids, are documented from 107 families. Of these, 154 are exotics (14 are designated as noxious in New Mexico), 22 are species of conservation concern, 28 represent first reports or their confirmation for New Mexico, and finally 17 are endemics to New Mexico. Based on verified material at four herbaria, 64 additional unique taxa are included in the Annotated Checklist; thus the grand total is 1,445.

RESUMEN

Este artículo es la primera de dos contribuciones que cubren la diversidad florística en el norte-centro de Nuevo México. Este área rodea las Montañas Tusas y las Montañas Jemez (incluyendo la Sierra Nacimiento) del Carson National Forest y Santa Fe National Forest. También están incluidos el Bandelier National Monument, la Valles Caldera National Preserve, Bureau of Land Management (Distrito de Taos), y otras tierras federales, estatales y privadas al oeste del Río Grande. El segundo artículo discutirá la florística de las porciones de los dos bosques y periferia al este del Río Grande. Primariamente la Cordillera Sangre de Cristo. El objetivo de esta serie de dos partes es enumerar los resultados del mayor inventario florístico intensivo llevado a cabo en Nuevo México. Aquí, citamos 19,929 colecciones numeradas de plantas vasculares (la suma para el área completa que cubre más de 3.7 millones de acres es de 35,857 nuevas colecciones). Se documentan un total de 1,384 taxa únicos, que incluyen 93 infraespecíficos y 10 híbridos, de 107 familias. De estas, 154 son exóticas (14 se designan como nocivas en Nuevo México), 22 son especies con preocupación en su conservación, 28 representan primeras citas o su confirmación para Nuevo México, y finalmente 17 son endémicas de Nuevo México. Basados en material verificado en cuatro herbarios, se incluyen 64 taxa adicionales únicos en el catálogo comentado; llegando así a un total de 1,445.

INTRODUCTION

We report on botanical inventories in the western portions of the Carson National Forest (CNF) and the Santa Fe National Forest (SFNF) by Jill Larson (2008) and Brian Reif (2006), respectively. Included are surrounding public lands administered by the State of New Mexico as well as the Bureau of Land Management, and some private lands (Fig. 1). These segments of the two Forests are defined as the portions occurring west of the Rio Grande. Thus they include the Tusas Mountains to the north and the Jemez Mountains and Sierra Nacimiento to the south. Results of two additional studies in the Jemez Mountains are included:

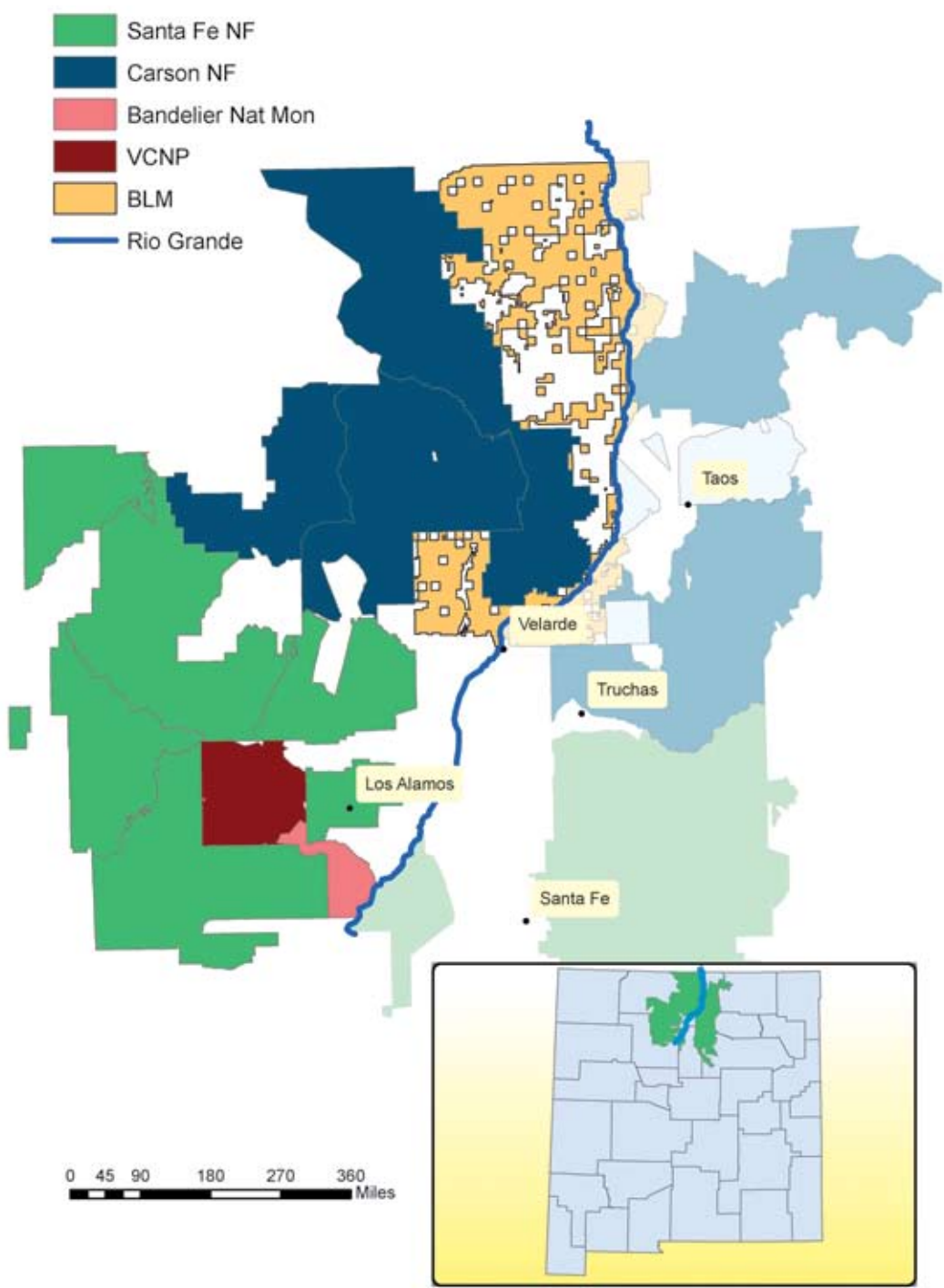


FIG. 1. Location of the entire study area in north central New Mexico. This paper discusses floristic research conducted in the portion to the west of the Rio Grande. Lands to the east of the River (in more muted colors) will be treated in a companion paper. The location of major towns and villages are indicated and federal agency lands are delineated (see coding, upper left corner of plate).

Bandelier National Monument (BNM; Jacobs 1989) and the Valles Caldera National Preserve (VCNP). Data from the latter, although reported separately (Hartman & Nelson 2005), were incorporated into the SFNF thesis (Reif 2006).

This is the first of two papers on federal and adjoining lands in north central New Mexico. The second will focus on the Sangre de Cristo Mountains to the east of the Rio Grande (largely CNF and SFNF). The Jicarilla Ranger District of the Carson National Forest in northwestern Rio Arriba County is excluded, although inventoried by Larson (2008).

The geographic area covered in this paper is over 2.4 million acres (the area as a whole inventoried in the two thesis projects and BNM was over 3.7 million acres). Included are all of Los Alamos, eastern Rio Arriba excluding the extreme southeast corner, northeastern Sandoval, northwest Santa Fe, and western Taos counties. Data on the Tusas Mountains are limited to the portion under the jurisdiction of the Carson National Forest (see Heil & O'Kane 2007 for partial coverage of the western slope). The area ranges in elevation from about 5,500 feet to just over 10,900 feet.

These botanical inventories are part of the larger effort by the Rocky Mountain Herbarium (RM) to produce a critical flora of the Rocky Mountains and to map, based on vouchered specimens, the distributions of its taxa in relatively fine detail (Hartman 1992; Hartman & Nelson 2008; Hartman et al. 2009). To this end, over 64 major floristic inventories have been conducted since 1978 from Oregon, Washington, Idaho, Montana, and South Dakota south to north central New Mexico. Over 575,000 new numbered collections have been obtained. They form the core of the 700,000 record Rocky Mountain Herbarium plant specimen database (Hartman et al. 2009).

Topography.—A majority of the area is within the Southern Rocky Mountain Region (Fenneman 1931). To the north, in southern Colorado, this region is divided by the headwaters of the Rio Grande, thus forming the broad, treeless San Luis Valley. Here the San Juan Mountains are to the west and the Sangre de Cristo Mountains are to the east. This division extends into New Mexico (the CNF), where the San Juan Mountains that extend southeast from Colorado are known locally as the Tusas Mountains. The San Juan or Tusas Mountains are separated to the south from the Jemez Mountains and the Sierra Nacimiento by the Rio Chama (Fenneman 1931). The surficial geology is largely volcanic. On the east side of the Rio Grande, the Sangre de Cristo Mountains form the southernmost range of the Rockies. At the southern terminus, near Santa Fe, they dissolve into a landscape of mesas and plains.

Unless stated to the contrary, the following discussion is limited to the Tusas Mountains, Jemez Mountains, Sierra Nacimiento, and vicinity. The region may be divided broadly into three geomorphic units: the Rio Grande Rift (including Taos Plateau), the Tusas Mountains, and the Jemez Mountains (including the Sierra Nacimiento).

The Taos Plateau is a broad basin and the southern extension of the San Luis Valley of Colorado in the northern portion of the valley of the Rio Grande. It is peppered with volcanic cones some of which rise 3,000 feet or more above the surrounding desert grass- and shrublands. The Rio Grande has cut a deep, narrow canyon through the basin and in places the gorge exceeds 800 feet in depth. To the south, the Rio Grande Rift is the portion constricted by mountains and formed by the Embudo Fault (Muehlberger 1978; Muehlberger & Muehlberger 1982).

To the west, the Tusas Mountain unit consists of low mountains and expansive valleys, descending south to the Rio Chama. Thus, a portion of the southern Chama Basin is included. The highest point in the Tusas Mountains under jurisdiction of the CNF is Canjilon Mountain at 10,903 feet.

To the south of the Rio Chama lies the Jemez Mountain unit, the location of Bandelier National Monument, Valles Caldera National Preserve (Anschuetz & Merlan 2007; Martin 2003; Muldavin & Tonne 2003), and the town of Los Alamos. Here, the highest point in the area is Redondo Peak at 11,255 feet. This unit includes the Sierra Nacimiento which merges on its east flank with the Jemez. Unlike the Tusas and the Jemez Mountains, the Sierra Nacimiento was part of the Laramide orogeny as was the Sangre de Cristo Mountains to the east of the Rio Grande.

Based on Fenneman (1931), the Southern Rocky Mountain Physiographic Province includes the Tusas and the Jemez mountains, as well as the Sangre de Cristos to the east and the intervening Rio Grande Rift including the Taos Plateau. The lowlands to the west of the Tusas and Jemez mountains are in the Colorado Plateau Province, while those to the south of Santa Fe are in the Basin and Range Province.

Climate.—The climate of north central New Mexico is arid in the lowlands, increasing in moisture as one ascends in elevation. Precipitation is significantly affected by the North American monsoon. The monsoon results in a seasonal pattern of precipitation with a primary maximum during July, August, and September. Strong diurnal cloud cover and precipitation accompany this season. This corresponds with peak convective heating during the day leading to frequent afternoon thunderstorms (Sheppard et al. 1999). The mountains exert strong orographic effects on precipitation in direct relationship to elevation while temperature is inversely related. New Mexico receives between 30 and 40 percent of its annual precipitation during the summer months.

Winter tends to be drier, with a secondary maximum for precipitation occurring November through March (Sheppard et al. 1999). Winter precipitation is hydrologically important as winter snowpack recharges surface and ground water (Redmond 2003).

In the Rio Grande Rift, annual precipitation is about 10 inches at Española (elevation 5,640 feet) and 14 inches at Santa Fe (6,720); in the Tusas Mountains, 10 inches at Abiquiú Dam (6,300) and 14 inches at Tres Piedras (8,140); while in the Jemez Mountains, 17 inches at Jemez Springs (6,260), 18 inches at Los Alamos (7,300), and 23 inches at Wolf Canyon (8,220). Rain shadows may explain why Española and Abiquiú Dam, located in intermontane basins, receive the least annual precipitation. In the mountains, differential heating of east and west exposures and localized cold air drainage also produce tremendous differences in climate over short distances (Eisenhood 1979). There is no long-term climate data for higher elevations in the mountains. The above precipitation data are based on a 30 year record (National Climatic Data Center 2009).

Drought during a portion of this study had an impact on collecting. Dry conditions were particularly severe in 2002 and 2003 and again in 2006 until the monsoon developed in late July and early August. Current drought conditions and climate change information for New Mexico can be obtained from the Governor's Drought Task Force (2008).

Geology and geomorphology.—The current landscape of the Southern Rocky Mountain Region is mainly a product of the Laramide Orogeny (late Cretaceous into the Tertiary (Eocene epoch), 70 to 55 million years ago (mya)) that produced the Sangre de Cristos and the Sierra Nacimiento. Subsequently, volcanism, erosion, infill, and subsidence of the mountains and basins occurred (Miller et al. 1992). Many older rock types of igneous origins have been uplifted and exposed as a result of the complex geologic history. Thus, the summits of the Sangre de Cristo and Tusas mountains consist of Precambrian rocks to 1.78 billion years in age.

The Tusas Mountains underwent extensive volcanic activity in the Tertiary (Bingler 1968). The northern portion received lava and ash flows from volcanic fields in the San Juan Mountains to the northwest. This portion of the range is now covered in ash-flow tuffs and volcanoclastic rocks of the Conejos Formation (New Mexico Bureau of Geology and Mineral Resources 2003).

The southern portion of the Tusas Mountains includes the Brazos uplift. This area is largely comprised of Precambrian granite, quartzite, schist, and gneiss (Bingler 1968). The surrounding valleys and slopes are covered in volcanic detritus eroded from the San Juan and northern Sangre de Cristo Mountains (Muehlberger & Muehlberger 1982).

During the Pleistocene, the Tusas Mountains were glaciated above 8,000 feet. Glacial outwash over Cretaceous strata has created large landslide deposits on its west slopes (Chronic 1987).

Separating the Tusas from the Jemez Mountains is the southern Chama Basin. It is filled with sandstones and shale of Jurassic and Triassic age (Smith et al. 1961). Present are fossils of the Upper Triassic that include conifers and cycads (Ash 1974). Of particular importance for the extant flora are outcrops of Todilto gypsum which harbor edaphic endemics such as *Abronia bigelovii* and *Astragalus micromerius* (New Mexico Rare Plant Technical Council 2008).

Volcanic activity intensified (10 mya) in the western Española Basin along the Rio Grande Rift. Repeated volcanic episodes gave rise to the Jemez Mountains, emerging directly out of the Rio Grande Basin. The earliest eruptions (9–11 mya) were basalt flows (e.g., caprock on Borrego Mesa) over arkosic sediments of the Santa Fe Group (Bailey & Smith 1978). Volcanic activity later culminated in a series of large pyroclastic eruptions at 1.6 and again 1.2 mya that left a crater 16 miles in diameter and deposited many hundreds of feet of volcanic tuff (Goff et al. 1996). The center of the Jemez Mountains is defined by this crater that consists of broad valleys interrupted by resurgent domes. It is the site of the Valles Caldera National Preserve. The most recent eruption was 40,000–50,000 years ago from the El Cajete crater whose pumice outfall blanketed Bandelier National Monument. Numerous sources provide a more detailed description of the volcanic history and the resultant geologic structure of the Jemez (Goff et al. 1996; Kues et al. 2006; Smith et al. 1970).

The Rio Grande Rift was formed in the Cenozoic (70–0 mya). To the north it forms a broad, relatively flat surface of basaltic lava flows known as the Taos Plateau volcanic field. These flows issued from hundreds of vents during the Pliocene (Chronic 1987). The larger shield volcanoes are still prominent and include San Antonio and Ute mountains. Rocks from some vents are dated from 2.2 to 1.8 mya (Lipman 1978).

The Rio Grande Rift proper is a large trough formed in two phases. Ultimately, separate “subsided blocks or grabens with high topographic relief and bound by widely spaced, high angle normal faults” formed (Kelly 1990). Tremendous amounts of arkosic sediments, or quartzite derived sand, were deposited primarily from the Sangre de Cristo Mountains into the grabens. This led to the characteristic Santa Fe Group fill found within the Española Basin (Muehlberger & Muehlberger 1982).

The Rio Grande became a free-flowing river during the Pliocene, having overcome containment by a succession of closed basins within the Rift (Chronic 1987). On the Taos Plateau, it is now confined to the Rio Grande gorge.

METHODS

Field work on the Carson National Forest, the Santa Fe National Forest, and Valles Caldera National Preserve was conducted during the summers of 2001 through 2006 whereas the Bandelier National Monument was inventoried by Brian Jacobs from 1986 through 1988. These studies combined represent the most extensive and exhaustive floristic survey ever conducted in New Mexico.

Botanists have been roaming the country sides throughout the world for centuries, documenting the riches of floristic diversity. In keeping with the tradition of field botanists, collecting sites were selected and searched based on the researcher’s judgment. Thus, the “meander search” strategy was employed (Goff et al. 1982; Ristau 1998; Hartman 1992; and Hartman & Nelson 2008). As sites were not selected at random, the result was the exploration of a much greater diversity of plant communities, soil types, geologic substrates, and topography leading to the documentation of a substantially greater diversity of taxa.

A total of 697 waypoints (each a geographic coordinate determined using a GPS unit) are represented in this paper (for the two thesis projects as a whole, the total was 1,542). Each waypoint represents a general location for collecting plant specimens, usually to within one-half mile (either as a radius from a point or a trail segment defined by two successive points). Details concerning collecting as followed in all RM studies are found in Hartman (1992) and Hartman and Nelson (2008).

Nomenclature in the Annotated Checklist follows Allred (2008) with some exceptions as treated in Hartman and Nelson (2001) or Flora of North America Editorial Committee, eds. (1993+).

This paper is based on 19,929 collections from the Tusas Mountains, Jemez Mountains, and vicinity (total number of collections obtained for the two thesis projects and the BNM inventory was 35,857 collections). A complete set of vouchers from CNF and SFNF are housed at RM. Bandelier specimens are housed at the monument herbarium with a partial set of duplicates at DUKE and miscellaneous vouchers at RM and UNM. All authors of this paper have made major contributions to the collection, identification, and verification of specimens as well as the writing of this paper.

The databases of the University of New Mexico Herbarium (UNM) and the Rocky Mountain Herbarium

(RM, USFS) were searched for species not encountered during our field studies. Their identifications were verified, and the institution and voucher is so indicated in the Annotated Checklist.

RESULTS AND DISCUSSION

The following sections will emphasize the results of research on the Tusas and Jemez mountains and vicinity with some discussion on various topics. Further aspects of the discussion will await the second paper on the Carson and Santa Fe National Forests to the east of the Rio Grande, thus data from the entire area.

Vegetation Types

New Mexico's vegetation has been partitioned and described in a number of studies at various spatial scales. The most relevant to this inventory are classifications by Brown (1994a, b), Daubenmire (1943), Dick-Peddie (1993), and Whittaker (1978). Vegetation types reported here are based on the application of the above-mentioned classifications as confirmed or modified by our observations. We report 14 vegetation types within five broad physiognomic and zonal categories. These may foster an understanding of the ecological amplitude, common associates, and environmental requirements of the taxa documented by these floristic inventories.

Forests and Woodlands

Spruce-fir forest.—These forests occur in subalpine habitats above 9,500 feet or on cooler and moister slopes at somewhat lower elevations. *Picea engelmannii* and *Abies arizonica* are codominants, although *Picea pungens* may occur as a seral species on moist sites (Moir 1993; Pase & Brown 1994a; U. S. Forest Service 1997). Scattered stands of *Populus tremuloides* may be present in disturbed areas. Conifers of lower elevations, such as *Pseudotsuga menziesii*, *Abies concolor*, and *Pinus flexilis*, may be present in low numbers. In the Tusas Mountains, spruce-fir forests were observed primarily around the Canjilon Lakes and Cruces Basin while in the Jemez Mountains they were common at higher elevations. The shrub and herb layer can be quite sparse due to the closed canopy.

Associated shrubs and subshrubs include *Arctostaphylos uva-ursi*, *Juniperus communis*, *Paxistima myrsinites*, *Ribes wolfii*, *Salix scouleriana*, *Sambucus racemosa*, and *Vaccinium myrtillus*. The herb layer is quite sparse yet may include the forbs *Actaea rubra*, *Castilleja sulphurea*, *Cymopterus lemmonii*, *Ligusticum porteri*, *Pedicularis racemosa*, *Penstemon whippleanus*, *Solidago simplex*, and *Viola canadensis* and such graminoids as *Bromus ciliatus*, *B. richardsonii*, *Luzula parviflora*, *Poa leptocoma*, *Trisetum spicatum* and *T. montanum*.

Mixed conifer forest.—This forest type covers large areas in the Tusas and Jemez mountains (8,000–10,000 feet). Small islands of mixed conifer forest are also found on the summits of the highest volcanic cinder cones on the Taos Plateau, including San Antonio Mountain, Ute Mountain, and Cerro de la Olla. *Pseudotsuga menziesii* and *Abies concolor* are the most widespread and important conifers. They occur with *Pinus strobiformis* in cooler sites while *Pinus flexilis* is found in dry, exposed areas, and *Abies arizonica* in the ecotones. *Picea pungens* is restricted to locations subject to cold-air inversions including lower slopes and drainages while *Pinus ponderosa* is found in xeric sites at lower elevations (DeVelle et al. 1986; Moir 1993). The mixed conifer forests are heterogeneous thus reflecting the landscape.

Common understory shrubs and subshrubs include *Acer glabrum*, *Arctostaphylos uva-ursi*, *Berberis repens*, *Holodiscus dumosus*, *Jamesia americana*, *Juniperus communis*, *J. scopulorum*, *Paxistima myrsinites*, *Physocarpus monogynus*, *Rosa arkansana*, *R. woodsii*, *Symphoricarpos rotundifolius*, and *Vaccinium myrtillus*. Forbs may be represented by *Artemisia franserioides*, *Castilleja miniata*, *Cymopterus lemmonii*, *Fragaria vesca*, *Lathyrus leucanthus*, *Lithospermum multiflorum*, *Potentilla gracilis*, *Thalictrum fendleri*, and *Thermopsis rhombifolia*, while frequent graminoids include *Agrostis scabra*, *Blepharoneuron tricholepis*, *Carex siccata*, *C. geophila*, *C. occidentalis*, *Elymus trachycaulus*, *Muhlenbergia montana*, and *Achnatherum asperifolia*.

Fire has created a natural mosaic within this vegetation type, with burns ranging from patchy, low

intensity to stand replacing fires (U. S. Forest Service 1997; Moir 1993). Insect outbreaks and dwarf mistletoe also add to the patchwork.

Ponderosa pine forest.—Warmer and drier conditions from 6,700–8,500 feet support this forest type that often forms pure stands and occurs throughout the Tusas and Jemez mountains. At its upper limit, *Pinus ponderosa* and mixed conifer forests intergrade, while at its lower limit it merges into piñon-juniper woodland. However, ponderosa pine typically is the sole dominant conifer. Where trees are large and scattered the forests may be open and park-like, with a predominately grassy understory formed under pre-settlement fire conditions (Allen 2001; Moir 1993; Pase & Brown 1994b). Disturbance patterns in ponderosa pine forest include frequent, low intensity understory fires (DeVelice et al. 1986; Moir 1993; U.S. Forest Service 1997).

Associated deciduous shrubs in the understory include *Berberis repens*, *Ceanothus fendleri*, *Cercocarpus montanus*, *Fallugia paradoxa*, *Juniperus communis*, *Ribes cereum*, *R. inerme*, *R. leptanthus*, *Rosa acicularis*, *R. woodsii*, and *Symphoricarpos rotundifolius*. Relictual individuals of *Juniperus deppeana* are here documented for the Jemez Mountains. These are of Madrean origin with a center of distribution in Mexico (Peet 1988). Representative forbs include *Achillea millefolium*, *Amauriopsis dissecta*, *Antennaria parvifolia*, *Cymopterus lemmonii*, *Erigeron divergens*, *E. flagellaris*, *Heterotheca villosa*, *Hymenoxys richardsonii*, *Lithospermum multiflorum*, *Lupinus argenteus*, *Penstemon barbatus*, and *Vicia americana* while common graminoids include *Blepharoneuron tricholepis*, *Carex inops* ssp. *heliophila*, *Elymus elymoides* var. *brevifolius*, *Festuca arizonica*, *Koeleria macrantha*, *Muhlenbergia montana*, and *Poa fendleriana*.

Piñon-juniper woodland.—*Pinus edulis* and *Juniperus monosperma* are dominant in the foothills and form a discontinuous transitional belt (6,000 to 8,500 feet). Piñon-juniper woodlands represents the lowest elevation, forest type. Piñon forms closed woodlands at the upper elevational range, whereas juniper occurs in savanna-like communities at the lower elevational range and interface with grasslands. *Juniperus scopulorum* commonly occurs with piñon in mesic settings and has recently encroached into *Pinus ponderosa* understories in absence of fire disturbance (U.S. Forest Service 1997). Understory conditions are dynamic and vary with canopy cover, soil conditions, and land use and fire history (West 1999).

Shrub cover is variable and includes *Quercus gambelii* and *Q. undulata*, but also *Artemisia tridentata*, *Cercocarpus montanus*, *Gutierrezia sarothrae*, *Fallugia paradoxa*, *Ribes cereum*, and *Rhus trilobata*. Forbs include *Castilleja integra*, *Chaetopappa ericoides*, *Chamaesyce fendleri*, *Cryptantha cinerea*, *Eriogonum jamesii*, *Gaillardia pinnatifida*, *Hymenoxys richardsonii*, *Lappula occidentalis*, *Oenothera suffrutescens*, *Sphaeralcea coccinea*, and *Tetranneuris argentea* with several succulents including *Cylindropuntia imbricata*, *Opuntia phaeacantha*, *O. polyacantha*, and *Yucca* spp. Common graminoids are *Achnatherum hymenoides*, *Aristida purpurea*, *Bouteloua curtipendula*, *B. gracilis*, *Carex geophila*, *Elymus elymoides*, *Hesperostipa comata*, *Hilaria jamesii*, *Koeleria cristata*, *Muhlenbergia torreyi*, *Piptatherum micranthum*, and *Poa fendleriana*.

Historic impacts in woodlands are extensive and include fuel harvest and grazing (Moir 1993). Degraded conditions due to historic grazing are often characterized by high densities of *Juniperus monosperma* and intercanopy spaces dominated by *Bouteloua gracilis* and *Gutierrezia sarothrae* with exposed soils and active erosion. Bark beetle outbreaks of *Ips confusus* associated with drought stress can result in high levels of piñon mortality with the most recent events peaking in 2002 (Breshears et al. 2005).

Shrublands

Montane Shrubland.—These shrublands are found throughout the Tusas and Jemez mountains. They are distributed in a patchy manner throughout ponderosa pine forest or piñon-juniper woodland. Areas of montane shrubland are often too limited in extent for mapping because they are produced by site-specific factors: past disturbance, local substrate, and patterns of moisture. Comparably drier and more rocky sites are typical of montane shrubland, although some associates such as *Prunus virginiana* and *Ptelea trifoliata* are found in areas of increased moisture such as small catchments (Dick-Peddie 1993).

Included in this classification of montane shrubland are thick stands of *Quercus gambelii* and *Robinia neomexicana*. These species occur on soils that are poorly developed and xeric (Brown 1994a) and have also

been regarded as a seral association produced by past disturbance (Dick-Peddie 1993). Also included here is the "climax" shrubland of Dick-Peddie (1993) or *Cercocarpus montanus* in association with *Amelanchier alnifolia*, *Philadelphus microphyllus*, *Quercus undulata*, and *Rhus trilobata*. Other shrubs include *Ceanothus fendleri*, *Holodiscus dumosus*, *Jamesia americana*, *Juniperus communis*, *Physocarpus monogynus*, *Ribes cernum*, *R. inerme*, *Rubus parviflorus*, *Sambucus racemosa*, and *Symphoricarpos rotundifolius*.

Desert Shrubland.—There are three subtypes that qualify as desert shrubland. One is found within a large area of the Taos Plateau, especially west of the Rio Grande. This subtype is characterized by the absence of *Artemisia tridentata* var. *tridentata* and the presence of a number of other shrubs and subshrubs. Included are *Artemisia nova*, *Atriplex canescens*, *Chrysothamnus Greenei*, *Ericameria nauseosa*, *Gutierrezia sarothrae*, and *Tetradymia canescens*.

The second subtype, the desert scrub, is dominated by *Artemisia tridentata* var. *tridentata*. It most often occurs in openings or glades within piñon-juniper woodland. *Atriplex canescens*, *Cylindropuntia imbricata*, and *Ericameria nauseosa* are common woody associates.

The third subtype is sand scrub found in dune areas on old floodplains of the Rio Chama and Rio Grande. Some shrub and subshrubs include *Atriplex canescens*, *Gutierrezia sarothrae*, *Krascheninnikovia lanata*, and *Rhus trilobata*.

The herbaceous cover is often sparse in desert shrublands but may include the forbs *Castilleja integra*, *Chaetopappa ericoides*, *Croton texensis*, *Eriogonum annuum*, *E. microthecum*, *Ipomopsis multiflora*, and the grasses *Achnatherum hymenoides*, *Aristida purpurea*, *Bouteloua gracilis*, *Elymus smithii*, *Muhlenbergia torreyi*, and *Sporobolus airoides*.

Grasslands

Montane meadow and grassland.—This vegetation type occurs from about 8,500 feet to the highest summits throughout the Tusas and Jemez mountains. Upper-elevation sites may be extensive and uninterrupted, whereas lower sites are often surrounded by coniferous forests. *Blepharoneuron tricholepis*, *Danthonia parryi*, *Festuca idahoensis*, *F. thurberi*, *Koeleria macrantha*, *Muhlenbergia montana*, and *Poa fendleriana* dominate at higher elevations, while forbs and exotic species may outnumber grasses in lower elevation meadows. These grasslands are frequently associated with areas where poor drainage or other edaphic conditions inhibit tree establishment (Brown 1994b). While species composition varies with elevation and moisture levels, montane meadows are characterized by a diverse array of grasses and forbs. Some frequent representatives of the latter group include *Achillea millefolium*, *Campanula rotundifolia*, *Carex microptera*, *Eremogone fendleri*, *Erigeron flagellaris*, *Erysimum capitatum*, *Frasera speciosa*, *Heterotheca villosa*, *Hymenoxys richardsonii*, *H. hoopesii*, *Ipomopsis aggregata*, *Iris missouriensis*, *Lupinus argenteus*, *Orthocarpus luteus*, *Potentilla hippiana*, *P. gracilis*, and *Thermopsis rhombifolia*.

Generally, this vegetation type has experienced a high level of disturbance by humans. Loss of natural fire cycles often leads to encroachment by woody plants. Overgrazing and changes in climate also may have an effect (Merola-Zwartjes 2004; Raish 2004; Dick-Peddie 1993).

Plains-desert grassland.—This vegetation type is ecotonal to piñon-juniper woodlands or juniper savannas. It may be interspersed with, or sometimes indistinguishable from, Great Basin desert scrub (Dick-Peddie 1993). Desert grassland occurs primarily along the Rio Grande Rift, on the edge of, or within, surrounding piñon-juniper woodlands, and to the west of the Tusas and Jemez mountains where it is transitional to desert. It has a significant shrub and forb cover. Characteristic grasses are *Achnatherum hymenoides*, *Aristida purpurea*, *Bouteloua gracilis*, *B. curtipendula*, *Elymus smithii*, *Hesperostipa comata*, and *Hilaria jamesii*, while frequently encountered forbs include *Antennaria microphylla*, *A. rosea*, *Castilleja integra*, *Cryptantha* spp., *Glandularia bipinnatifida*, *Grindelia squarrosa*, *Oenothera coronopifolia*, *O. suffrutescens*, *Opuntia polyacantha*, *O. phaeacantha*, *Ratibida tagetes*, *Sphaeralcea coccinea*, *Teucrium laciniatum*, and *Zinnia grandiflora*.

Wetlands

Montane Riparian.—Margins of perennial and intermittent streams support variable species assemblages. Montane riparian vegetation is found in moist areas within spruce-fir and mixed conifer forests. The above

are especially well developed in the Jemez Mountains but may also be encountered in the northern Tusas Mountains. As with montane meadows, the species composition follows an elevation gradient (Dick-Peddie 1993). Obligate and facultative riparian species of trees and shrubs can be arranged along a descending gradient: *Picea pungens*, *Salix bebbiana*, *Alnus incana*, *Acer glabrum*, *Cornus sericea*, *Populus angustifolia*, and *Acer negundo*. Additional facultative riparian trees and shrubs include *Populus tremuloides*, *Prunus virginiana*, *Quercus gambelii*, and *Robinia neomexicana*. Among the rich diversity of forbs are *Aconitum columbianum*, *Caltha leptosepala*, *Cardamine cordifolia*, *Equisetum arvense*, *Geum macrophyllum*, *Heracleum maximum*, *Hypericum scouleri*, *Mertensia fransiscana*, *Mimulus guttatus*, *Oxypolis fendleri*, *Pedicularis groenlandica*, *Saxifraga odontoloma*, *Veronica americana*, and species of *Epilobium*, *Potamogeton*, *Ranunculus* and *Salix*. Graminoids include *Alopecurus aequalis*, *Deschampsia cespitosa*, *Elymus canadensis*, *Glyceria grandis*, *G. striata*, *Juncus arcticus*, *Torreyochloa pallida*, and species of *Agrostis*, *Carex*, and *Eleocharis*.

Floodplain-arroyo riparian.—This type of vegetation occurs at lower elevations on floodplains of the major rivers, the Chama, Jemez, and Rio Grande, or in arroyos which drain bajadas and mesas. Many species that thrive here are well adapted to disturbance and dry conditions with periodic flooding. The most common dominate is *Populus deltoides*, with the understory shrubs *Baccharis salicina*, *Ericameria nauseosa*, *Fallugia paradoxa*, *Forestiera pubescens*, *Rhus trilobata*, and *Salix exigua*. The exotics, *Elaeagnus angustifolia* and *Tamarix chinensis* have proliferated and may persist in a subclimax state (Minckley & Brown 1994; Dick-Peddie 1993). Arroyo riparian is typically adjacent to desert shrubland and may grade into montane riparian.

Marsh-lacustrine.—The marsh-lacustrine riparian habitat is found around ponds, springs, and stock tanks in otherwise arid habitats such as piñon-juniper woodland or desert grassland where the water table remains sufficiently high, or in various montane vegetation types. Along the shoreline *Limosella aquatica*, *Potentilla anserina*, *P. norvegica*, *Ranunculus cymbalaria*, *Rorippa* spp., and *Rumex crispus* may be encountered. Emergents include *Scirpus microcarpus*, *Sparganium emersum*, *Typha latifolia* and species of *Carex*, *Eleocharis*, *Juncus*, and *Schoenoplectus*. Floating and submersed taxa include *Callitriche palustris*, *Potamogeton* spp., *Lemna minor*, *Elodea canadensis*, *Myriophyllum sibiricum*, *Ranunculus aquatilis*, and *Zannichellia palustris*.

Disturbed

Aspen seral forest.—*Populus tremuloides*, an important seral species and post-fire increaser, is widely distributed in the Rocky Mountains (Peet 1988). Pure stands of this shade-intolerant species arise through root sprouting following disturbances (Pase & Brown 1994b). Scattered individuals are also found in late-succession or near climax stages in mixed conifer forest and lower subalpine spruce-fir forests (Moir 1993). However, like many successional communities, aspen forms a distinct assemblage that may persist for long periods of time. Aspen are found in various coniferous forest types throughout the Tusas and Jemas mountains.

Forbs include *Campanula rotundifolia*, *Castilleja miniata*, *Chamerion angustifolia*, *Geranium richardsonii*, *Pseudostellaria jamesiana*, and *Thalictrum fendleri* while frequently encountered grasses included *Poa fendleriana*, *P. pratensis*, *Bromus carinatus*, *B. richardsonii*, and *Festuca arizonica*.

Burn Areas.—Natural and anthropogenic fires have been frequent in most of the vegetation types, as mentioned above. In this regard the Jemez Mountains has been extensively researched. Over 5,200 fires have been documented between 1906 and 1996, 75 percent of which were initiated by lightning (Allen 2001). Allen also described near continuous fire activity during the last 9,000 years based in large part on fire scars on trees and the charcoal record at Alamo Bog (VCNP). Recent extensive fires in the Jemez Mountains include the Dome (16,000 acres, 1996), the Cerro Grande (45,000 acres, 2000), and the Borrego (12,700 acres, 2002).

Roadside-agricultural.—Here, native vegetation may be largely replaced by exotic or agricultural species. Noxious weeds collected along roads include *Aegilops cylindrica*, *Cirsium vulgare*, *Convolvulus arvensis*, *Lepidium latifolium*, *Linaria dalmatica*, and *Ulmus pumila*. Weedy or agricultural plants include *Avena sativa*, *Helianthus annuus*, *Salsola tragus*, *Sisymbrium altissimum*, *Tragopogon dubius*, and species of *Ambrosia*, *Bromus*,

Chamaesyce, *Chenopodium*, *Elymus*, *Lappula*, *Lepidium*, *Medicago*, *Melilotus*, *Plantago*, *Polygonum*, and *Trifolium*. Roadsides often act as corridors for exotics and thus warrant monitoring.

NOXIOUS WEEDS

Invasive exotic plants are a principal cause for the loss of biodiversity (Randall 1996; Wilcove et al. 2000). In natural areas, invasive plants are defined as those which produce significant alterations in plant composition, structure, and ecosystem functions (Cronk & Fuller 1995). Invasive plant species that are particularly damaging or prolific are regulated as noxious weeds (Natural Resources Conservation Service 2008). A specific goal of our floristic inventories was to document noxious weeds for the purpose of assisting in monitoring and control efforts. Of the 32 taxa listed in New Mexico, 14 were encountered at 166 sites. They are *Acroptilon repens*, *Aegilops cylindrica*, *Carduus nutans*, *Cirsium arvense*, *C. vulgare*, *Conium maculatum*, *Convolvulus arvensis*, *Elaeagnus angustifolia*, *Hyoscyamus niger*, *Lepidium latifolium*, *Linaria dalmatica*, *Linaria vulgaris*, *Tamarix chinensis*, and *Ulmus pumila*. Noxious weeds and other exotics are indicated by a • or an *, respectively, in the Annotated Checklist.

TAXA OF CONSERVATION CONCERN

A primary goal of the inventories was to document the occurrence of rare and endemic taxa. A total of 22 species of conservation concern were documented from 49 sites in the Tusas and Jemez mountains and vicinity; four additional records were verified from accessions at UNM. The status is based on plants so designated by Natural Heritage New Mexico (2008) and New Mexico Rare Plant Technical Committee (2008). These taxa are listed alphabetically and each is followed by family name, counties of occurrence (apparent new county records in **bold**), and voucher(s). They also are indicated by a ♦ in the Annotated Checklist.

Abronia bigelovii (Nyctaginaceae) Rio Arriba, Sandoval, Santa Fe: *Larson 4113; Hartman 80977*.

Astragalus cyaneus (Fabaceae) Rio Arriba, Santa Fe, Taos: *Larson 10438, 10480; Hartman 81069; Nelson 67934*.

Astragalus iodopetalus (Fabaceae) Rio Arriba, Sandoval, Taos: *Hartman 74741*.

Astragalus micromerius (Fabaceae) McKinley, Rio Arriba, San Juan: *Larson 4112*.

Astragalus ripleyi (Fabaceae) Rio Arriba, Taos: *Larson 2023; Hartman 81215*.

Cornus canadensis (Cornaceae) Sandoval, Taos: *Hartman 75528, 75600, 75667; Jacobs 5183*.

Corydalis caseana ssp. **brandegeei** (Fumariaceae) Rio Arriba: *Larson 4533*.

Cymopterus sessiliflorus (Apiaceae) Cibola, McKinley, Rio Arriba, San Juan, Sandoval, Taos, Valencia: *Larson 5024, 10348*.

Cypripedium parviflorum var. **pubescens** (Orchidaceae) Catron, Grant, **Los Alamos**, San Miguel, Santa Fe: *Jacobs 3621, 5112*.

Epipactis gigantea (Orchidaceae) Catron, Eddy, Grant, Guadalupe, Harding, Los Alamos, Otero, **Rio Arriba**, Sandoval: *Hartman 74454; Jacobs 3885; Larson 5027*.

Eriogonum lachnogynum var. **colobum** (Polygonaceae) McKinley, **Taos**: *Hartman 81819, 81828*.

Grindelia decumbens var. **subincisa** (Asteraceae) Hidalgo, Grant, Rio Arriba, Sandoval: *Larson 8648, 9233; Nelson 61956*.

Hackelia hirsuta (Boraginaceae) Colfax, **Los Alamos**, Mora, Rio Arriba, Sandoval, San Miguel, Santa Fe, Taos, Union: *Jacobs & Perkins 3636*.

Lilium philadelphicum (Liliaceae) Sandoval, San Miguel, Santa Fe: *Jacobs 3695*.

Lorandersonia microcephala (Asteraceae) Rio Arriba, Taos: *Larson 3626; Hartman 83194, 83298*.

Mentzelia conspicua (Loasaceae) Rio Arriba: *Reif 1973*.

Mentzelia springeri (Loasaceae) Los Alamos, Sandoval, Santa Fe: *Fox s.n.; Hartman 75084; Jacobs 3202, 3296, 3904, 5124*.

Muhlenbergia arsenei (Poaceae) Sandoval, Santa Fe: *Hartman 75187; Jacobs 3094, 3209, 4536*.

Podistera eastwoodiae (Apiaceae) Mora, **Rio Arriba**, Santa Fe, San Miguel: *Hartman 75028*.

Ranunculus abortivus (Ranunculaceae) **Rio Arriba**, **Sandoval**, Taos: *Jacobs 3499; Reif 447, 6543, 6678*.

Salix arizonica (Salicaceae) Mora, Rio Arriba, Taos: *Hartman 75017*.

Spiranthes romanzoffiana (Orchidaceae) Rio Arriba, Sandoval, Santa Fe, Taos: *Hartman 78326*.

The following, also of conservation concern, were encountered in searches of the University of New Mexico database; identifications have been verified: **Astragalus puniceus** var. **gertrudis** (Fabaceae; UNM), **Lomatium grayi** var. **grayi** (Apiaceae; UNM), **Eustoma exaltatum** (Gentianaceae; UNM), and **Parnassia fimbriata** (Parnassiaceae; UNM).

State Records for New Mexico

Species from the Tusas and Jemez mountains and vicinity that appear to be new to the flora of New Mexico,

or that have had reports verified, are listed below (based on Allred 2008). A total of 28 apparent state records based on 78 collections are included along with three additional records verified from accessions at RM and UNM. The 18 taxa preceded by an ‘ were documented in Hartman et al. (2006). Of these, *Carex deweyana* var. *deweyana* previously had been reported by McGrath (2005). These taxa are listed alphabetically and each is followed by the family name, the number of collections, and the counties of occurrence. They are indicated by an ! in the Annotated Checklist.

- ‘**Achnatherum nelsonii** var. **nelsonii** (Poaceae) 7, Rio Arriba, Sandoval

Astragalus cerussatus (Fabaceae) 3, Rio Arriba, Taos

‘**Betula glandulosa** (Betulaceae) 2, Sandoval

‘**Cardamine cordifolia** var. **incana** (Brassicaceae) 1, Rio Arriba

‘**Carex deweyana** var. **deweyana** (Cyperaceae) 2, Los Alamos, Rio Arriba

‘**Carex rosea** (Cyperaceae) 1, Sandoval

‘**Chenopodium capitatum** (Chenopodiaceae) 1, Sandoval

‘**Cynosurus echinatus** (Poaceae) 1, Sandoval

Descurainia pinnata var. **paysonii** (Brassicaceae) 1, Rio Arriba

Epilobium campestre (Onagraceae) 1, Rio Arriba

Epilobium ciliatum var. **glandulosum** (Onagraceae) 4, Rio Arriba, Sandoval

‘**Equisetum xnelsonii** (Equisetaceae) 1, Sandoval

‘**Erigeron nivalis** (Asteraceae) 3, Sandoval

‘**Geum triflorum** var. **triflorum** (Rosaceae) 1, Sandoval

Hieraceum xfloribundum (Asteraceae) 3, Rio Arriba, Sandoval

‘**Juglans nigra** (Juglandaceae) 2, Sandoval

‘**Lactuca biennis** (Asteraceae) 2, Sandoval

Lepidium densiflorum Schrad. var. **macrocarpum** G. A. Mulligan (Brassicaceae) 1, Rio Arriba

‘**Lepidium ramosissimum** var. **bourgeauanum** (Brassicaceae) 25, Rio Arriba, Sandoval

Mimulus suksdorfii (Plantaginaceae) 1, Rio Arriba

‘**Neoparrya lithophila** (Apiaceae) 2, Taos

‘**Penstemon glaber** var. **alpinus** (Plantaginaceae) 1, Los Alamos

‘**Piptatherum pungens** (Poaceae) 1, Sandoval

‘**Prunus persica** (Rosaceae) 2, Sandoval

‘**Ranunculus alismifolius** var. **montanus** (Ranunculaceae) 5, Rio Arriba

‘**Ranunculus repens** (Ranunculaceae) 1, Sandoval

Silene drummondii var. **striata** (Caryophyllaceae) 2, Rio Arriba

Sium suave (Apiaceae) 1, Rio Arriba

The following taxa that also appear to be state records were encountered in searches of the University of New Mexico and the Rocky Mountain databases; identifications have been verified: **Carex tahoensis** (Cyperaceae; UNM, 2 collections), **Lomatium grayi** var. **grayi** (Apiaceae; UNM), and **L. triternatum** var. **platycarpum** (Apiaceae; RM).

SUMMARY OF TAXA

The first number represents results based on our fieldwork. Parenthetical numbers following most of the former include those verified from other herbaria. The two adjacent numbers below “Exotic taxa” represent the percent of exotics when compared to total Unique taxa.

List by taxonomic category		List by special category	
Families	107	Exotic taxa	154 (158)
Genera	519 (533)	Percent exotic taxa	(11.1) (9.1)
Species	1,279 (1,334)	NM Noxious weeds	14
Hybrids	10	Species conservation concern	22 (26)
Infraspecies	93 (98)	NM Endemic taxa	17 (18)
		State records	28 (31)
Unique taxa	1,384 (1,445)		
List of unique taxa by major plant group			
Fern Allies	7 (8)		
Ferns	20 (23)		
Gymnosperms	16		
Angiosperms	1,341 (1,398)		
Total	1,384 (1,445)		

CONCLUSIONS

This paper represents the first of two contributions that cover the floristic diversity in north central New Mexico. The area here covered encompasses the Tusas Mountains and the Jemez Mountains (including Sierra Nacimiento) of the Carson National Forest and Santa Fe National Forest. Also included is Bandelier National Monument, Valles Caldera National Preserve, and other federal, state, and private lands west of the Rio Grande. We report on results of 19,929 numbered collections of vascular plants (total for the two-part series covering more than 3.7 million acres is 35,857 new collections). A total of 1,384 unique taxa, including 93 infraspecies as well as 10 hybrids, are documented from 107 families. With the addition of 60 taxa (totals within parentheses) verified from four herbaria, the total for unique taxa rise to 1,445. Of these, 154 (158) are exotic taxa of which 14 are designated as noxious in New Mexico, 22 (26) are species of conservation concern, 28 (31) represent first reports or their confirmation for New Mexico, and 17 (18) are endemic to the state.

THE ANNOTATED CHECKLIST

The checklist is divided into major plant groups (ferns and fern allies, gymnosperms, and angiosperms) each with alphabetical listings by family and species. Nomenclature follows Allred (2008) with some exceptions as treated in Hartman and Nelson (2001) or Flora of North America Editorial Committee, eds. (1993+). Where these deviations occur, Allred’s scientific name appears in square brackets below the accepted name.

Following is a guide to format and abbreviations associated with individual taxa in the checklist. Except for records based on specimens at RM, or UNM, the citation of vouchers are omitted. This is justified as collection data are available online (Hartman et al. 2009).

Taxon Authority [#,# +INITIALS, #,#] COUNTY; elevational range in feet; GEOLOGIC AREA; habitat type.

[*Taxon* Authority, name accepted by Allred]

The number of collections for each project is based on the position of the pound sign (#) within square brackets: [#,-,-,-] Jemez Mountains and vicinity, [-,#,-,-] Valles Caldera National Preserve, [-,-,#,-] Bandelier National Monument, and [-,-,-,#] Tusas Mountains and vicinity.

Other attributes include herbaria of origin with specific vouchers cited, e.g., [UNM-Lowrey 1645] (RM, Rocky Mountain Herbarium; UNM, University of New Mexico Herbarium, USFS, National Herbarium of the U. S. Forest Service at RM) and associated initials, e.g., [-,C,-,-] or [-,#+N,-,-] representing contributor of VCNP data (C, Jonathan Coop; H, Natural Heritage New Mexico; N, Neal Osborne). Vouchers by Jonathan Coop are at the University of Wisconsin (verified by Andrew Hipp) whereas those by the Natural Heritage New Mexico or Neal Osborn (1966) are at the UNM (verified by Hartman).

County abbreviations:

- L Los Alamos
- R Rio Arriba
- D SanDoval
- S Santa Fe
- T Taos

Geologic area:

- J Jemez Mountains, s. of Chama River
- G Rio Grande Rift, s. of Black Mesa
- P Taos Plateau, n. of Black Mesa
- U TUsas Mountains, n. of Chama River

Habitat type:

- af Aspen seral forest
- br Burns
- ds Desert shrubland
- fr Floodplain-arroyo riparian
- mc Mixed conifer forest

- ml Marsh-lacustrine
- mm Montane meadow and grassland
- mr Montane riparian
- ms Montane shrubland
- pg Plains-desert grassland

- pj Piñon-juniper woodland
- pp Ponderosa pine forest
- ra Roadside-agricultural
- sf Spruce-fir forest

Symbols by category preceding *Taxon*:

- * Exotic species to New Mexico
- ◆ Species of conservation concern
- Noxious weed in New Mexico
- ! State record for New Mexico
- + Endemic to New Mexico
- × Hybrid

FERNS AND FERN ALLIES

Aspleniaceae

Asplenium septentrionale (L.) Hoffm. [1,3,1,1] D, R; 8300–9840'; **J, U**; mm, mc, mr.

Asplenium trichomanes L. [1,-,-,1] D, R; 8200–8460'; **J, U**; mm, mr.

Dennstaedtiaceae

Pteridium aquilinum (L.) Kuhn var. *pubescens* Underw. [12,13,1,-] D, L, R; 7350–9920'; **J, U**; af, br, mc, mm, mr, ms, ra.

Dryopteridaceae

Athyrium filix-femina (L.) Roth ex Mert. var. *californicum* Butters [7,5,1,-] D, L, R; 6700–10000'; **J, U**; mc, mm, mr, ms, sf.

Cystopteris fragilis (L.) Bernh. [9,7,3,3] D, L, R; 6600–10600'; **J, U**; af, mc, mm, mr, ms, pp, sf.

Cystopteris reevesiana Lellinger [12,20,1,-] D, L, R; 7450–10330'; **J, U**; af, mc, mm, mr, ms, pp, sf.

Dryopteris filix-mas (L.) Schott [10,9,4,3] D, L, R; 6150–9325'; **J, U**; af, mc, mm, mr, ms, pj, pp.

Woodsia neomexicana Windham [1,1,1,1] D, R; 6150–8940'; **J, U**; mm, mr, pj, pp.

Woodsia oregana D.C. Eaton var. *cathcartiana* (B.L. Rob.) Morton [-,3,1,2] D, R, T; 6660–10300'; **J, P, U**; ds, mm, mr, pj, pp.

Woodsia plummerae Lemmon [1,-,-,1] D, T; 7150–8460'; **J, P**; mm, pj.

Equisetaceae

Equisetum arvense L. [31,8,6,10] D, L, R; 5500–10020'; **J, G, P, U**; fr, ml, mm, mr, ra.

× *Equisetum xferissii* Clute [3,1,-,-] D, R; 5825–8600'; **J**; fr, mr, ra.

Equisetum hyemale L. var. *affine* (Engelm.) A.A. Eaton [8,-,2,1] D, L, R; 6000–8450'; **J, U**; fr, mm, mr.

Equisetum laevigatum A. Braun [19,4,2,7] D, L, R; 5550–8950'; **J, G, U**; fr, ml, mm, mr, ra.

!× *Equisetum xnelsonii* (A.A. Eaton) J.H. Schaffn. [-,,-,1,-] D; 5300' **J**; mr.

Ophioglossaceae

Botrychium lanceolatum (S.G. Gmel.) Ångstr. var. *lanceolatum* [UNM-McGrath 250] **R; U**.

Botrychium virginianum (L.) Sw. [-,-,1,-] L; 7150'; **J**; mr.

Polypodiaceae

Polypodium hesperium Maxon [UNM-Windham 357B] **R; U**.

Polypodium saximontanum Windham [UNM-Stanley 11195] **R; U**.

Pteridaceae

Argyrochosma fendleri (Kunze) Windham [2,-,2,1] D, S, T; 5400–7020'; **G, P**; ds, fr, mr.

Cheilanthes eatonii Baker [-,1,1,2] D, R, T; 6600–9050'; **J, P, U**; ms, pp, pj.

Cheilanthes feei T. Moore [2,-,1,3] D, R; 5500–7200'; **J, U**; ms, pj.

Cheilanthes fendleri Hook. [-,1,2,2] D, R, T; 5500–8670'; **J, P, U**; mc, ms, pj, ra.

Cheilanthes wootonii Maxon [1,-,-,-] L; 7500–8900'; **J**; mc.

Cryptogramma acrostichoides R. Br. [-,2,-,1] D, R; 8300–11150'; **J, U**; mm, pp, sf.

Notholeana standleyi Maxon [-,-,1,-] D; 6000'; **J**; pj.

Pellaea truncata Goodding [-,-,2,1] D; 5400–5500'; **J, P**; pj.

Pellaea wrightiana Hook. [-,-,1,-] D; 6100'; **J**; pj.

Selaginaceae

Selaginella densa Rydb. [-,-,-,8] R, T; 7150–10200'; **P, U**; mm, ms, pp.

Selaginella mutica D.C. Eaton ex Underw. var. *mutica* [3,-,1,-] D, S; 5860–6200'; **J, G**; ds, fr, ms, mr.

Selaginella underwoodii Hieronymus [UNM-Clark 9628] D; **J**.

GYMNOSPERMS

Cupressaceae

Juniperus communis L. var. *depressa* Pursh [37,33,2,23] D, L, R, T; 7500–11150'; **J, P, U**; af, mc, mm, mr, ms, pp, sf.

Juniperus deppeana Steud. var. *deppeana* [4,-,2,-] D; 6600–7210'; **J**; pp, pj.

Juniperus monosperma (Engelm.) Sarg. [32,-,4,32] D, R, T; 5470–8460'; **J, G, P, U**; ds, fr, mr, ms, pg, pj, pp, ra.

Juniperus scopulorum Sarg. [24,4,3,48] D, R, T; 6000–9400'; **J, P, U**; mc, mr, ms, pg, pj, pp, ra.

Ephedraceae

Ephedra cutleri Peebles [-,-,5,-] D, 5600–5900 **J**; pj.

Ephedra torreyana Torr. ex S. Watson var. *torreyana* [-,-,1,3] D, R; 6100–6340'; **J, U**; ds, fr, pj.

Ephedra trifurca Torr. ex S. Watson [2,-,-,-] L, S; 5470–6100'; **G**; ds, pg.

Pinaceae

Abies arizonica Merriam [9,17,1,5] D, L, R, T; 8340–11150'; **J, U**; af, mc, mr, sf.

Abies concolor (Gord. & Glend.) Hildebr. [49,42,2,23] D, L, R; 6800–10650'; **J, P, U**; af, br, mc, mm, mr, pp, sf.

Picea engelmannii Parry ex Engelm. var. *engelmannii* [9,19,1,12] D, L, R; 8375–11150'; **J, P, U**; af, mc, mm, mr, sf.

Picea pungens Engelm. [25,17,1,11] D, R; 7450–10200'; **J, P, U**; af, br, mc, mm, mr, pp, ra, sf.

Pinus edulis Engelm. [41,3,4,56] D, L, R, T; 5860–9850'; **J, G, P, U**; ds, fr, mc, ms, pg, pj, pp, ra.

Pinus flexilis E. James [10,6,2,2] D, L, R; 7450–10225'; **J, U**; af, br, mc, pp, sf.

Pinus ponderosa Douglas ex P. Lawson & C. Lawson var. *scopulorum* Engelm. [66,27,1,36] D, L, R, T; 6150–10650'; **J, G, P, U**; br, mc, mm, mr, ms, pj, pp, ra.

Pinus strobiformis Engelm. [18,21,1,-] D, L, R; 8000–10650'; **J**; mc, mr, ms, pp, sf.

Pseudotsuga menziesii (Mirb.) Franco var. *glauca* (Beissn.) Franco [47,29,5,29] D, L, R, T; 6000–11150'; **J, P, U**; af, br, mc, mm, mr, pp, sf.

ANGIOSPERMS

Aceraceae [as Sapindaceae]

Acer glabrum Torr. var. *glabrum* [37,21,3,5] D, L, R; 6400–10900'; **J, U**; af, br, mc, mm, mr, ms, pp, sf.

[*Acer glabrum* Torr. var. *neomexicanum* (Greene) Kearney & Peebles]

Acer negundo L. var. *interius* (Britton) Sarg. [4,-,4,1] D, L, R; 5600–8280'; **J, G, U**; fr, mr, ra.

Adoxaceae

Adoxa moschatellina L. [4,-,-,-] D; 8350–8475'; **J**; mm, mr.
Sambucus racemosa L. var. *melanocarpa* (A. Gray) McMinn [9,-,-,-] D, R; 7200–10430'; **J**; af, mc, mm, mr, pp, ra, sf.
Sambucus racemosa L. var. *microbotrys* (Rydb.) Kearney & Peebles [20,11,2,2] D, L, R; 7780–11254'; **J, U**; af, br, mc, mm, mr, sf.

Agavaceae [includes Nolinaceae]

Nolina microcarpa S. Watson [-,-,1,-] D; 6100'; **J**; pj.
Yucca baccata Torr. var. *baccata* [2,1,1,7] D, R, S, T; 5860–8630'; **J, G, P, U**; ds, mm, ms, pj, pp.
 + *Yucca intermedia* McKelvey [9,-,1,11] D, R, T; 5500–8750'; **J, G, P, U**; ds, fr, mc, ms, pg, pj, pp, ra.
 [Y. *baileyi* Wootton & Standl. var. *intermedia* (McKelvey) Reveal; see Sivinski 2008]

Alismataceae

Alisma subcordatum Raf. [UNM-Atwood 21196] R; **U**.
Sagittaria cuneata E. Sheld. [1,1,-,1] D, R; 6500–8550'; **J, U**; ml, mr.

Alliaceae [traditionally in Liliaceae]

Allium bisceptrum S. Watson [1,-,-,-] R; 9300–10135'; **J**; mc.
Allium cernuum Roth [15,27,1,21] D, L, R, T; 7300–10300'; **J, P, U**; af, br, ds, mc, mm, mr, ms, pj, pp.
Allium geyeri S. Watson var. *geyeri* [3,17,1,5] D, R; 7550–9625'; **J, U**; af, mc, mm, mr, ms, pp.
Allium geyeri S. Watson var. *tenerum* M.E. Jones [-,-,1,2] D, R; 8950–10600'; **J, U**; mm, mr.
Allium macropetalum Rydb. [2,-,1,-] D, R; 6250–7360'; **J**; ds, pj.
Allium textile A. Nelson & J. F. Macbr. [-,-,-,5] R, T; 6200–7150'; **P, U**; fr, pj.

Amaranthaceae

Amaranthus albus L. [2,-,2,3] D, L, R, T; 5450–8740'; **J, G, P, U**; fr, ml, mm, pj, ra.
Amaranthus arenicola I.M. Johnst. [-,-,2,-] D; 5800–6000'; **J**; pp.
 * *Amaranthus blitoides* S. Watson [-,-,1,1] L, T; 6500–8500'; **J, P**; ml, pj.
 * *Amaranthus hybridus* L. [-,-,3,-] D; 6000–6450'; **J**; pj.
 * *Amaranthus hypochondriacus* L. [-,-,1,-] D; 5300'; **J**; fr.
Amaranthus powellii S. Watson [-,1,-,7] D, R, T; 6975–8400'; **J, P, U**; ds, mr, pj, pp, ra.
 * *Amaranthus retroflexus* L. [4,5,4,-] D, L, R; 5400–9220'; **J, G, P**; mm, pp, pj, ra.
Amaranthus torreyi (A. Gray) Benth. ex S. Watson [UNM-Yarnell 90] D; **J**.
Amaranthus wrightii S. Watson [-,1,-,-] D; 8200–9054'; **J**; ms.

Anacardiaceae

Rhus glabra L. [2,-,3,-] D, L; 5500–7250'; **J**; mr, ra.
Rhus trilobata Nutt. var. *trilobata* [35,2,8,15] D, L, R, S, T; 5600–9580'; **J, G, P, U**; ds, fr, mc, mr, ms, pj, pp, ra.
Toxicodendron rydbergii (Small ex Rydb.) Greene [7,1,2,-] D, R; 6300–8500'; **J**; br, mc, mm, mr, ms, pj, pp.

Apiaceae

Aletes acaulis (Torr.) J.M. Coult. & Rose [8,-,3,-] D; 5850–7500'; **J, G**; ms, pj, pp.
Angelica pinnata S. Watson [2,-,-,3] D, R; 7100–10020'; **J, U**; mm, mr.
Berula erecta (Huds.) Coville var. *incisa* (Torr.) Cronquist [2,-,3,-] D, R; 5300–7350'; **J**; fr, mr.
Cicuta maculata L. var. *angustifolia* Hook. [16,4,3,-] D, L, R; 5825–8375'; **J**; fr, ml, mm, mr, ra.
Conioselinum scopulorum (A. Gray) J.M. Coult. & Rose [3,17,1,5] D, R; 6950–11000'; **J, U**; af, mc, ml, mm, mr, ra.
 * *Conium maculatum* L. [1,-,-,-] D; 7490'; **J**; mr.
 ! *Cymopterus spec. nov.* [-,-,-,4] R, T; 6200–8566'; **P, U**; ds, fr, pj.
Cymopterus alpinus A. Gray [-,3,-,-] D; 8600–8700'; **J**; mc, mm, sf.
Cymopterus bulbosus A. Nelson [1,-,1,3] L, R; 6400–8500'; **J, U**; ms, pg, pj.
Cymopterus constancei R.L. Hartm. [1,-,1,6] D, R, S, T; 5550–8500'; **G, P, U**; ds, fr, pg, pj.
Cymopterus glomeratus (Nutt.) A.P. de Candolle var. *fendleri* (A. Gray) R.L. Hartm. [2,-,1,1] D, S, T; 5600–7150'; **J, G, P**; ds, pj.
Cymopterus lemmonii (J.M. Coult. & Rose) Dorn [55,54,3,45] D, L, R, T; 7300–11150'; **J, P, U**; af, br, mc, mm, mr, ms, pp, ra, sf.
Cymopterus montanus Torr. & A. Gray [1,-,-,-] D; 7360'; **J**; ds.
 ♦ *Cymopterus sessiliflorus* (W.L. Theob. & C.C. Tseng) R.L. Hartm. [-,-,-,2] R; 6300–7250'; **U**; fr.
Heracleum maximum W. Bartram [16,4,1,5] D, R; 6950–11000'; **J, U**; af, mc, ml, mm, mr, sf.
Ligusticum porteri J.M. Coult. & Rose [9,-,-,5] D, R; 8180–10900'; **J, U**; af, mc, mm, mr, sf.
 ! ♦ *Lomatium grayi* (J.M. Coult.) J.M. Coult. & Rose var. *grayi* [UNM-Heil 8814] R; **U**.
 ! *Lomatium triternatum* (Pursh) J.M. Coult. & Rose var. *platycarpum* (Torr.) B. Boivin [UNM-Heil 8793] R; **U**.
 ! *Neoparrya lithophila* Mathias [-,-,-,2] T; 7900'; **P**; pj.
Osmorhiza chilensis Hook & Arn. [1,-,-,1] D, R; 7370–9150'; **J, U**; mm, mr.
Osmorhiza depauperata Phil. [29,17,5,3] D, L, R; 6600–10600'; **J, U**; af, br, mc, mm, mr, ms, pp, sf.
Oxypolis fendleri (A. Gray) A. Heller [22,13,1,10] D, L, R; 7740–10900'; **J, U**; af, br, mc, ml, mm, mr, sf.
 ♦ *Podistera eastwoodiae* (J.M. Coult. & Rose) Mathias & Const. [1,-,-,-] R; 9300–10135'; **J**; mc.
Sanicula marilandica L. [-,-,4,-] L; 7200–7800'; **J**; mr.
 ! *Sium suave* Walter [-,-,-,1] R; 9150'; **J**; mr.

Apocynaceae

Apocynum androsaemifolium L. [8,2,2,1] D, L, R; 7250–9100'; **J, U**; mc, mm, mr, ms, pp, ra.
Apocynum cannabinum L. [7,2,2,-] D, L; 5500–8300'; **J, G**; fr, mr, ms, pp, ra.
 × *Apocynum xfloribundum* Greene [5,-,-,-] D, R; 6875–8125'; **J**; mr, ra.
 [Apocynum *medium* Greene var. *floribundum* (Greene) Woodson]

Araliaceae

Aralia racemosa L. ssp. *bicrenata* (Wooton & Standl.) S.L. Welsh & N.D. Atwood [3,-,4,-] D, L, R; 5850–8550'; **J, U**; mc, mm, mr.

Asparagaceae [traditionally in Liliaceae]

* *Asparagus officinalis* L. [2,-,1,-] D; 5825–7800'; **J**; fr, mm, ra.

Asclepiadaceae

Asclepias asperula (Decne.) Woodson var. *asperula* [4,-,5,1] D, L, S, T; 5600–6320'; **G, P**; ds, fr, pj.

Asclepias engelmanniana Woodson [-,-,2,-] D; 5300–6000'; **J**; fr, pj.

Asclepias involucrata Engelm ex Torr. [-,-,-,3] R, T; 6400–7150'; **P, U**; fr, pj.

Asclepias macrosperma Eastw. [-,-,-,3] R; 6100–6990'; **P, U**; pj.

Asclepias macrotis Torr. [1,-,4,-] L, D; 5300–6600'; **G**; ds, fr, pj.

Asclepias speciosa Torr. [9,-,1,-] D, L, R; 5400–8500'; **J, G, P, U**; fr, mm, mr, ra.

Asclepias subverticillata (A. Gray) Vail [7,1,6,3] D, L, R; 5300–8450'; **J, G, P, U**; fr, mm, mr, pj, ra.

Asclepias tuberosa L. var. *interior* (Woodson) Shinnars [2,-,4,-] D, R; 5900–7350'; **J**; mr, pp, ra.

Asclepias viridiflora Raf. [-,-,3,-] D, L; 6700–7300'; **J**; pj, pp.

Asteraceae

Achillea millefolium L. [46,63,6,38] D, L, R; 6400–11150'; **J, P, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

* *Acroptilon repens* (L.) DC. [3,-,1,-] L, R, T; 5550–8200'; **J, G, P, U**; fr, pp, ra.

Ageratina herbacea (A. Gray) R.M. King & H. Rob. [-,2,3,1] D, R; 8625–9220'; **J, U**; mc, ms, pp, ra.

Agoseris aurantiaca (Hook.) Greene var. *purpurea* (A. Gray) Cronquist [4,29,2,17] D, R; 8000–11150'; **J, U**; br, mc, mm, mr, ms, pp.

Agoseris glauca (Pursh) Raf. var. *glauca* [-,9,1,4] D, R; 7550–11000'; **J, U**; mm, mr, ra.

Agoseris parviflora (Nutt.) Greene [2,-,-,-] D, R; 8000–8750'; **J, U**; mm, pp.

Almutaster pauciflorus (Nutt.) Å. Löve & D. Löve [1,-,-,-] D; 6320–6340'; **J**; ml.

Amauriopsis dissecta (A. Gray) Rydb. [2,8,4,3] D, L, R, T; 7020–9580'; **J, P, U**; mm, mc, pg, pj, pp, ra.

Ambrosia acanthicarpa Hook. [-,-,3,2] R, T; 6975–9580'; **J, P, U**; ds, fr, ra.

Ambrosia artemisiifolia L. [1,-,-,-] L; 6300'; **G**; ra.

Ambrosia psilostachya DC. [2,1,-,-] D, R; 7675–9100'; **J, U**; ml, mm, ra.

Ambrosia tomentosa Nutt. [2,-,-,-] D, R; 8050–9200'; **J, U**; mm, ra.

Ambrosia trifida L. var. *trifida* [-,-,1,-] D; 5400'; **J**; fr.

Anaphalis margaritacea (L.) Benth. & Hook. [-,-,2,-] R; 7150'; **J**; mr.

Antennaria corymbosa E. Nelson [1,-,-,-] R; 9300–10135'; **J, U**; mc.

Antennaria marginata Greene [15,7,4,7] D, L, R; 6400–10300'; **J, U**; af, mc, mm, mr, pp, sf.

Antennaria microphylla Rydb. [-,-,-,22] R; 7450–10900'; **P, U**; af, mc, mm, mr, ms, pp, sf.

Antennaria parvifolia Nutt. [17,11,3,13] D, L, R, T; 6400–11150'; **J, P, U**; af, br, mc, mm, mr, ms, pj, pp, sf.

Antennaria rosea Greene [8,6,1,10] D, L, R; 6500–10600'; **J, U**; af, mc, mm, mr, pp.

[*Antennaria rosea* subspecies]

Antennaria rosulata Rydb. [-,4,-,13] D, R; 7780–10940'; **J, U**; mc, mm, ms, pp.

Aphanostephus ramosissimus DC. var. *humilis* (Benth.) B.L. Turner & Birdsong [-,-,1,-] D; 5400'; **J**; fr.

* *Arctium minus* (Hill) Bernh. [1,-,-,-] R; 6010–7000'; **J**; mr.

Arnica chamissonis Less. var. *foliosa* (Nutt.) Maguire [2,1,1,5] D, R; 5400–9950'; **J, U**; ml, mm, mr, fr.

Arnica cordifolia Hook. [1,-,-,4] R; 9300–10150'; **J, U**; mc, mm, mr.

* *Artemisia biennis* Willd. var. *biennis* [-,-,-,1] R; 8720–8740'; **U**; ml.

Artemisia bigelovii A. Gray [1,-,2,-] D; 5700–7400'; **J**; ds, pj.

Artemisia campestris L. var. *caudata* (Michx.) Palmer & Steyerem. [-,-,-,2] R, T; 6820–7000'; **P, U**; fr, pj.

Artemisia campestris L. var. *pacifica* (Nutt.) M. Peck [6,9,1,5] D, R, T; 6125–10300'; **J, G, P, U**; mc, mm, mr, pj, pp, ra.

Artemisia caruthii A.W. Wood ex Carruth [3,22,2,12] D, L, R, T; 6300–9980'; **J, G, P, U**; ds, mc, mm, ms, pj, pp, ra.

Artemisia dracunculus L. [-,6,2,11] D, R, T; 6200–10200'; **J, P, U**; ds, fr, mc, mm, mr, pj, pp, ra.

Artemisia filifolia Torr. [-,-,3,2] R, T; 5300–7280'; **J, P, U**; ds, pj.

Artemisia franserioides Greene [1,13,2,-] D, L; 7200–9980'; **J**; af, mc, mm, ra.

Artemisia frigida Willd. [-,5,4,9] D, R, T; 5850–9850'; **J, P, U**; ds, mc, mm, mr, pg, pj, ra.

Artemisia laciniata Willd. ssp. *parryi* (A. Gray) W.A. Weber [-,1,-,-] D; 10340–10875'; **J**; sf.

Artemisia ludoviciana Nutt. var. *albula* (Wooton) Shinnars [-,-,3,2] D, T; 5600–7736'; **J, P**; ds, pj.

Artemisia ludoviciana Nutt. var. *ludoviciana* [2,14,3,4] D, R; 6300–10300'; **J, U**; mc, mm, pj, pp, ra.

Artemisia ludoviciana Nutt. var. *mexicana* (Willd. ex Spreng.) A. Gray [1,2,5,4] D, R; 5850–9350'; **J, U**; mc, mm, mr, ms, pj, pp, ra.

Artemisia nova A. Nelson [-,-,-,4] R, T; 8300–9020'; **P, U**; ms, pj, pp.

Artemisia tridentata Nutt. var. *tridentata* [1,-,3,19] D, R, T; 5500–8950'; **J, P, U**; ds, fr, mm, ms, pj.

Artemisia tridentata Nutt. var. *vaseyana* (Rydb.) B. Boivin [1,-,-,2] R; 7500–8700'; **J, U**; ms, pp.

Artemisia tridentata Nutt. var. *wyomingensis* (Beetle & A.M. Young) S.L. Welsh [-,-,-,3] R, T; 5400–7350'; **P, U**; fl, pj.

Baccharis salicina Torr. & A. Gray [3,-,1,-] D, L; 5400–5900'; **J, G**; fr.

Baccharis wrightii A. Gray [1,-,-,-] S; 6320'; **G**; fr.

Baileya multiradiata Harvey & A. Gray ex A. Gray [-,-,1,-] D; 6600'; **J**; fr.

Berlandiera lyrata Benth. [1,-,4,-] L; 5400–5800'; **G**; fr, ds, pj.

Bidens cernua L. [-,2,1,-] D, R; 5360–8600'; **J, U**; mm, mr, fr.

Bidens comosa (A. Gray) Weigand [-,-,1,-] D; 5460'; **J**; fr.

[*Bidens tripartita* L.]

Bidens frondosa L. [-,-,2,-] D; 5300–5400'; **J**; fr.

- Bidens tenuisecta* A. Gray [-,7,-,1] D, R; 8025–9200'; **J, U**; mm, mr, ms, pp, ra.
- Brickellia brachyphylla* A. Gray [1,-,5,1] D, L, R; 6100–7120'; **J, U**; pj, pp.
- Brickellia californica* (Torr. & A. Gray) A. Gray [1,1,1,-] D; 5800–8625'; **J**; ms, pp.
- Brickellia eupatorioides* (L.) Shinnars var. *chlorolepis* (Wootton & Standl.) B.L. Turner [-,1,3,1] D, R; 6300–8800'; **J, U**; fr, mm, ms, pp.
- Brickellia grandiflora* (Hook.) Nutt. [1,10,1,-] D, L, R; 5850–9960'; **J, U**; mc, mm, pp, ra.
- Brickellia microphylla* (Nutt.) A. Gray var. *scabra* A. Gray [-,-,-,1] R; 6300–6600'; **U**; pj.
- Brickellia rusbyi* A. Gray [-,1,-,-] D, R; 8600'; **J, U**; ms.
- Brickelliastrum fendleri* (A. Gray) King & H.E. Rob. [4,3,4,3] D, R; 7950–8700'; **J, U**; mc, mm, mr, ms, pp, ra.
- **Carduus nutans* L. [2,2,2,2] D, R; 7540–9700'; **J, U**; br, mc, mm, pp, ra.
- Chaenactis douglasii* (Hook.) Hook. & Arn. [1,-,-,-] R; 7100'; **J**; pj.
- Chaetopappa ericoides* (Torr.) G.L. Nesom [26,-,3,25] D, L, R, S, T; 5400–9060'; **J, G, P, U**; dg, ds, fr, mm, ms, pg, pj, pp, ra.
- Chrysanthamnus depressus* Nutt. [-,-,-,4] R, T; 7185–8655'; **P, U**; mm, pj.
- Chrysanthamnus greenii* (A. Gray) Greene [-,-,-,9] R, T; 8050–8667'; **P, U**; ds, pg, pj, ra.
- Chrysanthamnus vaseyi* (A. Gray) Greene [-,-,-,4] R, T; 7800–9020'; **P, U**; ms, pj.
- Chrysanthamnus viscidiflorus* (Hook.) Nutt. var. *lanceolatus* (Nutt.) Greene [-,-,-,2] R; 8720–9500'; **U**; mc, ms.
- Chrysanthamnus viscidiflorus* (Hook.) Nutt. var. *viscidiflorus* [1,-,-,2] R, T; 6120–9020'; **P, U**; ds, ms, pj.
- Cirsium arizonicum* (A. Gray) Petrack var. *bipinnatum* (Eastw.) Keil [2,-,-,-] D, R; 6250–7330'; **J, U**; ms, pj.
- **Cirsium arvense* (L.) Scop. [-,9,1,7] D, R, T; 5400–11000'; **J, P, U**; fr, mc, ml, mm, mr, ra.
- Cirsium neomexicanum* A. Gray [4,3,3,6] D, R, T; 5860–9000'; **J, G, P, U**; fr, mm, ms, pj, pp, ra.
- Cirsium ochrocentrum* A. Gray var. *ochrocentrum* [1,-,-,-] R; 6300'; **P**; fr.
- Cirsium parryi* (A. Gray) Petrak [13,32,1,2] D, L, R; 6950–10300'; **J, U**; mc, mm, mr, ra, sf.
- Cirsium undulatum* (Nutt.) Spreng. var. *undulatum* [4,4,1,-] D, R; 6875–9580'; **J, U**; fr.
- **Cirsium vulgare* (Savi) Ten. [2,10,3,-] D, L, R; 6013–9800'; **J, U**; af, fr, mm, mr, ra.
- **Conyza canadensis* (L.) Cronquist [4,7, 6, 1] D, L, R, S; 6090–9200'; **J, G, P, U**; fr, mm, mr, ms, pp, ra.
[*Conyza canadensis* varieties]
- Cosmos parviflorus* (Jacq.) Persoon [-,-,2,-] L; 7050–7450'; **J**; ra.
- Crepis occidentalis* Nutt. var. *occidentalis* [-,-,-,1] R; 8200–8500'; **U**; ms.
- Crepis runcinata* (E. James) Torr. & A. Gray var. *barberi* (Greene) B.L. Turner [1,-,-,-] D; 8000–8100'; **J**; mm.
- Crepis runcinata* (E. James) Torr. & A. Gray var. *glauca* (Nutt.) B. Boivin [UNM-Halley 20] D; **J**.
- Crepis runcinata* (E. James) Torr. & A. Gray var. *runcinata* [-,6,-,-] D; 7550–8710'; **J**; ml, mm, mr.
- Cyclachaena xanthifolia* (Nutt.) Fresen. [-,-,3,1] D, R; 5400–6000'; **J, P**; fr, ra.
- Dieteria asteroides* Torr. var. *asteroides* [-,-,3,-] D, L; 6400–7800'; **J**; pj, pp.
- Dieteria bigelovii* (A. Gray) Morgan & R.L. Hartm. var. *bigelovii* [3,11,1,9] D, L, R, T; 7675–10700'; **J, P, U**; mc, mm, mr, pp, ra.
- Dieteria canescens* (Pursh) Nutt. var. *ambigua* (B.L. Turner) Morgan & R.L. Hartm. [2,-,-,-] L; 5800–6300'; **J, G**; pp, ra.
- Dieteria canescens* (Pursh) Nutt. var. *aristata* (Eastw.) Morgan & R.L. Hartm. [-,-,-,9] R, T; 7300–9550'; **P, U**; mr, ms, pj, pp, ra.
- Dieteria canescens* (Pursh) Nutt. var. *glabra* (A. Gray) Morgan & R.L. Hartm. [7,-,-,1] D, L, R; 6000–9100'; **J, G, P, U**; ds, pj, pp, ml, ra.
- Dyssodia papposa* (Vent.) Hitchc. [-,-,1,-] D; 6000'; **J**; pp.
- Ericameria nauseosa* (Pall. ex Pursh) G.L. Nesom & G.I. Baird var. *bigelovii* (A. Gray) G.L. Nesom & G.I. Baird [1,-,-,2] L, R, T; 6300–8150'; **G, P, U**; ds, pp, ra.
- Ericameria nauseosa* (Pall. ex Pursh) G.L. Nesom & G.I. Baird var. *graveolens* (Nutt.) Reveal & Schuyler [-,1,2,7] D, R, T; 6000–9020'; **J, P, U**; ds, mm, ms, pg, pj, pp, ra.
- Ericameria nauseosa* (Pall. ex Pursh) G.L. Nesom & G.I. Baird var. *hololeuca* (A. Gray) G.L. Nesom & G.I. Baird [-,-,-,1] T; 7600–8655'; **P**; pj.
- Ericameria nauseosa* (Pall. ex Pursh) G.L. Nesom & G.I. Baird var. *nitida* (L.C. Anderson) G.L. Nesom & G.I. Baird [-,-,-,1] R; 6300–6600'; **U**; fr.
- Ericameria nauseosa* (Pall. ex Pursh) G.L. Nesom & G.I. Baird var. *oreophila* (A. Nelson) G.L. Nesom & G.I. Baird [-,-,-,11] R, T; 6200–9200'; **P, U**; ds, fr, mm, pg, pj.
- Ericameria parryi* (A. Gray) G.L. Nesom var. *attenuata* (M.E. Jones) G.L. Nesom & G.I. Baird [-,-,2,2] D, R, S; 6650–9200'; **J, U**; pj, mm.
- Ericameria parryi* (A. Gray) G.L. Nesom var. *howardii* (Parry ex A. Gray) G.L. Nesom & G.I. Baird [1,-,-,-] D; 7000–7400'; **J**; pp.
- Ericameria parryi* (A. Gray) G.L. Nesom var. *parryi* [-,-,-,4] R; 9000–9950'; **U**; af, mm, ra.
- Erigeron bellidiastrum* Nutt. var. *bellidiastrum* [1,-,-,4] R, T; 6000–6975'; **J, P, U**; ds, fr, pj.
- Erigeron canus* A. Gray [-,-,1,2] L, R, T; 5500–8700'; **J, P, U**; pj, ms.
- Erigeron concinnus* (Hook. & Arn.) Torr. & A. Gray var. *concinnus* [-,-,1,1] R; 8950'; **J, U**; fr, mc.
- Erigeron coulteri* T. Porter [-,-,-,2] R; 9100–11000'; **U**; mc, mr.
- Erigeron divergens* Torr. & A. Gray [27,24,9,31] D, L, R, S, T; 5300–10600'; **J, G, P, U**; br, fr, mc, mm, mr, ms, pj, pp, ra, sf.
- Erigeron elatior* (A. Gray) Greene [-,-,-,1] R; 9980–10020'; **U**; mr.
- Erigeron eximius* Greene [4,25,1,4] D, L, R; 8060–10600'; **J, U**; mc, mm, mr, sf.
- Erigeron flagellaris* A. Gray [62,52,3,48] D, R, T; 6500–11150'; **J, P, U**; af, br, mc, mm, mr, ms, pg, pj, pp, ra, sf.
- Erigeron formosissimus* Greene var. *formosissimus* [6,48,4,8] D, R; 7550–11150'; **J, U**; mc, mm, mr, ra, sf.

- Erigeron formosissimus* Greene var. *viscidus* (Rydb.) Cronquist [4,14,-,12] D, L, R; 7800–10940'; **J, U**; mc, mm, mr, ms, pp, ra, sf.
- Erigeron grandiflorus* Hook. [1,-,-,1] R; 9300–10135'; **J, U**; mm, sf.
- Erigeron lonchophyllus* Hook. [-,2,-,-] D; 8620–9850'; **J**; mr, sf.
- ! *Erigeron nivalis* Nutt. [-,3,-,-] D; 10160–10360'; **J**; mm.
- Erigeron philadelphicus* L. var. *philadelphicus* [1,-,1,-] L; 5400–5800'; **G**; fr.
- Erigeron pulcherrimus* A. Heller [-,-,-,6] R; 6050–10900'; **P, U**; ds, pj, pp, mc, mm.
- Erigeron pumilis* Nutt. var. *pumilis* [-,-,-,2] R; 6800–7000'; **U**; ds, ms.
- Erigeron speciosus* (Lindl.) DC. [3,7,3,3] D, L, R; 7150–9400'; **J, U**; br, mc, mm, mr, ms, pj, pp, ra.
- Erigeron strigosus* Muhl. ex Willd. [-,-,-,5] R, T; 6240–7300'; **P, U**; ds, pj.
- Erigeron subtrinervis* Rydb. ex Porter & Britton [14,20,2,20] D, R, T; 6500–10900'; **J, P, U**; af, br, ds, mc, mm, mr, ms, pj, pp, ra.
- Erigeron tracyi* Greene [11,1,3,9] D, L, R, S, T; 5440–9000'; **J, G, P, U**; br, ds, fr, mm, mr, pg, pj, pp.
- Erigeron vetensis* Rydb. [-,-,-,15] R; 7500–10600'; **U**; mc, mm, ms, pp.
- Erigeron vreelandii* Greene [1,1,1,1] D, L, R; 7020–9500'; **J, U**; mc, pp.
- Eutrochium maculatum* (A. Gray) Breitung var. *bruneri* (A. Gray) E.E. Lamont [UNM-lvey s.n.] D; **J**.
- Gaillardia aristata* Pursh [2,1,-,-] D; 7330–8500'; **J**; ms, pp, ra.
- Gaillardia pinnatifida* Torr. [9,-,4,3] D, L, R, S; 5500–8500'; **J, G, P, U**; ds, fr, pg, pj, pp, ra.
- Gaillardia pulchella* Foug. [1,-,5,-] D, L; 6000–6300'; **J, G**; mm, pp.
- Gnaphalium exilifolium* A. Nelson [-,14,1,4] D, R; 7550–9980'; **J, U**; mc, ml, mm, mr, ra.
- Gnaphalium palustre* Nutt. [-,-,2,-] D; 5360'; **J**; fr.
- Grindelia arizonica* A. Gray [-,-,-,3] D, R; 8250–8550'; **J, U**; br, ms, pj.
- [*Grindelia arizonica* varieties]
- ◆ *Grindelia decumbens* Greene var. *subincisa* (Greene) Steyerl. [1,-,-,2] D, R; 7200–9150'; **J, U**; ds, mm.
- Grindelia squarrosa* (Pursh) Dunal [8,-,3,15] D, L, R, T; 5760–9500'; **J, G, P, U**; ds, fr, mc, mm, ms, pg, pj, pp, ra.
- Gutierrezia sarothrae* (Pursh) Britton & Rusby [6,-,8,41] D, L, R, T; 5400–9200'; **J, G, P, U**; ds, fr, mm, ms, pg, pj, pp, ra.
- Helenium autumnale* L. var. *montanum* (Nutt.) Fernald [-,-,2,-] D, L; 5400'; **J**; fr.
- Helianthella parryi* A. Gray [1,-,-,10] R; 8280–10940'; **J, U**; af, mc, mm, mr, pp.
- Helianthella quinquenervis* (Hook.) A. Gray [-,-,1,2] D, R; 7850–10000'; **J, U**; br, mm.
- Helianthus annuus* L. [3,-,2,5] D, L, R, T; 6090–8400'; **J, P, U**; ds, ml, pp, pj, ra.
- Helianthus nuttallii* Torr. & A. Gray [1,-,-,-] D; 7675'; **J**; ml.
- Helianthus pauciflorus* Nutt. var. *subrhomboides* (Rydb.) Cronquist [2,1,2,1] D, R; 7025–8625'; **J, U**; br, mr, pp.
- Helianthus petiolaris* Nutt. var. *fallax* (Heiser) B.L. Turner [1,-,-,1] L; 6300'; **G**; mm, ra.
- Helianthus petiolaris* Nutt. var. *petiolaris* [2,-,3,1] D, L, R, S; 5760–6975'; **G, P, U**; ds, fr, pg, pj, ra.
- Heliomeris multiflora* Nutt. var. *multiflora* [2,16,5,15] D, R; 7280–10330'; **J, P, U**; af, br, mc, mm, ms, pp, ra, sf.
- Heliomeris multiflora* Nutt. var. *nevadensis* (A. Nelson) W.F. Yates [3,-,-,3] D, R, T; 7600–9800'; **J, G, P, U**; mc, ms, pj, pp, ra.
- Herrickia glauca* (Nutt.) Brouillet [-,-,-,1] R; 6300–6600'; **U**; fr.
- Heterotheca villosa* (Pursh) Shinnars var. *minor* (Hook.) Semple [19,19,-,17] D, L, R, T; 5825–10225'; **J, G, P, U**; af, br, fr, mc, mm, mr, ms, pg, pj, pp, ra, sf.
- Heterotheca villosa* (Pursh) Shinnars var. *nana* (A. Gray) Semple [12,12,-,23] D, L, R, T; 5760–9980'; **J, G, P, U**; af, mc, mm, ms, pg, pj, pp, ra.
- Heterotheca villosa* (Pursh) Shinnars var. *pedunculata* (Greene) Harms ex Semple [-,-,-,2] R; 9850–10500'; **U**; mm.
- Heterotheca villosa* (Pursh) Shinnars var. *scabra* (Eastw.) Semple [-,-,-,1] R; 8200–8350'; **U**; pp.
- Heterotheca villosa* (Pursh) Shinnars var. *villosa* [19,8,7,15] D, L, R, S, T; 5470–10600'; **J, G, P, U**; ds, fr, mc, mm, mr, ms, pg, pj, pp, ra.
- Hieraceum carneum* Greene [-,-,1,-] L; 7200'; **J**; pp.
- Hieracium fendleri* Sch. Bip. [7,10,2,6] D, L, R; 7250–11150'; **J, U**; br, mc, ms, pp, ra, sf.
- !x *Hieraceum xfloribundum* Wimm. & Grab. [-,-,1,2] R; 9000–10900'; **J, U**; mm, mr.
- Hymenopappus filifolius* Hook. var. *cinereus* (Rydb.) I.M. Johnst. [16,-,10,21] D, L, R, S, T; 5500–9450'; **J, G, P, U**; ds, fr, mc, mm, ms, pg, pj, pp, ra.
- Hymenopappus filifolius* Hook. var. *pauciflorus* (I.M. Johnst.) B.L. Turner [-,-,-,1] R; 6300–6600'; **U**; fr.
- Hymenopappus flavescens* A. Gray var. *canotomentosus* A. Gray [4,-,-,-] R; 5800–6150'; **J, G, P**; ds, fr, pg, pj.
- Hymenopappus newberryi* (A. Gray) I.M. Johnst. [18,17,-,-] D, R; 7330–10330'; **J**; af, br, mc, mm, mr, ms, pp, ra.
- Hymenopappus tenuifolius* Pursh [2,-,-,-] R, S; 6320–6880'; **G**; ds, pj.
- Hymenoxys hoopesii* (A. Gray) Bierner [14,21,3,5] D, R; 8000–11150'; **J, U**; af, mc, ml, mm, mr, ra, sf.
- Hymenoxys richardsonii* (Hook.) Cockerell var. *floribunda* (A. Gray) Parker [31,17,5,51] D, L, R, T; 5710–9750'; **J, G, P, U**; br, ds, fr, mc, mm, mr, ms, pj, pp, ra.
- Isocoma rusbyi* Greene [-,-,-,2] R; 6100–6200'; **U**; fr, pj.
- Iva axillaris* Pursh [1,1,-,1] D, R, T; 5400–8200'; **J, G, P**; fr, mm, mr, ra.
- Krigia biflora* (Walt.) S.F. Blake [-,2,1,-] D, L; 7200–8710'; **J**; ml, mm, mr.
- ! *Lactuca biennis* (Moench) Fernald [-,-,2,-] D; 6000–6500'; **J**; mr.
- Lactuca canadensis* L. [UNM-Clark s.n.] D, L; **J**.
- Lactuca graminifolia* Michx. var. *arizonica* McVaugh [4,4,2,-] D, L, R; 6300–9140'; **J, P**; fr, mm, mr, ms, ra.
- Lactuca pulchella* (Pursh) DC. [2,-,2,-] D, R; 6000–7100'; **J, U**; mm, mr.
- * *Lactuca serriola* L. [3,2,3,3] D, L, R, T; 5960–8080'; **J, G, P, U**; br, fr, mm, pj, pp, ra.
- Laennecia schiedeana* (Less.) G.L. Nesom [1,6,2,-] D, L; 8040–9980'; **J**; br, mc, mm, pp, ra.

- * *Leucanthemum vulgare* Lam. [4,6,-,-] D; 7860–9150'; **J**; mm, mr, ra.
- Liatris punctata* Hook. var. *punctata* [1,-,4,-] D, L; 6500–8200'; **J**; pj, pp.
- Lorandersonia baileyi* (Wooton & Standl.) Urbatsch, Roberts, & Neubig [2,-,-,2] R, T; 6000–6700'; **G, P**; ds, fr, pg, pj.
- Lorandersonia linifolia* (Greene) Urbatsch, Roberts, & Neubig [4,-,-,-] R; 5760–6800'; **J, G**; fr, pg, pj, ra.
- + ♦ *Lorandersonia microcephala* (Cronquist) Urbatsch, Roberts, & Neubig [-,-,-,3] R; 8100–8600'; **U**; pp.
- Lygodesmia juncea* (Pursh) D. Don ex Hook. [3,-,-,-] D, R; 6500–7000'; **J**; fr, pj, ra.
- Machaeranthera tanacetifolia* (Kunth) Nees [-,-,2,4] L, R, S, T; 6500–7280'; **J, P, U**; ds, pj.
- Madia glomerata* Hook. [-,7,-,10] D, R, T; 8450–10230'; **J, U**; mc, mm, mr, ra.
- Malacothrix fendleri* A. Gray [1,-,2,-] D, L; 5550–6600'; **G**; fr, pj.
- Malacothrix sonchoides* (Nutt.) Torr. & A. Gray [-,-,-,1] R; 6050–6200'; **U**; ds.
- * *Matricaria discoidea* DC. [4,-,-,-] D, R; 7490–8850'; **J**; mm, mr, ms, ra.
- Melampodium leucanthum* Torr. & A. Gray [1,-,3,-] D; 5300–6460'; **J, G**; fr, ms, pj.
- Oreochrysum parryi* (A. Gray) Rydb. [5,31,2,6] D, L, R; 6150–11000'; **J, U**; af, mc, mm, mr, pp, ra, sf.
- Packera cana* (Hook.) W.A. Weber & Å. Löve [-,1,-,-] D; 8500'; **J**; pg.
- Packera crocata* (Rydb.) W.A. Weber & Å. Löve [-,1,-,-] D, R; **J**; mm.
- Packera dimorphophylla* (Greene) W.A. Weber & Å. Löve var. *dimorphophylla* [1,-,-,-] R; 9300–10135'; **J**; mc.
- Packera fendleri* (A. Gray) W.A. Weber & Å. Löve [14,23,3,-] D, L, R; 5860–10600'; **J, G**; af, mc, mm, mr, ms, pj, pp, ra, sf.
- Packera multilobata* (Torr. & A. Gray ex A. Gray) W.A. Weber & Å. Löve [4,-,1,6] D, R, T; 6300–7700'; **J, P, U**; ds, fr, pg, pj, pp, ra.
- Packera neomexicana* (A. Gray) W.A. Weber & Å. Löve var. *mutabilis* (Greene) W.A. Weber & Å. Löve [21,26,4,18] D, L, R, T; 6050–9850'; **J, P, U**; af, br, ds, mc, mm, mr, ms, pj, pp, ra, sf.
- Packera pseud aurea* (Rydb.) W.A. Weber & Å. Löve var. *flavula* (Greene) D. Trock & T.M. Barkley [3,2,2,2] D, L, R; 7000–9800'; **J, U**; mc, mm, mr, sf.
- Packera streptanthifolia* (Greene) W.A. Weber & Å. Löve [6,-,-,3] D, R, T; 6875–10180'; **J, P, U**; af, ds, mr, ms, pp, ra.
- Packera thurberi* (A. Gray) B.L. Turner [2,-,-,-] R; 7930–8720'; **J**; af, mm.
- Palafoxia sphacelata* (Nutt ex Torr.) Cory [1,-,-,-] R; 5955'; **J**; fr.
- Parthenium incanum* Kunth [-,-,1,-] D; 5800'; **J**; ds.
- Pectis angustifolia* Torr. var. *angustifolia* [-,-,3,1] D, R; 5400–5600'; **J, U**; fr, pj.
- Pericoma caudata* A. Gray [-,2,3,1] D, L, R, T; 5850–8580'; **J, P, U**; ds, mc, mr, ra.
- Petroradia pumila* (Nutt.) Greene var. *pumila* [1,-,-,6] D, R, T; 7000–8700'; **J, P, U**; pj, pp.
- Pseudognaphalium canescens* (DC.) W.A. Weber [-,-,1,-] D; 6500'; **J**; pj.
- Pseudognaphalium macounii* Greene) Kartesz [1,10,2,-] D, R, S; 7260–10300'; **J, U**; mc, mm, ms, pp, ra.
- Pseudognaphalium stramineum* (Kunth) W.A. Weber [-,-,1,-] L; 5400'; **J**; fr.
- Psilostrophe sparsiflora* (A. Gray) A. Nelson [UNM–Castetter 8997] D; **J**.
- Psilostrophe tagetina* (Nutt.) Greene [5,-,4,3] D, R, S; 5300–7600'; **J, G, U**; ds, fr, pj, pp.
- Pyrrhopappus pauciflorus* (D. Don) DC. [-,-,1,-] L; 5500'; **J**; fr.
- Pyrocoma crocea* (A. Gray) Greene var. *crocea* [1,2,2,3] D, R; 8675–10600'; **J, U**; af, mm, mr.
- Ratibida columnifera* (Nutt.) Wooton & Standl. [6,1,1,1] D, R, T; 6125–8375'; **J, P, U**; ds, fr, mm, pg, pj, pp, ra.
- [*Ratibida columnifera* formas]
- Ratibida tagetes* (E. James) Barnhart [1,-,3,1] D, L; 5400–6100'; **J, G**; fr, pj.
- Rudbeckia hirta* L. var. *pulcherrima* Farw. [14,12,2,5] D, L, R; 7100–10200'; **J, U**; af, mc, mm, mr, ms, ra.
- Rudbeckia laciniata* L. var. *ampla* (A. Nelson) Cronquist [22,15,2,2] D, L, R; 5850–9625'; **J, U**; af, mc, ml, mm, mr, sf.
- Sanvitalia abertii* A. Gray [-,-,1,-] D; 5800'; **J**; pj.
- Schkuhria multiflora* Hook. & Arn. [-,3,1,2] D, T; 6420–8625'; **J, P**; ms, pg, pj, pp, ra.
- * *Scorzonera laciniata* L. [9,1,-,3] D, R, S; 6200–8750'; **J, G, U**; ds, mm, pg, pj, pp, ra.
- Senecio amplexens* A. Gray var. *amplexens* [-,-,-,1] R; 10700–11000'; **U**; sf.
- Senecio atratus* Greene [1,8,1,1] D, L, R; 8200–11150'; **J, U**; br, mc, sf.
- Senecio bigelovii* A. Gray var. *hallii* A. Gray [-,8,3,2] D, R; 8900–11000'; **J, U**; af, br, mc, mm, mr, ra, sf.
- Senecio eremophilus* Richardson var. *kingii* (Rydb.) Greenm. [3,38,1,5] D, L, R, T; 7150–10300'; **J, P, U**; af, br, mc, mm, mr, ms, pj, pp, ra, sf.
- [*Senecio eremophilus* var. *macdougalii* (A. Heller) Cronquist]
- Senecio flaccidus* Less. var. *flaccidus* [6,-,2,5] D, L, R, S, T; 5470–6500'; **J, G, P, U**; fr, mr, pg, pj, ra.
- Senecio spartioides* Torr. & A. Gray [1,-,1,7] D, R, T; 6000–8655'; **J, P, U**; ds, fr, pj, pp.
- Senecio triangularis* Hook. [2,-,-,2] D, R; 8120–11000'; **J, U**; mm, mr.
- Senecio wootonii* Greene [14,13,3,3] D, L, R; 6500–11150'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.
- Solidago altissima* L. ssp. *gilvocanescens* (Rydb.) Semple [-,-,4,4] D, R, T; 5400–8655'; **J, P, U**; fr, pj, pp.
- Solidago lepida* DC. var. *salebrosa* (Piper) Semple [1,-,3,-] D, L; 5400–7100'; **J, G**; fr, pj.
- Solidago missouriensis* Nutt. var. *fasciculata* Holzinger [-,-,-,1] R; 9700'; **U**; mc.
- Solidago missouriensis* Nutt. var. *missouriensis* [2,10,1,2] D, L, R; 7550–10200'; **J, P, U**; af, mc, mm, mr, pp, ra.
- Solidago missouriensis* Nutt. var. *tenuissima* (Wooton & Standl.) C. Taylor & J. Taylor [1,-,-,-] R; 9100'; **J**; mm.
- Solidago mollis* Bartl. [-,-,1,2] D, R; 6700–8500'; **J, U**; br, ms, pp.
- Solidago nana* Nutt. [1,-,-,1] L, R; 7800–9800'; **J, U**; mc, pp.

- Solidago nemoralis* Aiton var. *longipetiolata* (Mack. & Bush) Palmer & Steyer. [-,2,-,1] D, R; 8080–8625'; **J, U**; mm, pp, ra.
 [*Solidago nemoralis* var. *decemflora* (DC.) Fernald]
- Solidago simplex* Kunth var. *simplex* [4,16,3,4] D, R; 7260–11150'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.
- Solidago speciosa* Nutt. var. *pallida* Porter [-,-,1,-] L; 7000'; **J**; mr.
- Solidago velutina* DC. ssp. *sparsiflora* (A. Gray) Semple [1,1,1,-] D, L, R; 7200–8160'; **J**; mc, pp, ra.
- Solidago wrightii* A. Gray var. *adenophora* S.F. Blake [2,1,2,-] D, L; 6700–8025'; **J**; pp, mr, ra.
- * *Sonchus arvensis* L. ssp. *arvensis* [1,-,-,-] L; 5600'; **G**; fr.
- * *Sonchus asper* (L.) Hill [2,1,1,-] D, L; 5825–8900'; **J, G**; fr, ml, mr, ra.
- Stenotus armerioides* Nutt. [-,-,-,4] R; 6860–8075'; **P, U**; ds, pj.
- Stephanomeria exigua* Nutt. var. *exigua* [-,-,-,3] R, T; 6450–6780'; **P, U**; ds, pj.
- Stephanomeria pauciflora* (Torr.) A. Nelson [8,-,4,7] D, L, R, T; 5600–8655'; **J, G, P, U**; ds, fr, pg, pj, ra.
- Symphotrichum ascendens* (Lindl.) G.L. Nesom [1,21,-,8] D, R; 7550–10300'; **J, U**; mc, mm, mr, pp, ra.
- Symphotrichum falcatum* (Lindl.) G.L. Nesom var. *commutatum* (Torr. & A. Gray) G.L. Nesom [3,-,1,-] D, L, R; 6090–7400'; **J, G, P**; br, mr, ra.
- Symphotrichum foliaceum* Lindl. ex DC. var. *apricum* (A. Gray) G.L. Nesom [-,-,-,1] R; 10230'; **U**; mm.
- Symphotrichum foliaceum* (DC.) G.L. Nesom var. *canbyi* (A. Gray) G.L. Nesom [1,4,-,1] D, R; 8500–10020'; **J, U**; mm, mr, ra.
- Symphotrichum foliaceum* (Lindl. ex DC.) G.L. Nesom var. *parryi* (D.C. Eaton) G.L. Nesom [UNM-Castetter 7891] R; **U**.
- Symphotrichum laeve* (L.) Å. Löve & D. Löve var. *geyeri* (A. Gray) G.L. Nesom [3,6,3,-] D, L, R; 6400–8625'; **J, U**; br, ms, pp, ra.
- Symphotrichum lanceolatum* (Willd.) G.L. Nesom var. *hesperium* (A. Gray) G.L. Nesom [-,2,1,1] D, L, R; 5400–8740'; **J, U**; mm, mr, ms, ra.
- Symphotrichum spathulatum* (Lindl.) G.L. Nesom var. *spathulatum* [-,-,-,4] R; 8350–10230'; **U**; mm, mr.
- * *Tanacetum vulgare* L. [-,-,-,1] R; 7300'; **U**; ra.
- Taraxacum ceratophorum* (Ledeb.) DC. [-,-,1,-] L; 7400'; **J**; mr.
- * *Taraxacum erythrospermum* Andr. ex Besser [8,5,-,2] D, R; 7360–10230'; **J, U**; mc, mm, mr, ms, pp, ra.
- * *Taraxacum officinale* Weber ex F.H. Wigg. [21,19,1,26] D, R; 6600–10900'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.
- Tetradymia canescens* DC. [-,-,2,6] D, R, T; 6100–9200'; **J, P, U**; ds, mm, pj.
- Tetranneuris acaulis* (Pursh) Greene var. *acaulis* [1,-,-,10] R, T; 6300–8100'; **P, U**; br, ds, fr, ms, pj.
- Tetranneuris argentea* (A. Gray) Greene [13,-,10,4] D, L, R, S, T; 5300–8475'; **J, G, P, U**; br, fr, ms, pg, pj, pp.
- Tetranneuris ivesiana* Greene [8,1,-,24] D, R, T; 7060–9025'; **J, P, U**; fr, ms, mr, pg, pj, pp.
- Thelesperma filifolium* (Hook.) A. Gray [2,1,4,2] D, L, R, S, T; 5900–8800'; **J, G, U**; pj, pp, mm, ra.
- Thelesperma megapotamicum* (Spreng.) Kuntze [20,-,6,10] D, L, R, S, T; 5470–8100'; **J, G, P, U**; ds, fr, mr, ms, pg, pj, pp, ra.
- Thymophylla acerosa* (DC.) Strother [1,-,-,-] L; 5600–6600'; **G**; ds.
- Townsendia annua* Beaman [-,-,-,11] R, T; 6240–7600'; **P, U**; fr, pj.
- Townsendia eximia* A. Gray [7,3,4,-] D, L, R, S; 6140–8625'; **J**; br, mc, mm, mr, ms, pj, pp.
- Townsendia exscapa* (Richardson) T. Porter [1,-,2,4] D, L, R; 5650–8500'; **J, U**; ms, pj, pp.
- Townsendia fendleri* A. Gray [3,-,-,8] R, S, T; 6000–7237'; **J, G, P, U**; ds, fr, pj.
- Townsendia incana* Nutt. [-,-,-,5] R; 6700–8075'; **P, U**; ds, pj.
- Townsendia leptotes* (A. Gray) Osterh. [2,-,-,1] D, T; 6900–7700'; **J, P**; ds, pj, pp.
- * *Tragopogon dubius* Scop. [32,24,3,21] D, L, R, S, T; 5300–10900'; **J, G, P, U**; af, br, ds, fr, mc, mm, mr, ms, pg, pj, pp, ra, sf.
- * *Tragopogon porrifolius* L. [2,-,-,-,1] D, T; 7150–8400'; **J, P, U**; mm, mr, ra.
- * *Tragopogon pratensis* L. [5,-,-,1] D, R, T; 5760–9100'; **J, G, P, U**; ds, mc, mr, ms, pp, ra.
- Verbesina encelioides* (Cav.) Benth. & Hook. f. ex A. Gray [1,-,2,10] D, R, S, T; 5400–8655'; **G, U**; ds, fr, ml, pj, ra.
 [*Verbesina encelioides* var. *exauriculata* B.L. Rob.]
- Wyethia arizonica* A. Gray [2,-,-,2] R; 7800–8750'; **J, U**; mm, ms, pj, pp.
- Xanthisma gracile* (Nutt.) Morgan & R.L. Hartm. [2,-,2,3] D, L, R, T; 5700–8600'; **J, G, P, U**; ds, fr, mm, pg, pj, pp, ra.
- Xanthisma grindelioides* (Nutt.) Morgan & R.L. Hartm. var. *grindelioides* [-,-,-,2] R; 6750–7000'; **U**; pj.
- Xanthisma spinulosum* (Pursh) Morgan & R.L. Hartm. var. *spinulosum* [14,-,5,28] D, L, R, S, T; 5500–10200'; **J, G, P, U**; ds, fr, mm, pg, pj, pp, ra.
- Xanthium strumarium* L. var. *canadense* (Mill.) Torr. & A. Gray [2,-,2,3] D, L, R; 6000–7100'; **J, P, U**; fr, ra.
- Zinnia grandiflora* Nutt. [-,-,1,-] D; 6100'; **J**; pj.

Berberidaceae

- Berberis fendleri* A. Gray [30,5,5,14] D, L, R, T; 6100–9025'; **J, P, U**; af, br, mc, mm, mr, ms, pj, pp, ra.
- Berberis repens* Lindl. [30,12,2,11] D, L, R; 6800–9625'; **J, U**; af, br, mc, mm, mr, ms, pp.

Betulaceae

- Alnus incana* (L.) Moench var. *occidentalis* (Dippel) C.L. Hitchc. [24,9,2,12] D, L, R; 6875–10900'; **J, U**; ml, mm, mr, ra.
 [*Alnus incana* ssp. *tenuifolia* (Nutt.) Breitung]
- Alnus oblongifolia* Torr. [1,-,1,-] D; 6200–7675'; **J**; ml, mr.
- ! *Betula glandulosa* Michx. [-,2,-,-] D; 8460–9200'; **J**; ml, mr.
- Betula occidentalis* Hook. [3,4,5,1] D, L, R; 6700–8075'; **J, U**; fr, mm, mr, ra.

Boraginaceae

- Cryptantha cinerea* (Greene) Cronquist var. *cinerea* [13,1,5,18] D, L, R, S, T; 5860–8080'; **J, G, P, U**; ds, fr, mm, ms, pg, pj, pp, ra.
- Cryptantha cinerea* (Greene) Cronquist var. *jamesii* Cronquist [9,-,5,-] D, L, R; 5800–8250'; **J, G, P**; br, fr, pj, pp, ra.
- Cryptantha crassisepta* (Torr. & A. Gray) Greene var. *elachantha*

- I. M. Johnst. [1,-,1,9] D, L, R, T; 5460–9200'; **G, P, U**; ds, fr, mr, pj, ra.
- Cryptantha fendleri* (A. Gray) Greene [1,-,-,10] L, R, T; 6300'; **G, P, U**; pp, ra.
- Cryptantha flava* (A. Nelson) Payson [2,-,-,-] D, R; 5860–7660'; **J, G**; ms, pj.
- Cryptantha fulvocanescens* (S. Watson) Payson var. *fulvocanescens* [-,-,-,6] R, T; 6050–7050'; **J, P, U**; ds, fr, pj.
- Cryptantha minima* Rydb. [2,-,-,3] R, S, T; 6320–7200'; **G, P, U**; ds, fr, pj.
- Hackelia besseyi* (Rydb.) J.L. Gentry [-,6,1,-] D; 8100–9580'; **J**; mc, ml, mm, mr, pp.
- Hackelia floribunda* (Lehm.) I.M. Johnst. [9,6,4,2] D, L, R; 6400–9800'; **J, U**; mc, mm, mr, ra.
- + ♦ *Hackelia hirsuta* (Wooton & Standl.) I.M. Johnst. [-,-,1,-] L; 8100'; **J**; mc.
- Lappula occidentalis* (S. Watson) Greene var. *cupulata* (A. Gray) L.C. Higgins [3,-,1,2] D, R, S, T; 5860–7100'; **J, G, P, U**; ds, fr, pg, pj.
- Lappula occidentalis* (S. Watson) Greene var. *occidentalis* [31,20,4,48] D, L, R, S, T; 5550–10050'; **J, G, P, U**; af, br, fr, mc, ml, mm, ms, pg, pj, pp, ra.
- Lithospermum cobrense* Greene [UNM-Castetter 10732] D; **J**.
- Lithospermum incisum* Lehm. [7,-,3,17] D, L, R, T; 6100–8655'; **J, G, P, U**; fr, mc, mm, pj, pp, ra.
- Lithospermum multiflorum* Torr. ex A. Gray [35,19,6,8] D, L, R, T; 6300–9580'; **J, P, U**; af, br, mc, mm, mr, ms, pj, pp, ra.
- Mertensia ciliata* (James ex Torr.) G. Don [-,-,-,2] R; 9300–11000'; **U**; mr.
- Mertensia franciscana* A. Heller [28,8,4,5] D, L, R; 6400–10900'; **J, U**; af, mc, mm, mr, ra, sf.
- Mertensia lanceolata* (Pursh) DC. [30,15,3,13] D, L, R; 6300–10940'; **J, U**; af, br, mc, mm, mr, ms, pj, pp, sf.
- [*Mertensia lanceolata* varieties]
- Plagiobothrys scouleri* (Hook. & Arn.) I.M. Johnst. var. *hispidulus* (Greene) Dorn [-,2,2,5] D, R; 7550–9540'; **J, U**; ml, mm, mr.
- Brassicaceae**
- * *Alyssum simplex* Rudolphi [4,-,-,17] D, R, T; 6850–8500'; **J, P, U**; br, mm, mr, ms, pj, pp, ra.
- Arabis hirsuta* (L.) Scop. var. *pyncocarpa* (M. Hopkins) Rollins [4,3,1,-] D, R; 8060–9140'; **J**; mc, mm, mr, ms.
- * *Barbarea vulgaris* R. Br. [-,-,1,1] D, R; 6200–8000'; **J, U**; mr, ra
- * *Berteroa incana* (L.) DC. [-,2,-,-] D; 8200–8400'; **J**; mm, ra.
- × *Boechera xdivaricarpa* (A. Nelson) Å. Löve & D. Löve [3,4,-,13] D, R, T; 7150–10600'; **J, P, U**; br, mc, mm, mr, ms, pp, ra.
- [Our plants are an unnamed hybrid *B. fendleri* × *B. stricta*.]
- Boechera fendleri* (S. Watson) W.A. Weber [5,5,3,12] D, L, R; 5600–10150'; **J, P, U**; mc, mm, ms, pj, pp, ra.
- Boechera lignifera* (A. Nelson) W.A. Weber [-,-,-,3] R; 6500–7237'; **U**; pj.
- Boechera pallidifolia* (Rollins) W.A. Weber [-,-,-,7] R, T; 6050–8075'; **P, U**; ds, fr, pj.
- Boechera perennans* (S. Watson) W.A. Weber [1,2,-,-] D, R; 8000–10650'; **J, U**; mc, pp, ra.
- Boechera retrofracta* (Graham) Å. Löve & D. Löve [-,-,-,2] R; 7560–7950'; **U**; pj, pp.
- [*Boechera holboellii* (Hornem.) Å. Löve & D. Löve]
- Boechera spatifolia* (Rydb.) Windham & Al-Shehbaz [-,-,-,12] R, T; 7500–9500'; **P, U**; ds, mc, pj, pp.
- Boechera stricta* (Graham) Al-Shehbaz [14,49,1,15] D, R; 7310–10300'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.
- * *Camelina microcarpa* Andr. ex DC. [3,-,-,4] D, R, S; 5440–9200'; **J, G, U**; ds, fr, pg, pp, ra.
- * *Capsella bursa-pastoris* (L.) Medik. [21,19,2,11] D, R; 7310–10050'; **J, U**; af, br, mc, mm, mr, ms, pp, ra.
- Cardamine cordifolia* A. Gray var. *cordifolia* [8,5,1,3] D, R; 6800–10000'; **J, U**; af, mc, mm, mr, sf.
- ! *Cardamine cordifolia* A. Gray var. *incana* A. Gray ex M.E. Jones [1,-,-,-] R; 9300–10000'; **J**; mr.
- * *Chorispora tenella* (Pall.) DC. [2,-,-,1,-] D, L, R; 6000–9000'; **J, U**; br, mr, ra.
- * *Conringia orientalis* (L.) Dumort. [1,-,-,-] D; 7360'; **J**; ra.
- Descurainia californica* (A. Gray) O.E. Schulz [-,-,-,5] R; 8760–9540'; **U**; af, mm, mr.
- Descurainia incana* (Bernh. ex Fisch. & C.A. Mey.) Dorn ssp. *incisa* (Engelm.) Kartesz & Gandhi [2,1,3,6] D, R, T; 5400–10700'; **J, U**; br, fr, mm, mr, pj, pp, sf.
- [*Descurainia incisa* (Engelm. ex A. Gray) Britton ssp. *incisa*]
- Descurainia incana* (Bernh. ex Fisch. & C.A. Mey.) Dorn var. *macrocarpa* (O.E. Schulz) Dorn [1,13,1,1] D, R; 8625–11000'; **J, U**; mc, mm, mr, ra, sf.
- [*Descurainia incana*]
- Descurainia incana* (Bernh. ex Fisch. & C.A. Mey.) Dorn var. *viscosa* (Rydb.) Dorn [1,9,1,4] D, L, R, T; 6200–9980'; **J, P, U**; af, br, fr, mc, mm, mr, pj, pp, ra, sf.
- [*Descurainia incisa* (Engelm. ex A. Gray) Britton ssp. *viscosa* (Rydb.) Rollins]
- Descurainia pinnata* (Walter) Britton var. *filipes* (A. Gray) Peck [-,-,-,2] R; 7700–10150'; **U**; br, mm.
- [*Descurainia incisa* (Engelm. ex A. Gray) ssp. *filipes* (A. Gray) Rollins]
- Descurainia pinnata* (Walter) Britton var. *osmiarum* (Cockerell) Shinnars [6,-,2,10] D, R, S, T; 5860–10100'; **J, G, P, U**; ds, fr, mc, pg, pj, ra.
- [*Descurainia pinnata* ssp. *halictorum* (Cockerell) Detling]
- ! *Descurainia pinnata* (Walter) Britton var. *paysonii* Detling [-,-,-,1] R; 6050–9200'; **U**; ds, mm.
- [*Descurainia incisa* (Engelm. ex A. Gray) Britton ssp. *paysonii* (Detling) Rollins]
- * *Descurainia sophia* (L.) Webb ex Prantl [16,9,2,17] D, L, R, T; 5550–9500'; **J, G, P, U**; br, fr, mc, mm, mr, pg, pj, pp, ra.
- Dimorphocarpa wislizeni* (Engelm.) Rollins [9,-,4,10] D, R, S, T; 5470–7220'; **J, G, P, U**; ds, fr, pg, pj, ra.
- Draba aurea* Vahl ex Hornem. [1,17,-,-] D, R; 8060–10300'; **J, U**; mc, mm, mr, ra, sf.
- Draba helleriana* Greene var. *helleriana* [9,33,4,2] D, L, R; 7500–11150'; **J, U**; br, mc, mm, mr, pp, sf.
- Draba helleriana* Greene var. *patens* (Heller) O.E. Schulz [5,-,-,-] D, R; 6800–9625'; **J**; mc.
- Draba rectifurcata* C.L. Hitchc. [1,-,-,3] R; 8840–10150'; **J, U**; mc, mm, mr.

- Draba reptans* (Lam.) Fernald [-,-,1,2] R; 6250–7740'; **J, U**; pj.
Draba streptocarpa A. Gray [-,-,-,5] R; 7050–9200'; **U**; mc, ml, ms, pj.
Erysimum capitatum (Douglas ex Hook.) Greene var. *capitatum* [4,9,3,2] D, L, R, T; 6400–10225'; **J, P, U**; br, fr, mm, mr, ms, pj, pp, ra.
Erysimum capitatum (Douglas ex Hook.) Greene var. *elatum* (Nuttall) Torr. [18,11,-,30] D, L, R, S, T; 5860–11150'; **J, G, P, U**; br, ds, fr, mc, mm, mr, ms, pg, pj, pp, ra, sf.
 * *Erysimum cheiranthoides* L. [UNM-Yarnell 34] R; **U**.
Erysimum inconspicuum (S. Watson) MacMillan [-,-,-,3] R, T; 7300–8560'; **P, U**; ds, pj.
 * *Erysimum repandum* L. [1,-,-,-] D; 7360'; **J**; ra.
Hesperidanthus linearifolia (A. Gray) Rydb. [21,2,3,24] D, L, R, T; 5860–8940'; **J, G, P, U**; br, fr, mc, mm, mr, ms, pj, pp, ra.
Lepidium alyssoides A. Gray var. *alyssoides* [3,-,-,11] D, R, T; 6200–8400'; **J, P, U**; ds, fr, pg, pj, ra.
Lepidium alyssoides A. Gray var. *eastwoodiae* (Wooton) Rollins [3,-,-,-] R; 6500–8475'; **J**; fr, pj, ra.
 * *Lepidium appelianum* Al-Shehbaz [-,-,-,1] R; 8000–8400'; **P**; ra.
 * *Lepidium chalapense* L. [2,-,-,1] D, R, T; 6000–8200'; **J, P**; ra.
Lepidium densiflorum Schrad. var. *densiflorum* [8,-,1,2] D, L, R; 5550–9100'; **J, G, U**; fr, mm, ms, pg, pj, pp, ra.
Lepidium densiflorum Schrad. var. *macrocarpum* G.A. Mulligan [-,-,-,1] R; 9300–9500'; **U**; mc.
Lepidium densiflorum Schrad. var. *ramosum* (A. Nelson) Thell. [7,-,-,-] D, L, R, S; 6140–9625'; **J**; br, mm, mr, pp, ra.
 * *Lepidium draba* L. [-,-,3,-] D, L; 6000–7600'; **J**; ra.
 * * *Lepidium latifolium* L. [2,-,1,-] D, L, R; 5400–5600'; **G**; fr, ra.
 ! *Lepidium ramosissimum* A. Nelson var. *bourgeauanum* (Thell.) Rollins [-,20,-,5] D, R, T; 7950–9850'; **J, P, U**; af, mc, mm, mr, ms, pj, pp, ra.
Lepidium ramosissimum A. Nelson var. *ramosissimum* [-,-,-,1] R; 9250'; **U**; mr.
Lepidium virginicum L. var. *medium* (Greene) C.L. Hitchc. [2,-,2,5] D, R, S, T; 5500–8500'; **G, U**; br, fr, pj, ra.
Lepidium virginicum L. var. *pubescens* (Greene) Thell. [4,21,-,4] D, R, T; 7550–10230'; **J, P, U**; mc, ml, mm, mr, pp, ra.
 * *Nasturtium officinale* R. Br. [9,2,1,-] D, L, R; 5360–8625'; **J, G, U**; fr, mm, mr, ra.
Noccaea fendleri (A. Gray) Holub ssp. *glauca* (A. Nelson) Al-Shehbaz & M. Koch [18,11,2,13] D, L, R; 6700–10600'; **J, U**; af, mc, mm, mr, pp, ra, sf.
Pennellia longifolia (Benth.) Rollins [2,10,-,-] D, L; 7120–10300'; **J**; mc, ms, pp, ra.
Pennellia micrantha (A. Gray) Nieuwl. [-,1,-,1] D, R; 8300–9000'; **J, U**; af, pp.
Physaria fendleri (A. Gray) O'Kane & Al-Shehbaz [2,-,1,6] D, R; 5700–7600'; **J, G, U**; ds, fr, pj.
Physaria floribunda Rydb. var. *floribunda* [UNM-Atwood 21221] R; **U**.
Physaria intermedia (S. Watson) A. Heller [UNM-Tonne s.n.] D; **U**.
Physaria montana (A. Gray) Greene [1,-,-,10] R, T; 6400–8655'; **J, P, U**; fr, ms, pj, ra.
Physaria rectipes (Wooten & Standl.) O'Kane & Al-Shehbaz [10,-,1,12] D, L, R, S, T; 5600–8500'; **J, G, P, U**; ds, fr, ms, pg, pj, pp.
Rorippa curvipes Greene var. *curvipes* [1,-,-,4] D, R; 8300–10230'; **J, U**; mr.
Rorippa curvipes Greene var. *truncata* (Jeps.) Rollins [-,-,1,-] D; 5400–5900'; **J**; fr.
Rorippa palustris (L.) Besser var. *fernaldiana* (Butters & Abbe) Stuckey [2,-,2,-] D, R; 5360–8980'; **J**; fr, mr.
Rorippa palustris (L.) Besser var. *hispida* (Desv.) Jonsell [-,-,1,-] D; 5360'; **J**; fr.
Rorippa sinuata (Nutt.) Hitchc. [-,-,1,-] D; 5360'; **J**; fr.
Rorippa sphaerocarpa (A. Gray) Britton [1,16,-,-] D, R; 8450–10300'; **J, U**; mm, mr, ms, pp.
 * *Sisymbrium altissimum* L. [11,1,4,10] D, L, R, S, T; 5470–8500'; **J, G, P, U**; ds, fr, ml, pj, ra.
 * *Sisymbrium loeselii* L. [-,1,-,1] D, R; 8000–8400'; **J, P**; mm, ra.
Stanleya pinnata (Pursh) Britton var. *pinnata* [-,-,-,1] R; 8250'; **U**; pj.
Streptanthella longirostris (S. Watson) Rydb. [1,-,1,3] R; 6000–6500'; **J, U**; fr, ra.
Streptanthus cordatus Nutt. var. *cordatus* [1,-,1,2] D, R; 6400–8075'; **J, P, U**; pj, pp.
Thelypodopsis purpusii (Brandege) Rollins [1,-,7, -] S; 5800–6500'; **J, G**; fr, pj.
Thelypodium integrifolium (Nutt.) Endl. ex Walp. var. *gracilipes* B.L. Rob. [-,1,-, -] D; 9500–9660'; **J**; mc.
Thelypodium wrightii A. Gray subsp. *wrightii* [3,-,1,-] D, L, R; 6250–7120'; **J, G, U**; pj, pp, ra.
 * *Thlaspi arvense* L. [-,-,-,1] R; 7540–7740'; **U**; ms.
Turritis glabra L. [8,8,5,-] D, L, R; 6400–9450'; **J, U**; af, br, mm, mr, ms, pp, ra.
- ### Cactaceae
- Coryphantha vivipara* (Nutt.) Britton & Rose [1,-,1,9] D, R, T; 5600–9450'; **J, P, U**; fr, mc, pp.
Cylindropuntia imbricata (Haw.) Knuth var. *imbricata* [7,-,1,15] D, R, S, T; 5900–8000'; **J, G, P, U**; fr, ms, pj, pp, ra.
Echinocereus coccineus Engelm. [3,2,2,6] D, L, R, T; 6400–8670'; **J, P, U**; ds, ms, pj, pp, ra.
Echinocereus fendleri (Engelm.) F. Seitz [3,-,1,-] D, L, S; 5440–5940'; **G**; ds, fr, pj.
Echinocereus triglochidiatus Engelm. [4,-,1,16] D, R, T; 5800–9450'; **J, G, P, U**; ds, fr, pj, pp.
Echinocereus viridiflorus Engelm. [1,-,1,12] L, R; 6500–9000'; **J, P, U**; ds, fr, mc, pg, pj, pp.
 + *Grusonia clavata* (Engelm.) H. Rob. [1,-,-,-] S; 6320'; **G**; ds.
Opuntia fragilis Nutt. [UNM-Reenea 2146] R; **U**.
Opuntia macrorhiza Engelm. [RM-Nelson 228] D; **J**.
Opuntia phaeacantha Engelm. [10,1,2,13] D, L, R, T; 5600–8670'; **J, G, P, U**; ds, fr, mc, pj, pp, ra.
Opuntia polyacantha Haw. var. *hystricina* (Engelm. & Bigelow) B.D. Parfitt [1,-,1,-] D, R; 6000'; **J**; pj.
Opuntia polyacantha Haw. var. *polyacantha* [8,-,1,28] D, L, R, S, T; 5440–8700'; **J, G, P, U**; ds, fr, ms, pg, pj, pp.
Pediocactus simpsonii (Engelm.) Britton & Rose [UNM-Castetter 1002 A-J] R; **U**.
Sclerocactus papyracanthus (Engelm.) N.P. Taylor [-,-,1,-] L; 6300'; **J**; pj.

Campanulaceae

Campanula parryi A. Gray var. *parryi* [5,14,2,5] D, R; 8000–10230'; **J, U**; mm, mr.

Campanula rotundifolia L. [27,40,7,20] D, L, R; 5850–11150'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

Lobelia cardinalis L. [1,-,2,-] D, L; 5300–5400'; **J**; ml, mr.

Cannabaceae

Celtis reticulata Torr. [3,-,3,-] D, L, S; 5400–6000'; **J, G**; fr, mr, pj.

Humulus lupulus L. var. *neomexicanus* A. Nelson & Cockerell [7,3,2,-] D, R; 5550–8750'; **J**; mc, mm, mr, ms, ra.

Caprifoliaceae (includes Valerianaceae)

Linnaea borealis L. var. *longiflora* Torr. [3,3,1,-] D, L, R; 8475–9950'; **J**; mc, mr.

Lonicera involucrata (Richardson) Banks ex Spreng. [19,5,1,2] D, L, R; 7500–10260'; **J, U**; af, mc, mm, mr, sf.

Symphoricarpos rotundifolius A. Gray [18,3,3,32] D, L, R; 7100–10900'; **J, P, U**; af, mc, mm, mr, ms, pp, sf.

Valeriana acutiloba Rydb. var. *acutiloba* [11,2,1,-] D, L, R; 8000–9300'; **J, P, U**; af, mc, mm, mr.

Valeriana arizonica A. Gray [3,-,-,-] D; 7525–8600'; **J**; af, br, mr, pp.

Valeriana edulis Nutt. ex Torr. & A. Gray [17,3,2,-] D, R; 7600–9800'; **J**; mc, mm, mr, ms, pp.

Caryophyllaceae

Arenaria lanuginosa (Michx.) Rohrb. var. *saxosa* (A. Gray) Zarucchi, R.L. Hartm., & Rabeler [10,36,3,6] D, L, R; 7850–11150'; **J, U**; af, br, mc, mm, mr, ms, pp, sf.

[*Spergularium lanuginosum* Michx. ssp. *saxosum* (A. Gray) W. A. Weber]

Cerastium arvense L. var. *strictum* (Gaudin) Koch [14,20,5,3] D, L, R; 6850–10600'; **J, U**; af, br, mc, mm, mr, ms, ra, sf.

Cerastium brachypodium (Engelm. ex A. Gray) B.L. Rob. [-,2,-,-] D; 8570–9725'; **J**; mm, mr.

Cerastium fastigiatum Greene [UNM-Sivinski 5826] R; **U**.

* *Cerastium fontanum* Baumg. subsp. *vulgare* (Hartm.) Greuter & Burdet [3,17,1,2] D, R; 6100–10230'; **J, G, U**; mc, ml, mm, mr, ms.

* *Dianthus armeria* L. subsp. *armeria* [-,2,-,-] D; 8075–8625'; **J**; pp, ra.

Drymaria effusa A. Gray var. *depressa* (Greene) Duke [-,-,-,2] R; 8200–8600'; **U**; pp.

Drymaria glandulosa Bartling var. *glandulosa* [-,-,-,1] R; 6990'; **U**; pj.

Drymaria leptophylla (Cham. & Schltdl.) Fenzl ex Rohrbach var. *leptophylla* [-,-,-,1] R; 8200–8350'; **U**; pp.

Drymaria molluginea (Seringe) Didr. [-,1,2,1] D, R; 6500–8670'; **J, U**; br, pj, ra.

Eremogone eastwoodiae (Rydb.) Ikonn. var. *adenophora* (Kearney & Peebles) R.L. Hartm. & Rabeler [-,-,-,2] R; 6200–6500'; **U**; fr.

Eremogone eastwoodiae (Rydb.) Ikonn. var. *eastwoodiae* [1,-,-,3] R; 6050–6500'; **P, U**; ds, fr, pj.

Eremogone fendleri (A. Gray) Ikonn. [7,38,1,9] D, R; 7860–11150'; **J, U**; mc, mm, mr, pp, ra, sf.

Moehringia lateriflora (L.) Fenzl [-,-,-,1] R; 9250'; **U**; mr.

Moehringia macrophylla (Hook.) Fenzl [1,-,2,-] D, L; 6300–8900'; **J**; br, mr.

Pseudostellaria jamesiana (Torr.) W.A. Weber & R.L. Hartm. [13,6,-,5] D, R; 7300–10150'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.

Sagina saginoides (L.) H. Karst. [2,-,-,1] D, R; 8460–9720'; **J, U**; mc, mm, mr.

* *Saponaria officinalis* L. [-,-,1,-] D; 6000'; **J**; mr.

Silene antirrhina L. [1,-,4,-] D; 5700–6020'; **J, G**; fr.

Silene drummondii Hook. var. *drummondii* [5,19,-,11] D, R; 7800–10900'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.

! *Silene drummondii* Hook. var. *striata* (Rydb.) Bocq. [-,-,-,4] R; 9300–10940'; **U**; mm, mr.

Silene menziesii Hook. [6,1,-,2] D, R; 7950–9000'; **J, U**; mc, mr, ms, pp.

Silene scouleri Hook. var. *pringlei* (S. Watson) C.L. Hitchc. & Maguire ex Kartesz & Gandhi [1,20,2,2] D, R; 7025–10325'; **J, U**; af, mc, mm, mr, pp, ra.

* *Spergularia rubra* (L.) J. Presl & C. Presl [1,-,-,-] R; 9200–9400'; **J**; ra.

Spergularia salina J. Presl & C. Presl [-,-,1,-] D; 5360'; **J**; mr.

Stellaria calycantha (Ledeb.) Bong. [-,1,-,-] D; 9680–10340'; **J**; mr.

[*Stellaria calycantha* var. *simcoeii* (Howell) Fernald]

Stellaria longifolia Muhl. ex Willd. [3,3,-,1] D, R; 7740–9100'; **J, U**; mm, mr, pp.

Stellaria longipes Goldie var. *longipes* [3,9,-,5] D, R; 8525–10150'; **J, U**; af, mc, mm, mr, sf.

* *Stellaria media* (L.) Villars [-,-,1,-] L; 7100'; **J**; mr.

Stellaria umbellata Turcz. ex Karel. & Kir. [-,1,-,-] R; 9200–10300'; **J**; mr.

Celastraceae

Paxistima myrsinites (Pursh) Raf. [31,33,3,14] D, L, R, T; 6200–10700'; **J, P, U**; af, br, mc, mm, mr, ms, pp, sf.

Chenopodiaceae

Atriplex argentea Nutt. var. *argentea* [UNM-Castetter 3929] D; **J**.

Atriplex canescens (Pursh) Nutt. var. *canescens* [14,-,5,24] D, L, R, S, T; 5470–8560'; **J, G, P, U**; ds, fr, mr, ms, pg, pj, ra.

Atriplex confertifolia (Torr. & Frem.) S. Watson [2,-,-,-] D, R; 7000–7100'; **J**; ds, pj.

* *Bassia hyssopifolia* (Pall.) Kuntze [-,-,-,4] D, R, T; 8440–10700'; **P, U**; ds, mr, mm.

Chenopodium atrovirens Rydb. [-,9,-,5] D, R; 6975–10100'; **J, U**; mc, mm, mr, ms, pp, ra.

Chenopodium berlandieri Moq. var. *zschackei* (Murr) Murr ex Asch. [3,2,1,-] D, R; 5400–9625'; **J**; mc, mm, ms, pp, ra, sf.

! * *Chenopodium capitatum* (L.) Asch. [-,1,-,-] D; 9500–10120'; **J**; mc.

Chenopodium desiccatum A. Nelson [-,-,-,3] D, T; 8440–8450'; **P**; ml.

Chenopodium fremontii S. Watson [3,17,5,12] D, L, R, T; 6000–9800'; **J, P, U**; mc, mm, mr, pp, ra.

* *Chenopodium glaucum* L. var. *glaucum* [-,-,1,-] T; 5400'; **J**; fr.

Chenopodium hians Standl. [-,-,-,2] R, T; 6600–8655'; **P, U**; pj.

Chenopodium incanum (S. Watson) A. Heller var. *incanum* [3,-,2,3] D, L, S, T; 5550–8667'; **J, G, P**; ds, fr, mm, ms, pj.

Chenopodium leptophyllum (Moq.) Nutt. ex S. Watson [-,2,1,3] D, R; 6480–8400'; **J, U**; ms, pp, ra.

Chenopodium neomexicanum Standl. [UNM-Fleck s.n.] R; **J**.

* *Chenopodium overi* Aellen [8,15,2,2] D, R; 7450–9800'; **J, U**; af, br, mc, ml, mm, mr, ms, ra, sf.

[*Chenopodium capitatum* var. *parvicapitatum* S.L. Welsh]

Chenopodium pratericola Rydb. [4,2,2,3] D, L, R, T; 5450–9500'; **J, G, P, U**; fr, mm, mr, pg, ra.

[*Chenopodium desiccatum* A. Nelson var. *leptophylloides* (Murr) Wahl]

* *Chenopodium rubrum* L. var. *rubrum* [-,-,1,-] D; 5400'; **J**; fr.

Chenopodium watsonii A. Nelson [-,-,-,2] R; 6550–8150'; **P, U**; ds, pj.

* *Dysphania ambrosioides* (L.) Mosyakin & Clemants [-,-,1,-] D; 5400'; **J**; fr.

* *Dysphania botrys* (L.) Mosyakin & Clemants [-,-,1,-] D; 5400'; **J**; fr.

Dysphania graveolens (Willd.) Mosyakin & Clemants [-,6,6,13] D, R, S, T; 6500–9340'; **J, P, U**; br, ds, fr, mc, ms, pg, pj, pp, ra.

* *Kochia scoparia* (L.) Schrad. [1,1,1,5] D, R, T; 5200–8900'; **J, P, U**; fr, pg, pj, ra.

Krascheninnikovia lanata (Pursh) Meeuse & Smit [2,-,1,11] D, R, T; 6100–8320'; **J, P, U**; ds, pg, pj, ra.

Monolepis nuttalliana (Schult.) Greene [1,8,-,7] D, R, T; 7900–9600'; **J, P, U**; mm, mr, ra.

* *Salsola tragus* L. [3,-,3,16] D, R, T; 5760–6150'; **J, G, P, U**; ds, fr, pg, pj, ra.

Sarcobatus vermiculatus (Hook.) Torr. [2,-,-,-] D, R; 6000–7000'; **J**; ds, fr.

Suckleya suckleyana (Torr.) Rydb. [1,-,-,6] D, R, T; 7050–9020'; **J, P, U**; ml.

Cleomaceae [Capparaceae]

Cleome serrulata Pursh [3,-,7,-] D, L, R; 5300–8370'; **J, G**; mm, ra.

Polanisia dodecandra (L.) DC. var. *trachysperma* (Torr. & A. Gray) H.H. Iltis [3,-,7,-] D, L; 5300–6140'; **J, G**; fr, pj, ra.

Wislizenia refracta Engelm. var. *refracta* [UNM-Talley 25] D; **J**.

Commelinaceae

Commelina dianthifolia Delile [-,5,3,2] D, R; 6200–9200'; **J, U**; br, mm, pj, pp, ra.

Tradescantia occidentalis (Britton) Smyth var. *occidentalis* [3,-,-,7] R, T; 5800–7280'; **J, P, U**; ds, fr, pg, pj.

Tradescantia occidentalis (Britton) Smyth var. *scopulorum* (Rose) Anderson & Woodson [-,-,-,1] R; 6500'; **U**; pj.

Convallariaceae [traditionally in Liliaceae]

Maianthemum racemosum (L.) Link var. *amplexicaule* (Nutt.) Dorn [25,5,2,4] D, R; 6800–10900'; **J, U**; af, br, mc, mm, mr, ms, pp, sf.

Maianthemum stellatum (L.) Link [25,3,1,5] D, R; 6880–10150'; **J, U**; af, mc, mm, mr, ms, pp, sf.

Convolvulaceae

Calystegia sepium (L.) R. Br. var. *angulata* (Brummitt) N.H. Holmgren [-,-,2,-] L; 5400–5500'; **J**; mr.

* *Convolvulus arvensis* L. [20,-,-,4] D, L, R, T; 5550–8360'; **J, G, P, U**; fr, mm, mr, pg, pj, pp, ra.

Cuscuta aplanata Engelm. [-,-,3,-] D, L; 5400–6500'; **J**; ra.
Cuscuta umbellata Kunth [-,-,-,5] R, T; 6750–7185'; **P, U**; ds, fr, pj.

Evolvulus nuttallianus Roemer & Schult. [2,-,1,3] D, R, T; 5960–6720'; **J, P, U**; fr, pg, pj.

Ipomoea cristulata H. Hall [-,-,2,1] D, R; 6000–8350'; **J, U**; fr, pp.

* *Ipomoea purpurea* (L.) Roth [UNM-Dixon A-348] D; **U**.

Cornaceae

♦ *Cornus canadensis* L. [4,-,-,-] D; 8300–8475'; **J**; mm, mr.

Cornus sericea L. var. *sericea* [24,4,1,2] D, L, R; 6800–8850'; **J, U**; br, mc, mm, mr, ms.

Crassulaceae

Sedum cockerellii Britton [-,2,1,-] D, L; 7200–9050'; **J**; ms, pj, pp.

Sedum lanceolatum Torr. ssp. *lanceolatum* [-,-,-,1] R; 8600'; **U**; mr.

Sedum rhodanthum A. Gray [-,-,-,2] R; 9980–11000'; **U**; mr.

Cucurbitaceae

Cucurbita foetidissima Kunth [2,-,1,-] D, R; 5710–6500'; **J**; fr, ml, ra.

Cyperaceae

Carex aquatilis Wahlenb. var. *aquatilis* [6,6,-,9] D, R; 8350–11000'; **J, U**; mc, mm, mr.

Carex atherodes Spreng. [1,-,-,-] R; 10300'; **J**; ml.

Carex athrostachya Olney [-,-,-,2] R; 8350–9200'; **U**; mr.

Carex aurea Nutt. [2,2,-,1] D, R; 8000–10230'; **J, U**; mc, mm, mr.

Carex bebbii (L.H. Bailey) Olney ex Fernald [UNM-Worthington 32790] R; **U**.

Carex bella L.H. Bailey [1,6,-,1] D, R; 8900–11150'; **J, U**; mm, mr, sf.

Carex bolanderi Olney [-,-,1,-] D; 6800'; **J**; mr.

Carex brevior (Dewey) Mack. ex. Lunell [-,-,1,-] D; 5600'; **J**; fr.

Carex brunnescens (Pers.) Poir. var. *brunnescens* [-,1+C,-,-] D; 8660'; **J**; ml.

Carex canescens L. var. *canescens* [4,5,-,4] D, L, R; 7500–10900'; **J, U**; mc, mm, mr.

Carex conoidea Willd. [-,C,-,-] D; 8750'; **J**; mm.

! *Carex deweyana* Schwein. var. *deweyana* [1,C,-,1] L, R; 7000–8500'; **J, U**; mc, mr.

Carex disperma Dewey [3,2,-,-] D, L, R; 7740–10000'; **J**; mr.

Carex douglasii Boott [1,8,2,5] D, L, R; 7050–9250'; **J, U**; mm, mr, pp, ra.

Carex duriuscula C.A. Mey. [1,1,-,7] D, R, T; 6850–10330'; **J, P, U**; ds, mc, mm, mr, pj.

Carex ebenea Rydb. [-,-,-,1] R; 10230'; **U**; mm.

Carex echinata Murray var. *echinata* [-,C,-,1] D, R; 9300–10020'; **J, U**; mr.

Carex emoryi Dewey [2,-,-,-] D, L; 5600–7675'; **J, G**; fr, ml.

Carex filifolia Nutt. var. *filifolia* [1,-,-,4] D, R; 6300–8500'; **J, U**; mm, ms, pj, pp.

Carex geophila Mack. [3,10,1,24] D, R, T; 6850–11000'; **J, P, U**; mc, mm, mr, ms, pj, pp, ra, sf.

Carex geyeri Boott [1,-,-,4] D, R; 8460–10900'; **J, U**; mc, mm.

- Carex hystericina* Muhl. ex Willd. [1,-,2,-] D, L, R; 5400–7000'; **J**; fr, mr.
- Carex illota* L.H. Bailey [-,-,-,1] R; 10700–11000'; **U**; mr.
- Carex inops* L.H. Bailey subsp. *heliophila* (Mack.) Crins [5,4,-,16] D, R, T; 7130–9450'; **J, P, U**; br, mc, mm, mr, pj, pp.
- Carex interior* L.H. Bailey [1,-,-,-] D; 8000–8100'; **J**; mm.
- Carex jonesii* L.H. Bailey [-,-,-,1] R; 9500–9800'; **U**; mr.
- Carex macloviana* d'Urv. [-,-,-,4] R; 9000–9800'; **U**; mr.
- Carex microptera* Mack. [25,41,2,14] D, L, R; 6600–11150'; **J, U**; af, br, mc, mm, mr, ms, sf.
- Carex nebrascensis* Dewey [3,-,-,3] D, R; 7330–10150'; **J, G, U**; mm, mr.
- Carex obtusata* Lilj. [UNM-Chauvin 03BD032-G5] D; **J**.
- Carex occidentalis* L.H. Bailey [39,41,3,12] D, L, R; 5860–10900'; **J, G, U**; br, mc, mm, mr, ms, pj, pp, ra, sf.
- Carex pellita* Muhl. ex Willd. [8,4,3,5] D, L, R; 7000–9800'; **J, U**; ml, mm, mr, ra.
- Carex petasata* Dewey [-,1,-,-] D; 8810–8925'; **J**; mm.
- Carex pityophila* Mack. [2,6,-,-] D, R; 7100–11000'; **J, U**; af, mc, mm, mr, pp, sf.
- [*Carex geophila* Mack.]
- Carex praegracilis* Boott [1,-,1,4] D, R; 8000–10600'; **J, U**; mc, mm, mr.
- Carex praticola* Rydb. [-,-,-,1] R; 10175–10600'; **U**; mm.
- ! *Carex rosea* Schkuhr ex Willd. [2,-,-,-] D; 7025–7750'; **J**; mm, pp.
- Carex rossii* Boott [5,8,-,1] D, R; 8300–10675'; **J, U**; mc, mm, mr, pp, sf.
- Carex scoparia* Schkuhr ex Willd. var. *scoparia* [1,-,-,-] D; 7780–7940'; **J**; mr.
- Carex siccata* Dewey [3,10,-,11] D, R; 8075–11150'; **J, U**; mc, mm, mr, ra, sf.
- [*Carex foenea* Willd. var. *foenea*]
- Carex simulata* Mack. [1,7,-,-] D, R; 8350–9180'; **J, U**; mc, ml, mm, mr.
- Carex sprengei* Dewey ex Spreng. [2,-,-,-] D; 7275–8475'; **J**; mr.
- Carex stevenii* (Holm) Kalela [1,1,-,-] D, R; 8700–9625'; **J**; mr.
- Carex stipata* Muhl. ex Willd. var. *stipata* [10,7,3,-] D, R; 6600–9150'; **J, U**; af, mc, ml, mm, mr.
- Carex subfusca* Boott [4,-,-,2] D, L, R; 6850–10230'; **J, U**; mc, mm, mr.
- ! *Carex tahoensis* Smiley [UNM-Gierisch 3146] R; **U**.
- Carex utriculata* Boott [7,13,-,8] D, L, R; 7920–10900'; **J, U**; mc, mm, mr.
- Carex vallicola* Dewey [-,-,-,5] R, T; 7200–10900'; **P, U**; ds, mm, mr, pp.
- Carex vulpinoidea* Michx. [2,-,-,-] D, L; 5550–7490'; **J, G**; mm, mr.
- Carex wootonii* Mack. [1,5,-,-] D; 8380–9300'; **J**; mc, mm, mr.
- Cyperus bipartitus* Torr. [-,-,1,-] D; 5360'; **J**; fr.
- [*C. rivularis* Kunth]
- Cyperus esculentus* L. var. *leptostachyus* Boeck. [-,-,2,-] D; 5360'; **J**; fr.
- Cyperus fendlerianus* Boeck. [-,12,2,4] D, L, R; 6650–9200'; **J, U**; mm, mr, ms, pp, ra.
- Cyperus schweinitzii* Torr. [3,-,-,1] R; 5900–6975'; **J, P, U**; fr, pg.
- Cyperus squarrosus* L. [-,-,1,1] D, R; 5360–8350'; **J, U**; fr, pp.
- Eleocharis acicularis* (L.) Roem. & Schult. [1,1,-,3] D, R; 8460–9150'; **J, U**; ml, mm, mr.
- Eleocharis palustris* (L.) Roem. & Schult. [5,13,1,10] D, L, R; 5600–10900'; **J, G, U**; fr, mc, ml, mm, mr, pp, ra.
- Eleocharis parishii* Britton [UNM-Worthington 32762] R; **U**.
- Eleocharis quinqueflora* (F.X. Hartmann) O. Schwarz [-,1,-,1] D, R; 8600–9300'; **J, U**; mr.
- Eleocharis rostellata* (Torr.) Torr. [-,-,-,2] R; 6500–7100'; **U**; fr, ml.
- Schoenoplectus acutus* (Muhl. ex Bigelow) Å. Löve & D. Löve var. *occidentalis* (S. Watson) S.G. Sm. [1,-,-,-] R; 6010–7000'; **J**; ml.
- Schoenoplectus americanus* (Pers.) Volkart ex Schinz & R. Keller [-,-,-,2] R; 6500–7100'; **U**; fr, ml.
- Schoenoplectus pungens* (Vahl) Palla var. *longispicatus* (Britton) S.G. Sm. [5,-,-,-] D, L, R; 5600–7200'; **J, G**; fr, ml, mr.
- [*Schoenoplectus pungens* var. *pungens*]
- Schoenoplectus tabernaemontani* (C.C. Gmelin) Palla [-,-,-,1] R; 6550–7100'; **U**; fr.
- Scirpus microcarpus* J. Presl & C. Presl [8,2,1,3] D, R; 7080–10020'; **J, U**; mm, mr.
- Scirpus pallidus* (Britton) Fernald [3,-,-,-] D; 6400–7330'; **J**; mm, mr.

Elaeagnaceae

- *•*Elaeagnus angustifolia* L. [9,-,1,4] D, L, R, S; 5470–7300'; **J, G, U**; fr, ml, mr, ra.

- Shepherdia argentea* (Pursh) Nutt. [2,-,-,-] R; 6000–7480'; **J**; fr, ra.

- Shepherdia canadensis* (L.) Nutt. [6,1,-,1] D, L, R; 8340–9180'; **J, U**; mc, mm, mr, pp.

Elatinaceae

- Elatine rubella* Rydb. [-,-,1,-] D; 8900'; **J**; mr.

Ericaceae

- Arctostaphylos uva-ursi* (L.) Spreng. [17,17,2,8] D, L, R; 7350–10225'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.

- Chimaphila umbellata* (L.) W.P.C. Barton var. *occidentalis* (Rydb.) S.F. Blake [3,-,-,-] L; 7000–8000'; **J**; mc, mr.

- [*Chimaphila umbellata* var. *acuta* (Rydb.) S.F. Blake]

- Moneses uniflora* (L.) A. Gray [1,2,-,-] D, R; 9050–10000'; **J**; mc, mr, sf.

- Monotropa hypopithys* L. [-,6,3,-] D, R; 6350–10230'; **J**; af, mc, mm, mr.

- Orthilia secunda* (L.) House [4,6,1,-] D, R; 6950–10600'; **J**; af, mc, mm, mr, sf.

- Pterospora andromedea* Nutt. [1,4,3,1] D, R; 6300–9800'; **J, U**; mc, ms, pp, ra.

- Pyrola asarifolia* Michx. var. *asarifolia* [-,-,1,-] L; 7450'; **J**; mc.

- Pyrola chlorantha* Sw. [2,3,4,-] D, L, R; 7450–9650'; **J**; mc, pp, sf.

- Pyrola minor* L. [2,-,-,-] D, L; 8000–8650'; **J**; mc, mr.

- Pyrola picta* Sm. [2,-,1,-] D, L; 8020–9200'; **J**; af, mc, mr.

- Vaccinium cespitosum* Michx. [1,-,-,1] R; 9300–10135'; **J, U**; mc.

- Vaccinium myrtillus* L. var. *oreophilum* (Rydb.) Dorn [8,12,1,-] D, L, R; 8340–11150'; **J**; af, mc, mm, mr, sf.

Vaccinium scoparium Leiberg ex Coville [3,-,-,-] D, L, R; 9050–9625'; **J**; mc, mm, pp.

Euphorbiaceae

Chamaesyce fendleri (Torr. & A. Gray) Small var. *chaetocalyx* (Boiss.) Shinnars [14,-,2,8] D, L, R, S, T; 5600–7660'; **J, G, P, U**; br, ds, fr, ms, pj, pp, ra.

Chamaesyce fendleri (Torr. & A. Gray) Small var. *fendleri* [5,-,3,17] D, L, R, T; 5300–8500'; **J, G, P, U**; fr, ms, pj, pp, ra.

Chamaesyce geyeri (Engelm.) Small [1,-,-,-] L; 5500–5600'; **G**; fr.

Chamaesyce glyptosperma (Engelm.) Small [-,-,1,6] D, R, T; 5300–7620'; **J, P, U**; ds, fr, pj, ra.

Chamaesyce revoluta (Engelm.) Small [-,-,1,-] L; 6500'; **J**; pj.

Chamaesyce serpyllifolia (Pers.) Small [4,12,5,17] D, R, T; 5300–9200'; **J, P, U**; ds, mc, mm, mr, ms, pg, pp, ra, sf.

Chamaesyce serrula (Engelm.) Wootton & Standl. [1,-,-,-] D; 5710'; **J**; ra.

Croton texensis (Klotzsch) Muell. Arg. [7,-,5,1] L, D, R, S; 5300–6300'; **J, G, P, U**; ds, fr, pg, pj, pp, ra.

Euphorbia brachycera Engelm. [3,2,2,-] D, R; 6450–8250'; **J**; mm, ms, pp, ra.

Euphorbia davidii Subils [1,-,2,-] D, L; 6000–7400'; **J**; ra.

Euphorbia exstipulata Engelm. [-,-,-,1] R; 6200'; **U**; fr.

Euphorbia spathulata Lam. [1,-,-,-] L; 5600–6600'; **G**; pj.

Tragia nepetifolia Cav. [2,-,2,-] D, L; 5600–6600'; **G**; fr, pj.

Fabaceae

Amorpha canescens Pursh [-,-,3,-] D, L; 6500–6600'; **J**; pj.

Amorpha fruticosa L. [3,-,1,-] D, L, S; 5300–5800'; **J, G**; ds, fr.

Amorpha nana Nutt. [1,-,-,-] L; 8000'; **J**; mr.

Astragalus agrestis Douglas ex G. Don [-,-,-,5] R, T; 8200–8700'; **P, U**; ds, mm, ms, pp.

Astragalus albulus Wootton & Standl. [1,-,-,2] R; 6010–7000'; **J, U**; fr, pj.

Astragalus allochrous A. Gray var. *playanus* (M.E. Jones) Isley [-,-,-,3] R, T; 6900–8600'; **P**; ds, mm, pj.

Astragalus amphioxys A. Gray var. *amphioxys* [1,-,-,1] D, R; 6200–6880'; **G, U**; ms, pj.

Astragalus bisulcatus (Hook.) A. Gray var. *haydenianus* (A. Gray) Barneby [6,-,1,2] D, R; 6900–8260'; **J, U**; ds, fr, ms, pg, pp, ra.

Astragalus ceramicus E. Sheld. var. *ceramicus* [-,-,-,3] R, T; 6450–7150'; **P, U**; fr, pj.

! *Astragalus cerussatus* E. Sheld. [-,-,-,3] R, T; 8200–8328'; **P**; ds, pg.

+ ♦ *Astragalus cyaneus* A. Gray [-,-,-,4] R; 6700–7600'; **U**; pj.

Astragalus drummondii Douglas ex Hook. [-,-,-,10] R, T; 6850–8500'; **P, U**; ds, mm, ms, pj, pp, ra.

Astragalus flexuosus (Hook.) Douglas ex G. Don var. *flexuosus* [1,-,-,4] R, T; 7050–9450'; **J, P, U**; mm, pj, pp, ra.

Astragalus flexuosus (Hook.) Douglas ex G. Don var. *greenei* (A. Gray) Barneby [1,-,2,1] D, R, S; 5700–6600'; **J, G, U**; fr, pj.

Astragalus gilensis Greene [2,3,-,-] D; 8025–8375'; **J**; br, mc, ms, pp.

Astragalus hallii A. Gray var. *hallii* [-,-,-,1] R; 8250'; **U**; mm.

Astragalus humistratus A. Gray var. *humistratus* [3,-,-,-] R; 7310–8120'; **J**; ds, mr, pp.

♦ *Astragalus iodopetalus* (Rydb.) Barneby [1,-,-,-] R; 7400–8600'; **J**; pp.

+ *Astragalus kentrophyta* A. Gray var. *neomexicanus* (Barneby) Barneby [1,-,-,-] R; 5900–7100'; **P**; pj.

Astragalus laxmannii Jacq. var. *robustior* (Hook.) S.L. Welsh & Barneby [1,-,-,-] R; 5900–6000'; **G**; pj.

Astragalus lentiginosus Douglas ex Hook. var. *albiflorus* (A. Gray) Schoener [1,-,2,3] D, R, S, T; 5700–8350'; **G, J, P, U**; ds, fr, pj, ra.

Astragalus lonchocarpus Torr. [10,1,1,5] D, R; 5825–9025'; **J, U**; ds, fr, ms, pj, pp, ra.

Astragalus lotiflorus Hook. [-,-,-,1] R; 6400–6500'; **U**; fr.

+ ♦ *Astragalus micromeris* Barneby [-,-,-,1] R; 6550–7100'; **U**; pj.

Astragalus missouriensis Nutt. var. *missouriensis* [2,-,2,6] D, S, R, T; 5600–8260'; **G, J, P, U**; ds, fr, pj, pp.

+ *Astragalus mollissimus* Torr. var. *matthewsii* (S. Watson) Barneby [1,-,-,-] D; 7640–7680'; **J**; ms.

Astragalus multiflorus (Pursh) A. Gray [5,-,-,7] D, R; 6900–8350'; **J, U**; ms, pj, pp, ra.

Astragalus newberryi A. Gray var. *newberryi* [-,-,-,2] R; 6200–7200'; **U**; pj.

Astragalus nuttallianus A. DC. var. *austrianus* (Small) Barneby [2,-,-,-] D; 5700–6020'; **G**; fr, pj.

Astragalus nuttallianus DC. var. *micranthiformis* Barneby [-,-,4,1] R; 5400–6300'; **J, U**; pj.

Astragalus pattersonii A. Gray [1,-,-,-] S; 5470'; **G**; fr.

Astragalus praelongus E. Sheld. var. *praelongus* [2,-,-,2] D, R; 5825–7250'; **J, U**; fr, ms, pj.

Astragalus proximus (Rydb.) Wootton & Standl. [1,-,-,-] R; 7400–8600'; **J**; pp.

+ ♦ *Astragalus puniceus* Osterh. var. *gertrudis* (Greene) Barneby [UNM-Spellenberg et al. 1231] R; **P**.

♦ *Astragalus ripleyi* Barneby [-,-,-,2] R; 8250–8350'; **U**; mm.

Astragalus scopulorum Porter [2,-,-,-] D; 5600–7150'; **J**; ds, fr.

Calliandra humilis Benth. var. *humilis* [1,-,-,-] D; 6950–7100'; **J**; pj, pp.

* *Colutea arborescens* L. [UNM-Hutchins 8472] D; **J**.

* *Coronilla varia* L. [-,-,1,-] D; 6000'; **J**; ra.

Dalea candida Michx. ex Willd. var. *oligophylla* (Torr.) Shinnars [8,-,7,7] D, L, R, T; 5300–7400'; **J, G, P, U**; fr, ms, pj, pp, ra.

Dalea cylindriceps Barneby [-,-,3,-] D; 5450–5700'; **J**; fr.

Dalea filiformis A. Gray [2,-,-,-] D; 7600–8710'; **J**; br, mc.

Dalea formosa Torr. [4,-,3,-] D, R, S; 5600–6400'; **J, G**; fr, ms, pj.

Dalea jamesii (Torr.) Torr. & A. Gray [4,-,-,2] R, S, T; 5600–6450'; **J, G, P, U**; ds, fr, pj.

Dalea lanata Spreng. var. *terminalis* (M.E. Jones) Barneby [2,-,2,1] D, R; 5700–6300'; **J, G, U**; ds, fr, ra.

Dalea leporina (Aiton) Bullock [-,-,3,-] D, L; 6000–7000'; **J**; ra.

Dalea nana Torr. & A. Gray var. *nana* [-,-,2,-] D; 5300–6350'; **J**; fr, ra.

Dalea polygonoides A. Gray [-,-,1,-] D; 6500'; **J**; pj.

Dalea purpurea Vent. var. *purpurea* [1,-,2,-] D; 6950–7100'; **J**; pj, pp.

* *Gleditsia triacanthos* L. [1,-,1,-] D, R; 5800'; **P**; fr, ra.

Glycyrrhiza lepidota Nutt. ex Pursh [8,-,3,-] D, L, R, S; 5300–7310'; **J, G, P**; ds, fr, mr, ms, ra.

- Hedysarum boreale* Nutt. var. *boreale* [1,-,-,2] D, R; 6100–7100'; **J, U**; fr, pj, pp.
- Lathyrus eucosmus* Butters & H. St. John [4,-,-,-] R; 6875–8100'; **J**; fr, pp, ra.
- * *Lathyrus latifolius* L. [1,-,1,-] D; 5745–5900'; **J**; fr, ra.
- Lathyrus leucanthus* Rydb. [19,14,2,17] D, L, R; 6500–10675'; **J, U**; af, mc, mm, mr, ms, pp, sf.
- * *Lotus corniculatus* L. [1,-,-,-] R; 7400–8600'; **J**; ra.
- Lotus plebeius* (Brandege) Barneby [4,-,-,-] D, R; 7500–8750'; **J**; br, mm, ms, pp.
- Lotus wrightii* (A. Gray) Greene [10,5,4,5] D, L, R; 6100–8860'; **J, G, U**; br, mc, mm, ms, pj, pp, ra.
- Lupinus argenteus* Pursh var. *argenteus* [-,-,2,20] R, T; 7150–10900'; **P, U**; mc, mm, ms, pj, pp, ra.
- Lupinus argenteus* Pursh var. *argophyllus* (A. Gray) S. Watson [6,6,6,25] D, L, R, T; 6300–10150'; **J, G, P, U**; mc, mm, mr, ms, pj, pp, ra.
- [*Lupinus caudatus* Kellogg var. *argophyllus* (A. Gray) S.L. Welsh]
- Lupinus argenteus* Pursh var. *fulvomaculatus* (Payson) Barneby [4,1,-,5] D, R; 7950–10200'; **J, U**; af, mc, mm, mr, ra.
- Lupinus argenteus* Pursh var. *parviflorus* (Nutt. ex Hook. & Arn.) C.L. Hitchc. [2,-,-,1] R; 9300–10135'; **J, P, U**; mc, mm.
- Lupinus argenteus* Pursh var. *rubricaulis* (Greene) S.L. Welsh [RM-Nelson 496] D; **J**.
- Lupinus brevicaulis* S. Watson [-,-,1,1] D, R; 6250–7237'; **P, U**; pg, pj.
- Lupinus kingii* S. Watson [3,2,5,5] D, R; 6240–9020'; **J, U**; ml, ms, pj, pp.
- Lupinus polyphyllus* Lindley var. *ammophilus* (Greene) Barneby [3,-,-,-] D, R; 7675–8000'; **J**; pj, pp, ra.
- [*Lupinus ammophilus* Greene]
- Lupinus polyphyllus* Lindl. var. *prunophilus* (M.E. Jones) L. Phillips [-,-,-,4] R; 8200–9680'; **U**; mc, mr, ms.
- Lupinus pusillus* Pursh var. *pusillus* [1,-,2,-] D, L; 5300–5800'; **J, G**; fr.
- Lupinus sericeus* Pursh [14,-,-,3] D, R; 7675–9100'; **J, U**; af, mc, mm, mr, ms, pp, ra.
- * *Medicago lupulina* L. [22,8,2,10] D, R; 5300–9980'; **J, U**; af, fr, mc, mm, mr, ms, pp, ra.
- * *Medicago sativa* L. [17,2,2,4] D, R; 5710–9640'; **J, P, U**; fr, mm, mr, pj, pp, ra.
- * *Melilotus albus* Medik. [15,7,3,4] D, L, R; 5710–9200'; **J, G, P, U**; fr, mm, mr, pj, pp, ra.
- * *Melilotus officinalis* (L.) Pall. [40,6,2,14] D, L, R, S, T; 5710–9625'; **J, P, U**; br, ds, fr, mc, mm, mr, ms, pj, pp, ra.
- Oxytropis deflexa* (Pall.) A. DC. var. *pulcherrima* S.L. Welsh & A. Huber [UNM-Sivinski 1929] R; **U**.
- Oxytropis lambertii* Pursh var. *bigelovii* A. Gray [4,-,1,2] D, L, R; 5860–9350'; **J, P, U**; ds, fr, mc, pj, ra.
- Oxytropis sericea* Nutt. var. *sericea* [-,-,-,8] R, T; 7237–10900'; **P, U**; mc, mm, pp.
- Parryella filifolia* Torr. & A. Gray ex A. Gray [2,-,3,-] L, R; 5400–5800'; **G**; fr, ra.
- Pediomelum hypogaeum* (Nutt. ex Torr. & A. Gray) Rydb. var. *hypogaeum* [-,-,2,-] D; 5460'; **J**; fr.
- Phaseolus angustissimus* A. Gray var. *angustissimus* [-,-,2,-] D, L; 5500–6500'; **J**; ra.
- Phaseolus angustissimus* A. Gray var. *latus* M.E. Jones [1,-,-,-] R; 5800'; **J**; ra.
- Psoralidium lanceolatum* (Pursh) Rydb. [7,-,1,2] D, L, R, S, T; 5300–7130'; **J, G, P, U**; ds, fr, mr, pj, ra.
- Psoralidium tenuiflorum* (Pursh) Rydb. [4,-,4,-] D, L, R; 5800–7660'; **J**; ms, pj, pp.
- Robinia neomexicana* A. Gray var. *neomexicana* [41,9,4,4] D, L, R, S; 5600–9560'; **J, G, U**; af, br, fr, mc, mm, mr, ms, pp, ra.
- Sophora nuttalliana* B.L. Turner [1,-,-,-] S; 5600'; **G**; pj.
- Sophora stenophylla* A. Gray [UNM-Spellenberg & Spellenberg 4992] R; **G**.
- * *Sphaerophysa salsula* (Pall.) DC. [1,-,-,-] R; 5760'; **G**; ra.
- Thermopsis rhombifolia* (Nutt. ex Pursh) Nutt. ex Richardson var. *divaricarpa* (A. Nelson) Isely [7,-,-,-] D, R; 6600–9900'; **J**; mc, mr, ms, pp, ra.
- Thermopsis rhombifolia* (Nutt. ex Pursh) Nutt. ex Richardson var. *montana* (Nutt.) Isely [29,24,3,24] D, L, R; 6600–11150'; **J, P, U**; af, br, mc, mm, mr, ms, pp, ra, sf.
- Trifolium attenuatum* Greene [-,-,-,1] R; 9300–10150'; **U**; mm.
- Trifolium gymnocarpon* Nutt. [1,-,-,5] R; 7100–8750'; **J, U**; mm, pj, pp.
- * *Trifolium hybridum* L. [-,-,1,1] D, R; 6000–10020'; **J, U**; mr, ra.
- Trifolium longipes* Nutt. var. *reflexum* A. Nelson [1,1,-,5] D, R, S; 8200–10600'; **J, U**; mm, mr, ra.
- * *Trifolium pratense* L. [6,1,1,5] D, R; 6500–9800'; **J, U**; fr, mm, mr, pp, ra.
- * *Trifolium repens* L. [27,37,2,7] D, L, R; 6500–10300'; **J, U**; af, mc, ml, mm, mr, ms, pp, ra, sf.
- Trifolium wormsjoldii* Lehm. var. *arizonicum* (Greene) Barneby [-,9,-,-] D; 7950–9200'; **J**; mm, mr.
- Vicia americana* Muhl. ex Willd. [42,24,7,22] D, L, R; 6100–11000'; **J, G, U**; af, br, ds, mc, mm, mr, ms, pg, pp, ra, sf.
- Vicia ludoviciana* Nutt. ex Torr. & A. Gray var. *ludoviciana* [-,-,3,-] D; 5500–6300'; **J**; ds, pj.

Fagaceae

- Quercus gambelii* Nutt. [83,30,9,48] D, L, R, T; 5460–10900'; **J, G, P, U**; af, br, mc, mm, mr, ms, pj, pp, ra.
- Quercus grisea* Liebm. [7,-,3,3] D, L, R; 5400–8450'; **J, P, U**; mr, ms, pj, pp, ra.
- Quercus turbinella* Greene [6,-,14,-] D, L; 5400–8200'; **J, G**; br, ms, pj, pp.
- × *Quercus xundulata* Torr. [4,-,12,9] D, L, R, S; 5400–8450'; **J, P, U**; ms, pj, pp.

Fumariaceae

- Corydalis aurea* Willd. var. *aurea* [14,10,-,6] D, L, R, S, T; 6050–10900'; **J, G, P, U**; af, br, mc, mm, mr, ra, sf.
- Corydalis aurea* Willd. var. *occidentalis* Engelm. ex A. Gray [6,-,2,2] D, R; 5500–9600'; **J, U**; af, br, fr, mc, mm, mr, pj, pp, ra.

- ♦ *Corydalis caseana* S. Watson ssp. *brandegeei* (S. Watson) G. Ownbey [-,-,-,1] R; 10700–11000'; **U**; mr.

Gentianaceae

- ♦ *Eustoma exaltatum* (L.) Salisbury ex G. Don [UNM-Spellenberg & Spurrier 8249] R; **G**.

Frasera speciosa Douglas ex Griseb. [12,5,1,1] D, L, R; 7450–10675'; **J, U**; af, br, mc, mm, ms, pp.

Gentiana bigelovii A. Gray [-,7,1,-] D, L, R; 7560–10300'; **J, U**; mc, mm, mr, pp.

[*Gentiana affinis* Griseb.]

Gentiana parryi Engelm. [-,-,-,2] R; 10230–10600'; **U**; mm.

Gentiana prostrata Haenke ex Jacq. [-,1,-,-] D; 8440'; **J**; mr.

Gentianella amarella (L.) Börner var. *acuta* (Michx.) Herder [1,5,5,1] D, R; 8460–11275'; **J, U**; mc, mm, mr.

Gentianella amarella (L.) Börner var. *heterosepala* (Engelm.) Dorn [UNM-Fleck s.n.] R; **J**.

Gentianopsis thermalis (Kuntze) H.H. Iltis [-,2,-,1] D, R; 8610–10600'; **J, U**; mm, mr.

Swertia perennis L. [-,1,-,1] D, R; 9190–10940'; **J, U**; mm, mr.
Zeltnera arizonica (A. Gray) Mansion [UNM-Tierney & Fox 563] D; **J**.

Geraniaceae

* *Erodium cicutarium* (L.) L'Her. ex Aiton [15,9,2,7] D, R, S, T; 5760–9200'; **J, G, P, U**; ds, fr, mc, mm, mr, pg, pj, pp, ra.

Geranium caespitosum E. James [29,30,5,15] D, L, R; 5825–10200'; **J, G, U**; af, br, ds, mc, mm, mr, ms, pj, pp, ra.

Geranium richardsonii Fisch. & Trautv. [41,44,4,15] D, L, R; 7750–11000'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

Grossulariaceae

Ribes cereum Douglas [28,5,7,35] D, L, R, S, T; 5600–9580'; **J, G, P, U**; ds, fr, mc, mm, mr, ms, pj, pp, ra.

Ribes inerme Rydb. var. *inerme* [33,5,3,-] D, L, R; 6950–9075'; **J**; af, mc, mm, mr, ms, pp, ra.

Ribes leptanthum A. Gray [11,25,6,14] D, R, T; 5500–10230'; **J, P, U**; af, mc, mm, mr, ms, pj, pp, ra, sf.

Ribes montigenum McClat. [3,3,-,2] D, L, R; 7550–11150'; **J, U**; mc, mm, mr, sf.

Ribes wolffii Rothrock [6,10,2,-] D, L, R; 8200–10700'; **J**; af, mc, mm, mr, sf.

Haloragaceae

Myriophyllum sibiricum Komarov [-,-,-,1] R; 8200–8350'; **U**; mr.

Hydrangeaceae

Fendlera rupicola A. Gray var. *falcata* (Thornber) Rehder [1,-,-,-] D; 6010–6460'; **J**; fr.

Fendlera rupicola A. Gray var. *wrightii* A. Gray [2,-,1,-] L, R; 5500–7950'; **J**; fr, mm.

Jamesia americana Torr. & A. Gray var. *americana* [25,23,3,2] D, L, R; 6300–10300'; **J, U**; af, br, mc, mm, mr, ms, sf.

Philadelphus microphyllus A. Gray [9,6,7,-] D, L, S; 5860–9200'; **G, J**; br, mc, mm, mr, ms, pj, pp, ra.

[*Philadelphus microphyllus* subspecies]

Hydrocharitaceae

Elodea bifoliata H. St. John [-,2,-,-] D; 8560–9570'; **J**; ml, mr.
Elodea canadensis Michx. [2,3,-,2] D, R; 7960–10020'; **J, U**; ml, mr.

Hydrophyllaceae

Hydrophyllum fendleri (A. Gray) A. Heller var. *fendleri* [12,7,3,3] D, L, R; 6500–10900'; **J, U**; af, mc, mm, mr, sf.

Nama dichotomum (Ruiz & Pavon) Choisy [-,-,2,3] D, R, T; 6990–8328'; **J, P, U**; br, pg, pj.

Nama hispidum A. Gray [-,-,1,1] D, R; 5530–6200'; **J, U**; ds, fr.
Nama retrorsum J.T. Howell [3,-,-,-] R; 5760–6090'; **J, G**; ds, fr, ra.

Phacelia alba Rydb. [5,1,-,6] D, R, T; 7185–9850'; **J, P, U**; mc, mm, mr, ms, pg, pp.

Phacelia caerulea Greene [1,-,2,-] D, L; 5500–5600'; **J, G**; fr, pj.

Phacelia crenulata Torr. ex. S. Watson [-,-,3,3] D, R, S, T; 6200–6760'; **J, P, U**; ds, pj.

Phacelia heterophylla Pursh var. *heterophylla* [15,15,1,10] D, L, R; 7200–10940'; **J, U**; br, mc, mm, ms, ra, sf.

Phacelia integrifolia Torr. var. *integrifolia* [5,-,2,11] D, L, R, S, T; 5470–6980'; **J, G, P, U**; ds, fr, pj, ra.

Phacelia pinkavae N.D. Atwood [-,-,5,-] D, S; 5500–6600'; **J**; pj.

Hypericaceae

Hypericum scouleri Hook. [8,12,1,1] D, R; 7100–9300'; **J, U**; ml, mm, mr, ms.

Iridaceae

Iris missouriensis Nutt. [41,40,3,25] D, L, R; 7100–11150'; **J, U**; af, br, mc, ml, mm, mr, ms, pp, ra, sf.

Sisyrinchium demissum Greene [2,-,1,-] D, R; 5300–7490'; **J, U**; mm, mr.

Sisyrinchium idahoense E.P. Bicknell var. *occidentale* (E.P. Bicknell) D.M. Hend. [2,-,-,-] R; 7060–7200'; **J**; fr, mr.

Sisyrinchium montanum Greene var. *montanum* [1,5,1,3] D, R; 8400–10900'; **J, U**; ml, mm, mr.

Juglandaceae

! *Juglans nigra* L. [-,-,3,-] D; 6000'; **J**; mr.

Juncaceae

Juncus arcticus Willd. var. *balticus* (Willd.) Trautv. [25,27,2,24] D, R; 5825–9830'; **J, U**; fr, mc, ml, mm, mr, ms, pp, ra.

Juncus arcticus Willd. var. *mexicanus* (Willd. ex Roem. & Schult.) Balslev [5,-,-,-] D, R; 6500–8700'; **J**; mc, mm, mr, ra.

Juncus bufonius L. [1,1,1,-] D, R; 5360–8920'; **J, U**; mc, mr.

Juncus confusus Cov. [-,-,1,4] L, R; 6550–10600'; **J, U**; fr, mr, mm.

Juncus drummondii E. Mey. [-,-,-,1] R; 10350–10940'; **U**; mm.

Juncus dudleyi Wiegand [8,5,1,1] D, L, R; 5600–10100'; **J, G, U**; fr, mm, mr, ra.

Juncus ensifolius Wikstr. var. *montanus* (Engelm.) C.L. Hitchc. [17,20,2,12] D, L, R; 6500–10900'; **J, U**; mc, ml, mm, mr, ra, sf.

Juncus interior Wiegand [3,10,-,1] D, L, R; 6700–9700'; **J, U**; fr, mc, ml, mm, mr, pp, ra.

Juncus longistylis Torr. [12,14,1,4] D, R; 5360–10600'; **J, U**; fr, mc, ml, mm, mr, pp, ra, sf.

Juncus mertensianus Bong. [1,-,-,-] R; 9300–10135'; **J**; mc.

Juncus nevadensis S. Watson [-,4,-,2] D, R; 8500–10600'; **J, U**; ml, mm, mr.

Juncus nodosus L. [2,-,-,1] D, R; 6010–7100'; **J, U**; fr, pj.

Juncus tenuis Willd. [-,1,-,-] D; 7920–7990'; **J**; mr.

Juncus torreyi Coville [-,1,1,-] D; 5400–8500'; **J**; mr.

Juncus xiphioides E. Mey. [-,-,4,-] D, L; 5400–9700'; **J**; mr.

Luzula comosa E. Mey. [2,2,-,-] D, R; 9200–9720'; **J**; af, mc, mr.

Luzula parviflora (Ehrh.) Desv. [6,6,1,3] D, L, R; 8350–11000'; **J, U**; mc, mm, mr, sf.

Juncaginaceae

Triglochin maritima L. [2,-,-,-] D; 6330'; **J**; ml.

Triglochin palustre L. [-,2,-,-] D; 8610–8720'; **J**; mm, mr.

Lamiaceae

+ *Agastache pallidiflora* (A. Heller) Rydb. var. *neomexicana* (Briq.) R.W. Sanders [1,-,-,-] D; 8000'; **J**; ms.

Dracocephalum parviflorum Nutt. [16,24,3,9] D, R; 5860–9700'; **J, G, U**; af, br, ds, fr, mc, mm, mr, ms, pp, ra, sf.

Hedeoma drummondii Benth. [4,-,5,9] D, R, S, T; 5400–7900'; **J, P, U**; ds, fr, mr, ms, pj, pp.

Hedeoma nana (Torr.) Briq. [3,-,-,-] D, L; 5600–6100'; **G**; fr, pj.

Hedeoma oblongifolia (A. Gray) A. Heller [-,-,1,-] D; 5500'; **J**; fr.

Lycopus americanus Muhl. ex W.P. Barton [-,-,2,-] D, L; 5400'; **J**; fr, mr.

* *Marrubium vulgare* L. [4,1,1,5] D, R, T; 5550–8750'; **J, P, U**; ds, ms, pj, ra.

Mentha arvensis L. [6,11,1,7] D, L, R; 5825–10020'; **J, U**; fr, ml, mm, mr, ra.

* *Mentha spicata* L. [-,-,1,-] D; 5700'; **J**; mr.

Monarda fistulosa L. var. *menthifolia* (Graham) Fernald [15,5,9,-] D, L, R; 5850–9580'; **J, U**; br, mc, mm, mr, ms, pp, ra.

Monarda pectinata Nutt. [4,-,5,3] D, L, R, S, T; 5550–7280'; **J, G, P, U**; ds, fr, pj, pp, ra.

* *Nepeta cataria* L. [UNM-Robertson 1165] D; **J**.

Poliomnitha incana (Torr.) A. Gray [1,-,-,-] R; 5955'; **J**; fr.

Prunella vulgaris L. var. *lanceolata* (W.P.C. Barton) Fernald [29,29,3,8] D, L, R; 5825–10900'; **J, U**; af, fr, mc, ml, mm, mr, pp, ra, sf.

Salvia farinacea Benth. [UNM-Hutchins 6648] R; **U**.

* *Salvia pratensis* L. [-,-,2,-] D, L; 8200–9050'; **J**; br, ra.

Salvia reflexa Hornem. [-,-,3,-] D, S; 6000–6540'; **J**; br, pj, ra.

Salvia subincisa Benth. [-,-,1,-] S; 6500'; **J**; pj.

Satureja vulgaris (L.) Fritsch [1,-,2,-] D; 5900–8280'; **J**; mm, mr.

* *Scutellaria galericulata* L. [1,1,-,-] D; 7490–9450'; **J**; mm, mr.

Stachys pilosa Nutt. var. *pilosa* [-,-,-,1] R; 9000–9200'; **U**; mr.

Teucrium laciniatum Torr. [1,-,-,-] S; 6660–6720'; **G**; pj.

Lemnaceae

Lemna minor L. [2,5,-,4] D, L, R; 5600–10900'; **J, G, U**; fr, ml, mr.

Lemna valdiviana Phil. [-,-,1,-] D; 8000'; **J**; mr.

Lentibulariaceae

Utricularia macrorhiza LeConte [1,-,-,-] R; 8900'; **J**; ml.

Liliaceae

(see also Alliaceae, Asparagaceae, Convallariaceae, Melanthiaceae)

Calochortus gunnisonii S. Watson var. *gunnisonii* [2,10,2,6] D, R; 8075–10900'; **J, U**; af, mc, mm, ms, pp.

Calochortus nuttallii Torr. & A. Gray [2,-,1,6] D, R, T; 6200–8600'; **J, P, U**; ds, ms, pj, pp.

Erythronium grandiflorum Pursh var. *grandiflorum* [UNM-Todsen 95-7-13A] R; **U**.

♦ *Lilium philadelphicum* L. [-,-,1,-] D; 6800'; **J**; mr, mc.

Prosartes trachycarpum S. Watson [2,-,-,-] D; 8500–9050'; **J**; mc.

Streptopus amplexifolius (L.) DC. [7,3,-,-] D, L, R; 8350–9920'; **J**; af, mc, mr, sf.

Linaceae

Linum aristatum Engelm. [2,-,-,-] R; 5800–6300'; **P**; fr, ra.

Linum australe A. Heller var. *australe* [4,-,-,2] R, T; 7200–8600'; **J, P, U**; mm, pj, pp, ra.

Linum compactum A. Nelson [-,-,2,-] D; 6000'; **J**; pj, ra.

Linum lewisii Pursh var. *lewisii* [7,3,1,2] D, R, S; 6660–11150'; **J, G, U**; ds, mc, mm, mr, pj, pp, ra, sf.

Linum neomexicanum Greene [-,-,3,-] D, L; 7150–8200'; **J**; br, pp.

Linum pratense (Norton) Small [-,-,-,1] R; 6700–6980'; **U**; pj.

Linum puberulum (Engelm.) A. Heller [-,-,1,4] D, R, T; 6300–7000'; **J, P, U**; ds, pj.

Loasaceae

Mentzelia albicaulis (Douglas ex Hook.) Douglas ex Torr. & A. Gray [2,-,3,3] D, L, R, S, T; 5400–7150'; **J, G, P, U**; fr, pj.

+ ♦ *Mentzelia conspicua* Todsen [1,-,-,-] R; 7900–8160'; **J**; ra.

Mentzelia humilis (A. Gray) J. Darl. var. *humilis* [-,-,-,1] T; 8230–8320'; **P**; ds.

Mentzelia laciniata (Rydb.) J. Darl. [2,-,-,3] D, R, T; 6100–8560'; **J, P, U**; fr, pj, pp, ra.

Mentzelia multiflora (Nutt.) A. Gray var. *multiflora* [15,-,1,10] D, L, R, S, T; 5470–8475'; **J, G, P, U**; ds, fr, ms, pj, pp, ra.

Mentzelia rusbyi Wooton [5,-,-,-] D, R; 7675–8350'; **J**; ds, mm, ra.

+ ♦ *Mentzelia springeri* (Standl.) Tidestr. [1,-,5,-] D; 5600–7250'; **J**; pj, pp, ra.

Malvaceae

* *Alcea rosea* L. [-,-,2,-] D, L; 6000–8900'; **J**; ra.

* *Malva neglecta* Wallr. [3,1,1,-] D, R; 8000–8350'; **J**; fr, mm, pp, ra.

Sidalcea candida A. Gray var. *candida* [16,14,5,8] D, L, R; 6200–10020'; **J, U**; mc, ml, mm, mr.

Sidalcea neomexicana A. Gray var. *neomexicana* [1,-,-,1] D, R; 7675–8350'; **J, U**; ml, mr.

Sphaeralcea coccinea (Nutt.) Rydb. var. *coccinea* [14,-,3,20] D, L, R, T; 5300–8740'; **J, G, P, U**; ds, fr, mm, pj, pp, ra.

Sphaeralcea fendleri A. Gray var. *fendleri* [11,2,5,4] D, R, S; 5710–8100'; **J, G, U**; ds, fr, mm, ms, pj, pp, ra.

Sphaeralcea grossulariifolia (Hook. & Arn.) Rydb. var. *pedata* (Torr. ex A. Gray) Kearney [5,-,-,-] D, R; 5825–8475'; **J**; fr, mm, ms, pp, ra.

Sphaeralcea incana Torr. ex A. Gray var. *cuneata* Kearney [3,-,-,3] D, L, R, T; 5550–7130'; **J, G, P, U**; ds, fr, pj, ra.

Sphaeralcea incana Torr. ex A. Gray var. *incana* [1,-,-,-] D; 7675'; **J**; ra.

Sphaeralcea parvifolia A. Nelson [4,-,-,3] R; 5800–6975'; **G, P, U**; fr, pg, pj, ra.

Melanthiaceae

(traditionally in Liliaceae)

Veratrum californicum T. Durand var. *californicum* [2,8,-,7] D, L, R; 8625–10900'; **J, U**; mc, ml, mm, mr.

Zigadenus elegans Pursh [2,10,3,3] D, L, R; 7500–11150'; **J, U**; mc, mm, mr, sf.

[*Anticlea elegans* (Pursh) Rydb.]

Moraceae

* *Morus alba* L. [2,-,1,-] D, L; 5400–5800'; **J, G**; fr.

Nyctaginaceae

+ ♦ *Abronia bigelovii* Heimerl [-,-,-,2] R; 6550–7100'; **U**; pj.

Abronia fragrans Nutt. ex Hook. [6,-,-,6] D, R, S, T; 5470–7220'; **J, G, P, U**; ds, fr, pj.

Boerhavia spicata Choisy [UNM-Yarnell 189] D; **J**.

Mirabilis albidia (Walter) Heimerl [-,20,-,-] D; 7950–9580'; **J**; mc, mm, mr, ms, pp, ra.

Mirabilis glabra (S. Watson) Standl. [2,-,-,3] R, T; 6000–6975'; **J, P, U**; fr, pj, ra.

Mirabilis linearis (Pursh) Heimerl var. *decipiens* (Standl.) S.L. Welsh [2,-,3,8] D, R; 8300–8475'; **J, U**; mm, mr.

Mirabilis linearis (Pursh) Heimerl var. *linearis* [9,2,1,10] D, L, R; 5950–8900'; **J, G, P, U**; br, ds, mm, mr, pj, pp, ra.

Mirabilis melanotricha (Standl.) Spellb. [2,-,-,-] D; 8000–8700'; **J**; mm, pp.

Mirabilis multiflora (Torr.) A. Gray var. *glandulosa* (Standl.) J.F. Macbr. [-,-,7,-] D, L; 6000–6500'; **J**; pj.

Mirabilis multiflora (Torr.) A. Gray var. *multiflora* [8,-,-,10] D, L, R, S, T; 5600–8100'; **J, G, P, U**; br, ds, fr, pj, pp.

Mirabilis oxybaphoides (A. Gray) A. Gray [-,-,2,3] D, R, T; 6100–8328'; **J, P, U**; mr, pj, pp.

Oleaceae

Forestiera pubescens Nutt. [12,1,8,3] D, L, R, S; 5470–8940'; **J, G, U**; fr, mc, mr, pj, ra.

* *Fraxinus pennsylvanica* Marshall [-,-,1,-] D; 5400'; **J**; fr.

Menodora scabra A. Gray [-,-,1,-] D; 5700'; **J**; fr.

Onagraceae

Chamerion angustifolium (L.) Holub var. *canescens* (Wood) N. Holmgren & P. Holmgren [8,5,1,3] D, R; 7330–11000'; **J, P, U**; mc, mm, mr, ra.

[*Chamerion angustifolium* subsp. *circumvagum* Mosquin]

Circaea alpina L. var. *alpina* [1,-,2,-] L; 8000'; **J**; mr.

Epilobium anagallidifolium Lam. [1,-,-,1] R; 9300–10900'; **J, U**; mc, mr.

[*Epilobium alpinum* L.]

Epilobium brachycarpum C. Presl [-,2,1,5] D, R; 7200–10180'; **J, U**; br, mm, mr, ra.

! *Epilobium campestre* (Jeps.) Hoch & W.L. Wagner [-,-,-,1] R; 8720–8740'; **U**; ml.

[*Epilobium pygmaeum* (Speg.) Hoch & P.H. Raven]

Epilobium ciliatum Raf. var. *ciliatum* [11,19,3,8] D, R; 5400–10900'; **J, U**; fr, ml, mm, mr, ra.

[*Epilobium ciliatum*]

! *Epilobium ciliatum* Raf. var. *glandulosum* (Lehm.) Dorn [-,3,-,1] D, R; 8900–9800'; **J, U**; mm, mr, ra.

[*Epilobium ciliatum*]

Epilobium halleianum Haussk. [1,4,-,1] D, R; 8600–11000'; **J, U**; mm, mr, ra.

Epilobium hornemanii Rchb. var. *hornemanii* [UNM-Fleck s.n.] R; **U**.

Epilobium saximontanum Haussk. [-,3,-,2] D, R; 8650–10150'; **J, U**; mm, mr.

Gayophytum diffusum Torr. & A. Gray var. *strictipes* (Hook.) Dorn [-,2,-,9] D, R; 7900–9500'; **J, U**; mc, mm, ms, pj, pp.

Gayophytum ramosissimum Torr. & A. Gray [-,-,-,7] R, T; 7150–9250'; **P, U**; mm, pj, pp.

Oenothera albicaulis Pursh [2,-,4,6] D, R, S, T; 5500–7900'; **J, G, P, U**; ds, fr, pj, pp.

* *Oenothera biennis* L. [-,-,-,1] R; 8350'; **U**; ra.

Oenothera brachycarpa A. Gray [-,-,1,-] D; 6400'; **J**; pj.

Oenothera cespitosa Nutt. var. *macroglottis* (Rydb.) Cronquist [4,-,-,9] D, L, R, T; 6100–8475'; **J, G, P, U**; ds, ms, pj, pp, ra.

Oenothera cespitosa Nutt. var. *marginata* (Nutt. ex Hook. & Arn.) Munz [10,-,1,3] D, L, R, S, T; 5440–8375'; **J, G, P, U**; fr, ms, pj, pp.

Oenothera cespitosa Nutt. var. *navajoensis* (W.L. Wagner, Stockh., & W.M. Klein) Cronquist [1,-,-,1] D, R; 6200–7700'; **J, U**; pj, pp.

Oenothera coronopifolia Torr. & A. Gray [11,3,1,18] D, R, T; 6000–9000'; **J, P, U**; ds, mm, ms, pj, pp, ra.

Oenothera curtiflora W.L. Wagner & Hoch [4,-,1,-] D, L, R; 5710–6330'; **J, G, P**; fr, pj, ra.

Oenothera elata Kunth var. *hirsutissima* (A. Gray ex S. Watson) Cronquist [14,-,6,-] D, L, R, S; 5850–8500'; **J, U**; br, mc, mm, mr, pp, ra.

Oenothera flava (A. Nelson) Garrett [3,16,1,3] D, R; 7550–9600'; **J, U**; mc, ml, mm, mr, pp, ra.

Oenothera hartwegii Benth. ssp. *fendleri* (A. Gray) W.L. Wagner & Hoch [-,-,4,-] D; 5600–6500'; **J**; fr, pj.

Oenothera pallida Lindley var. *latifolia* Rydb. [-,-,4,-] D; 5450–6250'; **J**; fr.

Oenothera pallida Lindl. var. *pallida* [1,-,-,-] R; 6000–6300'; **J**; fr.

Oenothera pallida Lindl. var. *runcinata* (Engelm.) Cronquist [7,-,-,6] D, L, R, S, T; 5600–7500'; **J, G, P, U**; ds, fr, ms, pj, pp.

Oenothera serrulata Nutt. [1,-,-,-] R; 5850–5900'; **J**; pg.

Oenothera suffrutescens (Seringe) W.L. Wagner & Hoch [21,-,4,-] D, L, R, S; 5550–8475'; **J, G, U**; ds, fr, pg, pj, pp, ra.

Oenothera villosa Thunb. var. *strigosa* (Rydb.) Dorn [1,4,-,-] D; 7950–8400'; **J**; mm, mr, ms, pp.

Orchidaceae

Calypso bulbosa (L.) Oakes var. *americana* (R. Br.) Luer [4,-,1,-] D, R; 7500–9300'; **J**; mc.

Corallorrhiza maculata (Raf.) Raf. var. *maculata* [-,-,1,-] D; 6600'; **J**; mr.

Corallorrhiza maculata (Raf.) Raf. var. *occidentalis* (Lindl.) Ames [8,9,3,3] D, L, R; 6600–10900'; **J, U**; af, mc, mm, mr, sf.

Corallorrhiza striata Lindl. var. *vreelandii* (Rydb.) L.O. Williams [-,-,3,-] D, L, R; 8200–8900'; **J**; pp, mc.

Corallorrhiza wisteriana Conrad [1,2,-,-] D, R; 9100–10050'; **J**; mc, mm, mr.

♦ *Cypripedium parviflorum* Salisb. var. *pubescens* O.W. Knight [-,-,2,-] L; 7200–7700'; **J**; ms.

♦ *Epipactis gigantea* Douglas ex Hook. [1,-,1,1] D, L, R; 5940–7250'; **G, U**; fr, ml, mr.

Goodyera oblongifolia Raf. [2,16,1,2] D, R; 8600–10230'; **J, U**; af, mc, mm, mr, sf.

Goodyera repens (L.) R. Br. ex W.T. Aiton [1,3,1,-] D, L; 7950–9000'; **J**; mc, mm, mr.

Malaxis porphyrea (Ridley) Kuntze [UNM-Castetter 3498] D; **J**.

Malaxis soulei L.O. Williams [-,5,1,-] D; 8025–8980'; **J**; mc, mm, ms, pp.

Platanthera aquilonis Sheviak [-,1,-,-] D; 9050'; **J**; mr.

Platanthera huronensis (Nutt.) Lindl. [2,1,-,4] R; 9500–11000'; **J, U**; ml, mr.

Platanthera purpurascens (Rydb.) Sheviak & W.F. Jenn. [2,5,-,1] D, R; 7100–10900'; **J, U**; mc, mm, mr.

Platanthera sparsiflora (S. Watson) Schltr. [-,-,5,-] D; 6500–8000'; **J**; ml, mr.

♦ *Spiranthes romanzoffiana* Cham. [-,1,-,-] D; 8620'; **J**; ml.

Orobanchaceae (previously Scrophulariaceae)

Castilleja angustifolia (Nutt.) G. Don var. *dubia* A. Nelson [-,-,-,2] R; 7620–8075'; **U**; ms, pj.

Castilleja exilis A. Nelson [2,-,1,-] D, L, R; 5400–6560'; **G, J**; fr. [*Castilleja minor* (A. Gray) A. Gray]

Castilleja integra A. Gray [28,1,5,39] D, L, R, S, T; 5600–9200'; **J, G, P, U**; br, ds, fr, mm, mr, ms, pg, pj, pp, ra.

Castilleja linariifolia Benth. [10,-,2,5] D, R; 6150–9680'; **J, P, U**; br, ds, fr, mc, mm, pj, pp, ra.

Castilleja lineata Greene [2,7,3,4] D, R; 7100–10150'; **J, U**; mc, mm, mr, pp, ra.

Castilleja miniata Douglas ex Hook. var. *miniata* [29,21,4,18] D, L, R; 6975–10900'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

Castilleja occidentalis Torr. [-,-,-,2] R; 9500–10940'; **U**; mr, mm.

Castilleja rhexifolia Rydb. [1,-,-,-] D; 10000'; **J**; mc.

Castilleja sulphurea Rydb. [1,3,-,11] D, R; 8350–10600'; **J, U**; mc, mm, mr, sf.

Conopholis alpina Liebm. var. *mexicana* (A. Gray ex S. Watson) Haynes [2,-,2,-] D; 8150–8860'; **J**; mc, ms, pj, pp, ra.

Cordylanthus wrightii A. Gray ssp. *wrightii* [-,-,2,2] D, L, R; 5360–7280'; **J, U**; fr, pj, ra.

Orobanche fasciculata Nutt. [-,-,2,7] D, R, T; 5500–8600'; **J, P, U**; ds, mm, pj.

Orobanche ludoviciana Nutt. var. *ludoviciana* [-,-,-,1] T; 7185'; **U**; pj.

Orobanche ludoviciana Nutt. var. *multiflora* (Nutt.) Beck [-,-,4,3] D, R; 5600–6975'; **J, U**; ds, fr, pj.

Orthocarpus luteus Nutt. [1,22,1,16] D, R, T; 7550–10230'; **J, P, U**; mc, mm, mr, ms, pj, pp, ra.

Orthocarpus purpureoalbus A. Gray ex S. Watson [1,-,4,5] D, L, R, T; 6500–8000'; **J, P, U**; br, ds, pj, pp.

Pedicularis centranthera A. Gray [5,-,-,6] D, R; 6700–8700'; **J, U**; mc, mr, ms, pj, pp, ra.

Pedicularis groenlandica Retz. [-,-,-,4] R; 9300–11000'; **U**; mm, mr.

Pedicularis parryi A. Gray [UNM-McGrath 158] R; **U**.

Pedicularis procera A. Gray [7,5,1,4] D, R; 8180–10900'; **J, U**; mc, mm, mr, sf.

Pedicularis racemosa Douglas ex Benth. var. *alba* (Pennell) Cronquist [2,2,-,3] D, R; 9300–11150'; **J, U**; mc, mm, mr, sf.

Oxalidaceae

Oxalis corniculata L. var. *wrightii* (A. Gray) B.L. Turner [UNM-McGrath 111] R; **U**.

Oxalis metcalfei (Small) Knuth sensu G.L. Nesom manuscript [4,6,2,-] D; 7950–9725'; **J**; mm, mr, pp, ra.

Parnassiaceae [previously in Saxifragaceae]

♦ *Parnassia fimbriata* König [UNM-McGrath 153] R; **U**.

Parnassia palustris L. var. *montanensis* (Fernald & Rydb. ex Rydb.) C.L. Hitchc. [-,1,-,1] D, R; 8610–9350'; **J, U**; mr.

Plantaginaceae [includes Callitrichaceae, Scrophulariaceae, in part]

Callitriche hermaphrodita L. [-,1,-,1] D, R; 8400–10020'; **J**; ml, mr.

Callitriche heterophylla Pursh var. *heterophylla* [-,-,1,1] D, R; 8900–10020'; **J, U**; mr.

Callitriche palustris L. [-,15,-,2] D, R; 8450–11000'; **J, U**; ml, mm, mr.

Collinsia parviflora Lindl. [-,-,-,1] R; 7800–7900'; **U**; pj.

Limosella aquatica L. [2,2,2,2] D, R; 5360–8980'; **J, U**; ml, mr.

* • *Linaria dalmanica* (L.) Mill. subsp. *dalmanica* [2,-,-,-] D; 5710–8375'; **J**; fr, ra.

* • *Linaria vulgaris* Mill. [1,-,2,5] D, L, R, S; 5400–9200'; **J, G, U**; br, fr, ml, mm, ra.

Lindernia dubia (L.) Pennell [-,-,1,-] D; 5360'; **J**; fr.

Mimulus glabratus Kunth var. *jamesii* (Torr. & A. Gray ex Benth.) A. Gray [6,3,4,-] D, L, R; 5500–8700'; **J, G, U**; fr, ml, mm, mr.

Mimulus guttatus DC. [17,10,4,8] D, L, R; 5600–11000'; **J, U**; af, mc, mm, mr, sf.

Mimulus rubellus A. Gray [-,-,1,1] D, R; 5460–8500'; **J, U**; fr, ms.

! *Mimulus suksdorfii* A. Gray [-,-,-,1] R; 7900–8075'; **U**; pj.

Mimulus tilingii Regel [4,-,-,-] D, R; 8000–9075'; **J**; mm, mr.

Penstemon ambiguus Torr. var. *ambiguus* [-,-,1,-] D, 5900'; **J**; ds.

Penstemon angustifolius Nutt. ex Pursh var. *caudatus* (A. Heller) Rydb. [2,-,-,3] D, R, T; 6500–7500'; **J, P, U**; ds, fr, ms, pp.

Penstemon barbatus (Cav.) Roth var. *torreyi* (Benth.) A. Gray [39,27,4,9] D, L, R, S, T; 5500–9850'; **J, G, P, U**; af, br, ds, fr, mc, mm, mr, ms, pj, pp, ra.

Penstemon barbatus (Cav.) Roth var. *trichander* A. Gray [10,-,-,1] D, R; 7300–9830'; **J, U**; af, mc, ms, pp, ra.

Penstemon crandallii A. Nelson var. *glabrescens* (Pennell) G.T. Nisbet & R.C. Jacks. [7,-,-,17] D, R; 7310–9200'; **J, P, U**; ds, mc, ms, pj, pp, ra.

+ *Penstemon crandallii* A. Nelson var. *taosensis* (Keck) G.T. Nisbet & R.C. Jacks. [-,-,-,8] D, R; 6850–9450'; **P, U**; mc, pj, pp.

! *Penstemon glaber* Pursh var. *alpinus* (Torr.) A. Gray [1,-,-,-] L; 7500–8900'; **J**; br.

Penstemon griffinii A. Nelson [1,-,-,2] R; 8000–9670'; **J, U**; ds, ms, pj.

+ *Penstemon inflatus* Crosswhite [1,1,-,-] D; 8000–8280'; **J**; br, ms.

Penstemon jamesii Benth. [3,-,1,-] D, L, S; 5850–6660'; **G**; ds, fr, pj.

Penstemon linarioides A. Gray subsp. *coloradoensis* (A. Nelson) D.D. Keck [4,-,-,-] D, R; 7200–8000'; **J, U**; ds, mr, pj, pp.

Penstemon oliganthus Wootton & Standl. [1,-,-,-] D; 8240–8260'; **J**; pp.

Penstemon palmeri A. Gray [1,-,-,-] S; 5980–6300'; **J**; ra.

Penstemon rydbergii A. Nelson var. *rydbergii* [-,6,1,-] D; 7550–9075'; **J, U**; mm, mr.

- Penstemon secundiflorus* Benth. [3,-,3,5] D, L, R; 6100–8475'; **J, U**; fr, pj, ms, pj, pp.
- Penstemon strictiformis* Rydb. [-,-,1,-] S; 6200'; **J**; ra.
- Penstemon strictus* Benth. [8,1,-,15] D, R; 6775–10900'; **J, U**; af, mc, mm, ms, pp, ra.
- Penstemon unilateralis* Rydb. [-,-,3,-] D, L; 6600–6800'; **J**; pj, pp. [*Penstemon virgatus* ssp. *asa-grayii* Crosswhite]
- Penstemon virgatus* A. Gray [3,-,-,7] D, R, T; 7025–9200'; **J, G, P, U**; ds, mm, ms, pj, pp.
- Penstemon whippleanus* A. Gray [9,8,-,3] D, L, R; 8180–11000'; **J, U**; mc, mm, mr, sf.
- Plantago argyraea* Morris [6,-,-,-] D, R; 7125–8000'; **J**; mm, pj, pp, ra.
- * *Plantago lanceolata* L. [12,1,-,1] D, L, R; 5710–9200'; **J, G, P, U**; fr, mm, mr, ra.
- * *Plantago major* L. [13,17,2,5] D, R; 6000–10230'; **J, U**; mc, ml, mm, mr, ra.
- Plantago patagonica* Jacq. [4,-,5,9] D, L, R, S, T; 5400–8100'; **J, G, P, U**; ds, fr, pj, pp, ra.
- Synthyris plantaginea* (E. James) Benth. [5,2,2,3] D, R; 7900–10300'; **J, P, U**; af, mc, mm, mr, pp.
- Veronica americana* Schwein. ex Benth. [23,14,4,7] D, L, R; 6000–10900'; **J, U**; af, br, mc, mm, mr.
- * *Veronica anagallis-aquatica* L. [6,-,3,1] D, L, R, S; 5360–6500'; **J, G, U**; fr, mr.
- Veronica peregrina* L. var. *xalapensis* (Kunth.) St. John & F.W. Warren [4,28,3,4] D, L, R; 7200–10230'; **J, U**; mc, ml, mm, mr, pp, ra.
- * *Veronica serpyllifolia* L. var. *humifusa* (Dickson) Vahl [9,7,2,3] D, L, R; 6850–10600'; **J, U**; mc, mm, mr, sf.
- Veronica wormskjoldii* Roem. & Schult. [-,-,-,3] R; 9980–11000'; **J, U**; mr.
- Poaceae**
- Achnatherum hymenoides* (Roem. & Schult.) Barkworth [38,-,2,37] D, R, S, T; 5300–8850'; **J, G, P, U**; br, ds, fr, mc, mm, ms, pg, pj, pp, ra.
- Achnatherum lettermanii* (Vasey) Barkworth [2,28,3,14] D, R; 8050–11000'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.
- Achnatherum lobatum* (Swallen) Barkworth [-,-,-,3] R; 6300–7600'; **U**; ds, pj.
- ! *Achnatherum nelsonii* (Scribn.) Barkworth var. *nelsonii* [2,-,-,5] D, R; 7850–10150'; **J, U**; mc, mm, ms, pp.
- Achnatherum perplexum* Hoge & Barkworth [1,-,-,1] D, R; 6975–7120'; **J, U**; pj, pp.
- Achnatherum robustum* (Vasey) Barkworth [3,-,-,5] D, R, T; 7000–8150'; **J, P, U**; ds, mm, ms, pj, pp, ra.
- Achnatherum scribneri* (Vasey) Barkworth [UNM-Sivinski 2801] R; **J**.
- * *Aegilops cylindrica* Host [3,-,1,1] D, R, S; 5440–7675'; **J, G, U**; fr, pj, ra.
- * *Agropyron cristatum* (L.) Gaertn. var. *cristatum* [6,2,3,10] D, R, T; 6500–10000'; **J, P, U**; mc, mm, mr, ms, pp, ra. [*Agropyron cristatum*]
- * *Agropyron cristatum* (L.) Gaertn. var. *desertorum* (Fisch. ex Link) Dorn [11,-,-,9] D, R, T; 7100–8600'; **J, P, U**; ds, ms, pg, pj, pp, ra. [*Agropyron cristatum*]
- Agrostis exarata* Trin. var. *minor* Hook. [4,2,1,3] D, R; 5760–10230'; **J, U**; mc, ml, mm, mr, ra.
- * *Agrostis gigantea* Roth [2,-,-,2] D, R; 7200–9200'; **J, U**; mm, mr, ra.
- Agrostis scabra* Willd. [7,43,2,11] D, L, R; 7200–11150'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.
- * *Agrostis stolonifera* L. [10,11,5,4] D, L, R; 5300–9950'; **J, U**; af, fr, mc, ml, mm, mr, pp, ra.
- Alopecurus aequalis* Sobol. var. *aequalis* [6,23,2,12] D, R; 7080–10900'; **J, U**; mc, ml, mm, mr, ra.
- * *Alopecurus pratensis* L. [3,-,-,2] D, R; 7900–10900'; **J, U**; br, mr, ra.
- Andropogon gerardii* Vitman ssp. *gerardii* [-,-,3,-] D, R; 6400–7250'; **J**; pp.
- Aristida adscensionis* L. [2,-,1,-] L, R; 6090–6500'; **J, P**; pg, pj, ra.
- Aristida arizonica* Vasey [-,-,2,1] D, L, R; 6500–7300'; **J, U**; pp.
- Aristida divaricata* Humb. & Bonpl. ex Willd. [-,-,1,-] D; 6900'; **J**; pj.
- Aristida purpurea* Nutt. var. *fendleriana* (Steud.) Vasey [1,-,-,13] R, T; 6450–8300'; **J, P, U**; ds, pj, pp, ra.
- Aristida purpurea* Nutt. var. *longiseta* (Steud.) Vasey [16,-,4,18] D, L, R, S, T; 5825–9475'; **J, G, P, U**; ds, fr, ms, pg, pj, pp, ra.
- Aristida purpurea* Nutt. var. *nealleyi* (Vasey) Allred [3,-,1,1] D, L, R; 6100–7060'; **J, G, U**; fr, pj.
- * *Arrhenatherum elatius* (L.) P. Beauv. ex J. Presl & C. Presl [1,-,-,-] R; 7890'; **J**; ra.
- Beckmannia syzigachne* (Steud.) Fernald [-,1,1,2] D, R; 5360–9200'; **J, U**; fr, ml, mr. [*Beckmannia syzigachne* ssp. *baicalensis* (Kusn.) T. Koyama & Kuwano]
- Blepharoneuron tricholepis* (Torr.) Nash [3,49,2,10] D, L, R; 6300–11150'; **J, G, U**; af, mc, mm, mr, ms, pp, ra, sf.
- Bothriochloa barbinodis* (Lag.) Herter [-,-,1,-] D; 5950'; **J**; pj.
- Bothriochloa laguroides* (DC.) Herter ssp. *torreyana* (Steud.) Allred & Gould [2,-,-,1] D, R; 5700–6100'; **J, G, U**; fr, pj, ra.
- Bothriochloa springfieldii* (Gould) Parodi [-,-,3,-] D; 5400–6500'; **J**; ds, pj.
- Bouteloua barbata* Lag. var. *barbata* [-,-,1,1] R, T; 6200'; **P, U**; fr.
- Bouteloua curtipendula* (Michx.) Torr. var. *caespitosa* Gould & Kapadia [1,-,-,5] R, S, T; 5760–7350'; **G, P, U**; fr, pj.
- Bouteloua curtipendula* (Michx.) Torr. var. *curtipendula* [8,-,4,12] D, L, R, S, T; 5400–7600'; **J, G, P, U**; br, fr, pg, pj, pp, ra.
- Bouteloua eriopoda* (Torr.) Torr. [-,-,2,9] D, L, R, T; 6100–7600'; **J, P, U**; ds, fr, pg, pj.
- Bouteloua gracilis* (Kunth) Lag. [10,17,3,46] D, L, R, T; 5400–9980'; **J, G, P, U**; br, ds, fr, mm, ms, pg, pj, pp, ra.
- Bouteloua hirsuta* Lag. [1,-,2,1] R; 5450–6200'; **J, P, U**; pj, ra.
- Bouteloua simplex* Lag. [-,2,-,5] D, R, T; 7185–8670'; **J, P, U**; pj, pp, ra.
- Bromus carinatus* Hook. & Arn. [3,3,-,5] D, R, S; 6140–10900'; **J, U**; br, mc, mm, mr, ra.
- * *Bromus catharticus* Vahl [3,-,1,-] D, L, S; 5410–6330'; **J, G, U**; fr, ra.
- Bromus ciliatus* L. [10,37,3,2] D, R; 6750–11150'; **J, P, U**; af, mc, mm, mr, ms, pp, ra, sf.

- Bromus frondosus* (Shear) Wootton & Standl. [-,-,3,-] D, L; 5600–6350'; **J**; fr, ra.
- * *Bromus inermis* Leyss. [57,12,3,26] D, L, R, S, T; 5825–10600'; **J, P, U**; af, br, ds, fr, mc, mm, mr, ms, pp, ra.
- * *Bromus japonicus* Thunb. ex Murray [12,1,2,3] D, L, R, S; 5500–8750'; **J, G, U**; fr, mm, mr, pg, pp, ra.
- Bromus lanatipes* (Shear) Rydb. [-,-,2,3] D, L, R; 5700–9200'; **J, U**; fr, mc, mm, mr, pj.
- Bromus porteri* (J.M. Coult.) Nash [2,11,-,10] D, L, R; 8075–10200'; **J, U**; br, mc, mm, mr, ms, pp.
- [*Bromus anomalus* Rupr. ex E. Fourn.]
- Bromus pumpellianus* Scribn. [1,-,-,-] D; 9050'; **J**; mc.
- Bromus richardsonii* Link [-,-,-,8] R; 7960–11000'; **U**; af, mc, mm, mr.
- * *Bromus tectorum* L. [39,8,4,30] D, L, R, S, T; 5550–10200'; **J, G, P, U**; af, br, ds, fr, mc, mm, mr, ms, pg, pj, pp, ra.
- Calamagrostis canadensis* (Michx.) P. Beauv. var. *canadensis* [3,15,1,7] D, L, R; 7950–11000'; **J, U**; mc, mm, mr, sf.
- Calamagrostis stricta* (Timm) Koeler ssp. *inexpansa* (A. Gray) C.W. Greene [-,2,1,-] D, R; 8620–9180'; **J, U**; ml, mr.
- Cenchrus longispinus* (Hack.) Fernald [1,-,1,-] D, R; 5400–5955'; **J**; fr.
- Chloris verticillata* Nutt. [-,-,-,2] R; 6300–6600'; **U**; ra.
- * *Chloris virgata* Sw. [2,-,-,1] R; 5760–6600'; **G, P, U**; ra.
- Cinna latifolia* (Trev. ex Goepp.) Griseb. [1,2,-,1] D, R; 8550–9450'; **J, U**; ml, mm, mr.
- * *Cynosurus echinatus* L. [-,-,1,-] D; 6100'; **J**; mr.
- * *Dactylis glomerata* L. [45,15,2,9] D, L, R; 6000–10900'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.
- Danthonia intermedia* Vasey [-,4,-,2] D, R; 8690–10600'; **J, U**; mm.
- Danthonia parryi* Scribn. [11,48,4,8] D, L, R; 7550–11150'; **J, U**; af, br, mc, mm, mr, ms, pp, sf.
- Danthonia spicata* (L.) P. Beauv. ex Roem. & Schult. [3,8,5,1] D, L, R; 6200–8910'; **J, U**; mc, mm, mr, pp, ra.
- Deschampsia cespitosa* (L.) P. Beauv. var. *cespitosa* [4,32,-,15] D, R; 7550–11000'; **J, U**; mc, mm, mr, pp, sf.
- Dichanthelium oligosanthes* (Schult.) Gould var. *scribnerianum* (Nash) Gould [-,-,3,-] D; 5600–6200'; **J**; mr.
- * *Digitaria sparganalis* (L.) Scop. [1,-,-,-] D; 8360'; **J**; ra.
- Distichlis spicata* (L.) Greene var. *stricta* (Torr.) Scribn. [1,-,1,-] D, R; 5300–6000'; **J**; fr, ra.
- * *Echinochloa crus-galli* (L.) P. Beauv. [-,-,1,-] D; 5460'; **J**; fr.
- * *Echinochloa muricata* (P. Beauv.) Fernald var. *microstachya* Wiegand [1,-,-,-] R; 5760'; **G**; ra.
- Elymus canadensis* L. var. *canadensis* [4,-,3,1] D, L, R; 5400–7100'; **J, G, U**; fr, mc, mr, pp, ra.
- * *Elymus elongatus* (Host) Runem. var. *elongatus* [3,1,-,-] D, R; 6150–8350'; **J, U**; mm, pp, ra.
- Elymus elymoides* (Raf.) Swezey var. *brevifolius* (J.G. Sm.) Dorn [78,58,6,63] D, L, R, S, T; 5500–11150'; **J, G, P, U**; af, ds, fr, mc, mm, mr, ms, pg, pj, pp, ra, sf.
- [*Elymus longifolius* (Smith) Gould]
- Elymus glaucus* Buckley var. *glaucus* [8,5,2,3] D, L, R; 7000–10180'; **J, U**; af, br, mc, mm, mr, pp.
- * *Elymus hispidus* (Opiz) Melderis var. *hispidus* [10,9,-,3] D, L, R; 7580–10150'; **J, U**; br, mc, mm, mr, pp, ra, sf.
- * *Elymus hispidus* (Opiz) Melderis var. *ruthenicus* (Griseb.) Dorn [7,2,2,3] D, L, R; 6900–9980'; **J, U**; mc, mm, mr, ms, pp, ra.
- [*Elymus hispidus* ssp. *barbulatus* (Schur) Melderis]
- * *Elymus juncea* Fisch. [6,-,-,4] D, R; 6050–8900'; **J, U**; fr, mm, pj, pp, ra.
- [*Psathyrostachys juncea* (Fisch.) Nevski]
- Elymus lanceolatus* (Scribn. & J.G. Sm.) Gould [1,-,-,-,1] L, T; 6300–8560'; **G, P**; pg, pp.
- × *Elymus xpseudorepens* (Scribn. & J. G. Sm.) Barkworth & Dewey [1,-,-,-] R; 8400–8700'; **J**; mm.
- * *Elymus repens* (L.) Gould [5,-,-,-] D; 7100–8350'; **J**; mm, mr, ra.
- × *Elymus xsaxicolus* Scribn. & J.G. Sm. ex Scribn. [-,1,-,-] D; 8000–8160'; **J**; pp.
- [Unstabilized hybrid]
- Elymus smithii* (Rydb.) Gould [21,7,3,27] D, R, S, T; 5860–9500'; **J, G, P, U**; br, ds, fr, mc, mm, mr, ms, pg, pj, pp, ra.
- Elymus trachycaulus* (Link) Gould ex Shinners ssp. *subsecundus* (Link) Å. Löve & D. Löve [1,6,1,1] D, R; 8290–10180'; **J, U**; af, mc, mm, pp, ra.
- Elymus trachycaulus* (Link) Gould ex Shinners ssp. *trachycaulus* [12,44,4,11] D, L, R; 5600–10330'; **J, P, U**; af, br, ds, mc, mm, mr, ms, ra, sf.
- Elymus trachycaulus* (Link) Gould ex Shinners ssp. *violaceus* (Hornem.) Å. Löve & D. Löve [-,12,-,2] D, R; 8300–11000'; **J, U**; af, mc, mm, mr, ms, ra, sf.
- * *Eragrostis cilianensis* (All.) Lutati ex Janch. [-,-,2,-] D; 5460–6000'; **J**; ra.
- * *Eragrostis curvula* (Schrud.) Nees conferta Stapf [-,-,2,-] D; 6350–6400'; **J**; ra.
- Eragrostis hypnoides* (Lam.) Britton, Sterns, & Poggenb. [-,-,1,-] D; 5360'; **J**; fr.
- Eragrostis mexicana* (Hornem.) Link ssp. *mexicana* [1,-,-,-] R; 5760'; **G**; ra.
- Eragrostis pectinacea* (Michx.) Nees ex Steud. var. *miserrima* (E. Fourn.) Reeder [RM-Castetter 587] D; **J**.
- Eragrostis pectinacea* (Michx.) Nees ex Steud. var. *pectinacea* [1,-,2,-] D, R; 5450–6000'; **J, G**; fr, ra.
- Eragrostis trichodes* (Nutt.) A.W. Wood. [-,-,1,-] D; 6300'; **J**; ra.
- Festuca arizonica* Vasey [11,58,6,35] L, D, R; 6000–10900'; **J, P, U**; af, br, mc, mm, mr, ms, pp, ra.
- * *Festuca arundinacea* Schreb. [18,8,1,1] D, L, R; 5600–9250'; **J, G, U**; fr, mm, mr, pp, ra.
- Festuca brachyphylla* Schult. ex Schult. & Schult. f. ssp. *coloradensis* Fred. [-,C,-,-] D; 8550'; **J**; mm.
- Festuca calligera* (Piper) Rydb. [-,-,-,6] R; 8450–10600'; **U**; mm, pp.
- Festuca idahoensis* Elmer [10,8,-,5] D, R; 6900–9720'; **J, U**; af, mc, mm, mr, ms, pp, ra, sf.
- * *Festuca pratensis* Huds. [3,2,2,1] D, R; 5600–8460'; **J, U**; ml, mm, mr, ra.
- Festuca rubra* L. ssp. *rubra* [1,-,-,-] R; 9475–9840'; **J**; mm.
- Festuca saximontana* Rydb. var. *saximontana* [1,4,-,2] D, R; 7940–11000'; **J, U**; mc, mm, ms, ra, sf.
- Festuca sororia* Piper [-,10,2,-] D, L, R; 8000–10150'; **J, U**; af, mc, mm, mr.
- Festuca thurberi* Vasey [5,33,5,15] D, L, R; 7950–11150'; **J, U**; af, br, mc, mm, mr, pp, ra, sf.

- * *Festuca trachyphylla* (Hack.) Krajina [-,-,1,2] L, R; 8200–9600'; **J, U**; br, mc.
[Introduced in Jemez area after human mediated fire, etc.]
- Glyceria borealis* (Nash) Batch. [1,5,3,5] D, R; 7950–10020'; **J, U**; ml, mm, mr.
- Glyceria elata* (Nash ex Rydb.) M.E. Jones [2,1,-,4] D, R; 7100–10900'; **J, U**; ml, mm, mr.
- Glyceria grandis* S. Watson [3,17,3,4] D, L, R; 7860–10020'; **J, U**; ml, mm, mr.
- Glyceria striata* (Lam.) Hitchc. [29,10,4,11] D, L, R; 6500–10000'; **J, U**; af, br, mm, mr.
- Hesperostipa comata* (Trin. & Rupr.) Barkworth var. *comata* [8,-,2,17] D, R, S, T; 5860–10900'; **J, G, P, U**; ds, fr, mm, ms, pg, pj, pp, ra.
- Hesperostipa comata* (Trin. & Rupr.) Barkworth var. *intermedia* (Scribn. & Tweedy) Dorn [8,2,-,3] D, R; 7200–9200'; **J, U**; ds, mm, ms, pp, ra.
- Hesperostipa neomexicana* (Thurb. ex J.M. Coult.) Barkworth [1,-,2,2] D, L, R; 5600–6600'; **J, G, U**; fr, pj.
- Hierochloë odorata* (L.) P. Beauv. [2,3,-,-] D, R; 8760–9600'; **J**; mc, ml, mm.
- Hilaria jamesii* (Torr.) Benth. [14,-,4,27] D, L, R, S, T; 5530–8000'; **J, G, P, U**; ds, fr, ms, pg, pj, pp, ra.
[*Pleuraphis jamesii* Torr.]
- Hopia obtusa* (Kuntz) Zuloaga & Morrone [-,-,3,-] D; 6000'; **J**; ra.
- Hordeum brachyantherum* Nevski [2,14,1,6] D, R; 8450–10900'; **J, U**; mc, ml, mm, mr, ra.
- Hordeum jubatum* L. ssp. *intermedium* Bowden [5,11,-,7] D, R; 7500–9580'; **J, U**; mc, ml, mm, pp, ra.
- Hordeum jubatum* L. ssp. *jubatum* [18,8,2,4] D, L, R, S; 5300–9570'; **J, G, U**; br, ds, fr, mc, ml, mm, mr, ms, pj, pp, ra.
- * *Hordeum murinum* L. ssp. *glaucum* (Steud.) Tzvelev [3,-,-,1] D, R, S; 5470–8260'; **J, G, U**; br, fr, pj, ra.
- Hordeum pusillum* Nutt. [1,-,-,1] R, S; 6300–6720'; **G, U**; pg, pj.
- Koeleria macrantha* (Ledeb.) Schult. [29,58,6,43] D, L, R, T; 5750–11150'; **J, G, P, U**; af, br, ds, fr, mc, mm, mr, ms, pj, pp, ra, sf.
- Leersia oryzoides* (L.) Sw. [-,-,3,-] D, L; 5400–5500'; **J**; fr.
- * *Lolium perenne* L. var. *aristatum* Willd. [4,-,-,-] D, L; 7525–8250'; **J, U**; br, mm, mr, ra.
- * *Lolium perenne* L. var. *perenne* [3,-,1,1] D, R, S; 5760–9800'; **J, G, U**; fr, mc, mm, pp, ra.
- Lycurus setosus* (Nutt.) C. Reeder [-,2,2,4] D, L, R, T; 6300–8625'; **J, P, U**; mr, pj, ra.
- Melica porteri* Scribn. var. *porteri* [9,8,2,-] D, L, R; 6975–9580'; **J**; af, mc, mm, mr, ms.
- Muhlenbergia andina* (Nutt.) Hitchc. [1,-,-,-] D; 8000–8100'; **J**; mm.
- ◆ *Muhlenbergia arsenei* Hitchc. [1,-,3,-] D, L; 5800–6600'; **J**; pj, ra.
- Muhlenbergia asperifolia* (Nees & Meyen ex Trin.) Parodi [2,-,-,1] D, R; 6550–7550'; **J, U**; fr, mr, ra.
- Muhlenbergia dubia* E. Fourn. ex Hemsl. [-,-,1,-] D; 6750'; **J**; br.
- Muhlenbergia filiformis* (Thurb. ex S. Watson) Rydb. [-,-,-,6] R, T; 8300–10200'; **P, U**; mc, mm, pj.
- Muhlenbergia mexicana* (L.) Trin. var. *mexicana* [1,-,1,-] D, R; 6300–7350'; **J, U**; mr.
- Muhlenbergia minutissima* (Steud.) Swallen [1,1,1,1] D; 6920–8300'; **J**; pj, pp, ra.
- Muhlenbergia montana* (Nutt.) Hitchc. [4,46,4,17] D, L, R, T; 6300–10300'; **J, G, P, U**; af, mc, mm, mr, ms, pj, pp, ra.
- Muhlenbergia pauciflora* Buckley [-,1,2,3] D, L, R; 6300–9050'; **J, U**; ms, pj, pp.
- Muhlenbergia porteri* Scribn. ex Beal [-,-,1,-] D; 5800'; **J**; fr.
- Muhlenbergia pungens* Thurb. [3,-,-,9] R, T; 6000–7100'; **J, P, U**; ds, fr, pg, pj, ra.
- Muhlenbergia racemosa* (Michx.) Britton, Sterns, & Poggenb. [-,-,1,-] D; 5500'; **J**; mr.
- Muhlenbergia ramulosa* (Kunth) Swallen [-,7,1,1] D, R; 8200–9980'; **J, U**; mc, mm, ms, pp, ra.
- Muhlenbergia repens* (J. Presl) Hitchc. [-,1,-,-] D; 8700'; **J**; mc.
- Muhlenbergia richardsonis* (Trin.) Rydb. [-,9,-,6] D, R, T; 7550–9800'; **J, P, U**; mc, ml, mm, mr, pp, ra.
- Muhlenbergia rigens* (Benth.) Hitchc. [UNM- Jacobs 4276] L; **J**.
- Muhlenbergia sinuosa* Swallen [-,1,-,-] D; 7950–8100'; **J**; pp.
- Muhlenbergia thurberi* Rydb. [-,-,-,8] R; 6200–7600'; **G, U**; fr, pj.
- Muhlenbergia torreyi* (Kunth) Hitchc. ex Bush [-,-,2,11] D, R, T; 5600–8300'; **J, P, U**; ds, pg, pj, ra.
- Muhlenbergia wrightii* Vasey ex J.M. Coult. [3,14,1,9] D, L, R, T; 6300–9220'; **J, G, P, U**; ds, mc, mm, mr, ms, pp, ra.
- Munroa squarrosa* (Nutt.) Torr. [2,-,1,12] D, L, R, T; 5400–8720'; **J, G, P, U**; ds, fr, pj, ra.
- Nassella viridula* (Trin.) Barkworth [6,-,-,1] D, R; 7100–8250'; **J, U**; ds, pg, pp, ra.
- Oryzopsis asperifolia* Michx. [20,9,3,1] D, L, R; 6600–10200'; **J, U**; af, br, mc, mm, mr, pp, sf.
- Panicum bulbosum* Kunth [1,-,2,-] D; 5850–7400'; **J**; pp.
- Panicum capillare* L. var. *brevifolium* (Rydb.) Shear [-,-,1,1] D, R; 5460–8350'; **J, U**; fr, pp.
- Panicum hallii* Vasey var. *hallii* [-,-,1,-] D; 5600'; **J**; ds.
- Panicum virgatum* L. [-,-,1,-] D; 6000'; **J**; ra.
- Paspalum setaceum* Michx. var. *stramineum* (Nash) Banks [1,-,-,-] R; 5900'; **P**; fr.
- Phalaris arundinacea* L. var. *arundinacea* [2,-,2,1] D, R; 5400–9150'; **J, U**; fr, ml, mm, mr.
- Phleum alpinum* L. var. *alpinum* [-,11,2,11] D, L, R; 5850–11150'; **J, U**; af, mc, mm, mr, ra, sf.
- * *Phleum pratense* L. var. *pratense* [19,16,2,16] D, L, R; 5700–10180'; **J, U**; af, fr, mc, ml, mm, mr, ms, pp, ra, sf.
- Phragmites australis* (Cav.) Trin. ex Steud. ssp. *americanus* Saltonstall, Peterson, & Soreng [-,1,-,1] L; 5400'; **J**; fr.
- Piptatherum micranthum* (Trin. & Rupr.) Barkworth [18,5,3,19] D, R, S, T; 5725–8700'; **J, G, P, U**; br, ds, fr, mc, mm, mr, ms, pg, pj, pp, ra.
- ! *Piptatherum pungens* (Torr.) Barkworth [-,1,-,-] D; 8540–8740'; **J**; pp.
- * *Poa annua* L. [5,9,1,-] D, L, R; 5550–10230'; **J**; af, mc, mm, mr, ra, sf.
- Poa arctica* R. Br. var. *grayana* (Vasey) Å. Löve & D. Löve & Kapoor [-,-,-,3] R; 8300–10150'; **U**; mc, mm.
- Poa arida* Vasey [2,-,-,-] D; 8400–9900'; **J**; af, mm.

Poa bigelovii Vasey & Scribn. [UNM- Goodrow 430] R; **U**.

* *Poa bulbosa* L. [-,-,-,2] R; 6950–7900'; **U**; pj.

* *Poa compressa* L. [4,17,2,8] D, L, R; 7800–10250'; **J, U**; af, br, mc, mm, mr, ms, pp, ra.

Poa fendleriana (Steud.) Vasey [16,13,5,32] D, L, R, S, T; 6000–10675'; **J, P, U**; af, ds, mc, mm, mr, pg, pj, pp, ra.

[*Poa fendleriana* subspecies]

Poa glauca Vahl var. *rupicola* (Nash ex Rydb.) B. Boivin [-,1,-,-] D; 10340–10875'; **J**; sf.

Poa interior Rydb. [-,1,-,2] D, R; 8700–10600'; **J, U**; mc, mm, sf.

Poa leptocoma Trin. [3,-,-,1] R; 9300–11000'; **J, U**; mc, mm, mr, sf.

Poa occidentalis Vasey [-,-6,-,2] D, R; 8100–10900'; **J, U**; af, mc, mm, mr, pp.

Poa palustris L. [4,6,2,5] D, R; 7950–9950'; **J, U**; mm, mr.

* *Poa pratensis* L. [59,39,11,40] D, L, R, T; 5600–11150'; **J, G, P, U**; af, br, ds, fr, mc, mm, mr, ms, pg, pp, ra, sf.

[*Poa pratensis* subspecies]

Poa tracyi Vasey [UNM-Fleck s.n.] R; **J**.

Poa wheeleri Vasey [-,-,-,1] R; 7560–7740'; **U**; mc.

* *Polypogon monspeliensis* (L.) Desf. [-,-,2,-] D; 5300–5400'; **J**; fr.

* *Polypogon viridis* (Gouan) Breistr. [2,-,-,-] L, S; 5600–5760'; **G**; fr.

Puccinellia nuttalliana (Schult.) Hitchc. [UNM-Sivinski 2469] R; **J**.

Schedonnardus paniculatus (Nutt.) Trel. [2,-,1,-] L, R; 5650–8200'; **J**; pj, pp, ra.

Schizachne purpurascens (Torr.) Swallen [-,1,2,-] D, L; 7450–8950'; **J**; mm, mr

Schizachyrium neomexicanum Nash [2,-,3,-] D, L, R; 5760–7150'; **J, G**; pj, pp, ra.

Schizachyrium scoparium (Michx.) Nash var. *scoparium* [10,6,-,5] D, L, R; 5950–8450'; **J, G, P, U**; br, fr, mr, ms, pj, pp, ra.

* *Secale cereale* L. [1,-,1,-] L; 6650–8900'; **J**; br, pj.

Setaria grisebachii E. Fourn. [-,-,1,-] D; 6000'; **J**; ra.

Setaria leucopila (Scribn. & Merr.) K. Schum. [1,-,1,-] L; 5500–5700'; **J, G**; fr.

* *Setaria pumila* (Poir.) Roem. & Schult. [-,-,1,-] L; 6650'; **J**; ra.

* *Setaria viridis* (L.) P. Beauv. [1,-,4,-] R; 5400–6000'; **J, G**; mr, ra.

Sorghastrum nutans (L.) Nash [1,-,2,-] D; 6000–7350'; **J**; mr, pp.

* *Sorghum bicolor* (L.) Moench ssp. *bicolor* [1,-,-,-] L; 5450'; **G**; fr.

Sporobolus airoides (Torr.) Torr. [2,-,1,4] D, R, T; 6000–8200'; **J, P, U**; ds, fr, ms, pj, ra.

Sporobolus compositus (Poir.) Merr. var. *compositus* [-,-,1,-] L; 7550'; **J**; ra.

Sporobolus contractus Hitchc. [-,-,3,7] D, R, T; 6000–6975'; **J, P, U**; ds, fr, pj, ra.

Sporobolus cryptandrus (Torr.) A. Gray [12,2,3,28] D, L, R, S, T; 5500–8900'; **J, G, P, U**; br, ds, fr, mr, pg, pj, pp, ra.

Sporobolus flexuosus (Thurb. ex Vasey) Rydb. [-,-,-,1] R; 6200'; **U**; fr.

Torreyochloa pallida (Torr.) G.L. Church var. *pauciflora* (J. Presl) J.I. Davis [9,12,1,-] D, L, R; 6300–9750'; **J, U**; mc, ml, mm, mr, pp, ra.

Trisetum montanum Vasey [4,23,2,1] D, L, R; 7950–11150'; **J, U**; af, mc, mm, mr, ms, pp, sf.

Trisetum spicatum (L.) K. Richt. [-,6,-,1] D, R; 7950–10600'; **J, U**; mc, mm, mr, sf.

Trisetum wolfii Vasey [-,1,1,2] L, R; 8000–11000'; **J, U**; af, mm, mr, sf.

* *Triticum aestivum* L. [3,-,-,-] D, L, R, T; 6000–7600'; **J, P**; fr, ra.

Vulpia octoflora (Walter) Rydb. [2,-,5,12] D, L, R, T; 5300–8550'; **J, P, U**; ds, fr, ms, pg, pj, pp.

[*Vulpia octoflora* varieties]

Polemoniaceae

Aliciella pinnatifida (Nutt. ex A. Gray) J.M. Porter [2,-,1,-] L, S; 6500–8400'; **J**; mc, mr, pj.

Collomia linearis Nutt. [1,3,-,8] D, R; 7550–10900'; **J, U**; mc, mm, mr.

Eriastrum diffusum (A. Gray) H. Mason [-,-,-,7] R, T; 6050–7450'; **P, U**; ds, fr, pj.

Gilia flavocincta A. Nelson ssp. *australis* (A.D. Grant & V.E. Grant) A.D. Day & V.E. Grant [-,-,2,-] D; 5300–5550'; **J**; ds, fr.

Gilia ophthalmoides Brand [-,-,1,3] D, R; 5400–6850'; **J, U**; fr, pj.

Gilia sinuata Douglas ex Benth. [1,-,-,1] R, S; 6320–8075'; **G, U**; fr, pj.

Giliastrum acerosum (A. Gray) Rydb. [1,-,-,4] R; 5820–6600'; **G, U**; fr, pj.

Ipomopsis aggregata (Pursh) V.E. Grant ssp. *candida* (Rydb.) V.E. Grant & A.D. Grant [-,-,-,1] R; 8840–9200'; **U**; mm.

Ipomopsis aggregata (Pursh) V.E. Grant ssp. *collina* (Greene) Wilken & Allard [1,-,-,-] D; 8400–9340'; **J**; mc.

Ipomopsis aggregata (Pursh) V.E. Grant ssp. *formosissima* (Greene) Wherry [36,28,2,28] D, L, R, T; 6300–10940'; **J, G, P, U**; af, br, ds, mc, mm, mr, ms, pj, pp, ra.

Ipomopsis laxiflora (J.M. Coul.) V.E. Grant [1,-,-,1] S, T; 6320–7916'; **G, P**; ds, pj.

Ipomopsis longiflora (Torr.) V.E. Grant ssp. *longiflora* [-,-,-,14] R, T; 6050–7300'; **P, U**; ds, fr, pj.

Ipomopsis longiflora (Torr.) V.E. Grant ssp. *neomexicana* Wilken [6,-,6,-] D, L, R, S; 5300–7000'; **J, G**; ds, fr, pj, pp, ra.

Ipomopsis multiflora (Nutt.) V.E. Grant [4,-,-,15] D, R, T; 6300–8100'; **J, P, U**; br, ds, fr, pj, pp, ra.

Ipomopsis pumila (Nutt.) V.E. Grant [UNM- Tierney P-52175-14] D; **J**.

Leptosiphon nuttallii (A. Gray) J.M. Porter ssp. *tenuilobus* (R. Patterson) ined. [1,-,-,-] D; 10000'; **J**; mc.

Linanthus pungens (Torr.) J.M. Porter & L.A. Johnson [1,-,-,4] R, T; 7500–9250'; **J, P, U**; mm, mc, ms, pp.

Microsteris gracilis (Hook.) Greene [1,-,-,7] R; 7100–8500'; **J, U**; mr, pg, pj, pp.

Phlox austromontana Coville ssp. *densa* (Brand) Wherry [1,-,-,-] R; 6775'; **G**; pj.

[*Phlox austromontana*]

Phlox longifolia Nutt. ssp. *longifolia* [4,-,-,3] D, R; 7300–8350'; **J, U**; ds, pg, pj, pp, ra.

Polemonium foliosissimum A. Gray [14,8,2,4] D, R; 5400–10900'; **J, U**; af, mc, mm, mr, pp.

Polygalaceae

Polygala alba Nutt. var. *alba* [1,-,-,-] D; 7300–7600'; **J**; pp.

Polygonaceae

Bistorta bistortoides (Pursh) Small [1,-,2,1] D, R; 8960–10600'; **J, U**; mc, ml, mm.

Bistorta vivipara (L.) S.F. Gray [UNM-Fleck s.n.] R; **J, U**.

Eriogonum abertianum Torr. var. *abertianum* [-,-,1,-] D; 5500'; **J**; ds.

Eriogonum alatum Torr. var. *alatum* [14,-,2,13] D, L, R, T; 6450–9350'; **J, P, U**; br, ds, mc, mm, ms, pj, pp.

Eriogonum annuum Nutt. [2,-,1,2] D, R; 5950–7280'; **J, P, U**; fr, pj, ra.

Eriogonum arcuatum Greene var. *arcuatum* [1,-,-,-] D; 7000–7400'; **J**; pj.

[*Eriogonum jamesii* Benth. var. *flavescens* S. Watson]

Eriogonum cernuum Nutt. [-,-,3,5] D, R, T; 5300–8328'; **J, P**; ds, fr, pg, pj.

Eriogonum corymbosum Benth. var. *velutinum* Reveal [-,-,-,1] R; 6818–6900'; **U**; fr.

Eriogonum jamesii Benth. var. *jamesii* [8,-,8,35] D, L, R, T; 5300–9200'; **J, G, P, U**; ds, fr, mr, pg, pj, pp, ra.

◆+*Eriogonum lachnogynum* Torr. ex Benth. var. *colobum* Reveal & A. Clifford [-,-,-,2] T; 6818–6900'; **P**; ds.

Eriogonum leptophyllum (Torr. & A. Gray) Wootton & Standl. [-,-,-,1] R; 8250'; **U**; pj.

Eriogonum lonchophyllum Torr. & A. Gray var. *lonchophyllum* [1,-,-,1] D, R; 6990–7400'; **J, U**; ds, pj.

+*Eriogonum lonchophyllum* Torr. & A. Gray var. *nudicaule* (Torr.) Reveal [1,-,-,-] R; 7100'; **J**; pj.

Eriogonum microthecum Nutt. var. *simpsonii* (Benth.) Reveal [2,-,2,20] D, L, R, T; 5400–8700'; **J, P, U**; ds, ms, pj, pg, pp.

Eriogonum polycladon Benth. [-,-,1,-] D; 6100'; **J**; ra.

Eriogonum racemosum Nutt. [9,3,2,32] D, R, T; 7000–9670'; **J, P, U**; br, mc, mm, ms, pj, pp, ra.

Fallopia convolvulus* L. [1,1,1,-] D; 6000–8750'; **J; ds, mm, ms.

Persicaria amphibia (L.) S.F. Gray [1,1,2,2] D, R; 5300–9000'; **J, U**; fr, ml, mr.

Persicaria lapathifolia* (L.) A. Gray [1,5,1,1] D, R; 5360–8740'; **J, U; fr, ml, mm, mr.

Persicaria maculosa* A. Gray [6,-,4,-] D, R, S; 5300–7350'; **J, G; fr, ml, mm, mr.

Polygonum aviculare* L. [4,30,4,11] D, L, R, T; 5400–10330'; **J, P, U; af, fr, ml, mm, mr, pp, ra.

Polygonum douglasii Greene [1,4,1,7] D, L, R; 7300–10230'; **J, U**; af, br, mm, mr.

Polygonum erectum L. [1,-,-,-] D; 7600'; **J**; ra.

Polygonum polygaloides Wallich ex Meisner ssp. *confertiflorum* (Nutt. ex Piper) Hickman [-,-,-,2] R; 9380–9680'; **U**; mr.

Polygonum ramosissimum Michx. var. *ramosissimum* [2,-,-,-] R; 5760–6090'; **G, P**; ra.

Polygonum sawatchense Small [-,25,1,5] D, R, T; 5900–10300'; **J, P, U**; af, fr, mc, mm, mr, ms, pj, pp, ra.

Rumex acetosella* L. [14,47,3,2] D, L, R; 6200–11300'; **J, U; af, br, mc, mm, mr, ms, pp, ra, sf.

Rumex crispus* L. ssp. *crispus* [9,12,4,-] D, R; 5400–9700'; **J; af, br, fr, ml, mm, mr, ra.

Rumex occidentalis S. Watson [-,-,-,6] R; 6500–10020'; **U**; fr, mr.

Rumex patientia* L. [-,-,1,-] D; 6950'; **J; mr.

Rumex triangulivalvis (Danser) Rech. f. [5,7,3,13] D, L, R, S, T; 5400–10020'; **J, G, P, U**; fr, ml, mm, mr, ra.

Stenogonum salsuginosum Nutt. [1,-,-,-] D; 7000'; **J**; ds.

Portulacaceae

Lewisia pygmaea (A. Gray) B.L. Rob. [-,-,-,2] R; 9850–10600'; **U**; mm, sf.

Montia chamissoi (Ledeb. ex Spreng.) Greene [2,3,-,-] D; 8350–10000'; **J**; mm, mr.

Phemeranthus parviflorus (Nutt) Kiger [1,-,1,2] D, R; 6990–8650'; **J, U**; br, ms, pj, pp.

Portulaca halimoides L. [-,-,-,1] R; 6990'; **U**; pj.

Portulaca oleracea* L. [1,-,2,17] D, R, T; 5460–8350'; **P, U; ds, fr, pg, pj, ml, ra.

[*Portulaca oleracea* subspecies]

Potamogetonaceae

Potamogeton alpinus Balb. [-,2,-,1] D, R; 8590–9950'; **J, U**; mr.

Potamogeton foliosus Raf. var. *foliosus* [-,2,-,1] D, R; 8500–9150'; **J, U**; mr.

Potamogeton gramineus L. [-,2,-,-] D, R; 7950–8625'; **J, U**; mr.

Potamogeton natans L. [-,1,1,-] D; 8930'; **J**; ml.

Potamogeton nodosus Poir. [-,6,-,-] D; 7960–9570'; **J**; ml, mr.

Potamogeton richardsonii (A. Benn.) Rydb. [-,1,-,1] D, R; 8500–10500'; **J, U**; mr.

Primulaceae

Androsace septentrionalis L. [24,38,1,28] D, L, R, T; 5860–11000'; **J, G, P, U**; af, br, fr, mc, mm, mr, ms, pj, pp, ra, sf.

Dodecatheon pulchellum (Raf.) Merr. var. *pulchellum* [11,8,2,4] D, R; 7550–10600'; **J, U**; mc, mm, mr.

Ranunculaceae

Aconitum columbianum Nutt. var. *columbianum* [5,7,1,5] D, L, R; 8000–11000'; **J, U**; af, mc, mm, mr, sf.

Actaea rubra (Aiton) Willd. [37,9,3,3] D, L, R; 6950–10200'; **J, U**; af, br, mc, mm, mr, ra, sf.

[*Actaea rubra* ssp. *arguta* (Nutt.) Hultén]

Anemone cylindrica A. Gray [1,-,3,-] D, R; 6850–8900'; **J, U**; mm, mr.

Aquilegia coerulea E. James var. *coerulea* [4,4,2,2] D, R, S; 8180–10900'; **J, U**; mc, mm, mr, sf.

Aquilegia elegantula Greene [22,8,2,1] D, L, R; 6850–10200'; **J, U**; af, br, mc, mm, mr, pp, ra, sf.

Caltha leptosepala DC. [4,3,-,2] D, R; 8440–11000'; **J, U**; mc, ml, mm, mr.

Clematis bigelovii Torr. [1,-,-,-] D; 7600'; **J**; ms.

Clematis columbiana (Nutt.) Torr. & A. Gray var. *columbiana* [31,8,3,9] D, L, R; 6300–10900'; **J, P, U**; af, br, mc, mr, ms, pp, ra.

Clematis hirsutissima Pursh var. *hirsutissima* [1,-,-,-] R; 8070–8180'; **J**; ms.

Clematis hirsutissima Pursh var. *scottii* (Porter) E.O. Erickson [-,-,-,1] R; 7800–8500'; **U**; mr.

Clematis ligusticifolia Nutt. [10,-,3,1] D, R; 5300–8030'; **J, G, P**; ds, fr, mm, mr, pj, pp, ra.

Delphinium barbeyi (Huth) Huth [3,-,-,2] D, R; 8830–11000'; **J, U**; af, mc, mr, sf.

Delphinium nuttallianum Pritz. [2,-,-,9] R; 8125–10900'; **J, U**; mc, mm, ms, pj, pp.

Delphinium ramosum Rydb. [-,-,-,1] R; 9980–10020'; **U**; mr.

Delphinium wootonii Rydb. [1,-,2,-] D, S; 6320–6500'; **J, G**; ds, fr, pj.

Myosurus minimus L. [1,-,-,-] D; 7080'; **J**; ra.

Pulsatilla patens (L.) Mill. ssp. *multifida* (Pritz.) Zämsel [1,-,1,4] D, L, R; 7540–9000'; **J, U**; mc, ms, pp, ra.

♦ *Ranunculus abortivus* L. [3,-,1,-] D, R; 6850–8550'; **J**; mm, mr.

! *Ranunculus alismifolius* Geyer ex Benth. var. *montanus* S. Watson [3,-,-,2] R; 9300–10600'; **J, U**; mc, mm, mr.

Ranunculus aquatilis L. var. *diffusa* With. [2,2,2,3] D, R; 6500–9850'; **J, U**; mr.

Ranunculus cardiophyllus Hook. [1,12,5,-] D, R; 7550–9150'; **J, U**; ml, mm, mr, ra.

Ranunculus cymbalaria Pursh [9,3,2,-] D, L, R; 5300–8580'; **J**; fr, ml, mm, mr, ra.

Ranunculus inamoensis Greene var. *inamoensis* [14,15,2,5] D, L, R; 6700–9750'; **J, U**; af, mc, mm, mr, ra, sf.

Ranunculus macounii Britton [17,17,3,1] D, L, R; 6000–10020'; **J, U**; mc, ml, mm, mr, ms, pp, ra.

Ranunculus ranunculinus (Nutt.) Rydb. [1,-,-,-] L; 8960'; **J**; mc.

!* *Ranunculus repens* L. [1,-,-,-] D; 7490'; **J**; mr.

Ranunculus sceleratus L. var. *multifidus* Nutt. [1,-,2,-] D, L; 5400–5800'; **J, G**; fr.

Ranunculus uncinatus D. Don ex G. Don [5,-,-,4] R; 5360–9720'; **J, U**; af, mc, mr.

[*Ranunculus uncinatus* var. *earlei* (Greene) L.D. Benson]

Thalictrum fendleri Engelm. ex A. Gray [26,13,2,8] D, L, R; 6975–9950'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

Trautvetteria caroliniensis (Walter) Vail [9,2,2,1] D, L, R; 8400–10000'; **J, U**; af, mc, mm, mr, sf.

Rhamnaceae

Ceanothus fendleri A. Gray [21,9,2,4] D, L, R; 6900–9600'; **J, U**; br, mc, ms, pp, ra.

Rosaceae

Agrimonia gryposepala Wallr. [4,-,-,-] D, R; 7050–8150'; **J**; mc, mm, mr.

Agrimonia striata Michx. [4,3,3,-] D, L, R; 7960–8900'; **J**; mm, mr.

Amelanchier alnifolia (Nutt.) Nutt. ex Roem. var. *alnifolia* [23,2,2,3] D, L, R; 6600–10150'; **J, U**; af, mc, mm, mr, ms, pp, sf.

Amelanchier utahensis Koehne [1,-,-,-] D; 7940–8050'; **J**; ra.

Cercocarpus montanus Raf. var. *montanus* [28,2,7,37] D, L, R, S, T; 5600–9450'; **J, G, P, U**; br, ds, fr, mc, mr, ms, pj, pp.

Crataegus erythropoda Ashe [-,-,4,2] D, L, R, S; 6500–8350'; **J, U**; mr, ms.

Crataegus macracantha Lodd. ex Loud. var. *occidentalis* (Britton) Eggleston [1,-,-,-] D; 7100'; **J**; mr.

Dasiphora fruticosa (L.) Rydb. [17,16,1,25] D, R; 7475–10900'; **J, U**; af, mc, mm, mr.

Fallugia paradoxa (D. Don) Endl. ex Torr. [18,-,6,20] D, L, R, S, T; 5550–8475'; **J, G, P, U**; ds, fr, ms, pj, pp, ra.

Fragaria vesca L. [25,31,4,3] D, L, R; 6450–10150'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

Fragaria virginiana Mill. [27,21,2,6] D, L, R; 6975–10300'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

Geum aleppicum Jacq. [6,3,2,-] D, L, R; 7800–8900'; **J**; mc, ml, mm, mr, pp.

Geum macrophyllum Willd. var. *perincisum* (Rydb.) Raup [12,14,5,6] D, L, R; 6600–10900'; **J, U**; af, mc, mm, mr.

Geum rivale L. [-,N,1,-] D, L; 8000–9600'; **J**; mc, mr.

Geum triflorum Pursh var. *ciliatum* (Pursh) Fass. [-,2,2,2] D, R; 8530–9850'; **J, U**; mc, mm, ms, ra.

! *Geum triflorum* Pursh var. *triflorum* [1,-,-,-] D; 8500'; **J**; mr.

Holodiscus dumosus (Nutt. ex Hook.) A. Heller [13,16,4,10] D, L, R, T; 6000–10230'; **J, P, U**; af, br, mc, mm, mr, ms, pj, sf.

* *Malus pumila* Mill. [2,1,1,-] D, R; 6000–8300'; **J**; fr, mm, mr, ra.

Physocarpus monogynus (Torr.) J.M. Coult. [13,8,4,-] D, L, R; 6400–10000'; **J, U**; af, br, mc, mm, mr, ms.

Potentilla anserina L. [9,12,2,7] D, L, R; 5550–9200'; **J, U**; fr, ml, mm, mr.

Potentilla arguta Pursh var. *convallaria* (Rydb.) T.F. Wolf [2,1,1,-] D; 6500–8050'; **J**; br, mc, mr, ra.

Potentilla concinna Richardson var. *bicrenata* (Rydb.) S.L. Welsh & B.C. Johnston [-,-,-,6] R; 7050–8550'; **U**; mr, pp, ra.

[*Potentilla concinna*]

Potentilla concinna Richardson var. *concinna* [-,2,-,-] D; 10340–11150'; **J**; mm, sf.

Potentilla crinita A. Gray var. *crinita* [1,-,2,-] D, L, R; 7310'; **J**; ds, pp.

Potentilla diversifolia Lehm. var. *diversifolia* [-,3,-,3] D, R; 8625–10100'; **J, U**; af, mm, mr.

Potentilla gracilis Douglas ex Hook. var. *glabrata* (Lehm.) C.L. Hitchc. [1,-,-,-] R; 8060'; **J**; mr.

Potentilla gracilis Douglas ex Hook. var. *pulcherrima* (Lehm.) Fernald [23,19,5,10] D, L, R; 7675–11150'; **J, U**; af, mc, ml, mm, mr, ms, pp, ra, sf.

Potentilla hippiana Lehm. var. *hippiana* [29,62,3,24] D, L, R; 6975–11150'; **J, U**; af, br, ds, mc, mm, mr, ms, pp, ra, sf.

× *Potentilla hippiana* Lehm. × *P. gracilis* Douglas ex Hook. var. *pulcherrima* (Lehm.) Fernald [4,-,-,3] D, L, R; 8240–10900'; **J, U**; br, mm, mr, ra.

Potentilla norvegica L. ssp. *monspeliensis* (L.) Asch. & Graebn. [9,33,3,2] D, L, R; 5700–10230'; **J, U**; af, br, mc, mm, mr, ms, pp, ra.

[*Potentilla norvegica*]

Potentilla paradoxa Nutt. [-,-,2,-] D; 5360–5400'; **J**; fr.

Potentilla pensylvanica L. var. *pensylvanica* [7,18,-,8] D, R, T; 7300–10230'; **J, P, U**; br, ds, mc, mm, mr, ms, pp, ra.

Potentilla rivalis Nutt. [1,-,-,1] L, T; 5400–7100'; **G, P**; fr, ml.

Prunus americana Marshall [-,-,2,2] D, R; 6100–8000'; **J, U**; fr, mr, ra.

!* *Prunus persica* (L.) Batsch [1,1,-,-] D; 7250–8080'; **J**; ml, ra.

Prunus virginiana L. var. *melanocarpa* (A. Nelson) Sarg. [41,8,6,9] D, L, R, T; 5860–9600'; **J, G, P, U**; af, br, ds, fr, mc, mm, mr, ms, pp, ra.

Purshia stansburiana (Torr.) Henr. [1,-,-,-] D; 7000–7400'; **J**; pj.

Purshia tridentata (Pursh) DC. [1,-,-,-] R; 7400–8600'; **J**; pp.

Rosa acicularis Lindley var. *sayana* Erlanson [10,2,-,10] D, L, R; 5940–9500'; **J, G, U**; mc, mm, mr, ms, pp, ra.

Rosa arkansana Porter var. *arkansana* [24,-,-,-] D, R; 6320–8900'; **J**; br, ds, mm, mr, ms, pp, ra.

Rosa arkansana Porter var. *suffulta* (Greene) Cockerell [**1,-,-,-**] D; 8260'; **J**; ms.

Rosa nutkana C. Presl [**6,7,-,4**] D, R; 8025–9400'; **J, U**; af, mc, mm, mr, ms, pp, ra.

[*Rosa nutkana* var. *hispida* Fernald]

Rosa woodsii Lindl. var. *ultramontana* (S. Watson) Jeps. [**10,3,6,1**] D, L, R; 6000–9425'; **J, U**; fr, mc, mm, mr, ms, pp, ra.

Rubus idaeus L. var. *aculeatissimus* Regel & Tiling [**38,20,5,3**] D, L, R; 6000–10940'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf. [*Rubus idaeus* var. *strigosus* (Michx.) Maxim.]

Rubus parviflorus Nutt. var. *parviflorus* [**27,13,3,4**] D, L, R; 6800–10900'; **J, U**; af, br, mc, mm, mr, ms, pp, ra, sf.

* *Sanguisorba minor* Scop. ssp. *muricata* Briq. [**1,-,-,-**] D; 6200'; **J**; ra.

[*Sanguisorba minor* ssp. *balearica* (Bourg. ex Nyman) M. Garmendia & C. Navarro]

Sibbaldia procumbens L. [-,-,-,1] R; 10350–10940'; **U**; mm.

Sorbus dumosa Greene [**2,-,-,-**] D; 8400–9200'; **J**; af, mr.

Rubiaceae

* *Galium aparine* L. var. *echinospermum* (Wallr.) Farw. [-,-,6,-] D; 6000–9400'; **J**; mc, mr.

[*Galium aparine*]

Galium boreale L. [**13,10,3,14**] D, L, R; 7200–10600'; **J, U**; af, br, mc, mm, mr, ms, pp.

Galium fendleri A. Gray [**4,-,1,-**] D, L; 6150–8400'; **J**; br, mc, mr, ms, pp.

Galium mexicanum Kunth var. *aspermum* (A. Gray) Higgins & S.L. Welsh [**23,29,1,-**] D, L, R; 6500–10330'; **J**; br, mc, mm, mr, ms, sf.

Galium trifidum L. var. *subbiflorum* Wiegand [**3,5,-,2**] D, R; 7920–10940'; **J, U**; mc, mr, pp, ra, sf.

Galium triflorum Michx. [**8,-,2,2**] D, R; 6955–9150'; **J, U**; af, mc, mm, mr.

Houstonia rubra Cav. [**3,-,-,5**] R; 5800–6800'; **J, P, U**; ds, fr, pg, pj.

Rutaceae

Ptelea trifoliata L. [**10,-,4,1**] D, L, R, S, T; 5600–8475'; **J, G, P**; ds, fr, mr, ms, pp, ra.

[*Ptelea trifoliata* infrataxa]

Salicaceae

× *Populus* × *acuminata* Rydb. [**1,-,1,-**] D, R; 6000–7400'; **J**; mr.

* *Populus alba* L. [-,-,1,-] D; 6000'; **J**; ra. [Individual plant eradicated]

Populus angustifolia E. James [**17,1,2,21**] D, L, R; 5600–9000'; **J, G, P, U**; br, fr, mr, ms, ra.

Populus deltoides W. Bartram ex Marshall var. *wislizenii* (S. Watson) Dorn [**16,-,1,4**] D, L, R, S; 5470–7475'; **J, G, P, U**; fr, mr, ra.

Populus tremuloides Michx. [**48,27,2,26**] D, L, R; 6975–10700'; **J, P, U**; af, br, mc, mm, mr, pp, ra, sf.

♦ *Salix arizonica* Dorn [**1,-,-,-**] R; 9300–10140'; **J**; mc.

Salix bebbiana Sarg. [**16,8,2,1**] D, L, R; 6975–9725'; **J, U**; mc, mm, mr.

Salix boothii Dorn [RM-Dorn 8831] R; **J**.

Salix drummondiana Barratt ex Hook. [**4,-,-,2**] D, L, R; 8275–9830'; **J, U**; ml, mm, mr.

Salix eriocephala Michx. var. *ligulifolia* (C.R. Ball) Dorn [**5,4,-,-**] D, R; 7950–9190'; **J**; mc, mm, mr.

Salix exigua Nutt. var. *exigua* [**22,1,7,6**] D, L, R, S; 5400–8375'; **J, G, U**; fr, mm, mr, ra.

Salix gooddingii C.R. Ball [**2,-,-,-**] L, S; 5400–5800'; **G**; fr.

Salix irrorata Andersson [**6,1,4,-**] D, L; 5400–7950'; **J, G**; fr, mm, mr, ra.

Salix lasiandra Benth. var. *caudata* (Nutt.) Sudw. [-,-,-,8] R; 7050–9800'; **U**; fr, mr.

[*Salix lucida* Muhl. ssp. *caudata* (Nutt.) Murray]

Salix lasiandra Benth. var. *lasiandra* [**4,1,-,-**] D, R; 7100–8000'; **J, U**; mm, mr.

[*Salix lucida* Muhl. ssp. *lasiandra* (Benth.) Murray]

Salix monticola Bebb [**3,-,-,2**] D, R; 8350–9830'; **J, U**; mm, mr.

Salix planifolia Pursh var. *planifolia* [-,-,-,1] R; 10350–10940'; **U**; mr.

Salix scouleriana Barratt ex Hook. [**7,7,-,5**] D, R; 7950–10250'; **J, P, U**; af, mc, mm, mr, ms, pp, ra.

Salix wolfii Bebb var. *wolfii* [RM-Dorn 8847] R; **U**.

Santalaceae (Viscaceae)

Arceuthobium divaricatum Engelm. [**2,-,-,4**] D, R, T; 6400–7750'; **J, P, U**; pj, pp.

Arceuthobium douglasii Engelm. [-,6,-,2] D, R, T; 8450–10650'; **J, P, U**; mc.

Arceuthobium vaginatum (Willd.) J. Presl var. *cryptopodium* (Engelm.) Cronquist [**6,3,1,7**] D, L, R; 7300–9340'; **J, U**; mc, pj, pp.

Comandra umbellata (L.) Nutt. var. *pallida* (A. DC.) M.E. Jones [**9,1,2,10**] D, R, T; 5500–9600'; **J, P, U**; ds, fr, mc, ms, pj, pp, ra.

Phoradendron juniperinum Engelm. var. *juniperinum* [**4,-,3,6**] D, R, T; 5500–7950'; **J, G, P, U**; fr, pj, pp.

Saururaceae

Anemopsis californica (Nutt.) Hook. & Arn. [-,-,3,-] D, S; 5350'; **J**; ml.

Saxifragaceae

Heuchera parvifolia Nutt. ex Torr. & A. Gray [**6,3,2,12**] D, R, T; 6000–9720'; **J, P, U**; br, mc, mm, mr, ms, pj.

Heuchera rubescens Torr. [**1,-,-,-**] D; 6850–7100'; **J**; mr.

Lithophragma tenellum Nutt. [UNM-Heil 8812] R; **U**.

Mitella pentandra Hook. [UNM-Fleck s.n.] R; **J**.

Saxifraga bronchialis L. var. *austromontana* (Wiegand) Piper ex G.N. Jones [**3,8,2,1**] D, L, R; 7960–11150'; **J, U**; mc, mr, ms, pp, sf.

Saxifraga odontoloma Piper [**2,-,-,1**] R; 9300–11000'; **J, U**; mc, mr, sf.

Saxifraga rhomboidea Greene [**1,2,1,2**] D, R; 8500–10600'; **J, U**; mc, mm, mr.

Scrophulariaceae (see also Orobanchaceae, Plantaginaceae)

Scrophularia lanceolata Pursh [**1,-,-,2**] R; 8200–9680'; **J, U**; mc, mm.

* *Verbascum thapsus* L. [7,11,2,4] D, L, R; 6300–9800'; **J, G, U**; af, br, fr, mm, mr, ms, pp, ra.

Simaroubaceae

* *Ailanthus altissima* (Mill.) Swingle [2,-,2,-] D, L, R; 5400–6000'; **G**; fr, ra.

Solanaceae

Chamaesaracha coronopus (Dunal) A. Gray [2,-,1,3] R; 5500–6300'; **J, G, P, U**; fr, pg, pj, ra.

* *Datura quercifolia* Kunth [-,-,1,-] D; 5800'; **J**; pj.
Datura wrightii Regel [1,-,2,-] L; 5500–6000'; **J, G**; fr, ra.

* *Hyoscyamus niger* L. [-,-,-,4] R, T; 7600–8740'; **P, U**; ds, ml, pj, ra.

Lycium pallidum Miers [9,-,3,4] D, L, R, S, T; 5760–8150'; **J, G, P, U**; ds, fr, mm, pj, ra.

Nicotiana attenuata Torr. ex S. Watson [UNM-Bell s.n.] D; **J**.

Physalis hederifolia A. Gray var. *comata* (Rydb.) Waterf. [-,-,-,2] R, T; 6550–7300'; **P, U**; pj, ra.

Physalis hederifolia A. Gray var. *fendleri* (A. Gray) Cronquist [3,-,3,7] R, S, T; 5500–6880'; **J, G, P, U**; ds, pj, pp, ra.

Physalis longifolia Nutt. var. *longifolia* [1,-,2,-] D, L; 5400–6100'; **J, G**; fr.

Physalis subulata Rydb. var. *neomexicana* (Rydb.) Waterf. ex Kartesz & Gandhi [1,-,1,-] L, T; 6300–6900'; **G, P**; pp, ra.

[*Physalis foetens* Poir. var. *neomexicana* (Rydb.) Waterf. ex Kartesz & Gandhi]

Solanum americanum Mill. [-,-,1,-] D; 6500'; **J**; fr.

[*Solanum nigrum* L.]

* *Solanum dulcamara* L. [1,-,-,-] L; 6525'; **J**; ra.

Solanum elaeagnifolium Cav. [4,-,1,2] D, L, R; 5550–7000'; **J, G, U**; fr, pj, ra.

Solanum jamesii Torr. [-,-,3,4] D, L, R, T; 6200–8150'; **J, P, U**; br, ds, pj, pp.

* *Solanum lilifolium* Rusby var. *nitidibaccatum* (Bitter) Edmonds [-,-,1,-] L; 6650'; **J**; ra.

[*Solanum sarrachoides* Sendtner]

* *Solanum ptycanthum* Dunal ex DC. [1,2,-,-] D; 8050–8900'; **J**; mm, mr.

[*Solanum nigrum* L.]

* *Solanum triflorum* Nutt. [1,4,1,6] D, R, T; 5500–8750'; **J, P, U**; br, ds, fr, mm, pp, ra.

Sparganiaceae

Sparganium angustifolium Michx. [1,2,-,1] D, R; 8400–10020'; **J, U**; mr.

Sparganium emersum Rehmann [-,1,-,1] D, R; 8625–9150'; **J, U**; mr.

Tamaricaceae

* *Tamarix chinensis* Lour. [12,-,3,3] D, L, R, S; 5300–7200'; **J, G, U**; fr, mr.

Typhaceae

Typha latifolia L. [6,1,2,1] D, L, R; 5400–9150'; **J, G, U**; fr, ml, mr.

Ulmaceae

* *Ulmus pumila* L. [15,1,1,1] D, L, R, S; 5470–8080'; **J, G, P, U**; fr, mm, mr, pj, pp, ra.

Urticaceae

Parietaria pensylvanica Muhl. ex Willd. [-,1,-,-] D; 8700'; **J**; mr.

Urtica dioica L. var. *procera* (Muhl. ex Willd.) Wedd. [23,30,1,12] D, R; 6600–10100'; **J, U**; af, br, mc, ml, mm, mr, pp, ra, sf.

[*Urtica dioica* ssp. *gracilis* (Aiton) Selander]

Verbenaceae

Glandularia bipinnatifida (Nutt.) Nutt. var. *bipinnatifida* [6,-,2,-] D, L, R, S; 5500–6900'; **J, G**; ds, fr, pj, pp, ra.

Verbena bracteata Lag. & Rodr. [22,4,2,13] D, L, R, T; 5500–9050'; **J, G, P, U**; br, ds, fr, mc, mm, mr, pg, pj, pp, ra.

Verbena hastata L. [1,-,-,-] L; 5650'; **J**; mr.

Verbena macdougalii A. Heller [14,1,1,1] D, L, R, T; 6655–8400'; **J, P, U**; af, ds, mm, mr, pj, pp, ra.

Violaceae

Viola adunca J.E. Sm. [10,13,3,6] D, L, R; 6700–10675'; **J, U**; af, mc, mm, mr, sf.

Viola canadensis L. [33,18,1,3] D, R; 6300–10330'; **J, U**; af, br, mc, mm, mr, pp, ra, sf.

Viola nephrophylla Greene [-,-,1,2] D, R; 6600–9800'; **J, U**; mr.

Viola pedatifida G. Don [-,1,-,-] D; 8500'; **J**; mr.

[*Viola palmata* L.]

Vitaceae

Parthenocissus vitacea (Knerr) Hitchc. [5,-,1,1] D, R, T; 5900–7475'; **J, P**; fr, mr, ra.

Vitis arizonica Engelm. [6,-,2,-] D, L; 5460–6875'; **J, G**; fr, mr, ra.

Zannichelliaceae

Zannichellia palustris L. [2,2,-,-] D, L; 5600–8620'; **J, G**; fr, ml, mr.

Zygophyllaceae

Kallstroemia parviflora Norton [-,-,1,-] D; 5600'; **J**; pj.

* *Tribulus terrestris* L. [5,-,1,3] L, R, S, T; 5550–6300'; **J, G, P, U**; ds, fr, pj, ra.

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REFERENCES

- ALLEN, C.D. 2001. Fire and vegetation history of the Jemez Mountains. In: P.S. Johnson, ed. Water, watersheds, and land use in New Mexico: impacts of population growth on natural resources, Santa Fe region 2001. New Mexico Bur. Mines Mineral Res., Socorro. Pp. 29–33.
- ALLRED, K.W. 2008. Flora Neomexicana I: the vascular plants of New Mexico. An annotated checklist to the names of vascular plants with synonymy and bibliography. Lulu Enterprises, Inc., Morrisville, North Carolina.
- ANSCHUETA, K.F. AND T. MERLAN. 2007. More than a scenic mountain landscape: Valles Caldera National Preserve land use history. Forest Serv. Rocky Mountain Res. Sta. Gen. Tech. Rep. RMRS-GTR-196. Fort Collins, Colorado.
- ASH, S.R. 1974. Upper Triassic plants of Cañon del Cobre, New Mexico. In: C.T. Siemers, ed. Ghost Ranch, central northern New Mexico. New Mexico Geological Society, 25th Field Conference. Pp. 179–184.
- BAILEY, R.A. AND R.L. SMITH. 1978. Guide to the Jemez Mountains and Española Basin. In: J.W. Hawley, ed. Guidebook to Rio Grande Rift in New Mexico and Colorado. New Mexico Bur. Mines Mineral Res., Cir. 163, Socorro. Pp. 184–196.
- BINGLER, E.C. 1968. Geology and mineral resources of Rio Arriba County, New Mexico. New Mexico Inst. Mining Tech. Bull. 91, Socorro.
- BRESHEARS, D.D. (AND 12 OTHERS). 2005. Regional vegetation die-off in response to global-change-type drought. *Proc. Natl. Acad. Sci.* 102:15144–15148.
- BROWN, D.E. 1994a. Great Basin montane scrubland. In: D.E. Brown, ed. Biotic communities: southwestern United States and northwestern Mexico. Univ. Utah Press, Salt Lake City. Pp. 83–84.
- BROWN, D.E. 1994b. Montane meadow grassland. In: D.E. Brown, ed. Biotic communities: southwestern United States and northwestern Mexico. Univ. Utah Press, Salt Lake City. Pp. 113–114.
- CHRONIC, H. 1987. Roadside geology of New Mexico. Mountain Press Publ., Missoula, Montana.
- CRONK, Q. AND J. FULLER. 1995. Plant invaders: the threat to natural ecosystems. Chapman & Hall, New York.
- DAUBENMIRE, R.F. 1943. Vegetational zonation in the Rocky Mountains. *Bot. Rev.* 9:325–393.
- DEVELICE, R.L., J.A. LUDWIG, W.H. MOIR, AND F. RONCO, JR. 1986. A classification of forest habitat types of northern New Mexico and southern Colorado. Forest Ser. Rocky Mountain Forest Range Exp. Sta. Gen. Tech. Rep. RM-131.
- DICK-PEDDIE, W.A. 1993. New Mexico vegetation: past, present, and future. Univ. New Mexico Press, Albuquerque.
- EISENHOOB, B. 1979. Precipitation. In: J.L. Williams and P.E. McAllister, eds. New Mexico in maps. Tech. Appl. Cent., Univ. New Mexico, Albuquerque.
- FENNEMAN, N.M. 1931. Physiography of western United States. McGraw-Hill Book Co., New York.
- FLORA OF NORTH AMERICA EDITORIAL COMMITTEE, ed. 1993+. Flora of North America north of Mexico. Oxford Univ. Press, New York, Oxford.
- GOFF, G.F., G.A. DAWSON, AND J.J. ROCHOW. 1982. Site examination for threatened and endangered plant species. *Environm. Managem.* 6:307–316.
- GOFF, F., B.S. KUES, M.A. ROGERS, L.D. MCFADDEN, AND J.N. GARDNER. 1996. The Jemez Mountains Region, New Mexico. *Geol. Soc. 47th Ann. Field Conf.*, Socorro.
- GOVERNOR'S DROUGHT TASK FORCE. 2008. URL: www.ose.state.nm.us/DroughtTaskForce/.

- HARTMAN, R.L. 1992. The Rocky Mountain Herbarium, associated floristics inventory, and the Flora of the Rocky Mountains project. *J. Idaho Acad. Sci.* 28:22–43.
- HARTMAN, R.L. AND B.E. NELSON. 2001. A checklist of the vascular plants of Colorado. Generic circumscriptions largely traditional; relevant names from regional floras and checklists included with explicit attribution. URL: <http://www.rmh.uwyo.edu>.
- HARTMAN, R.L. AND B.E. NELSON. 2005. General floristic survey of the Valles Caldera National Preserve, New Mexico. Report on field seasons 2001, 2002, 2003, 2004. To: U.S. Geol. Surv., Biol. Res. Div. (Order no. 02MESA1023, Refer. no. 02330201023).
- HARTMAN, R.L. AND B.E. NELSON. 2008. General information for floristics proposals. [The Boiler Plate]. 12 pp. URL: www.rmh.uwyo.edu.
- HARTMAN, R.L., B.E. NELSON, AND B.S. LEGELER. 2009. Rocky Mountain plant specimen database: URL: <http://www.rmh.uwyo.edu>.
- HARTMAN, R.L., B. REIF, B.E. NELSON, AND B. JACOBS. 2006. New vascular plant records for New Mexico. *Sida* 22:1225–1233.
- HEIL, K.D. AND S.L. O'KANE, JR. 2007. A preliminary catalog of the vascular plants of the Chama Land and Cattle Company—Frank Sims Ranch, Rio Arriba County, New Mexico. *New Mexico Botanist Newslett.* 41:1–6.
- JACOBS, B.F. 1989. A flora of Bandelier National Monument. Report to the National Park Service, PX7029-8-0484. Bandelier National Monument, Los Alamos, New Mexico.
- KELLEY, S.A. 1990. Late Mesozoic to Cenozoic cooling history of the Sangre de Cristo Mountains, Colorado and New Mexico. In: P.W. Bauer, S.G. Lucas, C.K. Mawer, and W.C. McIntosh, eds. *Tectonic development of the southern Sangre de Cristo Mountains, New Mexico*. New Mexico Geol. Soc. Guidebook, 41st Ann. Field Conf., Socorro.
- KUES, B.S., S.A. KELLY, AND V.W. LUETH (EDS.). 2006. Geology of the Jemez Range II. *New Mexico Geol. Soc. Fall Field Conf. Guidebook* 58. Socorro.
- LARSON, J.E. 2008. A floristic inventory of vascular plants of the Carson National Forest and vicinity, north-central New Mexico, M.S. thesis, Dept. Botany, Univ. Wyoming, Laramie.
- LIPMAN, P.W. 1978. Northern Rift Guide 2, Alamosa, Colorado-Santa Fe, New Mexico: Antonito, Colorado, to Rio Grande Gorge, New Mexico. In: J.W. Hawley, ed. *Guidebook to Rio Grande Rift in New Mexico and Colorado*. New Mexico Bur. Mines Mineral Res., Cir. 163, Socorro. Pp. 36–41.
- MARTIN, C. 2003. Valle Grande: a history of the Baca Location No. 1. Los Alamos, New Mexico. All Seasons Publ.
- MCGRATH, J. 2005. Plant distribution reports: *Carex deweyana* Schweinitz (Cyperaceae). *New Mexico Botanist Newslett.* 33: 7.
- MEROLA-ZWARTJES, M. 2004. Chapter 4: Biodiversity, functional processes, and the ecological consequences of fragmentation in southwestern grasslands. In: D.M. Finch, ed. *Assessment of grassland ecosystem conditions in the southwestern United States*. Vol. 1. Forest Serv. Rocky Mountain Res. Sta. Gen. Tech. Rep. 134. Fort Collins, Colorado. Pp. 49–85.
- MILLER, D.M., T.H. NILSEN, AND W.L. BILOBEAU. 1992. Chapter 6: Late Cretaceous to early Eocene geologic evolution of the U.S. Cordillera. In: B.C. Burchfiel, P.W. Lipman, and M.L. Zoback, eds. *The Cordilleran Orogen: coterminous U.S. The Geology of North America*. Vol. G-3. Geol. Soc. Amer., Boulder, CO. Pp. 205–260.
- MINCKLEY, W.L. AND D.E. BROWN. 1994. Cold-Temperate Wetlands. In: D.E. Brown, ed. *Biotic communities: southwestern United States and northwestern Mexico*. Univ. Utah Press, Salt Lake City. Pp. 239–247.
- MOIR, W.H. 1993. Alpine tundra and coniferous forest. In: W.A. Dick-Peddie, ed. *New Mexico Vegetation, past, present, and future*. Univ. New Mexico Press, Albuquerque. Pp. 47–84.
- MUEHLBERGER, W.R. 1978. Frontal fault zone of northern Picuris Range. In: J.W. Hawley, ed. *Guide book to Rio Grande Rift in New Mexico and Colorado*. New Mexico Bur. Mines Mineral Res., Cir.163, Socorro. Pp. 44–45.
- MUEHLBERGER, W.R. AND S. MUEHLBERGER. 1982. Española-Chama-Taos: a climb through time. *Scenic trips to the geologic past*, no. 13. New Mexico Bur. Mines Mineral Res., Socorro.
- MULDavin, E. AND P. TONNE. 2003. A vegetation survey and preliminary ecological assessment of Valles Caldera National Preserve, New Mexico. Final report to: U.S. Geol. Surv., Biol. Res. Div.

- NATIONAL CLIMATIC DATA CENTER. 2009. Historic Palmer drought indices. URL: ncdc.noaa.gov/oa/climate/research/drought/palmer-maps/index.php.
- NATURAL HERITAGE NEW MEXICO. 2007. NHNM tracking list for vascular plants. Albuquerque. URL: nhnm.unm.edu/tracking/tracking_general.php.
- NATURAL RESOURCES CONSERVATION SERVICE. 2008. The PLANTS database. USDA Nat. Plant Data Center, Baton Rouge, Louisiana. URL: plants.usda.gov.
- NEW MEXICO BUREAU OF GEOLOGY AND MINERAL RESOURCES. 2003. Geol. map New Mexico, Scale 1:500,000. Socorro.
- NEW MEXICO RARE PLANT TECHNICAL COUNCIL. 2008. New Mexico rare plants. Albuquerque URL: nmrareplants.unm.edu.
- OSBORN, N.L. 1966. A comparative floristic study of Mount Taylor and Redondo Peak, New Mexico. Ph.D. dissertation. Univ. New Mexico, Albuquerque.
- PASE, C.P. AND D.E. BROWN. 1994a. Rocky Mountain (Petran) subalpine conifer forest. In: D.E. Brown, ed. Biotic communities: southwestern United States and northwestern Mexico. Univ. Utah Press, Salt Lake City. Pp. 37–39.
- PASE, C.P. AND D.E. BROWN. 1994b. Rocky Mountain (Petran) and Madrean Montane Conifer Forest. In: D.E. Brown, ed. Biotic communities: southwestern United States and northwestern Mexico. Univ. Utah Press, Salt Lake City. Pp. 43–48.
- PEET, R.K. 1988. Forests of the Rocky Mountains. In: M.G. Barbour and W.D. Billings, eds. North American terrestrial vegetation. Cambridge Univ. Press, New York. Pp. 63–102.
- RAISH, C. 2004. Historic and contemporary land use in southwestern grassland ecosystems. In: D.M. Finch, ed. Assessment of grassland ecosystem conditions in the southwestern United States. Vol. 1. Forest Serv. Rocky Mountain Res. Sta. Gen. Tech. Rep. 134. Fort Collins, Colorado. Pp. 86–119.
- RANDALL, J. 1996. Weed control for the preservation of biological diversity. Weed Tech. 10:370–383.
- REIF, B.P. 2006. A vascular plant inventory of the Santa Fe National Forest (including the Valles Caldera National Preserve) and vicinity, north-central New Mexico. M.S. thesis, Dept. of Botany, Univ. Wyoming, Laramie.
- REDMOND, K.T. 2003. Climate variability in the West: complex spatial structure associated with topography, and observational issues. In: W.M. Lewis, Jr., ed. Water and climate in the western United States. Univ. Press Colorado, Boulder. Pp. 29–48.
- RISTAU, T. 1998. Comparison of two techniques for assessing species richness in Allegheny hardwood forests. Abstract 111. In: Ecol. Soc. Amer. 83rd Annual Meeting, Baltimore, M.D.
- SHEPPARD, P.R., A.C. COMRIE, G.D. PACKIN, K. ANGERSBACH, AND M.K. HUGHES. 1999. The climate of the Southwest. The climate assessment project for the Southwest, CLIMAS Rep. Ser. CL1-99. Univ. Arizona, Tucson.
- SWINSKI, R. 2008. Some observations on the dry, dehiscent-fruited Yuccas of New Mexico. New Mexico Botanist Newslett. 43:1–4.
- SMITH, C.T., A.J. BUDDING, AND C.W. PITRAT. 1961. Geology of the southeastern part of the Chama Basin. New Mexico Inst. Mining Tech. Bull. 75, Socorro.
- SMITH, R.L., R.A. BAILEY, AND C.S. ROSS. 1970. Geologic map of the Jemez Mountains, New Mexico. U.S. Geol. Surv., Misc. Inves. Ser. Map I-571, Denver, Colorado.
- U.S. FOREST SERVICE. 1997. Plant associations of Arizona and New Mexico. Vol. 1: Forests. Vol. 2: Woodlands, 3rd ed. Forest Serv. Southw. Reg., Albuquerque, New Mexico.
- WEST, N.E. 1999. Juniper-pinyon savannas and woodlands of western North America. In: R.C. Anderson, J. S. Frahlsh, J.M. Baskin, eds. Savannas, barrens, and rock outcrop plant communities of North America. Cambridge Univ. Press, New York. Pp. 288–308.
- WHITTAKER, R.H. 1978. Classification of plant communities. W. Junk Publ., The Hague, Netherlands.
- WILCOVE, D.S., D. ROTHSTEIN, J. DUBOW, A. PHILLIPS, AND E. LOSOS. 2000. Leading threats to biodiversity. In: B.A. Stein, L.S. Kutner, and J.S. Adams, eds. Precious heritage: the status of biodiversity in the United States. Oxford Univ. Press, New York. Pp. 239–254.