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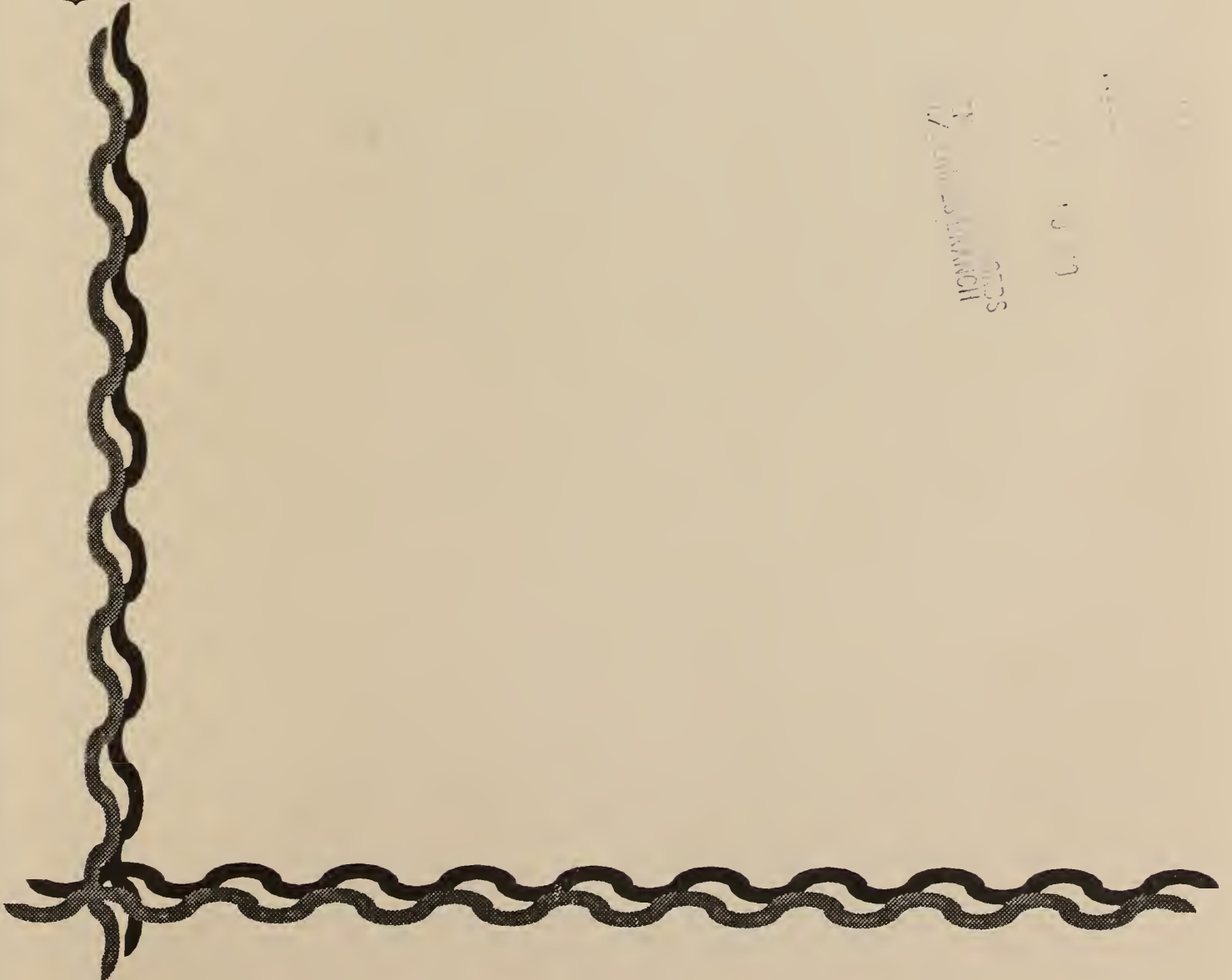
Rocky Mountain
Forest and Range
Experiment Station

Fort Collins,
Colorado 80526

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Consolidated Stand Tables and Biodiversity Data Base for Southwestern Forest Habitat Types

Esteban Muldavin, Frank Ronco, Jr., and Earl F. Aldon



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G. F. Aldon

Foreword

The initial descriptive phase of forest habitat type classification in the southwestern United States (Arizona, New Mexico, and southern Colorado) has been completed and published. To provide a foundation for future research into the biodiversity, structure, and dynamics of these forest communities, stand tables consolidating over 2,000 field plots, stratified by 11 different climax forest tree series, have been compiled. The data upon which the tables are based are made available in a computerized format, accessible by microcomputer. A suite of computer programs is also provided for manipulating the data base to meet individual research needs. An archive of noncomputerized information on stand structure, site productivity, soil analysis, plus descriptive materials such as photographs and maps has also been created. Both the data base (on floppy disks) and the archive are available for public use from the Rocky Mountain Forest and Range Experiment Station, 240 W. Prospect Road, Fort Collins, Colo. 80526.

To obtain the data base in electronic format, submit five 5 1/4-inch, high-density diskettes formatted for IBM PCAT compatible systems to the Station library. The data will be duplicated onto your disks, which will then be returned to you. Archived material can be viewed at the Station library.

Consolidated Stand Tables and Biodiversity Data Base for Southwestern Forest Habitat Types

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Abstract

To provide a foundation for future research into the biodiversity, structure, and dynamics of southwestern forest communities, stand tables consolidating over 2,000 field plots, stratified by 11 different climax forest tree series, have been compiled. The data upon which the tables are based are made available in a computerized format, accessible by microcomputer. A suite of computer programs is also provided for manipulating the data base to meet individual research needs.

¹Headquarters is in Fort Collins, in cooperation with Colorado State University.

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INTRODUCTION

Forest community classifications using the habitat type concept of Daubenmire (1968) have been widely developed and implemented in the southwestern United States (Arizona, New Mexico, and southern Colorado). Layser and Schubert (1979) described eight climax forest tree series in the Southwest which formed a framework for subsequent habitat type classifications. Moir and Ludwig (1979) followed with a preliminary classification of habitat types within the spruce-fir and mixed conifer forests in Arizona and New Mexico. Also during the 1970's, Hanks et al. (1983) initiated a habitat type classification within the *Pinus ponderosa* Series in northern Arizona. In conjunction with the above work, Ronco et al.² prepared a comprehensive study plan for systematically developing habitat classifications for all tall coniferous forests from national forests and selected Indian Reservations in the Southwest (fig. 1). The goals of this study plan have now been met, resulting in eight published classifications that cover the entire region (table 1).

²Ronco, Frank, Jr., William H. Moir, and E. Lee Fitzhugh. 1978. *Forest habitat type classification for Arizona, New Mexico, and southwestern Colorado. USDA Forest Service Study Plan FS-1203.81 [Mimeo]. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo.*

The completion of these classifications summarizes the initial descriptive phase of habitat type research in the Southwest and signals the next, more synthetic phase, where the focus will be on the detailed structure and dynamics of these communities. Areas of research envisioned in the synthetic phase include regional correlation studies, detailed analysis of dynamics and diversity in and among habitat types (particularly successional trends), productivity assessment, and regional floristic analysis. The habitat type classifications form the foundation for such research, but in order to do so, the quantitative and qualitative data upon which they are based must be made available. The habitat type data base is a storehouse of information about floristic diversity, environmental characteristics, stand productivity, and other descriptive information on forest communities of the Southwest. Our purpose here is to provide a comprehensive data base in an accessible and usable form for future research.

The concerted classification effort in the Southwest resulted in a large, more or less uniform data base of quantitative and qualitative information from approximately 2,000 field plots established during the development of the classifications. We are making available the actual plot data in a computerized format that is accessible with an IBM PC (or compatible) microcomputer.

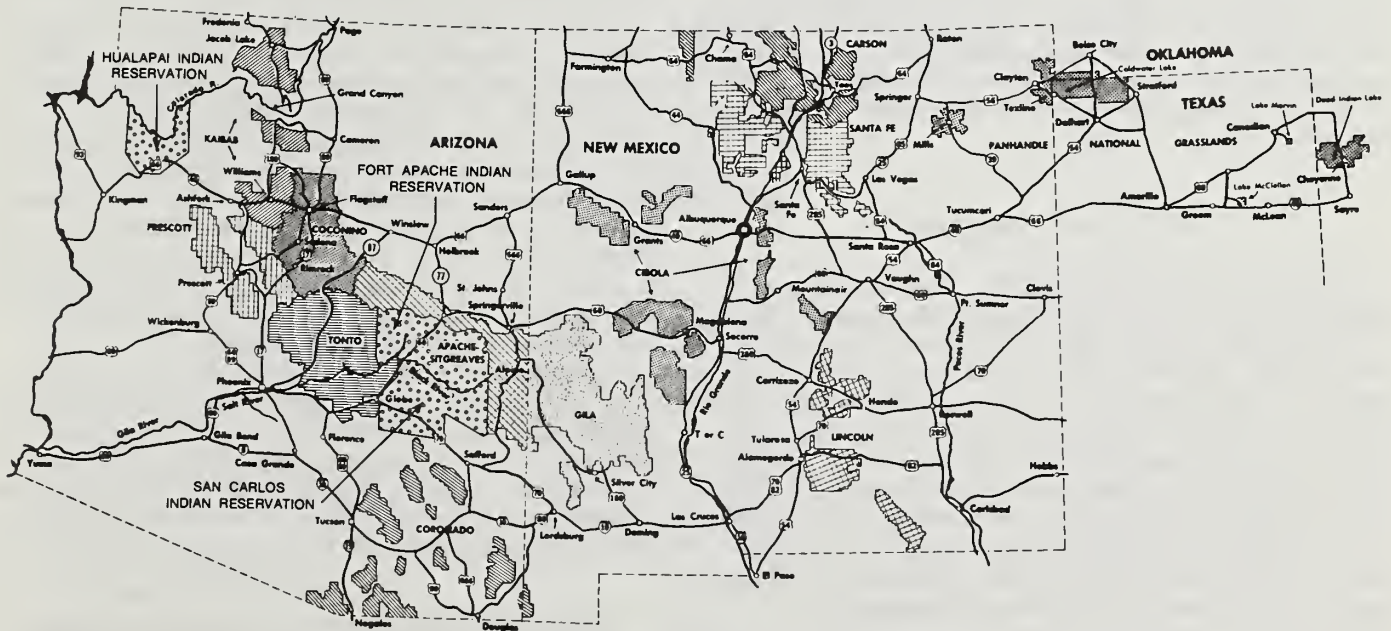


Figure 1.—National forests and Indian reservations of the Southwest covered in this study. Not shown are the San Juan, Rio Grande, and San Isabel National Forests of southern Colorado.

Table 1.—Series and habitat type classifications published in the southwest United States, with the geographic areas, national forests (N.F.), Indian reservations (I.R.), and, where appropriate, the forest zone covered.

| Authors | Description |
|-------------------------------|--|
| 1. Layser and Schubert (1979) | Arizona and New Mexico, all forest zones (series only). |
| 2. Moir and Ludwig (1979) | Arizona and New Mexico, spruce-fir and mixed conifer zones. |
| 3. Hanks et al. (1983) | Northern Arizona, ponderosa pine zone (Kaibab N.F., Coconino N.F., Sitgreaves N.F. Apache N.F.). |
| 4. Alexander et al. (1984b) | Northern Arizona, Douglas-fir zone (Kaibab N.F., Coconino N.F., Sitgreaves N.F., Apache N.F.). |
| 5. Alexander et al. (1984a) | South-central New Mexico, all zones (Lincoln N.F.). |
| 6. DeVelice et al. (1986) | Southern Colorado, northern New Mexico, all zones (Carson N.F., Santa Fe N.F., San Juan N.F., San Isabel N.F., Rio Grande N.F., and adjoining forested lands)* |
| 7. Fitzhugh et al. (1988) | Southeastern New Mexico and west-central Arizona, all zones (Apache N.F.; Sitgreaves N.F.; Gila N.F., and Magdalena District, Cibola N.F.). |
| 8. Alexander et al. (1988) | Central New Mexico, all zones (Cibola N.F., except Magdalena District). |
| 9. Muldavin et al. (1989) | Southern, central and northwestern Arizona, all zones (Coronado N.F., Tonto N.F., Prescott N.F., San Carlos I.R., Ft. Apache I.R., and Hualapai I.R.). |

* Including NM land grants, Pueblo de Taos I.R., miscellaneous private lands, and Bandelier National Park.

Using the data base and associated programs, the researcher can print complete, consolidated stand and site characteristics tables of habitat types of the Southwest, organized by climax forest tree series, or create customized tables and data sets to suit individual research needs. Below we describe in detail the content and structure of the data base and how to manipulate it. We expect that the data base and associated tables will give a regional perspective to the nature of the classifications in the Southwest and provide a context for future research.

DATA BASE CONTENT

The data base consists of 2,009 reconnaissance and analytic plots established throughout the region. Table 2 outlines the distribution of the plots by series and habitat type. There are 104 habitat types listed, stratified by 11 climax tree series. Assignment of individual plots to specific habitat types follows that given by investigators in their original publications. The most common habitat type names were used here, following closely the designations recommended by Ludwig and Moir.³ Synonymous habitat names are given where appropriate. The data base contains information on 1,209 species from across the Southwest (appendix A).

³Ludwig, John A., and William H. Moir. 1984. *Comparison table of habitat type nomenclature* [Mimeo]. New Mexico State University, Las Cruces, New Mexico.

Over the course of the habitat typing project, field methods and data collection remained relatively uniform. The procedures have been outlined elsewhere (Daubenmire and Daubenmire 1968, Franklin et al. 1970, Moir and Ludwig 1983, Pfister and Arno 1980), and only an overview is provided here.

Plots were uniform in size (375 m²) and were established in representative stands of climax or near climax vegetation that had not been recently disturbed, wherever possible. Plot information included: density of tree species in 2-inch diameter breast height (d.b.h.) classes; estimated or sample percent cover of all shrubs, grasses, and forbs; site characteristics including slope, aspect, elevation, and topography; site index evaluation entailing the measurement of d.b.h., height, and age on up to three trees per plot; and descriptive comments concerning stand condition, landscape position, and ecotones between adjacent communities.

An example of a plot data sheet is shown in figure 2. Plots were staked and located on USGS topographic quadrangles and documented with up to three photographs. Several investigators also included soil profile descriptions, mistletoe ratings, and voucher specimens of plant species found. The bulk of this data was then coded for computer processing and subsequent analysis.

COMPUTERIZED DATA BASE STRUCTURE

We have structured the computerized data base for maximum flexibility in access and manipulation to suit

Table 2.—Habitat types (HT) and phases (PH) of the southwest region listed by climax tree series. Habitat type names follow Ludwig and Moir¹ with synonymous names in parentheses. Abbreviations for habitat type names contain codes for the climax tree species and diagnostic undergrowth species separated by a slash (phase code names are also shown). The HT numbers correspond to the classification variables in the data base: SERIES (SER), HTNO (HT), and PHASE (PH). The total number of plots for each series, habitat type, and phase are also given. The references where descriptions of the types can be found are given by publication number corresponding to the numbers found in table 1.

| Name | Abbreviation | Number | | | No. of plots | References |
|--|----------------------|-----------|-----------|-----------|--------------|-----------------------|
| | | SER | HT | PH | | |
| Pinus aristata Series | PIAR | 01 | 00 | 00 | 12 | 1,6 |
| <i>Pinus aristata/Festuca thurberi</i> HT | PIAR/FETH | 01 | 01 | | 7 | 6 |
| <i>Pinus aristata/Festuca arizonica</i> HT | PIAR/FEAR | 03 | 01 | | 4 | 6 |
| <i>Pinus aristata/Ribes montigenum</i> HT (Scree) | PIAR/Scree | 02 | 01 | | 1 | 6 |
| Picea engelmannii Series | PIEN | 02 | 00 | 00 | 115 | 1,6,8,9 |
| <i>Picea engelmannii/Geum rossii</i> HT | PIEN/GERO | 12 | 01 | | 1 | 2 |
| <i>Picea engelmannii/Moss</i> HT | PIEN/Moss | 03 | 01 | | 6 | 2,7,8,9 |
| <i>Picea engelmannii/Vaccinium myrtillus/Polemonium pulcherrimum</i> HT | | | | | | |
| <i>Picea engelmannii</i> PH | PIEN/VAMY/POPU, PIEN | 01 | 01 | | 15 | 2,6 |
| <i>Abies lasiocarpa</i> PH | PIEN/VAMY/POPU, ABLA | 01 | 02 | | 38 | 6 |
| <i>Picea engelmannii/Vaccinium myrtillus</i> HT | PIEN/VAMY | 02 | 01 | | 3 | 7 |
| <i>Picea engelmannii/Senecio cardamine</i> HT | | | | | | |
| <i>Abies lasiocarpa</i> PH | PIEN/SECA, ABLA | 05 | 01 | | 8 | 7 |
| <i>Abies concolor</i> PH | PIEN/SECA, ABCO | 05 | 02 | | 12 | 7 |
| <i>Picea engelmannii/Acer glabrum</i> HT | PIEN/ACGL | 06 | 01 | | 6 | 2,5,9 |
| <i>Picea engelmannii/Erigeron eximius</i> HT | PIEN/EREX | 10 | 01 | | 9 | 7,9 |
| <i>Picea engelmannii/Carex foenea</i> HT | PIEN/CAFO | 09 | 01 | | 2 | 2,9 |
| <i>Picea engelmannii/Elymus triticoides</i> HT | PIEN/ELTR | 07 | 01 | | 4 | 2,5 |
| <i>Picea engelmannii/Saxifraga bronchialis</i> HT | PIEN/SABR | 08 | 01 | | 8 | 6 |
| <i>Picea engelmannii/Heracleum spondylium</i> HT | PIEN/HESP | 11 | 01 | | 3 | 6 |
| Abies lasiocarpa Series | ABLA | 03 | 00 | 00 | 264 | 1,6,9 |
| <i>Abies lasiocarpa/Mertensia ciliata</i> HT | ABLA/MECI | 01 | 01 | | 14 | 6 |
| <i>Abies lasiocarpa/Moss</i> HT | ABLA/Moss | 02 | 01 | | 18 | 6,9 |
| <i>Abies lasiocarpa/Vaccinium myrtillus</i> HT | ABLA/VAMY | 03 | 01 | | 80 | 2,6,7,8,9 |
| <i>Abies lasiocarpa/Vaccinium myrtillus-Linnæa borealis</i> HT | | | | | | |
| <i>Abies lasiocarpa/Vaccinium myrtillus-Rubus parviflorus</i> HT | ABLA/VAMY-LIBO | 04 | 01 | | 21 | 2,6 |
| <i>Abies lasiocarpa/Rubus parviflorus</i> HT | ABLA/VAMY-RUPA | 05 | 01 | | 14 | 2,6,7,9 |
| <i>Abies lasiocarpa/Rubus parviflorus</i> HT | ABLA/RUPA | 06 | 01 | | 17 | 2,6,7,9 |
| <i>Abies lasiocarpa/Senecio sanguisorboides</i> HT | ABLA/SECA | 08 | 01 | | 9 | 2,5 |
| <i>Abies lasiocarpa/Erigeron eximius</i> HT | ABLA/EREX | 07 | 01 | | 75 | 2,6,7,8,9 |
| <i>Abies lasiocarpa/Acer glabrum</i> HT | ABLA/ACGL | 12 | 01 | | 3 | 8 |
| <i>Abies lasiocarpa/Juniperus communis</i> HT | ABLA/JUCO | 09 | 01 | | 7 | 2 |
| <i>Abies lasiocarpa/Lathyrus arizonicus</i> HT | ABLA/LAAR | 10 | 01 | | 3 | 2,7 |
| <i>Abies lasiocarpa/Jamesia americana</i> HT | ABLA/JAAM | 13 | 01 | | 1 | 9 |
| <i>Abies lasiocarpa/Saxifraga bronchialis</i> HT (<i>Holodiscus dumosus</i> ; Scree) | ABLA/SABR | 11 | 01 | | 2 | 6,7 |
| Picea pungens Series | PIPU | 04 | 00 | 00 | 113 | 1,2,5,6,7,8,9 |
| <i>Picea pungens/Linnæa borealis</i> HT | PIPU/LIBO | 01 | 01 | | 11 | 2,6 |
| <i>Picea pungens/Senecio cardamine</i> HT | PIPU/SECA | 03 | 01 | | 4 | 2,7 |
| <i>Picea pungens/Carex foenea</i> HT | PIPU/CAFO | 06 | 01 | | 25 | 2,5,6,7,8 |
| <i>Picea pungens/Erigeron eximius</i> HT | PIPU/EREX | 04 | 01 | | 24 | 2,6,7,9 |
| <i>Picea pungens/Fragaria ovalis</i> HT | PIPU/FROV | 05 | 01 | | 6 | 5 |
| <i>Picea pungens-Pseudotsuga menziesii</i> HT | | | | | | |
| <i>Valeriana capitata</i> PH | PIPU-PSME, VACA | 13 | 01 | | 2 | 2 |
| <i>Picea pungens/Juniperus communis</i> HT | PIPU/JUCO | 02 | 01 | | 1 | 2,9 |
| <i>Picea pungens/Arctostaphylos uva-ursi</i> HT | PIPU/ARUV | 07 | 01 | | 4 | 2,6 |
| <i>Picea pungens/Festuca arizonica</i> HT | PIPU/FEAR | 08 | 01 | | 19 | 6,7 |
| <i>Picea pungens/Swida sericea</i> HT (<i>Cornus stolonifera</i>) | PIPU/SWSE | 09 | 01 | | 11 | 6,8 |
| <i>Picea pungens/Poa pratensis</i> HT | PIPU/POPR | 11 | 01 | | 7 | 2,6 |
| Abies concolor Series | ABCO | 05 | 00 | 00 | 361 | 1,2,5,6, 7,8,9 |
| <i>Abies concolor/Vaccinium myrtillus</i> HT | ABCO/VAMY | 01 | 01 | | 14 | 6,9 |
| <i>Abies concolor/Erigeron eximius</i> HT | ABCO/EREX | 03 | 01 | | 32 | 6,7,9 |

| Name | Abbreviation | Number | | | No. of plots | References |
|--|---------------------|-----------|-----------|-----------|--------------|----------------------|
| | | SER | HT | PH | | |
| <i>Abies concolor/Acer glabrum</i> HT | | | | | | |
| <i>Acer glabrum</i> PH | ABCO/ACGL, ACGL | 04 | 01 | 43 | 2,6,7,8,9 | |
| Riparian PH | ABCO/ACGL, Riparian | 04 | 02 | 3 | 8 | |
| <i>Berberis repens</i> PH | ABCO/ACGL, BERE | 04 | 03 | 5 | 2,8 | |
| <i>Holodiscus dumosus</i> PH | ABCO/ACGL, HODU | 04 | 04 | 17 | 2,5,8 | |
| <i>Abies concolor/Carex foenea</i> HT | ABCO/CAFO | 13 | 01 | 4 | 9 | |
| <i>Abies concolor/Sparse</i> HT (<i>Berberis repens</i>) | ABCO/Sparse | 05 | 01 | 66 | 2,5,6,7,9 | |
| <i>Abies concolor/Acer grandidentatum</i> HT | | | | | | |
| <i>Acer grandidentatum</i> PH | ABCO/ACGR, ACGR | 02 | 01 | 14 | 2,5,7,9 | |
| <i>Holodiscus dumosus</i> PH | ABCO/ACGR, HODU | 02 | 02 | 3 | 5 | |
| <i>Abies concolor/Arctostaphylos uva-ursi</i> HT | ABCO/ARUV | 06 | 01 | 7 | 6 | |
| <i>Abies concolor/Quercus gambelii</i> HT | | | | | | |
| <i>Quercus gambelii</i> PH | ABCO/QUGA, QUGA | 07 | 01 | 75 | 2,5,6,7,8,9 | |
| <i>Holodiscus dumosus</i> PH | ABCO/QUGA, HODU | 07 | 02 | 7 | 5 | |
| <i>Festuca arizonica</i> PH | ABCO/QUGA, FEAR | 07 | 03 | 6 | 2,5 | |
| <i>Muhlenbergia virescens</i> PH | ABCO/QUGA, MUVI | 07 | 04 | 9 | 2,5,7,8 | |
| <i>Muhlenbergia dubia</i> PH | ABCO/QUGA, MUDU | 07 | 05 | ? | 5 | |
| <i>Abies concolor/Lathyrus arizonica</i> HT | ABCO/LAAR | 14 | 01 | 2 | 2 | |
| <i>Abies concolor/Festuca arizonica</i> HT | | | | | | |
| <i>Festuca arizonica</i> PH | ABCO/FEAR, FEAR | 09 | 01 | 20 | 6,7,8 | |
| <i>Poa fendleriana</i> PH | ABCO/FEAR, POFE | 09 | 02 | 3 | 7 | |
| <i>Abies concolor/Muhlenbergia virescens</i> HT | ABCO/MUVI | 08 | 01 | 8 | 4,7 | |
| <i>Abies concolor/Robinia neomexicana</i> HT | ABCO/RONE | 10 | 01 | 2 | 2,7 | |
| <i>Abies concolor/Elymus triticoides</i> HT | ABCO/ELTR | 11 | 01 | 4 | 5 | |
| <i>Abies concolor/Jamesia americana</i> HT (<i>Holodiscus dumosus</i> ; Scree) | ABCO/HODU | 12 | 01 | 7 | 6,7 | |
| <i>Abies concolor/Juglans major</i> HT | ABCO/JAMA | 16 | 01 | 6 | 5,7,9 | |
| <i>Abies concolor/Galium triflorum</i> HT | ABCO/GATR | 15 | 01 | 4 | 6 | |
| Pinus flexilis Series | PIFL | 06 | 00 | 00 | 4 | 1,6 |
| <i>Pinus flexilis/Arctostaphylos uva-ursi</i> HT | PIFL/ARUV | | 01 | 01 | 4 | 6 |
| Pseudotsuga menziesii Series | PSME | 07 | 00 | 00 | 247 | 1,4,5,6,7,8,9 |
| <i>Pseudotsuga menziesii/Bromus ciliatus</i> HT | PSME/BRCI | | 01 | 01 | 10 | 7,8 |
| <i>Pseudotsuga menziesii/Sparse</i> (<i>Berberis repens</i>) | PSME/Sparse | | 02 | 02 | 20 | 4,9 |
| <i>Pseudotsuga menziesii/Acer grandidentatum</i> HT | PSME/ACGR | | 13 | 01 | 2 | 9 |
| <i>Pseudotsuga menziesii/Arctostaphylos uva-ursi</i> HT | PSME/ARUV | | 07 | 01 | 2 | 7 |
| <i>Pseudotsuga menziesii/Quercus gambelii</i> HT | | | | | | |
| <i>Quercus gambelii</i> PH | PSME/QUGA, QUGA | | 03 | 01 | 80 | 4,5,6,7,8,9 |
| <i>Festuca arizonica</i> PH | PSME/QUGA, FEAR | | 03 | 02 | 14 | 6,7 |
| <i>Muhlenbergia virescens</i> PH | PSME/QUGA, MUVI | | 03 | 03 | 11 | 4,7 |
| <i>Holodiscus dumosus</i> PH | PSME/QUGA, HODU | | 03 | 04 | 6 | 5 |
| <i>Pseudotsuga menziesii/Festuca arizonica</i> HT | PSME/FEAR | | 05 | 01 | 26 | 2,4,6,7,8 |
| <i>Pseudotsuga menziesii/Muhlenbergia virescens</i> HT | PSME/MUVI | | 04 | 01 | 30 | 2,4,7,9 |
| <i>Pseudotsuga menziesii/Muhlenbergia montana</i> | PSME/MUMO | | 06 | 01 | 13 | 7,8,9 |
| <i>Pseudotsuga menziesii/Quercus rugosa</i> HT | PSME/QURU | | 10 | 01 | 6 | 9 |
| <i>Pseudotsuga menziesii/Quercus hypoleucoides</i> HT | PSME/QUHY | | 08 | 01 | 12 | 2,8,9 |
| <i>Pseudotsuga menziesii/Quercus arizonica</i> HT | PSME/QUAR | | 12 | 01 | 5 | 9 |
| <i>Pseudotsuga menziesii/Holodiscus dumosus</i> HT (Scree) | PSME/HODU | | 09 | 01 | 5 | 6,7 |
| <i>Pseudotsuga menziesii/Unclassified</i> | PSME/Unclassified | | 00 | 00 | 5 | 2 |
| Pinus ponderosa Series | PIPO | 08 | 00 | 00 | 806 | 3,5,6,7,8,9 |
| <i>Pinus ponderosa/Arctostaphylos uva-ursi</i> HT | PIPO/ARUV | | 01 | 01 | 10 | 6 |
| <i>Pinus ponderosa/Quercus gambelii</i> HT | | | | | | |
| <i>Quercus gambelii</i> PH | PIPO/QUGA, QUGA | | 02 | 01 | 50 | 5,6,7,8,9 |
| <i>Pinus edulis</i> PH | PIPO/QUGA, PIED | | 02 | 02 | 32 | 6,8,9 |
| <i>Festuca arizonica</i> PH | PIPO/QUGA, FEAR | | 02 | 03 | 21 | 6 |
| <i>Muhlenbergia longiligula</i> PH | PIPO/QUGA, MULO | | 02 | 05 | 8 | 7,9 |
| <i>Schizachyrium scoparium</i> PH | PIPO/QUGA, SCSC | | 02 | 06 | 5 | 8 |
| <i>Pinus ponderosa/Festuca arizonica</i> HT | | | | | | |
| <i>Festuca arizonica</i> PH | PIPO/FEAR, FEAR | | 03 | 01 | 79 | 3,5,6,7,8,9 |
| <i>Danthonia parryi</i> PH | PIPO/FEAR, DAPA | | 03 | 02 | 7 | 6 |
| <i>Quercus gambelii</i> PH | PIPO/FEAR, QUGA | | 03 | 03 | 25 | 3,7,8,9 |
| <i>Boutelous gracilis</i> PH | PIPO/FEAR, BOGR | | 03 | 04 | 45 | 3,6,7,8 |

| Name | Abbreviation | Number | | | No. of plots | References |
|---|---------------------------|-----------|-----------|-----------|--------------|------------|
| | | SER | HT | PH | | |
| <i>Pinus ponderosa</i> / <i>Muhlenbergia virescens</i> - <i>Festuca arizonica</i> HT | | | | | | |
| <i>M. virescens</i> - <i>F. arizonica</i> PH | PIPO/MUVI-FEAR, MUVI-FEAR | 04 | 01 | 52 | 3,7,8 | |
| <i>Quercus gambelii</i> PH | PIPO/MUVI-FEAR, QUGA | 04 | 02 | 27 | 3,7 | |
| <i>Bouteloua gracilis</i> PH | PIPO/MUVI-FEAR, BOGR | 04 | 03 | 13 | 3,7 | |
| <i>Pinus ponderosa</i> / <i>Muhlenbergia virescens</i> HT | | | | | | |
| <i>Muhlenbergia virescens</i> PH | PIPO/MUVI, MUVI | 05 | 01 | 36 | 3,7,8,9 | |
| <i>Quercus gambelii</i> PH | PIPO/MUVI, QUGA | 05 | 02 | 34 | 3,7,8 | |
| <i>Pinus ponderosa</i> / <i>Muhlenbergia montana</i> HT | PIPO/MUMO | 06 | 01 | 36 | 3,6,7,8,9 | |
| <i>Pinus ponderosa</i> / <i>Bouteloua gracilis</i> HT | | | | | | |
| <i>Bouteloua gracilis</i> PH | PIPO/BOGR, BOGR | 07 | 01 | 36 | 3,6,8,9 | |
| <i>Schizachyrium scoparium</i> PH | PIPO/BOGR, SCSC | 07 | 02 | 14 | 6 | |
| <i>Pinus edulis</i> PH | PIPO/BOGR, PIED | 07 | 03 | 20 | 3,7 | |
| <i>Quercus gambelii</i> PH | PIPO/BOGR, QUGA | 07 | 04 | 19 | 3 | |
| <i>Andropogon halii</i> PH | PIPO/BOGR, ANHA | 07 | 05 | 16 | 3 | |
| <i>Artemisia tridentata</i> PH | PIPO/BOGR, ARTR | 07 | 06 | 14 | 3,9 | |
| <i>Pinus ponderosa</i> / <i>Poa longiligula</i> CT ² | PIPO/POLO | 22 | 01 | 15 | 3 | |
| <i>Pinus ponderosa</i> / <i>Poa fendleriana</i> CT | PIPO/POFE | 23 | 01 | 10 | 3 | |
| <i>Pinus ponderosa</i> / <i>Quercus rugosa</i> HT | PIPO/QURU | 12 | 01 | 11 | 9 | |
| <i>Pinus ponderosa</i> / <i>Quercus hypoleucoides</i> HT | PIPO/QUHY | 13 | 01 | 22 | 9 | |
| <i>Pinus ponderosa</i> / <i>Quercus arizonica</i> HT | | | | | | |
| <i>Quercus arizonica</i> PH | PIPO/QUAR, QUAR | 14 | 01 | 29 | 9 | |
| <i>Bouteloua gracilis</i> PH | PIPO/QUAR, BOGR | 14 | 02 | 5 | 9 | |
| <i>Pinus ponderosa</i> / <i>Quercus grisea</i> HT | | | | | | |
| <i>Muhlenbergia longiligula</i> PH | PIPO/QUGR, MULO | 25 | 03 | 9 | 7 | |
| <i>Muhlenbergia montana</i> PH | PIPO/QUGR, MUMO | 25 | 02 | 7 | 7 | |
| <i>Pinus ponderosa</i> / <i>Quercus undulata</i> HT | | | | | | |
| <i>Quercus undulata</i> PH | PIPO/QUUN, QUUN | 08 | 01 | 16 | 5,6 | |
| <i>Muhlenbergia dubia</i> PH | PIPO/QUUN, MUDU | 08 | 02 | 8 | 5 | |
| <i>Muhlenbergia longiligula</i> PH | PIPO/QUUN, MULO | 08 | 03 | 2 | 5 | |
| <i>Pinus ponderosa</i> / <i>Quercus emoryi</i> HT | PIPO/QUEM | 15 | 01 | 19 | 9 | |
| <i>Pinus ponderosa</i> / <i>Arctostaphylos pungens</i> HT | | | | | | |
| <i>Arctostaphylos pungens</i> PH | PIPO/ARPU, ARPU | 21 | 01 | 12 | 9 | |
| <i>Quercus gambelii</i> PH | PIPO/ARPU, QUGA | 21 | 02 | 13 | 3,7 | |
| <i>Pinus ponderosa</i> / <i>Artemisia arbuscula</i> HT | PIPO/ARAR | 10 | 01 | 6 | 6 | |
| <i>Pinus ponderosa</i> / <i>Cowania mexicana</i> CT | PIPO/COME | 24 | 01 | 1 | 3 | |
| <i>Pinus ponderosa</i> / <i>Ribes inerme</i> HT (Rockland, Scree) | PIPO/RIIN | 11 | 01 | 5 | 6,7,8 | |
| <i>Pinus ponderosa</i> / <i>Cinder</i> Soils HT | PIPO/Cinder | 27 | 01 | 4 | 8 | |
| <i>Pinus ponderosa</i> / <i>Acer grandidentatum</i> HT | PIPO/ACGR | 16 | 01 | 2 | 9 | |
| <i>Pinus ponderosa</i> / <i>Juglans major</i> HT | PIPO/JUMA | 17 | 01 | 5 | 9 | |
| <i>Pinus ponderosa</i> / <i>Riparian</i> | PIPO/Riparian | 26 | 01 | 1 | 8 | |
| <i>Pinus ponderosa</i> / <i>Oryzopsis hymenoides</i> HT | PIPO/ORHY | 09 | 01 | 1 | 6 | |
| <i>Pinus ponderosa</i> / <i>Poa pratensis</i> HT | PIPO/POPR | 18 | 01 | 3 | 6 | |
| <i>Pinus ponderosa</i> / <i>Unclassified</i> | PIPO/Unclassified | 00 | 00 | 1 | 3 | |
| <i>Pinus engelmannii</i> Series | PINEN | 09 | 00 | 00 | 10 | 9 |
| <i>Pinus engelmannii</i> / <i>Muhlenbergia longiligula</i> HT | PINEN/MULO | 01 | 01 | 1 | 9 | |
| <i>Pinus engelmannii</i> / <i>Quercus rugosa</i> HT | PINEN/QURU | 02 | 01 | 1 | 9 | |
| <i>Pinus engelmannii</i> / <i>Quercus hypoleucoides</i> HT | PINEN/QUHY | 03 | 01 | 6 | 9 | |
| <i>Pinus engelmannii</i> / <i>Quercus arizonica</i> HT | PINEN/QUAR | 04 | 01 | 1 | 9 | |
| <i>Pinus engelmannii</i> / <i>Quercus emoryi</i> HT | PINEN/QUEM | 05 | 01 | 1 | 9 | |
| <i>Pinus leiophylla</i> Series | PILE | 10 | 00 | 00 | 37 | 1,9 |
| <i>Pinus leiophylla</i> / <i>Piptochaetium fimbriatum</i> HT | PILE/PIFI | 05 | 01 | 7 | 9 | |
| <i>Pinus leiophylla</i> / <i>Quercus hypoleucoides</i> HT | PILE/QUHY | 01 | 01 | 9 | 9 | |
| <i>Pinus leiophylla</i> / <i>Quercus arizonica</i> HT | PILE/QUAR | 02 | 01 | 6 | 9 | |
| <i>Pinus leiophylla</i> / <i>Quercus emoryi</i> HT | PILE/QUEM | 03 | 01 | 6 | 9 | |
| <i>Pinus leiophylla</i> / <i>Arctostaphylos pungens</i> HT | PILE/ARPU | 04 | 01 | 8 | 9 | |
| <i>Pinus leiophylla</i> / <i>Quercus toumeyii</i> HT | PILE/QUTO | 06 | 01 | 1 | 9 | |
| <i>Populus angustifolia</i> Series | POAN | 11 | 00 | 00 | 9 | 7 |

¹Ludwig, John A., and William H. Moir. 1984. Comparison table of habitat type nomenclature [Mimeo], New Mexico State University, Las Cruces, New Mexico.

²Classified as a community type by the authors.

PLOT _____ Crew _____ Date _____

| UNDERSTORY | | | |
|------------|----|---|-------|
| Shrubs | %C | v | Herbs |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Herbs | %C | v | |
| | | | |
| | | | |
| | | | |
| | | | |
| REMARKS: | | | |

PLOT _____ photo _____

crew _____ date _____

state _____ phs. prv. _____

NF _____ RD _____

quad. _____ ser. _____

T _____ R _____ S _____ 1/4 _____ zone _____

Easting _____ Northing _____

local. _____

elev. _____ slope (%) _____ aspect _____

pos. _____ Par. Mat. _____

soil ser. _____ m. unit _____

soil dep. (dm) _____ ston. _____ rock. _____

Lit. _____ Soil _____ Rock _____ BA _____

HT/CT _____

REMARKS:

| TREES | NUMBER BY DBH (INCH) CLASS | | | | | | | | | | | |
|-------|----------------------------|--------|-------|----------|-------|--------|---------|---------|---------|---------|---------|------|
| | 0 - 2 | | 2 - 4 | 4 - 6 | 6 - 8 | 8 - 10 | 10 - 12 | 12 - 14 | 14 - 16 | 16 - 18 | 18 - 20 | > 20 |
| | < 4.5' | > 4.5' | | | | | | | | | | |
| P | | | | | | | | | | | | |
| P | | | | | | | | | | | | |
| P | | | | | | | | | | | | |
| P | | | | | | | | | | | | |
| P | | | | | | | | | | | | |
| P | | | | | | | | | | | | |
| P | | | | | | | | | | | | |
| TREE | DBH | Ht. | Core | REMARKS: | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

PLOT _____ Crew _____ Date _____

SOILS (0 hors. on reverse)

Horizon _____ Depth _____ Texture _____

Struct. _____ Consist. _____ Color _____

Frag. _____ Roots _____ Bound. _____

Horizon _____ Depth _____ Texture _____

Struct. _____ Consist. _____ Color _____

Frag. _____ Roots _____ Bound. _____

Horizon _____ Depth _____ Texture _____

Struct. _____ Consist. _____ Color _____

Frag. _____ Roots _____ Bound. _____

Horizon _____ Depth _____ Texture _____

Struct. _____ Consist. _____ Color _____

Frag. _____ Roots _____ Bound. _____

Figure 2.—Examples of field data cards where separate cards are used for location/site characteristics, plant inventory, tree inventory, and soils.

various research needs. There are two major partitions to the data base: (1) source data files containing the actual vegetation and site characteristics data organized by climax tree series; and (2) the program and parameter files used to manipulate the source data. The entire data set is in ASCII format on 5 1/4-inch floppy disks, which are compatible with IBM MS-DOS, and is available upon request from the Rocky Mountain Forest and Range Experiment Station.⁴ The data files can be read, edited, and subsetted by a microcomputer (given an appropriate FORTRAN compiler), and it may be possible, depending on the microcomputer hardware on hand, to analyze small data sets. The analysis of large data sets will probably require the larger capacity of a mini- or mainframe computer.

Source Data Files

The format of the original data files was developed by John Ludwig⁵ and provides for maximum flexibility in data entry and manipulation; at the same time it is compact, minimizing storage space requirements. Coded information includes species abundances and site and location information. The consolidated data files were constructed by merging the data sets from each study listed in table 1 and then re-sorting the plots by climax tree series, habitat type, and phase. For example, plots of the *Abies lasiocarpa/Vaccinium myrtillus* habitat type found in northern New Mexico and southern Colorado (DeVelice et al. 1986) were merged with all other plots from that habitat type found in southern New Mexico and Arizona (Alexander et al. 1988, Fitzhugh et al. 1988, Muldavin et al. 1989). Habitat types were then grouped into data files by series. Thus, all data are initially accessed by series and then manipulated to meet specific needs. The data files can be used with the programs provided to produce customized site characteristics tables similar to those in appendix C, or they can be subsetted for use in external programs.

Vegetation Files

The vegetation data files contain the species abundance values by plot and are used to construct stand tables similar to those in appendix B, or they can be subsetted and reformatted for use in other external programs. The vegetation data files are listed in table 3.

Figure 3 provides an example of how the vegetation abundance values are coded in the files. Each plot is represented by one to many lines (cards, card images), depending on the number of species in the plot. The first line contains a unique plot identifier in columns 1–5. Column 1 contains the code of the principal investigator who established the plot (table 4). Column 2 is a general location identifier (table 5). Columns 3–5 con-

⁴Rocky Mountain Forest and Range Experiment Station, 240 W. Prospect Road, Fort Collins, Colo. 80526.

⁵Work performed while a professor at New Mexico State University, Las Cruces, New Mexico. Current address: Rangelands Research Center, Deniliquin, New South Wales 2710 Australia.

Table 3.—Vegetation source data files available on floppy disks. The first four letters of the filename give the series code (as in table 2) followed by VEG to indicate that they are vegetation files, plus the file extension .DAT to indicate that they contain source data.

| Disk no. | File name | Data description | Size |
|----------|--------------|-------------------------------------|-------|
| 1 | PIPUVEG.DAT | <i>Picea pungens</i> Series | 60 K |
| 1 | PIARVEG.DAT | <i>Pinus aristata</i> Series | 5 K |
| 1 | PIENVEG.DAT | <i>Picea engelmannii</i> Series | 41 K |
| 1 | PIFLVEG.DAT | <i>Pinus flexilis</i> Series | 1 K |
| 1 | PILEVEG.DAT | <i>Pinus leiophylla</i> Series | 16 K |
| 1 | PINENVEG.DAT | <i>Pinus engelmannii</i> Series | 3 K |
| 1 | POANVEG.DAT | <i>Populus angustifolia</i> | 1 K |
| 2 | PIPOVEG.DAT | <i>Pinus ponderosa</i> Series | 294 K |
| 3 | ABCOVEG.DAT | <i>Abies concolor</i> Series | 152 K |
| 3 | ABLAVEG.DAT | <i>Abies lasiocarpa</i> Series | 98 K |
| 3 | PSMEVEG.DAT | <i>Pseudotsuga menziesii</i> Series | 93 K |

Table 4.—Principal investigator codes used in the data base plot identification codes.

| Code | Principal investigator |
|------|------------------------|
| A | Alexander, Billy G. |
| E | Muldavin, Esteban H. |
| F | Fitzhugh, E. Lee |
| D | DeVelice, Robert L. |
| L | Ludwig, John A. |
| M | Moir, William H. |
| W | White, Alan S. |

tain a plot number which was assigned by the principal investigator. Columns 7–8 contain the number of species observations in the plot.

Following the number of species observations is a series of couplets consisting of species codes and associated abundance values. There are as many couplets as the number of species. The couplets are nine columns wide; the first six columns contain the alphanumeric species code, while the last three columns contain the numeric abundance value for that species. Tree species abundances are in stems per plot (375 m²), presented in three broad size classes. For example, young regeneration of *Pinus leiophylla* (<2 inches d.b.h.) is recorded as PILE1, advanced regeneration (2–10 inches d.b.h.) as PILE2, and mature trees (>10 inches d.b.h.) as PILE3. The shrub, grass, and herb species values are in percent cover. A [+0] abundance value indicates that the species was present in the stand, but not in the plot. There are a maximum of eight couplets to a line, and the couplets continue on succeeding lines until all the species indicated by the number species in columns 7–8 are represented. A complete list of species names and codes is presented in appendix A.

The last three "species" couplets of each plot are special classification variables: SERIES, HTNO, and PHASE. Values associated with these variables correspond to the identification numbers found in table 2 for the series, habitat type, and phase, respectively.

```

                                COLUMNS
0           1           2           3           4           5           6           7           8
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
.....
EK 34 37 PILE1  4 PILE2  4 PILE3  7 QUHY0 27 QUHY1 59 QUHY2 24 QUAR0 28 QUAR1  2
      QUAR2 12 JUDE1  3 JUDE2  1 ARAR2  3 ARAR3  1 QUHY 25 QUAR 10 YUBA  1
      GAWR.01 ARAR .1 RHAR.05 AGPAR.05 MULO .5 BRCT.01 EROR.01 SENE.01
      HEDE.01 CHFE .1 GAMI.05ASTRAG.01 HEHY .1GNAPHA.01 DALEA +0 UNID1.01
      UNID2.01 UNID3.01SERIES 10 HTNO 01 PHASE 01
EW109 38 PILE1 16 PILE2 19 PILE3  4 PIPO1 21 PIPO2 11 PIPO3  1PIPOT1 21PIPOT2 11
      PIPOT3  1 QUHY0 40 QUHY1  8 QUHY2 14 QUEMO  2 QUEM1  2 QUEM2  2 QUGRO  3
      QUHY 15 QUEM  6 JUDE .1 ARPR +0 OPPL.01 NOMI.01 CEFE .1 ARPU .1
      QUGR.01 CABJ .1 CAGE.01 HEHY.01 ARCA .2 SENE.01 SOSF.05 LINE.01
      IPAG +0 AGHE +0 SILI.01SERIES 10 HTNO 01 PHASE 01
DK 17 17 PILE1  6 PILE2  5 PILE3  7 QUHY1100 QUHY2 46 ARAR2  3 QUAR2  1 JUDE1  1
      PID1  3 QUHY 65 QURU .1 ARAR  6 QUAR  1 MULO  3SERIES 10 HTNO 01
      PHASE 01
      :           :           :           :           :           :           :           :
      .           .           .           .           .           .           .           .

```

Figure 3.—An example of the structure of a vegetation source data file. See text for details.

Table 5.—Location codes used in the data base plot identification codes.

| Code | Location |
|------|---|
| C | Cibola National Forest, central New Mexico. |
| G | Gila National Forest, southwestern New Mexico, Apache National Forest, eastern Arizona. |
| H | Hualapai Indian Reservation, northwest Arizona. |
| K | Coronado National Forest, southeastern Arizona. |
| L | Lincoln National Forest, south-central New Mexico. |
| M | Mogollon Plateau, including the Coconino, Apache, Sitgreaves, and Kaibab National Forests of northern Arizona. |
| N | Northern New Mexico and southern Colorado, including the Santa Fe, Carson, San Isabel, San Juan, and Rio Grande National Forests. |
| P | Prescott National Forest, west-central Arizona. |
| S | San Carlos Indian Reservation, central Arizona. |
| T | Tonto National Forest, central Arizona. |
| W | Fort Apache Indian Reservation (White River), east-central Arizona. |

Site Characteristics Files

The structure of the site characteristics files is fundamentally different from the vegetation files. Data are coded in a fixed column format where each column or set of columns refers to a specific environmental variable. Figure 4 gives an example of the plot coding structure. There are two lines per plot. The first 5 columns of line 1 give the same unique plot identifier as outlined above under the vegetation files. The remaining columns have specific meanings, which are given in table 6. For example, elevation (in feet) can be found on line 2 in columns 42-46. The site characteristics files that are available are listed in table 7.

Data Manipulation: Programs and Parameter Files

To manipulate the data base, a suite of programs and associated data definition parameter files is provided. Using these programs and parameter files, complete stand and site characteristics tables like those shown in appendixes B and C can be directly produced. Alternatively, programs and procedures are provided for sub-setting and restructuring the data base either to produce customized tables or to create new data sets for use in external programs.

The programs are based on algorithms developed by John Ludwig⁵ that were written in ASCII FORTRAN VII for an IBM 370 mainframe. We have rewritten the pro-

COLUMNS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|

```

12345678901234567890123456789012345678901234567890123456789012345678901234567890
.....

EK 19185 720AZ SANTA CATALINA CORONADO SANTA CATALINABELLOTA RANCH 2
    2 12 53050 358350BEAR CAN GREEN MTHR G900 17 1225GRANITE100401 60 230 0 3
MK988183 9 6NM FELONCILLO MTNSCORONADO DOUGLAS APACHE 231S21W31SE
    2        WALNUT CANYON      5600 2 190RHY--ALL100201 95 5 T 0
DK 301821014AZ CHIRICAHUA MTNSCORONADO DOUGLAS CHIRICAHUA PK 218S29E24NE
    2 12        POLE BRIDGE CAN      6400 19 4 22RHYOLIT100101 95 0 2 T 3

:   :   :   :   :   :   :   :   :   :   :   :   :   :   :   :
:   :   :   :   :   :   :   :   :   :   :   :   :   :   :   :

```

Figure 4.—An example of a site characteristics source data file structure. See text for details.

Table 6.—Column location of site characteristics variables in the source site characteristics data files.

| Card | Columns | Variable |
|------|---------|---|
| 1 | 1 | Principal investigator code |
| 1 | 2 | General location code |
| 1 | 3-5 | Plot number as assigned by Principal Investigator |
| 1 | 6 | Card number 1 |
| 1 | 7-8 | Sampling date - year |
| 1 | 9-10 | Sampling date - month |
| 1 | 11-12 | Sampling date - day |
| 1 | 13-14 | State abbreviation |
| 1 | 16-30 | Physiographic region |
| 1 | 31-40 | National forest |
| 1 | 41-54 | Ranger district |
| 1 | 55-68 | USGS topographic quadrangle |
| 1 | 69 | Quadrangle series |
| 1 | 70-72 | Township |
| 1 | 73-75 | Range |
| 1 | 76-77 | Section |
| 1 | 78-79 | Quarter section |
| 2 | 1 | Null |
| 2 | 2 | Null |
| 2 | 3-5 | Null |
| 2 | 6 | Card number |
| 2 | 8-9 | UTM zone |
| 2 | 11-15 | UTM easting coordinates (to the nearest 10 meters) |
| 2 | 17-22 | UTM northing coordinates (to the nearest 10 meters) |
| 2 | 23-41 | Location description - locality |
| 2 | 42-46 | Elevation (feet) |
| 2 | 47-49 | Slope (percent) |
| 2 | 50-51 | Topographic position |
| 2 | 52-54 | Aspect (degrees azimuth) |
| 2 | 55-61 | Parent material |
| 2 | 62-63 | Series identification number (as in table 2) |
| 2 | 64-65 | Habitat type identification number (as in table 2) |
| 2 | 66-67 | Phase identification number (as in table 2) |
| 2 | 70-71 | Percent ground cover - litter |
| 2 | 72-73 | Percent ground cover - soil |
| 2 | 74-75 | Percent ground cover - rock |
| 2 | 76-77 | Percent ground cover - moss |
| 2 | 78-79 | Percent ground cover - basal area |

Table 7.—Site characteristics source data files available on floppy disk.

| File name | Data description | Size |
|--------------|-------------------------------------|-------|
| PSMESITE.DAT | <i>Pseudotsuga menziesii</i> Series | 38 K |
| ABCOSITE.DAT | <i>Abies concolor</i> Series | 57 K |
| PIPUSITE.DAT | <i>Picea pungens</i> Series | 16 K |
| PIENSITE.DAT | <i>Picea engelmannii</i> Series | 17 K |
| ABLASITE.DAT | <i>Abies lasiocarpa</i> Series | 40 K |
| PIARSITE.DAT | <i>Pinus aristata</i> Series | 2 K |
| PIFLSITE.DAT | <i>Pinus flexilis</i> Series | 1 K |
| PILESITE.DAT | <i>Pinus leiophylla</i> Series | 6 K |
| PINENSIT.DAT | <i>Pinus engelmannii</i> Series | 2 K |
| PIPOSITE.DAT | <i>Pinus ponderosa</i> Series | 109 K |
| POANSITE.DAT | <i>Populus angustifolia</i> Series | 1 K |

grams in Microsoft FORTRAN to be compiled and run on an IBM PC compatible machine. We have provided both the source code and the already compiled, executable form of the programs on the floppy disks. The executable forms (.EXE) are available for immediate use. The programs request data file names and other information interactively. If your machine cannot handle interactive file information, the source code can be altered accordingly and recompiled (see examples given in the program documentations). A “readme” file should be present on the floppy disks provided which will contain any program updates or changes.

The programs available, their general purpose, and input requirements are listed in table 8. Basic input requires the above defined data files (.DAT files), and may

require data definition parameter files (.PAR files). These parameter files are specially structured to direct data entry in the programs and consist generally of data definition lines, a list of species codes of species desired for a particular analysis, and a corresponding list of plots. An example of a parameter file is given in figure 5. In columns 3–6 of the first line is the value “9999” to indicate the beginning of a series definition sequence. Columns 7–11 indicate the number of species codes in the species code list that follows. Columns 13–79 are reserved for a user-supplied title for the series and analysis. The second line contains the series number in columns 1–2, which corresponds to the series number found in table 2.

Following the series number line is a list of species codes, one to a line, with the code in columns 2–7. Codes for desired species must correspond to the species on the list in appendix A. There are as many species code lines as indicated by the number of species on line 1. The species are usually ordered as desired for output in a stand table (see “Creating a Stand Table” below). The order is irrelevant when the users intention is to subset a data set with the selection programs provided (see “Creating Data Subsets”).

After the species codes lines is a habitat type definition line where columns 2–6 indicate the number of plots from that habitat type to be input, and columns 13–79 are reserved for a user supplied title. Following the habitat type definition line is the habitat type number line, with the series number in columns 1–2, the habitat type number in columns 3–4, and the phase number in

Table 8.—Programs available on floppy disk for manipulating data files.

| File name | Program purpose and input |
|-------------|--|
| SITETAB.FOR | Outputs site characteristics tables with a source site data file (.DAT file) and a data definition parameter file (.PAR file) as input. |
| VEGTAB.FOR | Outputs vegetation stand tables with a source vegetation data file (.DAT file), the SWSP.LIS file, and a data definition parameter file as input. |
| PAC.FOR | Condenses file definition parameter files (.PAR files). |
| UNPAC.FOR | Restores file definition parameter files (.PAR files) to an un-condensed format. |
| VEGSEL.FOR | Creates new vegetation source data sets based on the species and plots input with a file definition parameter file (.PAR file) and a vegetation data file (.DAT file). |
| SITSEL.FOR | Creates new site characteristics data files based on the plots entered in a data definition parameter file (.PAR file) and a source data file (.DAT file). |
| VEGMAT1.FOR | Restructures a vegetation data file (.DAT file) into matrix format with species in rows and plots in columns as defined by a data definition parameter file (.PAR file). |
| VEGMAT2.FOR | Restructures a vegetation data file (.DAT) into matrix format with plots in rows and species in columns as defined by the data definition parameter file (.PAR). |
| SPPSEL.FOR | Creates new source data files which contain a specified species. |
| VEGIN.SAS | SAS program to create vegetation (stand) system files from data files (.DAT) for statistical analysis. |
| SITEIN.SAS | SAS program to create site characteristics system files from site data files for statistical analysis. |
| CORTAB.FOR | Converts data files to Cornell Ecology Programs Series format. |
| SPPOBS.FOR | Determines the number of observations for selected species in a data set. |


```

                                COLUMNS
    0           1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
.....:.....:.....:.....:.....:.....:.....:.....:.....
9999 290 SOUTHWESTERN HABITAT TYPES: PINUS LEIOPHYLLA SERIES
10 0 0
TREES
PIED1
PIST2
QUAR2
QUGR3
SHRUBS
ARBAR
GRASS
ARISTI
CYPERU
ORMI
FORBS
.
.
.
PEBA
SALE
SILI
9          PINUS LEIOPHYLLA/QUERCUS HYPOLEUCOIDES HT
10 1 1
EK 20
EK 34
EW109
DK 17
DK 30
DK 35
DK 45
DK 32
DK 6
10          PINUS LEIOPHYLLA/QUERCUS ARIZONICA HT
10 2 1
ET 69
MK908
DK 3
DK 4
DK 39
DK 44
DK 5
DK 60
EW105
DK 24
6          PINUS LEIOPHYLLA/QUERCUS EMORYI HT
10 3 1
.
.

```

Figure 5.—An example of a file definition parameter file. See text for details.

columns 5-6. These numbers correspond to those found in table 2 for individual habitat types. Next, the plot identification codes are listed, one to a line, in columns 2-6, for as many lines as there are plots indicated on the habitat type definition line. The format of the plot code must match that in the data files. The plots are ordered as desired for listing in the stand and site characteristics tables. The sequence of habitat type definition line, habitat type number line, and plot list lines is repeated for as many habitat types as wanted.

The data definition parameter files designed for the output of tables like those found in appendixes B and C are provided on floppy disk (see table 9). To conserve space on the disk, files were put in a condensed format using the program PAC.FOR where there are eight species codes to a line and 10 plots per line. Use program

UNPAC.FOR to unpack these files into the format shown in figure 5. PAC.FOR and UNPAC.FOR are simple, small programs that should easily operate on a microcomputer.

Creating Data Subsets

The programs VEGSEL.FOR and SITESEL.FOR are used to subset new source vegetation and site characteristics data files from the data base to meet specific research needs. The input required is a data definition parameter file (.PAR file) and a corresponding initial source data file (.DAT file). The parameter file should be designed to contain only those species and plots desired in the new data sets. Output is in the same format as the original input data files. Currently, the programs are dimensioned for up to 1,000 plots and 1,300 species, as defined in the parameter file.

Table 9.—File definition parameter files available to create the stand tables in appendixes B and C.

| File name | Data description | Size |
|--------------|---|------|
| ABLALIST.PAR | <i>Abies lasiocarpa</i> Series | 6 K |
| ABCOLIST.PAR | <i>Abies concolor</i> Series | 8 K |
| PIENLIST.PAR | <i>Picea engelmannii</i> Series | 5 K |
| PIPULIST.PAR | <i>Picea pungens</i> Series | 5 K |
| PSMELIST.PAR | <i>Pseudotsuga menziesii</i> Series | 7 K |
| PIPOLIST.PAR | <i>Pinus ponderosa</i> Series | 14 K |
| PIARLIST.PAR | <i>Pinus aristata</i> Series | 1 K |
| PIFLLIST.PAR | <i>Pinus flexilis</i> Series | 1 K |
| PINENLIS.PAR | <i>Pinus engelmannii</i> Series | 2 K |
| PILELIST.PAR | <i>Pinus leiophylla</i> Series | 3 K |
| POANLIST.PAR | <i>Populus angustifolia</i> Series | 1 K |
| SWSPP.LIS | Species names, codes, and synonymy for all species in the database. | 20 K |

The program VEGMAT1.FOR takes the same input as above—a parameter file and vegetation data file—but creates an output file in matrix format with species in rows going down and plots in columns going across. VEGMAT2.FOR performs the same function, except that plots are in rows and species in columns.

The program VEGIN.SAS is a special program written in Statistical Analysis System (SAS) programming language (SAS Inc. 1986). The program makes it possible to input vegetation data files (.DAT files) and create SAS system files for statistical analysis. Cases in the system files are equivalent to plots and are identified by the same plot identification code as in the data file. Variables are species, identified by the species code. Correspondingly, SITEIN.SAS is an example of how to input site characteristics data into SAS to create a SAS site characteristics system file. These SAS programs require a large amount of disk space and memory for use with the larger data sets and are, thus, suited primarily for mini- or mainframe computers.

Creating a Stand Table

The program VEGTAB.FOR creates vegetation stand tables similar to the one shown in appendix B. Input files required are: (1) a data definition parameter file (.PAR) with species codes and plot numbers in desired output order; (2) the SWSPP.LIS file containing the species list for the data base; and (3) the appropriate vegetation data file (.DAT) containing the plots listed in the above parameter file. The tables are 80 columns wide, with the first 30 columns reserved for the species name, followed by up to 50 columns containing the abundance values for each of 50 plots. Species abundance values are converted into one column scalars as shown in table 10. The tables can be customized by simply adding, deleting, or rearranging species code and plot lists in parameter files; but, remember to reset the number of species or number of plots on the data definition lines.

Table 10.—Scalar conversions of density (stems/375 m²) for tree species and percent cover for shrub, grass, and forb species. The scalar values are use in the output of stand tables by the program VEGTAB.FOR.

| Density conversion | | Percent cover conversion | |
|--------------------|-----------------|--------------------------|----------------|
| Scalar | Density (stems) | Scalar | Percent cover |
| + | = 1 | P | = +0 (present) |
| 1 | = 2 | + | = < 1 |
| 2 | = 3–4 | 1 | = 1–4 |
| 3 | = 5–9 | 2 | = 5–24.9 |
| 4 | = 10–20 | 3 | = 25–49.9 |
| 5 | = 21–40 | 4 | = 50–74.9 |
| 6 | = 41–60 | 5 | = 74–100 |
| 7 | = 61–80 | | |
| 8 | = 81–99 | | |
| 9 | = > 100 | | |

Creating a Site Characteristics Table

Procedures for producing site tables are similar to creating a stand table. Using the program SITETAB.FOR, input the same data definition parameter file used for the vegetation stand table along with the corresponding site characteristics file (the SWSPP.LIS file is not required).

The program presently reads and outputs only selected site and location characteristics as shown in the tables in appendix C. If other variables are desired, the appropriate dimension, read, and write statements will need to be altered. See “Site Characteristics Files” and table 6 above for the variables available and their location in the data files. The program automatically converts elevation in feet to meters and performs a cosine transformation of the azimuth into a crude solar index where a value of 2.0 = northeast and 0.0 = southwest. The program is currently dimensioned for 1,000 plots.

Creating Summary Stand Tables

Summary tables, similar in form to those found in the publications listed in table 1, can be produced using the program SUMTAB.FOR. Input is identical to that required to produce a normal stand table using VEGTAB.FOR described above. The program outputs a table of mean abundance values and percent constancy per habitat type for each species in the parameter file. A word of warning: SUMTAB.FOR requires considerable memory space to run large data sets (see program documentaion).

Individual Species Information

The program SPPSEL.FOR is an interactive program that allows the user to input a particular species code(s) and vegetation data file. The program will then search the data for those plots containing the species and output a new data set of those plots along with a listing.

The program SPPOBS.FOR takes as input a vegetation data file (.DAT) and the species list (SWSP.LIS) and outputs the number of observations per species in the particular data file.

NONCOMPUTERIZED DATA

Included in the data base is a wide variety of noncomputerized information which is on file at the library of the Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo. All original plot records, with associated photographs, are available. Plot records contain detailed stand structures, site index tree measurements, soil profile descriptions, and qualitative descriptions of the stands. Precise plot locations as shown on USGS quadrangles are also available. The original stand and site tables from the publications listed in table 1, along with hard copies of the data base provided here, are also archived in the Rocky Mountain Station library.

THE SERIES STAND AND SITE TABLES

The primary analytic tools used to develop the classifications were table manipulation, cluster analysis, and ordination. The results of analysis are stand and site characteristics tables, where plots with similar species compositions and site characteristics are grouped together to define the habitat types. The habitat type classifications are then summarized by deriving, from the stand tables, the mean species abundance values and constancy (percent occurrence) per habitat type and then presenting them in the form of a summary table. Normally, only summary tables are published, not the stand tables. The process of summarization leads to information loss on the distribution of species in and among habitat types, and can gloss over anomalies and subpatterns in the data. Thus, the stand tables, rather than the summary tables, provide the best and most accurate picture of the classification structure. For this reason, we compiled new regional stand tables and site characteristics tables which contain all the plots from the data base stratified by climax forest tree series. To conserve space, only limited examples of these stand and site tables using the *Picea engelmannii* series are provided in appendixes B and C. The data base files currently available (tables 3, 7, and 9) are structured to create these consolidated stand tables directly using the programs provided (table 8). To output a complete set of regional consolidated stand and site tables, use these data files and the programs and follow the procedures outlined above in "Creating a Stand Table" and "Creating a Site Characteristics Table."

Plots in the stand tables are classified and ordered as they were by the original investigators, with habitat type numbers corresponding to those found in table 2. In a few cases, plots were either not classified or were misclassified by the respective investigators. Based on our knowledge of the regional distribution of habitat types,

we have attempted to place such plots into the most appropriate existing habitat type. The major series stand tables (*Pinus ponderosa*, *Pseudotsuga menziesii*, *Abies concolor*, *Picea pungens*, *Picea engelmannii*, and *Abies lasiocarpa*) contain all species that were observed in more than two stands⁶ within a respective series. Tables of the minor series (*Pinus engelmannii*, *Pinus leiophylla*, *Pinus aristata*, and *Pinus flexilis*) have complete species lists. Elements identified only to the generic level were excluded from all tables as well. All genera and species present within each series are indicated on the species list in appendix A. For information on uncommon species not listed on the tables, refer to the procedures above on "Individual Species Information."

In the site characteristics tables (appendix C), plots are ordered as in the stand tables. We have included only the most important site and location characteristics on these tables. For a complete list of environmental information available see the above "Site Characteristics Files" section.

These tables represent the current status of habitat typing in the Southwest. We hope that future work, using these tables and the associated data base, will help clarify and more precisely delineate differences among forest communities of the region.

⁶The reader is reminded of habitat type terminology (e.g., Moir and Ludwig 1983) whereby a plot is a sampled portion of the larger homogeneous stand.

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APPENDIX A

Vascular Plant Species Found in Forest Habitat Types of the Southwest

Species names variously follow Kearny and Peebles (1951), Martin and Hutchins (1980-81), and Weber and Johnston (1979). Shown are: species names, with any relevant synonymy in parentheses; the number of total observations in the data base; and a presence/absence code for the series in which a species is found. A [+] indicates that the species is listed in the series stand tables. A [•] indicates no observation for that series.

Tree species are represented in the data by up to three size classes as follows:

Young regeneration (Yng regen): less than 2 inches d.b.h.

Advanced regeneration (Adv regen): 2 to 10 inches d.b.h.
Mature: greater than 10 inches d.b.h.

Series numbers (No.) correspond to the following climax forest series:

- | | |
|-------------------------------|-----------------------------------|
| 01 = <i>Pinus aristata</i> | 07 = <i>Pseudotsuga menziesii</i> |
| 02 = <i>Picea engelmannii</i> | 08 = <i>Pinus ponderosa</i> |
| 03 = <i>Abies lasiocarpa</i> | 09 = <i>Pinus engelmannii</i> |
| 04 = <i>Picea pungens</i> | 10 = <i>Pinus leiophylla</i> |
| 05 = <i>Abies concolor</i> | 11 = <i>Populus angustifolia</i> |
| 06 = <i>Pinus flexilis</i> | |

| SPECIES NAME | | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | |
|-------------------------------|-----------|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| ----- TREES ----- | | | | TREE | | | | | | | | | | | |
| <i>Abies concolor</i> | Yng regen | ABCO1 | 573 | . | + | + | + | + | + | + | + | + | . | . | + |
| | Adv regen | ABCO2 | 512 | . | + | + | + | + | + | + | + | + | . | . | + |
| | Mature | ABCO3 | 374 | + | + | + | + | + | . | + | + | . | . | . | + |
| <i>Abies lasiocarpa</i> | Yng regen | ABLA1 | 375 | + | + | + | + | + | + | . | . | . | . | . | . |
| | Adv regen | ABLA2 | 339 | + | + | + | + | + | . | + | . | . | . | . | . |
| | Mature | ABLA3 | 272 | . | + | + | + | + | . | + | . | . | . | . | . |
| <i>Acer glabrum</i> | Yng regen | ACGL1 | 35 | . | + | + | + | + | . | . | . | . | . | . | . |
| | Adv regen | ACGL2 | 21 | . | + | + | . | + | . | . | . | . | . | . | . |
| | Mature | ACGL3 | 2 | . | . | . | . | + | . | . | . | . | . | . | . |
| <i>Acer grandidentatum</i> | Yng regen | ACGR1 | 13 | . | . | . | . | + | . | + | + | . | . | . | . |
| | Adv regen | ACGR2 | 10 | . | . | . | . | + | . | + | + | . | . | . | . |
| | Mature | ACGR3 | 3 | . | . | . | . | + | . | . | . | . | . | . | . |
| <i>Acer negundo</i> | Yng regen | ACNE1 | 8 | . | . | . | . | + | . | . | + | . | . | . | . |
| | Adv regen | ACNE2 | 8 | . | . | . | . | + | . | . | + | . | . | . | . |
| | Mature | ACNE3 | 5 | . | . | . | . | + | . | . | + | . | . | . | . |
| <i>Alnus spp.</i> | Yng regen | ALNUS1 | 5 | . | + | . | + | . | . | . | . | . | . | . | . |
| <i>Alnus oblongifolia</i> | Yng regen | ALOB1 | 2 | . | . | . | . | + | . | . | . | . | . | . | + |
| | Adv regen | ALOB2 | 3 | . | . | . | . | . | . | . | . | . | . | . | + |
| | Mature | ALOB3 | 7 | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Alnus tenuifolia</i> | Yng regen | ALTE1 | 5 | . | + | + | + | . | . | . | . | . | . | . | . |
| | Adv regen | ALTE2 | 5 | . | + | + | + | . | . | . | . | . | . | . | . |
| <i>Arbutus arizonica</i> | Yng regen | ARAR1 | 4 | . | . | . | . | . | . | . | . | . | + | + | . |
| | Adv regen | ARAR2 | 14 | . | . | . | . | . | . | . | . | . | + | + | + |
| | Mature | ARAR3 | 4 | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Arbutus xalapensis</i> | Yng regen | ARXA1 | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| | Adv regen | ARXA2 | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Forestiera neomexicana</i> | Yng regen | FONE1 | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| | Adv regen | FONE2 | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Fraxinus anomala</i> | Yng regen | FRAN1 | 1 | . | . | . | . | . | + | . | . | . | . | . | . |
| | Adv regen | FRAX2 | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Fraxinus pennsylvanica</i> | Yng regen | FRPE1 | 16 | . | . | . | . | . | + | . | + | + | . | . | . |
| | Adv regen | FRPE2 | 7 | . | . | . | . | . | + | . | + | + | . | . | . |
| <i>Juglans major</i> | Yng regen | JUMA1 | 18 | . | . | . | . | . | + | . | + | + | . | . | . |
| | Adv regen | JUMA2 | 10 | . | . | . | . | . | + | . | + | . | + | . | . |
| | Mature | JUMA3 | 5 | . | . | . | . | . | + | . | . | + | . | . | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| ----- TREES ----- | | | TREE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| <i>Juniperus deppeana</i> | Yng regen | JUDE1 | 359 | . | . | . | . | . | + | . | + | + | + | + |
| | Adv regen | JUDE2 | 226 | . | . | . | . | . | + | . | + | + | + | + |
| | Mature | JUDE3 | 117 | . | . | . | . | . | + | . | + | + | + | . |
| <i>Juniperus monosperma</i> (Incl: <i>J. erythrocarpa</i>) | Yng regen | JUMO1 | 71 | . | . | . | . | . | + | . | + | + | . | . |
| | Adv regen | JUMO2 | 39 | . | . | . | . | . | . | . | . | . | + | + |
| | Mature | JUMO3 | 7 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Juniperus osteosperma</i> (<i>J. utahensis</i>) | Yng regen | JUOS1 | 31 | . | . | . | . | . | + | . | . | + | . | . |
| | Adv regen | JUOS2 | 24 | . | . | . | . | . | + | . | . | . | + | . |
| | Mature | JUOS3 | 5 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Juniperus scopulorum</i> | Yng regen | JUSC1 | 135 | . | . | . | . | . | + | + | . | + | + | . |
| | Adv regen | JUSC2 | 102 | . | . | . | . | . | + | + | . | + | + | . |
| | Mature | JUSC3 | 23 | . | . | . | . | . | + | + | . | . | . | . |
| <i>Picea engelmannii</i> | Yng regen | PIEN1 | 412 | + | + | + | + | + | + | + | + | . | . | . |
| | Adv regen | PIEN2 | 413 | + | + | + | + | + | + | + | . | . | . | . |
| | Mature | PIEN3 | 377 | + | + | + | + | + | + | + | . | . | . | . |
| <i>Picea pungens</i> | Yng regen | PIPU1 | 177 | . | + | + | + | + | . | . | + | + | . | . |
| | Adv regen | PIPU2 | 175 | . | + | + | + | + | . | . | + | + | . | . |
| | Mature | PIPU3 | 136 | . | + | + | + | + | . | . | + | + | . | . |
| <i>Pinus aristata</i> | Yng regen | PIAR1 | 19 | + | . | + | . | . | . | + | + | . | . | . |
| | Adv regen | PIAR2 | 18 | + | + | + | . | . | . | + | + | . | . | . |
| | Mature | PIAR3 | 16 | + | + | + | . | . | . | . | . | . | . | . |
| <i>Pinus contorta</i> | Yng regen | PICO1 | 3 | . | . | + | . | . | . | . | . | . | . | . |
| | Adv regen | PICO2 | 5 | . | . | + | . | . | . | . | . | . | . | . |
| | Mature | PICO3 | 3 | . | . | + | . | . | . | . | . | . | . | . |
| <i>Pinus discolor</i> | Yng regen | PIDI1 | 59 | . | . | . | . | . | + | . | + | + | + | . |
| | Adv regen | PIDI2 | 29 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Pinus edulis</i> | Yng regen | PIED1 | 362 | . | . | . | . | . | + | . | + | + | + | . |
| | Adv regen | PIED2 | 165 | + | . | + | . | . | . | . | + | + | + | . |
| | Mature | PIED3 | 15 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Pinus flexilis</i> (Incl: <i>X P. strobiformis</i>) | Yng regen | PIFL1 | 102 | + | + | + | + | + | + | + | . | . | . | . |
| | Adv regen | PIFL2 | 77 | . | . | + | + | + | + | + | . | . | . | . |
| | Mature | PIFL3 | 49 | + | + | + | + | + | + | + | . | . | . | . |
| <i>Pinus leiophylla</i> | Yng regen | PILE1 | 47 | . | . | . | . | . | . | . | . | . | + | + |
| | Adv regen | PILE2 | 49 | . | . | . | . | . | . | . | . | . | + | + |
| | Mature | PILE3 | 48 | . | . | . | . | . | . | . | . | . | + | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| ----- TREES ----- | | | TREE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| <i>Pinus monophylla</i> | | | | | | | | | | | | | | |
| | Yng regen | PIMO1 | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Pinus engelmannii</i> (<i>P. latifolia</i>) | | | | | | | | | | | | | | |
| | Yng regen | PINEN1 | 13 | . | . | . | . | . | . | . | . | . | . | + |
| | Adv regen | PINEN2 | 11 | . | . | . | . | . | . | . | . | . | . | + |
| | Mature | PINEN3 | 17 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Pinus ponderosa</i> (Incl: <i>P. arizonica</i>) | | | | | | | | | | | | | | |
| | Yng regen | PIPO1 | 1054 | . | + | . | + | + | . | + | + | . | + | + |
| | Adv regen | PIPO2 | 1067 | . | + | + | + | + | + | + | + | + | + | + |
| | Mature | PIPO3 | 1242 | . | + | + | + | + | . | + | + | . | + | + |
| <i>Pinus strobiformis</i> | | | | | | | | | | | | | | |
| | Yng regen | PIST1 | 423 | . | + | + | + | + | . | + | + | . | + | + |
| | Adv regen | PIST2 | 342 | . | + | + | + | + | . | + | + | . | + | + |
| | Mature | PIST3 | 226 | . | + | + | + | + | . | + | + | . | + | + |
| <i>Platanus wrightii</i> | | | | | | | | | | | | | | |
| | Yng regen | PLWR1 | 1 | . | . | . | . | . | . | . | . | . | . | + |
| | Adv regen | PLWR2 | 1 | . | . | . | . | . | . | . | . | . | . | + |
| | Mature | PLWR3 | 3 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Populus angustifolia</i> | | | | | | | | | | | | | | |
| | Yng regen | POAN1 | 12 | . | + | . | + | + | . | + | . | . | . | + |
| | Adv regen | POAN2 | 13 | . | + | . | + | + | . | + | . | . | . | + |
| | Mature | POAN3 | 21 | . | + | + | + | + | . | + | . | . | . | + |
| <i>Populus tremuloides</i> | | | | | | | | | | | | | | |
| | Yng regen | POTR1 | 163 | + | + | + | + | + | + | + | + | . | . | . |
| | Adv regen | POTR2 | 284 | . | + | + | + | + | + | + | + | . | . | + |
| | Mature | POTR3 | 218 | . | + | + | + | + | + | + | + | . | . | . |
| <i>Prunus serotina</i> (ssp. <i>virens</i> ; <i>P. virens</i>) | | | | | | | | | | | | | | |
| | Yng regen | PRSE1 | 6 | . | . | . | . | . | . | . | . | . | . | + |
| | Adv regen | PRSE2 | 3 | . | . | . | . | . | . | . | . | . | . | + |
| | Mature | PRSE3 | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Pseudotsuga menziesii</i> | | | | | | | | | | | | | | |
| | Yng regen | PSME1 | 926 | + | + | + | + | + | + | + | + | + | + | + |
| | Adv regen | PSME2 | 876 | + | + | + | + | + | + | + | + | + | + | + |
| | Mature | PSME3 | 795 | + | + | + | + | + | + | + | + | + | + | + |
| <i>Quercus arizonica</i> (Incl: X <i>Q. grisea</i>) | | | | | | | | | | | | | | |
| | Yng regen | QUAR1 | 73 | . | . | . | . | . | . | . | . | . | . | + |
| | Adv regen | QUAR2 | 113 | . | . | . | . | . | . | . | . | . | . | + |
| | Mature | QUAR3 | 56 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Quercus chrysolepis</i> (<i>Q. wilcoxii</i> ; <i>Q. palmeri</i>) | | | | | | | | | | | | | | |
| | Yng regen | QUCH1 | 5 | . | . | . | . | . | . | . | . | . | . | + |
| | Adv regen | QUCH2 | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Quercus emoryi</i> | | | | | | | | | | | | | | |
| | Yng regen | QUEM1 | 52 | . | . | . | . | . | . | . | . | . | . | + |
| | Adv regen | QUEM2 | 54 | . | . | . | . | . | . | . | . | . | . | + |
| | Mature | QUEM3 | 15 | . | . | . | . | . | . | . | . | . | . | + |

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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | |
| TREES | | | TREE | | | | | | | | | | | |
| <i>Quercus gambelii</i> | Yng regen | QUGA1 | 354 | . | . | . | + | + | . | + | + | . | + | + |
| | Adv regen | QUGA2 | 370 | . | . | . | + | + | . | + | + | + | + | + |
| | Mature | QUGA3 | 123 | . | . | . | . | + | . | + | + | . | + | . |
| <i>Quercus grisea</i> | Yng regen | QUGR1 | 20 | . | . | . | . | . | . | . | . | . | + | + |
| | Adv regen | QUGR2 | 19 | . | . | . | . | . | . | . | . | . | + | + |
| | Mature | QUGR3 | 10 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus hypoleucoides</i> | Yng regen | QUHY1 | 75 | . | . | . | . | . | . | . | . | . | + | + |
| | Adv regen | QUHY2 | 70 | . | . | . | . | . | . | . | . | . | + | + |
| | Mature | QUHY3 | 12 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus muhlenbergia</i> | Yng regen | QUMU1 | 2 | . | . | . | . | . | . | . | . | . | + | . |
| | Adv regen | QUMU2 | 3 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Quercus rugosa</i> (<i>Q. reticulata</i>) | Yng regen | QURU1 | 26 | . | . | . | . | . | . | . | . | . | + | + |
| | Adv regen | QURU2 | 29 | . | . | . | . | . | . | . | . | . | + | + |
| | Mature | QURU3 | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Robinia neomexicana</i> | Yng regen | RONE1 | 7 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Salix scouleriana</i> | Yng regen | SASC1 | 11 | . | + | + | + | + | . | . | . | . | . | . |
| | Adv regen | SASC2 | 8 | . | + | + | + | + | . | . | . | . | . | . |
| | Mature | SASC3 | 1 | . | . | . | . | . | . | . | . | . | + | . |
| SHRUBS | | | SHRUBS | | | | | | | | | | | |
| <i>Acer glabrum</i> | | ACGL | 241 | . | + | + | + | + | . | + | + | . | . | + |
| <i>Acer grandidentatum</i> | | ACGR | 42 | . | . | . | . | . | . | + | + | . | . | + |
| <i>Acer negundo</i> | | ACNE | 17 | . | . | . | . | . | . | + | + | . | . | + |
| <i>Agave spp.</i> | | AGAVE | 6 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Agave chrysantha</i> | | AGCR | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Agave palmeri</i> | | AGPAL | 6 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Agave parryi</i> | | AGPAR | 30 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Alnus spp.</i> | | ALNUS | 7 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Alnus oblongifolia</i> | | ALOB | 11 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Alnus tenuifolia</i> | | ALTE | 13 | . | + | + | + | + | . | . | . | . | + | . |
| <i>Amelanchier alnifolia</i> | | AMAL | 117 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Amelanchier goldmannii</i> | | AMGO | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Amelanchier utahensis</i> (Incl: <i>A. oreophila</i> ; <i>A. mormonica</i>) | | AMUT | 45 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Amorpha canescens</i> | | AMCA | 15 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Amorpha fruticosa</i> | | AMFR | 4 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Arbutus arizonica</i> | | ARBAR | 9 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Arctostaphylos pringlei</i> | | ARPR | 32 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Arctostaphylos pungens</i> | | ARPU | 64 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Arctostaphylos uva-ursi</i> | | ARUV | 99 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Artemisia arbuscula</i> | | ARARB | 6 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Artemisia tridentata</i> | | ARTR | 27 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Baccharis thesioides</i> | | BATH | 6 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Berberis fendleri</i> | | BEFE | 23 | . | . | . | . | . | . | . | . | . | + | . |

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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- SHRUBS ----- | | | SHRUBS | | | | | | | | | | |
| <i>Berberis fremontii</i> (<i>Mahonia fremontii</i>) | MAFR | 1 | . | . | . | . | + | . | . | . | . | . | . |
| <i>Berberis haematocarpa</i> (<i>Mahonia haematocarpa</i>) | MAHA | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Berberis repens</i> (<i>Mahonia repens</i>) | BERE | 370 | . | + | + | + | + | . | + | + | . | . | . |
| <i>Bouvadia glaberrima</i> | BOGL | 2 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Brickellia californica</i> | BRICA | 2 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Carpochaete bigelovii</i> | CABI | 15 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Ceanothus fendleri</i> | CEFE | 350 | . | . | . | + | + | . | + | + | + | + | + |
| <i>Ceanothus greggii</i> | CEGR | 6 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Cercocarpus montanus</i> | CEMO | 204 | . | . | . | . | + | . | + | + | + | + | + |
| <i>Chimaphila umbellata</i> | CHUM | 58 | . | + | + | + | + | . | + | . | . | . | + |
| <i>Chrysothamnus</i> spp. | CHRYSO | 3 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Chrysothamnus depressus</i> | CHDE | 10 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Chrysothamnus greenii</i> | CHGR | 3 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Chrysothamnus nauseosus</i> | CHNA | 44 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Chrysothamnus viscidiflorus</i> | CHVI | 52 | . | . | . | . | + | . | + | + | . | . | . |
| <i>Clematis columbiana</i> (<i>C. pseudoalpina</i>) | CLCO | 225 | + | + | + | + | + | . | + | + | . | . | . |
| <i>Clematis hirsutissima</i> | CLHI | 10 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Clematis ligusticifolia</i> | LLI | 39 | . | . | . | + | + | . | + | + | . | . | + |
| <i>Cowania mexicana</i> | COWME | 6 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Dalea formosa</i> | DAFO | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Dalea leporina</i> | DALE | 2 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Dalea wislizeni</i> | DAWI | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Dasyliion wheeleri</i> | DAWH | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Fallugia paradoxa</i> | FAPA | 15 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Fendlera rupicola</i> | FE RU | 25 | . | . | . | . | + | . | + | + | . | + | . |
| <i>Forestiera neomexicana</i> | FC NE | 5 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Fraxinus</i> spp. | FRAXIN | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Fraxinus anomala</i> | FRAN | 2 | . | . | . | . | + | . | . | + | . | . | . |
| <i>Fraxinus pennsylvanica</i> | FRPE | 21 | . | . | . | . | + | . | + | + | . | + | . |
| <i>Fraxinus velutina</i> | FRVE | 16 | . | . | . | . | + | . | + | + | . | + | + |
| <i>Garrya flavescens</i> | GAFL | 3 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Garrya wrightii</i> | GAWR | 86 | . | . | . | . | . | + | . | + | + | + | + |
| <i>Gaultheria humifusa</i> | GAHU | 1 | . | . | + | . | . | . | . | . | . | . | . |
| <i>Gutierrezia microcephala</i> (Incl: <i>G. lucida</i>) | GULU | 13 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Gutierrezia sarothrae</i> (<i>Xanthocephalum sarothrae</i>) | GUSA | 75 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Holodiscus dumosus</i> | HODU | 183 | + | + | + | + | + | + | + | + | . | . | + |
| <i>Hymenoxys acaulis</i> | HYAC | 44 | + | . | . | . | . | + | . | + | + | . | . |
| <i>Hymenoxys richardsonii</i> | HYRI | 130 | . | . | . | . | . | + | . | + | + | . | . |
| <i>Hymenoxys rusbyi</i> | HYRU | 3 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Jamesia americana</i> | JAAM | 90 | . | + | + | + | + | + | + | + | . | . | + |
| <i>Juglans major</i> | JUMA | 33 | . | . | . | . | . | + | . | + | + | + | + |
| <i>Juniperus communis</i> | JUCO | 255 | + | + | + | + | + | + | + | + | . | . | . |
| <i>Juniperus deppeana</i> | JUDE | 93 | . | . | . | . | . | + | . | + | + | + | + |
| <i>Juniperus osteosperma</i> | JUOS | 9 | . | . | . | . | + | . | . | . | + | . | . |
| <i>Juniperus scopulorum</i> | JUSC | 11 | . | . | . | + | + | . | + | + | . | . | . |
| <i>Linnaea borealis</i> | LIBO | 56 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Lonicera</i> spp. | LONICE | 12 | . | . | . | + | + | . | + | + | . | . | . |
| <i>Lonicera albiflora</i> | LOAL | 9 | . | . | . | . | + | . | + | + | . | . | . |
| <i>Lonicera arizonica</i> | LOAR | 110 | . | + | + | + | + | . | + | + | + | + | + |

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| ----- SHRUBS ----- | | | SHRUBS | | | | | | | | | | | |
| <i>Lonicera involucrata</i> | LOIN | 182 | . | + | + | + | + | . | + | . | . | . | . | . |
| <i>Lonicera utahensis</i> | LOUT | 94 | . | + | + | + | + | . | + | + | . | . | . | . |
| <i>Lycium</i> spp. | LYCIUM | 2 | . | . | . | . | + | . | . | + | . | . | . | . |
| <i>Mimosa biuncifera</i> | MIBI | 5 | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Mimosa grahamii</i> | MIGR | 2 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Nolina microcarpa</i> | NOMI | 50 | . | . | . | . | . | . | . | . | . | + | + | + |
| <i>Nolina texana</i> | NOTE | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Opuntia</i> spp. | OPUNTI | 75 | . | . | . | . | . | . | . | + | . | + | + | + |
| <i>Opuntia engelmannii</i> (<i>Opuntia phaeacantha</i>) | OPEN | 18 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Opuntia imbricata</i> | OPIM | 3 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Opuntia plumbea</i> | OPPL | 26 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Opuntia polyacantha</i> | OPPO | 24 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Opuntia spinosior</i> | OPSP | 8 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Opuntia whipplei</i> | OPWH | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Pachistima myrsinites</i> | PAMY | 293 | + | + | + | + | + | + | + | + | . | . | . | . |
| <i>Parthenocissus inserta</i> | PAIN | 6 | . | . | . | . | . | . | + | . | . | . | . | + |
| <i>Philadelphus</i> spp. | PHILA | 6 | . | . | . | . | . | . | . | + | + | . | . | + |
| <i>Philadelphus microphyllus</i> | PHMI | 5 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Physocarpus monogynus</i> | PHMO | 76 | + | + | + | + | + | . | + | . | + | . | . | + |
| <i>Pinus edulis</i> - shrubs | PIED | 4 | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Platanus wrightii</i> | PLWR | 3 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Poliomintha incana</i> | POINC | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Populus angustifolia</i> | POAN | 2 | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Populus tremuloides</i> - shrubs | POTR | 374 | + | + | + | + | + | + | + | + | . | . | . | . |
| <i>Potentilla fruticosa</i> (<i>Pentaphylloides floribunda</i>) | PEFL | 17 | + | + | . | + | . | + | . | + | . | . | . | . |
| <i>Prunus</i> spp. | PRUNUS | 7 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Prunus emarginata</i> | PREM | 10 | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Prunus serotina</i> ssp. <i>virens</i> (<i>P. virens</i>) | PRSE | 28 | . | . | + | + | + | . | . | + | . | + | . | + |
| <i>Prunus virginiana</i> | PRVI | 116 | . | + | + | + | + | . | . | . | . | . | . | + |
| <i>Ptelea trifoliata</i> | PTTR | 23 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Purshia tridentata</i> | PUTR | 12 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Quercus arizonica</i> | QUAR | 133 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus chrysolepis</i> (<i>Q. palmeri</i> ; <i>Q. willcoxii</i>) | QUCH | 20 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus emoryi</i> | QUEM | 86 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus gambelii</i> | QUGA | 933 | . | + | + | + | + | . | . | . | . | . | + | + |
| <i>Quercus grisea</i> | QUGR | 87 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus hypoleucoides</i> | QUHY | 124 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus muhlenbergii</i> | QUMU | 2 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Quercus rugosa</i> | QURU | 80 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus toumeyii</i> | QUTO | 6 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Quercus turbinella</i> | QUTU | 24 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Quercus undulata</i> (<i>Q. gambelii</i> x <i>Q. grisea</i>) | QUUN | 67 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Rhamnus betulaeifolia</i> | RHBE | 51 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Rhamnus californica</i> | RHCA | 4 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Rhamnus crocea</i> | RHCR | 14 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Rhus</i> spp. | RHUS | 2 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Rhus aromatica</i> (<i>R. trilobata</i>) | RHAR | 120 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Rhus choriophylla</i> | RHCH | 5 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Rhus glabra</i> | RHGL | 5 | . | . | . | . | . | . | . | . | . | . | . | + |

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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- SHRUBS ----- | | | SHRUBS | | | | | | | | | | |
| Ribes spp. | RIBES | 85 | . | + | + | + | + | . | + | + | . | . | + |
| Ribes aureum | RIAU | 2 | . | . | . | . | . | . | . | + | . | . | . |
| Ribes cereum | RICE | 107 | + | + | + | + | + | . | + | + | . | . | . |
| Ribes inerme | RIIN | 56 | + | + | . | + | + | . | + | + | . | . | . |
| Ribes lacustre | RILA | 1 | . | . | + | . | . | . | . | . | . | . | . |
| Ribes leptanthum | RILE | 9 | . | . | + | . | . | . | . | + | . | . | . |
| Ribes montigenum | RIMO | 148 | + | + | + | + | + | . | + | . | . | . | . |
| Ribes pinetorum | RIPI | 77 | . | + | + | + | + | . | + | + | . | . | . |
| Ribes viscosissimum | RIVI | 1 | . | . | . | . | . | . | + | . | . | . | . |
| Ribes wolfii | RIWO | 93 | . | + | + | + | + | . | + | . | . | . | . |
| Robinia neomexicana | RONE | 290 | . | + | + | + | + | . | + | + | + | + | + |
| Rosa spp. | ROSA | 391 | + | + | + | + | + | + | + | + | . | . | + |
| Rosa woodsii (R. fendleri; R. arizonica) | ROWO | 62 | + | + | . | + | + | . | + | + | . | . | . |
| Rubus spp. | RUBUS | 1 | . | . | + | . | . | . | . | . | . | . | . |
| Rubus arizonensis | RUAR | 2 | . | . | . | . | . | . | . | . | . | . | + |
| Rubus deliciosus | RUDE | 5 | . | . | . | . | . | . | + | + | . | . | . |
| Rubus idaeus var. strigosus (R. strigosus) | RUID | 115 | + | + | + | + | + | . | + | + | . | . | + |
| Rubus leucodermis | RULE | 7 | . | . | + | + | + | . | + | . | . | . | . |
| Rubus neomexicanus | RUNE | 17 | . | + | + | + | + | . | + | + | . | . | + |
| Rubus parviflorus | RUPA | 214 | . | + | + | + | + | . | . | . | . | . | . |
| Salix spp. | SALIX | 40 | . | + | + | + | + | . | . | . | . | . | + |
| Salix bebbiana (S. depressa) | SADE | 2 | . | . | . | . | . | . | + | . | . | . | . |
| Salix pseudocordata (S. myrtilifolia) | SAPS | 1 | . | . | . | . | . | . | . | . | . | . | + |
| Salix scouleriana | SASC | 104 | . | + | + | + | + | + | + | . | . | . | . |
| Salix subcoerulea (S. drummondiana) | SASU | 2 | . | + | . | . | . | . | . | . | . | . | + |
| Sambucus spp. | SAMBUC | 36 | . | + | + | + | + | . | + | + | . | . | . |
| Sambucus glauca | SAGL | 12 | . | . | + | + | + | . | + | . | . | . | . |
| Sambucus melancarpa | SAME | 3 | . | . | + | . | . | . | . | . | . | . | . |
| Sambucus racemosa | SARA | 34 | + | + | + | + | . | . | + | . | . | . | . |
| Selloa glutinosa | SEGL | 3 | . | . | . | . | . | . | . | . | . | . | + |
| Shepherdia canadensis | SHCA | 94 | . | + | + | + | + | . | + | + | . | . | . |
| Sorbus spp. | SORBUS | 23 | . | + | + | . | . | . | . | . | . | . | . |
| Sorbus dumosa | SODU | 15 | . | + | + | . | . | . | . | . | . | . | . |
| Sorbus scopulina | SOSC | 9 | . | + | + | + | + | . | . | . | . | . | . |
| Swida sericea (Cornus stolonifera) | COST | 48 | . | + | + | + | + | . | + | + | . | . | . |
| Symphoricarpos oreophilus | SYOR | 438 | + | + | + | + | + | + | + | + | . | . | + |
| Symphoricarpos palmeri | SYPAL | 1 | . | . | . | . | . | . | . | . | . | . | + |
| Symphoricarpos parishii | SYPAR | 1 | . | . | . | . | . | . | . | . | . | . | + |
| Symphoricarpos rotundifolius | SYRO | 6 | . | . | . | . | . | . | + | + | . | . | . |
| Toxicodendron rydbergii (Rhus radicans) | TORY | 46 | . | . | . | . | . | . | + | + | . | . | + |
| Vaccinium myrtilillus (V. oreophilum; V. caespitosum) | VAMY | 282 | + | + | + | + | + | . | + | . | . | . | . |
| Vitis arizonica | VIAR | 37 | . | . | . | . | . | . | + | + | + | + | + |
| Yucca spp. | YUCCA | 8 | . | . | . | . | . | . | . | . | . | . | + |
| Yucca angustissima | YUAN | 2 | . | . | . | . | . | . | + | . | . | . | . |
| Yucca baccata | YUBA | 66 | . | . | . | . | . | . | + | + | . | . | + |
| Yucca glauca | YUGL | 28 | . | . | . | . | . | . | . | . | . | . | + |
| Yucca schottii | YUSC | 44 | . | . | . | . | . | . | . | . | . | . | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- GRAMINOIDS ----- | | | GRASS | | | | | | | | | | |
| <i>Agropyron</i> spp. | AGROPY | 16 | . | . | . | + | + | . | . | + | . | . | + |
| <i>Agropyron arizonicum</i> | AGAR | 36 | . | . | + | + | + | . | + | + | + | . | . |
| <i>Agropyron desertorum</i> | AGDE | 4 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Agropyron elongatum</i> | AGEL | 2 | . | . | + | . | . | . | . | . | + | . | . |
| <i>Agropyron smithii</i> | AGSM | 23 | . | . | . | . | . | . | . | . | + | + | . |
| <i>Agropyron subsecundum</i> | AGSU | 10 | + | . | + | . | + | . | + | + | . | . | . |
| <i>Agropyron trachycaulum</i> | AGTR | 26 | + | + | + | + | . | + | + | . | . | . | . |
| <i>Agrostis</i> spp. | AGROST | 12 | . | + | + | + | + | . | . | + | . | . | . |
| <i>Agrostis alba</i> (<i>A. gigantea</i> ; <i>A. stolonifera</i>) | AGGI | 9 | . | + | + | + | + | . | . | . | . | . | + |
| <i>Agrostis idahoensis</i> | AGID | 1 | . | + | . | . | . | . | . | . | . | . | . |
| <i>Agrostis scabra</i> | AGSC | 29 | . | + | + | + | + | . | + | + | . | . | . |
| <i>Agrostis semiverticillata</i> | AGSE | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Andropogon</i> spp. | ANDROP | 25 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Andropogon gerardi</i> | ANGE | 44 | . | . | . | . | . | . | . | . | + | + | . |
| <i>Andropogon pseudorepens</i> | ANPS | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Aristida</i> spp. | ARISTI | 8 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Aristida arizonica</i> | ARAR | 107 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Aristida fendleriana</i> | ARFE | 62 | . | + | + | + | + | . | + | + | . | . | . |
| <i>Aristida longiseta</i> | ARLO | 8 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Aristida orcuttiana</i> | AROR | 51 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Aristida wrightii</i> | ARWR | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Blepharoneuron tricholepis</i> | BLTR | 381 | + | . | . | + | + | . | + | + | + | + | + |
| <i>Bouteloua barbatus</i> | BOBA | 3 | . | . | . | . | . | . | . | . | + | . | + |
| <i>Bouteloua curtipendula</i> | BOCU | 79 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Bouteloua gracilis</i> | BOGR | 323 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Bouteloua hirsuta</i> | BOHI | 8 | . | . | . | . | . | . | . | . | + | . | + |
| <i>Bromus</i> spp. | BROMUS | 178 | + | + | + | + | + | . | + | + | . | . | + |
| <i>Bromus carinatus</i> | BRCA | 54 | . | . | . | + | + | . | + | + | + | + | + |
| <i>Bromus ciliatus</i> (Incl: <i>Bromopsis</i> or <i>Bromus richardsonii</i>) | BRCI | 909 | + | + | + | + | + | + | + | + | + | + | + |
| <i>Bromus frondosa</i> (<i>Bromopsis frondosus</i>) | BRFR | 14 | . | . | . | . | . | . | . | . | + | + | . |
| <i>Bromus inermis</i> (<i>Bromopsis inermis</i>) | BRIN | 2 | . | . | . | + | . | . | . | . | + | . | . |
| <i>Bromus japonicus</i> | BRJA | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Bromus lanatipes</i> (<i>Bromopsis lanatipes</i>) | BRLA | 28 | . | . | . | + | + | . | + | + | . | . | + |
| <i>Bromus orcuttianus</i> | BROR | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Bromus polyanthus</i> | BRPO | 33 | + | + | . | . | + | . | + | + | + | + | . |
| <i>Bromus anomalous</i> (<i>Bromus porteri</i>) | BRPOR | 19 | + | + | + | + | . | . | + | + | . | . | . |
| <i>Bromus tectorum</i> | BRTE | 24 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Bromus marginatus</i> (<i>Ceratochloa marginata</i>) | CEMA | 19 | . | . | . | . | . | . | . | . | + | + | . |
| <i>Calamagrostis canadensis</i> | CACA | 24 | . | + | + | + | + | . | . | + | . | . | . |
| <i>Calamagrostis inexpansa</i> | CAIN | 9 | . | . | + | . | + | . | . | + | . | . | . |
| <i>Calamagrostis purpurascens</i> | CAPU | 1 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Carex</i> spp. | CAREX | 694 | + | + | + | + | + | . | + | + | + | + | + |
| <i>Carex aurea</i> | CARAU | 2 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Carex bella</i> | CABE | 24 | . | + | + | . | + | . | . | . | . | . | . |
| <i>Carex brevipes</i> | CABR | 16 | . | + | + | . | + | + | . | . | . | . | . |
| <i>Carex deweyana</i> | CADE | 6 | . | + | . | + | . | . | + | + | . | . | . |
| <i>Carex ebenea</i> | CAEB | 2 | . | + | . | . | . | . | . | . | . | . | . |

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|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- GRAMINOIDS ----- | | | GRASS | | | | | | | | | | |
| <i>Carex elynoides</i> | CAELY | 2 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Carex festivella</i> | CAFE | 2 | . | . | . | + | . | . | . | . | . | . | + |
| <i>Carex foenea</i> | CAFO | 263 | . | + | + | + | + | . | + | + | . | + | . |
| <i>Carex geophila</i> | CAGE | 135 | . | . | + | . | + | . | + | + | + | . | . |
| <i>Carex geyeri</i> | CAGEY | 49 | . | + | + | + | . | + | + | . | . | . | . |
| <i>Carex heliophila</i> | CAHE | 31 | . | . | . | + | . | . | + | . | . | . | . |
| <i>Carex hoodii</i> | CAHO | 2 | . | . | + | . | . | . | . | + | . | . | . |
| <i>Carex lanuginosa</i> | CALA | 2 | . | . | . | + | . | . | . | . | . | . | . |
| <i>Carex leucodonta</i> | CALE | 17 | . | + | + | . | . | . | . | + | . | . | . |
| <i>Carex microptera</i> | CAMI | 15 | . | + | + | + | . | . | + | . | . | . | . |
| <i>Carex montanae</i> | CAMO | 35 | . | . | . | . | + | . | . | . | + | . | . |
| <i>Carex nova</i> | CANO | 1 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Carex norvegica</i> ssp. <i>stevenii</i> (<i>C. media</i>) | CANOR | 6 | . | . | + | + | . | . | + | + | . | . | . |
| <i>Carex occidentalis</i> | CAOC | 30 | . | . | . | . | + | . | + | . | + | . | + |
| <i>Carex praegracilis</i> | CAPR | 3 | . | . | . | . | . | . | + | . | . | . | . |
| <i>Carex rossii</i> | CARO | 548 | + | + | + | + | + | + | + | + | + | . | + |
| <i>Carex rupestris</i> | CARU | 1 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Carex scoparia</i> | CASC | 1 | . | . | . | . | . | . | + | . | . | . | . |
| <i>Carex scopulorum</i> | CASC2 | 1 | . | . | . | + | . | . | . | . | . | . | . |
| <i>Carex stenophylla</i> ssp. <i>eleocharis</i> (<i>C. eleocharis</i>) | CAST | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Carex utriculata</i> (<i>C. rostrata</i>) | CAUT | 2 | . | . | . | . | . | + | . | . | . | . | . |
| <i>Carex vallicola</i> | CAVA | 2 | . | . | . | . | . | . | + | . | . | . | . |
| <i>Cyperus</i> spp. | CYPERU | 9 | . | . | . | . | . | . | . | + | . | + | + |
| <i>Cyperus fendlerianus</i> | CYFE | 15 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Cyperus inflexus</i> (<i>C. aristatus</i>) | CYIN | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Cyperus rusbyi</i> | CYRU | 19 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Dactylis glomerata</i> | DAGL | 11 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Danthonia</i> spp. | DANTHO | 2 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Danthonia californica</i> | DACA | 2 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Danthonia intermedia</i> | DAIN | 5 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Danthonia parryi</i> | DAPA | 38 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Deschampsia caespitosa</i> | DECA | 14 | . | + | + | + | . | . | . | . | . | . | . |
| <i>Dichanthelium lanuginosum</i> (<i>Panicum huachucae</i>) | DILA | 4 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Elymus</i> spp. | ELYMUS | 7 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Elymus ambiguus</i> | ELAM | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Elymus canadensis</i> | ELCA | 3 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Elymus glaucus</i> | ELGL | 40 | . | + | + | + | + | . | . | . | . | . | + |
| <i>Elymus triticoisdes</i> | ELTR | 14 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Eragrostis</i> spp. | ERAGRO | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Eragrostis intermedia</i> | ERIN | 3 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Festuca</i> spp. | FESTUC | 6 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Festuca arizonica</i> | FEAR | 512 | + | + | + | + | + | + | + | + | . | . | . |
| <i>Festuca ovina</i> (incl: <i>F. brachyphylla</i>) | FEBR | 23 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Festuca idahoensis</i> | FEID | 3 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Festuca octoflora</i> | FEOC | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Festuca sororia</i> | FESO | 65 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Festuca thurberi</i> | FETH | 53 | + | + | + | + | . | . | . | . | . | . | . |
| <i>Glyceria elata</i> | GLEL | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Glyceria grandis</i> | GLMA | 1 | . | . | . | . | . | . | . | . | . | . | + |

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|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | | |
| ----- GRAMINOIDS ----- | | | GRASS | | | | | | | | | | | | |
| <i>Glyceria striata</i> | GLST | 8 | . | . | . | + | + | . | . | . | . | . | . | . | + |
| <i>Hilaria jamesii</i> | HIJA | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Juncus arcticus</i> (<i>J. balticus</i>) | JUAR | 5 | . | . | . | + | . | . | . | . | . | . | + | . | . |
| <i>Juncus drummondii</i> | JUDR | 1 | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Juncus interior</i> | JUIN | 2 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Juncus longistylis</i> | JULO | 3 | . | . | . | + | . | . | . | . | . | . | . | . | + |
| <i>Juncus parryi</i> | JUPA | 3 | . | + | + | . | . | . | . | . | . | . | . | . | . |
| <i>Juncus saximontanus</i> | JUSA | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Koeleria pyramidata</i> (<i>K. cristata</i> ; <i>K. macrantha</i> ; <i>K. nitida</i>) | KOPY | 908 | + | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Leucopoa kingii</i> | LEKI | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Luzula parviflora</i> | LUPA | 92 | . | + | + | + | + | . | + | + | . | . | . | . | . |
| <i>Luzula spicata</i> | LUSP | 1 | . | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Lycurus phleoides</i> | LYPH | 26 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Melica porteri</i> | MEPO | 16 | . | + | . | + | + | . | + | . | . | . | . | . | + |
| <i>Muhlenbergia</i> spp. | MUHLEN | 9 | . | + | . | . | + | . | + | + | . | . | . | . | . |
| <i>Muhlenbergia dubia</i> | MUDU | 17 | . | . | . | . | + | . | + | + | . | . | . | . | . |
| <i>Muhlenbergia emersleyi</i> | MUEM | 29 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Muhlenbergia fragilis</i> | MUFR | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Muhlenbergia glauca</i> | MUGL | 2 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Muhlenbergia longiligula</i> | MULO | 176 | . | . | . | . | + | . | + | + | + | . | . | . | . |
| <i>Muhlenbergia minutissima</i> | MUMI | 3 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Muhlenbergia montana</i> | MUMO | 597 | + | + | + | + | + | . | + | + | + | + | + | + | + |
| <i>Muhlenbergia monticola</i> | MUMO1 | 3 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Muhlenbergia pauciflora</i> | MUPA | 11 | . | . | . | . | . | . | + | + | + | . | . | . | . |
| <i>Muhlenbergia pungens</i> | MUPU | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Muhlenbergia racemosa</i> | MURA | 4 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Muhlenbergia repens</i> | MURE | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Muhlenbergia rigens</i> | MURI | 25 | . | . | . | . | . | . | + | . | + | + | + | + | + |
| <i>Muhlenbergia virescens</i> | MUVI | 376 | . | + | + | + | + | . | + | + | + | + | + | + | + |
| <i>Muhlenbergia wrightii</i> | MUWR | 16 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Oryzopsis</i> spp. | ORYZOP | 12 | . | . | + | + | + | . | . | . | . | . | . | . | . |
| <i>Oryzopsis asperifolia</i> | ORAS | 51 | . | + | + | + | + | . | . | . | . | . | . | . | . |
| <i>Oryzopsis hymenoides</i> | ORHY | 16 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Oryzopsis micrantha</i> | ORMI | 24 | + | . | . | + | + | . | + | + | + | . | . | + | . |
| <i>Panicum bulbosum</i> | PABU | 50 | . | . | . | . | . | . | + | + | + | + | . | . | . |
| <i>Panicum</i> spp. | PANICU | 3 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Panicum obtusum</i> | PAOB | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Panicum virgatum</i> | PAVI | 3 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Phleum commutatum</i> (<i>P. alpinum</i>) | PHCO | 7 | . | + | + | + | . | . | . | . | . | . | . | . | . |
| <i>Phleum pratensis</i> | PHPR | 7 | . | . | . | + | + | . | . | . | . | . | . | + | . |
| <i>Piptochaetium fimbriatum</i> | PIFI | 41 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Poa</i> spp. | POA | 19 | . | + | + | + | + | . | . | . | . | . | . | + | . |
| <i>Poa alpina</i> | POALP | 6 | + | + | + | . | . | . | . | . | . | . | . | . | . |
| <i>Poa annua</i> | POANN | 1 | . | . | . | . | . | . | + | . | . | . | . | . | . |
| <i>Poa artica</i> ssp. <i>grayana</i> | POAR | 1 | . | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Poa compressa</i> | POCO | 6 | . | . | . | + | . | . | . | . | . | . | . | + | + |
| <i>Poa epilis</i> | POEP | 1 | . | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Poa fendleriana</i> | POFE | 1166 | + | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Poa fendleriana</i> ssp. <i>longiligula</i> | POLON | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Poa glauca</i> var. <i>rupicola</i> (<i>P. rupicola</i>) | POGL | 3 | + | + | + | . | . | . | . | . | . | . | . | . | . |
| <i>Poa leptocoma</i> | POLE | 15 | . | + | + | + | . | . | . | . | . | . | . | + | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|--|--------------|-----------|--------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- GRAMINOIDS ----- | | | GRASS | | | | | | | | | | |
| <i>Poa nervosa</i> var. <i>tracyi</i> | PONE | 4 | . | . | + | . | + | . | . | + | . | . | . |
| <i>Poa nemoralis</i> var. <i>interior</i> (<i>P. interior</i>) | PONEM | 20 | + | + | + | + | + | . | + | + | . | . | . |
| <i>Poa palustris</i> | POPA | 8 | . | . | . | + | . | . | + | . | . | . | + |
| <i>Poa pratensis</i> | POPR | 126 | . | + | + | + | + | . | + | + | . | . | + |
| <i>Poa reflexa</i> | PORE | 13 | . | + | + | + | . | . | . | . | . | . | . |
| <i>Poa tracyi</i> (<i>P. occidentalis</i>) | POTRA | 3 | . | . | . | + | + | . | . | . | . | . | . |
| <i>Schizachne purpurascens</i> | SCPU | 8 | . | . | . | + | + | . | . | . | . | . | + |
| <i>Schizachyrium cirratum</i> (<i>Andropogon cirratus</i>) | SCCI | 26 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Schizachyrium hirtiflorum</i> (<i>Andropogon hirtiflorus</i>) | SCHI | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Schizachyrium scoparium</i> (<i>Andropogon scoparius</i>) | SCSC | 170 | . | . | . | + | + | . | + | + | . | . | . |
| <i>Schizachyrium scoparium</i> var. <i>frequens</i> | SCSCFR | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Schizachyrium scoparium</i> var. <i>neomexicanum</i> | SCSCNE | 3 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Scirpus microcarpa</i> | SCMI | 3 | . | . | . | + | . | . | . | . | . | . | + |
| <i>Setaria</i> spp. | SETARI | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Setaria geniculata</i> | SEGE | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Setaria grisebachii</i> | SEGR | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Sitanion hystrix</i> (<i>S. longiflorum</i>) | SIHY | 958 | + | + | + | + | + | . | + | + | . | + | + |
| <i>Sorghastrum avenaceum</i> (<i>S. nutans</i>) | SOAV | 16 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Sporobolus</i> spp. | SPOROB | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Sporobolus cryptandrus</i> | SPCR | 8 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Sporobolus contractus</i> | SPCO | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Sporobolus giganteus</i> | SPGI | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Sporobolus interruptus</i> | SPIN | 34 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Stipa</i> spp. | STIPA | 34 | . | . | . | + | + | . | + | + | . | . | . |
| <i>Stipa columbiana</i> (<i>S. occidentalis</i>) | STCO | 9 | . | . | . | + | + | . | . | . | . | . | . |
| <i>Stipa comata</i> | STCOM | 25 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Stipa lettermanii</i> | STLE | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Stipa neomexicana</i> | STNE | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Stipa pringlei</i> | STPR | 104 | . | . | . | + | + | . | + | + | . | + | + |
| <i>Stipa robusta</i> | STRO | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Trisetum spicatum</i> | TRSP | 24 | + | + | + | . | . | . | . | . | . | . | . |
| <i>Trisetum spicatum</i> ssp. <i>montanum</i> (<i>T. montanum</i>) | TRSPMO | 220 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Trisetum wolfii</i> | TRWOL | 2 | . | + | . | . | . | . | . | . | . | . | . |
| Unknown grass | UNGR | 3 | . | . | . | . | . | . | . | . | . | . | + |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | |
| <i>Abronia</i> spp. | ABRONI | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Achillea millefolium</i> ssp. <i>lanulosa</i> (<i>A. lanulosa</i>) | ACMI | 615 | + | + | + | + | + | . | + | + | . | + | + |
| <i>Acomastylis rossii</i> (<i>Geum rossii</i>) | ACRO | 8 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Aconitum columbianum</i> | ACCO | 15 | . | + | + | + | . | . | . | . | . | . | . |
| <i>Actaea rubra</i> ssp. <i>arguta</i> (<i>A. arguta</i>) | ACRU | 96 | . | + | + | + | + | . | . | . | . | . | + |
| <i>Agastache</i> sp. | AGASTA | 2 | . | . | . | . | . | . | . | . | . | . | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | |
| <i>Agastache pallidiflora</i> | AGPA | 34 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Ageratina herbacea</i> (<i>Eupatorium herbaceum</i>) | AGHE | 81 | . | + | + | + | + | . | + | + | + | + | . | . |
| <i>Agoseris</i> spp. | AGOSER | 9 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Agoseris aurantiaca</i> | AGAU | 14 | . | + | + | + | + | . | + | . | . | . | . | . |
| <i>Agoseris glauca</i> | AGGL | 24 | . | . | + | . | + | . | + | + | . | . | . | . |
| <i>Agrimonia striata</i> | AGST | 10 | . | . | + | + | + | . | + | + | . | . | . | + |
| <i>Allium</i> spp. | ALLIUM | 29 | . | + | + | . | + | . | + | + | . | . | . | . |
| <i>Allium cernuum</i> | ALCE | 154 | + | . | + | + | + | . | + | + | . | . | . | . |
| <i>Allium geoyeri</i> | ALGE | 9 | + | + | + | . | . | . | . | + | . | . | . | . |
| <i>Allium gooddingii</i> | ALGO | 2 | . | . | . | . | . | + | . | . | . | . | . | . |
| <i>Allium kunthii</i> | ALKU | 4 | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Allium rhizomatum</i> | ALRH | 4 | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Amaranthus</i> spp. | AMARAN | 3 | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Ambrosia</i> spp. | AMBROS | 5 | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Ambrosia psilostachya</i> | AMPS | 18 | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Anaphalis margaritacea</i> | ANAMA | 1 | . | . | + | . | . | . | . | . | . | . | . | . |
| <i>Androsace occidentalis</i> | ANOC | 10 | . | + | . | + | + | . | + | . | . | . | . | . |
| <i>Androsace septentrionalis</i> | ANSE | 66 | + | . | + | + | + | . | + | + | . | . | . | . |
| <i>Anemone</i> spp. | ANEMON | 1 | . | . | . | + | . | . | . | . | . | . | . | . |
| <i>Anemone canadensis</i> | ANCA | 1 | . | . | . | . | + | . | . | . | . | . | . | . |
| <i>Angelica grayii</i> | ANGR | 23 | . | + | + | . | . | . | . | + | . | . | . | . |
| <i>Antennaria</i> spp. | ANTENN | 98 | + | + | + | + | + | . | + | + | . | . | . | . |
| <i>Antennaria arida</i> | ANAR | 3 | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Antennaria neglecta</i> (<i>A. marginata</i>) | ANNE | 164 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Antennaria parvifolia</i> (<i>A. aprica</i>) | ANPA | 249 | . | + | + | + | + | . | + | + | . | + | . | . |
| <i>Antennaria rosulata</i> | ANRO | 170 | + | + | + | + | + | + | + | + | . | . | . | . |
| <i>Anthericum torreyi</i> | ANTO | 16 | . | . | + | . | . | . | . | + | + | . | + | . |
| <i>Apocynum</i> spp. | APOCYN | 43 | . | + | + | + | + | . | + | + | . | . | . | . |
| <i>Apocynum androsaemifolium</i> | APAN | 30 | . | . | + | + | + | . | + | + | . | . | . | . |
| <i>Apocynum cannabinum</i> | APCA | 1 | . | . | + | . | . | . | . | . | . | . | . | . |
| <i>Aquilegia</i> spp. | AQUILE | 35 | . | + | + | + | + | . | + | + | . | . | . | . |
| <i>Aquilegia triternata</i> (<i>A. barnebyi</i>) | AQBA | 20 | . | + | + | + | + | . | + | . | . | . | . | . |
| <i>Aquilegia caerulea</i> | AQCA | 55 | + | + | + | . | . | . | . | . | . | . | . | . |
| <i>Aquilegia chrysantha</i> | AQCH | 34 | . | + | + | + | + | . | + | . | . | . | . | + |
| <i>Aquilegia elegantula</i> | AQEL | 151 | + | + | + | + | + | . | + | + | . | . | . | . |
| <i>Arabis</i> spp. | ARABIS | 109 | + | . | . | + | + | . | + | + | + | + | + | + |
| <i>Arabis fendleri</i> | ARAFE | 83 | . | + | + | + | + | + | + | + | . | . | . | . |
| <i>Arabis drummondii</i> | ARDRU | 25 | + | + | . | + | + | . | + | + | . | . | . | . |
| <i>Arabis pendulina</i> | ARPE | 1 | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Arabis tricornuta</i> | ARTRI | 2 | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Aralia</i> spp. | ARALIA | 1 | . | . | . | . | . | + | . | . | . | . | . | . |
| <i>Aralia nudicaulis</i> | ARNU | 1 | . | . | . | . | . | + | . | . | . | . | . | . |
| <i>Aralia racemosa</i> | ARRA | 1 | . | . | . | . | . | + | . | . | . | . | . | . |
| <i>Arctium minus</i> | ARMI | 1 | . | . | . | . | . | + | . | . | . | . | . | . |
| <i>Arenaria</i> spp. | ARENAR | 49 | . | + | + | + | + | . | + | + | . | . | . | . |
| <i>Arenaria eastwoodiae</i> | AREA | 6 | . | . | . | . | . | . | . | . | . | + | + | . |
| <i>Arenaria fendleri</i> | AREFE | 48 | + | + | + | + | + | + | + | + | . | . | . | . |
| <i>Arenaria lanuginosa</i> (<i>A. confusa</i>) | ARLAN | 46 | + | + | + | + | + | + | + | + | . | . | . | . |
| <i>Arnica</i> spp. | ARNICA | 17 | . | + | + | + | . | . | . | . | . | . | . | . |
| <i>Arnica cordifolia</i> | ARCO | 153 | + | + | + | + | + | . | + | . | . | + | . | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | |
| <i>Arnica latifolia</i> | ARLA | 30 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Arnica mollis</i> | ARMO | 10 | + | + | + | . | . | . | . | . | . | . | . | . |
| <i>Artemisia</i> spp. | ARTEMI | 4 | . | . | . | + | . | . | + | . | + | . | . | . |
| <i>Artemisia carruthii</i> | ARCA | 209 | + | . | + | + | + | . | + | + | . | + | + | + |
| <i>Artemisia campestris</i> ssp. <i>pacifica</i> (<i>A. pacifica</i>) | ARCAM | 26 | + | . | . | . | . | . | + | + | . | . | . | . |
| <i>Artemisia dracunculoides</i> | ARDR | 74 | . | . | + | . | + | . | + | + | . | . | . | + |
| <i>Artemisia franserioides</i> | ARFR | 257 | + | + | + | + | + | + | + | + | . | . | . | . |
| <i>Artemisia frigida</i> | ARFRI | 36 | + | . | + | + | + | . | + | + | . | . | . | . |
| <i>Artemisia ludoviciana</i> | ARLU | 415 | + | . | . | + | + | . | + | + | + | + | + | + |
| <i>Artemisia parryi</i> | ARPAR | 1 | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Artemisia scopulorum</i> | ARSC | 2 | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Asclepias</i> spp. | ASCLEP | 9 | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Asclepias asperula</i> (<i>A. capricornu</i>) | ASAS | 6 | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Asclepias brachystephana</i> | ASBR | 8 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Asclepias involucrata</i> | ASIN | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Asclepias speciosa</i> | ASSP | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Asclepias tuberosa</i> | ASTU | 5 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Asclepias viridiflora</i> | ASVI | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Asparagus officinalis</i> | ASOF | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Aster</i> spp. | ASTER | 20 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Aster falcatus</i> (<i>A. commutatus</i>) | ASCOM | 24 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Aster exilis</i> | ASEX | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Aster foliaceus</i> | ASFO | 5 | . | . | . | + | . | . | + | + | . | . | . | . |
| <i>Aster glaucodes</i> | ASGL | 7 | . | . | . | . | + | . | + | + | . | . | . | . |
| <i>Aster laevis</i> | ASLA | 6 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Aster praealtus</i> | ASPR | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus</i> spp. | ASTRAG | 246 | . | . | + | + | + | . | + | + | . | + | . | + |
| <i>Astragalus adsurgens</i> | ASAD | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus amphioxys</i> | ASAM | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus cobrensis</i> | ASCO | 8 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Astragalus drummondii</i> | ASDR | 6 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus egglestonii</i> | ASEG | 6 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus flexuosus</i> | ASFL | 8 | . | . | . | + | . | . | + | . | . | . | . | . |
| <i>Astragalus gilensis</i> | ASGI | 31 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Astragalus hallii</i> | ASHA | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus humistratus</i> | ASHU | 33 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Astragalus lonchocarpus</i> | ASLO | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus mollisimus</i> | ASMO | 7 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Astragalus parryi</i> | ASPA | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus pictiformis</i> | ASPI | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus recurvus</i> | ASRE | 3 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Astragalus rusbyi</i> | ASRU | 10 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Astragalus tephrodes</i> | ASTE | 10 | . | . | . | . | . | + | . | . | . | + | . | + |
| <i>Astragalus wingatanus</i> | ASWI | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Athyrium filix-femina</i> | ATFI | 2 | . | . | + | + | . | . | . | . | . | . | . | . |
| <i>Bahia dissecta</i> | BADI | 131 | . | . | . | . | . | + | . | + | + | + | + | + |
| <i>Balsamorhiza sagittata</i> | BASA | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Besseyia plantaginea</i> | BEPL | 16 | . | + | . | + | + | . | + | + | . | . | . | . |
| <i>Bidens</i> spp. | BIDENS | 7 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Bidens bipinnata</i> | BIBI | 5 | . | + | + | . | . | . | + | + | . | . | . | . |
| <i>Bidens herterosperma</i> | BIHE | 3 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Bidens lemmonii</i> | BILE | 2 | . | . | . | . | . | . | . | . | . | . | + | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | |
| <i>Bistorta bistortoides</i> (<i>Polygonum bistortoides</i>) | BIBIS | 12 | . | + | + | + | . | . | . | . | . | . | . |
| <i>Bistorta vivipara</i> (<i>Polygonum viviparum</i>) | BIVI | 13 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Boerhaavia</i> spp. | BOERHA | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Brickellia</i> spp. | BRICKE | 78 | . | . | . | . | + | . | + | + | + | + | + |
| <i>Brickellia betonieaefolia</i> | BRBE | 12 | . | . | . | . | + | . | + | + | . | . | . |
| <i>Brickellia brachyphylla</i> | BRBR | 9 | . | . | . | . | . | . | + | + | . | . | . |
| <i>Brickellia fendleri</i> | BRFE | 6 | . | . | . | . | + | + | . | . | . | . | . |
| <i>Brickellia grandiflora</i> | BRGR | 95 | + | + | . | + | + | . | + | + | . | . | . |
| <i>Brickellia lemmoni</i> | BRLE | 6 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Brickellia microphylla</i> (<i>B. scabra</i>) | BRMI | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Brickellia rusby</i> | BRRU | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Cacalia decomposita</i> | CACDE | 4 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Calliandra humilis</i> | CAHU | 78 | . | . | . | . | . | . | . | + | + | . | + |
| <i>Calliandra reticulata</i> | CARE | 22 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Calliandra schottii</i> | CALSC | 3 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Calochortus</i> spp. | CALOCH | 3 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Calochortus gunnisonii</i> | CAGU | 8 | . | . | + | . | . | . | . | . | . | . | + |
| <i>Calypso bulbosa</i> | CABU | 26 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Campanula rotundifolia</i> | CAROT | 196 | + | + | + | + | . | . | . | . | . | . | + |
| <i>Cardamine cordifolia</i> | CACO | 28 | . | + | + | + | . | . | . | . | . | . | + |
| <i>Castilleja</i> spp. | CASTIL | 137 | . | + | + | + | . | . | . | . | . | . | . |
| <i>Castilleja austromontana</i> | CAAU | 17 | . | + | . | + | . | . | . | . | . | . | . |
| <i>Castilleja confusa</i> | CACON | 4 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Castilleja integra</i> | CAINT | 21 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Castilleja lineata</i> | CALI | 10 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Castilleja linariaefolia</i> | CALI2 | 18 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Castilleja miniata</i> | CAMIN | 33 | + | + | + | + | . | . | . | . | . | . | . |
| <i>Castilleja occidentalis</i> | CASOC | 2 | + | + | . | . | . | . | . | . | . | . | . |
| <i>Castilleja rhexifolia</i> | CARH | 6 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Castilleja sulphurea</i> (<i>C. septentrionalis</i>) | CASU | 2 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Cerastium</i> spp. | CERAST | 7 | . | + | . | + | . | . | . | . | . | . | . |
| <i>Cerastium arvense</i> | CEAR | 5 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Cerastium nutans</i> | CENU | 6 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Cerastium texanum</i> | CETE | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chaenactis</i> spp. | CHAENA | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chaenactis douglasii</i> | CHDO | 6 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chamaesyce fendleri</i> (<i>Euphorbia fendleri</i>) | CHAFE | 6 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chamaesyce albomarginata</i> (<i>Euphorbia albomarginata</i>) | CHAMAL | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chamerion angustifolium</i> (<i>Epilobium angustifolium</i>) | CHAN | 198 | + | + | + | + | . | . | . | . | . | . | . |
| <i>Chamaepericlymenum canadense</i> (<i>Cornus canadensis</i>) | CHCA | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chamaesaracha coronopus</i> | CHCO | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chamaebatiaria millefolium</i> | CHMI | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chaptalia alsophila</i> | CHALS | 38 | . | + | . | + | . | . | . | . | . | . | . |
| <i>Cheilanthes</i> spp. | CHEILA | 8 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Cheilanthes fendleri</i> | CHFE | 40 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chenopodium</i> spp. | CHENOP | 19 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Chenopodium aff album</i> | CHAL | 53 | . | . | . | . | . | . | . | . | . | . | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- FORBS ----- | | | | | | | | | | | | | |
| <i>Chenopodium fremontii</i> | CHFR | 8 | . | . | . | + | + | . | + | + | . | + | . |
| <i>Chenopodium graveolens</i> | CHIN | 15 | . | . | . | . | . | . | . | + | + | . | . |
| <i>Chenopodium leptophyllum</i> | CHLE | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Chimaphila menziesii</i> | CHME | 3 | . | . | . | . | + | . | + | . | . | . | . |
| <i>Cicuta douglasii</i> (<i>C. maculata</i>) | CIDO | 4 | . | . | . | + | + | . | . | . | . | . | + |
| <i>Circaea alpina</i> | CIAL | 7 | . | . | + | + | . | . | . | . | . | . | + |
| <i>Cirsium</i> spp. | CIRSIU | 358 | + | + | + | + | + | . | + | + | + | . | . |
| <i>Cirsium arizonicum</i> | CIAR | 11 | . | . | . | . | . | + | . | + | + | . | . |
| <i>Cirsium canescens</i> | CICA | 6 | . | . | . | . | . | . | . | + | + | . | . |
| <i>Cirsium calcareum</i> (<i>C. pulchellum</i>) | CICAL | 4 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cirsium grahami</i> | CIGR | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cirsium parryi</i> | CIPA | 36 | . | + | + | + | + | . | + | + | . | . | . |
| <i>Cirsium pallidum</i> | CIPAL | 1 | . | . | + | . | . | . | . | . | . | . | . |
| <i>Cirsium pulchellum</i> | CIPU | 3 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cirsium rothrockii</i> | CIRO | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cirsium scopulorum</i> | CISC | 2 | + | + | . | . | . | . | . | . | . | . | . |
| <i>Cirsium undulatum</i> | CIUN | 3 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cirsium wheeleri</i> | CIWH | 15 | . | . | . | . | . | . | . | + | + | . | . |
| <i>Cirsium wrightii</i> | CIWR | 11 | . | . | . | + | . | . | . | . | + | . | . |
| <i>Clementsia rhodantha</i> (<i>Sedum rhodanthum</i>) | CLRH | 3 | . | + | . | . | . | . | . | . | . | . | . |
| <i>Cologania</i> spp. | COLOGA | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cologania longifolia</i> (<i>C. angustifolia</i>) | COLO | 110 | . | . | . | . | . | . | + | . | + | + | + |
| <i>Cologania pulchella</i> | COPU | 7 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Comandra umbellata</i> ssp. <i>pallida</i> (<i>C. pallida</i>) | COUM | 78 | . | . | . | + | + | . | + | + | + | + | . |
| <i>Commelina</i> spp. | COMMEL | 2 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Commelina dianthifolia</i> | CODI | 35 | . | . | . | . | . | + | . | + | + | + | . |
| <i>Commelina erecta</i> | COER | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Conioselinum scopulorum</i> | COSCO | 1 | . | . | . | . | . | + | . | . | . | . | . |
| <i>Conopholis mexicana</i> | COME | 24 | . | . | . | . | . | + | + | . | + | . | . |
| <i>Conyza canadensis</i> | CONCA | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Conyza schiedeana</i> | COSC | 8 | . | . | . | . | . | . | + | . | + | . | . |
| <i>Corallorhiza</i> spp. | CORALL | 28 | . | + | + | + | + | . | + | + | . | . | . |
| <i>Corallorhiza maculata</i> | COMA | 100 | . | + | + | + | + | . | + | + | . | . | + |
| <i>Corallorhiza striata</i> | COSTR | 17 | . | + | . | + | + | . | + | + | . | . | . |
| <i>Corallorhiza trifida</i> | COTR | 2 | . | . | + | . | . | . | . | . | . | . | . |
| <i>Corallorhiza wisteriana</i> | COWI | 4 | . | . | . | + | . | . | + | . | . | . | . |
| <i>Coreopsis lanceolata</i> | COLA | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Corydalis aurea</i> | COAU | 1 | . | . | + | . | . | . | . | . | . | . | . |
| <i>Corydalis caseana</i> | COCAS | 2 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Cosmos</i> spp. | COSMOS | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cosmos bipinnatus</i> (<i>C. parviflorus</i>) | COBI | 2 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cosmos parviflora</i> | COPA | 3 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Crepis</i> spp. | CREPIS | 2 | . | . | . | . | . | . | + | . | . | + | . |
| <i>Crotalaria pumila</i> | CRPU | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cruciferae</i> spp. | CRUCIF | 6 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Cryptogramma crispa</i> | CRCR | 2 | . | . | + | . | + | . | . | . | . | . | . |
| <i>Cryptantha jamesii</i> | CRJA | 31 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Cryptantha thyrsoflora</i> | CRTH | 3 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Crypthantha</i> sp. | CRYPTH | 1 | . | . | . | . | . | . | . | . | . | + | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | | | |
|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | | | |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | | | |
| <i>Cucurbita foetidissima</i> | CUFO | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Cynoglossum officinale</i> | CYNOGL | 4 | . | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Cypripedium calceolus</i> | CYCA | 1 | . | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Cystopteris fragilis</i> | CYFR | 134 | + | + | + | + | + | . | + | + | . | . | . | . | . | + |
| <i>Dalea</i> spp. | DALEA | 3 | . | . | . | . | . | . | . | . | . | . | + | . | + | . |
| <i>Dalea candida</i> (<i>Petalostemon cadidimum</i>) | DACAN | 16 | . | + | . | + | . | . | . | . | . | . | + | . | . | . |
| <i>Dalea filiformis</i> | DAFI | 3 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Dalea frutescens</i> | DAFR | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Dalea ordiae</i> | DAOR | 2 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Dalea polygonoides</i> | DAPO | 7 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Delphinium</i> spp. | DELPHI | 3 | . | . | . | + | + | . | . | . | . | . | + | . | . | . |
| <i>Delphinium barbeyi</i> | DEBA | 31 | . | + | + | . | . | . | . | . | . | . | + | . | + | . |
| <i>Descurainia</i> spp. | DESC | 3 | . | . | . | + | + | . | . | . | . | . | . | . | . | . |
| <i>Descurainia richardsonii</i> | DERI | 12 | + | . | . | + | + | . | + | + | . | . | . | . | . | . |
| <i>Desmodium</i> spp. | DESMOD | 6 | . | . | . | . | . | . | . | . | . | . | + | + | . | + |
| <i>Desmodium arizonicum</i> | DEAR | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Desmodium cf. cinerascens</i> | DECI | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Desmanthus cooleyi</i> | DECO | 5 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Desmodium grahami</i> | DEGR | 9 | . | . | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Desmodium rosei</i> | DERO | 12 | . | . | . | . | . | . | . | . | . | . | . | + | + | + |
| <i>Disporum trachycarpum</i> | DITR | 55 | . | + | + | + | + | . | + | . | . | . | . | . | . | . |
| <i>Dithyrea wislizeni</i> | DIWI | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Dodecatheon ellisiae</i> | DOEL | 2 | . | . | . | + | + | . | . | . | . | . | . | . | . | . |
| <i>Dodecatheon pulchellum</i> | DOPU | 1 | . | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Draba</i> spp. | DRABA | 57 | + | + | + | + | + | . | + | + | . | + | + | . | + | . |
| <i>Draba asprella</i> | DRAS | 24 | . | . | . | . | . | . | . | . | . | . | + | + | . | . |
| <i>Draba aurea</i> | DRAU | 32 | + | + | + | + | + | . | + | + | . | + | + | . | . | . |
| <i>Draba helleriana</i> | DRHE | 92 | . | + | + | + | + | . | + | + | . | + | + | . | + | + |
| <i>Draba smithii</i> | DRSM | 1 | + | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Draba spectabilis</i> | DRSP | 2 | + | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Draba streptocarpa</i> | DRST | 19 | . | + | + | + | + | + | + | + | . | . | . | . | . | . |
| <i>Drymocallis fissa</i> (<i>Potentilla fissa</i>) | DRFIS | 10 | + | . | . | . | . | . | . | . | . | + | + | + | . | . |
| <i>Drymaria tenella</i> | DRTE | 3 | . | . | . | + | . | . | . | . | . | . | + | . | + | . |
| <i>Dryopteris filix-mas</i> | DRFI | 3 | . | . | . | . | . | . | . | . | . | . | + | . | . | + |
| <i>Dugaldia hoopesii</i> (<i>Helenium hoopsii</i>) | DUHO | 117 | . | + | + | + | + | . | + | + | . | + | + | . | . | . |
| <i>Echinocactus</i> spp. | ECHINC | 4 | . | . | . | . | . | . | . | . | . | . | + | . | + | . |
| <i>Echinocereus fendleri</i> | ECFE | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Echinocereus</i> spp. | ECHINO | 44 | . | . | . | . | . | . | . | . | . | . | + | + | + | + |
| <i>Echinocereus triglochidiatus</i> | ECTR | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Echinocereus viridiflorus</i> | ECVI | 2 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Epilobium</i> spp. | EPILOB | 19 | . | . | . | + | + | + | . | . | . | . | + | . | . | . |
| <i>Epilobium adenocaulon</i> | EPAD | 6 | . | . | . | + | . | . | . | . | . | . | + | . | . | + |
| <i>Epilobium ciliatum</i> (<i>E. glandulosum</i>) | EPCI | 3 | . | + | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Epilobium hornemannii</i> | EPHO | 8 | . | + | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Epilobium paniculatum</i> | EPPA | 2 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Equisetum</i> spp. | EQUISE | 13 | . | . | . | + | . | . | . | . | . | . | . | . | . | + |
| <i>Equisetum arvense</i> | EQAR | 18 | . | + | + | + | + | . | . | . | . | . | + | . | . | + |
| <i>Equisetum hymale</i> (<i>Hippochaete hymalis</i>) | HIHY | 6 | . | . | . | + | + | . | . | . | . | . | + | . | . | . |
| <i>Equisetum laevigatum</i> (<i>Hippochaete laevigata</i>) | HILA | 3 | . | . | . | . | . | . | . | . | . | . | + | . | + | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | |
| <i>Erigeron</i> spp. | ERIGER | 292 | + | + | + | + | + | . | + | + | . | . | + |
| <i>Erigeron canus</i> | ERCAN | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Erigeron concinnus</i> | ERCO | 24 | . | + | + | . | . | . | . | . | . | . | + |
| <i>Erigeron compositus</i> | ERCOM | 2 | + | + | . | . | . | . | . | . | . | . | . |
| <i>Erigeron coulteri</i> | ERCOU | 14 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Erigeron divergens</i> | ERDI | 114 | . | . | . | . | + | . | + | + | . | . | + |
| <i>Erigeron elatior</i> | EREL | 1 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Erigeron eximius</i> (<i>E. superbus</i>) | EREX | 427 | + | + | + | + | + | . | + | + | . | . | . |
| <i>Erigeron flagellaris</i> | ERFL | 233 | + | + | . | + | + | . | + | + | . | . | + |
| <i>Erigeron formosissimus</i> | ERFO | 110 | . | + | . | + | + | . | + | + | . | . | . |
| <i>Erigeron caespitosus</i> | ERICA | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Erigeron macranthus</i> | ERMA | 76 | . | . | + | + | + | . | + | + | . | . | . |
| <i>Erigeron melanocephalus</i> | ERME | 4 | . | + | . | . | . | . | . | . | . | . | . |
| <i>Erigeron neomexicanus</i> (<i>E. delphinifolius</i>) | ERNE | 78 | . | . | . | . | . | + | . | + | + | + | + |
| <i>Erigeron nudiflorus</i> | ERNU | 44 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Erigeron oreophilus</i> | EROR | 4 | . | . | . | . | . | . | . | + | + | . | + |
| <i>Erigeron peregrinus</i> | ERPE | 32 | . | + | . | + | . | . | . | . | . | . | . |
| <i>Erigeron platyphyllus</i> | ERPL | 89 | . | + | . | + | . | . | + | + | . | . | . |
| <i>Erigeron rusbyi</i> | ERRU | 10 | . | . | . | . | . | . | + | + | . | . | . |
| <i>Erigeron speciosus</i> (<i>E. macranthus</i>) | ERSP | 44 | . | + | + | + | + | . | + | + | . | . | . |
| <i>Erigeron subtrinervis</i> | ERSUB | 95 | + | . | + | + | + | . | + | + | . | . | . |
| <i>Erigeron vetensis</i> | ERVE | 10 | + | + | + | . | . | . | + | . | . | . | . |
| <i>Eriogonum</i> spp. | ERIOGO | 66 | . | . | . | + | + | . | + | + | . | . | . |
| <i>Eriogonum alatum</i> | ERAL | 135 | . | . | . | . | . | . | + | + | . | . | . |
| <i>Eriogonum annuum</i> | ERAN | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Eriogonum bakeri</i> (<i>E. jamesii</i> var. <i>flavescens</i>) | ERBA | 7 | . | . | . | . | . | . | + | . | . | . | + |
| <i>Eriogonum hieracifolium</i> | ERHI | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Eriogonum jamesii</i> | ERJA | 86 | + | . | . | . | . | . | + | . | . | . | + |
| <i>Eriogonum microthecum</i> | ERMI | 3 | . | + | . | . | . | . | . | . | . | . | + |
| <i>Eriogonum pharnaceoides</i> | ERPH | 4 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Eriogonum racemosum</i> | ERRA | 199 | . | . | . | . | . | + | + | . | . | . | . |
| <i>Eriogonum umbellatum</i> | ERUM | 8 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Eriogonum wrightii</i> | ERWR | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Erysimum</i> spp. | ERYSIM | 3 | + | . | . | . | . | . | . | . | . | . | . |
| <i>Erysimum asperum</i> | ERAS | 4 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Erysimum capitatum</i> | ERCA | 83 | + | . | + | + | . | . | + | + | . | . | . |
| <i>Erythronium grandiflorum</i> | ERGR | 8 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Euphorbia</i> spp. | EUPHOR | 42 | . | . | . | + | + | . | + | + | . | . | + |
| <i>Euphorbia albomarginata</i> | EUAL | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Euphorbia brachycera</i> | EUBR | 9 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Euphorbia chamaesula</i> | EUCH | 9 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Euphorbia fendleri</i> | EUFE | 3 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Euphorbia lurida</i> | EULU | 86 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Euphorbia palmeri</i> | EUPA | 17 | . | . | . | . | . | + | + | . | . | . | . |
| <i>Euphorbia revoluta</i> | EURE | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Euphorbia robusta</i> | EURO | 6 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Fragaria americana</i> (<i>F. vesca</i> var. <i>bracteata</i>) | FRAM | 322 | + | + | + | + | . | . | + | + | . | . | + |
| <i>Fragaria ovalis</i> (<i>F. virginiana</i> var. <i>glauca</i>) | FROV | 578 | + | + | + | + | + | + | + | + | . | . | + |
| <i>Frasera</i> spp. | FRASE | 11 | . | . | + | + | + | . | + | + | . | . | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | |
| <i>Frasera speciosa</i> (<i>Swertia radiata</i>) | FRSP | 99 | . | + | + | + | + | + | + | + | + | . | . | + |
| <i>Gaillardia</i> spp. | GAILLA | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gaillardia aristata</i> | GAAR | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gaillardia pinnatifida</i> | GAPI | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Galactia wrightii</i> | GALWR | 3 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Galium</i> spp. | GALIUM | 60 | . | + | + | + | + | . | + | + | . | + | + | + |
| <i>Galium aparine</i> | GAAP | 11 | . | . | . | . | . | . | + | + | . | + | + | + |
| <i>Galium asperrimum</i> | GAAS | 46 | . | . | . | . | . | . | + | + | . | + | + | + |
| <i>Galium boreale</i> | GABO | 117 | + | + | + | + | + | . | + | + | . | . | . | + |
| <i>Galium fendleri</i> | GAFE | 48 | . | . | . | . | . | . | + | + | . | + | + | + |
| <i>Galium microphyllum</i> | GAMI | 20 | . | . | . | . | . | . | + | . | + | + | . | + |
| <i>Galium rothrockii</i> | GARO | 6 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Galium tinctorium</i> | GATI | 5 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Galium triflorum</i> | GATR | 81 | . | + | + | + | + | . | + | + | . | + | . | + |
| <i>Galium trifidum</i> | GATR2 | 45 | . | . | + | + | + | . | + | + | . | . | . | . |
| <i>Galium wrightii</i> | GAWR1 | 3 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gaura</i> spp. | GAURA | 2 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gaura hexandra</i> (<i>G. gracilis</i>) | GAGR | 13 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gaura neomexicana</i> | GANE | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gayophytum diffusum</i> ssp. <i>parviflorum</i> (<i>G. nuttans</i>) | GADI | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gayophytum ramossum</i> | GARA | 4 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gentiana</i> spp. | GENTIA | 9 | . | + | + | + | . | . | . | . | . | . | + | . |
| <i>Gentiana bigelovii</i> (<i>Pneumonanthe affinis</i>) | GEBI | 6 | . | . | . | . | . | . | . | + | . | + | . | . |
| <i>Gentiana parryi</i> (<i>Pneumonanthe calycosa</i>) | PNCA | 4 | . | . | + | + | . | . | . | . | . | . | . | . |
| <i>Gentianella amarella</i> | GEAM | 2 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gentianella amarella</i> ssp. <i>acuta</i> (<i>Gentiana strictiflora</i>) | GEAMAC | 43 | . | + | + | + | + | . | + | + | . | . | . | . |
| <i>Gentianella amarella</i> ssp. <i>heterosepala</i> (<i>Gentiana heterosepala</i>) | GEAMHE | 23 | . | + | + | + | + | . | . | . | . | . | . | . |
| <i>Gentianella microcalyx</i> (<i>Gentiana microcalyx</i>) | GEMI | 2 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Geranium</i> spp. | GERANI | 185 | . | + | + | + | + | . | + | + | . | . | . | + |
| <i>Geranium caespitosum</i> | GECA | 366 | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Geranium ereophilum</i> | GEER | 12 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Geranium richarsonii</i> | GERI | 447 | + | + | + | + | + | . | + | + | . | . | . | + |
| <i>Geum triflorum</i> (<i>Erythrocoma triflora</i>) | ERTR | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Geum aleppicum</i> ssp. <i>strictum</i> (<i>G. strictum</i>) | GEAL | 7 | . | . | + | + | . | . | . | . | . | . | . | + |
| <i>Geum macrophyllum</i> | GEMA | 3 | . | + | + | + | . | . | . | . | . | . | . | . |
| <i>Gilia</i> spp. | GILIA | 59 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Gilia macombii</i> | GIMA | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Gilia multiflora</i> | GIMU | 13 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Gilia pinnatifida</i> var. <i>calcareo</i> | GIPI | 9 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Gilia polyantha</i> | GIPO | 4 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gnaphalium</i> spp. | GNAPHA | 36 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Gnaphalium arizonicum</i> | GNAR | 13 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Gnaphalium chilense</i> | GNCH | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Gnaphalium pringlei</i> | GNPR | 3 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Gnaphalium viscosum</i> (<i>G. macounii</i>) | GNVI | 19 | . | + | + | . | . | . | . | . | . | . | + | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|---|--------------|-----------|--------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| FORBS | | | FORBS | | | | | | | | | | |
| <i>Gnaphalium wrightii</i> | GNWR | 16 | . | + | . | . | . | . | . | + | . | + | . |
| <i>Goodyera oblongifolia</i> | GOOB | 256 | . | + | + | + | + | . | + | . | . | . | . |
| <i>Goodyera repens</i> | GORE | 29 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Grindelia</i> spp. | GRINDE | 1 | . | . | . | . | . | . | . | + | . | . | . |
| <i>Gutierrezia glutinosa</i> | GUGL | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Habenaria</i> spp. | HABENA | 16 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Habenaria hyperborea</i> (<i>Limorchis hyperborea</i>) | HAHY | 2 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Habenaria saccata</i> (<i>Limorchis saccata</i>) | HYSA | 3 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Habenaria sparsiflora</i> | HASP | 4 | . | . | + | . | . | . | + | + | . | . | . |
| <i>Habenaria unalascensis</i> (<i>Piperia unalascensis</i>) | PIUN | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Hackelia</i> spp. | HACKEL | 4 | . | . | . | + | + | . | . | + | . | . | . |
| <i>Hackelia floribunda</i> | HAFL | 6 | . | . | . | + | + | . | + | + | . | . | . |
| <i>Hackelia ursina</i> | HAUR | 10 | . | . | . | + | + | . | . | . | . | . | . |
| <i>Halenia recurva</i> | HARE | 12 | . | + | . | + | . | . | + | + | . | . | . |
| <i>Haploppappus</i> spp. | HAPLOP | 2 | . | . | . | . | . | . | . | + | + | . | . |
| <i>Harbouria trachypleura</i> | HATR | 19 | . | . | . | . | . | . | . | + | + | . | . |
| <i>Hedeoma</i> spp. | HEDEOM | 18 | . | . | . | . | . | + | . | + | + | . | . |
| <i>Hedeoma costatum</i> | HECO | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Hedeoma dentatum</i> | HEDE | 7 | . | . | . | . | . | . | . | . | + | . | + |
| <i>Hedeoma diffusum</i> | HEDI | 3 | . | . | . | . | . | + | . | . | + | . | . |
| <i>Hedeoma drummondii</i> | HEDR | 8 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Hedeoma hyssopifolium</i> | HEHY | 59 | . | . | . | . | . | + | . | + | + | + | + |
| <i>Hedeoma oblongifolium</i> | HEOB | 31 | . | . | . | . | . | + | . | + | + | . | + |
| <i>Hedyotis acerosa</i> | HEAC | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Hedyotis pygmaea</i> (<i>Houstonia wrightii</i>) | HEPY | 77 | . | . | . | . | . | + | . | + | + | + | + |
| <i>Helianthus annuus</i> | HEAN | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Heliopsis helianthoides</i> (<i>H. scabra</i>) | HEHE | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Helianthella</i> spp. | HELIA1 | 4 | . | . | + | . | + | . | . | . | . | . | . |
| <i>Helianthella parryi</i> | HEPA | 59 | + | + | + | + | + | + | + | + | + | . | + |
| <i>Helianthus</i> spp. | HELIA2 | 3 | . | . | . | . | . | + | . | . | + | . | . |
| <i>Helianthella quinquenervis</i> | HEQU | 20 | . | + | + | + | + | . | . | + | . | . | . |
| <i>Heracleum sphondylium</i> (<i>H. lanatum</i>) | HESP | 33 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Heterotheca fulcrata</i> (<i>Chrysopsis villosa</i> var. <i>fulcrata</i>) | HEFU | 201 | + | . | . | + | + | . | + | + | . | + | + |
| <i>Heterotheca grandiflora</i> | HEGR | 2 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Heuchera</i> spp. | HEUCHE | 48 | + | + | . | + | + | . | + | + | . | . | . |
| <i>Heuchera eastwoodiae</i> | HEEA | 2 | . | . | . | . | + | . | . | . | . | . | . |
| <i>Heuchera novomexicana</i> | HENO | 2 | . | . | . | . | . | . | . | + | . | . | . |
| <i>Heuchera rubescens</i> | HERU | 2 | . | . | . | . | . | . | . | + | + | . | . |
| <i>Heuchera parvifolia</i> | HEUPA | 37 | + | + | + | + | + | . | + | + | . | . | . |
| <i>Heuchera versicolor</i> | HEVE | 4 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Hieracium</i> spp. | HIERAC | 23 | . | + | + | + | + | . | . | + | . | . | . |
| <i>Hieracium carneum</i> | HICA | 7 | . | . | . | . | . | . | . | . | + | + | + |
| <i>Hieracium fendleri</i> | HIFE | 394 | . | + | + | + | + | . | + | + | + | + | + |
| <i>Hieracium geyeri</i> | HIGE | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Hieracium gracile</i> | HIGR | 9 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Hieracium rusbyi</i> | HIRU | 3 | . | . | . | . | . | + | . | . | . | . | . |
| <i>Humulus lupulus</i> | HULU | 1 | . | . | . | . | . | + | . | . | . | . | . |
| <i>Hydrophyllum fendleri</i> (<i>H. occidentale</i>) | HYFE | 17 | + | + | + | + | + | . | . | + | . | . | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | | | | |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | | | | |
| <i>Hymenopappus filifolius</i> (<i>H. lugens</i> ; <i>H. parvulus</i> ; <i>H. pauciflora</i>) | HYFI | 27 | . | . | . | . | . | + | . | . | + | . | + | . | | | |
| <i>Hymenopappus mexicanus</i> | HYME | 55 | . | . | . | . | . | . | . | . | . | . | + | + | . | . | + |
| <i>Hymenopappus radiatus</i> | HYRA | 23 | + | + | . | + | + | . | + | + | . | . | . | . | . | . | . |
| <i>Hymenothrix wrightii</i> | HYWR | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Hymenoxys</i> spp. | HYMENX | 18 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Hymenoxys bigelovii</i> | HYBI | 35 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Hymenoxys brandegii</i> | HYBR | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Hymenoxys cooperi</i> | HYCO | 13 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Hymenoxys grandiflora</i> | HYGR | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Hymenoxys ivesiana</i> | HYIV | 11 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Hypericum formosum</i> | HYFO | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Ipomopsis aggregata</i> (<i>Gilia aggregata</i>) | IPAG | 234 | + | . | + | + | + | . | + | . | + | . | + | + | . | + | + |
| <i>Ipomoea</i> spp. | IPOMOE | 13 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Ipomoea costellata</i> | IPCO | 9 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Ipomoea coccinea</i> | IPCOC | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Ipomoea hederacea</i> | IPHE | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Iris missouriensis</i> | IRMI | 83 | . | + | + | + | + | . | + | . | + | . | + | . | . | . | . |
| <i>Kochia</i> spp. | KOCHIA | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Eurotia lanata</i> (<i>Krascheninnikova lanata</i>) | KRLA | 5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Kuhnia rosmarinifolia</i> (<i>K. chlorolepis</i>) | KURO | 26 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lactuca</i> spp. | LACTUC | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lactuca graminifolia</i> | LACGR | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lactuca serriola</i> (<i>L. scariola</i>) | LASE | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lappula</i> spp. | LAPPUL | 1 | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Lappula redowskii</i> | LARE | 11 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lathyrus</i> spp. | LATHYR | 40 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lathyrus arizonicus</i> | LAAR | 569 | + | + | + | + | + | . | + | . | + | . | + | . | + | . | + |
| <i>Lathyrus ariz. x graminifolius</i> | LAARGR | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lathyrus eucosmus</i> | LAEU | 3 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lathyrus graminifolius</i> | LAGR | 117 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lathyrus leucanthus</i> | LALE | 16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Leonurus cardiaca</i> | LECA | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lepidium</i> spp. | LEPEDI | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lepidium densiflorum</i> | LEDE | 10 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lepidium medium</i> (<i>L. virginicum</i>) | LEME | 3 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lepidium</i> spp. | LEPIDI | 4 | + | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Leptodactylon pungens</i> | LEPU | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lesquerella</i> spp. | LESQUE | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lesquerella alpina</i> (<i>L. subumbellata</i>) | LEAL | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lesquerella fendleri</i> | LEFE | 22 | + | . | . | . | . | . | + | . | . | . | . | . | . | . | + |
| <i>Lesquerella gordonii</i> | LEGO | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lesquerella intermedia</i> | LEIN | 3 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lesquerella montana</i> | LESMO | 6 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Leucelene arenosus</i> | LEAR | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Leucelene ericoides</i> | LEER | 12 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Leucanthemum vulgare</i> (<i>Chrysanthemum leucanthemum</i>) | LEVU | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Liatrus punctata</i> | LIPU | 19 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | | | | | | | | |
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| ----- FORBS ----- | | | FORBS | | | | | | | | | | | | | | | | | | |
| <i>Ligularia amplexans</i> (<i>Senecio amplexans</i>) | LIAM | 39 | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Ligularia bigelovii</i> (<i>Senecio bigelovii</i>) | LIBI | 52 | . | + | + | + | + | . | + | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Ligusticum porteri</i> | LIPO | 185 | . | + | + | + | + | . | + | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Ligularia pudica</i> (<i>Senecio pudicus</i>) | LIPUD | 2 | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Linathus nuttallii</i> (<i>Linanthastrum nuttallii</i>) | LINU | 17 | . | . | . | + | + | . | . | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Linum</i> spp. | LINUM | 19 | . | . | . | . | . | + | . | + | + | . | . | . | . | . | . | . | . | . | . |
| <i>Linum aristatum</i> | LIAR | 11 | . | . | . | . | . | + | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Linum lewisii</i> | LILE | 22 | . | . | . | . | . | + | . | + | + | . | . | . | . | . | . | . | . | . | . |
| <i>Linum neomexicanum</i> | LINE | 27 | . | . | . | . | . | . | . | . | . | + | + | . | + | . | . | . | . | . | . |
| <i>Listera cordata</i> | LICO | 21 | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Lithospermum</i> spp. | LITHOS | 1 | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . |
| <i>Lithospermum cobrense</i> | LICOB | 6 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Lithospermum incisum</i> | LIIN | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Lithospermum multiflorum</i> | LIMU | 447 | + | + | + | + | + | . | + | + | + | + | . | + | + | + | . | + | + | . | + |
| <i>Lobelia anatina</i> | LOAN | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Lotus</i> spp. | LOTUS | 27 | . | . | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Lotus oroboides</i> | LOOR | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Lotus utahensis</i> | LOUTA | 11 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + | . |
| <i>Lotus wrightii</i> | LOWR | 402 | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | + | + | . | + |
| <i>Lotus wrightii</i> x <i>rigidus</i> (<i>L. nummularis</i>) | LOWRRI | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Lupinus</i> spp. | LUPINU | 56 | . | + | + | + | + | . | + | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Lupinus argenteus</i> | LUAR | 69 | . | . | . | + | + | . | + | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Lupinus blumeri</i> | LUBL | 6 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + | + |
| <i>Lupinus hillii</i> | LUHI | 39 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + | . |
| <i>Lupinus kingii</i> | LUKI | 33 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Lupinus neomexicanus</i> | LUNE | 6 | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | + | + | . | + |
| <i>Lupinus palmeri</i> | LUPAL | 3 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Lupinus pulsillus</i> | LUPU | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Lupinus sierra-blancae</i> | LUSB | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Machaeranthera bigelovii</i> (<i>Aster pattersonii</i> ; <i>A. bigelovii</i>) | ASBI | 5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Machaeranthera pinnatifida</i> (<i>Haplopappus spinulosus</i>) | MAPI | 9 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Macromeria viridiflora</i> | MAVI | 12 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Malaxis ehrenbergii</i> | MAEH | 7 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Malaxis soulei</i> | MASO | 55 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Mammillaria</i> spp. (<i>Coryphantha</i> spp. [in part]) | MAMMIL | 24 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Mammillaria arizonica</i> | MAAR | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Mariscus schweinitzii</i> (<i>Cyperus schweinitzii</i>) | MASC | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Medicago lupulina</i> | MEDLU | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Melampodium cinereum</i> | MECI | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Melilotus alba</i> | MEAL | 3 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Melilotus officinalis</i> | MEOF | 6 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Mentha arvensis</i> | MEAR | 8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Mentzelia pumila</i> | MEPU | 3 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Mertensia</i> spp. | MERTEN | 9 | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Mertensia ciliata</i> | MECIL | 96 | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Mertensia franciscana</i> | MEFR | 81 | . | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | + |

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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| FORBS | | | FORBS | | | | | | | | | | |
| <i>Mertensia lanceolata</i> | MELA | 36 | + | + | + | + | + | . | + | + | . | . | . |
| <i>Mertensia viridus</i> | MEVI | 3 | + | + | . | . | . | . | . | . | . | . | . |
| <i>Mimulus</i> spp. | MIMULU | 1 | . | . | . | . | . | . | . | + | . | . | . |
| <i>Mimulus guttatus</i> | MIGU | 7 | . | + | + | + | . | . | . | . | . | . | + |
| <i>Mirabilis multiflora</i> | MIMU | 2 | . | . | . | . | + | . | . | . | . | . | . |
| <i>Mirabilis oxybaphoides</i> | MIOX | 7 | . | . | . | . | + | . | + | + | . | . | . |
| <i>Mirabilia</i> spp. | MIRABI | 1 | . | . | . | . | . | . | . | + | . | . | . |
| <i>Mitella pentandra</i> | MIPE | 24 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Moehringia macrophylla</i> (<i>Arenaria macrophylla</i>) | MOMA | 7 | . | . | + | . | . | . | . | + | . | . | . |
| <i>Monarda</i> spp. | MONARD | 5 | . | . | . | . | . | . | . | . | + | . | + |
| <i>Monarda austromontana</i> | MOAU | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Monarda fistulosa</i> var. <i>menthaefolia</i> | MOFI | 24 | . | . | . | + | + | . | . | . | + | . | + |
| <i>Monarda pectinata</i> | MOPE | 5 | . | . | . | . | . | . | . | . | . | + | + |
| <i>Monardella odoratissima</i> | MOOD | 1 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Moneses uniflora</i> (<i>Pyrola uniflora</i>) | MOUN | 85 | . | + | + | + | . | . | . | . | . | . | . |
| <i>Monotropa latisquama</i> (<i>M. hypotitys</i>) | MOLA | 29 | . | + | + | + | + | . | . | . | + | + | . |
| <i>Myosotis scorpiodes</i> | MYSC | 6 | . | . | . | . | . | + | . | + | + | . | . |
| <i>Oenothera</i> spp. | OENOTH | 12 | . | . | . | . | . | + | + | . | + | + | . |
| <i>Oenothera caespitosa</i> | OECA | 10 | . | . | . | . | . | + | . | . | + | + | . |
| <i>Oenothera coronopifolia</i> | OECA | 10 | . | . | . | . | . | + | . | . | + | + | . |
| <i>Oenothera hookeri</i> | OEHO | 4 | . | . | . | . | . | . | . | . | + | . | . |
| <i>Oenothera pubescens</i> (<i>O. laciniata</i>) | OEPU | 5 | . | . | . | . | . | . | . | . | + | + | . |
| <i>Oenothera pubescens</i> (<i>O. laciniata</i>) | OEPU | 10 | . | . | . | . | . | . | . | . | + | + | . |
| <i>Oenothera rosea</i> | OERO | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Oenothera villosa</i> (<i>O. strigosa</i>) | OEVI | 1 | . | . | . | . | . | . | . | . | . | + | . |
| <i>Oreoxis alpina</i> | ORAL | 8 | . | + | . | . | . | + | . | . | . | . | . |
| <i>Oreoxis bakeri</i> | ORBA | 3 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Oreochrysum parryi</i> (<i>Haplopappus parryi</i> ; <i>Solidago parryi</i>) | ORPA | 459 | + | + | + | + | + | + | + | + | . | . | . |
| <i>Orobanche cooperi</i> (<i>O. ludoviciana</i> var. <i>cooperi</i>) | ORCO | 4 | . | . | . | . | . | + | + | . | . | + | . |
| <i>Orobanche fasciculata</i> | ORFA | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Orobanche multiflora</i> | ORMU | 16 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Orobanche</i> sp. | OROBAN | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Orthocarpus luteus</i> | ORLU | 3 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Orthocarpus purpureo-albus</i> | ORPU | 4 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Osmorhiza chilensis</i> | OSCH | 9 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Osmorhiza depauperata</i> (<i>O. obtusa</i>) | OSDE | 302 | + | + | + | + | + | . | . | . | . | . | + |
| <i>Oxalis</i> spp. | OXALIS | 14 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Oxalis decaphylla</i> (<i>O. grayi</i>) | OXDE | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Oxalis metcalfei</i> (<i>O. alpina</i>) | OXME | 98 | . | + | + | + | + | . | . | . | . | . | + |
| <i>Oxalis violacea</i> | OXVI | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Oxybaphus</i> spp. | OXYBAP | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Oxybaphus comatus</i> (<i>Mirabilis comatus</i>) | OXCO | 8 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Oxybaphus linearis</i> (<i>Mirabilis linearis</i>) | OXLI | 28 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Oxybaphus pumilis</i> (<i>Mirabilis pulmilia</i>) | OXPU | 2 | . | . | . | . | . | . | . | . | . | . | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | | |
|--|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | | |
| <i>Oxypolis fendleri</i> | OXFE | 31 | . | + | + | + | . | . | . | . | . | . | . | . | . |
| <i>Oxytropis</i> spp. | OXYTRO | 4 | . | . | . | . | + | . | . | + | . | . | . | . | . |
| <i>Oxytropis lambertii</i> | OXLA | 68 | . | . | . | + | + | . | + | + | + | + | . | . | . |
| <i>Oxytropis sericea</i> | OXSE | 1 | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Parnassia fimbriata</i> | PAFI | 2 | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Parthenocissus</i> spp. | PARTHE | 3 | . | . | . | . | . | + | . | . | + | . | . | . | . |
| <i>Pedicularis</i> spp. | PEDICU | 19 | . | . | + | . | + | . | + | + | . | . | . | . | . |
| <i>Pedicularis angustifolia</i> (<i>P. angustissima</i>) | PEAN | 11 | . | . | + | + | + | . | . | . | . | . | . | . | . |
| <i>Pedicularis canadensis</i> | PECAN | 2 | . | . | + | . | + | . | . | . | . | . | . | . | . |
| <i>Pedicularis centranthera</i> | PECE | 97 | . | . | . | . | . | + | . | + | + | . | . | . | . |
| <i>Pedicularis bracteosa</i> | PEDBR | 11 | . | + | + | . | . | . | . | . | . | . | . | . | . |
| <i>Pedicularis grayi</i> | PEGR | 65 | . | + | + | + | + | . | + | . | . | . | . | . | . |
| <i>Pedicularis groenlandica</i> | PEGRO | 1 | . | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Pedicularis racemosa</i> | PERA | 102 | . | + | + | + | + | . | . | . | . | . | . | . | . |
| <i>Pelleae</i> spp. | PELLEA | 3 | . | . | . | . | . | . | . | . | + | + | . | . | . |
| <i>Pellaea atropurpurea</i> | PEAT | 10 | . | . | . | . | . | + | . | + | + | . | + | . | . |
| <i>Pellaea wrightiana</i> | PEWR | 3 | . | . | . | . | . | . | . | . | . | + | . | + | . |
| <i>Penstemon</i> spp. | PENSTE | 257 | . | + | + | + | + | . | + | + | + | . | + | . | . |
| <i>Penstemon barbatus</i> | PEBA | 328 | + | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Penstemon bridgesii</i> | PEBR | 20 | . | + | + | . | + | . | + | + | . | . | . | . | . |
| <i>Penstemon eatoni</i> | PEEA | 1 | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Penstemon griffinii</i> (<i>P. oliganthus</i>) | PEGRI | 34 | . | + | . | . | + | . | + | + | . | . | . | . | . |
| <i>Penstemon linarioides</i> | PELI | 104 | . | . | . | . | . | + | . | + | + | . | . | . | . |
| <i>Penstemon pinifolius</i> | PEPI | 12 | . | . | . | . | . | . | + | . | + | + | . | . | . |
| <i>Penstemon pseudospectabilis</i> | PEPS | 3 | . | . | . | . | . | . | . | . | . | . | + | . | + |
| <i>Penstemon strictus</i> | PEST | 1 | . | . | . | . | . | + | . | . | . | . | . | . | . |
| <i>Penstemon virgatus</i> | PEVI | 115 | + | . | + | + | + | . | + | + | + | . | + | . | . |
| <i>Penstemon virgatus</i> var. <i>ariz.</i> (<i>P. deaveri</i>) | PEVIAR | 4 | . | . | + | . | + | . | + | + | . | . | . | . | . |
| <i>Penstemon virens</i> | PENVI | 3 | . | . | . | . | . | . | . | . | . | + | + | . | . |
| <i>Penstemon whippleanus</i> | PEWH | 30 | + | + | + | + | + | . | + | + | . | + | . | . | + |
| <i>Perezia</i> spp. | PEREZI | 1 | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Pericome caudata</i> | PECAU | 6 | . | . | . | + | + | . | + | . | . | . | . | . | . |
| <i>Perityle ciliata</i> | PECI | 3 | . | . | . | . | . | . | . | . | . | + | + | . | . |
| <i>Petalostemon</i> spp. | PETALO | 2 | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Petalostemon pupureum</i> (<i>Dalea purpurea</i>) | DAPU | 8 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Petasites sagittata</i> | PESA | 4 | . | . | + | + | . | . | . | . | . | . | . | . | . |
| <i>Petrophytum caespitosum</i> | PETCA | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Phacelia</i> spp. | PHACEL | 26 | + | . | + | + | + | . | + | + | . | + | . | . | + |
| <i>Phacelia heterophylla</i> | PHHE | 18 | . | + | . | + | + | . | + | + | . | + | . | . | . |
| <i>Phacelia ivesiana</i> | PHIV | 2 | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Phacelia magellanica</i> | PHMA | 7 | . | + | . | + | + | . | + | . | . | . | . | . | . |
| <i>Phacelia neomexicana</i> | PHNE | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Phaseolus</i> spp. | PHASEO | 13 | . | . | . | . | . | . | . | . | . | . | + | + | + |
| <i>Phaseolus acutifolius</i> | PHAC | 2 | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Phaseolus angustissimus</i> | PHAN | 2 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Phaseolus grayanus</i> | PHGR | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Phaseolus metcalfei</i> | PHME | 9 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Phaseolus parvulus</i> | PHPA | 7 | . | . | . | . | . | . | . | . | . | . | + | + | . |
| <i>Phaseolus wrightii</i> | PHWR | 11 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Phlox</i> spp. | PHLOX | 63 | . | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Phlox amabilis</i> | PHAM | 2 | . | . | . | . | . | . | . | . | . | . | . | . | + |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | |
| <i>Phlox condensata</i> (<i>P. caespitosa</i>) | PHCON | 3 | + | + | . | . | . | . | . | . | . | . | . |
| <i>Phlox nana</i> | PHNA | 6 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Phlox woodhousei</i> (<i>P. speciosa</i> ssp. <i>woodhousei</i>) | PHWO | 5 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Physalis virginiana</i> var. <i>sonorae</i> (<i>P. longiflora</i>) | PHVI | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Plantago</i> spp. | PLANTA | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Plantago major</i> | PLMA | 2 | . | . | . | + | . | . | . | . | . | . | + |
| <i>Plantago patagonica</i> (<i>P. purshii</i>) | PLPA | 12 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Plummera floribunda</i> | PLFL | 7 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Polemonium</i> spp. | POLEMO | 12 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Polemonium foliosissimum</i> | POFO | 17 | . | . | + | + | + | . | + | + | . | . | . |
| <i>Polemonium pulcherrimum</i> | POPU | 81 | + | + | + | . | . | . | . | . | . | . | . |
| <i>Polemonium viscosum</i> | POVI | 8 | + | . | + | . | . | + | + | . | . | . | . |
| <i>Polygala</i> spp. | POLYGA | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Polygala alba</i> | POAL | 8 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Polygala obscura</i> | POOB | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Polygala longa</i> | POLO | 45 | . | . | . | . | . | + | . | . | . | + | + |
| <i>Polygonum</i> spp. | POLYGO | 1 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Polygonum sawatchensis</i> | POSA | 191 | . | . | . | + | + | . | + | + | . | . | + |
| <i>Potentilla</i> spp. | POTENT | 50 | + | + | + | + | . | . | + | + | . | . | . |
| <i>Potentilla concinna</i> | POCON | 3 | . | + | . | . | . | . | . | . | . | . | + |
| <i>Potentilla crinita</i> | POCR | 71 | . | . | . | . | . | . | + | . | . | + | . |
| <i>Potentilla diversifolia</i> | PODI | 7 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Potentilla gracilis</i> v <i>pulcher</i> (<i>P. pulcherrima</i>) | POGR | 86 | + | + | + | + | . | . | + | + | . | . | . |
| <i>Potentilla hippiana</i> | POHI | 124 | + | + | + | + | . | . | + | + | . | . | . |
| <i>Potentilla norvegica</i> | PONO | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Potentilla pennsylvanica</i> | POPE | 9 | + | . | . | + | + | . | . | . | . | . | . |
| <i>Potentilla subviscosa</i> | POSU | 15 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Potentilla anserina</i> | POTAN | 1 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Potentilla thurberi</i> | POTH | 20 | . | + | . | + | + | . | + | . | . | . | . |
| <i>Primula ellisiae</i> | PREL | 8 | . | . | . | . | . | . | + | + | . | . | . |
| <i>Primula parryi</i> | PRPA | 8 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Prunella vulgaris</i> | PRVU | 23 | . | + | + | + | + | . | . | . | . | . | + |
| <i>Pseudostellaria jamesiana</i> (<i>Stellaria jamesiana</i>) | PSJA | 66 | + | + | + | + | . | . | + | + | . | . | . |
| <i>Pseudocymopterus montanus</i> | PSMO | 842 | + | + | + | + | . | . | + | + | + | + | + |
| <i>Psoralea tenuiflora</i> | PSTE | 36 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Pterospora andromedea</i> | PTAND | 54 | . | + | + | + | . | . | + | + | . | . | . |
| <i>Pteridium aquilinum</i> | PTAQ | 216 | . | + | + | + | + | . | + | + | . | . | + |
| <i>Pulsatilla patens</i> | PUPA | 35 | + | . | . | + | + | . | + | + | . | . | . |
| <i>Pyrola</i> spp. | PYROLA | 2 | . | . | . | . | . | . | . | . | . | . | + |
| <i>Pyrola asarifolia</i> | PYAS | 30 | . | + | + | + | + | . | . | . | . | . | . |
| <i>Pyrola chlorantha</i> (<i>P. virens</i>) | PYCH | 155 | . | + | + | + | + | . | + | + | . | . | + |
| <i>Pyrola minor</i> | PYMI | 4 | . | + | + | . | . | . | . | . | . | . | . |
| <i>Pyrola picta</i> | PYPI | 40 | . | + | + | + | + | . | + | + | . | . | + |
| <i>Ramischia secunda</i> (<i>Orthilia secunda</i> ; <i>Pyrola secunda</i>) | ORSE | 344 | + | + | + | + | . | . | + | . | . | . | . |
| <i>Ranunculus</i> spp. | RANUNC | 7 | . | + | + | + | . | . | . | . | . | . | + |
| <i>Ranunculus aquatilis</i> (<i>Batrachium trichophyllum</i>) | RAAQ | 1 | . | . | . | . | . | . | . | . | . | . | . |

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|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 1 |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | |
| <i>Ranunculus alismaefolius</i> | RAAL | 2 | . | . | + | . | . | . | . | . | . | . | . | . |
| <i>Ranunculus cardiophyllus</i> | RACA | 1 | . | . | . | . | + | . | . | . | . | . | . | . |
| <i>Ranunculus eschscholtzii</i> | RAES | 7 | . | + | + | . | . | . | . | . | . | . | . | . |
| <i>Ranunculus hydrocharoides</i> | RAHY | 1 | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Ranunculus inamoenus</i> | RAIN | 9 | . | . | + | + | + | . | + | + | . | . | . | . |
| <i>Ranunculus macounii</i> | RAMA | 2 | . | . | . | + | . | . | . | . | . | . | . | . |
| <i>Ranunculus uncinatus</i> | RAUN | 2 | . | . | + | . | . | . | . | . | . | . | . | . |
| <i>Ratibida columnaris</i> | RACO | 3 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Rhodiola integrifolia</i> (<i>Sedum rosea</i>) | RHIN | 14 | + | + | + | . | . | . | + | . | . | . | . | . |
| <i>Rudbeckia hirta</i> | RUHI | 6 | . | . | . | + | . | . | . | . | + | . | . | . |
| <i>Rudbeckia laciniata</i> | RULA | 21 | . | . | + | + | + | . | . | . | + | . | . | + |
| <i>Acetosella vulgaris</i> (<i>Rumex acetocella</i>) | ACVU | 4 | . | . | . | + | . | . | . | . | . | . | . | + |
| <i>Rumex crispus</i> | RUCR | 2 | . | . | . | + | . | . | . | . | . | . | . | + |
| <i>Rumex occidentalis</i> | RUOC | 3 | . | . | . | + | . | . | . | . | . | . | . | + |
| <i>Salsola kali</i> | SAKA | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Salvia arizonica</i> | SAAR | 4 | . | . | . | . | . | . | . | + | + | . | . | . |
| <i>Salvia davidsonii</i> | SADA | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Salvia lemmoni</i> | SALE | 2 | . | . | . | . | . | . | . | . | . | . | + | + |
| <i>Saxifraga bronchialis</i> | SABR | 51 | + | + | + | + | + | + | + | + | + | . | . | . |
| <i>Saxifraga eriophora</i> | SAER | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Saxifraga odontoloma</i> | SAOD | 9 | . | + | + | . | . | . | . | . | . | . | . | . |
| <i>Saxifraga rhomboidea</i> | SARH | 9 | + | + | . | . | + | . | . | . | + | . | . | . |
| <i>Saxifraga</i> spp. | SAXIFR | 11 | . | + | + | . | . | + | . | . | + | . | . | . |
| <i>Scrophularia parviflora</i> | SCPA | 18 | . | . | + | . | . | + | . | + | + | + | + | + |
| <i>Scutellaria</i> spp. | SCUTEL | 1 | . | . | . | . | + | . | . | . | . | . | . | . |
| <i>Sedum</i> spp. | SEDUM | 30 | . | + | + | + | + | . | + | + | . | . | . | . |
| <i>Sedum cockerellii</i> | SECO | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Sedum griffthsii</i> | SEDGR | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Sedum lanceolatum</i> (<i>S. stenopetalum</i>) | SELA | 27 | + | + | + | . | . | + | + | + | + | . | . | . |
| <i>Senecio</i> spp. | SENECI | 19 | . | . | + | + | + | . | + | + | . | . | . | . |
| <i>Senecio actinella</i> | SEAC | 43 | . | . | . | . | . | + | . | + | + | . | . | . |
| <i>Senecio arizonica</i> | SEAR | 2 | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Senecio atratus</i> | SEAT | 10 | + | + | + | . | . | . | . | . | . | . | . | . |
| <i>Senecio cardamine</i> | SECA | 43 | . | + | + | + | + | . | + | . | . | . | . | . |
| <i>Senecio crocatus</i> | SECR | 1 | . | . | + | . | . | . | . | . | . | . | . | . |
| <i>Senecio cynthioides</i> | SECY1 | 25 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Senecio dimorphophyllus</i> | SEDI | 1 | . | . | + | . | . | . | . | . | . | . | . | . |
| <i>Senecio douglasii</i> | SEDO | 1 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Senecio eremophilus</i> | SEER | 53 | . | . | + | + | + | . | + | + | . | + | . | . |
| <i>Senecio fendleri</i> | SEFE | 110 | + | + | + | + | + | + | + | + | . | . | . | . |
| <i>Senecio hartianus</i> | SEHA | 16 | . | . | . | + | + | . | + | + | . | . | . | . |
| <i>Senecio integerrimus</i> | SEIN | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Senecio lemmoni</i> | SELE | 2 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Senecio macdougali</i> (<i>S. eremophilus</i> var. <i>macdougali</i>) | SEMA | 16 | . | . | + | + | + | . | + | . | . | . | . | . |
| <i>Senecio multilobatus</i> | SEMU | 71 | . | . | . | . | . | . | . | . | . | . | + | . |
| <i>Senecio neomexicanus</i> | SENE | 563 | + | + | + | + | + | . | + | + | + | + | + | + |
| <i>Senecio neomexicanus</i> var. <i>mut.</i> (<i>S. mutabilis</i>) | SENEMU | 19 | . | . | + | + | + | . | + | + | . | . | . | . |
| <i>Senecio quaerens</i> | SEQU | 8 | . | . | . | + | + | . | . | . | . | . | . | + |
| <i>Senecio sanguisorboides</i> | SESA | 27 | . | + | + | + | + | . | . | . | . | . | . | . |
| <i>Senecio sacramentanus</i> | SESAC | 14 | . | . | . | + | + | . | + | . | . | . | . | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | | | |
|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | | | | |
| <i>Senecio serra</i> | SESE | 10 | . | . | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Senecio spartioides</i> | SESP | 3 | . | . | . | . | . | . | . | . | . | . | + | + | . | . |
| <i>Senecio streptanthifolius</i> (<i>S. cymbalarioides</i>) | SEST | 28 | . | + | + | + | + | . | . | . | . | . | . | . | . | . |
| <i>Senecio triangularis</i> | SETR | 16 | . | + | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Senecio wootoni</i> | SEWO | 328 | . | + | + | + | + | . | + | + | . | + | + | . | + | + |
| <i>Sibbaldia procumbers</i> | SIPR | 14 | . | + | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Sidalcea neomexicana</i> | SINE | 8 | . | . | . | + | + | . | . | + | . | . | . | . | . | . |
| <i>Silene</i> spp. | SILENE | 14 | . | + | . | + | + | . | + | . | . | . | . | . | . | . |
| <i>Silene acaulis</i> | SIAC | 3 | + | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Silene antirrhina</i> | SIAN | 1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Silene laciniata</i> | SILA | 71 | . | . | . | + | + | . | + | + | + | . | . | . | . | . |
| <i>Silene menziesii</i> | SIME | 21 | . | + | + | + | + | . | + | + | . | . | . | . | . | . |
| <i>Silene scouleri</i> | SISC | 87 | + | + | + | + | + | . | + | + | . | . | . | . | . | . |
| <i>Sisymbrium altissimum</i> | SIAL | 10 | . | . | . | . | . | . | . | . | . | + | + | . | . | + |
| <i>Sisyrinchium angustifolium</i> (<i>S. demissum</i>) | SIANG | 4 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Sisyrinchium arizonicum</i> | SIAR | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Sisymbrium</i> spp. | SISYMB | 33 | . | . | . | . | . | . | . | . | . | . | + | + | . | . |
| <i>Sisymbrium irio</i> | SIIR | 7 | . | . | . | . | . | . | . | . | . | . | + | . | . | . |
| <i>Smilacina racemosa</i> | SMRA | 299 | . | + | + | + | + | . | + | + | . | + | . | . | . | + |
| <i>Smilacina stellata</i> | SMST | 318 | + | + | + | + | + | . | + | + | . | + | . | . | . | + |
| <i>Solanum</i> spp. | SOLAN | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Solidago</i> spp. | SOLIDA | 167 | + | + | + | + | + | + | + | + | + | + | . | + | . | + |
| <i>Solidago altissima</i> | SOAL | 5 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Solidago canadensis</i> | SOCA | 4 | . | . | . | + | + | . | . | . | . | . | + | . | . | . |
| <i>Solidago missouriensis</i> | SOMI | 17 | . | . | . | + | + | . | + | . | . | . | . | . | . | . |
| <i>Solidago miss. var. extraria</i> | SOMIEX | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Solidago sparsiflora</i> | SOSP | 267 | . | . | . | + | + | . | + | + | . | + | + | + | + | . |
| <i>Solidago spathulata</i> var. <i>nana</i> | SOSPNA | 4 | . | + | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Solidago spathulata</i> var. <i>neomexicana</i> (<i>S. decumbens</i>) | SOSPNE | 46 | + | . | + | + | + | + | + | + | . | . | . | . | . | . |
| <i>Solidago wrightii</i> | SOWR | 44 | . | . | . | . | . | . | . | . | . | . | + | + | + | + |
| <i>Sonchus asper</i> | SOAS | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| <i>Sphaeralcea fendleri</i> | SPFE | 5 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Sphaeralcea grossulariaefolia</i> | SPGR | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Sphaeralcea coccinea</i> | SPHAER | 25 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Spiranthes parasitica</i> | SPPA | 2 | . | . | . | + | . | . | . | . | . | . | . | . | . | . |
| <i>Stachys coccinea</i> | STCOC | 7 | . | . | . | + | + | . | . | . | . | . | + | . | . | . |
| <i>Stachys palustris</i> | STPA | 3 | . | . | . | + | + | . | . | . | . | . | . | . | . | . |
| <i>Stellaria</i> spp. | STELLA | 26 | + | + | + | + | + | . | + | + | . | + | + | . | . | . |
| <i>Stellaria longipes</i> (<i>S. laeta</i>) | STLA | 17 | . | + | + | + | + | . | . | . | . | . | + | . | . | . |
| <i>Stellaria longifolia</i> | STLO1 | 26 | . | . | + | + | + | . | + | . | . | . | . | . | . | . |
| <i>Stellaria umbellata</i> | STUM | 14 | . | + | + | . | . | . | + | . | . | . | . | . | . | . |
| <i>Stephanomeria exigua</i> | STEX | 2 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Stevia</i> spp. | STEVIA | 13 | . | . | . | . | . | . | . | . | . | . | + | + | . | . |
| <i>Stevia plummerae</i> | STPL | 6 | . | . | . | . | . | . | . | . | . | . | . | + | + | + |
| <i>Stevia serrata</i> | STSE | 10 | . | . | . | . | . | . | . | . | . | . | . | + | + | + |
| <i>Streptopus amplexifolius</i> | STAM | 46 | . | + | + | . | . | . | + | . | . | . | . | . | . | . |
| <i>Streptanthus</i> spp. | STREPT | 2 | . | + | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Swertia perennis</i> | SWPE | 2 | . | . | + | . | . | . | . | . | . | . | . | . | . | . |
| <i>Talinum</i> spp. | TALINU | 1 | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| <i>Taraxacum</i> spp. | TARAXA | 44 | . | + | + | + | + | . | + | + | . | + | + | . | . | + |
| <i>Taraxacum laevigatum</i> | TALA | 3 | . | . | . | + | . | . | . | . | . | . | + | . | . | . |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | |
|---|--------------|-----------|------------|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| ----- FORBS ----- | | | FORBS | | | | | | | | | | |
| <i>Taraxacum officinale</i> | TAOF | 159 | + | + | + | + | + | . | + | + | . | + | |
| <i>Tetradymia canescens</i> | TECA | 4 | . | . | . | . | . | . | . | . | . | + | |
| <i>Teucrium</i> spp. | TEUCRI | 1 | . | . | . | . | . | . | . | . | . | + | |
| <i>Thalictrum fendleri</i> | THFE | 730 | + | + | + | + | + | . | + | + | + | + | |
| <i>Thelypodopsis linearifolia</i> (<i>Sisymbrium linarifolium</i>) | SILI | 92 | . | . | . | . | . | . | + | . | + | + | |
| <i>Thelypodium</i> spp. | THELYP | 1 | . | . | . | . | . | . | . | . | . | + | |
| <i>Thelypodium longifolium</i> (<i>Pennelia longifolia</i>) | THLO | 4 | . | . | . | . | . | . | . | . | . | + | |
| <i>Thelypodium micanthum</i> (<i>Pennelia micranthum</i>) | PEMI | 7 | . | . | . | . | . | . | + | . | . | + | |
| <i>Thelypodium wrightii</i> | THWR | 2 | . | . | . | . | . | . | + | . | . | + | |
| <i>Thelesperma filifolium</i> | THFI | 2 | . | . | . | . | . | . | . | . | . | + | |
| <i>Thelesperma megapotamicum</i> | THME | 9 | . | . | . | . | . | . | . | . | . | + | |
| <i>Thermopsis</i> spp. | THERMO | 2 | + | . | . | . | . | . | . | . | . | + | |
| <i>Thermopsis divaricarpa</i> (<i>T. pinetorum</i>) | THDI | 153 | + | + | + | + | + | . | + | + | + | + | |
| <i>Thermopsis montana</i> | THMO | 8 | + | . | . | . | . | . | . | . | . | . | |
| <i>Thlaspi</i> spp. | THLASP | 29 | . | + | + | + | + | . | . | . | . | . | |
| <i>Thlaspi arvense</i> | THLAR | 3 | . | + | . | . | . | . | . | . | . | . | |
| <i>Thlaspi fendleri</i> | THLFE | 2 | . | . | . | . | . | . | . | . | . | + | |
| <i>Thlaspi montanum</i> (<i>T. fendleri</i>) | THLMO | 145 | + | + | + | + | + | . | + | + | + | + | |
| <i>Townsendia</i> spp. | TOWNSE | 3 | . | . | . | . | . | . | . | . | . | + | |
| <i>Townsendia eximia</i> | TOEX | 19 | . | . | . | . | . | . | . | . | . | + | |
| <i>Townsendia exscapa</i> | TOEXS | 4 | . | . | . | . | . | . | . | . | . | + | |
| <i>Townsendia formosa</i> | TOFO | 32 | . | + | + | + | + | . | . | . | . | . | |
| <i>Tradescatia pinetorum</i> | TRAPI | 20 | . | . | . | . | . | . | . | . | . | + | |
| <i>Tradescantia occidentalis</i> | TROC | 1 | . | . | . | . | . | . | . | . | . | + | |
| <i>Tragopogon</i> spp. | TRAGOP | 43 | . | . | . | . | . | . | . | . | . | + | |
| <i>Tragopogon dubius</i> | TRADU | 24 | . | . | . | . | . | . | . | . | . | + | |
| <i>Tragopogon pratensis</i> | TRAPR | 2 | . | . | . | . | . | . | . | . | . | + | |
| <i>Tragia stylaris</i> (<i>T. ramosa</i>) | TRST | 41 | . | . | . | . | . | . | . | . | . | + | |
| <i>Trautvetteria carolinensis</i> (<i>T. grandis</i>) | TRCA | 12 | . | + | + | + | . | . | . | . | . | . | |
| <i>Trifolium</i> spp. | TRIFOL | 28 | . | + | + | + | + | . | . | . | . | . | |
| <i>Trifolium brandegei</i> | TRBR | 4 | . | + | . | . | . | . | . | . | . | . | |
| <i>Trifolium dasyphyllum</i> | TRDA | 9 | + | + | + | + | . | . | . | . | . | . | |
| <i>Trifolium dubium</i> | TRDU | 19 | . | . | . | . | . | . | . | . | . | + | |
| <i>Trifolium neurophyllum</i> (<i>T. longipes</i>) | TRNE | 6 | . | . | . | . | . | . | . | . | . | + | |
| <i>Trifolium parryi</i> | TRPA | 1 | . | . | . | . | . | . | . | . | . | + | |
| <i>Trifolium rusbyi</i> | TRRU | 2 | . | . | . | . | . | . | . | . | . | + | |
| <i>Trifolium subcaulescens</i> | TRSU | 1 | . | . | . | . | . | . | . | . | . | + | |
| <i>Trifolium wormskjoldii</i> | TRWO | 1 | . | . | . | . | . | . | . | . | . | + | |
| <i>Trollis laxis</i> | TRLA | 11 | . | + | + | . | . | . | . | . | . | . | |
| <i>Urtica</i> spp. | URTICA | 11 | . | . | . | . | . | . | . | . | . | + | |
| <i>Valeriana</i> spp. | VALERI | 24 | . | + | + | + | . | . | . | . | . | . | |
| <i>Valeriana arizonica</i> | VAAR | 3 | . | . | . | . | . | . | . | . | . | + | |
| <i>Valeriana capitata</i> ssp. <i>acutiloba</i> | VACA | 89 | . | + | + | + | + | . | . | . | . | + | |
| <i>Valeriana edulis</i> | VAED | 19 | + | + | . | . | . | . | . | . | . | . | |
| <i>Veratrum californicum</i> | VECA | 18 | . | + | + | + | . | . | . | . | . | + | |
| <i>Verbena</i> spp. | VERBEN | 3 | . | . | . | . | . | . | . | . | . | + | |
| <i>Verbena ambrosiifolia</i> | VEAM | 3 | . | . | . | . | . | . | . | . | . | + | |

| SPECIES NAME | SPECIES CODE | NO OF OBS | SERIES NO. | | | | | | | | | | | | | | | | | | |
|---|-----------------|--------------|---------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | | | | | | | | |
| FORBS | | | FORBS | | | | | | | | | | | | | | | | | | |
| <i>Verbena bipinnatifida</i> | VEBI | 11 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Verbesina longifolia</i> | VELO | 5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Verbena macdougalii</i> | VEMA | 5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Verbena neomexicana</i> | VEVE | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Verbascum thapsus</i> | VETH | 47 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Verbena wrightii</i> | VEWR | 9 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Veronica</i> spp. | VERONI | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Veronica peregrina</i> | VEPE | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Veronica serphyllifolia</i> | VESE | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Veronica wormskjoldii</i> | VEWO | 14 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Vicia</i> spp. | VICIA | 19 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Vicia americana</i> | VIAM | 505 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Vicia leucophaea</i> | VILE | 10 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Vicia ludoviciana</i> var. <i>texana</i> (<i>V. exigua</i>) | VILU | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Vicia pulchella</i> | VIPU | 82 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Vicia villosa</i> | VIVI | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viguiera</i> spp. | VIGUIE | 64 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viguiera annua</i> | VIAN | 5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viguiera cordifolia</i> | VICO | 7 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viguiera dentata</i> | VIDE | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viguiera multiflora</i> (<i>Heliomeris multiflora</i>) | VIMU | 116 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viola</i> spp. | VIOLA | 7 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viola adunca</i> | VIAD | 37 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viola canadensis</i> | VICA | 397 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Viola nephrophylla</i> | VINE | 13 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Woodsia</i> spp. | WOODSI | 26 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Woodsia mexicana</i> | WOME | 6 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Woodsia oregana</i> | WOOR | 2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Wyethia amplexicaulis</i> | WYAM | 4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Wyethia arizonica</i> | WYAR | 6 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Zygadenus</i> spp. | ZYGADE | 51 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Zygadenus elegans</i> (<i>Anticlea elegans</i>) | ZYEL | 117 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| <i>Zygadenus virescens</i> | ZYVI | 5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

APPENDIX B

Consolidated Series Stand Tables

There are 11 consolidated series stand tables for southwestern habitat types, one for each climax tree series. Below we provide an example of the tables using the *Picea engelmannii* series. To output the set of tables in their complete form, follow the instructions given in "Creating a Stand Table" using the parameter files as given on floppy disk. The complete set of tables is also archived at the Rocky Mountain Experiment Station library, 240 W. Prospect Road, Fort Collins, CO 80526.

At the beginning of each table is a list of habitat types included for that series and the associated habitat type and phase numbers. The tables are presented with plots going across the page and species observations going down. The first three lines are the habitat type and phase numbers (read vertically), corresponding to the above list of habitat types. Plots are identified by a five-digit code of the Principal Investigator responsible for the plot, the general Geographic Location, and the Plot Number assigned by the principal investigation (also read vertically).

The Principal Investigator codes are:

| <u>Code</u> | <u>Principal investigator</u> |
|-------------|-------------------------------|
| A | Alexander, Billy G. |
| E | Muldavin, Esteban H. |
| F | Fitzhugh, E. Lee |
| D | DeVelice, Robert L. |
| L | Ludwig, John A. |
| M | Moir, William H. |
| W | White, Alan S. |

The Geographic Location codes are:

| <u>Code</u> | <u>Location</u> |
|-------------|---|
| C | Cibola National Forest, central New Mexico. |
| G | Gila National Forest, southwestern New Mexico, Apache National Forest, eastern Arizona. |

| | |
|---|---|
| H | Hualapai Indian Reservation, northwest Arizona. |
| K | Coronado National Forest, southeastern Arizona. |
| L | Lincoln National Forest, south-central New Mexico. |
| M | Mogollon Plateau, including the Coconino, Apache-Sitgreaves, and Kaibab National Forests of northern Arizona. |
| N | Northern New Mexico and southern Colorado, including the Santa Fe, Carson, San Isabel, San Juan, and Rio Grande National Forests. |
| P | Prescott National Forest, west-central Arizona. |
| S | San Carlos Indian Reservation, central Arizona. |
| T | Tonto National Forest, central Arizona. |
| W | Fort Apache Indian Reservation (White River), east-central Arizona. |

Density (stems per 375 m²) and percent cover values for species observations have been converted into 1-column scalars as follows:

| <u>Density conversion</u> | | | <u>Percent cover conversion</u> | | |
|---------------------------|-------------------|-------|---------------------------------|-------------------|-----------|
| <u>Table scalar</u> | <u>Data value</u> | | <u>Table scalar</u> | <u>Data value</u> | |
| + | = 1 | stem | P | = + 0 | (present) |
| 1 | = 2 | stems | + | = < 1 | % |
| 2 | = 3-4 | stems | 1 | = 1-4 | % |
| 3 | = 5-9 | stems | 2 | = 5-24.9 | % |
| 4 | = 10-20 | stems | 3 | = 25-49.9 | % |
| 5 | = 21-40 | stems | 4 | = 50-74.9 | % |
| 6 | = 41-60 | stems | 5 | = 75-100 | % |
| 7 | = 61-80 | stems | | | |
| 8 | = 81-99 | stems | | | |
| 9 | = 100 or more | | | | |

APPENDIX C

Consolidated Series Site Characteristics Tables

There are 11 consolidated series site characteristics tables for southwestern habitat types, one for each climax tree series (tables C.1—C.11). Each series table contains subtables for each habitat type within the series. Each subtable gives the habitat type name and number and contains site information on individual plots with the habitat type. Plots are identified by a five-digit code of the Principal Investigator responsible for the plot, the general Geographic Location, and the Plot Number assigned by the principal investigator.

The Principal Investigator codes are:

| Code | Principal investigator |
|------|------------------------|
| A | Alexander, Billy G. |
| E | Muldavin, Esteban H. |
| F | Fitzhugh, E. Lee |
| D | DeVelice, Robert L. |
| L | Ludwig, John A. |
| M | Moir, William H. |
| W | White, Alan S. |

The Geographic Location codes are:

| Code | Location |
|------|---|
| C | Cibola National Forest, central New Mexico. |
| G | Gila National Forest, southwestern New Mexico, Apache National Forest, eastern Arizona. |
| H | Hualapai Indian Reservation, northwest Arizona. |
| K | Coronado National Forest, southeastern Arizona. |
| L | Lincoln National Forest, south-central New Mexico. |
| M | Mogollón Plateau, including the Coconino, Apache-Sitgreaves, and Kaibab National Forests of northern Arizona. |

| | |
|---|---|
| N | Northern New Mexico and southern Colorado, including the Santa Fe, Carson, San Isabel, San Juan, and Rio Grande National Forests. |
| P | Prescott National Forest, west-central Arizona. |
| S | San Carlos Indian Reservation, central Arizona. |
| T | Tonto National Forest, central Arizona. |
| W | Fort Apache Indian Reservation (White River), east-central Arizona. |

Site characteristics, given as provided by the original principal investigators, include:

1. Geographic locale—the approximate location of the plot.
2. USGS topographic quadrangle along with township, range, section, and quarter section location, if given.
3. Elevation—meters and feet.
4. Percent slope.
5. Aspect—degrees azimuth, and a cosine conversion of azimuth where 2.0 = northeast (coolest) and 0.0 = southwest (warmest).
6. Land form code as follows:

| | |
|-----------------|-----------------|
| 0 = plateau | 4 = lower slope |
| 1 = ridge | 5 = bench |
| 2 = upper slope | 6 = streamside |
| 3 = midslope | 7 = other |

Two or more numbers together imply transitions.

7. Percent of plot that is exposed soil.
8. Percent of plot that is covered by rock.
9. Underlying geologic parent material (codes assigned by principal investigator).

TABLE C.2 -- SITE CHARACTERISTICS -- PICEA ENGELMANNII SERIES

PICEA ENGELMANNII/GEUM ROSSII HT
HT NUMBER: 12 PHASE NUMBER: 01

| PLOT NO. | STATE | GEOGRAPHIC LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL |
|----------|-------|------------------|-----------------------------|---------------|-----|-----|-----|-----------|-------|-------|--------|------|-----------|---------|------|-----------------|
| | | | | | | | | (M) | (FT) | (%) | DEG | COS | | SOIL | ROCK | |
| MM347 | AZ | SAN FRAN MTNS | S FRAN AGASSIZ PK | HUMPHREY PEAK | | | | 3598 | 11150 | 55 | 350 | 1.57 | 2 | 0 | 40 | |

PICEA ENGELMANNII/MOSS HT
HT NUMBER: 03 PHASE NUMBER: 01

| PLOT NO. | STATE | GEOGRAPHIC LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL | |
|----------|-------|------------------|-----------------------------|---------------|-----|-----|-----|-----------|-------|-------|--------|------|-----------|---------|------|-----------------|---------|
| | | | | | | | | (M) | (FT) | (%) | DEG | COS | | SOIL | ROCK | | |
| FC937 | NM | MNT. TAYLOR | MT TAYLOR | MNT TAYLOR | 12N | 7W | 19 | SE | 3194 | 10480 | 20 | 322 | 1.12 | 12 | 0 | 0 | ANDESIT |
| AC 11 | NM | MNT TAYLOR | LAMOSCA PEAK | SAN MATEO | 12N | 7W | 20 | NW | 3267 | 10720 | 8 | 18 | 1.89 | 12 | 0 | 7 | BASALT |
| MC731 | NM | SAN MATEO MTS | APACHE KID PEAK | BLUE MOUNTAIN | 8S | 6W | 2 | | 2974 | 9760 | 25 | 280 | 0.43 | 2 | 0 | 4 | |
| MC739 | NM | SAN MATEO MTS | TEEPEE PEAK | BLUE MOUNTAIN | 7S | 6W | 26 | | 3038 | 9970 | 4 | 18 | 1.89 | 1 | 0 | 2 | |
| MC735 | NM | SAN MATEO MTS | WEST BLUE MOUNTAIN | BLUE MOUNTAIN | 7S | 6W | 34 | | 3108 | 10200 | 45 | 0 | 1.71 | 2 | 0 | 1 | |
| EW101 | AZ | WHITE MTS | MT WARREN | | | | | 3243 | 10640 | 4 | 168 | 0.46 | 1 | 0 | 5 | 5 | BASALT |

PICEA ENGELMANNII/VACC. MYRTILLUS/POLE. PULCHERRIMUM HT, PIEN PH
HT NUMBER: 01 PHASE NUMBER: 01

| PLOT NO. | STATE | GEOGRAPHIC LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL | |
|----------|-------|------------------|-----------------------------|----------------|-----|-----|-----|-----------|-------|-------|--------|------|-----------|---------|------|-----------------|---------|
| | | | | | | | | (M) | (FT) | (%) | DEG | COS | | SOIL | ROCK | | |
| MN126 | NM | SANGRE RANGE | GOLD HILL TRAIL | WHEELER PK. | | | | 3505 | 11500 | 5 | 10 | 1.82 | 1 | 0 | 0 | | |
| LN178 | CO | SPANISH PEAKS | 1 MI W BEAR LAKE CG | TRINCHERA PEAK | | | | 3633 | 11920 | 48 | 105 | 1.50 | 2 | 0 | 7 | | |
| MN150 | NM | SANGRE RANGE | NO FISH LAKE BASIN | PECOS FALLS | | | | 3596 | 11800 | 72 | 20 | 1.91 | 2 | 0 | 20 | | |
| MN151 | NM | SANGRE RANGE | CHIMAYOSOS PEAK | PECOS FALLS | | | | 3596 | 11800 | 50 | 225 | 0.00 | 3 | 0 | 15 | | |
| MN127 | NM | SANGRE RANGE | GOLD HILL TRAIL | RED RIVER | | | | 3596 | 11800 | 20 | 103 | 1.53 | 2 | 0 | 0 | | |
| LN 72 | CO | SAN JUAN MTS | ELWOOD PASS SLOPES | ELWOOD PASS | 37N | 1E | 34 | SE | 3590 | 11780 | 19 | 282 | 0.46 | 2 | 0 | 7 | RHYOLIT |
| LN227 | CO | SANGRE RANGE | LAKE COMO | TWIN PEAKS | | | | 3596 | 11800 | 10 | 10 | 1.82 | 3 | 0 | 3 | | |
| MN168 | NM | SANGRE RANGE | N FORK TESUQUE CR. | ASPEN BASIN | | | | 3627 | 11900 | 40 | 310 | 0.91 | 2 | 0 | 6 | | |
| LN192 | CO | WET MTS | CISNEROS CREEK | SAN ISABEL | | | | 3438 | 11280 | 32 | 245 | 0.06 | 3 | 0 | 35 | | |
| LN193 | CO | WET MTS | POLE CREEK TRAIL | SAN ISABEL | | | | 3383 | 11100 | 17 | 350 | 1.57 | 3 | 0 | 1 | | |
| MN 31 | NM | SANGRE RANGE | CERRO VISTA | CERRO VISTA | | | | 3413 | 11200 | 54 | 105 | 1.50 | 2 | 0 | 1 | | |

TABLE C.2 (CONTINUED) -- SITE CHARACTERISTICS -- PICEA ENGELMANNII SERIES

PICEA ENGELMANNII/VACC. MYRTILLUS/POLE. PULCHERRIMUM HT, PIEN PH (CONTINUED)

| PLOT NO. | STATE | GEOGRAPHIC LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL | |
|----------|-------|------------------|-----------------------------|-------------|-----|-----|-----|-----------|-------|-------|--------|------|-----------|---------|------|-----------------|---------|
| | | | | | | | | (M) | (FT) | (%) | DEG | COS | | SOIL | ROCK | | |
| LN224 | CO | SANGRE RANGE | HUERFANO RIVER | BLANCA PEAK | | | | 3340 | 10960 | 35 | 105 | 1.50 | 4 | 1 | 10 | | |
| LN248 | CO | SAN JUAN MTS | SCHINZEL FLATS | ELWOOD PASS | | | | 3529 | 11580 | 13 | 350 | 1.57 | 3 | 1 | 0 | | |
| LN191 | CO | WET MTS | BLUE LAKES | SAN ISABEL | | | | 3450 | 11320 | 14 | 335 | 1.34 | 3 | 0 | 0 | | |
| LN 53 | CO | SAN JUAN MTS | GRAYBACK MT | SUMMITVILLE | 37N | 4E | 10 | NE | 3572 | 11720 | 46 | 95 | 1.64 | 3 | 1 | 2 | ANDESIT |

PICEA ENGELMANNII/VACC. MYRTILLUS/POLE. PULCHERRIMUM HT, ABLA PH
HT NUMBER: 02 PHASE NUMBER: 02

| PLOT NO. | STATE | GEOGRAPHIC LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL | |
|----------|-------|------------------|-----------------------------|----------------|-----|-----|-----|-----------|-------|-------|--------|------|-----------|---------|------|-----------------|---------------|
| | | | | | | | | (M) | (FT) | (%) | DEG | COS | | SOIL | ROCK | | |
| MN 45 | NM | SANGRE RANGE | SERPENT LAKE TRAIL | JICARITA PK | | | | 3520 | 11550 | 20 | 10 | 1.82 | 12 | 0 | 0 | | |
| MN146 | NM | SANGRE RANGE | NO FISH LAKE BASIN | PECOS FALLS | | | | 3535 | 11600 | 28 | 270 | 0.29 | 1 | 0 | 7 | MORaine | |
| MN125 | NM | SANGRE RANGE | GOLD HILL TRAIL | WHEELER PK. | | | | 3438 | 11280 | 38 | 82 | 1.80 | 2 | 0 | 7 | | |
| LN215 | CO | SANGRE RANGE | COMANCHE TRAIL | HORN PEAK | | | | 3352 | 11000 | 46 | 345 | 1.50 | 2 | 0 | 1 | | |
| LN287 | CO | SAN JUAN MTS | WOLF CREEK | WOLF CK PASS | | | | 3108 | 10200 | 42 | 355 | 1.64 | 3 | 0 | 1 | | |
| MN145 | NM | SANGRE RANGE | NO FISH LAKE BASIN | PECOS FALLS | | | | 3499 | 11480 | 37 | 165 | 0.50 | 3 | 0 | 7 | | |
| MN148 | NM | SANGRE RANGE | NO FISH LAKE BASIN | PECOS FALLS | | | | 3474 | 11400 | 28 | 345 | 1.50 | 2 | 0 | 2 | TALUS | |
| LN263 | CO | SAN JUAN MTS | TRUJILLO MEADOWS | CUMBRES | | | | 3255 | 10680 | 48 | 275 | 0.36 | 34 | 0 | 1 | | |
| LN 54 | CO | SAN JUAN MTS | W FORK PINOS CREEK | SUMMITVILLE | 37N | 4E | 4 | SE | 3425 | 11240 | 16 | 10 | 1.82 | 3 | 0 | 7 | RHY-AND TALUS |
| MN149 | NM | SANGRE RANGE | NO FISH LAKE BASIN | PECOS FALLS | | | | 3474 | 11400 | 30 | 315 | 1.00 | 2 | 0 | 7 | TALUS | |
| LN244 | CO | SAN JUAN MTS | S FORK ROCK CREEK | JASPER | | | | 3459 | 11350 | 39 | 75 | 1.87 | 3 | 0 | 5 | | |
| LN250 | CO | SAN JUAN MTS | PLATORO RESERVOIR | PLATORO | | | | 3124 | 10250 | 36 | 20 | 1.91 | 3 | 0 | 7 | | |
| LN220 | CO | SANGRE RANGE | SOUTH COLONY LAKES | CRESTONE PEAK | | | | 3560 | 11680 | 20 | 125 | 1.17 | 2 | 0 | 10 | | |
| LN247 | CO | SAN JUAN MTS | MORSETHIEF PARK | SUMMIT PEAK | | | | 3297 | 10820 | 23 | 240 | 0.03 | 4 | 0 | 7 | | |
| LN177 | CO | SPANISH PEAKS | N FORK PURGATOIRE R | TRINCHERA PEAK | | | | 3310 | 10860 | 30 | 55 | 1.98 | 3 | 0 | 7 | | |
| LN127 | CO | LA PLATA MTNS | SHRKTUOTH TRAIL HD | LA PLATA | 37N | 11W | 20 | NW | 3331 | 10930 | 25 | 15 | 1.87 | 3 | 0 | 7 | GRANITE |
| LN 90 | CO | SAN MIGUEL MTNS | SLP S OF MIDDLE PK | DOLORES PARK | 41N | 11W | 6 | SW | 3389 | 11120 | 23 | 210 | 0.03 | 2 | 0 | 7 | GRANITE |
| LN 76 | CO | SAN JUAN MTS | PASS CK BELOW CAMPO | ELWOOD PASS | 38N | 2E | 2 | SW | 3035 | 9960 | 55 | 1 | 1.72 | 4 | 0 | 0 | ANDESIT |
| LN 93 | CO | SAN MIGUEL MTNS | W FK UP LTL FISH CK | GROUNDHOG MT | 41N | 12W | 18 | NE | 3371 | 11060 | 40 | 20 | 1.91 | 2 | 0 | 7 | GRN-SHL |
| LN163 | CO | SAN JUAN MTS | W SPUR MILLER MT | LEMON RESV | 37N | 7W | 22 | SW | 3304 | 10840 | 37 | 307 | 0.86 | 2 | 2 | 7 | LIMSTON |
| LN160 | CO | SAN JUAN MTS | RUNLETT PARK | VALLECITO RESV | 37N | 6W | 11 | NW | 3255 | 10680 | 40 | 326 | 1.19 | 3 | 0 | 7 | LIM-SHL |
| LN168 | CO | SAN JUAN MTS | CAMP CREEK | MT VIEW CREST | 38N | 8W | 25 | NE | 3297 | 10820 | 65 | 342 | 1.45 | 3 | 0 | 1 | LIMSTON |
| LN115 | CO | LA PLATA MTNS | LITTLE BEAR CK | ORPHAN BUTTE | 38N | 11W | 20 | SW | 3285 | 10780 | 25 | 350 | 1.57 | 1 | 0 | 7 | SANDSTN |
| MN147 | NM | SANGRE RANGE | NO FISH LAKE BASIN | PECOS FALLS | | | | 3474 | 11400 | 42 | 10 | 1.82 | 3 | 0 | 9 | | |
| LN149 | CO | RICO MTNS | BOLAM PASS | HERMOSA PK | 40N | 9W | 19 | SE | 3176 | 10420 | 26 | 85 | 1.77 | 2 | 0 | 2 | QRT-SAN |
| LN211 | CO | SANGRE RANGE | MIDDLE TAYLOR CREEK | ELECTRIC PEAK | | | | 3291 | 10800 | 36 | 350 | 1.57 | 34 | 0 | 15 | | |
| LN216 | CO | SANGRE RANGE | COMANCHE LAKE | HORN PEAK | | | | 3480 | 11420 | 30 | 90 | 1.71 | 3 | 0 | 3 | | |
| LN249 | CO | SAN JUAN MTS | GLOBE CREEK | PLATORO | | | | 3139 | 10300 | 53 | 350 | 1.57 | 4 | 0 | 0 | | |
| LN262 | CO | SAN JUAN MTS | TRUJILLO MEADOWS | CUMBRES | | | | 3243 | 10640 | 48 | 35 | 1.98 | 4 | 0 | 0 | | |
| LN 94 | CO | SAN MIGUEL MTNS | BLACK MESA UP SLPS | GROUNDHOG MT | 41N | 12W | 22 | NW | 3395 | 11140 | 23 | 335 | 1.34 | 2 | 0 | 7 | GRANITE |
| LN136 | CO | LA PLATA MTNS | HIELAND GULCH RV | LA PLATA | 37N | 11W | 35 | NE | 3115 | 10220 | 25 | 245 | 0.06 | 4 | 0 | 7 | GRANITE |
| LN111 | CO | RICO MTNS | HIGHLINE TRAIL | HERMOSA PK | 39N | 10W | 21 | SW | 3285 | 10780 | 50 | 285 | 0.50 | 2 | 1 | 7 | SANDSTN |
| LN147 | CO | RICO MTNS | BOLAM PASS | HERMOSA PK | 40N | 9W | 19 | SE | 3474 | 11400 | 13 | 60 | 1.97 | 2 | 0 | 1 | QRT-SAN |
| LN125 | CO | LA PLATA MTNS | BEAR CK | ORPHAN BUTTE | 37N | 11W | 6 | NW | 3236 | 10620 | 78 | 340 | 1.42 | 23 | 1 | 1 | SANDSTN |

TABLE C.2 (CONTINUEO) -- SITE CHARACTERISTICS -- PICEA ENGELMANNII SERIES

PICEA ENGELMANNII/VACC. MYRTILLUS/POLE. PULCHERRIMUM HT, ABLA PH (CONTINUEO)

| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUAORANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE (%) | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL |
|----------|-------|-----------------|--------------------|--------------------------------|-----|-----|-----|-----|-----------|-------|-----------|--------|------|-----------|---------|------|-----------------|
| | | | | | | | | | (M) | (FT) | | DEG | COS | | SOIL | ROCK | |
| LN 52 | CO | SAN JUAN MTS | NW OF FUCHS RESV | SUMMITVILLE | 37N | 4E | 3 | NE | 3432 | 11260 | 43 | 295 | 0.66 | 34 | T | 1 | RHY-AND |
| LN153 | CO | SAN MIGUEL MTNS | MILL CK | SILVERTON | 42N | 8W | 27 | NE | 3200 | 10500 | 53 | 335 | 1.34 | 4 | 0 | T | QRT-SAN |
| LN116 | CO | LA PLATA MTNS | UP ROUGH CANYON | ORPHAN BUTTE | 38N | 11W | 16 | SW | 3425 | 11240 | 60 | 75 | 1.87 | 34 | 5 | 4 | SANDSTN |
| LN121 | CO | RICO MTNS | UPPER PRIEST GULCH | CLYDE LAKE | 39N | 12W | 1 | SW | 3310 | 10860 | 61 | 115 | 1.34 | 3 | I | 1 | SANOSTN |

PICEA ENGELMANNII/VACCINIUM MYRTILLUS HT
HT NUMBER: 02 PHASE NUMBER: 01

| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUAORANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE (%) | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL |
|----------|-------|---------------|---------------|--------------------------------|-----|-----|-----|-----|-----------|-------|-----------|--------|------|-----------|---------|------|-----------------|
| | | | | | | | | | (M) | (FT) | | DEG | COS | | SOIL | ROCK | |
| MC738 | NM | SAN MATEO MTS | BLUE MOUNTAIN | BLUE MOUNTAIN | 7S | 6W | 35 | | 306 | 1004 | 3 | 235 | 0.02 | 0 | 6 | 0 | 7 |
| MC736 | NM | SAN MATEO MTS | CUB SPRING | BLUE MOUNTAIN | 7S | 6W | 27 | | 2865 | 9400 | 31 | 3 | 1.74 | 7 | 0 | T | |
| MC733 | NM | SAN MATEO MTS | BLUE MOUNTAIN | BLUE MOUNTAIN | | | | | 3093 | 10150 | 60 | 47 | 2.00 | 2 | 0 | 1 | |

PICEA ENGELMANNII/SENECIO CARDAMINE HT, ABIES LASIOCARPA PH
HT NUMBER: 05 PHASE NUMBER: 01

| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUAORANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE (%) | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL |
|----------|-------|------------|---------------------|--------------------------------|-----|-----|-----|-----|-----------|------|-----------|--------|------|-----------|---------|------|-----------------|
| | | | | | | | | | (M) | (FT) | | DEG | COS | | SOIL | ROCK | |
| MG193 | AZ | WHITE MTS | HANNAGAN CR | | | | | | 2779 | 9120 | 23 | 334 | 1.33 | 2 | 0 | T | BASALT |
| MG246 | AZ | WHITE MTS | KP CIENEGA | | | | | | 2804 | 9200 | 27 | 97 | 1.62 | 2 | 0 | 1 | |
| YG184 | AZ | WHITE MTS | E FORK THOMAS CR | | | | | | 2743 | 9000 | 2 | 50 | 2.00 | 1 | T | 0 | BASALT |
| MG187 | AZ | WHITE MTS | HANNAGAN CR | | | | | | 0 | 0 | 0 | 0 | 1.71 | 0 | 0 | 0 | BASALT |
| MG189 | AZ | WHITE MTS | RENO LO ROAD | | | | | | 2804 | 9200 | 15 | 88 | 1.73 | 12 | 0 | 0 | BASALT |
| MG 8 | AZ | WHITE MTS | E FORK THOMAS CR | | | | | | 2743 | 9000 | 8 | 365 | 1.77 | 4 | 0 | 3 | BAS-CIN |
| MG178 | AZ | WHITE MTS | HANNAGAN CR-PBAR TR | | | | | | 2651 | 8700 | 10 | 23 | 1.93 | 6 | 3 | 15 | BASALT |
| MG 9 | AZ | WHITE MTS | E FORK THOMAS CR | | | | | | 2758 | 9050 | 8 | 85 | 1.77 | 1 | 0 | 0 | |

TABLE C.2 (CONTINUEO) -- SITE CHARACTERISTICS -- PICEA ENGELMANNII SERIES

PICEA ENGELMANNII/SENECIO CAROAMINE HT, ABIES CONCOLOR PH
HT NUMBER: 05 PHASE NUMBER: 02

| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUAORANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE (%) | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL |
|----------|-------|-----------------|-------------------|--------------------------------|-----|-----|-----|-----|-----------|------|-----------|--------|------|-----------|---------|------|-----------------|
| | | | | | | | | | (M) | (FT) | | DEG | COS | | SOIL | ROCK | |
| MG543 | NM | MOGOLLON MTS | BEARWALLOW PARK | BEARWALLOW MTN | | | | | 2767 | 9080 | 25 | 294 | 0.64 | 4 | 0 | 15 | BASALT |
| MG198 | AZ | WHITE MTS | W FORK THOMAS CR | | | | | | 2636 | 8650 | 52 | 330 | 1.26 | 4 | 0 | 3 | BASALT |
| MG256 | AZ | WHITE MTS | BEAR CR TRIBUTARY | | | | | | 2682 | 8800 | 42 | 51 | 1.99 | 4 | 0 | 1 | |
| MG182 | AZ | WHITE MTS | E FORK THOMAS CR | | | | | | 2743 | 9000 | 5 | 45 | 2.00 | 1 | T | T | BASALT |
| MG253 | AZ | WHITE MTS | BEAR CR | | | | | | 2590 | 8500 | 46 | 291 | 0.59 | 4 | 0 | 3 | |
| MG199 | AZ | WHITE MTS | W FORK THOMAS CR | | | | | | 2621 | 8600 | 10 | 55 | 1.98 | 6 | 3 | 4 | BASALT |
| MG 3 | AZ | WHITE MOUNTAINS | E FORK THOMAS CR | | | | | | 2590 | 8500 | 6 | 10 | 1.82 | 6 | 5 | 13 | BASALT |
| MG573 | NM | MOGOLLON MTS | TURKEY CREEK | BEARWALLOW MTN | | | | | 2865 | 9400 | 25 | 359 | 1.69 | 3 | 1 | 1 | BASALT |
| MG183 | AZ | WHITE MTS | E FORK THOMAS CR | | | | | | 2743 | 9000 | 13 | 51 | 1.99 | 12 | 0 | 0 | BASALT |
| MG186 | AZ | WHITE MTS | E FORK THOMAS CR | | | | | | 2712 | 8900 | 8 | 55 | 1.98 | 1 | 0 | 0 | BASALT |
| MG190 | AZ | WHITE MTS | RENO LO ROAD | | | | | | 2804 | 9200 | 15 | 198 | 0.11 | 2 | 0 | 0 | BASALT |
| MG181 | AZ | WHITE MTS | E FORK THOMAS CR | | | | | | 2743 | 9000 | 5 | 15 | 1.87 | 1 | 0 | 2 | BASALT |

PICEA ENGELMANNII/ACER GLABRUM HT
HT NUMBER: 06 PHASE NUMBER: 01

| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUAORANGLE | TWN | RNG | SEC | QTR | ELEVATION | | SLOPE (%) | ASPECT | | LAND FORM | % COVER | | PARENT MATERIAL |
|----------|-------|-----------------|--------------------|--------------------------------|-----|-----|-----|-----|-----------|------|-----------|--------|------|-----------|---------|------|-----------------|
| | | | | | | | | | (M) | (FT) | | DEG | COS | | SOIL | ROCK | |
| ML209 | NM | SACRAMENTO MTS | HUBBELL CANYON | ALAMOGOROO | | | | | 2804 | 9200 | 40 | 5 | 1.77 | 4 | 0 | 0 | |
| ML208 | NM | SACRAMENTO MTS | SACRAMENTO RIV CAN | ALAMOGORDDO | | | | | 2712 | 8900 | 62 | 40 | 2.00 | 4 | 0 | 8 | |
| MK406 | AZ | CHIRICAHUA MTNS | CIMA CABIN | CHIRICAHUA PK | | | | | 2773 | 9100 | 47 | 36 | 1.99 | 3 | 0 | 0 | |
| OK 8 | AZ | CHIRICAHUA MTNS | FLY PEAK | CHIRICAHUA PK. | | | | | 2880 | 9450 | 30 | 5 | 1.77 | 3 | 0 | T | RHYOLIT |
| OK 9 | AZ | CHIRICAHUA MTNS | ROUND PARK | CHIRICAHUA PK. | | | | | 2880 | 9450 | 32 | 55 | 1.98 | 3 | T | T | RHYOLIT |
| DK 34 | AZ | CHIRICAHUA MTNS | RASPBERRY RIDGE | CHIRICAHUA PK. | | | | | 2804 | 9200 | 40 | 74 | 1.87 | 2 | T | 5 | RHYOLIT |

TABLE C.2 (CONTINUED) -- SITE CHARACTERISTICS -- PICEA ENGELMANNII SERIES

| PICEA ENGELMANNII/ERIGERON EXIMIUS HT | | | | | | | | | | | | | | | | | |
|---------------------------------------|-------|-----------------|---------------------|-----------------------------|-----|-----|-----|-----|---------------|------------|-----|------------|------|-----------|--------------|------|-----------------|
| HT NUMBER: 10 PHASE NUMBER: 01 | | | | | | | | | | | | | | | | | |
| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION (M) | SLOPE (FT) | (%) | ASPECT DEG | COS | LAND FORM | % COVER SOIL | ROCK | PARENT MATERIAL |
| PLOT E 99 NOT FOUND | | | | | | | | | | | | | | | | | |
| MG540 | NM | MOGOLLON MTS | QUAKING ASPEN CREEK | BEARWALLOW MTN | | | | | 2755 | 9040 | 28 | 10 | 1.82 | 3 | 0 | 6 | |
| MG577 | NM | MOGOLLON MTS | 1 MI S BEARWALLOW | BEARWALLOW MTN | | | | | 2962 | 9720 | 28 | 56 | 1.98 | 2 | 0 | 3 | BASALT |
| MG659 | NM | BLACK RANGE | MIMBRES RIVER | REEDS PEAK | | | | | 2697 | 8850 | 48 | 355 | 1.64 | 4 | 2 | 1 | RHYOLIT |
| MG656 | NM | BLACK RANGE | REEDS PEAK .4 MI N | REEDS PEAK | | | | | 2962 | 9720 | 46 | 10 | 1.82 | 0 | 1 | 2 | |
| MG 80 | AZ | WHITE MOUNTAINS | BIG LAKE LOOKOUT | | | | | | 2758 | 9050 | 7 | 45 | 2.00 | 1 | 2 | T | BASALT |
| MG 81 | AZ | WHITE MOUNTAINS | BIG LAKE LOOKOUT | | | | | | 2749 | 9020 | 13 | 210 | 0.03 | 1 | 0 | T | BASALT |
| MG262 | AZ | WHITE MOUNTAINS | BURRO MOUNTAIN | BIG LAKE | | | | | 2987 | 9800 | 16 | 196 | 0.13 | 3 | T | T | |
| EW 94 | AZ | WHITE MTS | RDY55 S FK SQUAM CK | | | | | | 2462 | 8080 | 20 | 320 | 1.09 | 4 | T | T | BASALT |

| PICEA ENGELMANNII/CAREX FOENEA HT | | | | | | | | | | | | | | | | | |
|-----------------------------------|-------|---------------|-----------------|-----------------------------|-----|-----|-----|-----|---------------|------------|-----|------------|------|-----------|--------------|------|-----------------|
| HT NUMBER: 09 PHASE NUMBER: 01 | | | | | | | | | | | | | | | | | |
| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION (M) | SLOPE (FT) | (%) | ASPECT DEG | COS | LAND FORM | % COVER SOIL | ROCK | PARENT MATERIAL |
| MK400 | AZ | PINALENO MTNS | PLAIN VIEW PEAK | MT. GRAHAM | | | | | 3108 | 10200 | 42 | 194 | 0.14 | 3 | 20 | 6 | GRANITE |
| MK401 | AZ | PINALENO MTNS | PLAIN VIEW PEAK | | | | | | 3108 | 10200 | 25 | 173 | 0.38 | 12 | 0 | 0 | |

| PICEA ENGELMANNII/ELYMUS TRITICOIDES HT | | | | | | | | | | | | | | | | | |
|---|-------|-------------|---------------------|-----------------------------|-----|-----|-----|-----|---------------|------------|-----|------------|------|-----------|--------------|------|-----------------|
| HT NUMBER: 07 PHASE NUMBER: 01 | | | | | | | | | | | | | | | | | |
| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION (M) | SLOPE (FT) | (%) | ASPECT DEG | COS | LAND FORM | % COVER SOIL | ROCK | PARENT MATERIAL |
| ML236 | NM | CAPITAN MTS | MITT-BAR TRAIL | ND60 | | | | | 0 | 0 | 35 | 66 | 1.93 | 12 | 0 | 35 | |
| ML234 | NM | CAPITAN MTS | FR56 .8MI PAST TR60 | | | | | | 0 | 0 | 34 | 217 | 0.01 | 1 | 0 | 30 | |
| ML232 | NM | CAPITAN MTS | CAPITAN MTS | | | | | | 3017 | 9900 | 40 | 324 | 1.16 | 2 | 0 | 10 | |
| ML231 | NM | CAPITAN MTS | CAPITAN MTS | | | | | | 3017 | 9900 | 50 | 75 | 1.87 | 2 | 0 | 58 | |

TABLE C.2 (CONTINUED) -- SITE CHARACTERISTICS -- PICEA ENGELMANNII SERIES

| PICEA ENGELMANNII/HERACLEUM SPONDYLIIUM HT | | | | | | | | | | | | | | | | | |
|--|-------|--------------|--------------------|-----------------------------|-----|-----|-----|-----|---------------|------------|-----|------------|------|-----------|--------------|------|-----------------|
| HT NUMBER: 11 PHASE NUMBER: 01 | | | | | | | | | | | | | | | | | |
| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION (M) | SLOPE (FT) | (%) | ASPECT DEG | COS | LAND FORM | % COVER SOIL | ROCK | PARENT MATERIAL |
| LN157 | CO | NEEDLE MTNS | LIME CK CAMPGROUND | ENGINEER MT | 39N | 8W | 4 | SW | 2761 | 9060 | 1 | 190 | 0.18 | 6 | 1 | T | ALLUVIA |
| LN277 | CO | SAN JUAN MTS | FISH CREEK | CHAMA PEAK | | | | | 2712 | 8900 | 2 | 340 | 1.42 | 6 | 2 | 2 | |
| LN 77 | CO | SAN JUAN MTS | W FORK WOLF CK | WOLF CK PASS | 37N | 1W | 7 | SW | 2502 | 8210 | 4 | 350 | 1.57 | 56 | 0 | 10 | ALLUVIA |

| PICEA ENGELMANNII/SAXIFRAGA BRONCHIALIS HT | | | | | | | | | | | | | | | | | |
|--|-------|-----------------|--------------------|-----------------------------|-----|-----|-----|-----|---------------|------------|-----|------------|------|-----------|--------------|------|-----------------|
| HT NUMBER: 08 PHASE NUMBER: 01 | | | | | | | | | | | | | | | | | |
| PLOT NO. | STATE | GEOGRAPHIC | LOCAL | USGS TOPOGRAPHIC QUADRANGLE | TWN | RNG | SEC | QTR | ELEVATION (M) | SLOPE (FT) | (%) | ASPECT DEG | COS | LAND FORM | % COVER SOIL | ROCK | PARENT MATERIAL |
| LN 91 | CO | SAN MIGUEL MTNS | LITTLE FISH CK | GROUNDHOG MT | 41N | 12W | 16 | NW | 3310 | 10860 | 55 | 159 | 0.59 | 3 | 10 | 68 | GRN-QRT |
| LN100 | CO | RICO MTNS | BARLOW LAKE TALUS | MT WILSON | 40N | 10W | 9 | NE | 3041 | 9980 | 62 | 285 | 0.50 | 3 | 1 | 61 | GRN-QRT |
| LN126 | CO | LA PLATA MTNS | BARCO MT TALUS | LA PLATA | 37N | 11W | 5 | SW | 3276 | 10750 | 2 | 350 | 1.57 | 3 | 0 | 84 | GRANITE |
| LN128 | CO | LA PLATA MTNS | SHRKTOOTH TRAIL HD | LA PLATA | 37N | 11W | 20 | NW | 3337 | 10950 | 45 | 200 | 0.09 | 3 | 3 | 89 | GRANITE |
| LN139 | CO | LA PLATA MTNS | SLIDEROCK MT | MONUMENT HILL | 36N | 10W | 2 | NE | 3200 | 10500 | 67 | 260 | 0.18 | 3 | T | 90 | SANDSTN |
| LN196 | CO | WET MTS | OPHIR CREEK | DEER PEAK | | | | | 2980 | 9780 | 55 | 320 | 1.09 | 3 | T | 98 | |
| LN228 | CO | SANGRE RANGE | LAKE COMO | TWIN PEAKS | | | | | 3596 | 11800 | 58 | 195 | 0.13 | 3 | T | 85 | |
| LN235 | CO | SANGRE RANGE | RASPBERRY CREEK | HOWARD | | | | | 3093 | 10150 | 49 | 255 | 0.13 | 4 | T | 40 | |

Muldavin, Esteban; Ronco, Frank, Jr.; Aldon, Earl F. 1990. Consolidated stand tables and biodiversity data base for southwestern forest habitat types. Gen. Tech. Rep. RM-190. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 51 p.

To provide a foundation for future research into the biodiversity, structure, and dynamics of southwestern forest communities, stand tables consolidating over 2,000 field plots, stratified by 11 different climax forest tree series, have been compiled. The data upon which the tables are based are made available in a computerized format, accessible by microcomputer. A suite of computer programs is also provided for manipulating the data base to meet individual research needs.

Keywords: Habitat type, classification



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