Floristic Quality Assessment Indices for Colorado Plant Communities

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Cover photograph: *Pedicularis groenlandica, Castilleja rhexifolia, Carex aquatilis, Clementsia rhodantha,* and *Arnica mollis.* Photo by Joe Rocchio.

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EXECUTIVE SUMMARY

The primary objective of the Clean Water Act is to "maintain and restore the chemical, physical, and biological integrity of the Nation's waters," which includes wetlands. Wetlands in Colorado have not only been lost from the landscape but have and continue to be impacted or degraded by multiple human activities associated with water use, transportation, recreation, mineral extraction, grazing, urbanization, and other land uses. In order to make informed management decisions aimed at minimizing loss or protecting wetland acreage, quality, and function credible data on the ecological condition of these wetlands need to be collected (U.S. EPA 2002a). In order to prioritize management, protection, and restoration activities an efficient and effective method is needed to identify high-quality wetlands, monitor restoration projects, and assess the effects of management activities.

It is not practical to measure every human impact to wetlands since these disturbances are numerous and complex. However, measuring the integrity of the biological community provides a means to evaluate the cumulative effect of all the stressors associated with human disturbance. The distribution of vegetation across the landscape serves as an indicator of various biotic and abiotic processes, including anthropogenic disturbance (Taft et al. 1997; U.S. EPA 2002b). Spatial and temporal human disturbances have a strong role in determining which plant species are able to survive and/or compete in a particular site. Thus, the composition of vegetation growing at a particular site integrates spatial and temporal impacts and can serve as an indicator of ecological integrity or condition.

The concept of species conservatism is the foundation of the Floristic Quality Assessment (FQA) approach to monitoring and assessing ecological communities. The core of the FQA method is the use of “coefficients of conservatism” (C value), which are assigned to all native species in a flora following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1996). C values range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from pre-European settlement conditions. In other words, the species has a wide ecological tolerance and may be found almost anywhere. A C value of 10 is assigned to species which are obligate to high-quality natural areas and can’t tolerate any habitat degradation whereas a 0 is assigned to species with a wide tolerance to human disturbance. The proportion of conservative plants in a plant community provides a powerful and relatively easy assessment of the integrity of both biotic and abiotic processes and as such is indicative of the ecological integrity of a site (Wilhelm and Ladd 1988).

The Floristic Quality Assessment (FQA) is a method which uses plant composition or specifically the overall conservatism of species present at a site, as an indicator of ecological condition. The FQA method, originally developed for the Chicago region, uses the proportion of conservative plants in a plant community to assess the degree of "naturalness" of an area (Swink and Wilhelm 1979, 1994). The FQA has been developed and successfully tested in 11 States and Provinces. The FQA provides a means to evaluate floristic integrity of a wetland over time, or to compare quality of wetlands of a similar type (e.g. same ecological system (Comer et al. 2003).

Once each species has been assigned a C value, a few different FQA indices can be used to assess the floristic integrity of an area. These indices can be calculated using only native species as well as including non-native plants resulting in variations of three core indices: Mean C, Floristic Quality Index, and the Adjusted Floristic Quality Index.

The FQA provides a unique approach to ecological monitoring and assessment which moves beyond simple measures of species richness and abundance and provides an estimate of the quality of native plants at a site (Herman et al. 1997). Under the assumption that plants effectively integrate spatial and temporal human impacts to ecological systems, the FQA indices provide a cost-effective means of assessing ecological condition. The FQA indices also provide consistent, quantitative measures of floristic integrity, can be used in any plant community, do not require extensive sampling equipment (only a competent botanist), and can be applied to existing data sets.

The FQA indices can be used for a variety of regulatory and non-regulatory assessment and monitoring applications. For example, FQA index scores can be used to conduct ambient monitoring of wetland condition within a targeted area, can be used to prioritize wetlands (or other ecosystems) for protection, restoration, or management efforts, and can be used to monitor the effectiveness of these actions. The FQA indices can also be used for specific wetland regulatory needs such permitting decisions associated with Section 404 of the Clean Water Act. Some U.S. Army Corps of Engineers districts currently use FQA indices for wetland assessment associated with permitting and mitigation activities tied to Section 404 of the Clean Water Act.

The objecitves of this project were to assign coefficients of conservatism for each species in Colorado's flora and then test the ability of these coefficients in detecting degradation of floristic integrity resulting from human disturbance of Southern Rocky Mountain wetlands. To accomplish these objectives, the following tasks were completed:

- A panel of botanical and ecological experts with field-based knowledge of Colorado's flora was assembled (i.e. Colorado Floristic Quality Assessment Panel);
- The Colorado Floristic Quality Assessment Panel (Panel) convened for a one day workshop to review the process of assigning coefficients of conservatism;
- The Panel then individually assigned coefficients for those species which they were familiar with;
- The coefficient assignments were assembled for data analysis;
- Although coefficients were assigned to the entire Colorado flora, testing of the FQA indices only occurred for a few wetland types found in the Southern Rocky Mountain ecoregion (riparian shrublands, fens, extremely rich fens, slope wet meadows, and riverine wet meadows);
- Vegetation composition from wet meadows, fens, and riparian shrublands exposed to varying degrees of human disturbance were sampled;
- Coefficients of conservatism were plugged into multiple FQA indices and calculated for each vegetation sample plot;
- The FQA indices were correlated to a semi-quantitative human disturbance index to discern their effectiveness in detecting floristic change resulting from human impacts.

C values were assigned by a panel of Colorado's botanical experts. In order to provide some independent measure of the accuracy of these assignments a subset of species were also assigned C values based on their frequency of occurrence along the human disturbance gradient. An independent measure of C values was assigned to those native species which occurred in three or more of the sample plots (*sensu* Cohen et al. 2004 and Mushet et al. 2002). These C values were derived by averaging the Human Disturbance Index score from each plot that each of these species occurred in. This value was relativized to a value between 0-10 and used as an empirically defined C value.

A field study was conducted to determine if a subset of the assigned C values (Appendix D) were able to detect loss of floristic integrity in wetlands with increasing human perturbations. The study entailed sampling vegetation plots from wetlands exposed to varying degrees of human-induced disturbance; calculating FQA indices from each of these plots; scoring the severity, type and amount of human disturbance affecting each plot; and then correlating the FQA index scores to the gradient of human disturbance.

Including non-native species, approximately 84% of the Colorado Flora has been assigned a C value. The Panel had strong agreement regarding the C values assignments, as indicated by the fact that 90% of the species had a range of C value assignments within three values. In addition, 89% of the 237 species which were assigned data-derived C values were within three values of the corresponding Panel assigned C values. However, the Panel C value assignments were generally higher than those assigned from data. Nonetheless, these results suggest that the concept of conservatism was consistently applied, that the Panel shared similar opinions for the portion of the flora which was assigned C values, and that the subjectively assigned C values appear to be in agreement with data-derived C values.

The results of this study suggest that weighting the FQA indices by percent cover only showed significant improvement for FQA indices used in extremely rich fens and riverine wet meadows. Considering the limited improvement in index performance with the inclusion of percent cover, the fact that abundance can vary throughout a growing season (Wilhelm and Ladd; Swink and Wilhelm 1994), and that collecting percent cover data makes the FQA approach too intensive for rapid employment (Francis et al. 2000; Cohen et al. 2004; Bourdaghs et al. 2006) it does not appear the use of of cover-weighted FQA indices is worth the extra effort to collect such data.

A single, universal index which could be used to detect ecological degradation in Colorado's plant community types was not extractable from this study's results. However, this study does show that coefficients of conservatism can be a useful and sensitive measure of human impacts to the natural quality of ecological systems. Including non-native species into the Mean C and FQI indices improved the correlation for all wetland types except slope wet meadows.

The Floristic Quality Indices (using both native and all species versions as well cover-weights), were strongest for extremely rich fens and slope wet meadow wetland types due to the stronger relationship species richness had in these systems to the HDI. However, the FQI indices did not show promise for the other wetland types. Mean C (natives) ($\overline{C}_n$) is the most straightforward application of C values since the index does not use species richness, non-native species or cover in the calculation (Francis et al. 2000; Rooney and Rodgers 2002). In other words, the $\overline{C}_n$ index does not contain hidden information and if used with other transparent, stand-alone indices such as species richness and percentage of non-native species provides a much clearer indication as to the specific impact human disturbance has on floristic integrity (Rooney and Rodgers 2002). In addition, Mean C has been shown to not be strongly affected by sample size, species richness, or seasonality of sampling (Francis et al. 2000; Rooney and Rogers 2002; Matthews 2003). Although it was not considered a "strong" (per this project's screening criteria) index for all wetland types, it had a correlation coefficient at least > -0.44 and an ability to distinguish reference from highly impacted sites for all wetland types except riverine wet meadows.

Although $\overline{C}_n$ can be a useful independent metric of floristic quality, it is recommended that practitioners use additional FQA or other vegetation metrics along with Mean C to provide a more comprehensive and clear assessment (Taft et al. 1997, Jog et al. 2006). This could be accomplished using a multi-metric index such as a vegetation index of biotic integrity (e.g.

Rocchio 2007) or simply by reporting and making conclusions based on multiple, independent vegetation metrics.

Although the original FQI was intended to be used to distinguish sites of various quality (Swink and Wilhelm 1994; Taft et al. 1997) classification was found to be an important constraining variable for improving the detection capability of the FQA indices in this project. Other researchers have found similar reasons to limit comparisons to similar ecological types (Rooney and Rogers 2002; Matthews 2003; Andreas et al. 2004).

In conclusion, it is recommended that FQA indices be calculated and reported using both natives-only as well as all species in order to provide a more comprehensive and detailed assessment of floristic quality and that FQA scores only be compared between similar plant community types or similar ecological system types. It does not appear the weighting the indices by cover is worth the extra effort associated with collecting the necessary data.

This report presents the first iteration of the assignment of coefficients of conservatism to Colorado's flora. Additional field testing of the FQA indices is needed in a variety of ecological system types and geographic areas throughout Colorado. As additional field testing occurs, C value assignments may be refined to reflect increased understanding of the preferred ecological niche and tolerance to human stressors of Colorado's plant species. Practitioners of the FQA in Colorado are encouraged to submit their results and opinions regarding specific C value assignments to the Colorado Natural Heritage Program. Periodic review of C value assignments will occur in order to improve the FQA approach and its utility to managing Colorado's natural resources. In addition, the contribution of FQA monitoring results will build an empirical database from which the *a priori* C value assignments can be refined from empirical observations, thus creating an adaptive framework that allows continual input from new data sources and expert opinion to improve the efficacy of the C value assignments (Cohen et al. 2004).

In the near future, a FQA index calculator will be posted on CNHP's website (http://www.cnhp.colostate.edu/reports.html). This spreadsheet will allow practitioners to enter a species inventory list and will then automatically calculate the various FQA index scores.

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1.0 INTRODUCTION

The primary objective of the Clean Water Act is to "maintain and restore the chemical, physical, and biological integrity of the Nation's waters," which includes wetlands (Federal Water Pollution Control Act, Public Law 92-500). Simply calculating the amount of wetland acreage lost or protected does not provide information as to the quality of wetlands destroyed, impacted, restored, or protected. In order to make informed management decisions aimed at minimizing loss or protecting wetland acreage, quality, and function credible data on the ecological condition of these wetlands need to be collected (U.S. EPA 2002a). In addition, in order to better prioritize management, protection, and restoration activities an efficient and effective method is needed to identify high-quality wetlands, monitor restoration projects, and assess the effects of management activities. It is not practical to measure every human impact to wetlands since these disturbances are numerous and complex. However, measuring the integrity of the biological community provides a means to evaluate the cumulative effect of all the stressors associated with human disturbance (U.S. EPA 2002a).

The distribution of vegetation across the landscape serves as an indicator of various biotic and abiotic processes, including anthropogenic disturbance (Taft et al. 1997; U.S. EPA 2002b). Spatial and temporal human disturbances have a strong role in determining which plant species are able to survive and/or compete in a particular site. Thus, the composition of vegetation growing at a particular site integrates spatial and temporal impacts and can serve as an indicator of ecological integrity or condition. In summary, the ecological basis for using vegetation as an indicator in wetlands is as follows (U.S. EPA 2002b):

- Vegetation is known to be a sensitive measure of human impacts including hydrological alterations, sedimentation, vegetation removal, physical disturbance, watershed development, mining, presence of invasive plants, and nutrient enrichment (Elmore and Kauffman 1984; Kauffman and Krueger 1984; Fulton et al. 1986; Kantrud et al. 1989; Cooper 1990; Wilcox 1995; Johnson 1996; Weixelman et al. 1997; Bedford et al. 1999; Galatowitsch et al. 2000; Adamus et al. 2001; Azous and Horner 2001; Cronk and Fennessy 2001; Flenniken et al. 2001; DeKeyser et al. 2003; Jones 2003;Kauffman et al. 2004; Zedler and Kercher 2004; Cooper et al. 2005; Reiss 2006);
- Vegetation structure and composition influence habitat suitability for other taxonomic groups such as waterbirds, migratory songbirds, macroinvertebrates, fish, large and small mammals, etc. (Kattleman and Embury 1996; Panzer and Schwarz 1998; Nelson *In Press;* Johnson and Anderson 2003; Miller et al. 2003; Baker et al. 2005);
- Strong correlations exist between vegetation and water chemistry (Bedford et al. 1999; Reiss 2006);
- Vegetation influences most wetland functions (Reed 1988; Wilcox 1995; Goslee et al. 1997; Tabacchi et al. 1998; Williams et al. 1998; Winward 2000; Cronk and Fennessy 2001; Lopez and Fennessy 2002;; Simon and Collision 2002; Baker et al. 2005; Jones 2005; Magee and Kentula 2005; Reiss 2006);
- Vegetation supports the food chain and is the primary vector of energy flow through an ecosystem (Baxter et al. 2005);
- Plants are found in all wetlands and are the most conspicuous biological feature of wetland ecosystems; and
- Ecological tolerances for many plant species are known and could be used to identify specific disturbances or stressors that may be responsible for a change in wetland biotic integrity.

Wetlands in Colorado have not only been lost from the landscape but have been and continue to be impacted or degraded by multiple human activities associated with water use, transportation, recreation, mineral extraction, urbanization, and land use management (Winters et al. 2004). In order to better prioritize management, protection, and restoration activities a relatively rapid method is needed to identify high-quality wetlands, monitor restoration projects, and assess the effects of management activities. The Floristic Quality Assessment (FQA) is a method which uses plant composition, specifically, the overall conservatism of species present at a site, as an indicator of ecological condition. The results provide numeric values which can be used to conduct ambient monitoring of the ecological condition of Colorado's plant communities or ecological systems, can be used to prioritize plant communities or ecological systems for protection, restoration, or management efforts, and can be used to monitor the effectiveness of these actions.

The objectives of this project were to assign coefficients of conservatism for each species in Colorado's flora and then test the ability of these coefficients to detect degradation of floristic integrity resulting from human disturbance of Southern Rocky Mountain wetlands. To accomplish these objectives, the following tasks were completed:

- A panel of botanical and ecological experts with field-based knowledge of Colorado's flora was assembled (i.e. Colorado Floristic Quality Assessment Panel);
- The Colorado Floristic Quality Assessment Panel (Panel) convened for a one day workshop to review the process of assigning coefficients of conservatism;
- The Panel members then individually assigned coefficients for those species which they were familiar;
- The coefficient assignments were assembled for data analysis;
- Vegetation composition from select wetland types (i.e. wet meadows, fens, and riparian shrublands) exposed to varying degrees of human disturbance were sampled;
- Coefficients of conservatism were used to calculate multiple FQA indices for each vegetation sample plot;
- The FQA indices were correlated to a semi-quantitative human disturbance index to discern their effectiveness in detecting floristic change resulting from human impacts.

1.1 Plant Conservatism

Plant species conservatism is essentially the degree to which a species displays fidelity to a specific habitat or set of environmental conditions (Wilhelm and Ladd 1988). Conservative species are those that have evolved with a specific set of biotic and abiotic factors, interactions, and natural disturbances (Wilhelm and Ladd 1988; Wilhelm and Masters 1996). Although these factors are not static over time, they change in a gradual manner that along with ecosystem complexity have allowed conservative species to adapt to the dynamic nature of their habitat (Wilhelm and Ladd 1988). Thus, conservative species are not simply restricted to relatively stable habitats such as fens but can also occur in periodically disturbed habitats such as riparian systems. Conservatism is not the same as "rarity" which it is often confused with. Rare species may or may not be conservative. Nonconservative or generalist species are those which have a broader ecological niche and thus don't show fidelity to a specific set of environmental parameters.

Since European settlement began, human impacts have caused dramatic shifts in many ecological processes including natural disturbance regimes. Due to these impacts many ecological processes and disturbance regimes now function outside their natural range of intensity, frequency, or

duration (Wilhelm and Masters 1996). Conservative plants are not able to adapt to these human-induced alterations and thus are typically the first plants to disappear from a habitat impacted by human activities (Wilhelm and Masters 1996). The severity of these impacts appears to be correlated to the proportion of conservative plants which are found within an area (Wilhelm and Masters 1996; Wilhelm and Ladd 1988; Lopez and Fennessy 2002; DeKeyser et al. 2003). Thus, nonconservative or generalist species tend to dominate habitats which have had been exposed to prolonged and/or severe human impacts, resulting in a loss of ecological complexity (Wilhelm and Masters 1996). These simplified, weedy habitats are not able to persist as self-sustaining ecological systems and can result in changes in nutrient, soil, and hydrological regimes (Wilhelm and Masters 1996; Lopez and Fennessy 2002). In summary, a high-quality natural ecological system is comprised of both conservative and non-conservative plants whereas highly disturbed, low-quality natural areas or sites of anthropogenic origin have few, if any, surviving conservative plants. Thus, the proportion of conservative plants in a plant community provides a powerful and relatively easy assessment of the integrity of both biotic and abiotic processes and as such is indicative of the ecological integrity of a site (Wilhelm and Ladd 1988).

The concept of species conservatism is the foundation of the Floristic Quality Assessment (FQA) approach to monitoring and assessing ecological communities. The core of the FQA method is the use of "coefficients of conservatisms" (C value), which are assigned to all native species in a flora following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1996). C values range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from pre-European settlement conditions. Nonnative plants were not part of the pre-settlement flora, so no C values are assigned to them. However, if nonnative species are used in the calculation of FQA indices, they are given a default C value of 0. A C value of 0 is assigned to native plants that have demonstrated little fidelity to any remnant natural community or area[15]. In other words, the species has a wide ecological tolerance and may be found almost anywhere. A C value of 10 is assigned to species which are obligate to high-quality natural areas and can't tolerate any habitat degradation. The C values in the 4-6 ranges are assigned to species which show weak affinity to natural areas but provide no indication of the quality of those areas. The conceptual difference between a value of 0 and a 1, or between 9 and 10, is slight, while the difference between a value of 0 and a value of 3 is more distinct.

1.2 Floristic Quality Assessment

The FQA method, originally developed for the Chicago region, uses the proportion of conservative plants in a plant community to assess the degree of "naturalness" of an area (Swink and Wilhelm 1979, 1994). The FQA has been developed and successfully tested in Illinois (Swink and Wilhelm 1979), Missouri (Ladd 1993), Ohio (Andreas et al. 2004), southern Ontario (Oldham et al. 1995), Michigan (Herman et al. 1996), Indiana (Rothrock 2004), Florida (Cohen et al. 2004), Virginia (Nichols et al. 2006), North Dakota (Northern Great Plains Floristic Quality Assessment Panel, 2001), Kansas (Craig Freeman, personal communication), Montana (Jones 2005), and Wisconsin (Bernthal 2003). The FQA provides a means to evaluate floristic integrity of a wetland over time, or to compare quality of wetlands of a similar type (e.g. same ecological system (Comer et al. 2003). In addition, because C values are assigned to all species in a flora, the FQA can be used to assess the floristic integrity of any plant community, upland or wetland.

[15] Natural areas or communities are areas in which the existing vegetation communities approximate the condition that prevailed prior to European settlement (Wilhelm and Ladd 1988). Non-natural areas are those places where human activity has created an environment or altered existing environments so that the area no longer represents pre-settlement conditions.

As noted above, the first step in developing the FQA method is to assign each species in a flora a C value ranging from 0-10. The C values essentially represent the collective opinion of local botanical experts regarding a species fidelity to high-quality natural areas, or those areas in which existing plant communities and ecological conditions represent those prior to European settlement (Wilhelm and Ladd 1988; Swink and Wilhelm 1994; Taft et al. 1997). Wilhelm and Masters (1996) provide an example of assigning a species a C value: If someone were to present a plant specimen and ask how confident one would be to say it was taken from high-quality natural area, the response would 10 if one was extremely confident, 5 if one was confident that it came from a natural area but unsure of whether it was degraded, 0 if one had no confidence that a came from a natural community, and, of course, the continuum between these values are used to fine-tune the C value assignments. Plants often have varying C values in different geographic regions due to physiological and ecological variations within the range of each species. Thus, C values must be assigned on a regional basis.

Once each species has been assigned a C value, a few different FQA indices can be used to assess the floristic integrity of an area. These indices can be calculated using only native species as well as including non-native plants. The most straightforward application is to calculate the average C value of all the native species which occur at a site (Rooney and Rodgers 2002; Taft et al. 1997). The average C value is calculated as:

$$\textbf{Mean C} = \sum C_i \div N$$

where C = C value, i = an individual native species, and N = native species richness

Mean C ($\overline{C}$) has been found to be correlated with increasing human disturbance (Andreas et al. 2004; Wilhelm and Masters 1996; Taft et al. 1997; Lopez and Fennessy 2002; Cohen et al. 2004; Bourdaghs et al. 2006; Miller and Wardrop 2006; Nichols et al. 2006) (Figure 1).

If the objective is to prioritize sites for conservation, then the $\overline{C}$ value alone may not be the most useful index since it doesn't detect other differences between the sites (Wilhelm and Master 1996). For example, larger areas will typically support more species than smaller areas. Since there may be cases when a large and a small area share the same $\overline{C}$ value, accounting for species richness by multiplying it with the $\overline{C}$ value adds a discriminating factor to the floristic quality assessment (Taft et al. 1997). This equation is the Floristic Quality Index (FQI). Area is not the only factor affecting species richness, as habitat heterogeneity and the presence of anthropogenic patches can have an impact on richness, regardless of size (Wilhelm and Masters 1996). Thus, to limit the influence of area alone on the index, the square root of species richness is used and the FQI is calculated as (Swink and Wilhelm 1994; Taft et al. 1997):

$$\textbf{FQI} = \overline{C} * \sqrt{N}$$

where $\overline{C}$ *= average C values and N = native species richness*

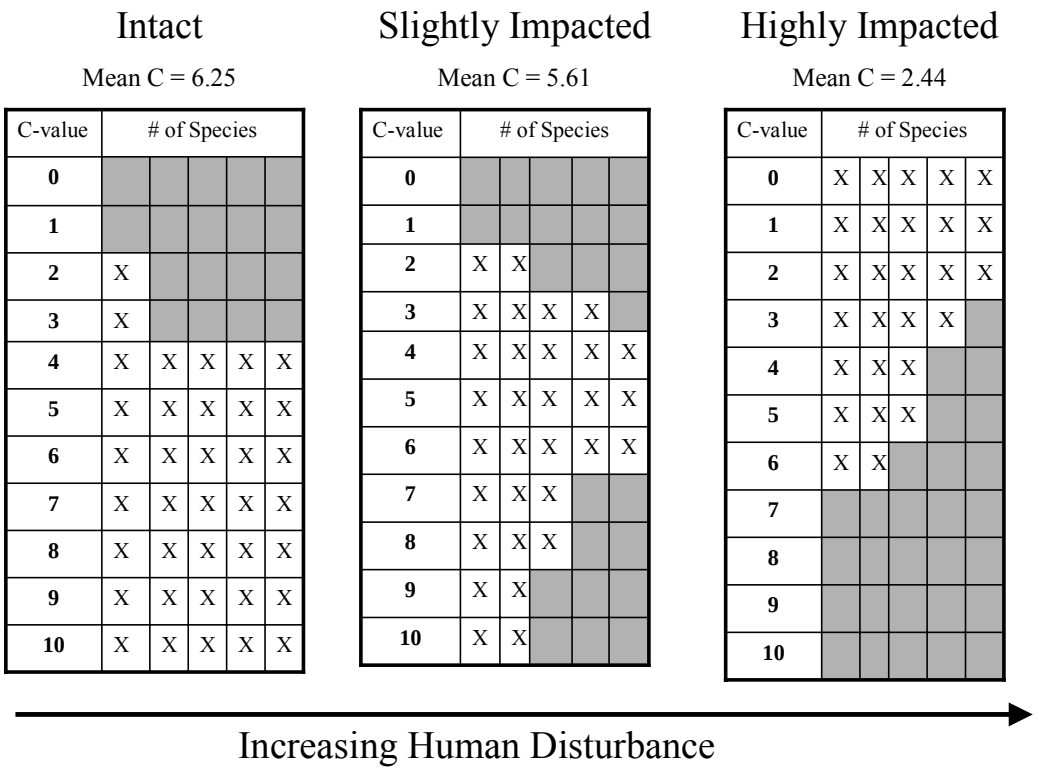

Figure 1. Example of Relationship of Mean C to Human Disturbance

Thus, a higher FQI suggests a site with a higher conservation priority (e.g. higher $\overline{C}$, species richness, or combination of the two). However, many researchers have found that the FQI is overwhelming correlated to species richness and thus may obscure information related to aggregate conservatism (Matthews 2003, Francis et al. 2000; Rooney and Rodgers 2002). Because the FQI is often employed with other vegetation metrics, Rooney and Rodgers (2002) suggest that $\overline{C}$, which they call the Modified Floristic Quality Index, is most useful due to its simple calculation, independence from species richness, and the fact that it does not confound floristic quality with species richness. Francis et al. (2000) suggest computing and reporting each index separately and Bernthal (2003) notes that this allows the user to separate factors which may be affecting species richness but not aggregate conservatism or vice versa.

A metric developed by researchers in Pennsylvania, the Adjusted Floristic Quality Assessment Index (Adjusted FQI), attempts to further eliminate the sensitivity of the FQI to species richness as well as incorporating the impact of non-native species by calculating an Adjusted FQI as a percentage of the maximum attainable FQI score for a site by assuming that maximum attainable $\overline{C}$ is 10 and all species are native (Miller and Wardrop 2006). The following equation is used to calculate the Adjusted FQI:

$$\textbf{Adjusted FQI} = \left(\frac{\overline{C}}{10} * \frac{\sqrt{N}}{\sqrt{S}}\right) * 100$$

where $\overline{C}$ *= average C values; N = native species richness; and S = native + nonnative species richness*

Miller and Wardrop (2006) found that the Adjusted FQI had a stronger correlation with $\overline{C}$ than FQI. The Adjusted FQI was correlated with non-native species richness while the FQI was correlated with native species richness. The use of non-native species in the equation decreases the effect of the species richness modifier. In other words, species poor sites with few, if any, non-native species will have a higher score than species rich sites with a substantial amount of non-native species present (Miller and Wardrop 2006).

Using parametric or non-parametric statistics, it is possible to compare any of these index scores among different sites or among different years at a particular site to determine whether significant differences exist (Taft et al. 1997).

1.3 Use and Application of the Floristic Quality Assessment

The FQA indices recognize that all plant species, not just the dominant or rare species, contribute useful information about a site's quality due to each species' ability to adapt to a unique set of biotic and abiotic conditions (Herman et al. 1997). Thus, the FQA provides a unique approach to ecological monitoring and assessment which move beyond simple measures of species richness and abundance and provide an estimate of the quality of native plants at a site (Herman et al. 1997). Under the assumption that plants effectively integrate spatial and temporal human impacts to ecological systems, the FQA indices provide a cost-effective means of assessing ecological condition. The FQA indices also provide consistent, quantitative measures of floristic integrity, can be used in any plant community, do not require extensive sampling equipment (only a competent botanist), and can be applied to existing data sets.

The FQA indices can be used for a variety of regulatory and non-regulatory assessment and monitoring applications. For example, FQA index scores can be used to conduct ambient monitoring of wetland condition within a targeted area, can be used to prioritize wetlands (or other ecosystems) for protection, restoration, or management efforts, and can be used to monitor the effectiveness of these actions.

1.3.1 Identification of Conservation Areas

The Floristic Quality Assessment (Swink and Wilhelm 1994), originally called the Natural Area Rating Index (Wilhelm 1977; Swink and Wilhelm 1979), was developed to assist in the identification of natural areas worthy of conservation actions (Swink and Wilhelm 1979, 1994; Taft et. al. 1997). To determine overall floristic quality of a targeted area, a site inventory of all plant species growing in the area of interest is documented either using a qualitative approach such as thoroughly walking the area of interest and taking a census of all vascular plants or by establishing vegetation plots or transects for a more quantitative and repeatable analysis. Francis et al. (2000) showed that FQA was useful in determining the condition of natural areas and many organizations ranging from the Missouri Department of Conservation (Nelson 2005), county governments (Dupage County Stormwater Management Committee 1992; Wilhelm 1977), and The Nature Conservancy (Ladd 1993) use FQA indices to identify and prioritize high quality natural areas to include in their Natural Areas network.

The Colorado Natural Heritage Program (CNHP) will incorporate FQA indices into Ecological Integrity Assessments of specific plant communities and ecological systems to improve our methodology for prioritizing ecological conservation targets. CNHP also intends to use the FQA scores to calibrate other wetland assessment methods currently in development by CNHP. These include Level 1 (remote-sensing based) and Level 2 (rapid, field assessments) methods which, when calibrated with a quantitative measure such as the FQA index scores, will provide alternative methods to assess wetland condition depending on the project objectives or the time, money, and level of effort available to the user.

1.3.2 Monitoring Response of Floristic Quality to Management, Restoration, or Protection Activities

The FQA index scores can be used for numerous monitoring applications whether it is for long-term or ambient monitoring of ecological condition or to set and determine success in meeting performance standards of wetland restoration efforts.

Mushet (2002) demonstrated usefulness of FQA for monitoring wetland restoration projects. FQA index scores could also be used in ambient monitoring programs which seek to estimate the overall ecological condition of an ecological system within a large landscape. For example, the National Park Service has included FQA indices (within vegetation index of biotic integrity (VIBI) models) as part of their wetland vital signs monitoring protocol for Cuyahoga Valley National Park (Fraser 2005). The coefficients of conservatism for the Colorado flora will also be used in a similar manner within the National Park Service Rocky Mountain Inventory and Monitoring Network's wetland vital signs program (Billy Schweiger, personal communication). The Colorado Natural Heritage Program is seeking funding to implement basinwide ambient monitoring and assessment of wetland condition throughout the State of Colorado. The FQA indices will be utilized as one indicator for this work.

Some of the more common questions asked by managers regarding floristic quality are (Wilhelm and Masters 1996): (1) What is the overall floristic quality of a site/plant community; (2) How does floristic quality spatially vary throughout a site; and (3) How does management, restoration, or protection efforts affect floristic quality $\overline{C}$ of a site? Various monitoring approaches can be used to answer such questions. As noted above, to determine overall floristic quality, a site inventory of all plant species growing in the area of interest is documented either using a qualitative census approach or by establishing vegetation plots or transects for a more quantitative analysis. In order to determine spatial variability of floristic quality across a site, numerous quadrats can be sampled along sampling transects randomly distributed throughout a site. FQA index scores can then be calculated for both the entire site (species data compiled from all quadrats) as well as individual quadrats (Wilhelm and Masters 1996). FQA index scores from individual quadrats can identify and focus management efforts toward more sensitive areas within a site. Both quadrat and overall floristic quality data can be used to measure the extent to which management is having a positive or negative effect on floristic quality. For example, Mean C (natives) can be calculated based on two averages: (1) overall Mean C across all quadrats ($\overline{C}_t$) or (2) the individual quadrat $\overline{C}$ values averaged across the transect ($\overline{C}_q$). The ratio of these two values provides valuable information such as if $\overline{C}_q$ is less than $\overline{C}_t$ suggests that conservative species are not well represented in any given location within the area of interest whereas the reverse would suggest that non-conservative species, while present, are not abundant in system (Wilhelm and Masters 1996).

1.3.3 Compensatory Wetland Mitigation and State Water Quality Standards

The FQA indices can also be used for specific wetland regulatory needs such permitting decisions associated with Section 404 of the Clean Water Act. Some U.S. Army Corps of Engineers districts currently use FQA indices for wetland assessment associated with permitting and mitigation activities tied to Section 404 including the Omaha District (USACE 2003), Chicago District (USACE 2005), and Detroit District (USACE 2006). The FQI is used in Ohio within a vegetation index of biotic integrity as apart of a statewide wetland regulatory program (Lopez and Fennessy 2002; Mack et al. 2004).

Wilhelm (1992) notes that very few *de novo* restoration sites are able to achieve FQA index scores (i.e. FQI and Mean C) comparable to naturally diverse wetlands and thus suggests that minimum FQA index scores should be used to determine permit decisions and wetland mitigation performance standards. For example, monitoring data from wetland restoration sites in the Chicago region suggest that wetlands with low floristic quality (in Chicago this was generally defined as FQA ≤ 35 and Mean C ≤ 3.5) can be compensated for via mitigation efforts whereas wetlands with high floristic quality may be irreplaceable (Wilhelm 1992). These data have been used by some regional agencies to set performance standards and mitigation ratio. For example, Dupage County, Illinois uses a minimum $\overline{C}$ value of 3.5 to identify critical wetlands and requires a higher mitigation ratio for these sites (Dupage County Stormwater Management Committee 1992). The Illinois Wetland Policy Act of 1989 (20ILCS 830, 17 Ill. Adm. Code 1090) requires a 5.5:1 replacement ratio for mitigation of wetlands with a FQI index score ≥ 20 or Mean C ≥ 4.0. In Michigan, FQA index scores were used to establish mitigation performance criteria associated with endangered species impacts at the Detroit Metropolitan Wayne County Airport (Herman et al. 1997). Rooney and Rodgers (2002) note that such thresholds need to be regional defined and that baseline values should be benchmarked according to specific ecological community types.

FQA index scores could also help define regional wetland reference conditions, delineating designated use categories for wetlands, and assigning biocriteria to each of these uses. Once such a framework is established, periodic monitoring of wetland FQA index scores is then possible and would allow an assessment of the status and trends of wetland condition, an activity required of each State in Section 305 (b) of the Clean Water Act. It would also allow the identification of impaired wetlands meeting the definition of Waters of the U.S., as required by Section 303(d) of the Clean Water Act.

2.0 STUDY AREAS

The objective of this project is to develop and test FQA indices which can be applied to any plant community in Colorado. Although C values were assigned to the entire Colorado flora, field testing of the FQA indices only occurred for a five wetland types found in the Southern Rocky Mountain ecoregion (e.g. riparian shrublands, fens, extremely rich fens, slope wet meadows, and riverine wet meadows) and focused on three watersheds: Upper Blue River, South Platte River Headwaters and Colorado Headwater watersheds (Figure 1). General descriptions of the study areas for this report are provided below.

2.1 Upper Blue River Watershed

The Upper Blue River watershed generally corresponds with the political boundaries of Summit County which straddles the west flank of the Continental Divide and is approximately 176,922 hectares (437,183 acres). Elevations range from 4,280 m (14,265 feet) on Quandary Peak to 2,274 m (7,580 feet) where the Blue River leaves Summit County. More than 85% of the county is above 9,000 feet. The watershed is bordered by the Gore Range on the northwest, the Williams Fork Mountains on the northeast, and the Tenmile Range on the west. Hoosier Pass and Loveland Pass lie on the continental divide which forms the watershed boundary to the south and east. Major tributaries include the Swan River, Snake River, and Tenmile Creek. Three major reservoirs (Blue Lakes, Dillon Lake, and Green Mountain) influence the Blue River and its associated wetlands.

The climate is generally characterized by long, cold, moist winters, and short, cool, dry summers. The Town of Dillon, where climate data are recorded, receives approximately 41.58 cm (16.37 in.) of precipitation each year. Average minimum and maximum temperatures are -7.9^{o} C (17.7^{o} F) and 11^{o} C (51.8^{o} F) respectively. The average total snow fall is 334.8 cm (131.8 in.) (Western Regional Climate Center 2006).

The geology of Summit County is complex, as evidenced by the Geological Map of Colorado (Tweto 1979). The Williams Fork Mountains, Gore Range and the Tenmile Range consist of Precambrian granitic rock with several faults (Tweto 1979). The lower Blue River Valley at the base of the Williams Fork Mountains consists of Pierre Shale. There are outcrops of Dakota sandstone near the Dillon Dam. High elevation outcrops of Leadville limestone are found in the southern portion of the county. The Blue River Valley has glacial origins as evidenced by the numerous boulder-strewn moraines (Chronic 1980).

Typical Southern Rocky Mountain flora is prevalent in Summit County. Elevations between approximately 2,274 m (7,580 ft) to 2,400 m (8,000 ft) are dominated by *Amelanchier alnifolia* (service berry), *Artemisia tridentata* ssp. *vaseyana* (mountain sagebrush) and *Symphoricarpos rotundifolius* (snowberry). At these elevations, wetlands along riparian areas are dominated by *Salix* spp. (willows), *Populus angustifolia* (narrowleaf cottonwood), *Picea pungens* (Colorado blue spruce) and *Alnus incana* (thinleaf alder). Other wetlands within this elevation range include seeps, springs, wet meadows, and fens which are supported by groundwater discharge. These wetland types are mostly dominated by various graminoid species, mostly of the Cyperaceae (sedge) family. Above 2,400 m (8,000 ft), *Populus tremuloides* (quaking aspen), *Pinus contorta* (lodgepole pine), *Pseudotsuga menziesii* (Douglas-fir), and *Picea engelmannii* (Engelmann

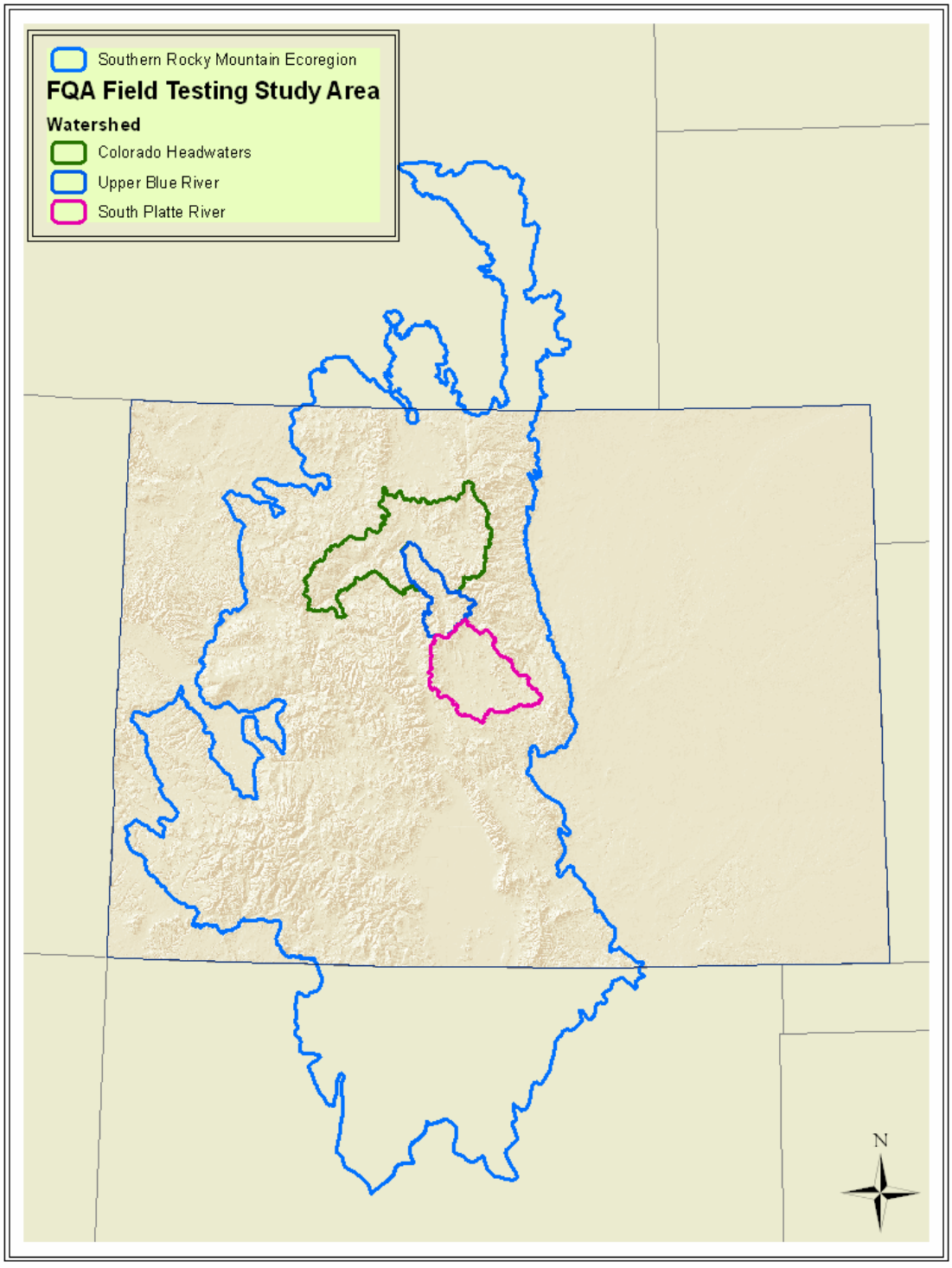

Figure 2. FQA Field Testing Study Area

spruce) dominate uplands and can occasionally be found in confined riparian areas. The most conspicuous wetland types at this elevation are riparian shrublands or willow carrs which are dominated by various species of willow (*Salix planifolia, S. wolfii, S. brachycarpa,* etc.) and sedges (*Carex utriculata, C. aquatilis,* etc.). Groundwater supported wetlands are common at these elevations as well. In the elevational zone between 3,000 m to 4,267 m (10,000 to 14,000 ft) *Picea engelmannii* (Engelmann spruce), *Abies lasiocarpa* (subalpine fir), *Salix brachycarpa* (short-fruit willow), and *Salix planifolia* (planeleaf willow) occur along riparian zones. Various *Salix* spp. (willow), *Carex* spp. (sedges), and herbaceous species are also found in groundwater discharge sites and snow melt areas.

Historical hard rock and placer mining and timbering operations have dramatically affected lands throughout the county. Many of the larger rivers have large tailings piled throughout the floodplain and some areas remain effected by acid mine drainage. Currently, ski areas and associated residential and commercial developments are widespread in the county. Additionally, gravel mining, grazing, and agricultural activities are found in isolated pockets. Three large reservoirs, Blue Lakes, Dillon and Green Mountain, are also significant components of the human influences in the county. These various land uses introduce problems associated with habitat fragmentation, hydrological alterations, topographic alterations, non-native species invasions, and alternation of natural fire regimes.

2.2 South Platte River Headwaters Watershed

The South Platte River Headwaters watershed encompasses much of Park County and is approximately 415,244 hectares (1,026,097 acres). Elevations range from over 4,267 meters (14,000 feet) to approximately 2,225 meters (7,300 feet). Much of the watershed occurs in a prominent physiographic feature in Park County called South Park, a grass-dominated basin, 80 km (50 miles) long and 56 km (35 miles) wide. South Park is the largest intermountain basin in Colorado, and is surrounded on all sides by mountains. It is bordered to the west by the Buffalo Peaks and the Mosquito Range, to the north by Mt. Evans and Mt. Bierstadt, to the east by the Kenosha Mountains, Tarryall Mountains, and Puma Hills, and to the south by the Black and Thirtynine Mile mountains.

The climate is characterized by long, cold, moist winters, and short, cool, dry summers. Climatic data from the Town of Fairplay indicate that South Park receives approximately 33 cm (13 inches) of precipitation each year. Average minimum and maximum temperatures in Fairplay are -12^{o} and 20^{o} C (9 ^{o} and 69 ^{o} F), respectively. The average total snowfall in Fairplay is 213 cm (84 inches) (Western Regional Climate Center 2006). Climatic for the higher elevations in this area but precipitation and snowfall would be much higher and average temperatures lower for the higher elevations. In sub-alpine basins, streams flow over glacial till from the Pinedale and Bull lake glaciations. Elsewhere, streams and tributaries to the South Platte flow over Quaternary alluvial deposits of varying depth (except where bedrock is exposed in narrow canyon reaches). The upper glaciated reaches are in wide U-shaped valleys. Below elevations of glacial terminal moraines, river canyons become narrow, and the rivers are steeper, forming narrow, cool canyons with limited floodplain development. Hydrology of the South Platte River is primarily driven by spring and early summer snow-melt runoff from the mountains.

The vegetation on the valley floor of South Park is generally short and sparse as a result of the dry, windy climate, historic and current grazing, fires, and, to a much lesser extent, prairie dog activity. The wetlands of South Park are unique.

The geologic and hydrologic setting found in South Park combines to create wetlands known as "extremely rich fens," so named because of their high concentrations of minerals. These fens provide habitat for a suite of rare plant species and plant communities. Approximately 20% of the fen communities in the study area have been drained or mined for peat (Sanderson and March 1995).

Other wetland types include playa lakes, springs, wet meadows, and riparian wetlands. At higher elevations the vegetation is dominated by willows (*Salix* spp.), spruce-fir *(Picea engelmannii-Abies lasiocarpa)*, ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta* ssp. *latifolia*), bristlecone pine (*Pinus aristata*), quaking aspen *(Populus tremuloides)* and alpine communities.

There are a high percentage of private lands in the watershed, particularly in South Park and on the immediately adjacent slopes. Currently, residential, agricultural (mostly livestock grazing) and commercial developments are widespread. Most of the streams in South Park are used to support some level of irrigation for pasture and/or hay operations. There are three large reservoirs that provide water for Front Range cities. Historical mining and timbering operations have dramatically affected some lands throughout the higher elevations of the county.

2.3 Colorado Headwaters Watershed

This watershed encompasses approximately 751,180 hectares (1,856,199 acres) of north central Colorado. The elevation ranges for this portion are from 2,225 meters (7,300 feet) where the Colorado River cuts through the Gore Range at Gore Canyon, to 4,066 meters (13,553 feet) at the summit of Pettingell Peak in the Front Range. The principal mountain ranges are: Rabbit Ears Range, Front Range, and Gore Range. The Continental Divide defines the northern and eastern county lines while the Gore Range delineates the southwest boundary. The watershed also encompasses Middle Park intermountain basin. Major tributaries of the Colorado River include the Fraser River, Williams Fork River, Willow Creek, Blue River, Troublesome Creek, and Muddy Creek.

The climate is generally characterized by long, cold, and moist winters, and short, cool, dry summers. Climatic data from the Grand Lake area indicate that this area receives approximately 51 cm (20 inches) of precipitation each year. Average minimum and maximum temperatures are, respectively, -6.5 ^{o} and 11.5^{o} C (20.2 ^{o} and 52.8 ^{o} F). The average total snowfall in Fairplay is 368 cm (145 inches) (Western Regional Climate Center 2006).

Watershed geology consists of crystalline Precambrian rocks underneath thousands of feet of sedimentary rocks including the Jurassic Morrison Formation, Dakota Sandstone, Benton Shale, Niobrara Formation, and Pierre Shale (Tweto 1979). The diversity of climate, geology, elevation, and soils within the Colorado Headwaters watershed leads to a wide range of ecological systems. At the highest elevations, alpine tundra dominated by cushion plants grades into subalpine forests dominated by Engelmann spruce and subalpine fir, which in turn grade into upper montane forests of lodgepole or limber pine (*Pinus flexilis*). Lower montane forests are strongly dominated by lodgepole pine, especially on dry slopes, although Douglas-fir can intermingle on moister, often north-facing slopes with aspen. The basins between mountain ranges are characterized by mountain big sagebrush and Wyoming big sagebrush (*A. tridentata* ssp. *wyomingensis*) shrublands, which dominate the clay soils within Middle Park. Scattered throughout the watershed are riparian forest and shrublands and other wetland types such as fens, kettle ponds, wet meadows, and freshwater marshes.

Historically, the basin's economy was based on agriculture and livestock activities. Presently, the economy is largely based on recreation and tourism. Approximately 28% of Grand County is privately owned and the majority of private lands are located within Middle Park. The towns of Granby, Fraser, and Winter Park are all located only one hour from Denver and offer easily accessible fishing and hiking in the summer, and snowmobiling, tubing, and skiing in the winter.

3.0 METHODS

3.1 Assignment of Coefficient of Conservatism Values

Coefficients of conservatism values (C values) were assigned by a Panel of Colorado's botanical experts. In order to provide some independent measure of the accuracy of these assignments a subset of species were also assigned C values based on their frequency of occurrence along the human disturbance gradient. Both approaches are described below.

3.1.1. Panel Assigned Coefficients of Conservatism

All plant species known to occur in Colorado were considred for assignment of a C value ranging from 0-10. The C values were assigned using expert opinion of local and regional botanical experts. Although these values are assigned subjectively, they are *applied* consistently and objectively since value judgments have already been determined. Often, expert opinion is sought using a panel consensus method (Swink and Wilhelm 1994; Andreas et al. 2004; Mushet et al. 2002). In other words, botanical experts convene and collectively decide the C value for each species in the flora. This method has the advantage of ensuring consensus of the C value assignments through group discussion but is disadvantageous because it potentially allows dominant personalities to override other opinions. Other researchers have sought expert opinion by requesting independent input from each panel member (Cohen et al. 2004; Craig Freeman personal communication; Bernthal 2003). This often is a more practical arrangement for panel members with busy schedules since they can provide their input as time allows and it also provides an opportunity for quantification of expert opinion. The disadvantage is that is does not allow group discussion and removes consensus results.

The Colorado FQA was developed using the independent input method. The Colorado Natural Heritage Program (CNHP) convened a panel of regional botanical experts to assign C values to each species in Colorado's flora. Initially, botanical experts with the CNHP, Kansas Natural Heritage Inventory, Wyoming Natural Diversity Database, Utah Conservation Data Center, NatureServe, U.S. Forest Service, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Natural Resource Conservation Service, U.S. National Park Service, University of Colorado, University of Northern Colorado, University of Wyoming, San Juan College, and private consultants were invited to participant on the Colorado Floristic Quality Assessment Panel (Panel). The few botanists who know the entire Colorado flora (which has over 3,000 species) were unable to participate on the Panel, thus the initial list of potential Panel members was chosen based on geographic and taxonomic expertise to ensure that the entire flora could be assigned a C value. Initially, 27 people agreed to participate, however to date only 13 Panel members have submitted their suggested C values (Table 1). Gerould Wilhelm, the original author of the FQA method, was contracted to moderate an initial workshop where the Panel reviewed and discussed the concept of "conservatism". The Panel then proceeded to collectively assign C values to approx. 100 species to help calibrate the group's understanding of this concept.

Following the meeting, each Panel member was provided with a Microsoft Excel spreadsheet containing all 3,191 species in the Colorado flora. Species nomenclature follows USDA PLANTS Database (http://plants.usda.gov/) as of January 2005. Since many botanists in Colorado use Dr. William Weber's Colorado East/West Slope floras as a field key and nomenclature reference (Weber and Wittmann 2001a, 2001b), these names were cross-referenced to the PLANTS names in the FQA database (Appendix E). Life history traits and wetland

indicator status were downloaded from PLANTS. The USFWS Region 5 and 8 Wetland Indicator Status lists were also used to ensure that PLANTS information was correct (Reed 1988).

Panel members were then asked to provide their individual estimates of C values for those species they were familiar with. The Panel was provided with guidelines to help them assign C values.

The C values can be summarized as follows:

- 0-3 Species very prevalent in non-natural areas. They have a wide ecological tolerance and do not show any fidelity to high-quality natural areas.
- 4-6 Species that show weak affinity to natural areas but provide no indication of quality. Many matrix or dominant species fall into this category.
- 7-9 Species that are obligate to natural areas but can sustain some habitat degradation
- 10 Species which are obligate to high-quality natural areas and can not tolerate any habitat degradation.

Once Panel members returned their C value suggestions, the values were entered into a Microsoft Excel spreadsheet and the average C value was calculated. Many species only had one suggested C value. Species with a range greater than three C values, were revisited by the Panel. However, even following this second evaluation of C value assignments, a wide-range of C value suggestions remained for some species.

Table 1. Colorado Floristic Quality Assessment Panel Members

Colorado Floristic Quality Assessment Panel Gerould Wilhelm, Conservation Designe Forum, Inc. (moderator)			
Name	**Organization**	**Name**	**Organization**
Dave Anderson	*Colorado Natural Heritage Program*	Brad Johnson	*Colorado State University*
David Buckner	*ESCO Associates, Inc.*	Steve Kettler	*U.S. Fish and Wildlife Service*
Kathy Carsey	*U.S. Forest Service*	Gwen Kittel	*NatureServe*
Dina Clark	*Denver Botanic Gardens*	Peggy Lyon	*Colorado Natural Heritage Program*
Janet Coles	*U.S. National Park Service*	Joe Rocchio	*Colorado Natural Heritage Program*
Denise Culver	*Colorado Natural Heritage Program*	Harvey Sprock	*U.S. Natural Resources Conservation Service*
Craig Freeman	*Kansas Natural Heritage Inventory*		

3.2.1 Data Derived Coefficients of Conservatism

An independent measure of C values was assigned to those native species that occurred in three or more of the sample plots (*sensu* Cohen et al. 2004 and Mushet et al. 2002). These C values were derived by averaging the Human Disturbance Index score (see Section 3.2.5) from each plot in which these species occurred. This value was relativized to a value between 0-10 and used as an empirically defined C value.

3.2 Field Testing of FQA Indices

A field study was conducted to determine if a subset of the assigned C values (Appendix D) were able to detect loss of floristic integrity in wetlands with increasing human perturbations. The study entailed sampling vegetation plots from wetlands exposed to varying degrees of human-induced disturbance; calculating FQA indices from each of these plots; scoring the severity, type and amount of human disturbance affecting each plot; and then correlating the FQA index scores to the gradient of human disturbance.

Sampling focused on the Upper Blue and South Platte River Headwaters watersheds while a few reference quality sample sites were chosen from the Colorado Headwaters watershed. Human disturbance was scored at each one of the vegetation plots according to the degree of human-induced alterations to the wetland and surrounding buffer's ecological processes. Multiple FQA indices were calculated for each site and compared to the human disturbance index to determine whether they were correlated. For each plot, three main indices were tested: (1) Mean C; (2) Floristic Quality Assessment Index; and (3) Adjusted Floristic Quality Assessment Index. Variations on these indices (i.e. using native and total species richness; weighting each with mean cover) resulted in the ten FQA indices that were tested (Table 2). The calculations used for each FQA Indices tested are shown in Table 2.

Table 2. Notation and Calculations for FQA Indices

Floristic Quality Assessment Indices	Calculation
Mean C (native) = $\overline{C}_n$	$\sum Ci \div N$
Cover weighted Mean C (native) = $\overline{C}_{n\,\mathrm{cov}}$	$\left(\sum Ci * MCi\right) \div TCi$
Mean C (all species) = $\overline{C}_{all}$	$\sum Cj \div N$ (C values for non-native are defaulted to 0)
Cover weighted Mean C (all species) = $\overline{C}_{all\ \mathrm{cov}}$	$\left(\sum Cj * MCj\right) \div TCj$
Floristic Quality Index (native) = FQI_n	$\overline{C}_n * \sqrt{N}$
Cover weighted Floristic Quality Index (native) = $FQI_{n\ \mathrm{cov}}$	$\overline{C}_{n\ \mathrm{cov}} * \sqrt{N}$
Floristic Quality Index (all species) = FQI_{all}	$\overline{C}_{all} * \sqrt{N}$
Cover weighted Floristic Quality Index (all species) = $FQI_{all\ \mathrm{cov}}$	$\overline{C}_{all\ \mathrm{cov}} * \sqrt{N}$
Adjusted Floristic Quality Index = $AFQI$	$\left(\frac{\overline{Cn}}{10} * \frac{\sqrt{N}}{\sqrt{S}}\right) * 100$
Cover weighted Adjusted Floristic Quality Index = $AFQI_{\mathrm{cov}}$	$\left(\frac{\overline{Cn\,\mathrm{cov}}}{10} * \frac{\sqrt{N}}{\sqrt{S}}\right) * 100$

*i = individual native species; N = native species richness; MC = mean cover/species; TC = total mean cover for all species; j = individual species (native or nonnative); S = total species richness (native and nonnative)

3.2.1 Sample Site Classification

For identifying conservation targets or remnant or high-quality natural areas, Wilhelm and Ladd (1988) suggested determining FQI or $\overline{C}$ values across ecotones and plant community types.

However, for many applications such as monitoring, establishing mitigation criteria, ecological integrity assessment, etc. this approach may not be useful. In addition, numerous studies have found that FQI scores differed among different plant community types due to the fact that some plant communities naturally support more generalist species than others (Andreas et al. 2004; Matthews 2003; Rooney and Rodgers 2002). Due to this potential ecological effect, these studies suggest constraining comparisons of C values to similar wetland types. Thus, wetland or plant community classification is an important component to the FQA.

Classification aids in constraining or minimizing natural variation by categorizing wetlands into units which share similar biotic and abiotic characteristics. Classification units that are too large may have too much internal variability to provide useful signals whereas units that are too small may pose practical difficulties in application. For the purpose of monitoring and assessing biological integrity, the purpose of classification is to group ecosystems based on biotic similarities in the absence of human disturbance as well as in regard to similarities in their response to human disturbance (Karr 1998). Thus, classifications based only on chemical or physical criteria may not be sufficient for biological monitoring (Karr 1998).

Classifications based on HGM are often used for wetland functional assessments due to their ability to distinguish unique abiotic processes. Vegetation types associated with each HGM class often reflect these different abiotic scenarios and consequently may share similar responses to human disturbance (DeKeyser et al. 2003). This suggests that HGM would be a useful and practical classification for FQA. However, there is often much overlap of physiognomic vegetation types (e.g., herbaceous vs. shrubland) among HGM classes. Since physiognomic type has been shown to be an important distinguishing variable for other vegetation assessments such as a vegetation index of biotic integrity, HGM may not be the best sole classification system to use (Mack 2004a). Thus, a classification system which utilizes vegetation as well as aspects of HGM is desirable. The ecological system classification (Comer et al. 2003), which incorporates both biotic and abiotic criteria, appears to meet such a need (Rocchio 2007). As such, ecological systems were chosen as the classification scheme and consequently were used to help determine sample site selection and design.

Comer et al. (2003) define ecological systems as "a group of plant community types that tend to co-occur within landscapes sharing similar ecological processes, substrates, and/or environmental gradients". In the Southern Rocky Mountain ecoregion, physiognomy, elevation, water source, landform, and substrate were the diagnostic criteria used to define the following wetland and riparian ecological system types (Rondeau 2001):

- Rocky Mountain Alpine-Montane Wet Meadow
- Rocky Mountain Subalpine-Montane Fen
- Rocky Mountain Subalpine-Montane Riparian Woodlands,
- Rocky Mountain Subalpine-Montane Riparian Shrublands,
- Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrublands,
- North American Arid Freshwater Marsh
- Intermountain Basins Playa

Descriptions and a key to ecological system types were used to classify the targeted wetland's ecological system type (Appendix A). The HGM type of each site was classified using the keys provided in Johnson (2005). Physiognomic class was determined based on the dominance or lack of shrubs at a site and soil type was determined by digging multiple soil pits within the vegetation plot to determine whether organic or mineral soils were predominant.

3.2.2 Reference Condition

Purpose

In order to assess floristic or ecological response to human-induced disturbance a baseline reference condition consisting of no or minimal human impacts must be defined and described. By describing the natural variability associated with reference condition wetlands, the response of these wetlands to human-induced disturbances is more easily understood. In other words, it becomes easier to separate the signal (response to human disturbance) from noise (natural variability) when sampling wetlands across a human disturbance gradient. It follows that, if ecological response to stressors can be identified then better informed restoration, management, and protection projects can be implemented.

Conceptual Definition

Conceptually, the biotic reference condition for this project uses the concept of natural range of variability (NRV). NRV is based on the temporal and spatial range of climatic, edaphic, topographic, and biogeographic conditions under which contemporary ecosystems evolved (Morgan et al. 1994; Quigley and Arbelbide 1997). The NRV delimits the range of ecosystem processes that remain relatively consistent over a specified temporal period (Morgan et al. 1994). Regional climatic regimes have undergone more recent changes than geological parameters, thus the climate under which contemporary biota have evolved is most useful for delineating a temporal limit to the NRV. Whitlock et al. (2002) suggest modern climatic conditions in the Rocky Mountain region began about 3,000 years before present while Vierling (1998) estimates that current climatic conditions in central Colorado began about 1800 years before present. Thus, the NRV is not considered to be static for any given variable but rather a range of responses to climatic fluctuations which have occurred over the past few thousand years.

Another consideration for describing the NRV is the degree to which anthropogenic impacts have altered natural ecosystems. There is disagreement over whether disturbances resulting from Native Americans' interaction with the landscape occurred over spatial and temporal scales in which native flora and fauna were able to adapt (see Vale 1998 and Denevan 1992). The hypothesis offered by Vale (1998), which notes that Native American impacts were not ubiquitous across the landscape, is accepted for this project. Furthermore, where Native American impacts did occur, it is accepted here that they occurred over spatial and temporal scales in which native biota were able to adapt and thus are included within the NRV (Quigley and Arbelbide 1997; Wilhelm and Masters 1996). European settlement of the Southern Rocky Mountains began in earnest during the 1860s although fur-trappers were present in the area well before then (Wohl 2001). With settlement, came a profusion of impacts which occurred at a spatial and temporal scale, intensity, and duration unprecedented in the evolutionary history of contemporary ecosystems (Morgan et al. 1994; Poff et al. 1997; Quigley and Arbelbide 1997). Beavers were extirpated from the region by 1830 exerting major changes to the hydrology of streams and wetlands (Wohl 2001). Most low-elevation forests in the Rocky Mountains were cut over by 1900; domestic livestock operations boomed after 1880 affecting large areas of the Rocky Mountain landscape; and to date, there are more than 7,000 abandoned mines in Colorado (Rueth et al. 2002). Water resources were drastically affected by human and livestock consumption via irrigation and impoundments (Wohl 2001). For example, Solley et al. (1998) estimated that there are over 67,000 surface water diversions within and Colorado's National Forests and Grasslands and nearby private lands. These alterations have resulted in many aquatic, riparian, and wetland environments being ecologically very different from which resident biota evolved (Poff et al. 1997). In conclusion, past and current human impacts have become one of the most dominant environmental variables affecting ecosystems (Vitousek et al. 1997) and there is no doubt that

European settlement has had a unique impact to the landscape. Thus, the NRV for this project spans the period between 3000 years BP until European settlement (approximately mid-1800s).

Practical Definition

Practically speaking, the NRV is difficult to empirically define since long-term ecological data as well as data prior to European settlement are rarely available (Swetnam et al. 1999). Thus, a more practical definition of the reference condition is needed. The concept of Minimally Disturbed Condition (MDC), or the biotic condition of sites in the absence of significant human disturbance, is used here to define the reference condition for Southern Rocky Mountain wetlands and riparian areas (Stoddard et al. 2006). Stoddard et al. (2006) consider the MDC to be the "best approximation or estimate of biotic integrity". Recognizing that most sites have likely been exposed to some minimal human stressor (e.g. atmospheric contaminants), the definition incorporates the disclaimer of "significant" human disturbances. The reference condition represents one end of a continuum ranging from sites with minimal or no exposure to human-induced disturbance to those in a highly degraded condition due to such impacts (Bailey et al. 2003; Stoddard et al. 2006).

Current and historical land use information was used to determine whether a specific site met the MDC criteria. As previously mentioned, historical and contemporary human disturbances directly or indirectly affect much of the Southern Rocky Mountain landscape (Wohl 2001); however, many areas in the Southern Rocky Mountains still meet the MDC criteria and thus allow direct observation and measurement of conditions which are likely very similar to what occurred prior to European settlement. Data from such sites allow the natural variability of the MDC to be quantified and/or described. Literature sources can also be used to describe the MDC. For example, Cooper and Gage (*In Progress*) provide a thorough review and synthesis of historic and contemporary climatic, geological, hydrological, and biological data as it relates to the concept of the historic range of variation for wetlands and riparian areas found within the mountainous portions of Colorado and adjacent states. Based on such literature resources as well as on-the ground experience, a general description of the MDC for the targeted wetland types can be found in the Rocky Mountain Sublapine-Montane Riparian Shrubland, Alpine-Montane Wet Meadow, and Subalpine-Montane Fen Ecological Integrity Assessment reports which are located online at http://www.cnhp.colostate.edu/reports.html (Faber-Langendoen et al. 2006).

The natural variation of the MDC provides a baseline from which biotic or abiotic variables can be assessed to determine whether ecological integrity has been compromised at a site. Similarly, sites exposed to varying types and intensities of human disturbance are also sampled in order to characterize how each variable of interest (e.g. vegetation) responds to such impacts (Davies and Jackson 2006). This approach allows the construction of multi-metric indices as well as a framework for interpreting changes in ecological condition (Faber-Lagendoen et al. 2006; Davies and Jackson 2006).

For this project, contemporary and historic literature, GIS data concerning land use, observable signs of human disturbances, and best professional judgment were used to determine whether a sample site met or how much it has deviated from the MDC criteria. This was accomplished by applying this information toward the assignment of a Human Disturbance Index score (see Section 3.5.1). By sampling wetlands representing the continuum from reference to highly degraded, this project will seek to correlate the response of vegetation attributes to the Human Disturbance Index in order to create a Vegetation Index of Biotic Integrity.

3.2.3 Site Selection and Wetland Assessment Area

Sample Site Selection

Sample sites were subjectively chosen to strive for adequate representation of the human-disturbance gradient and equal representation of each ecological system (U.S. EPA 2002b). A potential list of sample sites was first developed by categorizing the study area into *a priori* disturbance categories and identifying wetland sites within each category. This was accomplished using a Landscape Integrity Model (LIM), a GIS-based algorithm which plugs various land use GIS layers (roads, land cover, water diversions, groundwater wells, dams, mines, etc.) weighted according to their perceived impact on ecological integrity, into a distance-based, decay function to determine what effect these stressors have on landscape integrity. The result is that each grid-cell (30 m) is assigned an integrity "score". The product is a watershed map depicting areas according to their potential "integrity". A LIM was developed for this project's study area to provide an initial stratification of potential sample sites (Figure 2).

Additionally, the following resources were used to identify and categorize potential sample sites into broad disturbance categories (as depicted in Figure 2):

- Digital orthophoto Quadrangles (1 m resolution)
- GIS layers (roads, utility lines, trails, mines, wilderness areas, National Land Cover Dataset, irrigation, ditches, groundwater wells, etc.),
- Element occurrence records from the Colorado Natural Heritage Program's Biodiversity Tracking and Conservation System (Colorado Natural Heritage Program 2004),
- Bureau of Land Management Proper Functioning Condition data (Bureau of Land Management 2004),
- Site data from the Summit County Wetland Functional Assessment (SAIC 2000),
- U.S. Forest Service wetland surveys (Summit County 1999), and

Coupled with the LIM, these qualitative determinations helped stratify and target sampling efforts. However, onsite assessment often placed a wetland into a different disturbance category than the one identified using the LIM and other resources. Sample site selection was adjusted accordingly to strive for equal representation of disturbance across ecological system types. Once onsite, a different set of criteria was used to assign a human disturbance index score (see Section 3.5.1). Sample site selection and data collection occurred during the summers of 2004 (Plots 1-20), 2005 (Plots 21-52), and 2006 (Plots 53-78). Notes: Plot 12 was removed as it was resampled (Plot 21) due to data quality issues. Plots 66 and 67 were removed because they represented wetland type (e.g. salt flats) not included in this study. Thus, a total of 75 plots were included for data analysis.

Wetland Assessment Area

At each sample site, a wetland assessment area (AA) was defined. The AA is simply the boundary of the wetland (or a portion thereof) in which analysis will occur. The AA is defined for the purpose of developing a vegetation index of biotic integrity, thus different criteria may be used for other project objectives such as those associated with regulatory projects. For example, regulatory projects also have "project boundaries" and such projects may require assessing multiple AAs within each project area. For this project, typically only one AA was assessed at each site. The steps below were taken to delineate the AA for this project:

1. Estimation of Wetland Boundaries

The first step in identifying the wetland assessment area was to delineate the approximate boundaries of the wetland. Readily observable ecological criteria such as vegetation, soil, and

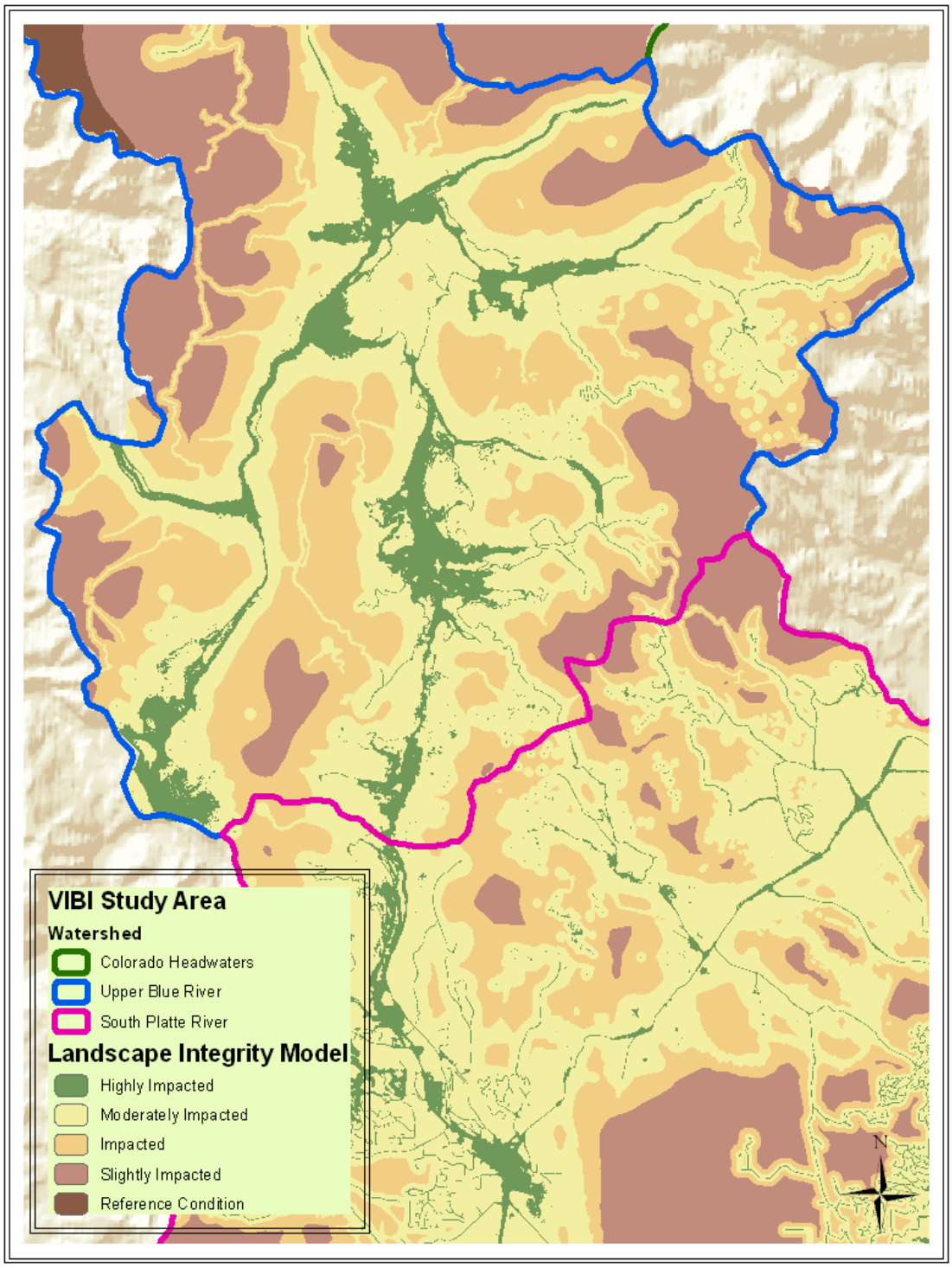

Figure 3. Example of Landscape Integrity Model Results for a Portion of the Study Area

hydrological characteristics were used to define wetland boundaries, regardless of whether they met jurisdictional criteria for wetlands regulated under the CWA.

2. Delineating Ecological System Boundaries

The second step was to delineate the targeted ecological system type present within the wetland boundary. Ecological system descriptions (Appendix A) were used to guide a subjective determination of the target system's boundaries in the field. A confounding factor is that ecological systems often co-occur in the landscape. For example, fens may occur together with riparian shrublands in a basin or along a riparian corridor (Figure 4). Similarly, wet meadows are often interspersed with riparian shrublands. For such scenarios, it was necessary to delineate the boundaries of these separate ecological systems based on the minimum size criteria associated with each system (Appendix A). Each patch of ecological system meeting its minimum size would be considered a separate potential AA and thus as an independent sample point (Figure 4). If an ecological system patch was less than its minimum size then it would be considered to be an inclusion within the ecological system type in which it is embedded.

There were a few cases where wet meadows and fens which were smaller than their minimum size criteria were chosen as sample AAs because they were limited in size only by their hydrogeomorphic position (Plots 01, 39, and 51) (i.e. small areas of groundwater discharge surrounded by uplands).

3. Size and Land Use Related Boundaries

Once the targeted ecological system's boundaries were delineated, then size and land use were used to further refine AA boundaries. For example, depending on the size or variation of the wetland area, the AA may consist of the entire site or only a portion of the wetland/riparian area. For small wetlands or those with a clearly defined boundary (e.g., isolated fens or wet meadows) the AA was almost always the entire wetland. In very large wetlands or extensive and contiguous riparian types, a sub-sample of the area was defined as the AA for this project. For other project purposes such as regulatory wetland projects, there may be multiple AA in one large wetland. A few samples sites contained multiple AAs due to abrupt changes in land use or human-induced disturbances. These distinct AAs were treated as separately in data analysis (Figure 4)

The following size and land use guidelines were used to make final adjustments to the AA boundaries[16]:

Wetland AA Boundaries:

1. Wet meadows and fens were often spatially distinct from surrounding uplands or adjacent wetland types and easily identified. For these cases, the AA was often the entire wetland area.
2. Significant change in management or land use which result in distinct ecological differences dictated distinct AAs. For example, a heavily grazed wetland on one side of a fence line and ungrazed wetland on the other would result in two AAs.
3. Natural changes in hydrology. For example, a drastic change in water table levels or fluctuations, confluence with a tributary, etc. would dictate separate AAs. Anthropogenic changes in hydrology. For example, ditches, water diversions, irrigation inputs, roadbeds, etc. which substantially alter a site's hydrology relative to adjacent areas would dictate separate a AA.

[16] These guidelines are mostly based on those identified by Mack (2001), Washington State Dept. of Ecology (1993), and Collins et al. (2006).

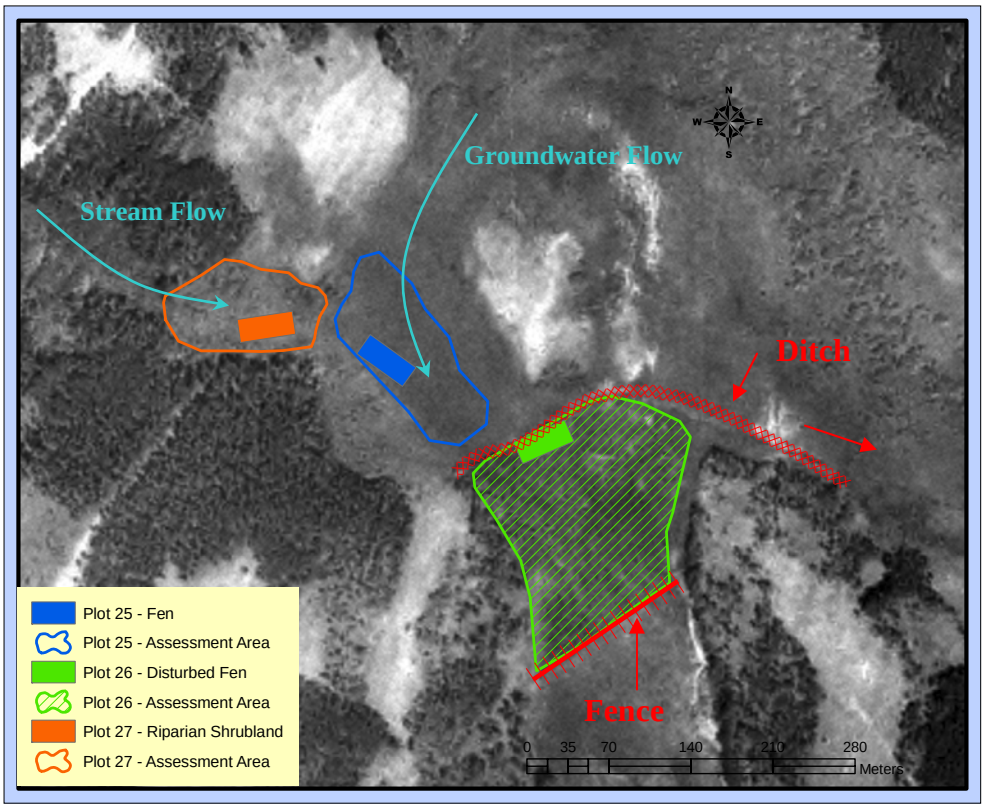

Figure 4. Examples of Delineated Wetland Assessment Areas. Although contiguous with each other, three distinct AAs were delineated because either they were distinct ecological system types (e.g. fen vs. riparian shrubland) or due to a human-induced disturbance (e.g. ditch) which significantly altered a large portion of an otherwise contiguous wetland type (e.g. intact vs. disturbed fen).

4. For large wetlands, representative sub-samples of the floristic and abiotic micro-variation with the wetland/riparian type in question was used as the AA. For example, in a large wetland such as High Creek Fen, sedge meadows, water tracks, and rills represented micro-variation within the fen ecological system type. A representative sub-sample included portions of these variations within the AA.

Riparian AA Boundaries:

1. Lateral boundaries were defined by:
   - Abrupt changes in geomorphology (e.g., upland slopes)
   - Transition of wetland vegetation to upland species.
2. Longitudinal boundaries were defined by:
   - Natural changes in hydrology. For example, a change in channel type (e.g. Rosgen 1996), geomorphic constrictions, the presence/absence of beaver ponds, confluence with a tributary, or rapids/waterfalls.
   - Anthropogenic changes in hydrology. For example, dams, water diversions, dikes, berms, roadbeds, etc. which substantially alters a site's hydrology relative to adjacent reaches.

- Significant change in management or land use which result in distinct ecological differences. For example, a heavily grazed shrubland on one side of a fence line and ungrazed shrubland on the other.
- Sub-sample of riparian area that is representative of local human-induced disturbances and floristic variation. For example, if hydrological changes and/or management criteria aren't helpful in defining the AA because the wetland in question is so large (longitudinally or laterally), then a representative sub-sample of the wetland was defined as the AA.

3.2.4 Plot Establishment and Vegetation Sampling

Plot Location

Vegetation plots were subjectively placed within the AA to maximize abiotic/biotic heterogeneity within the plot. Capturing heterogeneity within the plot ensures adequate representation of local, micro-variations produced by such things as hummocks, water tracks, side-channels, pools, wetland edge, micro-topography, etc. in the floristic data.

The following guidelines were used to determine plot locations within the AA[17]

- The plot was located in a representative area of the AA which incorporated as much microtopographic variation as possible.
- If a small patch of another wetland type was present in the AA (but not large enough to be delineated as a separate ecological system type), the plot was placed so that at least a portion of the patch was in the plot.
- When site characteristics dictated a modification of plot structure, an alternative array of modules was selected to best represent the AA (e.g. 20 m x 20 m for small circular sites or 10 m x 50 m for narrow linear areas)
- Uplands were excluded from plots; however, mesic microtopographic features such as hummocks, if present, were included in the plots.
- Localized, small areas of human-induced disturbance were included in the plot according to their relative representation of the AA (large areas of human-induced disturbance dictated that the area be delineated as a separate AA).

Reléve Method

A 20 m x 50 m reléve plot developed by Robert Peet was used to collect vegetation data. The method has been in use by the North Carolina Vegetation Survey for over 10 years (Peet et. al 1998) and has also been used to successfully develop a VIBI in Ohio (Mack 2004b).

The structure of the plot consists of ten 100 m^2 modules (total of 1000 m^2 or 0.1 hectare) which are typically arranged in a 20 m x 50 m array (Figure 5). Floristic measurements included presence/absence and abundance (e.g. cover) and were made within at least four of the 100 m^2 intensive modules. These are referred to as "intensive" modules. In addition, nested quadrats within each module are established in at least two corners providing data from multiple scales (Figure 5). The remaining six modules are considered "residuals" and are searched for any species not documented in the intensive modules.

To lay out the plot, a 50 m measuring tape was extended as the centerline of the plot from a subjectively chosen origin (see Section 3.4.1). Starting at zero, a stake flag (or flagging tied to a

[17] Many of the guidelines are based on Mack 2004b.

shrub /tree) was placed every 10 m. Red stake flags or flagging were placed at the 0, 40, and 50 m marks and green stake flags/flagging at the 10, 20 and 30 m marks. This helped visualize the four "intensive modules" which occur on either side of the centerline between the 10-30 m marks. Next, a 10 m rope was extended perpendicular on either side of the centerline at each 10 m mark. Red or green flags were placed at the end of the rope to mark the lateral boundaries of each module and the plot.

If the wetland had an irregular shape and the plot did not "fit", the 2 x 5 array of modules was restructured accommodate the shape of the wetland or AA. For example, a 1 x 5 array of 100 m^2 modules was used for narrow, linear areas. A 2 x 2 array of 100 m^2 modules was used for small, circular sites (Peet et. al. 1998; Mack 2004b). Regardless of the structure, a minimum of four intensive modules was always sampled.

If the wetland was so large that the 20 m x 50 m plot did not capture a significant amount of variation of the wetland, then the 2 x 5 array of 100 m^2 modules was separated into ten individual modules which were subjectively established throughout the wetland to ensure variation of the wetland type was captured (Figure 6). In this case, all ten modules were intensively sampled. For other types of projects, the locations of these modules might be randomly placed throughout the wetland (Mack 2004b).

Each module in the plot was numbered by standing at the 0 m mark facing the 50 m end, the modules were assigned from 1-5 starting on the right side and modules 6-10 were assigned using a similar method then from the 50 m mark (Figure 5). Intensive modules were typically modules 2, 3, 8, and 9. Within intensive modules, a $\log_{10}$ series of nested subquadrats were established to obtain estimates of species composition at multiple spatial scales (e.g., 0.01, 0.1, 1.0, and 10 m^2) (Figure 5). The subquadrats were established in one or more corners in each intensive module. For this project, only two corners in each of the four intensive modules were sampled. When standing at the 0 m mark and facing the 50 m end, the corners of each intensive module are numbered in a clockwise direction within each module. To maximize spatial distinction of the sampled corners, the following sequence of corners was sampled: Module 2 (corners 2 and 4), Module 3 (corners 2 and 3), Module 8 (corners 2 and 4), and Module 9 (corners 2 and 3) (Figure 5). For those plots that did not use a 2x5 array of modules (e.g. 1x5 or 2x2), the module numbers may be different (and were randomly chosen); however the same sequence of corners was used.

The number of subquadrats in a nest is referred to as depth, where a depth of 5 indicates species presence was recorded in the 0.01 m^2 subquadrat, depth of 4 (0.1 m^2), depth of 3 (1.0 m^2), depth of 2 (10.0 m^2), and depth of 1 (100.0 m^2). Sampling began at the smallest subquadrat and each species received a number corresponding to the depth at which it was initially encountered. During 2004, all five depths (subquadrats) were sampled; however, to increase efficiency and due to a lack of utility of the finer scaled depths, only 3 subquadrats (1, 10, and 100 m^2) were sampled in 2005 and 2006. Presence recorded for a particular depth implies presence at all lower-numbered depths, thus both corners were sampled before documenting which species occur at depth 1 (100 m^2).

Cover was visually estimated at the level of the 100 m^2 module (depth 1) using the following cover classes (Peet et al. 1998):

1 = trace (one individual)
2 = 0-1%
3 = 1-2%
4 = 2-5%

5 = 5-10%
6 = 10-25%
7 = 25-50%
8 = 50-75%
9 = 75-95%
10 = > 95%

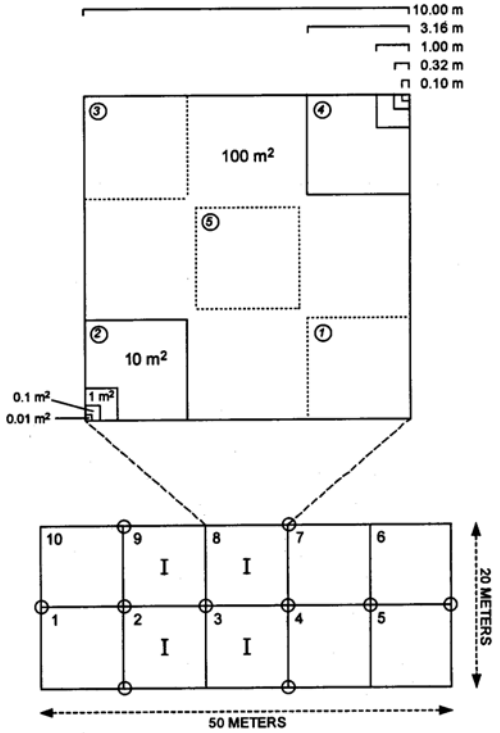

Figure 5. Reléve Plot Method (from Peet et al. 1998). I = intensive modules. Nested subquadrats are shown in the inset diagram at the top.

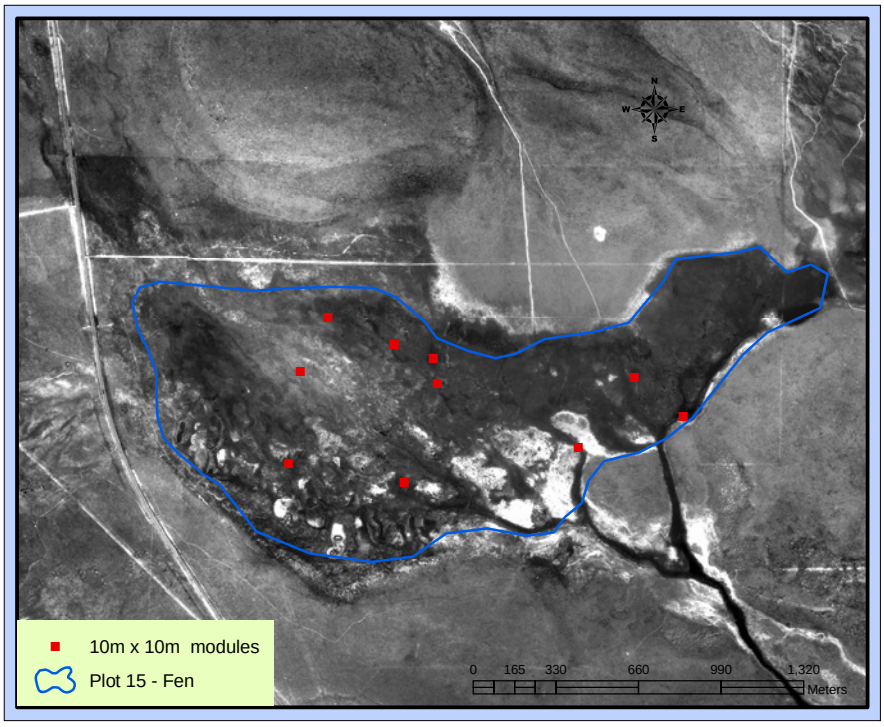

Figure 6. Example of 20m x 50m plot broken into ten 100m^2 modules.

After sampling each of the intensive modules, the remaining (i.e. residual) modules were walked through to document presence of any species not recorded in the intensive modules. Percent cover of these species is estimated over the entire 1000 m^2 plot. Cover was the only abundance measurement for all species.

3.2.5 Human Disturbance Gradient

Human Disturbance Index

The Human Disturbance Index (HDI) is a semi-quantitative index which provides an independent measure of wetland condition against which vegetation attributes are assessed to determine their relationship with increasing human disturbance (Appendix B). The HDI is an estimate of the degree to which each site has deviated from the reference condition, as defined by the minimum disturbed condition (MDC). The HDI was developed using rapidly employed metrics extracted from the related Ecological Integrity Assessment (Faber-Langendoen et al. 2005; Rocchio 2006a) as well as metrics employed in other rapid wetland condition assessment methods (Montana Department of Environmental Quality 2005; Mack 2001).

The HDI is based on the MDC definition of 'reference condition' and assume that the absence of historic and/or contemporary human disturbance indicates that the wetland or riparian area possesses biotic and ecological integrity and that increasing human disturbance results in a predictable deviation from the ecological reference condition (Figure 7). The HDI utilizes a series of metrics related to three major categories of human-induced stressors associated with wetlands and riparian areas in Colorado.

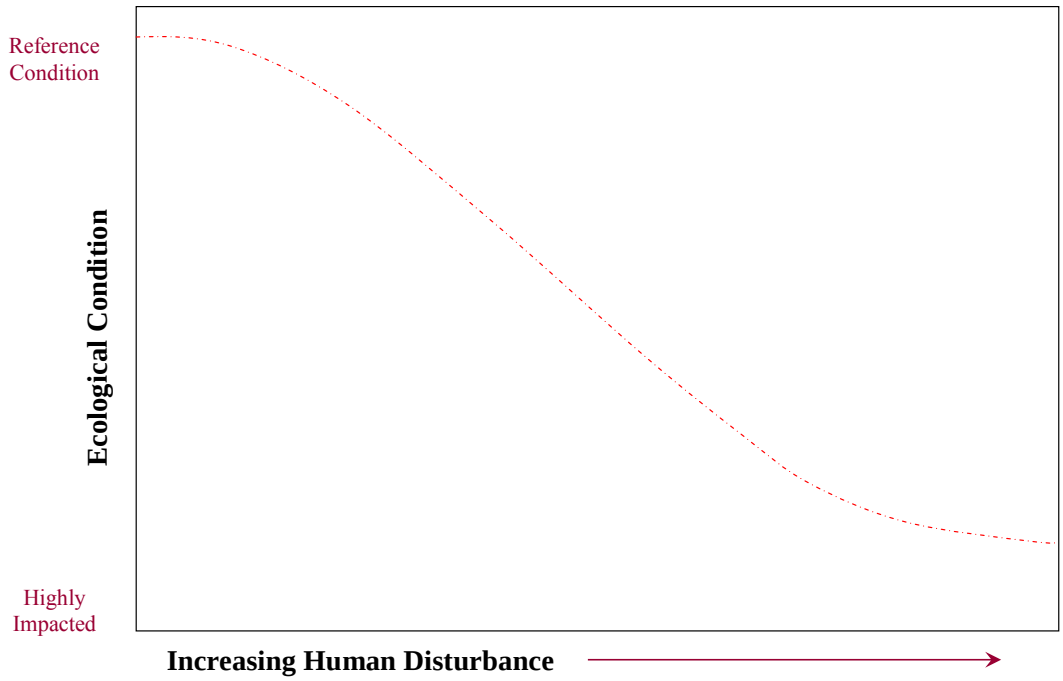

Figure 7. Human Disturbance and Ecological Condition. Graph adapted from: Davies and Jackson (2006).

The stressor categories and their respective metrics are listed below:

Alterations within Buffers and Landscape Context

- Average Buffer Width
- Land Use in 100 m Buffer
- Percentage of Unfragmented Landscape within 1 km (0.6 miles)
- Riparian Corridor Continuity

Hydrological Alterations

- Hydrological Alterations
- Upstream Surface Water Retention
- Upstream/Onsite Water Diversions/Additions
- Floodplain Interaction

Physical/Chemical Disturbances

- Substrate/Soil Disturbance
- Onsite Land Use
- Bank Stability
- Algal Blooms
- Cattail Dominance
- Sediment/Turbidity
- Toxics/Heavy Metals

Each metric has descriptive criteria indicating how many points are assigned to it (see form in Appendix B). The two highest indicator scores for each metric are summed then multiplied by a weighting factor (0.33 for Buffer/Landscape Context and Physical/Chemical Disturbances; 0.34 for Hydrology) to arrive at a final score ranging from 0 (reference condition; no/minimal human-induced disturbance) to 100 (highly impacted).

3.2.6 Other Data Collected

Standard site data were collected from each sample location. This included:

- HGM classification (Johnson 2005)
- Classification of plant association(s) (Carsey et al. 2003)
- Cowardin classification (Cowardin et al. 1979)
- GPS location
- Elevation
- Slope between 0 and 50 m mark of vegetation plot
- Compass direction of plot
- Selected soils data – depth and identification of soil horizons, texture, and color.
- Water table depth
- Nearby landforms (alluvial fans, narrow bedrock valley, alluvial valley, etc.)
- Description of onsite and adjacent ecological processes and land use.
- Description of general site characteristics.
- Photos
- Water pH, conductivity, and temperature were measured using a Hanna Instruments hand-held meter (Model # HI98129).

3.2.7 Data Management and FQA Database

An FQA database containing every species in the Colorado flora as well as their associated life history traits, wetland indicator status, and C values was created. Species nomenclature follows USDA PLANTS Database (http://plants.usda.gov/) as of January 2005. Since many practitioners in Colorado use Dr. William Weber's Colorado East/West Slope floras as a field key and nomenclature reference (Weber and Wittmann 2001a, 2001b), these names were cross-referenced to the PLANTS names in the database. Life history traits and wetland indicator status were downloaded from PLANTS. The USFWS Region 5 and 8 Wetland Indicator Status lists were also used to ensure that PLANTS information was correct (Reed 1988). However, these lists are not complete and many species did not have a wetland indicator status listed. For some of these species, a wetland indicator status was estimated using input from members of the Colorado Floristic Quality Assessment Panel as well as the author's personal experience with the flora.

Vegetation data were entered into a Microsoft Excel™ spreadsheet where data were "reduced" from raw cover class scores to cover values (the midpoint of each cover class). Mean cover for each species was averaged across the intensive modules and used in data analysis. For those species only occurring in the residual plots, the cover value for the residual plots was used for analysis. To eliminate spelling errors, a drop-down list was used for species entry. For a few vegetation plots, a number in a couplet (depth/cover) was missing. Because one value was recorded, it was assumed that the species was present in the plot and that the second value was simply overlooked. For these situations, a default value of 1 was entered no matter whether the missing value was depth or cover. Unknown or ambiguous species (e.g. Carex sp.) were recorded

but not included in data analysis. Data entry was reviewed by an independent observer for quality control.

Coefficients of conservatism, nativity and cover data were used to calculate FQA indices using the pivot table feature in Microsoft Excel™. Calculations made by pivot tables were randomly checked via hand-calculations to ensure that pivot tables were constructed correctly. Environmental data and human disturbance rating scores were also entered into a Microsoft Excel™ spreadsheet. These data were combined with metric values from each plot into a new spreadsheet. This spreadsheet served as the basis for analysis.

3.2.8 Data Analysis

Assignment of C values

Descriptive statistics were used to determine the distribution, number, and range of C values assignments. The average Panel assigned C value was compared to the empirically assigned C values using a Pearson correlation coefficient and descriptive statistics. Panel C values were not rounded for this analysis; however, the values in Appendix E were rounded to integers.

Testing FQA Indices

The values for FQA indices were calculated for each plot sampled. The following protocol was then implemented in the order shown to screen and identify which of the FQA indices were effective in detecting degradation of the plant community due to human disturbance (Barbour et al. 1996; Blocksom et al. 2002; Jones 2005):

1. Discriminatory Power: Box plots were used to assess the ability of each FQA index to discriminate between reference and highly impacted site (reference = HDI ≥ 68; highly impacted = HDI ≤ 33). Each index was scored according to the following criteria: 3= no overlap of interquartile range of reference vs. highly impacted sites (middle 50% of observations), 2=Interquartile ranges overlap but medians of both disturbance groups are outside the other's interquartile range, 1= Interquartile ranges overlap and one median occurs inside the other's interquartile range, 0= both medians overlap the others interquartile range or one group's interquartile range was entirely overlapped by the other's). Those indices which scored a 2 or 3 were considered to have adequate discriminatory power.

2. Correlation to Disturbance: The relationship of each FQA index to the HDI was assessed using scatterplots and Spearman's rank correlation coefficients (r[s]). Spearman's rank was used because the HDI consists of ordinal data. The Spearman's correlation coefficient measures the strength of correlation between the ranks of two variables.

3. Efficacy: The effectiveness of each FQA index in detecting floristic changes due to human disturbance was rated according to the following criteria:

Strong = Strong/good discriminatory power and correlation to HDI > 0.50

Weak = Good/weak discriminatory power and correlation to HDI > 0.30 (this rating was included due to the possibility that additional data collection may improve the index's effectiveness)

Poor = Weak/poor discriminatory power and correlation to HDI < 0.30

4.0 RESULTS

4.1 Sample Sites

A total of 75 plots were sampled over three field seasons (2004, 2005, and 2006; Figures 8 & 9). Most data collection occurred in the Upper Blue River and South Platter River Headwaters watersheds while a few reference quality sites were sampled in the Colorado Headwater watershed (Figure 9; Appendix C). A total of 480 species were identified in the 75 plots sampled (Appendix D), with 354 (mean of 62/plot) species found in riparian shrublands, 246 (mean of 30/plot) in fens, 190 (mean of 46/plot) in slope wet meadows, 171 (mean of 37/plot) in riverine wet meadows, and 130 (mean of 41/plot) in extremely rich fens.

Sampling initially focused on three ecological system types (wet meadows, fens, and riparian shrublands) with the intended goal of obtaining at least 25 plots per type. However, classification analysis indicated that fens and wet meadows needed to be split into two types (Rocchio 2007). Due to this, each ecological system type did not receive the same amount of sampling effort since the additional types were not initially targeted for sampling (Figure 8).

Riparian shrublands and fens have adequate representation across the human disturbance gradient (Figure 8). However, the newly defined types (extremely rich fens, slope wet meadows, and riverine wet meadows) generally need more data collection.

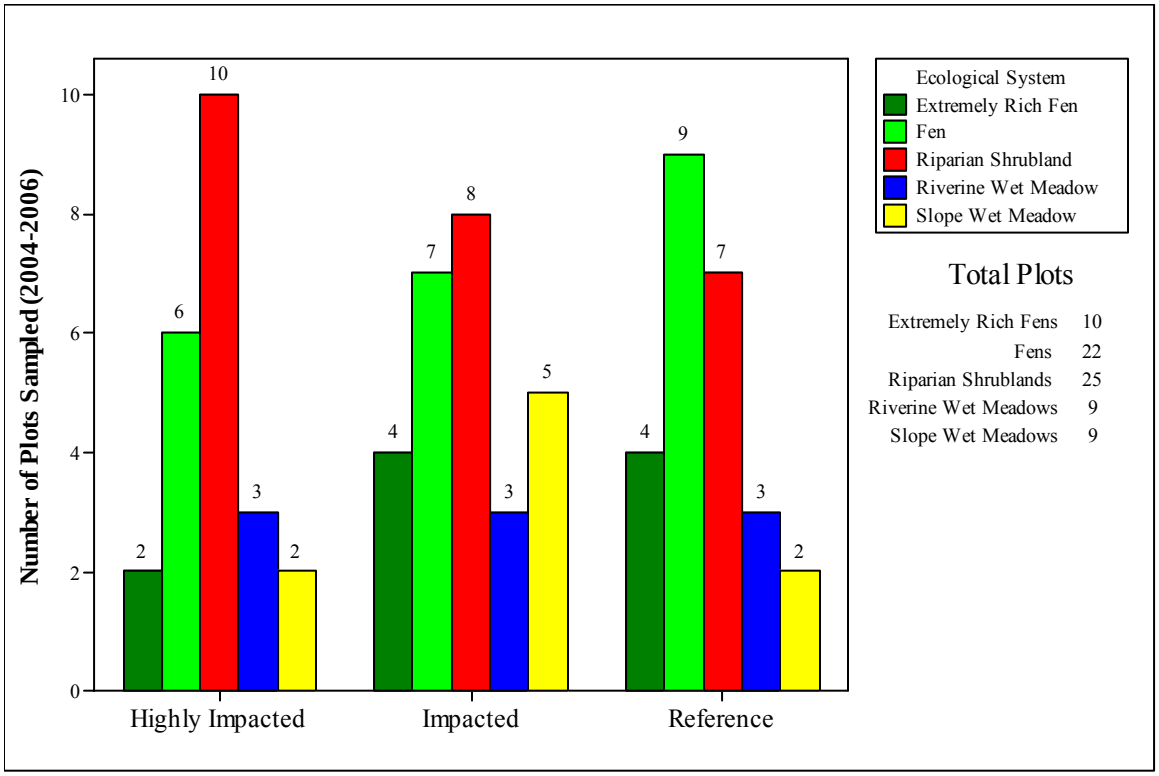

Figure 8. Plot Distribution Across Ecological System Types and Degree of Human Disturbance

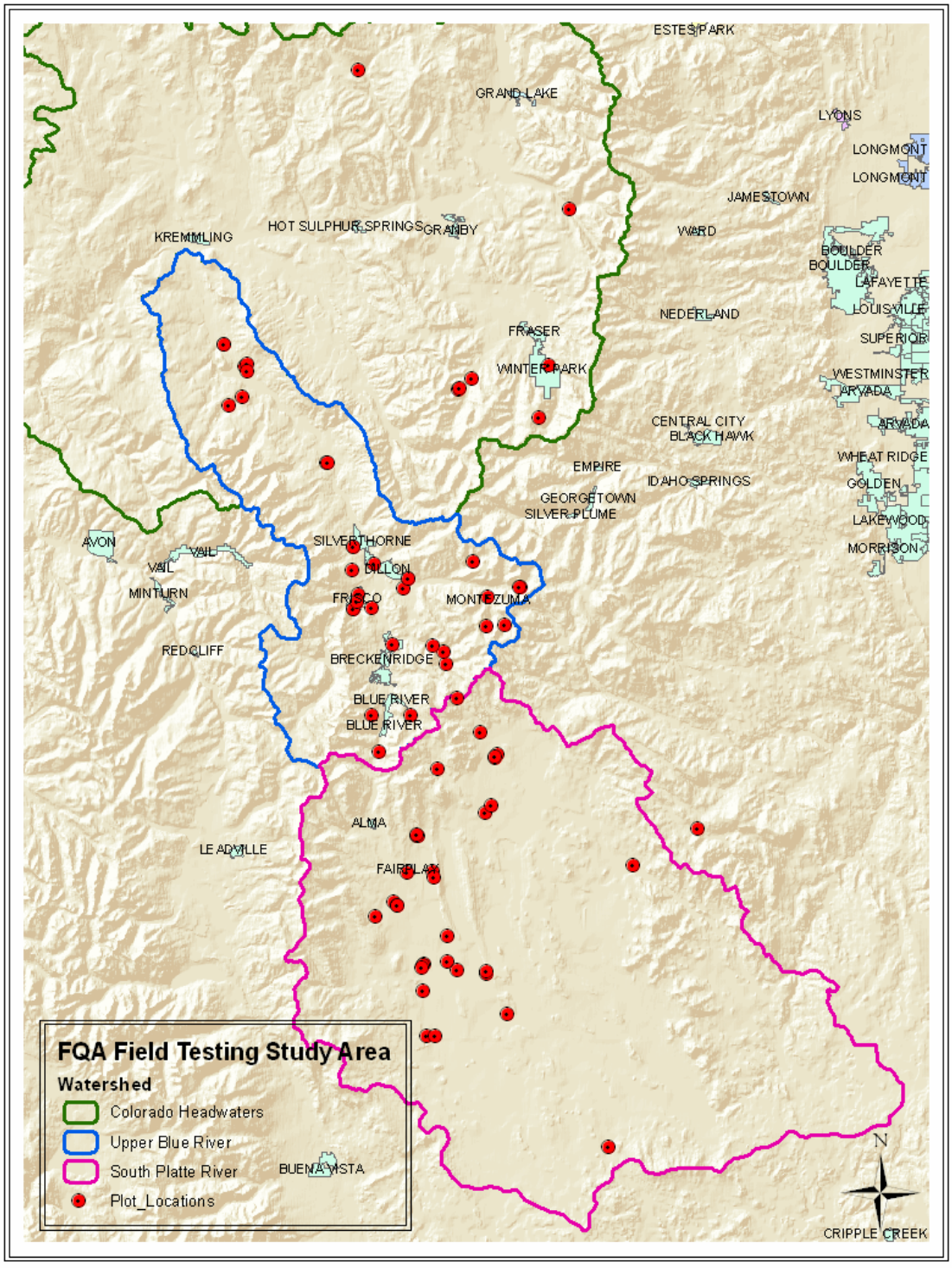

Figure 9. Plot Locations

4.2 Assignment of Coefficients of Conservatism Values

4.2.1 Panel Assigned C values

C values were assigned for 80% of the native Colorado flora (Table 3). Non-native species, which do not receive a C value assignment (they default to 0 in any analysis which includes them) comprise 16% of the flora, thus 84% of the Colorado flora is complete. The Panel was not able to assign C values to 525 species (16%). The C value assignments are listed in Appendix E.

Table 3. C value Assignments

Native Species Assigned C values	2,160 (80%)
Species Not Completed (not assigned C value)	*525* (20%)
Total Native Species	**2,685**
Non-native species	506
Total Species in Database	**3,191**

A histogram of the assigned C values is shown in Figure 10. The mean was 6.31 and there was a standard deviation of 2.04. The distribution of C values is skewed toward the higher end of the scale (Figure 10). Only 8% (178) of the assigned species had a C value ≤3 whereas 46% (988) of the species had a C value ≥ 7 (Figure 10).

Each Panel member suggested C values for those species they were most familiar with. Consequently, some species had more input than others. The number of individual suggestions (sample size) for those 2,160 species which were assigned C values is shown in Figure 11. Approximately 25% (529 species) are based on one individual suggestion indicating that many species were unknown to most of the Panel.

Of the 1,631 species which had more than one suggested C value, the majority of the Panel was in agreement regarding the individual assignment of C values. Figure 12 shows the number of species and their respective range of assigned C values. For example, the Panel was in complete agreement (i.e. range of 0) for 15% (250) of the species which were assigned C values (Figure 12). The Panel was in close agreement (range <3) for 90% (1,467) of the species assigned C values (Figure 12). However, there is strong disagreement regarding the remaining 10% (Figure 12).

4.2.2 Comparison of Panel and Empirically Defined C values

Of the 480 plant species observed in the 75 sample plots, 237 occurred in three or more plots and were assigned C values based on the average Human Disturbance Index scores of the plots in which they occurred. These empirically derived C values were compared to the Panel assigned C values using a histogram of the range of difference between these values (Figure 13) and Pearson correlation coefficients (Figure 14).

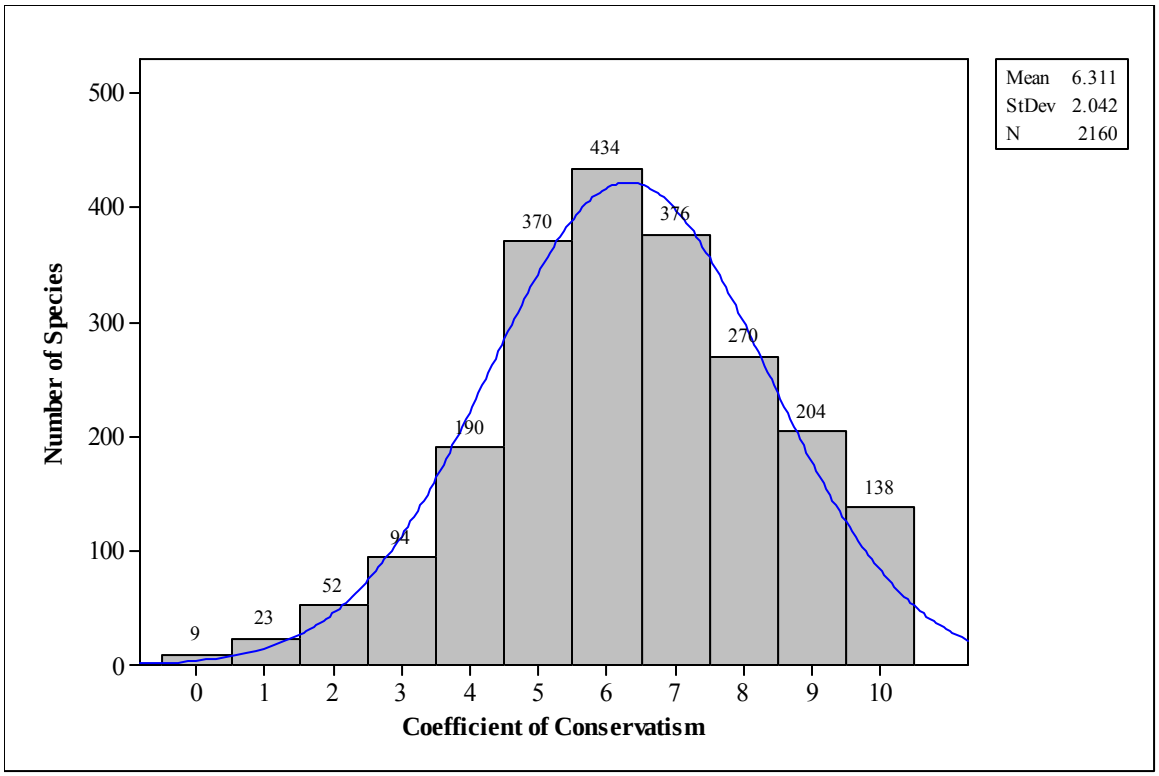

Figure 10. Distribution of Panel Assigned Coefficient of Conservatism Values for Native Species

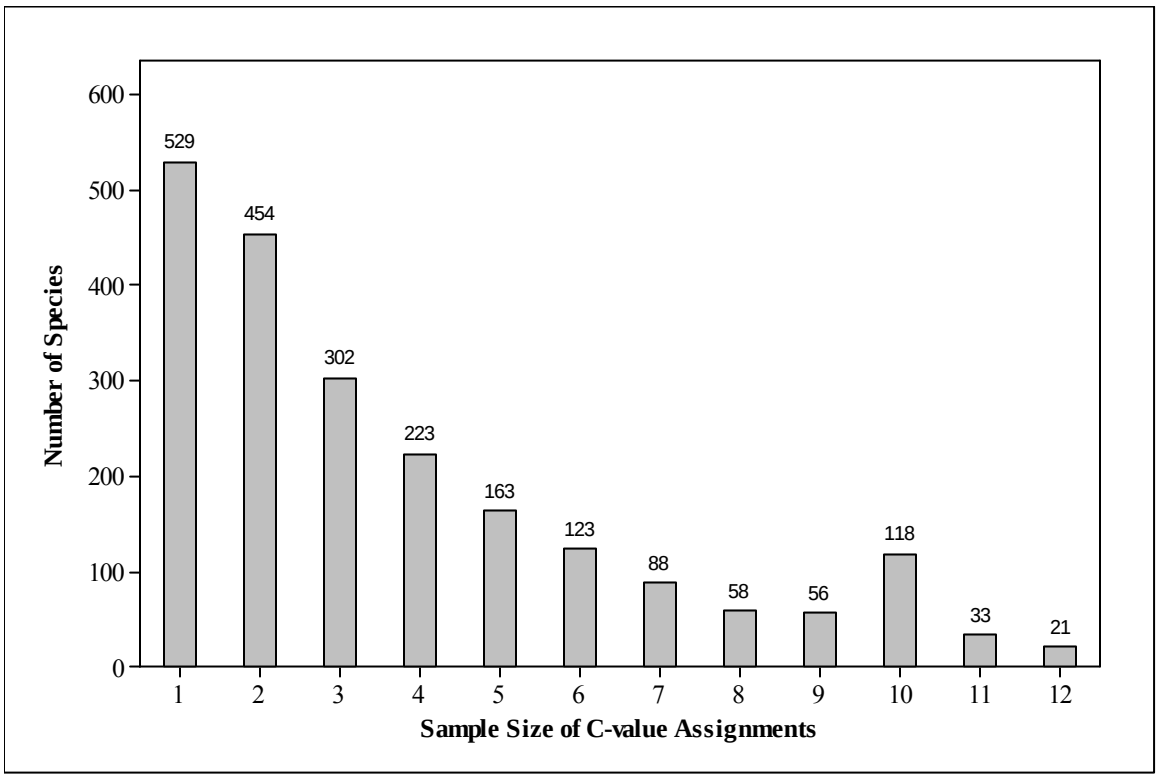

Figure 11. Sample Size for Panel C value Assignments

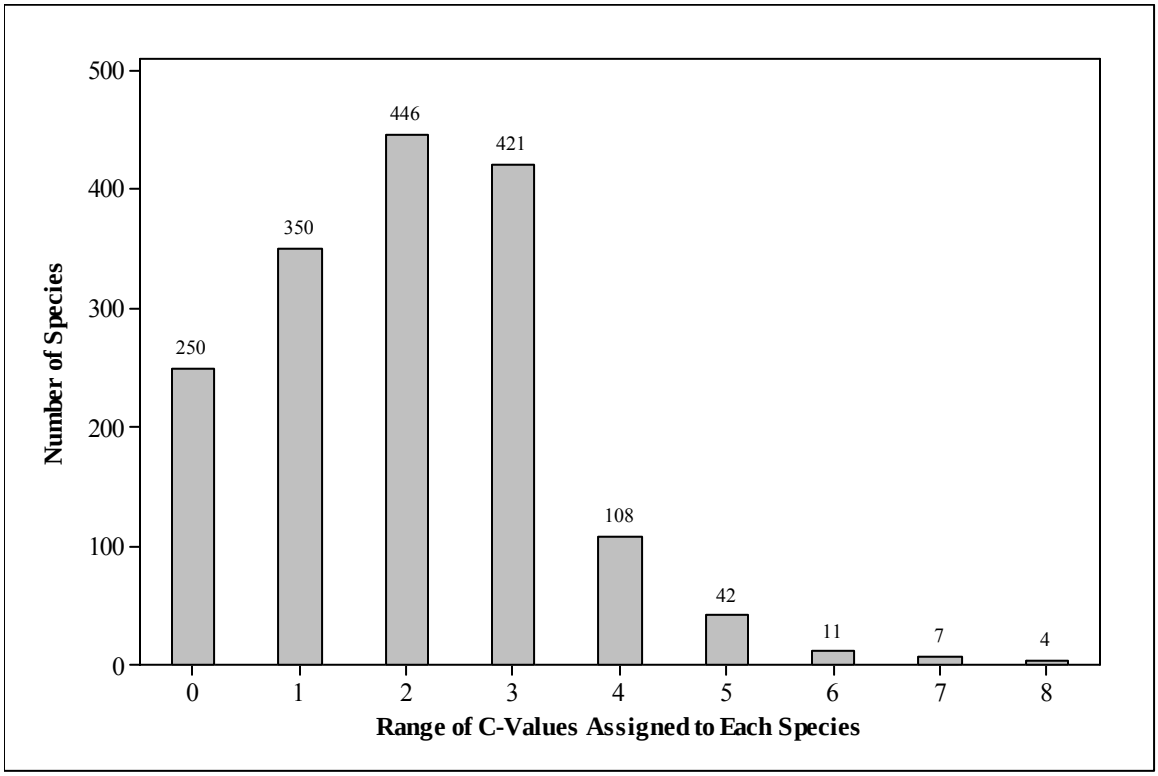

Figure 12. Range of Panel C value Assignments

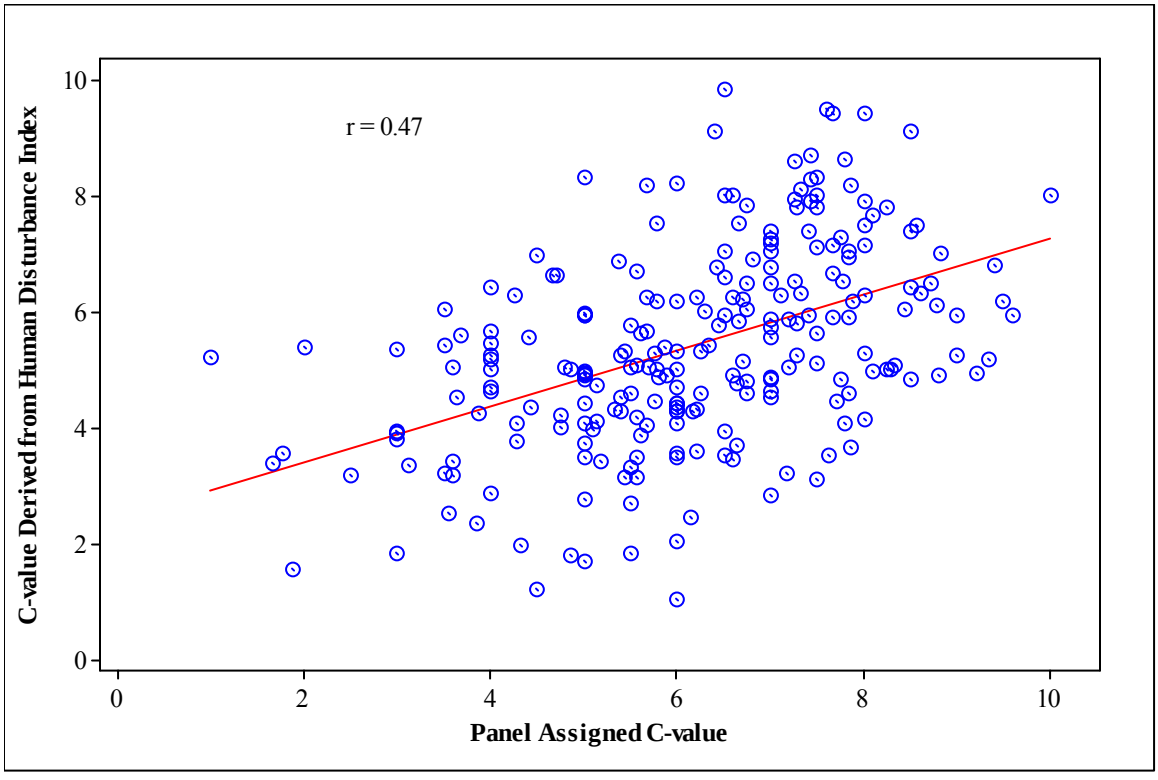

Figure 13. Pearson Correlation of Panel and Empirical C value Assignments

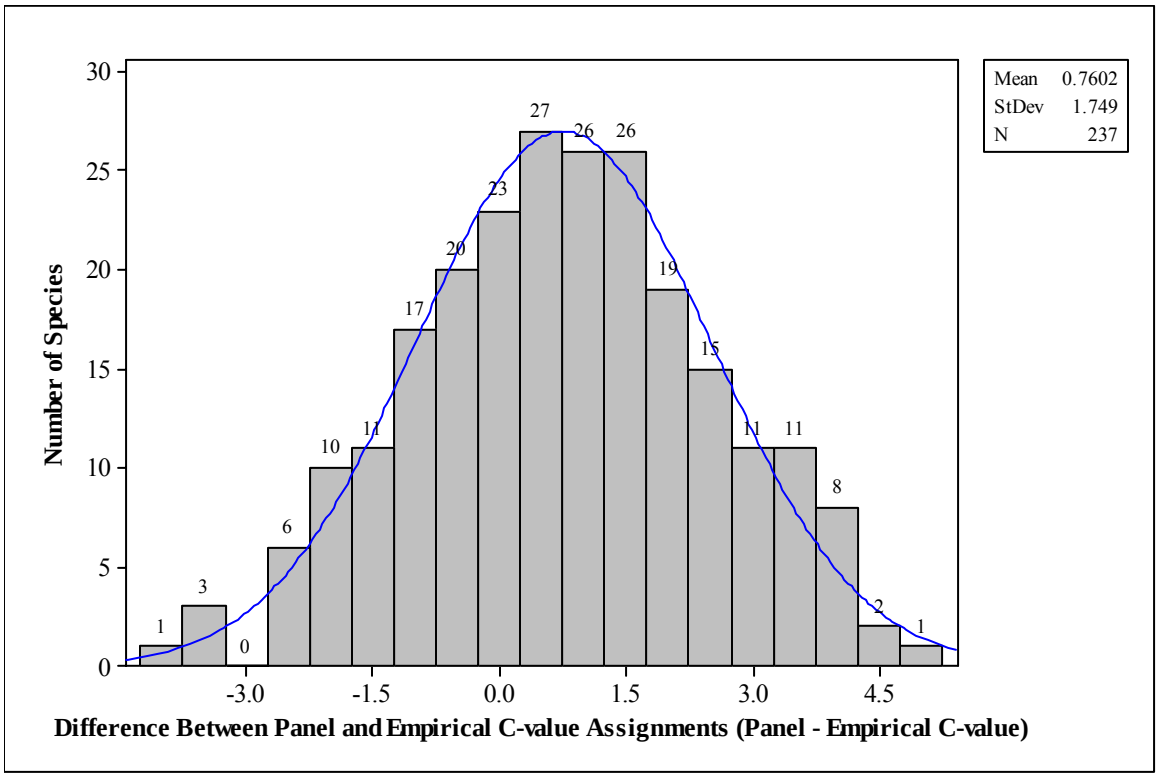

Figure 14. Disagreement of Panel and Empirical C value Assignments

The correlation between the Panel and empirical C value assignments is strong (r = 0.47) but still shows considerable noise (Figure 13). However, most of this noise is associated with relatively small (e.g. <3) differences between the two approaches (Figure 14). The Panel C value assignments were generally higher than those empirically assigned; 62% (146) of the species had higher Panel assigned C values (Figure 14).

4.3 Field Testing of Floristic Quality Assessment Indices

As mentioned above, 75 plots representing a human disturbance gradient in five Southern Rocky Mountain wet types (e.g. riparian shrublands, fens, extremely rich fens, slope wet meadows, and riverine wet meadows) were sampled. The species observed in this dataset are in Appendix D. The C values associated with each of these species were used in the FQA indice calculations and thus were the only C values field tested for this project. The results of field testing for each of these indices are given below.

4.3.1 Mean C (natives)

The $\overline{C}_n$ index showed strong discriminatory power and a strong correlation to the HDI for all ecological systems (and all plots together) except extremely rich fens and riverine wet meadows (Figures 15-18; Table 4). When all plots were analyzed together, Mean C (natives) was clearly able to discriminate between reference condition and highly impacted sites (Figure 15) and showed a strong correlation (r[s] = -0.60) to the human disturbance index (Figure 18). The effectiveness of Mean C (natives) for each ecological system type was very strong for fens (r[s] =

-0.71), riparian shrublands (r[s] = -0.70), and slope wet meadows (r[s] = -0.56) (Figures 17 & 18). Variability of the index for fens and riparian shrublands increased substantially as human disturbance increased (Figure 16). The index was weakly effective in detecting human disturbance in extremely rich fens (Figures 17 & 18). The scatterplots suggest that $\overline{C}_n$ is can effectively discriminate reference from highly impacted extremely rich fen sites, but additional data collection is needed to confirm this. Similarly, additional data from reference condition slope wet meadows are needed to determine the effective of the index for that system; however, it was tentatively concluded to be effective (Table 4). The index showed no utility for riverine wet meadows as indicated by the lack of discriminatory power(Figures 17) and correlation (Figure 18) with the HDI.

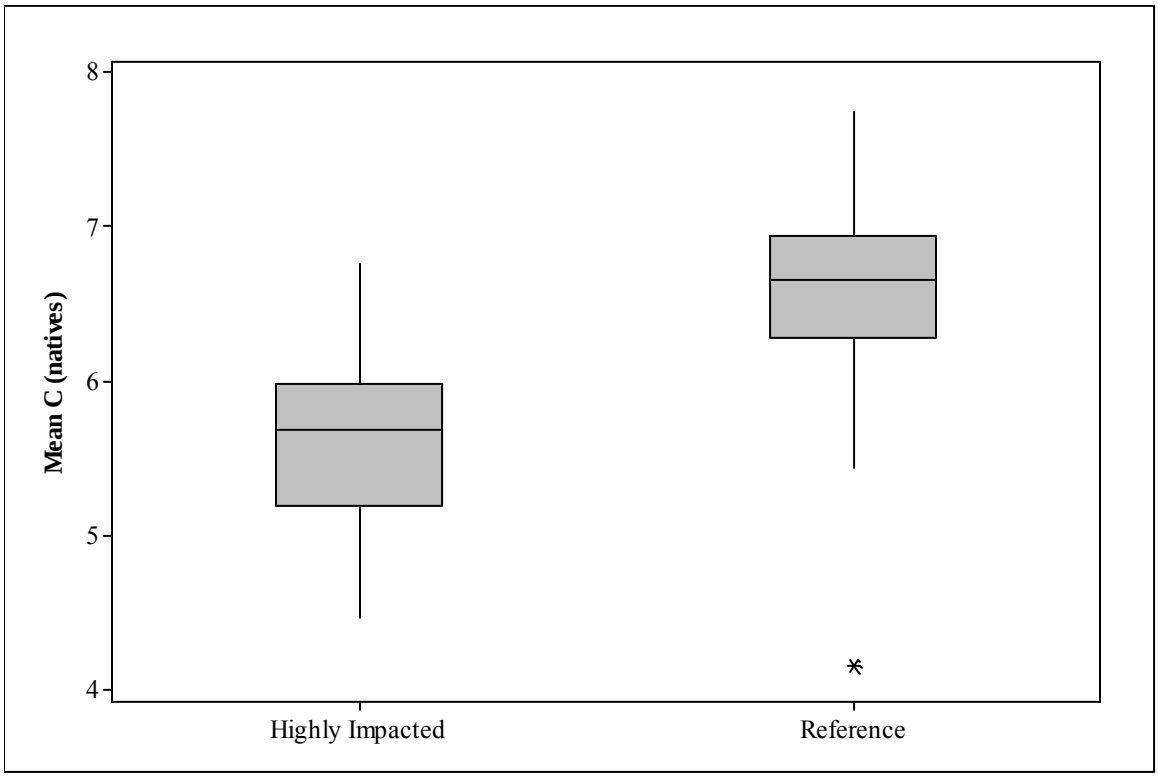

Figure 15. Discriminatory Power of Mean C (natives) (All Plots)

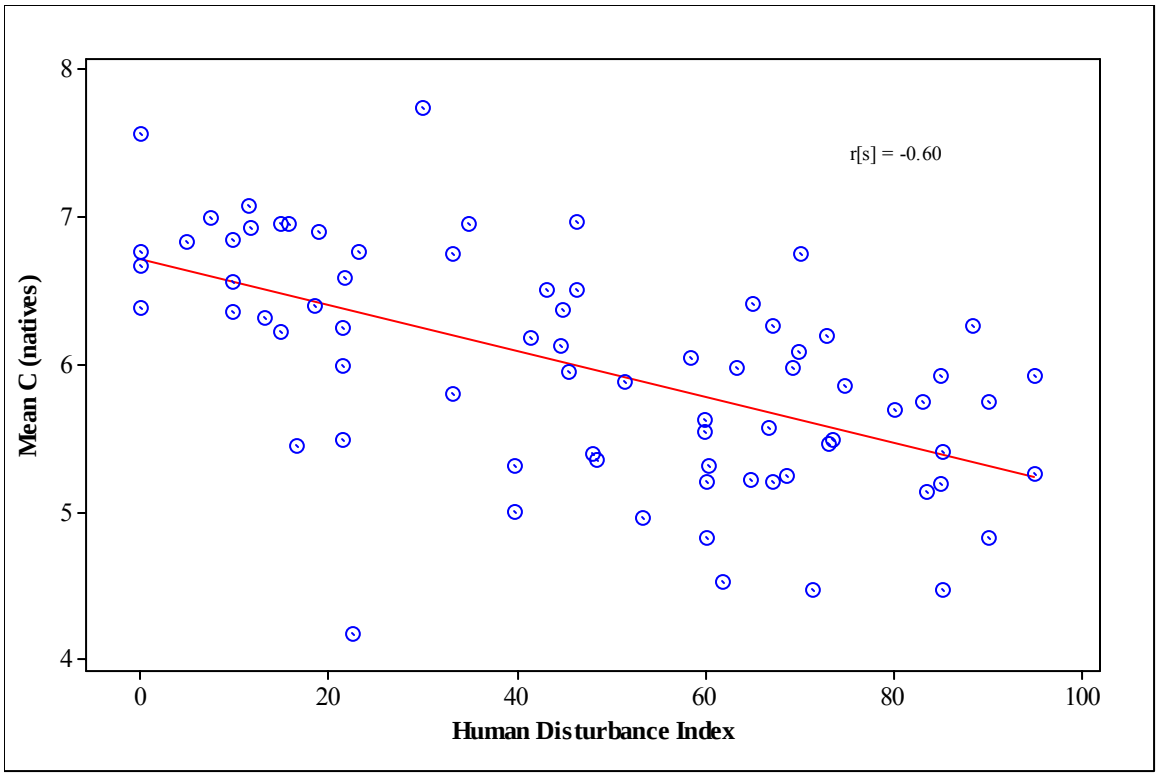

Figure 16. Spearman's Rank Correlation of Mean C (natives) to Human Disturbance Index (All Plots)

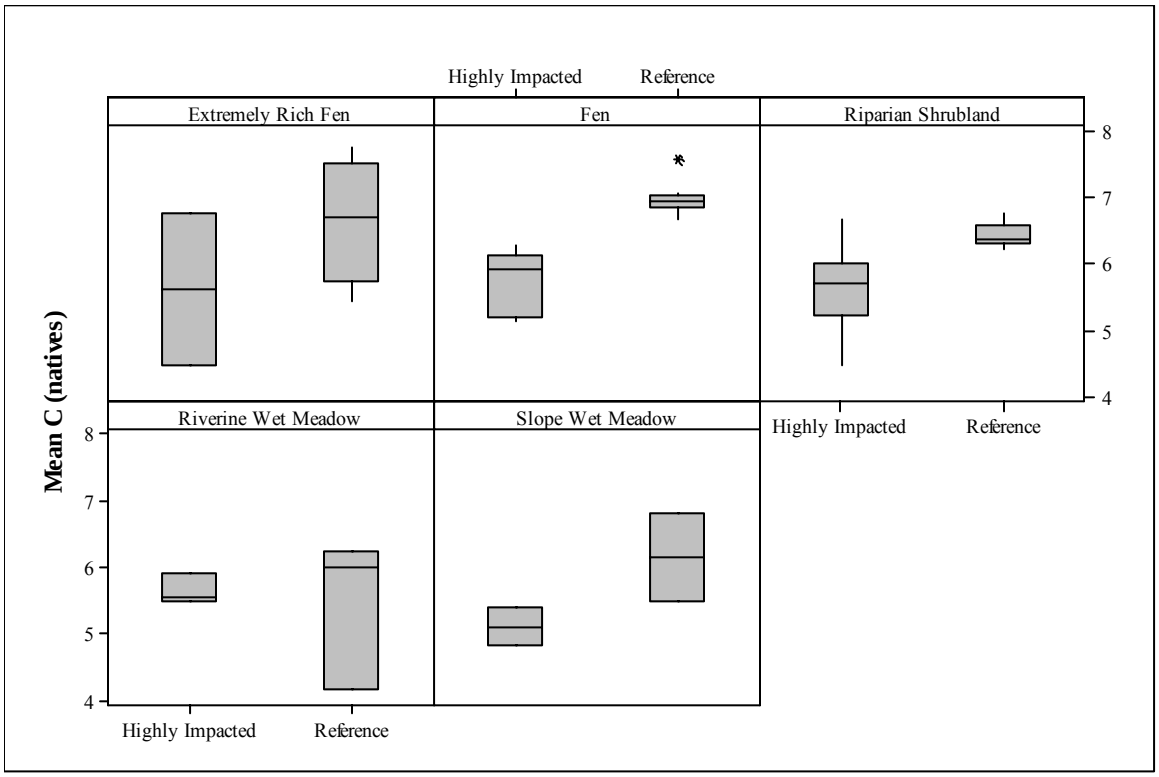

Figure 17. Discriminatory Power of Mean C (natives) (Grouped by Ecological System)

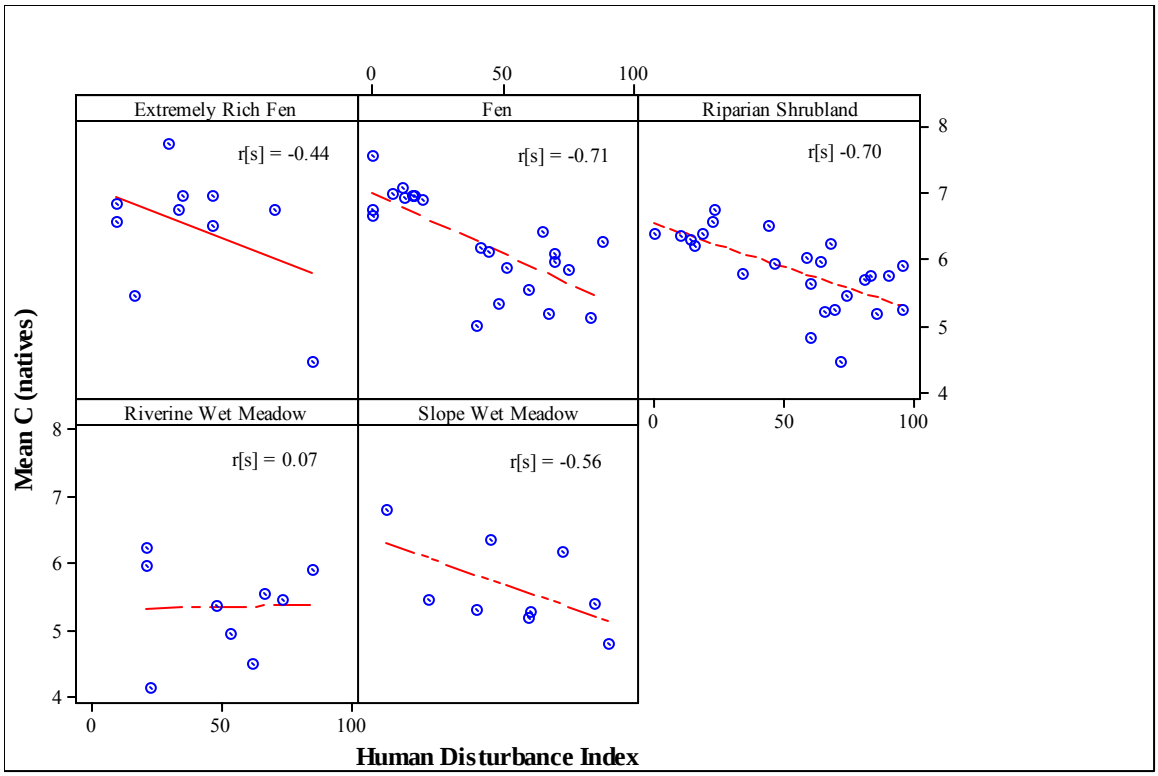

Figure 18. Spearman's Rank Correlation of Mean C (natives) to Human Disturbance Index (Grouped by Ecological System)

Table 4. Effectiveness of Mean C (natives)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Strong	-0.56	**Strong**
Riparian Shrubland	Strong	-0.70	**Strong**
Fens	Strong	-0.71	**Strong**
Extremely Rich Fens	Weak	-0.44	Weak
Slope Wet Meadows	Strong	-0.56	**Strong**
Riverine Wet Meadows	Poor	0.07	Poor

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.2 Cover Weighted Mean C (natives)

When all plots were analyzed together, the $\overline{C}_{n\,\mathrm{cov}}$ index showed good discriminatory power and a strong correlation (r[s] = -0.55) to the Human Disturbance Index (Figures19 & 20). The effectiveness of the index for each ecological system type was strong for all systems except slope and riverine wet meadows for which the index has little utility (Figures 21 & 22; Table 5). Additional data from highly impacted extremely rich fens are needed to discern how strong the index is for that system (Figure 22). The $\overline{C}_{n\,\mathrm{cov}}$ index only improved the utility of $\overline{C}_n$ for extremely rich fens and decreased its utility for Slope Wet Meadows (Figures 18 & 22; Table 4 & 5).

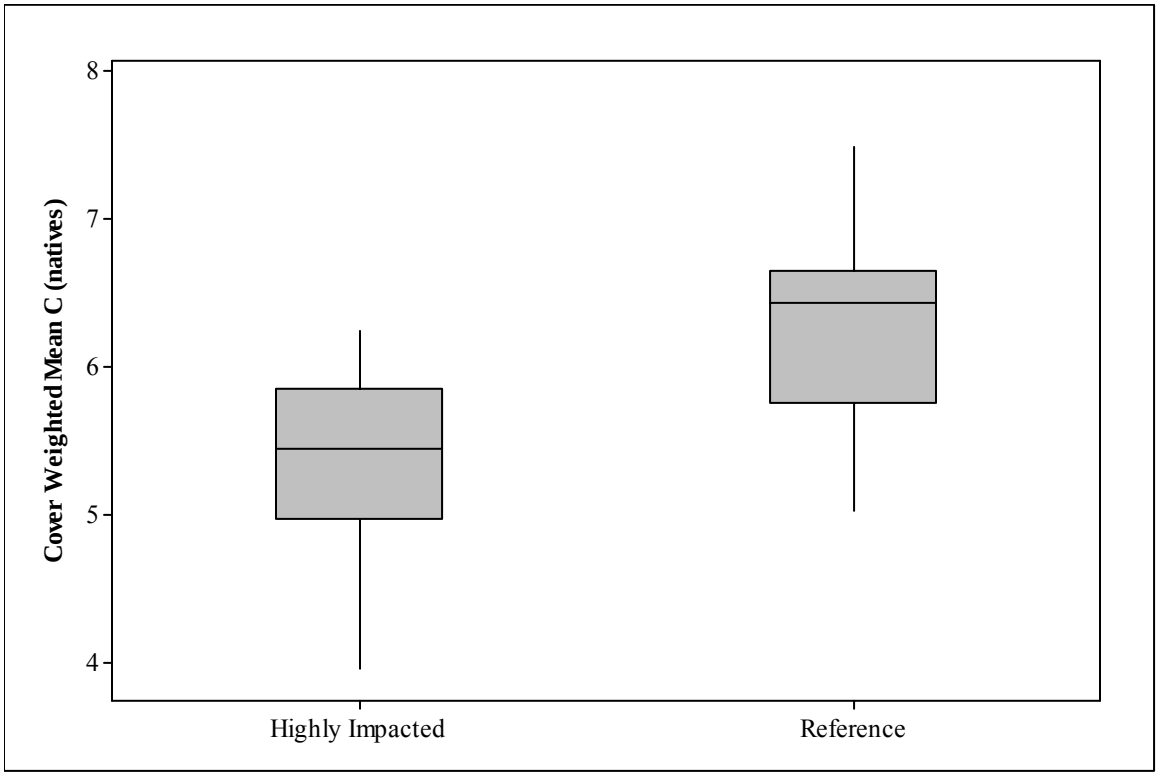

Figure 19. Discriminatory Power of Cover Weighted Mean C (natives) (All Plots)

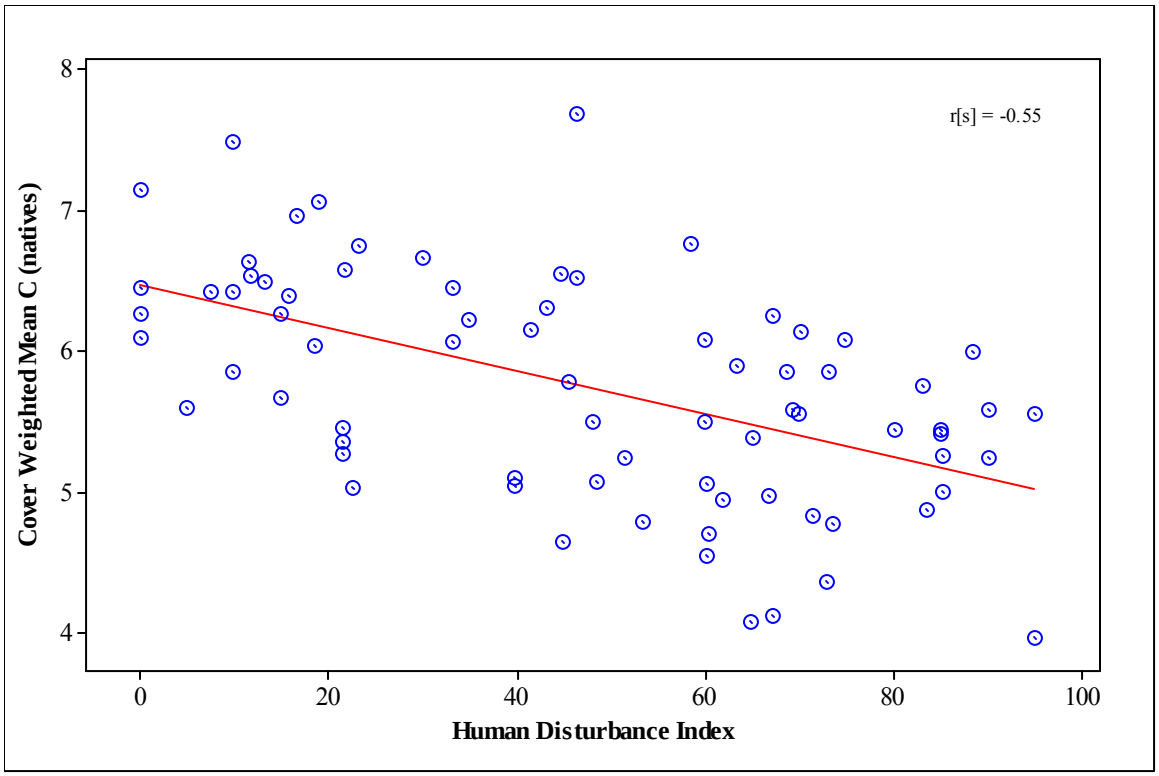

Figure 20. Spearman's Rank Correlation of Cover Weighted Mean C (natives) to Human Disturbance Index (All Plots)

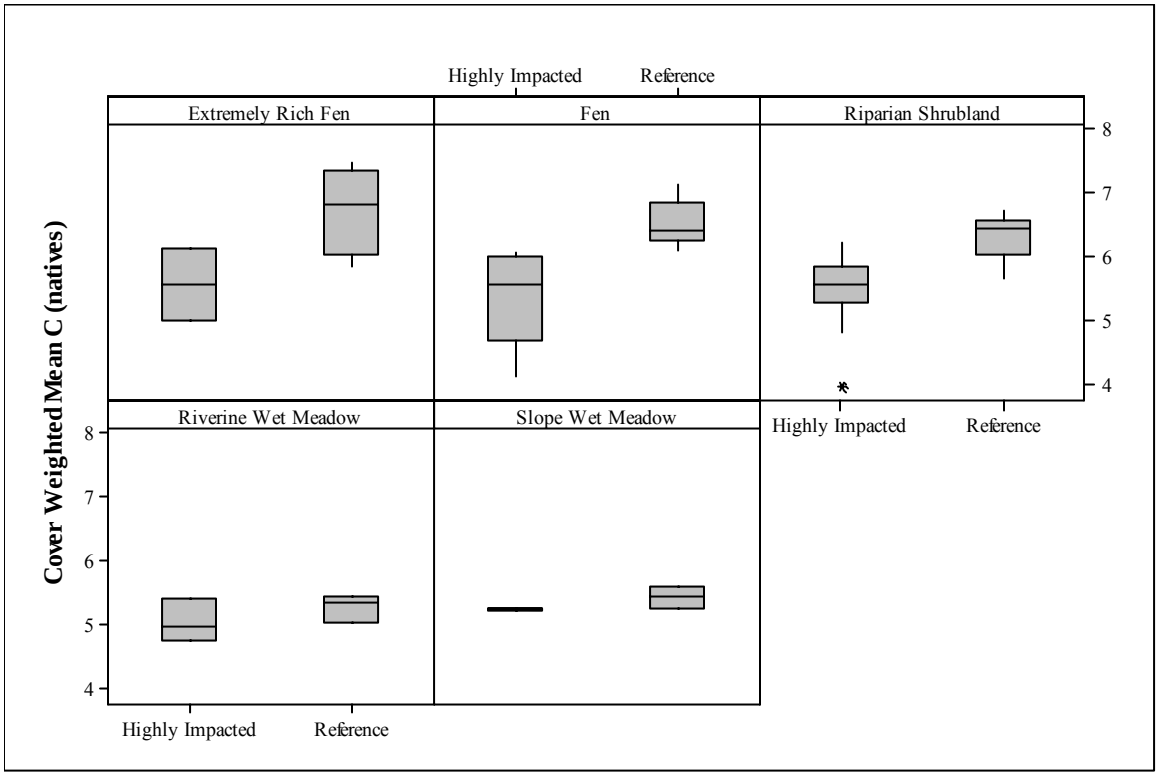

Figure 21. Discriminatory Power of Cover Weighted Mean C (natives) (Grouped by Ecological System)

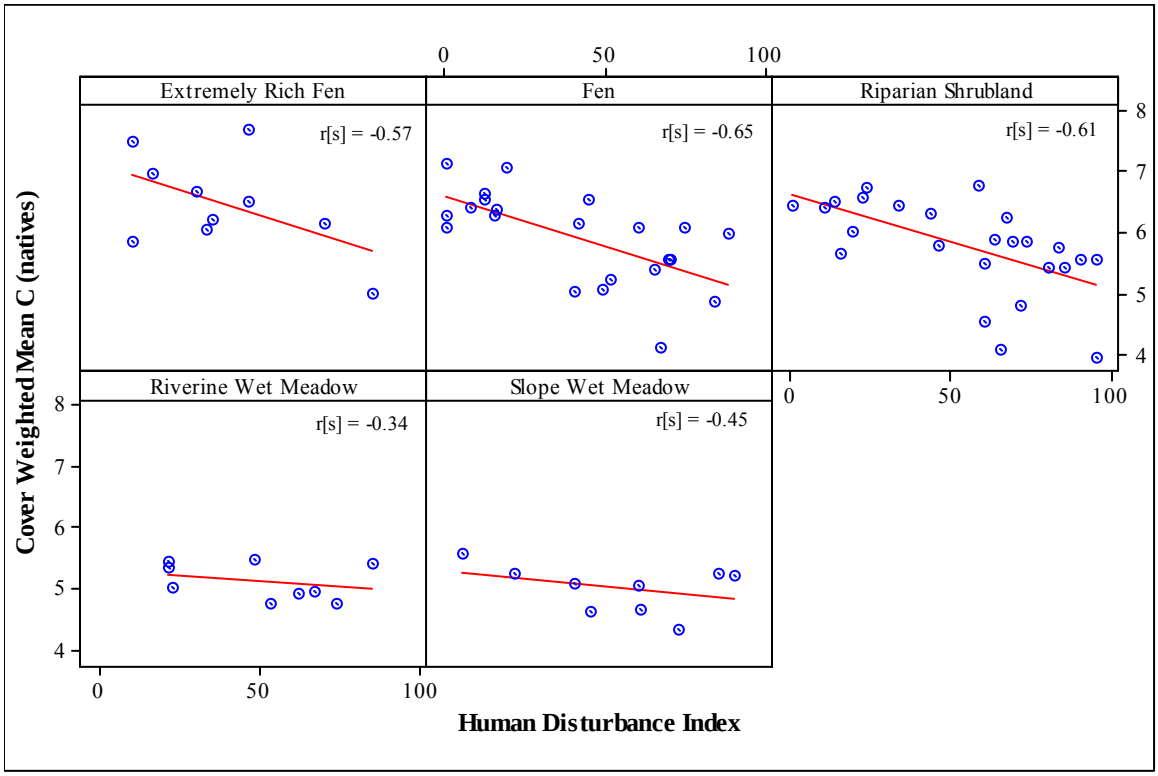

Figure 22. Spearman's Rank Correlation of Cover Weighted Mean C (natives) to Human Disturbance Index (Grouped by Ecological System)

Table 5. Effectiveness of Cover Weighted Mean C (natives)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Good	-0.55	**Strong**
Riparian Shrubland	Strong	-0.61	**Strong**
Fens	Strong	-0.65	**Strong**
Extremely Rich Fens	Good	-0.57	**Strong**
Slope Wet Meadows	Strong	-0.45	Weak
Riverine Wet Meadows	Weak	-0.34	Weak

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.3 Mean C (all species)

When all plots were analyzed together, $\overline{C}_{all}$ index was clearly able to discriminate between reference condition and highly impacted sites (Figure 23) and showed a strong correlation (r[s] = -0.64) to the HDI (Figure 24). Variability of the index increased when the human disturbance index increased beyond a score of approximately 15 (Figure 24). The effectiveness of the index was very strong for fens (r[s] = -0.76) and riparian shrublands (r[s] = -0.76) (Figures 25 & 26; Table 6). The index was weakly effective in detecting human disturbance in extremely rich fens and slope wet meadows (Figures 25 & 26; Table 6). Additional data collection from highly impacted extremely rich fens and reference slope wet meadows is needed to determine whether this index is useful for these ecological systems. The index showed no utility for riverine wet meadows, although one reference condition "outlier" may be driving this conclusion (Figures 25 & 26).

The inclusion of non-native species into the calculation of this index appears to have slightly increased effectiveness in detecting human disturbance relative to the $\overline{C}_{n}$ index (Tables 4 & 6), except for slope wet meadows, which showed a decrease (Table 4).

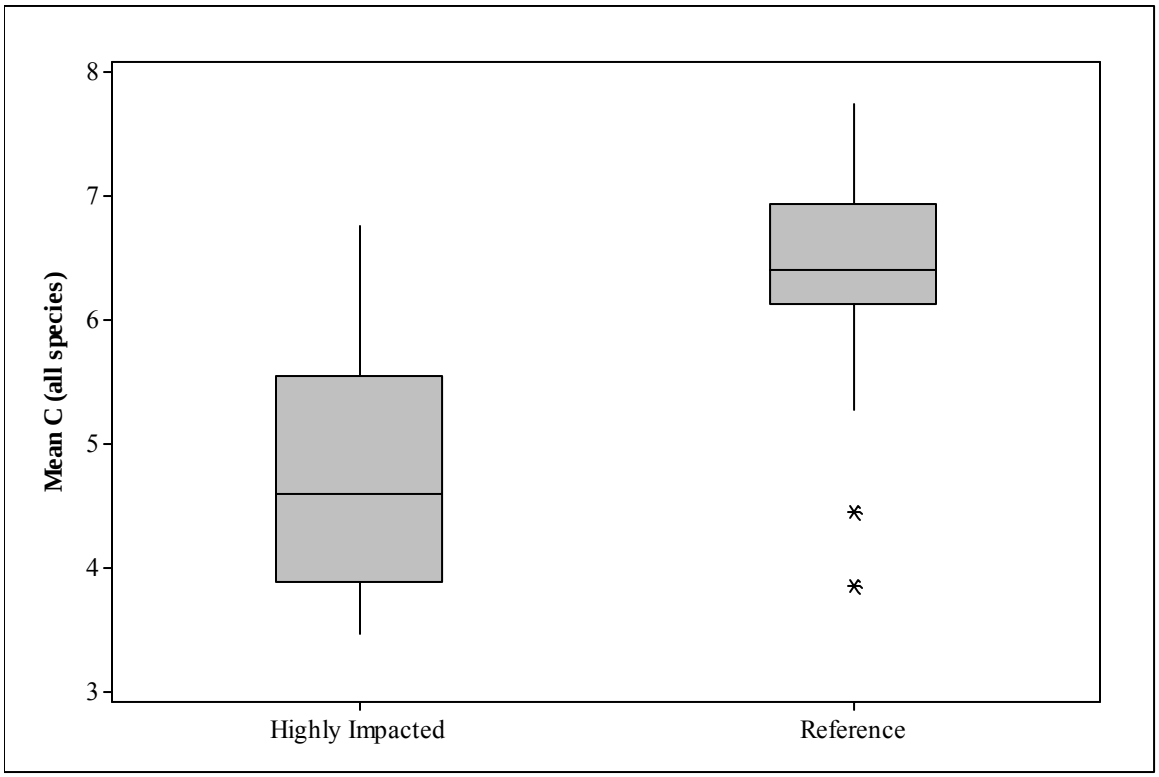

Figure 23. Discriminatory Power of Mean C (all species) (All Plots)

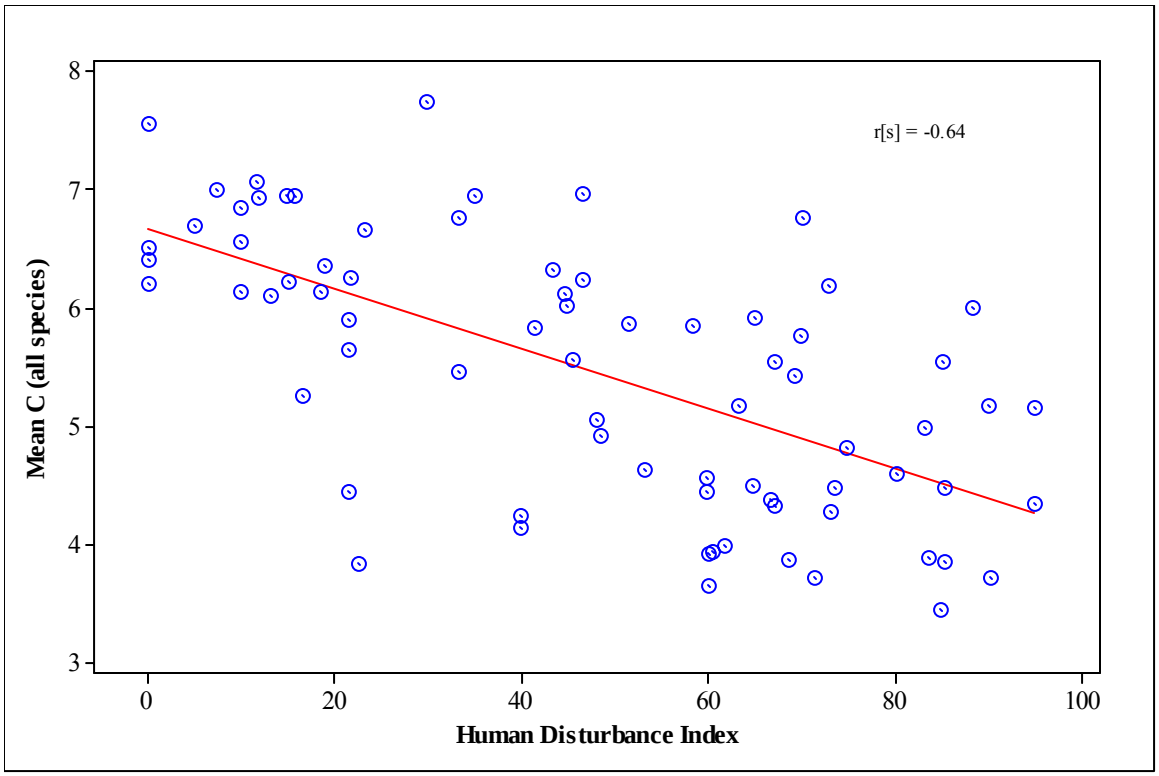

Figure 24. Spearman's Rank Correlation of Mean C (all species) to Human Disturbance Index (All Plots)

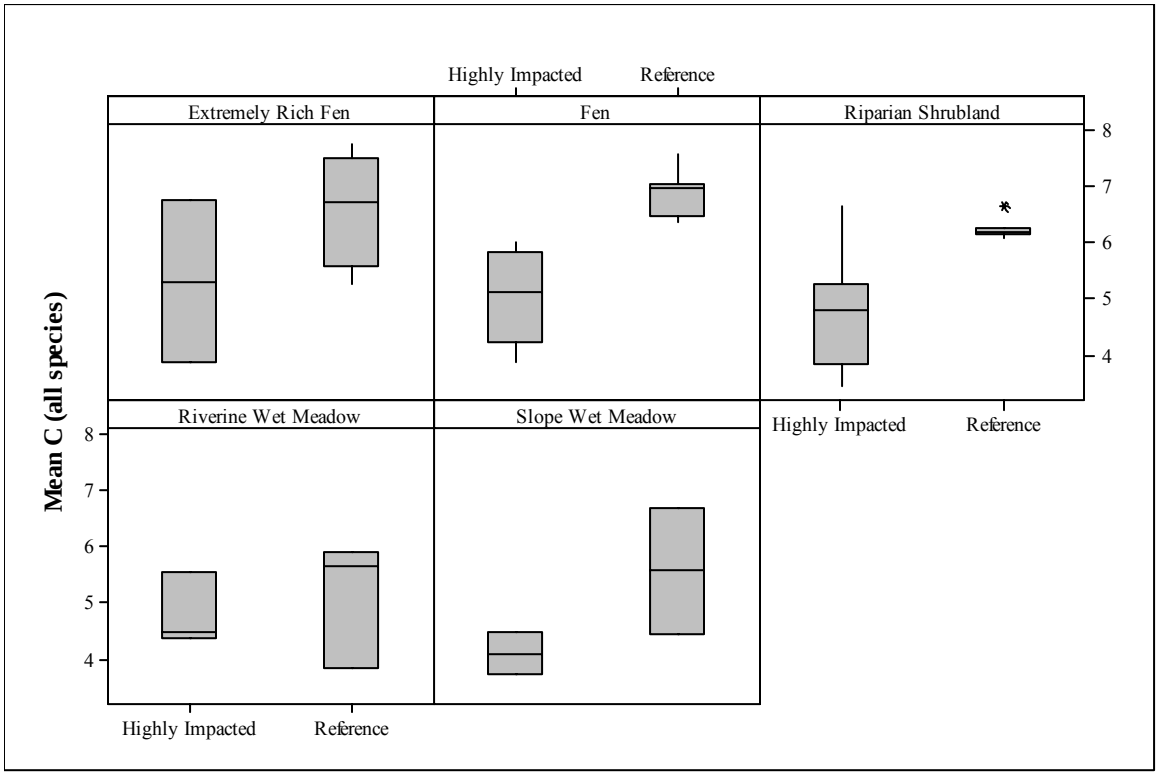

Figure 25. Discriminatory Power of Mean C (all species) (Grouped by Ecological System)

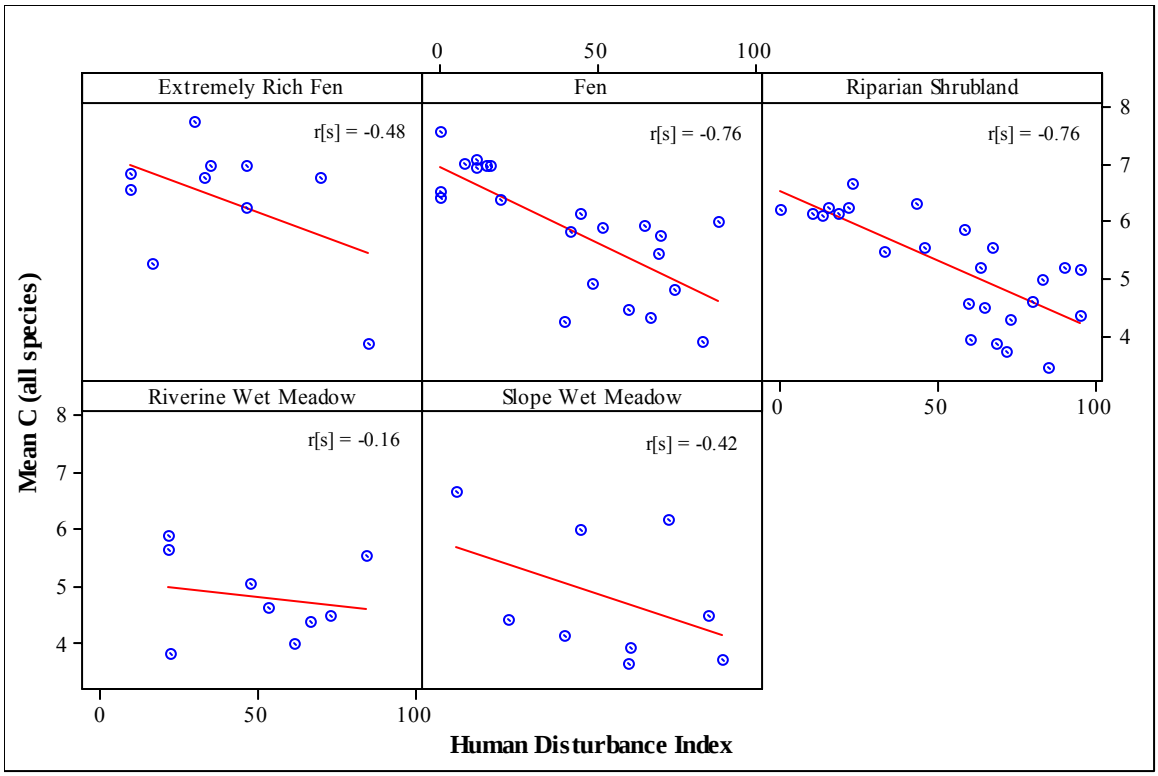

Figure 26. Spearman's Rank Correlation of Mean C (all species) to Human Disturbance Index (Grouped by Ecological System)

Table 6. Effectiveness of Mean C (all species)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Strong	-0.60	**Strong**
Riparian Shrubland	Strong	-0.76	**Strong**
Fens	Strong	-0.76	**Strong**
Extremely Rich Fens	Weak	-0.48	Weak
Slope Wet Meadows	Good	-0.42	Weak
Riverine Wet Meadows	Poor	-0.16	Poor

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.4 Cover Weighted Mean C (all species)

When all plots were analyzed together, $\overline{C}_{all\ cov}$ index showed strong discriminatory power and correlation (r[s] = -0.64) to the HDI (Figures27 & 28). The effectiveness of the index was strong for all ecological systems except slope and riverine wet meadows for which the index showed weak efficacy (Figures 29 & 30; Table 7). Relative to the $\overline{C}_{all}$ index, this index showed improvement in correlation to the HDI for all systems except fens, which showed a decrease (Figures 26 and 30). Although the index showed good discriminatory power and a promising correlation to the HDI, inspection of the scatterplot (Figure 30) shows that this is mostly driven by reference and highly impacted outlier plots. Additional data is needed from slope wet meadows to more accurately assess its effectiveness for this system. Relative to the $\overline{C}_{n\ cov}$ index, this index showed improvement in the correlation with the HDI for all ecological systems but resulted in the same efficacy for each system (Table54 & 7). Compared to the $\overline{C}_{n\ cov}$ index, this index showed lower values in highly disturbed sites (Figures 20 & 28).

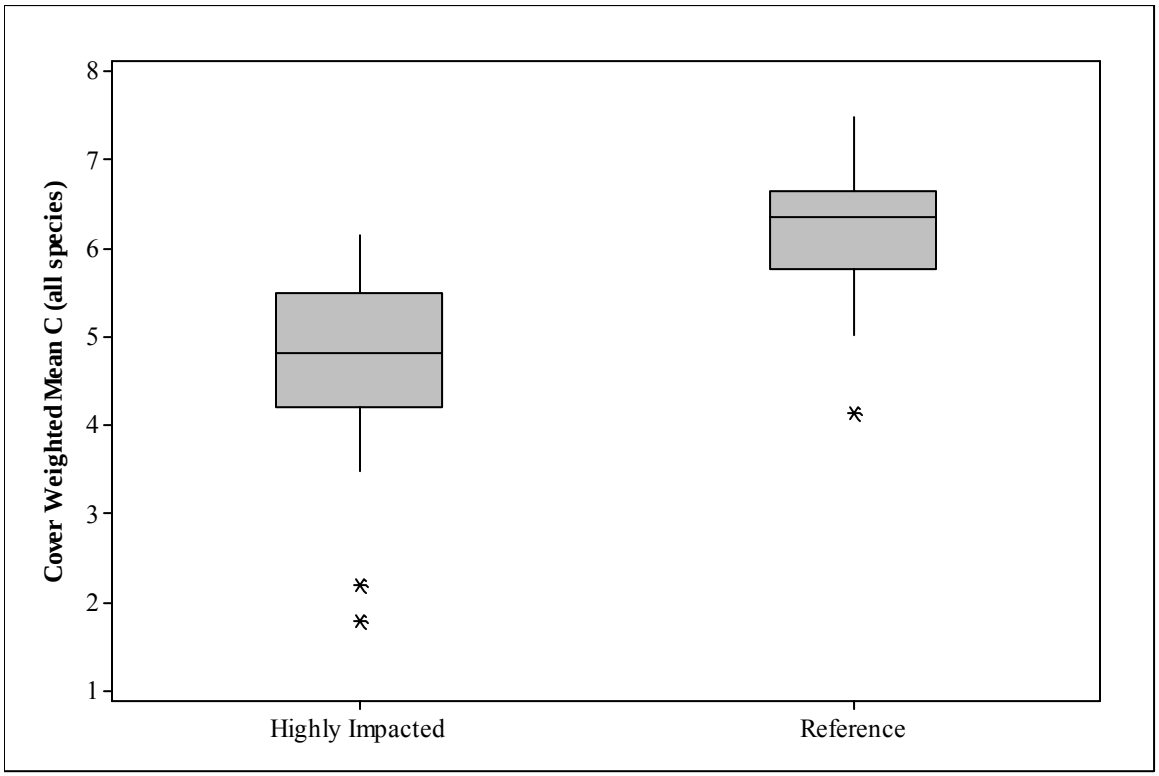

Figure 27. Discriminatory Power of Cover Weighted Mean C (all species) (All Plots)

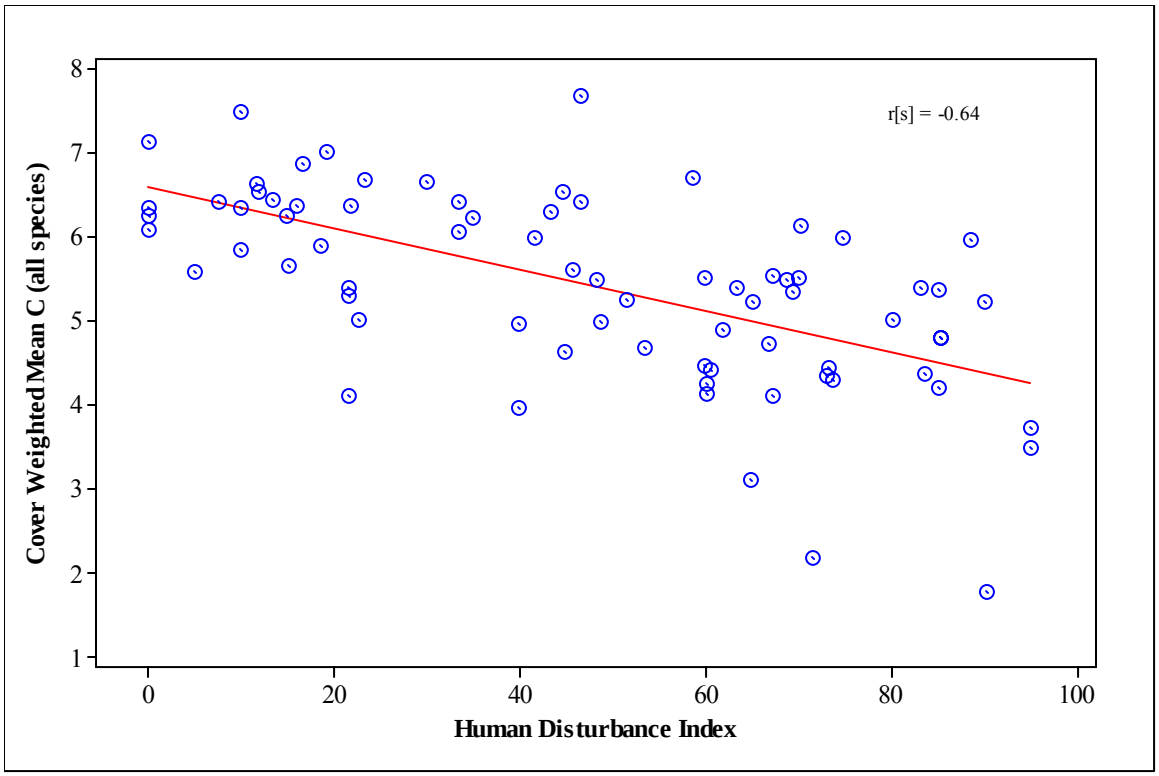

Figure 28. Spearman's Rank Correlation of Cover Weighted Mean C (all species) to Human Disturbance Index (All Plots)

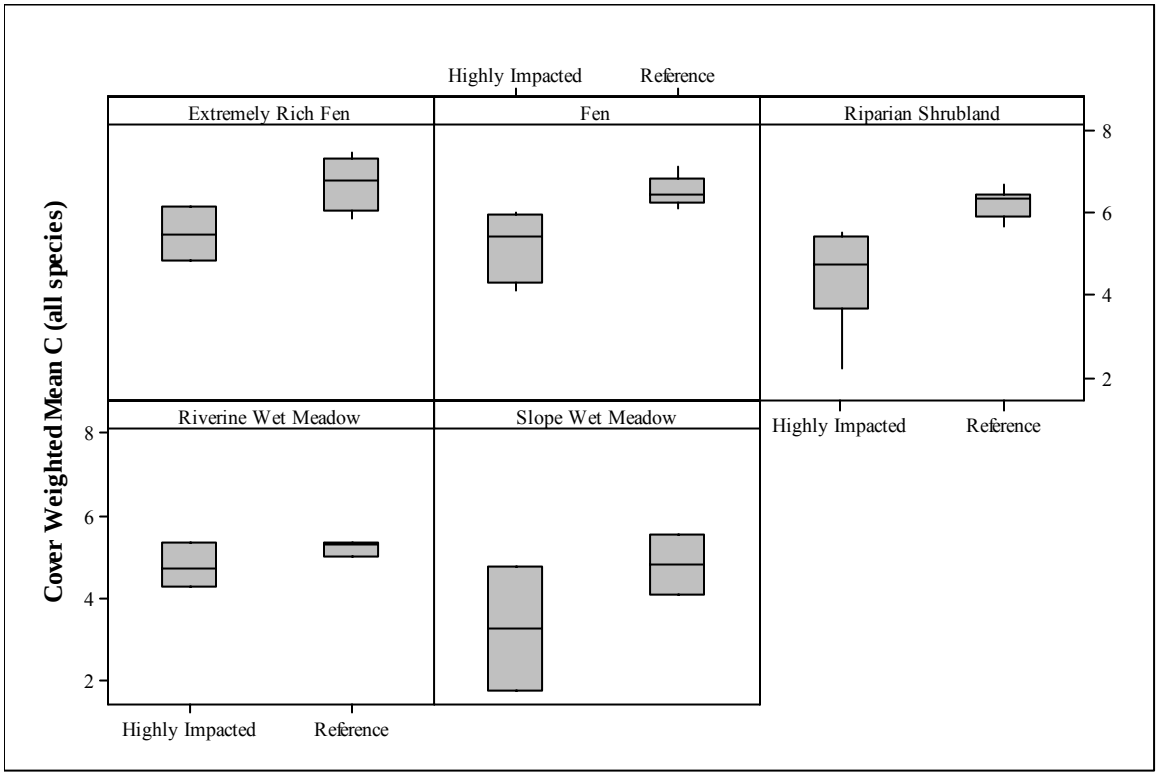

Figure 29. Discriminatory Power of Cover Weighted Mean C (all species) (Grouped by Ecological System)

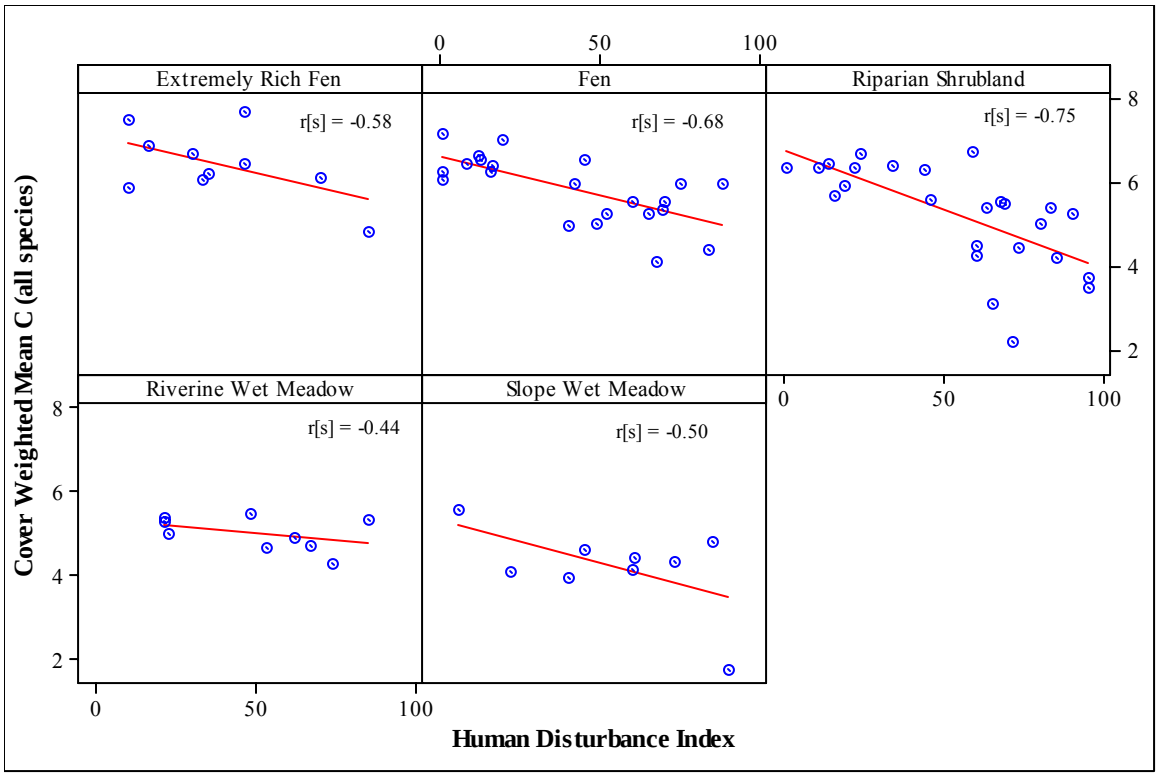

Figure 30. Spearman's Rank Correlation of Cover Weighted Mean C (all species) to Human Disturbance Index (Grouped by Ecological System)

Table 7. Effectiveness of Cover Weighted Mean C (all species)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Strong	-0.64	**Strong**
Riparian Shrubland	Strong	-0.75	**Strong**
Fens	Strong	-0.68	**Strong**
Extremely Rich Fens	Good	-0.58	**Strong**
Slope Wet Meadows	Good	-0.50	Weak
Riverine Wet Meadows	Weak	-0.44	Weak

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.5 Floristic Quality Index (natives)

When all plots were analyzed together, the FQI_n index showed good discriminatory power and a weak correlation (r[s] = -0.38) to the HDI and thus was determined to have weak efficacy in discriminating sites with varying degrees of human disturbance (Figures 31 & 32; Table 8). The effectiveness of the FQI_n was strong for riparian shrublands (r[s] = -0.52), extremely rich fens (r[s] = -0.60), and slope wet meadows (r[s] = -0.75) but poor for fens and riverine wet meadows (Figures 33 & 34; Table 8). Relative to the Mean C-based indices, the FQI_n is a stronger index for extremely rich fens and slope wet meadows.

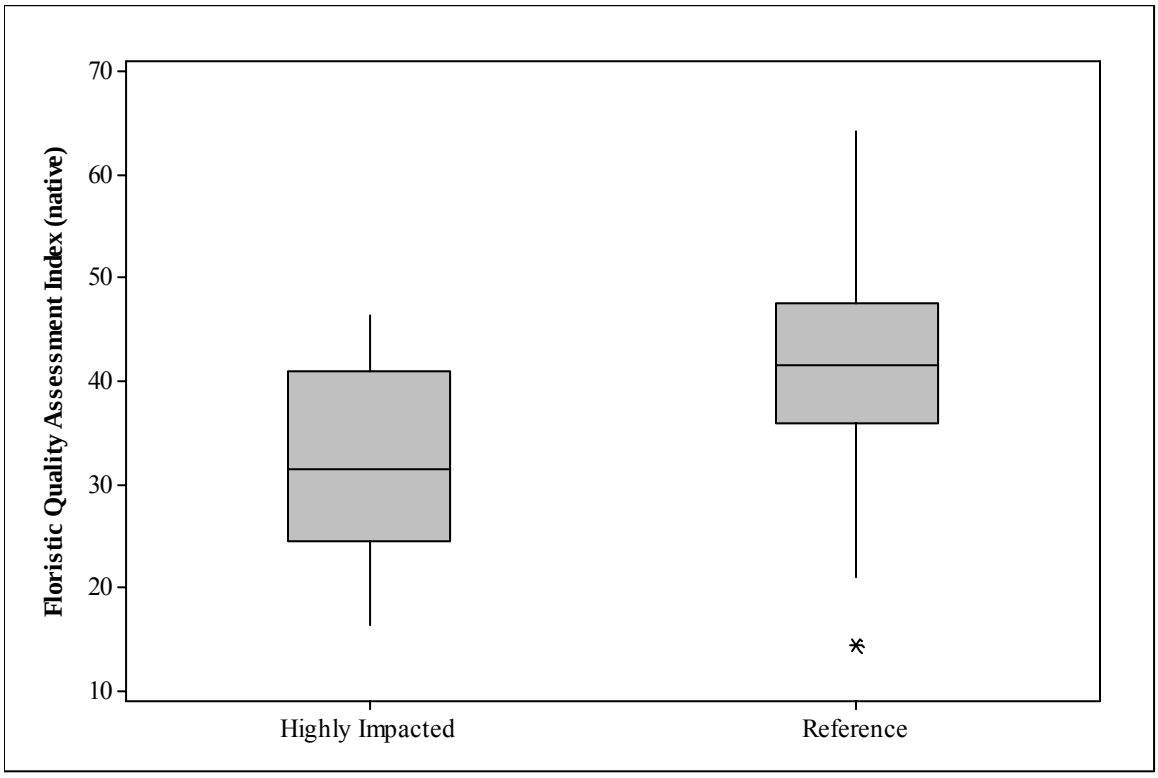

Figure 31. Discriminatory Power of Floristic Quality Assessment Index (natives**)** (All Plots)

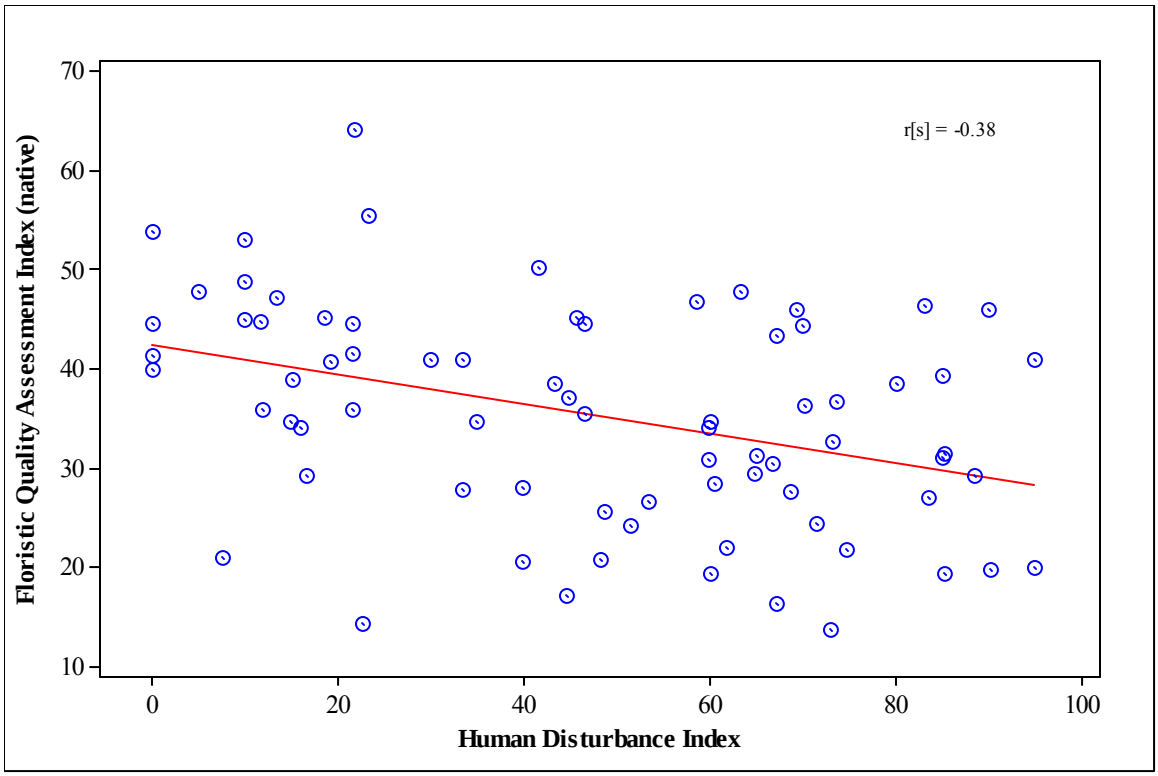

Figure 32. Spearman's Rank Correlation of Floristic Quality Assessment Index (natives) to Human Disturbance Index (All Plots)

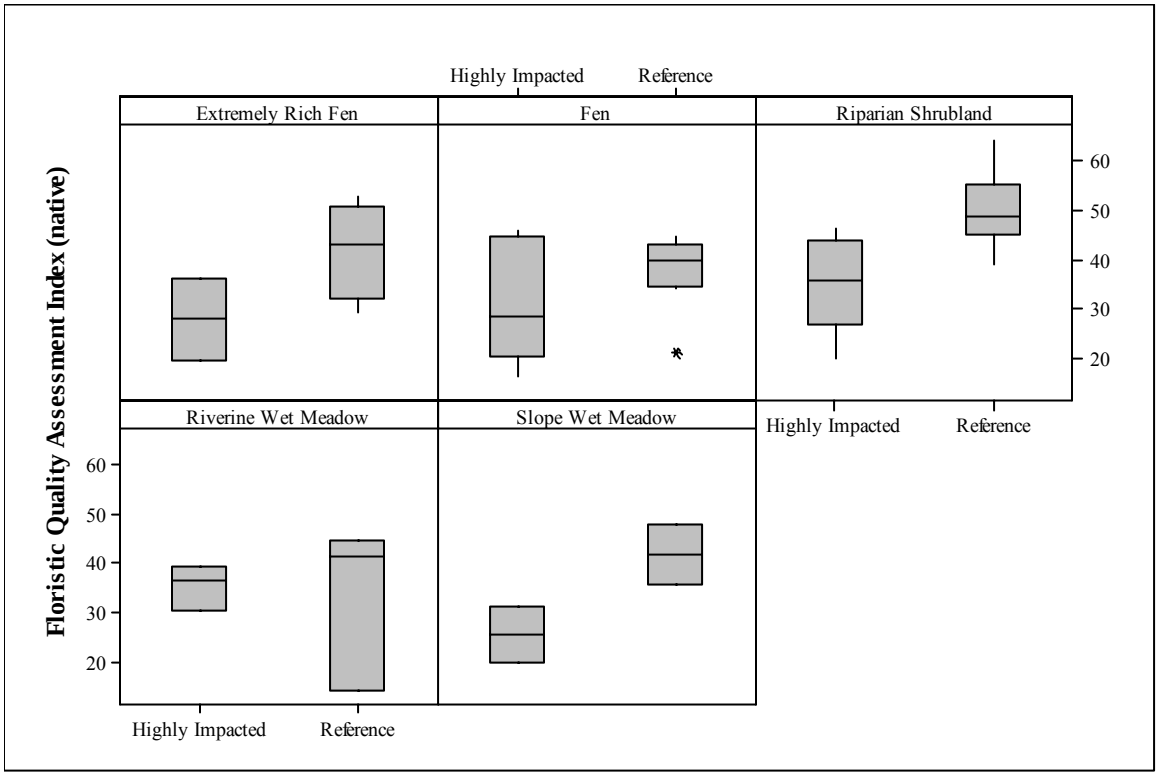

Figure 33. Discriminatory Power of Floristic Quality Assessment Index (natives) (Grouped by Ecological System)

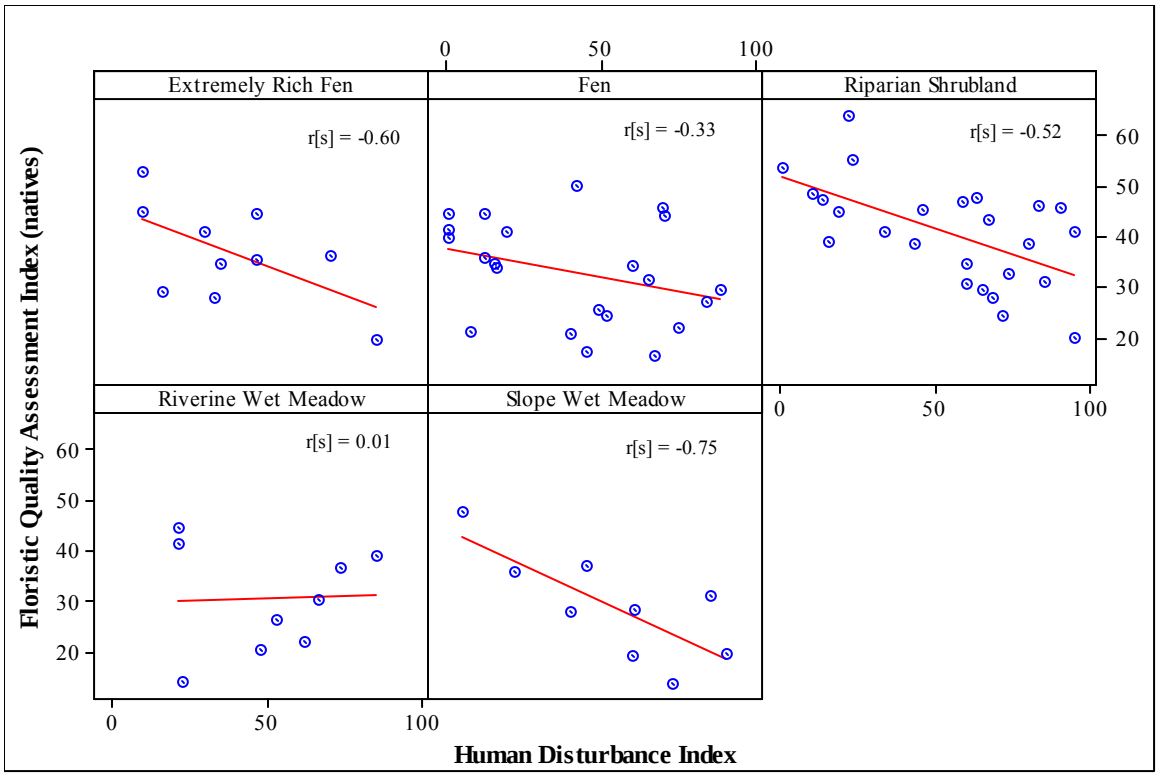

Figure 34. Spearman's Rank Correlation of Floristic Quality Assessment Index (natives) to Human Disturbance Index (Grouped by Ecological System)

Table 8. Effectiveness of Floristic Quality Assessment Index (natives)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Good	-0.38	Weak
Riparian Shrubland	Strong	-0.52	**Strong**
Fens	Poor	-0.33	Poor
Extremely Rich Fens	Good	-0.60	**Strong**
Slope Wet Meadows	Strong	-0.75	**Strong**
Riverine Wet Meadows	Poor	0.01	Poor

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.6 Cover Weighted Floristic Quality Assessment Index (natives)

When all plots were analyzed together, the $FQI_{n\,cov}$ index showed good discriminatory power and weak correlation (r[s] = -0.33) to the HDI and thus was determined to have weak efficacy in discriminating sites with varying degrees of human disturbance (Figures 35 & 36; Table 9). This index was less effective than the FQI_n index in detecting degradation from human disturbance (Figures 31, 32, 35, and 36) indicating the cover values did not add useful information to the index.

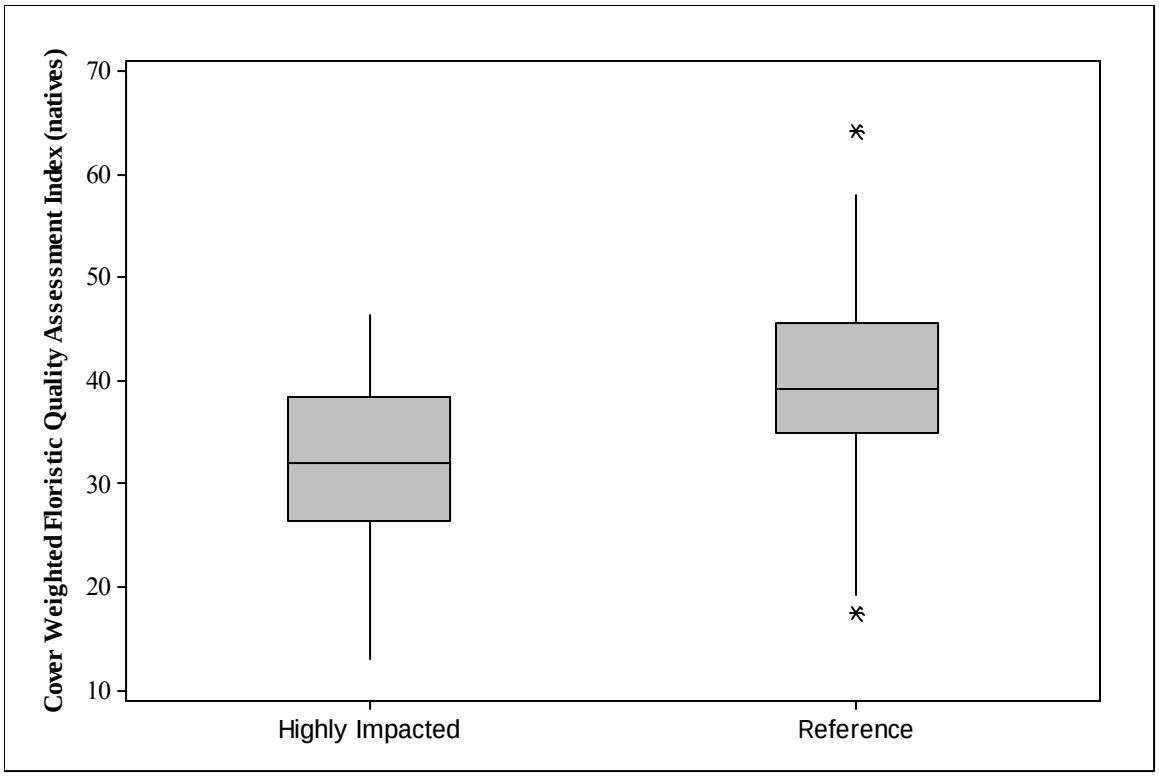

Figure 35. Discriminatory Power of Cover Weighted Floristic Quality Assessment Index (natives**)** (All Plots)

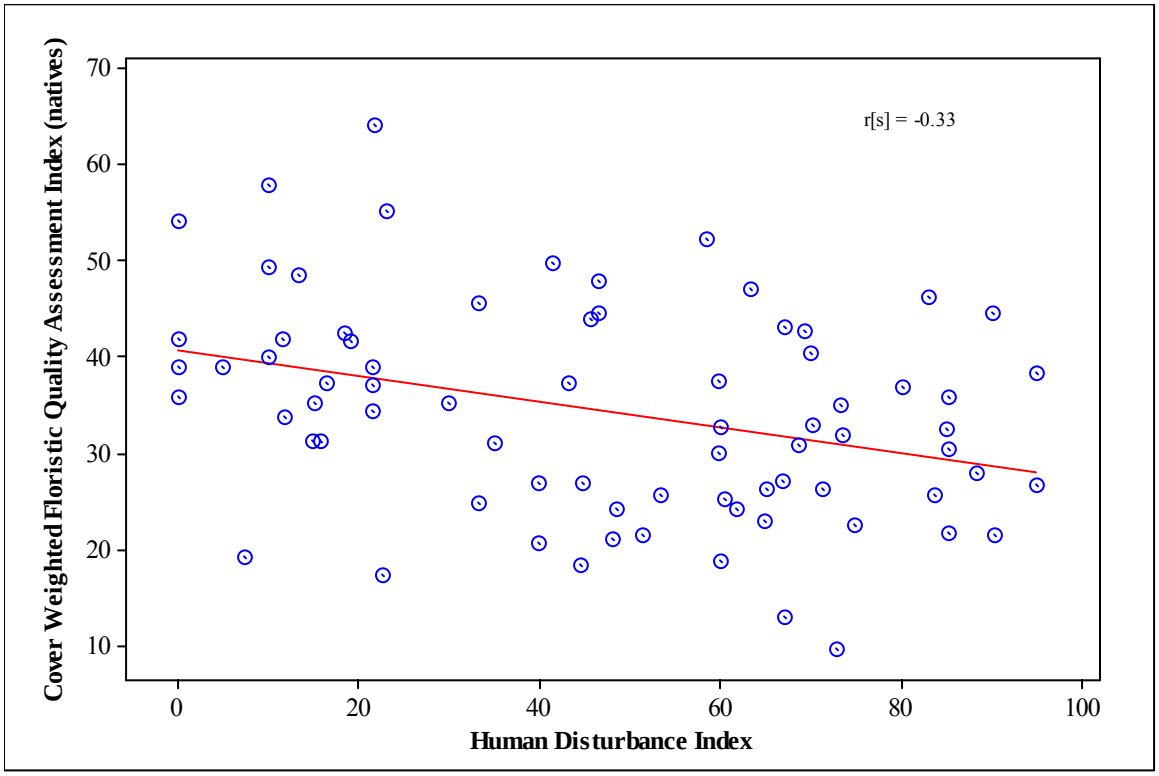

Figure 36. Spearman's Rank Correlation of Cover Weighted Floristic Quality Assessment Index (natives) to Human Disturbance Index (All Plots)

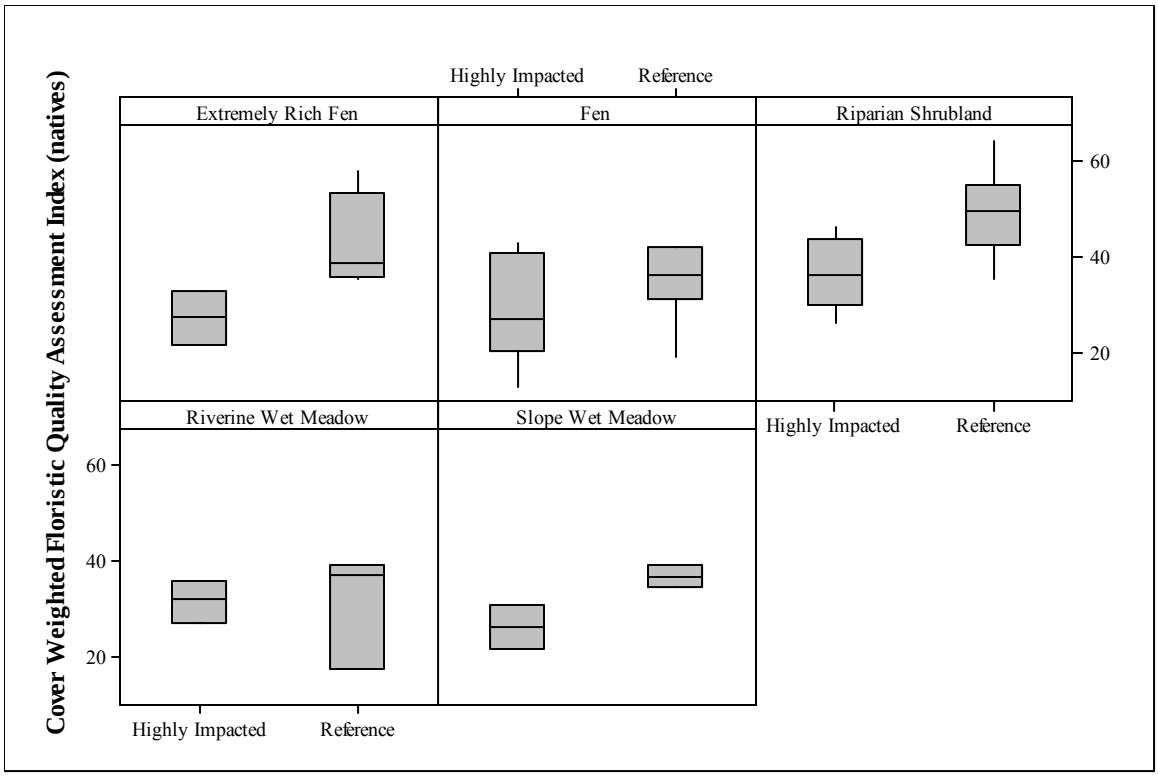

Figure 37. Discriminatory Power of Cover Weighted Floristic Quality Assessment Index (natives) (Grouped by Ecological System)

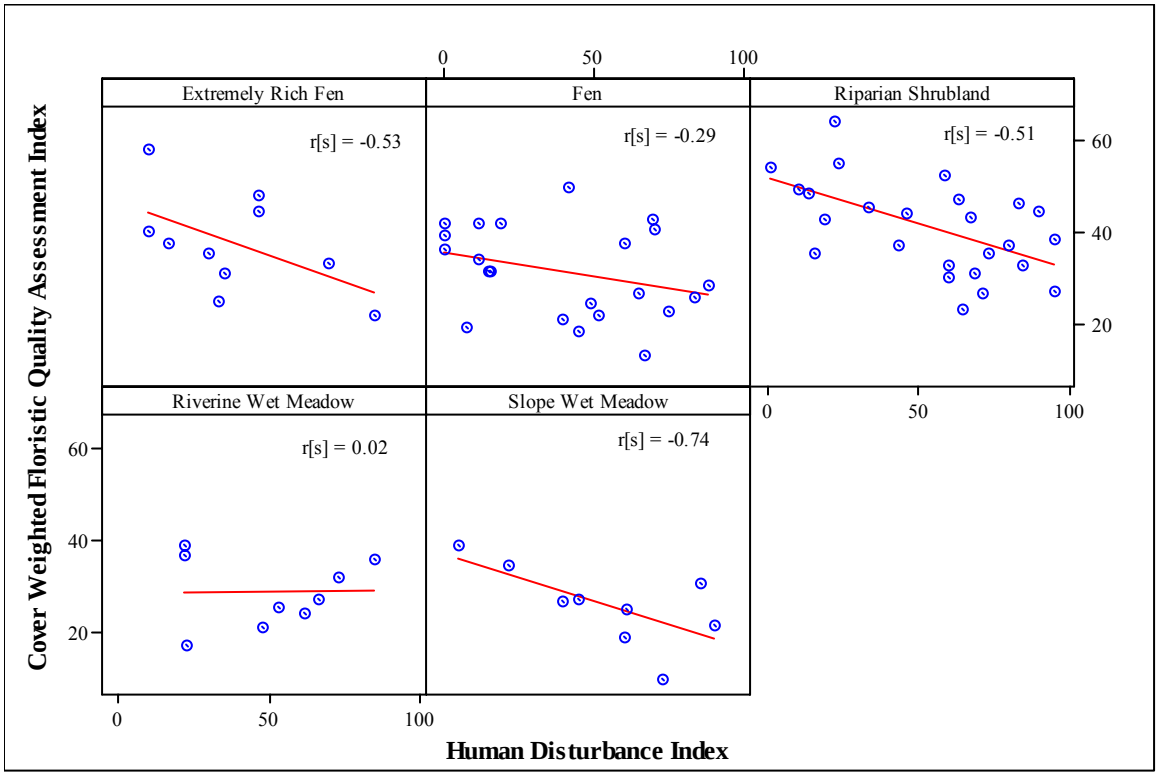

Figure 38. Spearman's Rank Correlation of Cover Weighted Floristic Quality Assessment Index (natives) to Human Disturbance Index (Grouped by Ecological System)

Table 9. Effectiveness of Cover Weighted Floristic Quality Assessment Index (natives)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Good	-0.33	Weak
Riparian Shrubland	Good	-0.51	**Strong**
Fens	Weak	-0.29	Poor
Extremely Rich Fens	Strong	-0.53	**Strong**
Slope Wet Meadows	Strong	-0.74	**Strong**
Riverine Wet Meadows	Poor	0.02	Poor

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.7 Floristic Quality Assessment Index (all species)

When all plots were analyzed together, the FQI_{all} index was able to discriminate between reference condition and highly impacted sites (Figure 39) but had a weak correlation (r[s] = -0.46) to the HDI (Figure 40). Overall, the efficacy of the index for all plots compiled was weak (Table 10). The effectiveness of the FQI_{all} was strong for riparian shrublands (r[s] = -0.61), extremely rich fens (r[s] = -0.64), and slope wet meadows (r[s] = -0.71; Figures 39 & 40; Table 10). The index poorly detected human disturbance in fens and riverine wet meadows (Figures 41 & 42; Table 9). The inclusion of non-native species into the calculation of this index appears to have slightly increased effectiveness in detecting human disturbance for those systems in which the index was effective (Tables 9 & 10).

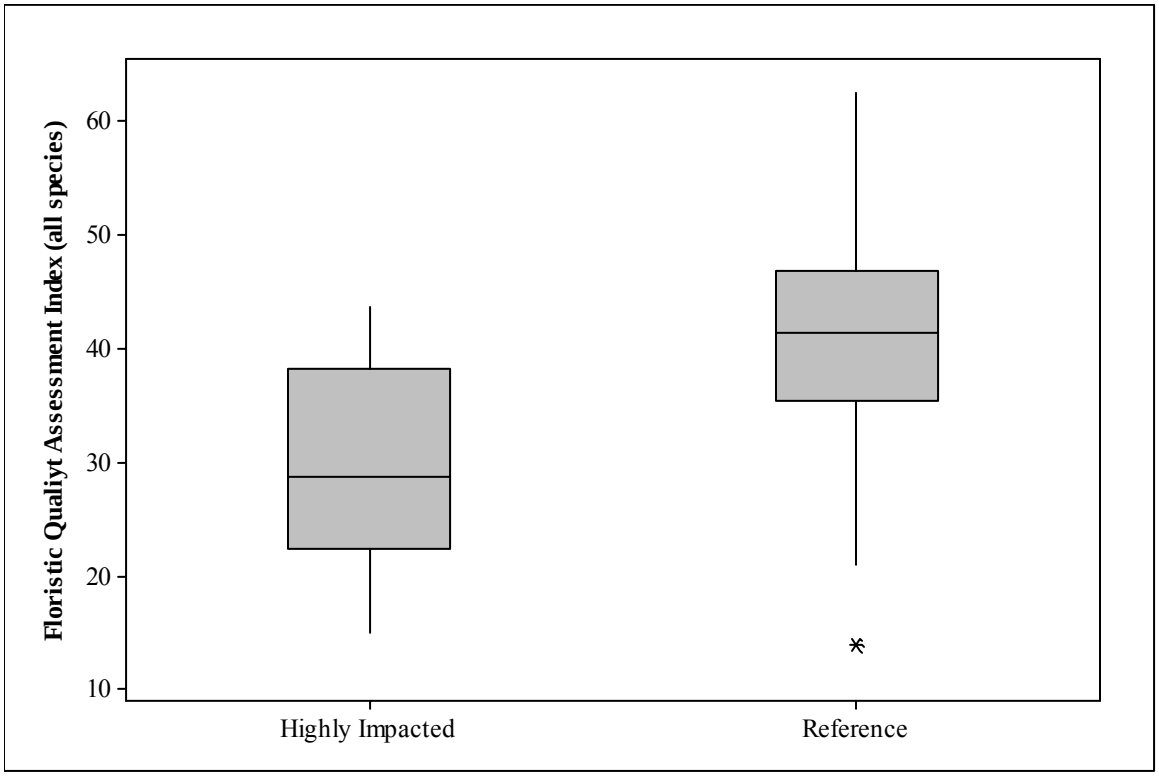

Figure 39. Discriminatory Power of Floristic Quality Assessment Index (all species**)** (All Plots)

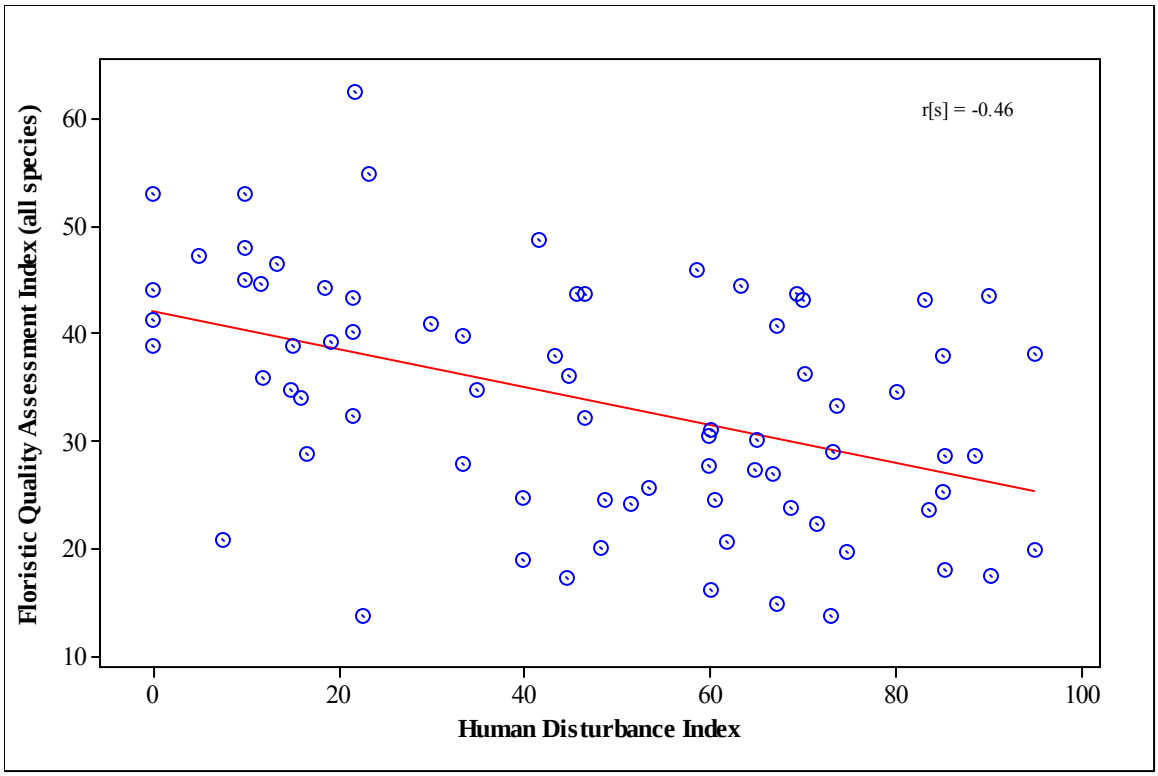

Figure 40. Spearman's Rank Correlation of Floristic Quality Assessment Index (all species) to Human Disturbance Index (All Plots)

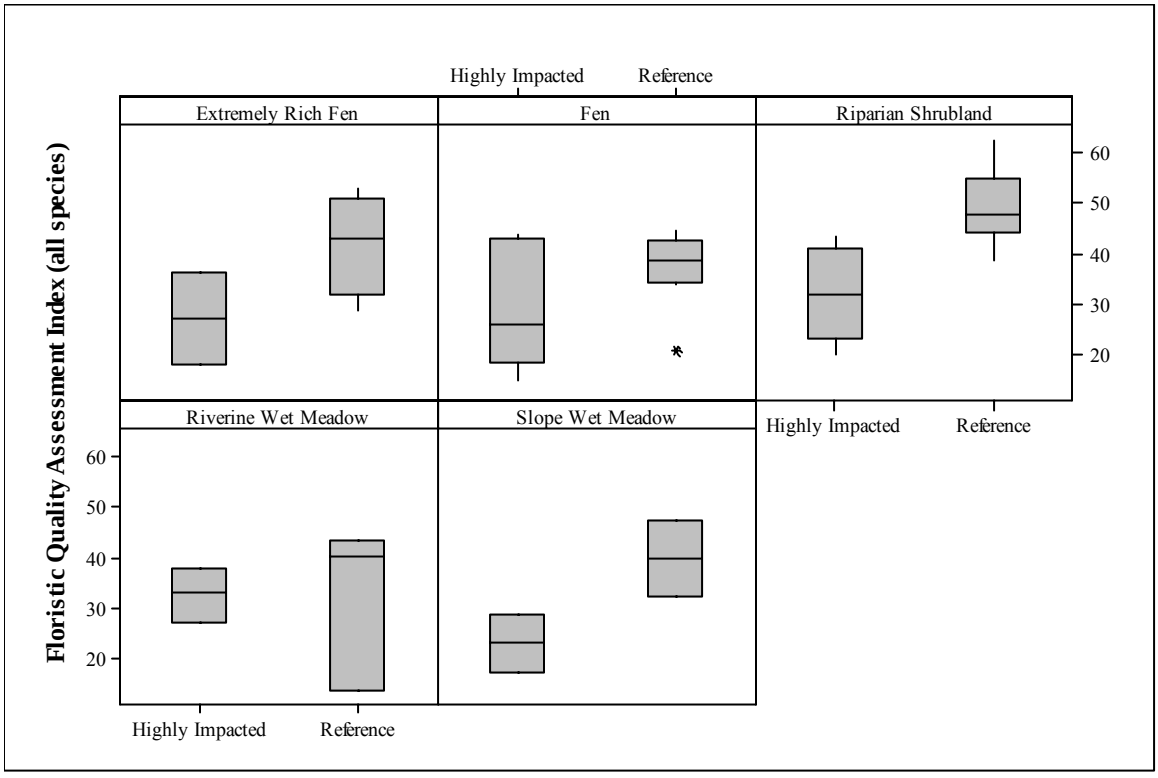

Figure 41. Discriminatory Power of Floristic Quality Assessment Index (all species) (Grouped by Ecological System)

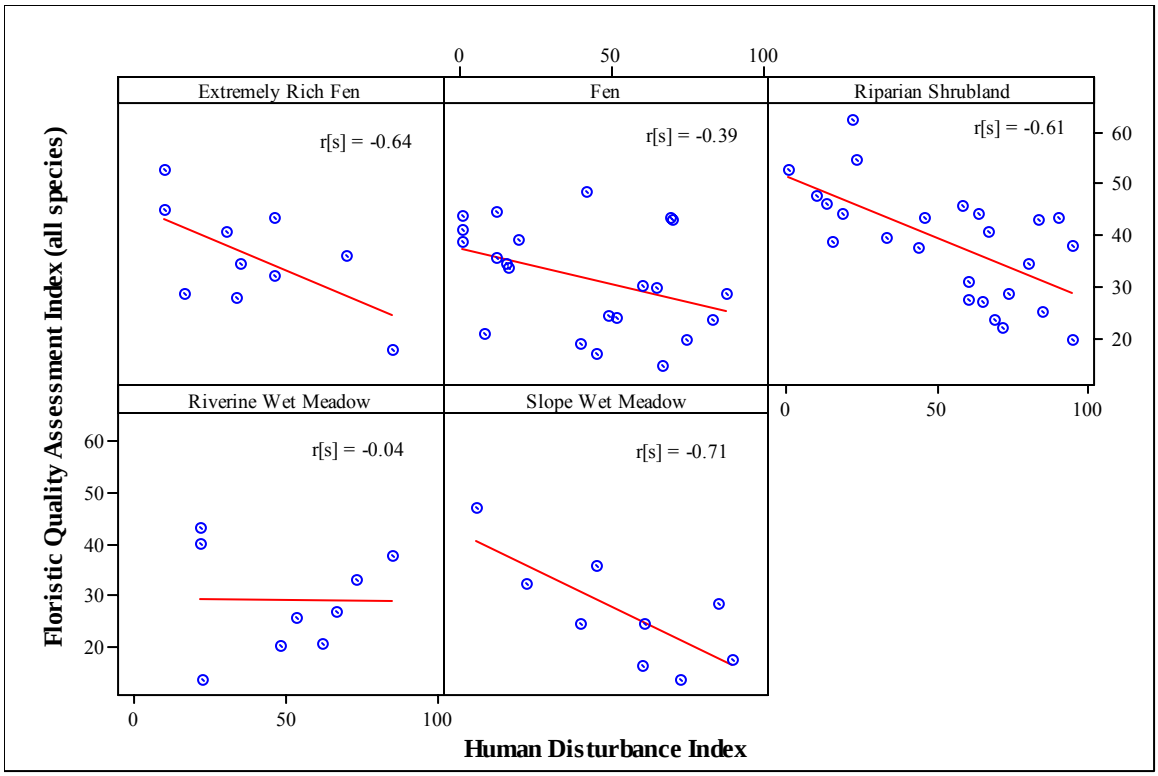

Figure 42. Spearman's Rank Correlation of Floristic Quality Assessment Index (all species) to Human Disturbance Index (Grouped by Ecological System)

Table 10. Effectiveness of Floristic Quality Assessment Index (all species)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Good	-0.46	Weak
Riparian Shrubland	Strong	-0.61	**Strong**
Fens	Poor	-0.39	Poor
Extremely Rich Fens	Good	-0.64	**Strong**
Slope Wet Meadows	Strong	-0.71	**Strong**
Riverine Wet Meadows	Poor	-0.04	Poor

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.8 Cover Weighted Floristic Quality Assessment Index (all species)

When all plots were analyzed together, the $FQI_{all\ cov}$ index showed good discriminatory power and weak correlation (r[s] = -0.37) to the HDI and thus was determined to have weak efficacy in discriminating sites with varying degrees of human disturbance (Figures 43 & 44; Table 11). Overall, as well as for each ecological system, the $FQI_{all\ cov}$ index was less effective than the FQI_{all} index in detecting degradation from human disturbance (Figures 39-42; 43-46 and Tables 10 & 11) indicating that cover values did not add useful information to the index.

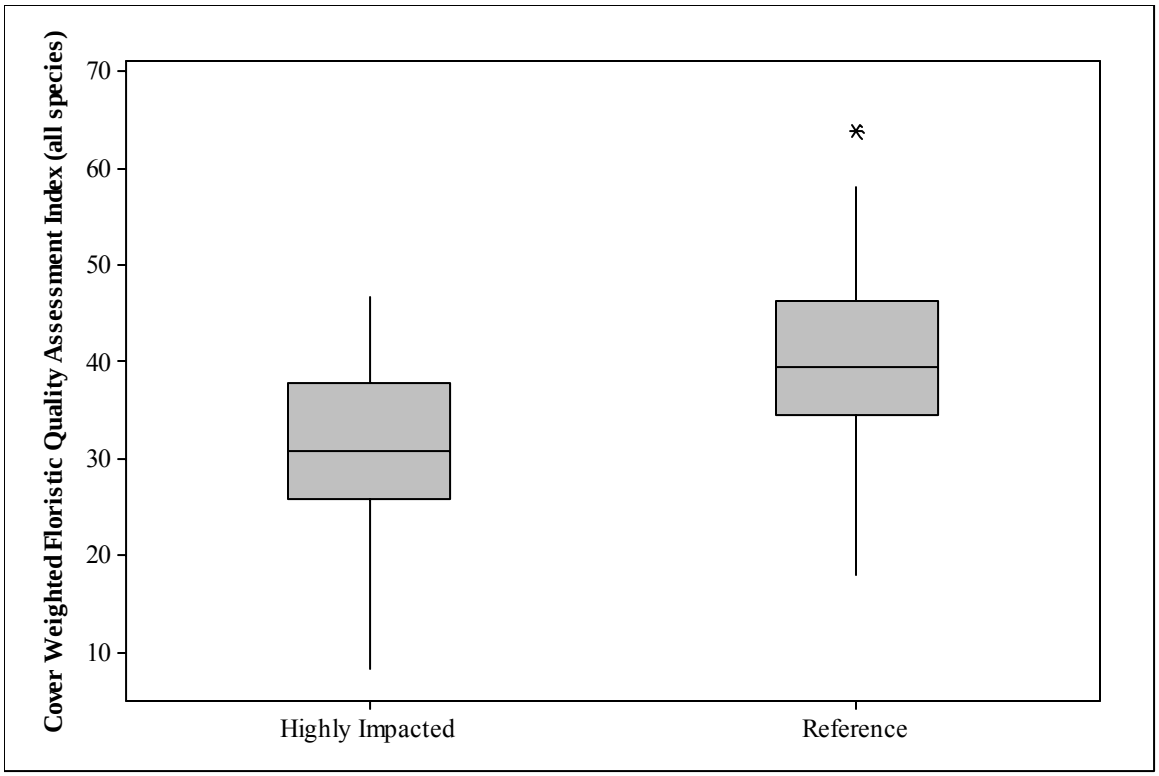

Figure 43. Discriminatory Power of Cover Weighted Floristic Quality Assessment Index (all species**)** (All Plots)

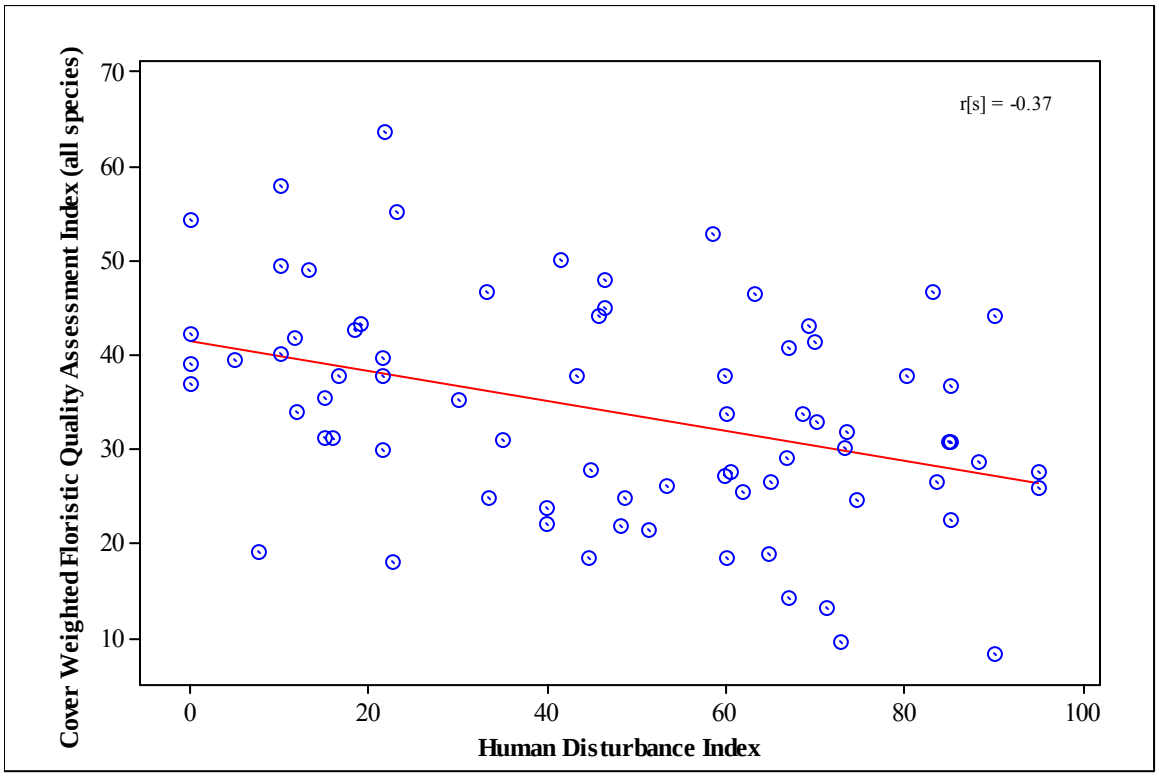

Figure 44. Spearman's Rank Correlation of Cover Weighted Floristic Quality Assessment Index (all species) to Human Disturbance Index (All Plots)

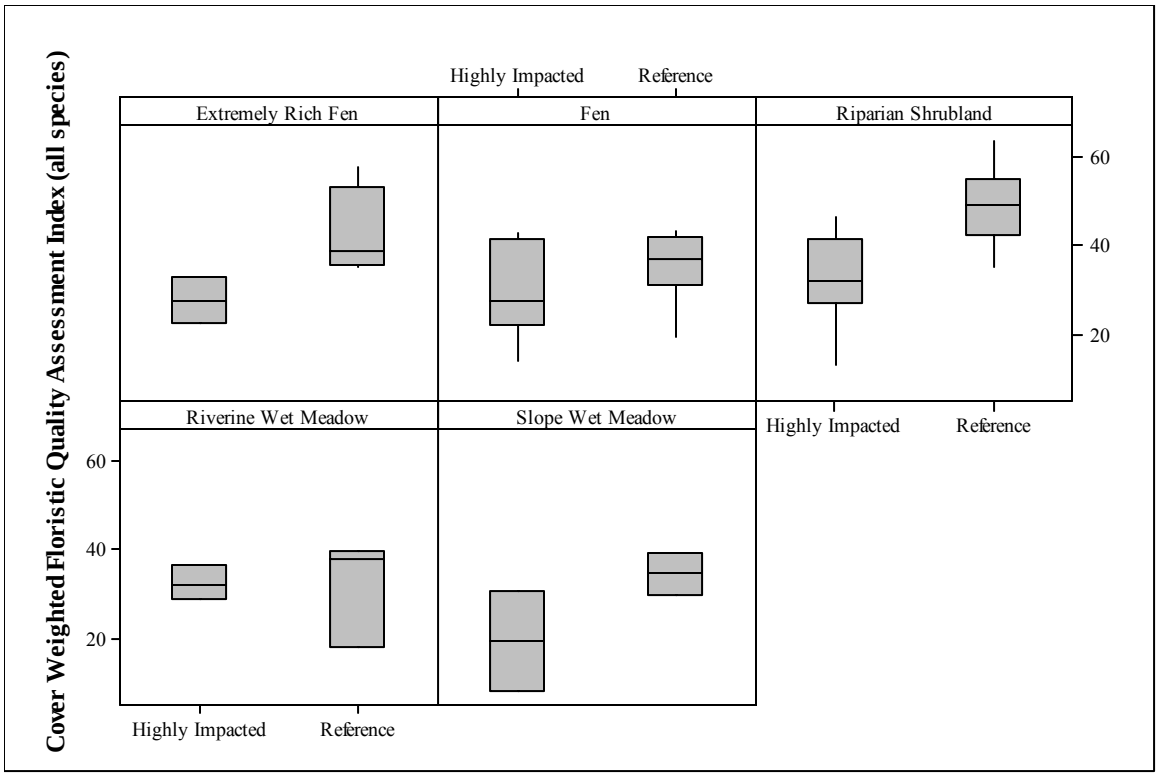

Figure 45. Discriminatory Power of Cover Weighted Floristic Quality Assessment Index (all species) (Grouped by Ecological System)

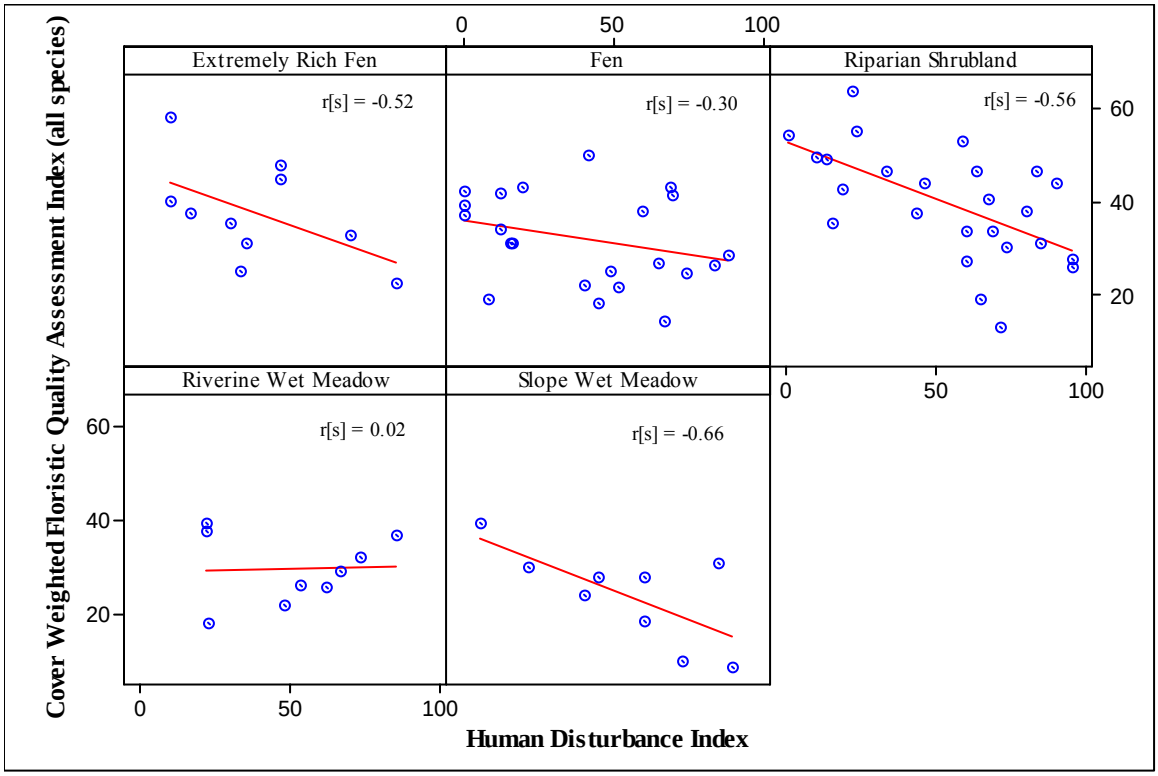

Figure 46. Spearman's Rank Correlation of Cover Weighted Floristic Quality Assessment Index (all species) to Human Disturbance Index (Grouped by Ecological System)

Table 11. Effectiveness of Cover Weighted Floristic Quality Assessment Index (all species)

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Good	-0.37	Weak
Riparian Shrubland	Strong	-0.56	**Strong**
Fens	Weak	-0.30	Weak
Extremely Rich Fens	Strong	-0.52	**Strong**
Slope Wet Meadows	Good	-0.66	**Strong**
Riverine Wet Meadows	Poor	0.02	Poor

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).

**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.9 Adjusted Floristic Quality Assessment Index

The *AFQI* was able to clearly distinguish reference from highly impacted sites (Figure 47) and had a strong correlation to the HDI (r[s] = -0.64; Figure 48). As with Mean C based indices, variability of the *AFQI* increased when the human disturbance index increased beyond a score of approximately 15 (Figure 48). In regards to the specific ecological systems, the *AFQI* was only effective for riparian shrublands and fens (Figures 49 & 50; Table 12). For these systems, the *AFQI* became much noisier above HDI scores of 50 (Figure 50). The *AFQI* had very similar results to $\overline{C}_{all}$ (Figures 24-26).

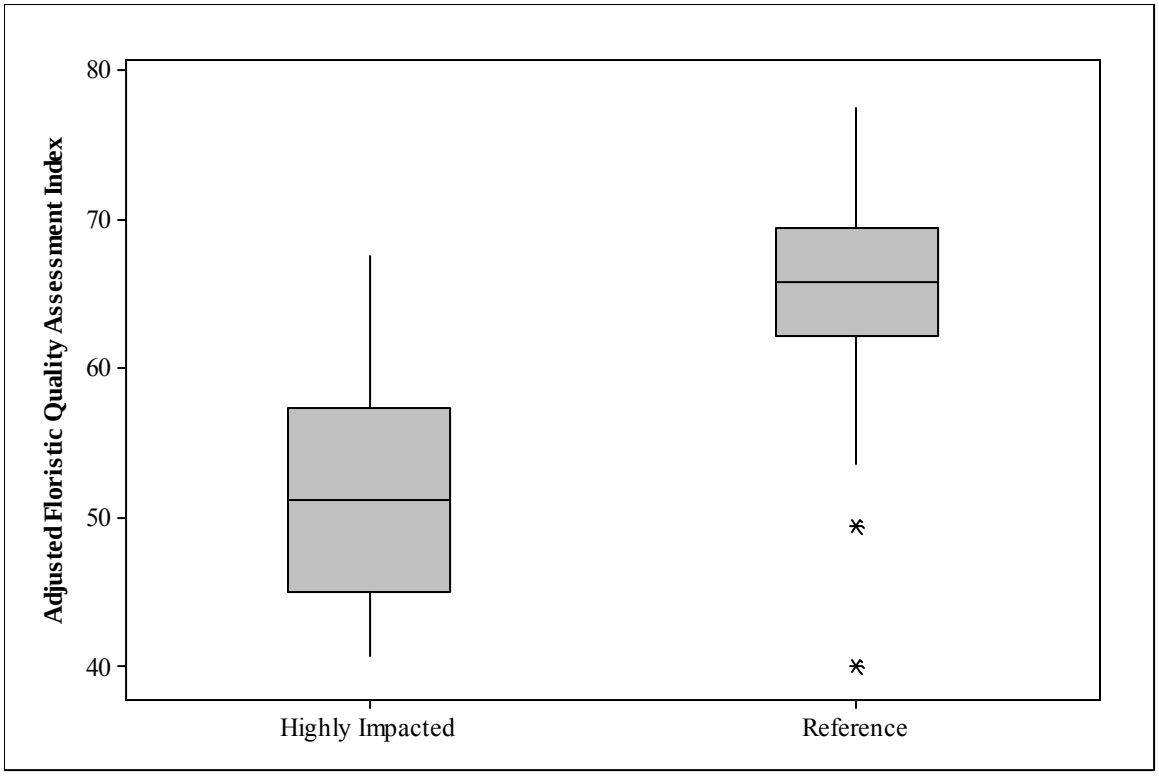

Figure 47. Discriminatory Power of Adjusted Floristic Quality Assessment Index (All Plots)

Figure 48. Spearman's Rank Correlation of Adjusted Floristic Quality Assessment Index to Human Disturbance Index (All Plots)

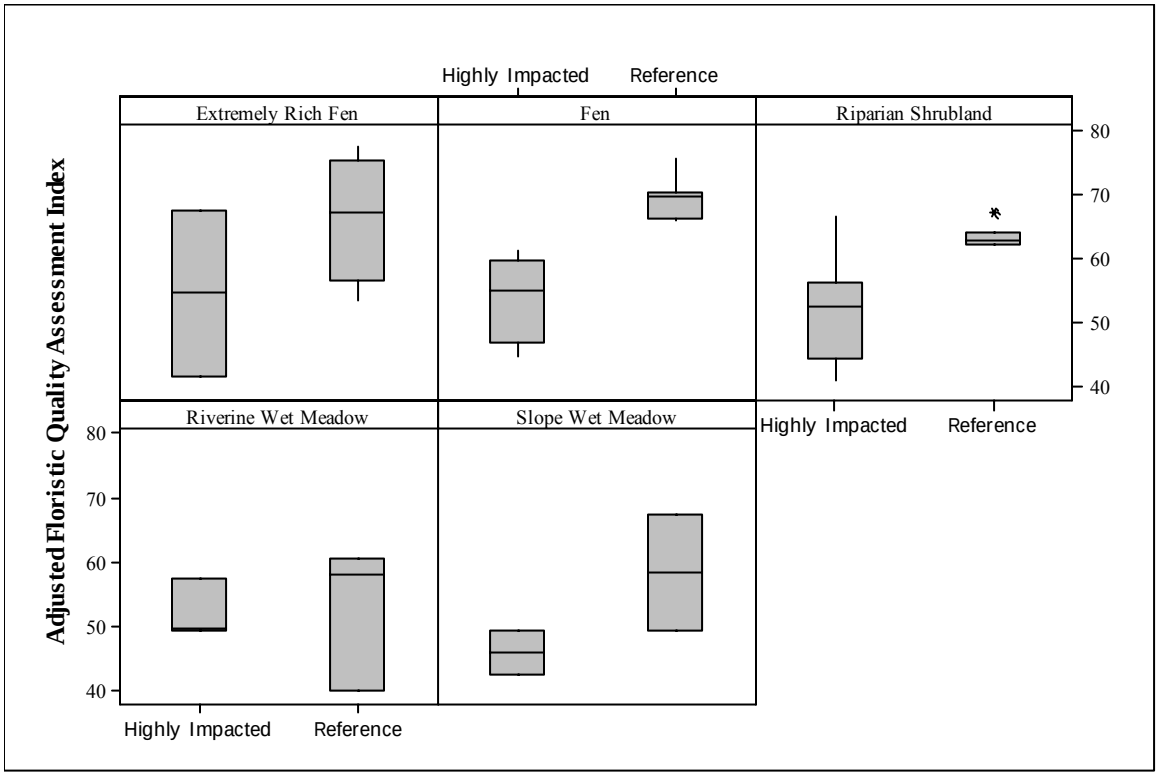

Figure 49. Discriminatory Power of Adjusted Floristic Quality Assessment Index (Grouped by Ecological System)

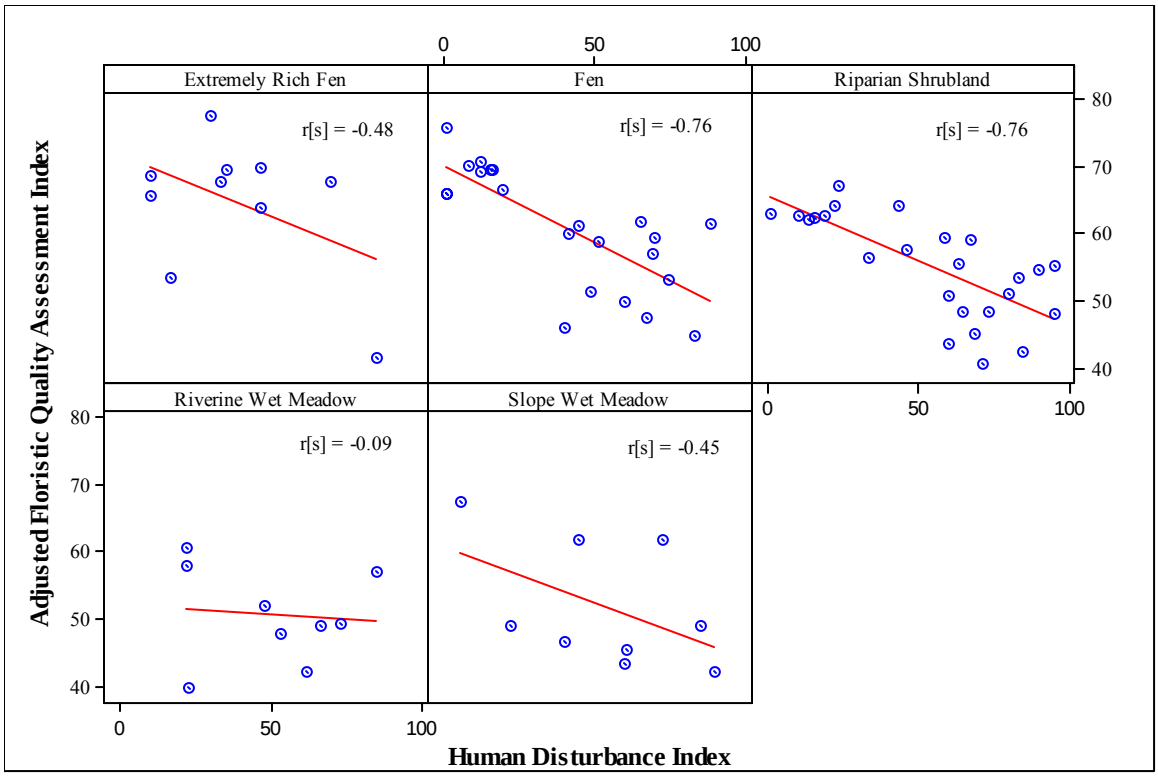

Figure 50. Spearman's Rank Correlation of Adjusted Floristic Quality Assessment Index to Human Disturbance Index (Grouped by Ecological System)

Table 12. Effectiveness of Adjusted Floristic Quality Assessment Index

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Strong	-0.60	**Strong**
Riparian Shrubland	Strong	-0.76	**Strong**
Fens	Strong	-0.76	**Strong**
Extremely Rich Fens	Weak	-0.48	Weak
Slope Wet Meadows	Strong	-0.45	Weak
Riverine Wet Meadows	Poor	-0.09	Poor

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.10 Cover Weighted Adjusted Floristic Quality Assessment Index

The $AFQI_{cov}$ was able to clearly distinguish reference from highly impacted sites (Figure 51) and had a strong correlation to the HDI (r[s] = -0.62; Figure 52). Variability of the $AFQI_{cov}$ increased when the HDI increased beyond a score of approximately 20 (Figure 52). The $AFQI_{cov}$ was effective for riparian shrublands, fens, and extremely rich fens but weak for slope and riverine wet meadows (Figures 53 & 54; Table 13). Although the index shows promise for slope wet meadows (Table 13), the narrow range of values may limit its usefulness (Figure 54). Except for fens, the addition of cover to the *AFQI* improved correlations to the HDI for all ecological systems (Table 12 & 13).

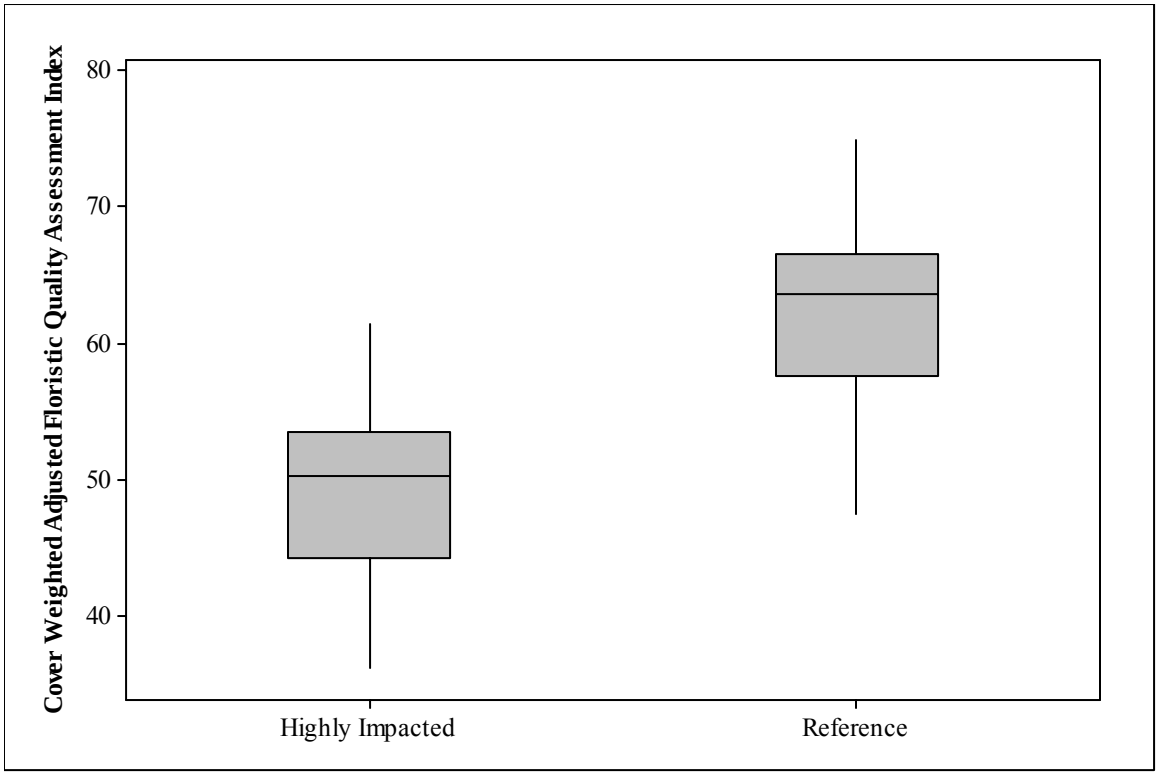

Figure 51. Discriminatory Power of Cover Weighted Adjusted Floristic Quality Assessment Index (All Plots)

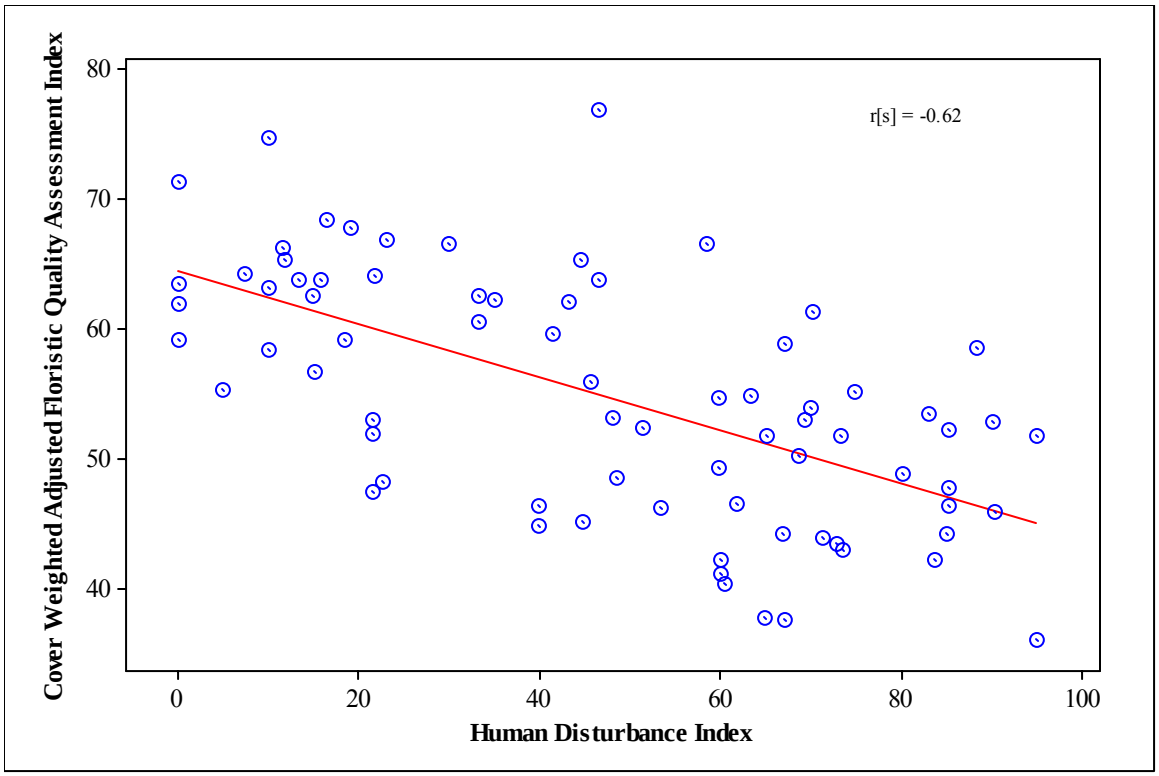

Figure 52. Spearman's Rank Correlation of Cover Weighted Adjusted Floristic Quality Assessment Index to Human Disturbance Index (All Plots)

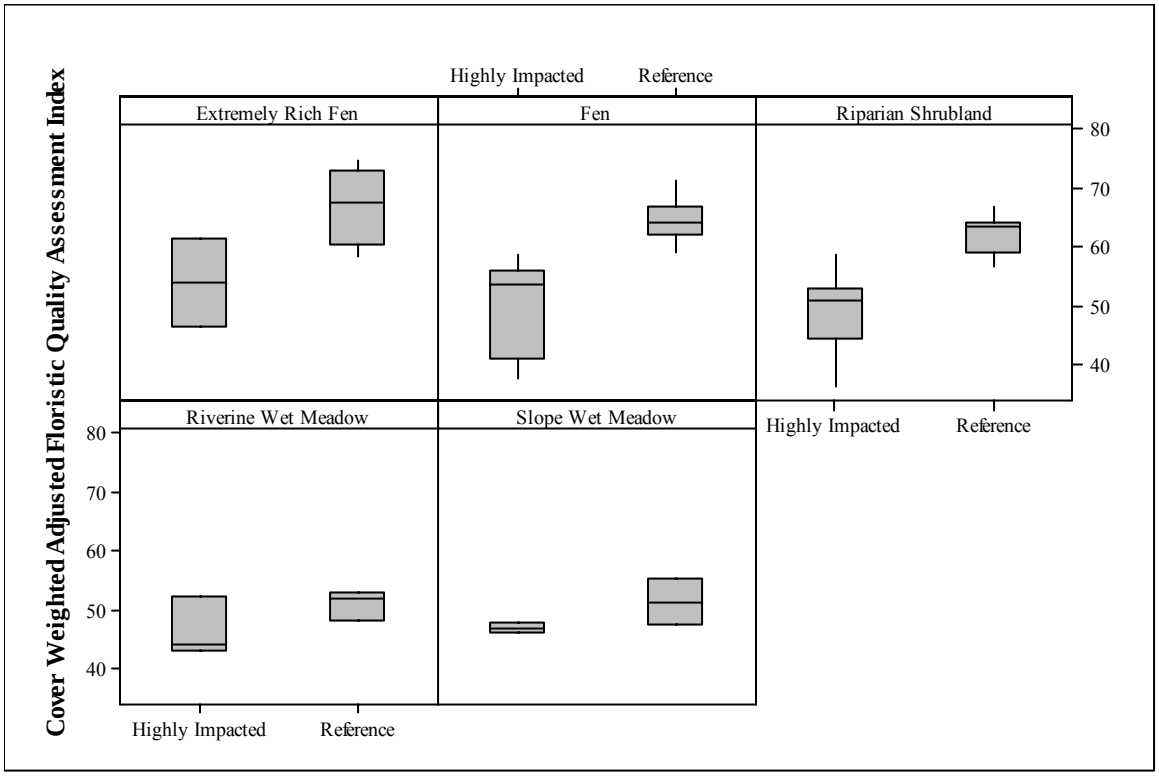

Figure 53. Discriminatory Power of Cover Weighted Adjusted Floristic Quality Assessment Index (Grouped by Ecological System)

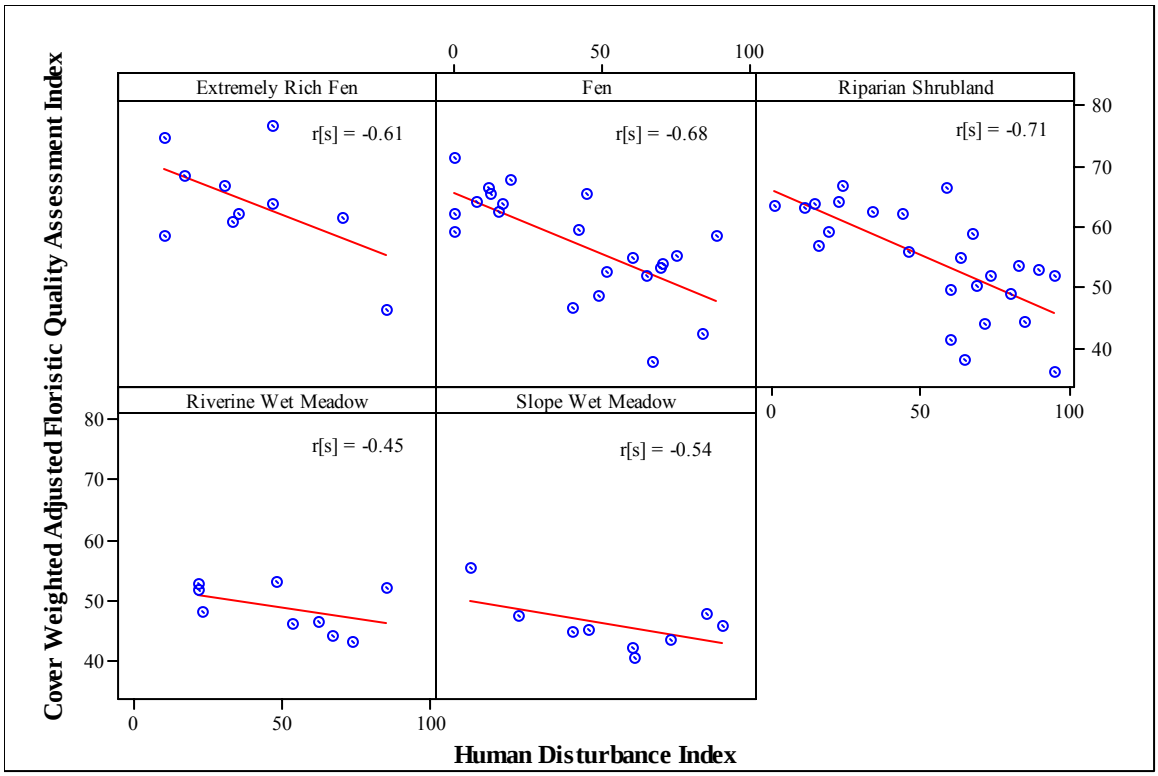

Figure 54. Spearman's Rank Correlation of Cover Weighted Adjusted Floristic Quality Assessment Index to Human Disturbance Index (Grouped by Ecological System)

Table 13. Effectiveness of Cover Weighted Adjusted Floristic Quality Assessment Index

Ecological System	Discriminatory Power*	Correlation to HDI	Efficacy**
All Plots	Strong	-0.62	**Strong**
Riparian Shrubland	Strong	-0.71	**Strong**
Fens	Strong	-0.68	**Strong**
Extremely Rich Fens	Good	-0.61	**Strong**
Slope Wet Meadows	Good	-0.54	Weak
Riverine Wet Meadows	Weak	-0.45	Weak

* Discriminatory Power (see Section 3.2.8) = Strong (3), Good (2), Weak (1), Poor (0).
**Efficacy is based on the index's discriminatory power and correlation to the human disturbance index

4.3.11 Summary of Field Testing Results

Only Mean C and Adjusted FQI indices were found to be effective when all plots were analyzed together (Table 14). All indices proved effective for riparian shrublands whereas none were deemed useful for riverine wet meadows (Table 14).

Species richness appears to have a stronger role than Mean C in detecting disturbance for extremely rich fens and slope wet meadows than other systems as indicated by the successfulness of the FQI-based indices for these systems and poorer performance of the Mean C based indices (Table 14). Mean C or Adjusted FQI indices appear to best detect degradation in fens (Table 13).

The addition of cover values improved the effectiveness of the Mean C (natives), Mean C (all species), and Adjusted Floristic Quality Assessment Index indices for extremely rich fens. Cover also improved these same metrics for the wet meadows types although these were not deemed effective (with or without cover values). Cover added no value to the indices for riparian shrublands and fen wetland types (Table 14). Two indices, $\overline{C}_{all}$ and $AFQI$ had very similar results, indicating that the addition of nonnative species has an overriding influence over the index scores in comparison to the effect from species richness.

No single index proved to be effective across all wetland types.

Table 14. Results of Field Testing of the FQA Indices for Southern Rocky Mountain Wetlands

FQA Index	All Plots	Riparian Shrublands	Fens	Extremely Rich Fens	Slope Wet Meadows	Riverine Wet Meadows
$\overline{C}_n$	Strong (-0.60)	Strong (-0.70)	Strong (-0.71)	Weak (-0.44)	Strong (-0.56)	Poor (-0.07)
$\overline{C}_{n\ cov}$	Strong (-0.55)	Strong (-0.61)	Strong (-0.65)	Strong (-0.57)	Weak (-0.45)	Weak (-0.34)
$\overline{C}_{all}$	Strong (-0.64)	Strong (-0.76)	Strong (-0.76)	Weak (-0.48)	Weak (-0.42)	Poor (-0.16)
$\overline{C}_{all\ cov}$	Strong (-0.64)	Strong (-0.75)	Strong (-0.68)	Strong (-0.58)	Weak (-0.50)	Weak (-0.44)
FQI_n	Weak (-0.38)	Strong (-0.52)	Poor (-0.33)	Strong (-0.60)	Strong (-0.75)	Poor (-0.01)
$FQI_{n\ cov}$	Weak (-0.33)	Strong (-0.51)	Poor (-0.29)	Strong (-0.53)	Strong (-0.74)	Poor (-0.02)
FQI_{all}	Weak (-0.46)	Strong (-0.61)	Poor (-0.39)	Strong (-0.64)	Strong (-0.71)	Poor (-0.04)
$FQI_{all\ cov}$	Weak (-0.37)	Strong (-0.56)	Weak (-0.30)	Strong (-0.52)	Strong (-0.66)	Poor (-0.02)
$AFQI$	Strong (-0.64)	Strong (-0.76)	Strong (-0.76)	Weak (-0.48)	Weak (-0.45)	Poor (-0.09)
$AFQI_{cov}$	Strong (-0.62)	Strong (-0.71)	Strong (-0.68)	Strong (-0.61)	Weak (-0.54)	Weak (-0.45)

Efficacy descriptors: Strong = Strong/good discriminatory power and correlation to HDI > 0.50; Weak = Good/weak discriminatory power and correlation to HDI > 0.30; Poor = Weak/poor discriminatory power and correlation to HDI < 0.30

5.0 DISCUSSION

5.1 Assignment of Coefficients of Conservatism

Including non-native species, approximately 84% of the Colorado Flora has been assigned a C value. The C value assignments had a normal distribution but were skewed toward higher values (Figure 10), a pattern also exhibited in other FQA efforts (Andreas et al. 2004; Herman et al. 1996; Taft et al. 1997). For example, 46% of Colorado species had C values ≥ 7 (Figure 10) while 41% of Ohio's, 49% of Michigan's, and 49% of Illinois' flora had C values ≥ 7. In contrast, there was more disparity among these various FQA efforts at the opposite end of the scale where 8% of the Colorado flora, 11% of the Ohio flora, 15% of the Michigan flora, and 17% of the Illinois' flora had C values ≤ 3. Typically the proportion of species with C values ≤ 3 is less than 12% of a flora (Gerould Wilhelm, personal communication). The Michigan and Illinois C values were normally distributed except for sharp peaks for species assigned to 10 (Herman et al. 1996; Taft et al. 1997). The FQA for North and South Dakota did not exhibit a strong normal distribution but still shared similar proportions of species at the high end of the scale, with 52% having C values ≥ 7 but diverging from other FQA studies by having 23% of species with C values ≤ 3 (Northern Great Plains Floristic Quality Assessment Panel 2001). It appears that the distribution of assigned C values for Colorado flora is comparable to other States.

The Panel had strong agreement regarding the C values assignments, as indicated by the fact that 90% of the species had a range of C value assignments within three values. In addition, 89% of the 237 species which were assigned data-derived C values were within three values of the corresponding Panel assigned C values. However, the Panel C value assignments were generally higher than those empirically assigned. Nonetheless, these results suggest that the concept of conservatism was consistently applied, that the Panel shared similar opinions for the portion of the flora which was assigned C values, and that the subjectively assigned C values appear to be in agreement with data-derived C values.

5.2 Effectiveness of the FQA Indices in Detecting Floristic Change

5.2.1 Testing of FQA Indices in Southern Rocky Mountain Headwater Wetlands

Field testing of the various FQA indices indicated that no single index emerged as the strongest index for detecting human-induced floristic change across all Southern Rocky Mountain wetlands (Table 13). However, a few indices, such $\overline{C}_n$ and $AFQI$, were able to differentiate between reference and highly impacted sites and exhibited a good correlation with the HDI suggesting that, although the variability of these indices varies among wetland types, they were consistently able to distinguish various states of ecological condition. Weighting the various indices by percent cover had mixed results. Except for the Mean C indexes for extremely rich fens and Mean C and Adjusted FQI indices for riverine wet meadows, weighting the FQA indices by percent cover did not improve the efficacy of any of the indices (Table 13). Other researchers have also found limited utility of weighting the indices with percent cover (Cohen et al. 2004; Bourdaghs et al. 2006). Considering the limited improvement in index performance with the inclusion of percent cover, the fact that abundance can vary throughout a growing season (Wilhelm and Ladd; Swink and Wilhelm 1994), and that collecting percent cover data makes the FQA approach too intensive for rapid employment (Francis et al. 2000; Cohen et al. 2004;

Bourdaghs et al. 2006) it does not appear the use of of cover-weighted FQA indices is worth the extra effort to collect such data.

Including non-native species into the Mean C and FQI indices improved the correlation for all wetland types except slope wet meadows (Table 13). Taft et al. (1997) recommend that FQA indices should be calculated and reported using both natives-only as well as all species in order to provide a more comprehensive and detailed assessment of floristic quality. It has been suggested that the presence of non-native species will be indirectly observed by a corresponding effect on the proportion of conservative native plants at a site (Mushet et al. 2002). In other words, the same processes that lead to invasion of non-native species is assumed to have a similar effect on the proportion of conservative plants able to survive at a site. Cohen et al. (2004) found no appreciable improvement in the efficacy of Mean C or FQI indices when non-native species were included lending support to these suggestions. However, it is possible that a site dominated by an aggressive exotic species could still support a few conservative species and consequently have a misleading Mean C value (Matthews 2003) thus it is recommended that both $\overline{C}_n$ and $\overline{C}_{all}$ be calculated.

Some researchers have found that the size of the assessment area has a strong effect on species richness and FQI (Francis et al. 2000; Matthews 2003; and Matthews et al. 2005) but an insignificant effect on Mean C (Francis et al. 2000; Matthews et al. 2005; Bourdaghs et al. 2006). Matthews et al. (2005) do note that Mean C is not completely independent of area but does provide a more robust assessment than the FQI. None of the FQA indices examined in this report were strongly or predictably correlated to the size of the assessment area. This may be due to the fact that the same plot size (1000 m^2) was used at each Assessment Area and thus standardized the effect of area. However, Francis et al. (2000) found that Mean C did not appreciably change with plot size whereas species richness and FQI increased substantially and plot size increased.

For those indices determined to be effective for multiple wetland types, the scoring range of those indices among the various wetland types differed indicating that classification is an important first step before application of the FQA as suggested by other researchers (Andreas et al. 2004; Rooney and Rodgers 2002). In other words, whichever FQA index is used, the resulting scores should only be compared to similar plant community types due to the fact that some types inherently support a higher proportion of conservative species (e.g. fens) than other types (e.g. riparian shrublands). For this project, the classification used was relatively course (e.g. ecological systems) and it is not known how the effectiveness of each index would change with a different classification scheme. Users of the Colorado FQA need to be aware of the importance of comparing similar ecosystem types before comparing FQA indices scores from different sites.

The Floristic Quality Indices (using both native and all species versions as well cover-weights), were strongest for extremely rich fens and slope wet meadow wetland types due to the stronger relationship species richness had in these systems to the HDI. However, the FQI indices did not show promise for the other wetland types. Mean C (natives) is the most straightforward application of C values since the index does not use species richness, non-native species or cover in the calculation (Francis et al. 2000; Rooney and Rodgers 2002). In other words, the $\overline{C}_n$ index does not contain hidden information and if used with other transparent, stand-alone indices such as species richness and percentage of non-native species provides a much clearer indication as to the specific impact human disturbance has on floristic integrity (Rooney and Rodgers 2002). In addition, Mean C has been shown to not be strongly affected by sample size, species richness, or seasonality of sampling (Francis et al. 2000; Rooney and Rogers 2002; Matthews 2003). Although it was not considered a "strong" (per this project's screening criteria) index for all

wetland types, it had a correlation coefficient at least > -0.44 and an ability to distinguish reference from highly impacted sites for all wetland types except riverine wet meadows. Some researchers have found Mean C (natives) to be a stronger predictor of human stressors than other FQA indices (Rooney and Rogers 2002; Cohen et al. 2004) whereas Bowles and Jones (2006) found that FQI was a stronger measure of floristic quality due to the inclusion of species richness.

Compared to other FQA studies, the lower range of $\overline{C}_n$ scores observed were higher in this study than in other geographic areas (Wilhelm and Masters 1996). Given the skewness shown in Figure 10 and the small percentage of the flora assigned a C value between 0-3, it is not surprising the most of the indices (especially $\overline{C}_n$) were generally high (5 or above) in highly impacted sites (at least relative to what others have found in other parts of the country). It is unclear if these results suggest that floristic quality has not been as impacted in these sites as the HDI suggests or if many of the species were assigned "inflated" C values. The latter may be a result of the fact that many of the Panel members who assigned the C values spend a disproportionate of their time in higher quality areas. Nonetheless, any bias toward "inflated" C values does not appear to have restricted the ability of many of the FQA indices to detect degradation in floristic quality of the wetlands sampled in this study.

Interestingly, all the indices proved effective for riparian shrublands. This may be due to the fact that both Mean C and species richness in riparian shrubland had strong correlations to the HDI as compared to fens, where only C values had strong correlation, and compared to extremely rich fens and slope wet meadows, where species richness had a stronger effect than C values resulting in the effectiveness of Floristic Quality Index indices being more effective for these systems.

The extremely poor ability of any index detecting floristic change for riverine wet meadows is particularly intriguing. Cover increased the effectiveness of the Mean C and Adjusted FQI indices for this type but still did not pass the screening tests. The scatterplots of the indices for the riverine wet meadow type suggest that one outlier may be masking potential correlations with Mean C (Figures 18 & 26) and Adjusted FQI (Figure 50). Additional data collection may prove that these indices are indeed effective for this wetland type.

5.2.2 Recommended Use of FQA Indices

The results of this study suggest that weighting the FQA indices by percent cover only showed significant improvement for FQA indices used in extremely rich fens and riverine wet meadows. In addition, a single, universal index which could be used to detect ecological degradation in Colorado's plant community types was not extractable from this study's results. However, this study does show that coefficients of conservatism can be a useful and sensitive measure of human impacts to the natural quality of ecological systems.

Due to the fact that $\overline{C}_n$ is solely based on assigned C values and does not use species richness or cover in the calculation, it is the most straightforward index regarding plant conservatism at a site and should be calculated and reported when other FQA indices (i.e. FQI or Adjusted FQI) are used as the primary measure for monitoring and assessment. The $\overline{C}_n$ allows better interpretation of the other indices which incorporate species richness (e.g. Floristic Quality Assessment Index and Adjusted Floristic Quality Assessment Index) and cover by helping determine the overall effect conservatism has on floristic quality relative to the other variables such as species richness, non-natives, and cover. A very useful aspect of $\overline{C}_n$ is that it has been found to be insensitive to

sample plot size, which broadens the comparability of $\overline{C}_n$ from existing and disparate datasets (Francis et al. 2000; Bourdaghs et al. 2006).

Although $\overline{C}_n$ can be a useful independent metric of floristic quality, it is recommended that practitioners use additional FQA or other vegetation metrics along with Mean C to provide a more comprehensive and clear assessment (Taft et al. 1997; Jog et al. 2006). This could be accomplished using a multi-metric index such as a vegetation index of biotic integrity (e.g. Rocchio 2007) or simply by reporting and making conclusions based on multiple, independent vegetation metrics.

Miller and Wardrop (2006) created a single index (e.g. Adjusted FQI) which incorporates $\overline{C}_n$, species richness and non-natives species relative to expected conditions. This study showed that $AFQI$ perfomed well for all wetland types, except riverine wet meadows and was a stronger metric than FQI indices for all wetland types except for extremely rich fens and slope wet meadows. Miller and Wardrop (2006) recommend the $AFQI$ because they feel it more accurately reflects floristic quality relative to expected condition (e.g. no nonnative species and $\overline{C}_n$ =10) and because the index is less sensitive to species richness. Minimally, $\overline{C}_n$, $\overline{C}_{all}$, species richness, and % non-native should be calculated for each sample site. If a single, comprehensive index score is desired the $AFQI$ or, if available, a vegetation index of biotic integrity is recommended.

Finally, although the original FQI was intended to be used to distinguish sites of various quality (Swink and Wilhelm 1994; Taft et al. 1997), classification was found to be an important constraining variable for improving the detection capability of the FQA indices in this project. Other researchers have found similar reasons to limit comparisons to similar ecological types (Rooney and Rogers 2002; Matthews 2003; Andreas et al. 2004). Thus, it is recommended that FQA index scores only be compared between similar plant community types or similar ecological system types.

5.3 Conclusion and Next Steps

This report presents the first iteration of the assignment of coefficients of conservatism to Colorado's flora. Additional field testing of the FQA indices is needed in a variety of ecological system types and geographic areas throughout Colorado. As additional field testing occurs, C value assignments may be refined to reflect increased understanding of the preferred ecological niche and tolerance to human stressors of Colorado's plant species. Practitioners of the FQA in Colorado are encouraged to submit their results and opinions regarding specific C value assignments to the Colorado Natural Heritage Program. Periodic review of C value assignments will occur in order to improve the FQA approach and its utility to managing Colorado's natural resources. In addition, the contribution of FQA monitoring results will build an empirical database from which the *a priori* C value assignments can be refined from empirical observations, thus creating an adaptive framework that allows continual input from new data sources and expert opinion to improve the efficacy of the C value assignments (Cohen et al. 2004).

A study of the FQA in forested wetlands in Virginia found that the FQI values of herbaceous layers was more useful than woody layers for detecting disturbance given that herbaceous species are typically more sensitive to short-term ecological conditions (Nichols et al. 2006). Future studies in Colorado could investigate whether the relationships between the FQA indices

presented in this report as well as in other ecosystems are more effective if only herbaceous species are included in the analysis.

In the near future, a FQA index calculator will be posted on CNHP's website (http://www.cnhp.colostate.edu/reports.html). This spreadsheet will allow practitioners to enter a species inventory list and will then automatically calculate the various FQA index scores.

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APPENIDX A: DESCRIPTIONS AND KEY TO WETLAND ECOLOGICAL SYSTEM TYPES

ECOLOGICAL SYSTEM DESCRIPTIONS

Note: The three "new" ecological system types discussed in this document, are in bold and embedded in the descriptions of the original three ecological systems targeted for this study.

Rocky Mountain Alpine-Montane Wet Meadow: Wet meadows are dominated by herbaceous species and range in elevation from montane to alpine (3,280 to 11,800 ft.). These types occur as large meadows in montane or subalpine valleys, as narrow strips bordering ponds, lakes, and streams, and near seeps and springs. They are typically found on flat areas or gentle slopes, but may also occur on sub-irrigated sites with slopes up to 10%. In alpine regions, sites typically are small depressions located below late-melting snow patches or on snowbeds. Soils of this system are mineral but may have large amounts of organic matter. Soils show typical hydric soil characteristics, including high organic content and/or low chroma and redoximorphic features. This system often occurs as a mosaic of several plant associations, often dominated by graminoids. Often riparian shrublands, especially those dominated by willows (*Salix* spp.), are immediately adjacent to **riverine wet meadows**. Wet meadows in the alpine are tightly associated with snowmelt (**slope wet meadows**) and typically not subjected to high disturbance events such as flooding. Wet meadows also occur near the fringes of lakes and ponds as well as near ephemeral groundwater discharge sites (**slope wet meadows**) where the water table is high enough to support hydrophytic vegetation but fluctuates or is deep enough to restrict the development of organic soils.

The size of wet meadows can vary greatly depending on their topographic location, underlying soil texture, and driving hydrological processes. Some are very small (< 1 acre) while others can be very large (> 75 acres). In order for a patch of wet meadow to be considered a distinct "ecological system", it must meet a minimum size of 1 acre.

Rocky Mountain Subalpine-Montane Fen: Fens are confined to specific environments defined by ground water discharge, soil chemistry, and peat accumulation of at least 40 cm. Fens remain saturated primarily as a result of discharging groundwater, seasonal and/or perennial surface water input, or due to their location on the fringes of lakes and ponds. Fens form at low points in the landscape or on slopes where ground water intercepts the soil surface. Ground water inflows maintain a fairly constant water level year-round, with water at or near the surface most of the time. Constant high water levels lead to accumulation of organic material. In addition to peat accumulation and perennially saturated soils, **extremely rich fens** have distinct soil and water chemistry, with high levels of one or more minerals such as calcium and magnesium and have a high pH (e.g. > 7.0). Fens usually occur as a mosaic of several plant associations. Shrubs may be dominant. Mosses are an integral floristic as well as functional component to fens. Mosses provide a critical role in the accumulation of peat, formation of hummocks, and nutrient cycling. Most fens in the Southern Rocky Mountains are dominated by brown mosses such as *Drepanocladus aduncus, Tomenthypnum nitens,* and *Aulacomnium palustre*. *Sphagnum* species are not as common as brown mosses in intermediate and rich fens however *Sphagnum* is an important and conspicuous component of poor and iron fens.

A distinguishing characteristic between wet meadows and fens is the depth of the water table and presence of organic soils. In fens, ground water maintains a fairly constant water level year-

round, with water at or near the surface most of the growing season whereas water tables in wet meadows are more variable and tend to fluctuate or decline throughout the growing season.

The size of fens can vary greatly depending on their topographic location, underlying soil texture, and driving hydrological processes. Some are very small (< 0.5 acre) while others can be very large (> 2.5 acres). In order for a patch of fen to be considered a distinct "ecological system", it must meet a minimum size of 0.5 acre.

Rocky Mountain Subalpine-Montane Riparian Shrubland: This system is located in the montane to subalpine and occurs as narrow to wide bands of shrubs lining stream banks and alluvial terraces in narrow to wide, low gradient valley bottoms and flood plains with sinuous stream channels. In general, most riparian shrublands in the Southern Rocky Mountains are dominated by various assemblages of willow (*Salix* spp.). Valley geomorphology and substrate dictate the types of riparian shrublands which typically develop. For example, thinleaf alder (*Alnus incana*), Drummonds willow (*Salix drummondiana*), and red-osier dogwood (*Cornus sericea*) are often dominant shrublands on steep and/or gravelly streams whereas a variety of willows (*Salix* sp.) occupy more gently sloped streams with finer sediment or peat substrates. However, riparian shrublands in the Southern Rocky Mountains are most commonly found in wide glaciated valleys or open parks where they often occupy a substantial portion of the valley floor. It has been reported that most riparian shrublands below 9000 ft. have mineral soils, while those above this elevation generally have peat or organic soils (Cooper 1986). However, for VIBI development any system with organic soils was classified as a fen.

The size of riparian shrublands can vary greatly depending on their topographic location, underlying soil texture, and driving hydrological processes. Some are very large (> 1.5 linear miles) while others can be very small (< 0.5 linear miles). In order for a patch of riparian shrubland to be considered a distinct "ecological system", it must meet a minimum size of 0.5 miles long by 30 feet wide.

KEY TO ECOLOGICAL SYSTEM TYPES

1

Mineral soils; sometimes organic soil horizon (histic epipedon) present but <40 cm 2

Organic soils, >40 cm depth present. If < 40 cm then organic soil layer occurs on lithic material 4

2

Shrubs dominate overstory; sometimes with scattered trees, but not densely forested. System usually occurs in riparian landscape but can be found on slopes near seeps/springs

ROCKY MOUNTAIN SUBALPINE-MONTANE RIPARIAN SHRUBLAND

Herbaceous vegetation is predominant; located in riparian landscape, near open water, or associated with groundwater discharge sites.....3

3

Wet meadow occurs in riparian landscape; wetland is exposed to fluvial dynamics; supported by overbank flooding, alluvial groundwater

ROCKY MOUNTAIN ALPINE-MONTANE RIVERINE WET MEADOW

Wet meadow occurs on or at base of slope; supported by unidirectional, groundwater discharge;

ROCKY MOUNTAIN ALPINE-MONTANE SLOPE WET MEADOW

4

Wetland occurs on slope or in a basin and/or is supported by groundwater discharge; Generally occurs at elevations above 8000 ft; Shrubs or herbaceous species may dominate. Groundwater pH is circumneutral

ROCKY MOUNTAIN SUBALPINE-MONTANE FEN

Wetland occurs on slope and/or is supported by groundwater discharge; Generally occurs at elevations above 8000 ft; Shrubs or herbaceous species may dominate. Groundwater is calcareous with pH above 7.0 and with high levels of Ca, Mg,; calciphiles are prevalent; marl is often present and may comprise most of substrate. In Colorado, this type is most prevalent in Park County, but examples are also found in Gunnison and Grand counties

ROCKY MOUNTAIN SUBALPINE-MONTANE EXTREMELY RICH FEN

APPENDIX B: HUMAN DISTURBANCE INDEX FORM

Plot #: **Date:** **Observers:** **County:**

Alterations within Buffers and Landscape Context	**Score**
1a. Average Buffer Width. (ALL) This metric is measured by estimating the width of the buffer surrounding the wetland. Buffers are natural vegetated areas with no or minimal human-use. Buffer boundaries extend from the wetland edge to intensive human land uses which result in non-natural areas. Some land uses such as light grazing and recreation may occur in the buffer, but other more intense land uses should be considered the buffer boundary. Irrigated meadows may be considered a buffer if the area appears to function as a buffer between the wetland and nearby, more intensive land uses such as agricultural row cropping, fenced or unfenced pastures, paved areas, housing developments, golf courses, mowed or highly managed parkland, mining or construction sites, etc.	
0pts EXCELLENT Wide > 100 m	
3pts GOOD Medium. 50 m to <100 m	
7pt FAIR Narrow. 25 m to 50 m	
10pts POOR Very Narrow. < 25m	
1b. Adjacent Land Use. (ALL) This metric is measured by documenting surrounding land use(s) within 100 m of the outer buffer boundary. To calculate a Total Land Use Score estimate the % of the adjacent area within 100 m of the buffer boundary under each Land Use type and then plug the corresponding coefficient (Table 1) with some manipulation to account for regional application) into the following equation: *Sub-land use score* = ∑ LU x PC/100 where**:** LU = Land Use Score for Land Use Type; PC = % of adjacent area in Land Use Type. Do this for each land use within 100 m of the buffer edge, then sum the Sub-Land Use Score(s) to arrive at a Total Land Score. For example, if 30% of the adjacent area was under moderate grazing (0.3 * 0.6 = 0.18), 10% composed of unpaved roads (0.1 * 0.1 = 0.01), and 40% was a natural area (e.g. no human land use) (1.0 * 0.4 = 0.4), the Total Land Use Score would = 0.59 (0.18 + 0.01 + 0.40).	
0pts EXCELLENT Average Land Use Score = 1.0-0.95	
3pts GOOD Average Land Use Score = 0.80-0.94	
7pt FAIR Average Land Use Score = 0.4-0.79	
10pts POOR Average Land Use Score = < 0.4	
1c. Percentage of Unfragmented Landscape Within One Kilometer (ALL) This metric is measured by estimating the amount of unfragmented area in a one km buffer surrounding the wetland and dividing that by the total area. This can be completed in the office using aerial photographs or GIS.	
0pts EXCELLENT Embedded in 90-100% unfragmented, roadless natural landscape;	
3pts GOOD Embedded in 60-90% unfragmented, roadless natural landscape;	
7pt FAIR Embedded in 20-60% unfragmented, roadless natural landscape;	
10pts POOR Embedded in < 20% unfragmented, roadless natural landscape;	
1d. Riparian Corridor Continuity (RIPARIAN ONLY) This metric is measured as the percent of anthropogenic patches within the riparian corridor. Anthropogenic patches are defined as areas which have been converted or are dominated by human activities such as heavily grazed pastures, roads, bridges, urban/industrial development, agriculture fields, and utility right-of-ways. The riparian corridor itself is defined at the width of the geomorphic floodplain. Using GIS, field observations, and/or aerial photographs the area occupied by anthropogenic patches is compare to the area occupied by natural vegetation with the riparian corridor.	
0pts EXCELLENT < 5% of riparian reach with gaps / breaks due to cultural alteration	
3pts GOOD > 5 - 20% of riparian reach with gaps / breaks due to cultural alteration	
7pt FAIR >20 - 50% of riparian reach with gaps / breaks due to cultural alteration	
10pts POOR > 50% of riparian reach with gaps / breaks due to cultural alteration	

Calculation	**Subtotal Score**
(Sum of two highest scores/20) * 100	

Hydrological Alterations	**Score**
2a. Hydrological Alterations (NON-RIPARIAN ONLY) Measured by evaluating land use and human activity within or near the wetland which appear to be altering hydrology of the site. (see Table 2)	
0pts EXCELLENT No alterations. No dikes, diversions, ditches, flow additions, pugging, or fill present in wetland that restricts or redirects flow	
8pts GOOD Low intensity alteration such as roads at/near grade, pugging, small diversion or ditches (< 1 ft. deep) or small amount of flow additions	
16pts FAIR Moderate intensity alteration such as 2-lane road, low dikes, pugging, roads w/culverts adequate for stream flow, medium diversion or ditches (1-3 ft. deep) or moderate flow additions.	
20pts POOR High intensity alteration such as 4-lane Hwy., large dikes, diversions, or ditches (>3 ft. deep) capable to lowering water table, large amount of fill, or artificial groundwater pumping or high amounts of flow additions	
2b Upstream Surface Water Retention (RIPARIAN ONLY) Measured as the % of the contributing watershed that occurs upstream of a surface water retention facility. (1) Sum the area of the contributing watershed. (2) Determine/sum area of the contributing watershed upstream of the surface water retention facility furthest downstream for each contributing stream reach (e.g., main channel and/or tributaries). (3) Divide this by the total area of the contributing watershed, (4) multiply by 100. For example if a dam occurs on the main channel, then the entire watershed upstream of that dam is calculated whereas if only small dams occur on tributaries then the contributing watershed upstream of each dam on each of the tributaries would be calculated then summed.	
0pts EXCELLENT < 5% of drainage basin drains to surface water storage facilities	
3pts GOOD >5 - 20% of drainage basin drains to surface water storage facilities	
7pt FAIR >20 - 50% of drainage basin drains to surface water storage facilities	
10pts POOR > 50% of drainage basin drains to surface water storage facilities	
2c. Upstream/Onsite Water Diversions/Additions (RIPARIAN ONLY). Calculate the total number of water diversions occurring in the contributing watershed as well as those onsite. Consider the number of diversions with the size of the contributing watershed to assess their impact.	
0pts EXCELLENT No upstream or onsite water diversions/additions present	
3pts GOOD Few diversions/additions present or impacts minor relative to contributing watershed size. Onsite diversions/additions, if present, have minor impact on local hydrology.	
7pt FAIR Many diversions/additions present or impacts moderate relative to contributing watershed size. Onsite diversions/additions, if present, have a major impact on local hydrology.	
10pts POOR Water diversions/additions are very numerous or impacts high relative to contributing watershed size. Onsite diversions/additions, if present, have drastically altered local hydrology.	
2d. Floodplain Interaction (RIPARIAN ONLY) This metric is estimated in the field by observing signs of overbank flooding, channel migration, and geomorphic modifications that are present within the riparian area.	
0pts EXCELLENT Floodplain interaction is within natural range of variability. There are no geomorphic modifications (incised channel, dikes, levees, riprap, bridges, road beds, etc.) made to contemporary floodplain.	
3pts GOOD Floodplain interaction is disrupted due to the presence of a few geomorphic modifications. Up to 20% of streambanks are affected.	
7pts FAIR Floodplain interaction is highly disrupted due to multiple geomorphic modifications. Between 20 – 50% of streambanks are affected.	
10pts POOR Complete geomorphic modification along river channel. The channel occurs in a steep, incised gulley due to anthropogenic impacts. More than 50% of streambanks are affected.	

	Calculation	**Subtotal Score**
Non-Riparian	(Score/20) * 100	
Riparian	(Sum of two highest scores/20) * 100	

Physical/Chemical Disturbance	**Score**
3a. Substrate/Soil Disturbance[18] (ALL) Select one or double check and average. This metric evaluates physical disturbances to the soil and surface substrates of the area. Examples include filling and grading, plowing, pugging (hummocking from livestock hooves), vehicle use (motorbikes, off-road vehicles, and construction vehicles), sedimentation, dredging, and other mechanical disturbances to the surface substrates or soils.	

Circle one answer.	**YES**	**NO**	**NOT SURE**
Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils or substrates, or have they occurred so far in the past that current conditions should be considered to be "natural."?	Assign a score 1, 2 or 3, or an intermediate score, depending on degree of recovery from the disturbance.	Assign a score of 4 since there are no apparent modifications.	Choose "none apparent" and "recovered" and assign a score of 3.5.

0pts EXCELLENT No Apparent Modifications	
3pts GOOD Past Modification but Recovered; OR Recent but Minor Modifications	
7pts FAIR Recovering OR Recent and Moderate Modifications	
10pts POOR Recent and Severe Modifications	
3b. Onsite Land Use. (ALL) This metric is measured by documenting surrounding land use(s) occurring in the wetland or riparian area. Follow the same procedures as in Metric 1a. Adjacent Land Use	
0pts EXCELLENT Average Land Use Score = 1.0-0.95	
3pts GOOD Average Land Use Score = 0.80-0.94	
7pt FAIR Average Land Use Score = 0.4-0.79	
10pts POOR Average Land Use Score = < 0.4	
3c. Bank Stability (RIPARIAN ONLY) Walk the streambanks and observe signs of eroding and unstable banks. These signs include crumbling, unvegetated banks, exposed tree roots, exposed soil, as well as species composition of streamside plants. Stable streambanks are vegetated by native species that have extensive root masses (*Alnus incana*, *Salix* spp., *Populus* spp., *Betula* spp., *Carex* spp., *Juncus* spp., and some wetland grasses). In general, most plants with a Wetland Indicator Status of OBL (obligate) and FACW (facultative wetland) have root masses capable of stabilizing streambanks while most plants with FACU (facultative upland) or UPL (upland) do not.	
0pts EXCELLENT Banks stable; evidence of erosion or bank failure absent or minimal; < 5% of bank affected. Streambanks dominated (> 90% cover) by Stabilizing Plant Species (OBL & FACW)	
3pts GOOD Mostly stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion. Streambanks have 75-90% cover of Stabilizing Plant Species (OBL & FACW)	
7pt FAIR Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods. Streambanks have 60-75% cover of Stabilizing Plant Species (OBL & FACW)	
10pts POOR Unstable; many eroded areas; "raw". Areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars. Streambanks have < 60% cover of Stabilizing Plant Species (OBL & FACW)	

[18] Adapted from Mack 2001

3d. Algae[19] Large patch = 50% cover of standing water	
0pts EXCELLENT Algae growth is minimal	
3pts GOOD Algae growth in small patches	
7pt FAIR Algae growth in large patches	
10pts POOR Abundant algae growth in continuous mats	
3e. Cattail Dominance Dominance = 70% of vegetated component	
0pts EXCELLENT Cattails, if present, occur in sporadic stands but do not dominate the wetland/riparian area.	
10pts POOR Cattails dominate and form a monoculture in the wetland/riparian area. Very few, if any, additional species are present. Co-dominants may include other aggressive native/non-native species.	
3f. Sediment & Turbidity	
0pts EXCELLENT No evidence of excessive sediment in wetland/riparian area due to human-induced activities (bare ground, row crops, erosion, etc.); Water is not turbid.	
3pts GOOD Slight evidence of excessive sediment in wetland/riparian area due to human-induced activities (bare ground, row crops, erosion, etc.); Water is slightly turbid.	
7pt FAIR Moderate evidence of excessive sediment in wetland/riparian area due to human-induced activities (bare ground, row crops, erosion, etc.); Water is moderately turbid.	
10pts POOR High evidence of excessive sediment in wetland/riparian area due to human-induced activities (bare ground, row crops, erosion, etc.); Water is highly turbid.	
3g. Toxics/Heavy Metals Mine tailings, mine drainage, hydrocarbons, pesticides, etc. Indicators include different color of water (e.g. orange), odors, no aquatic life, or obvious point source. For oil sheens…poke with stick. If the sheen immediately comes back together it is likely petroleum, otherwise it is natural.	
0pts EXCELLENT No evidence of toxics	
5pts GOOD/FAIR Evidence of toxics; diversity/abundance of organism slightly affected.	
10pts POOR Evidence of toxics with drastic affect on organisms.	

	Calculation	**Subtotal Score**
All Types	(Sum of two highest scores/20) * 100	

Human Disturbance Index (HDI) Score	**Subtotal**	**Weight**	**Final Score**
Buffers and Landscape Context		0.33	
Hydrology		0.34	
Physical Disturbances/Water Quality		0.33	
		HDI Final Score	

[19] Metrics 3d, 3e, 3f, and 3g are adapted from Montana Department of Environmental Quality 2005

Table1. Land Use Coefficient Table (modified from Hauer et al. 2002)

Current Land Use	Coefficient
Paved roads/parking lots/domestic or commercially developed buildings/gravel pit operation	0.0
Unpaved Roads (e.g., driveway, tractor trail) / Mining	0.1
Agriculture (tilled crop production)	0.2
Heavy grazing by livestock / intense recreation (ATV use/camping/popular fishing spot, etc.)	0.3
Logging or tree removal with 50-75% of trees >50 cm dbh removed	0.4
Hayed	0.5
Moderate grazing	0.6
Moderate recreation (high-use trail)	0.7
Selective logging or tree removal with <50% of trees >50 cm dbh removed	0.8
Light grazing / light recreation (low-use trail)	0.9
Fallow with no history of grazing or other human use in past 10 yrs	0.95
Natural area / land managed for native vegetation	1.0

Land Use Calculations:

LU Type #1 Coeff _____ x % of Area _____/_____ /100 = Sub-land use score _____
LU Type #2 Coeff _____ x % of Area _____/_____ /100 = Sub-land use score _____
LU Type #3 Coeff _____ x % of Area _____/_____ /100 = Sub-land use score _____
LU Type #4 Coeff _____ x % of Area _____/_____ /100 = Sub-land use score _____
LU Type #5 Coeff _____ x % of Area _____/_____ /100 = Sub-land use score _____

Total Land Use Score_____

APPENDIX C: SAMPLE SITE INFORMATION

	Ecological System	HGM Class	Human Disturbance Index	Human Disturbance Category	Dominant Land Use	Sampling Date	Site Name	Watershed	Elevation (ft)	UTM 13 NAD83 Easting	UTM 13 NAD83 Northing	Soil Type	WAA Size (hectare)
Plot 01	Wet Meadow	Slope	39.80	Impacted	Recreation	7/7/2004	Cataract Lake	Blue River	8750	387366	4410496	Mineral	0.18
Plot 02	Wet Meadow	Slope	60.00	Impacted	Grazing	7/8/2004	Cataract Lake-Irrigated Meadow	Blue River	8454	389494	4411631	Mineral	1.89
Plot 03	Wet Meadow	Riverine	22.50	Reference	Grazing	7/9/2004	County Line Meadow	Blue River	7740	386743	4419368	Mineral	0.35
Plot 04	Fen	Slope	18.98	Reference	Natural	7/13/2004	Frisco Boardwalk Fen	Blue River	9120	405649	4380424	Organic	0.58
Plot 05	Riparian Shrubland	Slope	67.00	Highly Impacted	Suburban	7/14/2004	Frisco Bike Path Shrubland	Blue River	9120	405735	4380438	Mineral	1.24
Plot 06	Riparian Shrubland	Riverine	84.85	Highly Impacted	Urban	7/15/2004	Straight Creek - Silverthorne	Blue River	8888	408776	4387160	Mineral	1.51
Plot 07	Fen	Slope	14.85	Reference	Natural	7/20/2004	Lost Park Campground	Upper South Platte River	9960	456222	4348380	Organic	0.24
Plot 08	Wet Meadow	Riverine	53.20	Impacted	Grazing	7/21/2004	BLM 94	South Platte River Headwaters	9600	424978	4350609	Mineral	0.24
Plot 09	Riparian Shrubland	Riverine	80.05	Highly Impacted	Grazing	7/22/2004	Teter SWA Parking Lot	South Platte River Headwaters	9665	426853	4359100	Mineral	1.34
Plot 10	Riparian Shrubland	Riverine	15.00	Reference	Natural	7/23/2004	Michigan Creek Campground	South Platte River Headwaters	10000	424353	4362357	Mineral	6.34
Plot 11	Riparian Shrubland	Riverine	45.53	Impacted	Suburban	7/27/2004	Breckenridge Gold Course	Blue River	9300	411402	4375350	Mineral	1.1
Plot 13	Riparian Shrubland	Riverine	23.10	Reference	Natural	7/29/2004	Deer Creek	Blue River	11000	425236	4377901	Mineral	2.07
Plot 14	Wet Meadow	Riverine	66.70	Highly Impacted	Suburban	7/29/2004	Soda Creek	Blue River	9020	413041	4383563	Mineral	2.21

	Ecological System	HGM Class	Human Disturbance Index	Human Disturbance Category	Dominant Land Use	Sampling Date	Site Name	Watershed	Elevation (ft)	UTM 13 NAD83 Easting	UTM 13 NAD83 Northing	Soil Type	WAA Size (hectare)
Plot 15	Extremely Rich Fen	Slope	9.90	Reference	Natural	8/6/2004	High Creek Fen	South Platte River Headwaters	9290	415981	4328230	Organic	26.32
Plot 16	Extremely Rich Fen	Slope	70.10	Highly Impacted	Mining	8/6/2004	High Creek Fen	South Platte River Headwaters	9290	416069	4328353	Organic	2.72
Plot 17	Fen	Slope	41.35	Impacted	Suburban	8/9/2004	Bemrose Creek	Blue River	10700	409433	4359579	Organic	0.19
Plot 18	Riparian Shrubland	Riverine	13.20	Reference	Natural	8/10/2006	Middle Fork Swan River	Blue River	10000	419389	4372351	Mineral	4.94
Plot 19	Riparian Shrubland	Riverine	9.90	Reference	Natural	8/11/2004	Indiana Creek	Blue River	10600	414071	4364864	Mineral	3.63
Plot 20	Extremely Rich Fen	Slope	16.50	Reference	Natural	8/13/2004	County Line Fen	Blue River	7750	386715	4419389	Organic	0.2
Plot 21	Fen	Slope	74.65	Highly Impacted	Grazing	7/28/2004	Horse Creek Fen 2	Blue River	8000	389963	4416033	Organic	0.53
Plot 22	Wet Meadow	Slope	90.10	Highly Impacted	Grazing	7/7/2005	Horse Creek-irrigated meadow	Blue River	8000	389811	4416186	Mineral	1.29
Plot 23	Riparian Shrubland	Riverine	73.10	Highly Impacted	Grazing	7/7/2005	Horse Creek-Riparian	Blue River	8060	390055	4416443	Mineral	0.88
Plot 24	Fen	Slope	59.80	Impacted	Grazing	7/8/2005	Iron Springs	Blue River	9242	408451	4380581	Organic	1.34
Plot 25	Extremely Rich Fen	Slope	29.90	Reference	Grazing	7/12/2005	Crooked Creek Fen 1	South Platte River Headwaters	10037	415122	4347238	Organic	1.13
Plot 26	Extremely Rich Fen	Slope	85.15	Highly Impacted	Grazing	7/13/2005	Crooked Creek Fen 2	South Platte River Headwaters	10016	415214	4347174	Organic	1.71
Plot 27	Fen	Slope	15.75	Reference	Natural	7/13/2005	Crooked Creek Fen 3	South Platte River Headwaters	10050	415024	4347285	Organic	0.92
Plot 28	Riparian Shrubland	Riverine	64.75	Impacted	Grazing	7/14/2005	Tomahawk SWA	South Platte River Headwaters	9096	425184	4326976	Mineral	0.7
Plot 29	Riparian Shrubland	Riverine	59.80	Impacted	Grazing	7/14/2005	Tomahawk SWA2	South Platte River Headwaters	9088	425166	4327352	Mineral	0.4

	Ecological System	HGM Class	Human Disturbance Index	Human Disturbance Category	Dominant Land Use	Sampling Date	Site Name	Watershed	Elevation (ft)	UTM 13 NAD83 Easting	UTM 13 NAD83 Northing	Soil Type	WAA Size (hectare)
Plot 30	Riparian Shrubland	Riverine	58.35	Impacted	Exurban	7/15/2005	Tarryall Creek	South Platte River Headwaters	10306	418023	4357048	Mineral	7.44
Plot 31	Riparian Shrubland	Riverine	0.00	Reference	Natural	7/19/2005	Trail Creek	Colorado River Headwaters	8984	406499	4459712	Mineral	0.41
Plot 32	Fen	Slope	0.00	Reference	Natural	7/21/2005	Second Creek	Colorado River Headwaters	11268	432956	4408597	Organic	0.26
Plot 33	Riparian Shrubland	Riverine	18.40	Reference	Natural	7/22/2005	St. Louis Creek	Colorado River Headwaters	9388	423068	4414284	Mineral	1.21
Plot 34	Extremely Rich Fen	Slope	9.90	Reference	Natural	7/27/2005	High Creek Fen - Shrubland	South Platte River Headwaters	9276	415702	4327905	Organic	0.25
Plot 35	Extremely Rich Fen	Slope	34.85	Reference	Grazing	7/27/2005	Teter-Michigan Creek SWA	South Platte River Headwaters	9672	426459	4358616	Organic	0.93
Plot 36	Wet Meadow	Slope	85.15	Highly Impacted	Grazing	7/27/2005	Teter-Michigan Creek SWA2	South Platte River Headwaters	9686	426464	4358731	Mineral	0.63
Plot 37	Fen	Slope	11.55	Reference	Natural	7/29/2005	Michigan Creek Headwaters	South Platte River Headwaters	11292	420999	4367487	Organic	0.21
Plot 38	Riparian Shrubland	Riverine	33.15	Reference	Suburban	8/1/2005	Mesa Cortina-Wildernest	Blue River	9600	405626	4386288	Mineral	0.64
Plot 39	Wet Meadow	Slope	4.95	Reference	Natural	8/2/2005	Spruce Creek	Blue River	10757	408443	4364948	Mineral	0.16
Plot 40	Riparian Shrubland	Riverine	21.60	Reference	Recreation	8/3/2005	N. Fork Swan River	Blue River	9850	418977	4374191	Mineral	1.11
Plot 41	Riparian Shrubland	Riverine	83.00	Highly Impacted	Mining	8/4/2005	N. Fork Swan River2	Blue River	9698	417440	4375082	Mineral	0.47
Plot 42	Wet Meadow	Riverine	61.75	Impacted	Grazing	8/15/2005	Tarryall Creek SWA	South Platte River Headwaters	8900	446707	4342923	Mineral	2
Plot 43	Riparian Shrubland	Riverine	60.00	Impacted	Grazing	8/16/2005	Hwy. 9/FR 258	South Platte River Headwaters	9183	443174	4301507	Mineral	0.42

	Ecological System	HGM Class	Human Disturbance Index	Human Disturbance Category	Dominant Land Use	Sampling Date	Site Name	Watershed	Elevation (ft)	UTM 13 NAD83 Easting	UTM 13 NAD83 Northing	Soil Type	WAA Size (hectare)
Plot 44	Extremely Rich Fen	Slope	46.40	Impacted	Grazing	8/16/2005	Badger Creek SWA	South Platte River Headwaters	8955	428314	4321085	Organic	1.27
Plot 45	Riparian Shrubland	Riverine	94.90	Highly Impacted	Mining	8/17/2005	Middle Fork S. Platte River-Fairplay Beach	South Platte River Headwaters	9922	413526	4341839	Mineral	3.17
Plot 46	Fen	Slope	7.43	Reference	Natural	8/18/2005	Montezuma Iron Fen	Blue River	11193	427923	4378064	Organic	0.57
Plot 47	Wet Meadow	Slope	72.80	Impacted	Mining	8/18/2005	Pennsylvania Mine	Blue River	10881	430201	4383761	Mineral	0.17
Plot 48	Fen	Slope	44.55	Impacted	Mining	8/18/2005	Pennsylvania Mine2	Blue River	10982	430164	4383783	Organic	0.68
Plot 49	Wet Meadow	Riverine	21.45	Reference	Recreation	8/19/2005	Ten Mile Creek	Blue River	10000	403054	4381500	Mineral	0.31
Plot 50	Fen	Slope	0.00	Reference	Natural	8/23/2005	Iron Creek	Colorado River Headwaters	10118	421121	4412805	Organic	0.78
Plot 51	Fen	Slope	0.00	Reference	Natural	8/23/2005	Iron Creek	Colorado River Headwaters	10112	421323	4412852	Organic	0.17
Plot 52	Fen	Slope	11.75	Reference	Natural	8/25/2005	Monarch Lake	Colorado River Headwaters	8375	437374	4439314	Organic	0.53
Plot 53	Wet Meadow	Slope	60.40	Impacted	Recreation	6/28/2006	SR 4 Sisters of Charity	Blue River	9200	413834	4384990	Mineral	0.59
Plot 54	Fen	Slope	48.45	Impacted	Grazing	7/9/2006	Blue River Valley	Blue River	8290	401777	4401968	Organic	0.13
Plot 55	Wet Meadow	Slope	21.45	Reference	Grazing	7/10/2006	Blue River Valley	Blue River	8290	401914	4401942	Mineral	0.1
Plot 56	Fen	Slope	39.80	Impacted	Recreation	7/11/2006	Blue River Valley	Blue River	9200	413745	4385011	Organic	0.33
Plot 57	Wet Meadow	Riverine	21.45	Reference	Recreation	7/12/2006	North Fork Snake River	Blue River	10320	423274	4387458	Mineral	0.1
Plot 58	Riparian Shrubland	Riverine	43.20	Impacted	Mining	7/18/2006	Montezuma Wetland	Blue River	10000	425452	4382208	Mineral	0.12
Plot 59	Riparian Shrubland	Riverine	68.50	Highly Impacted	Recreation	7/19/2006	Horse Creek	Blue River	7960	390073	4415505	Mineral	1.26
Plot 60	Wet Meadow	Riverine	48.00	Impacted	Grazing	7/24/2006	East of Fairplay	Upper South Platte River	9688	417389	4341905	Mineral	1.18

	Ecological System	HGM Class	Human Disturbance Index	Human Disturbance Category	Dominant Land Use	Sampling Date	Site Name	Watershed	Elevation (ft)	UTM 13 NAD83 Easting	UTM 13 NAD83 Northing	Soil Type	WAA Size (hectare)
Plot 61	Fen	Slope	64.95	Impacted	Grazing	7/25/2006	Crooked Creek @Coil Ranch	Upper South Platte River	9694	417529	4341059	Organic	4.89
Plot 62	Extremely Rich Fen	Slope	46.40	Impacted	Grazing	7/26/2006	Upper Four Mile Creek1	Upper South Platte River	9852	411690	4337483	Organic	0.29
Plot 63	Extremely Rich Fen	Slope	33.20	Reference	Grazing	8/1/2006	4 mile Creek	Upper South Platte River	9770	412177	4336952	Organic	0.6
Plot 64	Wet Meadow	Slope	44.75	Impacted	Grazing	8/2/2006	No Data	Upper South Platte River	9803	412241	4336881	Mineral	0.85
Plot 65	Wet Meadow	Riverine	85.00	Highly Impacted	Grazing/Recr eatoin	8/3/2006	Rach 63, S. Fork S. Platte River	Upper South Platte River	8960	416516	4317822	Mineral	1.39
Plot 68	Riparian Shrubland	Riverine	71.25	Impacted	Grazing	8/8/2006	Knight-Imler	Upper South Platte River	9189	415940	4324409	Mineral	1.1
Plot 69	Wet Meadow	Riverine	73.45	Highly Impacted	Grazing	8/9/2006	S.Fork S. Platte River	Upper South Platte River	9000	417674	4317792	Mineral	2.49
Plot 70	Fen	Slope	69.90	Highly Impacted	Grazing	8/11/2006	Platte Ranch	Upper South Platte River	9340	419458	4332415	Organic	5.2
Plot 71	Riparian Shrubland	Riverine	94.90	Highly Impacted	Suburban	8/14/2006	Meadow Creek @ Dillon Reservoir	Blue River	9025	406374	4382617	Mineral	2.41
Plot 72	Riparian Shrubland	Riverine	63.20	Impacted	Suburban	8/15/2006	Willow Creek	Blue River	8960	405713	4389619	Mineral	0.87
Plot 73	Riparian Shrubland	Riverine	89.95	Highly Impacted	Suburban	8/16/2006	Frisco Bay	Blue River	9020	406315	4381492	Mineral	0.67
Plot 74	Fen	Slope	88.25	Highly Impacted	Utility Line	8/22/2006	Sewer Line Fen	Colorado River Headwaters	8855	434448	4416240	Organic	0.15
Plot 75	Fen	Slope	83.50	Highly Impacted	Mining	8/23/2006	Warm Springs	Upper South Platte River	10052	408992	4335304	Organic	1.11
Plot 76	Fen	Slope	69.28	Highly Impacted	Ditch	8/24/2006	Four mile Creek	Upper South Platte River	9240	419534	4328772	Organic	0.6
Plot 77	Fen	Slope	67.00	Highly Impacted	Ditch	8/24/2006	Four mile Creek	Upper South Platte River	9190	420930	4327457	Organic	3.76
Plot 78	Fen	Slope	51.35	Impacted	Grazing	8/25/2006	Elkhorn Road	Upper South Platte River	9640	425957	4351598	Organic	1.9

APPENDIX D: SPECIES FREQUENCY IN EACH ECOLOGICAL SYSTEM AND HUMAN DISTURBANCE CLASS

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Abies lasiocarpa	5					1	1									1	**3**
Achillea millefolium var. occidentalis	4	1	1	1	5	3	2	7	8	7	3	2	2	2	2	1	**47**
Achnatherum nelsonii	6							4									**4**
Aconitum columbianum	8			1		1		1		5			1			1	**10**
Aconitum columbianum ssp. columbianum	8								1								**1**
Agoseris aurantiaca	6									1							**1**
Agoseris glauca	6		1	2	1			1			1		1	1			**8**
Agoseris glauca var. laciniata	7													1			**1**
Agropyron desertorum	*								1								**1**
Agrostis exarata	*								1								**1**
Agrostis gigantea	*			1	1			1	2				1		1		**7**
Agrostis humilis	10						3		1	2							**6**
Agrostis scabra	4			1	1	3	3	5	5	6	1		2	1		1	**29**
Agrostis stolonifera	*							1									**1**
Allium geyeri	5								2								**2**
Almutaster pauciflorus	4	1	1	2													**4**
Alnus incana ssp. tenuifolia	6		1					1	1								**3**
Alopecurus aequalis	4					1		3	1	3	1	1	1				**11**
Alopecurus alpinus	7								1	3							**4**
Alopecurus pratensis	*							2	3	1	1	1		1			**9**
Androsace filiformis	8								1	3							**4**

[20] C value = coefficient of conservatism (Rocchio 2007); * = non-native species (defaulted to 0 in metric calculations); NCA = No C value has been assigned yet.
[21] Hig Imp = Highly Impacted sites
[22] Imp = Impacted site
[23] Ref = Reference site

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Androsace septentrionalis	6							1									**1**
Anemone cylindrica	5			1					1								**2**
Angelica pinnata	5															1	**1**
Antennaria anaphaloides	5			1										1			**2**
Antennaria can't read	5													1			**1**
Antennaria corymbosa	5		1	1	2	1		1	1	4	1		1		1	1	**15**
Antennaria luzuloides	5										1						**1**
Antennaria rosea	5			2				1	2	1		1					**7**
Antennaria umbrinella	8							1									**1**
Arabis drummondii	5							1	1	2							**4**
Arabis glabra	*					1		5	1	3					1	1	**12**
Arabis hirsuta var. pycnocarpa	3							1	1					1			**3**
Arctostaphylos uva-ursi	6							2									**2**
Arenaria lanuginosa ssp. saxosa	NCA								1								**1**
Argentina anserina	3	2		2	3	2		1	4		3	2			1		**20**
Arnica cordifolia	7					1										1	**2**
Arnica fulgens	6										1						**1**
Arnica mollis	7					1	2			2						1	**6**
Artemisia arbuscula	7														1		**1**
Artemisia biennis	*				1												**1**
Artemisia campestris	7							1	1								**2**
Artemisia campestris ssp. borealis var. borealis	5							1	1								**2**
Artemisia cana ssp. cana	5					1		4	1	1					1		**8**
Artemisia frigida	4	1			2			1	2		1						**7**
Artemisia ludoviciana	4										1						**1**
Artemisia tridentata	4													1			**1**
Astragalus alpinus	6				1	1		2	2	1							**7**
Astragalus bodinii	NCA				1												**1**
Astragalus hallii	NCA								1								**1**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Astragalus leptaleus	8				1						1						**2**
Astragalus pubentissimus	NCA							1									**1**
Astragalus spatulatus	6								1								**1**
Axyris amaranthoides	*				2				1		1						**4**
Beckmannia syzigachne	4							2				3					**5**
Betula nana	9			2	1	2	3	4	2	5			1		1		**21**
Botrychium simplex	4									1							**1**
Bromus inermis ssp. inermis var. inermis	*							7	3						2	1	**13**
Bromus inermis ssp. pumpellianus var. pumpellianus	6					1	1	2	3	4			1			1	**13**
Bromus porteri	5							2	1								**3**
Calamagrostis canadensis	6				2	3	5	4	4	8			2	1		1	**30**
Calamagrostis stricta	7	1	1	5	3			2		2	1	1		2	1	1	**20**
Callitriche palustris	5				1								1				**2**
Caltha leptosepala ssp. leptosepala var. leptosepala	7					1	7	1		3				1		1	**14**
Campanula parryi	7			1	2			2	1		1						**7**
Campanula rotundifolia	5		1					3		1						1	**6**
Cardamine cordifolia	8						3	2	4	7			2			1	**19**
Carduus nutans ssp. macrolepis	*								1								**1**
Carex aquatilis	6	2	1	5	3	7	9	3	8	9	3	3	2		2	1	**58**
Carex athrostachya	7							1							1		**2**
Carex aurea	7		1		1	1	1			4	1				1	1	**11**
Carex canescens	8						6		2	4			2				**14**
Carex capillaris	9		1	3		1	1										**6**
Carex disperma	9						2			2						1	**5**
Carex douglasii	5		1									1					**2**
Carex ebenea	4					1		1		1							**3**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Carex foenea	6							2									**2**
Carex geyeri	6														1		**1**
Carex gynocrates	10						1										**1**
Carex illota	9						1										**1**
Carex interior	7		1				2		1				1				**5**
Carex lachenalii	10						1										**1**
Carex livida	10			1													**1**
Carex magellanica ssp. irrigua	9						1										**1**
Carex microglochin	9		2	1						1							**4**
Carex microptera	5					1		7	3	8	1		1	1	3		**25**
Carex nebrascensis	5				1	1			1						1		**4**
Carex nelsonii	9					1				3							**4**
Carex nigricans	8						2										**2**
Carex norvegica	8								1								**1**
Carex norvegica ssp. stevenii	8					1	1	3	2	7						1	**15**
Carex nova	10						1										**1**
Carex obtusata	8														1		**1**
Carex occidentalis	7							1									**1**
Carex pachystachya	NCA							1			1				1		**3**
Carex parryana	7		1	1	1										1		**4**
Carex pellita	6					2		2	2	1					1		**8**
Carex phaeocephala	9								1						1	1	**3**
Carex praegracilis	5				1			2	3	1		1			2	2	**12**
Carex praticola	6								1	1							**2**
Carex scirpoidea	9		2	3	1										1		**7**
Carex scopulorum	7						1			1							**2**
Carex simulata	6	1	2	6	2	4	2		3			1	1	2	1		**25**
Carex utriculata	5		1	3	4	7	4	5	6	6	3	2	3	1	4	1	**50**
Carex vesicaria	*					1											**1**
Carex viridula	9			1													**1**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Carum carvi	*							1									**1**
Castilleja rhexiifolia	8						1									1	**2**
Castilleja sulphurea	7					1		4	2	5			1				**13**
Catabrosa aquatica	7					1				1							**2**
Cerastium arvense	*									1							**1**
Cerastium arvense ssp. strictum	5					1		2	1	1							**5**
Cerastium fontanum	*					1		3		1					1		**6**
Ceratophyllum demersum	1		1	1				1									**3**
Chamerion angustifolium ssp. circumvagum	4					1	3	5	4	8			1			1	**23**
Chamerion latifolium	7							2		1							**3**
Chenopodium album	*				1				2		1				1	1	**6**
Chenopodium atrovirens	5					1											**1**
Chenopodium leptophyllum	5				1												**1**
Chenopodium rubrum	2				1												**1**
Chrysothamnus viscidiflorus	5														1		**1**
Cicuta douglasii	3								1				1				**2**
Cirsium arvense	*	1			1	1		6	6		2	1	1	2	2	1	**24**
Cirsium canescens	6				3			2									**5**
Cirsium parryi	5							1		1						1	**3**
Cirsium scariosum	6	2	1	2	2	1		5	4		2	2		1	1		**23**
Coeloglossum viride var. virescens	7						1										**1**
Collomia linearis	4														1		**1**
Comarum palustre	9						1										**1**
Conioselinum scopulorum	7		1	2	3	1	6	4	5	8	2		2			1	**35**
Crepis runcinata ssp. runcinata	6	1	2	2	3				1		2	1			1		**13**
Danthonia intermedia	8					1		3		1							**5**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Danthonia parryi	8									1							**1**
Dasiphora floribunda	4	1	2	5	2	3	5	8	6	6	3		2	1	2	1	**47**
Delphinium barbeyi	7						2	1	1								**4**
Deschampsia caespitosa	4	1	2	6	4	6	6	5	8	7	3	3	2	2	3	2	**60**
Descurainia incana	2	1															**1**
Descurainia incana ssp. incisa	2				1					1					1		**3**
Descurainia pinnata	2				1			1			1			1			**4**
Descurainia sophia	*							2	1		1				1		**5**
Dodecatheon pulchellum	8	1	1	3	1	2		1	1	1	1				1		**13**
Draba aurea	7								1								**1**
Eleocharis palustris	4			1	1				1		1	2	1				**7**
Eleocharis quinqueflora	8	1	2	4	2	2	3		1						1		**16**
Elodea bifoliata	NCA					1											**1**
Elymus elymoides ssp. brevifolius	NCA							1									**1**
Elymus repens	*							2	1		1	1					**5**
Elymus trachycaulis	7					1											**1**
Elymus trachycaulus	4	2	1	2		1	2	3	4	2		1	2		1		**21**
Epilobium ciliatum ssp. ciliatum	4			2	4	2		5	2	4		2	1	1	1	2	**26**
Epilobium ciliatum ssp. glandulosum	4			1			1	4	4	5	1	1	1				**18**
Epilobium hornemannii	6					1	1		2	1					1		**6**
Epilobium lactiflorum	7						1			1							**2**
Epilobium leptophyllum	8	1	1	2	3	2	2		1	1	1	1	1				**16**
Epilobium saximontanum	6							1									**1**
Equisetum arvense	4		1	2	3	3	3	6	6	6		1	2		2	2	**37**
Equisetum hyemale var. affine	4				1						2						**3**
Equisetum laevigatum	4				1			1					1				**3**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Equisetum variegatum var. variegatum	5			2	1	1	1										**5**
Ericameria nauseosa ssp. nauseosa var. glabrata	3								1								**1**
Ericameria parryi var. parryi	4							1							1		**2**
Erigeron elatior	7									1							**1**
Erigeron flagellaris	3							1	1								**2**
Erigeron formosissimus	6							1		1							**2**
Erigeron glabellus	6								1						1	1	**3**
Erigeron lonchophyllus	5		1	1	2	2		1	2		2	1		3			**15**
Erigeron peregrinus ssp. callianthemus	7						2	3		2						1	**8**
Erigeron subtrinervis	NCA					1											**1**
Eriogonum lonchophyllum	4														1		**1**
Eriogonum umbellatum	6							2		1						1	**4**
Eriophorum angustifolium	9	1	1	1													**3**
Erysimum cheiranthoides	3					1		1	1								**3**
Erysimum inconspicuum	NCA								1								**1**
Festuca arizonica	6		1						1								**2**
Festuca brachyphylla ssp. coloradensis	7						2	1	2	2							**7**
Festuca idahoensis	7							1									**1**
Festuca rubra	5			1		1		2		1				1			**6**
Festuca saximontana	7							1	1								**2**
Festuca thurberi	8							3	1	2							**6**
Fragaria virginiana ssp. glauca	5			1		1	2	4	3	8			3		1	1	**24**
Galium boreale	6			2				5	3	3							**13**
Galium trifidum ssp. subbiflorum	7				2	2	2		2	6		1	2			1	**18**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Galium triflorum	7								1								**1**
Gaultheria humifusa	8						2										**2**
Gentiana affinis	8		1	1		1		2	2		3						**10**
Gentiana fremontii	9	1	2	2	1	1				1	1				1		**10**
Gentiana parryi	9				1												**1**
Gentiana prostrata	9			1													**1**
Gentianella amarella ssp. acuta	8	1	1	1	1	1			1	1	1						**8**
Gentianella amarella ssp. heterosepala	8							1		1							**2**
Gentianopsis thermalis	8	1	1	1	2	2	1			2	2				1		**13**
Geranium caespitosum var. caespitosum	4							1									**1**
Geranium richardsonii	6							2		3					1	1	**7**
Geranium viscosissimum var. incisum	5								1								**1**
Geum aleppicum	6															1	**1**
Geum macrophyllum var. perincisum	6				1	3	2	5	4	7	1		2		1	1	**27**
Geum rivale	5												1				**1**
Geum triflorum var. triflorum	7					1	1	4	1	4	1						**12**
Gilia ophthalmoides	6								1								**1**
Glaux maritima	7											1					**1**
Glyceria borealis	8								1				1				**2**
Glyceria grandis	6											1					**1**
Glyceria striata	6				1	1		4	1	2	1		2		2	1	**15**
Grindelia inornata	3								1								**1**
Gutierrezia sarothrae	3								2								**2**
Hackelia floribunda	3	1				1		3	2					1	1	1	**10**
Helenium autumnale var. montanum	5									1							**1**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Helianthella parryi	5								1								**1**
Heracleum maximum	6						1	3	1	2			1				**8**
Hesperostipa comata	6														1		**1**
Hippuris vulgaris	6				1	1			1			1					**4**
Hordeum brachyantherum ssp. brachyantherum	*	1	1		2	3		4	6		2	2	1	2	2		**26**
Hordeum jubatum ssp. jubatum	2			1	2			1	1		1	2					**8**
Hymenopappus filifolius var. parvulus	NCA								1								**1**
Hymenoxys hoopesii	5				1			1									**2**
Hymenoxys richardsonii var. richardsonii	4							1	1								**2**
Iris missouriensis	4			1				3	4		1	1			1		**11**
Juncus alpinoarticulatus	9	1	1	2													**4**
Juncus articulatus	*				2												**2**
Juncus balticus var. montanus	4	2	2	4	5	6	1	7	7	4	3	1	3	2	4	1	**52**
Juncus bufonius	3							1									**1**
Juncus compressus	*						2	1								1	**4**
Juncus confusus	5								1	1							**2**
Juncus drummondii	6									1							**1**
Juncus hallii	NCA								1								**1**
Juncus longistylis	6			2	1	2		2	1	1			1	1		2	**13**
Juncus mertensianus	7						1			2						1	**4**
Juncus saximontanus	6									1							**1**
Juncus tracyi	6					3	2	4	1	2			1			1	**14**
Juncus triglumis	10									1							**1**
Juncus vaseyi	NCA									1							**1**
Juniperus communis var. montana	6							2								1	**3**
Kalmia microphylla	9						1										**1**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Kobresia myosuroides	9		1	3	1										1		**6**
Kobresia simpliciuscula	10	1	2	2													**5**
Koeleria macrantha	6	1	1	1	1	2		2		2	2			1	1		**14**
Lactuca serriola	*							1									**1**
Lappula occidentalis var. occidentalis	2								1								**1**
Lemna minor	2					1											**1**
Lepidium campestre	*							1							1		**2**
Lepidium densiflorum	*				2						1				1		**4**
Lepidium ramosissimum	2								1		1	1					**3**
Leucanthemum vulgare	*							1							1		**2**
Ligusticum tenuifolium	8								1	1						1	**3**
Linaria vulgaris	*							1									**1**
Linum lewisii var. lewisii	4								1		1	1					**3**
Listera borealis	9										1						**1**
Lolium pratense	*								2					1	1		**4**
Lomatium dissectum var. multifidum	7														1		**1**
Lomatogonium rotatum	9				2	1				1		1					**5**
Lonicera involucrata var. involucrata	7					2	3	4	3	3			2		1	2	**20**
Lupinus argenteus	5							1	1	1							**3**
Lupinus caespitosus	NCA							1									**1**
Luzula comosa	7									2							**2**
Luzula parviflora	7					2	4		3	7			1			1	**18**
Luzula subcapitata	8						1										**1**
Maianthemum racemosum ssp. amplexicaule	7						3		1	2						1	**7**
Maianthemum stellatum	7						1	4	3	2							**10**
Melilotus officinalis	*							2	1								**3**
Mentha arvensis	4							1	2			1					**4**
Mertensia ciliata	7			1		1		5	4	7	1		2			1	**22**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value**[20]	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Mimulus guttatus	8			1		1	1		3	3							**9**
Mitella pentandra	9						2		1								**3**
Moehringia lateriflora	8								2	1							**3**
Monarda pectinata	5									1							**1**
Moneses uniflora	9															1	**1**
Monolepis nuttalliana	4				1				1								**2**
Montia chamissoi	8				1		3	1	1	5			1				**12**
Muhlenbergia filiculmis	4								1								**1**
Muhlenbergia filiformis	8		1		1			1	1		2				1		**7**
Muhlenbergia richardsonis	8		1	3	3	2		1				1			1		**12**
Nassella viridula	4														1		**1**
Orthilia secunda	8						2										**2**
Orthocarpus luteus	6			1													**1**
Osmorhiza depauperata	7															1	**1**
Oxypolis fendleri	7						3			6			1			1	**11**
Oxytropis deflexa var. sericea	NCA							1									**1**
Oxytropis sericea	5				1			1									**2**
Oxytropis splendens	NCA								1								**1**
Packera crocata	6							2									**2**
Packera dimorphophylla	6							1									**1**
Packera pauciflora	9	1	2	2	1						2				1		**9**
Packera pseudaurea	7		1		1	1	2		2	2		1		1			**11**
Packera pseudaurea var. pseudaurea	7							1									**1**
Packera streptanthifolia	8							1									**1**
Parnassia fimbriata	8						1			1							**2**
Parnassia palustris var. parviflora	7	1	2	5	2		1		2								**13**
Pascopyrum smithii	5	1							1								**2**
Pedicularis crenulata	7			2	2	1					1						**6**
Pedicularis groenlandica	8	1	1	3	2	2	7	3	3	6							**28**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Pedicularis parryi	9									1						1	**2**
Penstemon auriberbis	7											1					**1**
Penstemon procerus var. procerus	6							1	2								**3**
Penstemon rydbergii	7							1		3							**4**
Penstemon unilateralis	NCA							1	1								**2**
Phalaris arundinacea	*							1									**1**
Phleum alpinum	6			1		1	2	3	2	8	1		1				**19**
Phleum pratense	*				3	2		6	2	1	1		1	2	2		**20**
Phlox longifolia	6										1						**1**
Picea engelmannii	5				1	1	4		1	1					1	1	**10**
Picea pungens	6			2		1	4	1	1	5					1		**15**
Pinus contorta var. latifolia	5				1	1	1	4	3	5							**15**
Plantago eriopoda	5	1			1				1		1						**4**
Plantago major	*							1			2		1				**4**
Plantago tweedyi	5								1								**1**
Platanthera dilatata var. albiflora	8						3			1						1	**5**
Platanthera hyperborea var. hyperborea	7		1	3	1	3	2	1					1			1	**13**
Platanthera stricta	8			1			1	1	3								**6**
Poa alpina	7							3		3							**6**
Poa arctica	7										1				1		**2**
Poa arida	5	1															**1**
Poa cusickii ssp. pallida	6			1			1	1	2			1		1			**7**
Poa fendleriana	7				1					1							**2**
Poa glauca ssp. rupicola	7			1		1				1							**3**
Poa leptocoma	8						2	1		5						1	**9**
Poa nemoralis ssp. interior	6				1												**1**
Poa palustris	6				1		1	5	2	3		1	1	1			**15**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Poa pratensis	*	1	1		2	4	1	8	8	3	3		1	2	2	1	**37**
Poa pratensis ssp. pratensis	4							1		2					1		**4**
Poa reflexa	8								1				1			1	**3**
Poa secunda	6				3			1	1		1						**6**
Polemonium	6						1										**1**
Polemonium foliosissimum	7				1		1	1	1	3							**7**
Polemonium occidentale ssp. occidentale	8					1	2	1	1	1			2				**8**
Polemonium pulcherrimum ssp. delicatum	8								1								**1**
Polygonum achoreum	*										1						**1**
Polygonum amphibium var. emersum	4											1					**1**
Polygonum bistortoides	7						1		1	4						1	**7**
Polygonum douglasii	3				1			2	1	2							**6**
Polygonum viviparum	8		1	4	2	2	4	3	3	6	1		2	1		1	**30**
Populus angustifolia	5															1	**1**
Populus tremuloides	5		1							1						1	**3**
Potamogeton epihydrus	5			1	1	1											**3**
Potentilla biennis	4												1		1		**2**
Potentilla diversifolia	6		1			3				1	2						**7**
Potentilla gracilis var. glabrata	NCA														1		**1**
Potentilla hippiana	5	1			1			1			1			1			**5**
Potentilla norvegica	*							4	1						1		**6**
Potentilla pensylvanica	6		1	2	1	1			1			1			1		**8**
Potentilla plattensis	7			1	2				2		1						**6**
Potentilla pulcherrima	5						1	5	2	3	1			1	2		**15**
Potentilla rivalis	5							2									**2**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Potentilla subjuga	8				1			1									**2**
Primula egaliksensis	10		1	3	1												**5**
Primula incana	9			1											1		**2**
Primula parryi	8									1							**1**
Prunella vulgaris	4														1		**1**
Pseudocymopterus montanus	6					1		1									**2**
Pseudoroegneria spicata ssp. inermis	7														1		**1**
Pseudoroegneria spicata ssp. spicata	7		1		2	1		3	2		2				1		**12**
Ptilagrostis porteri	10						1										**1**
Puccinellia nuttalliana	6				1						1						**2**
Pyrola asarifolia ssp. asarifolia	8						2										**2**
Pyrola minor	8								2							1	**3**
Pyrrocoma clementis	6		1														**1**
Pyrrocoma lanceolata	NCA					1					1	1					**3**
Ranunculus cymbalaria	4		1	1	3	3			2			2		1	1		**14**
Ranunculus gmelinii	6				1				2								**3**
Ranunculus hyperboreus	8				2	1	1			2							**6**
Ranunculus macounii	7					1		2							1		**4**
Ranunculus pedatifidus	7							1									**1**
Ranunculus repens	*							1									**1**
Ranunculus trichophyllus var. trichophyllus	10								1								**1**
Rhodiola integrifolia	8									1			1				**2**
Rhodiola rhodantha	8			1	1	1	6			6			1	1		1	**18**
Ribes cereum	6								1								**1**
Ribes inerme	5				1			1	2								**4**
Ribes lacustre	7			1				1		1				1			**4**
Ribes montigenum	6			1				1	1	1			1	1			**6**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Rorippa curvipes	5				1												**1**
Rorippa nasturtium-aquaticum	*								1								**1**
Rorippa palustris	NCA					1			2		1		1			1	**6**
Rorippa palustris ssp. hispida	NCA									1							**1**
Rorippa sinuata	4							2	1		1				1		**5**
Rorippa sphaerocarpa	4											1	1				**2**
Rosa woodsii	5							3	1	1			1				**6**
Rubus idaeus ssp. strigosus	5							1	1								**2**
Rumex acetosella	*							1									**1**
Rumex aquaticus var. fenestratus	5			1	1	2					1	1			1		**7**
Rumex crispus	*							3	1		1						**5**
Rumex densiflorus	5							1	2	1			1	1			**6**
Rumex obtusifolius	*							1									**1**
Rumex salicifolius var. denticulatus	4									1							**1**
Rumex salicifolius var. mexicanus	4							1	2						1		**4**
S.monticola x S. planifolia	NCA			1													**1**
Sagina saginoides	7								1	4							**5**
Salix boothii	7														1		**1**
Salix brachycarpa	8	1	2	5	3	1	1	2	2	1	3			1	1		**23**
Salix candida	9	1	1	4	1		1										**8**
Salix drummondiana	6				1	1		4	2	4			2				**14**
Salix eriocephala	6				1			2	2	1			1				**7**
Salix exigua	3							1	2							1	**4**
Salix geyeriana	6			1	1	3	2	6	2	4	1		2		2	1	**25**
Salix lucida ssp. lasiandra	6					1											**1**
Salix monticola	6	1		3	2	2	1	8	7	6		1	3	1	1	1	**37**
Salix myrtillifolia	6		1	4			1				1				1		**8**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Salix planifolia	7	1	1	5	3	4	9	2	4	7	1		2	1	2	2	**44**
Salix planifolia	7				1												**1**
Salix wolfii	8				1	2	5	4	2	4			1				**19**
Salsola tragus	*				1												**1**
Saxifraga hirculus	9			1			1										**2**
Saxifraga odontoloma	8					1	3			5			1			1	**11**
Saxifraga oregana	8						2									1	**3**
Schoenoplectus pungens	4			1													**1**
Scutellaria galericulata	7															2	**2**
Senecio bigelovii var. hallii	7					1				2							**3**
Senecio eremophilus var. kingii	4							2				1					**3**
Senecio hydrophilus	6							1	1					1			**3**
Senecio integerrimus	5			1					1								**2**
Senecio serra var. admirabilis	7												1				**1**
Senecio triangularis	7					1	4		2	7			1			1	**16**
Sidalcea neomexicana	5							1									**1**
Sisyrinchium montanum	6			1							1	1			1	1	**5**
Sisyrinchium pallidum	7			1							1	1					**3**
Sium suave	6				1			1						1			**3**
Solanum triflorum	2								1								**1**
Solidago canadensis	5							1			1				1		**3**
Solidago multiradiata var. scopulorum	5							3	1	3							**7**
Sparganium angustifolium	7								1	1							**2**
Spartina gracilis	7										1						**1**
Sphagnum sp.	*						1										**1**
Spiranthes romanzoffiana	7		1	1	1												**3**
Stellaria calycantha	8						1		1	2			1				**5**
Stellaria crassifolia	7					1	2		3	5							**11**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Stellaria graminea	*													1			**1**
Stellaria longifolia	7				1	2	4	5	2	4			2		2		**22**
Stellaria longipes	8			1		1		1		1	2	1					**7**
Stuckenia pectinatus	3	1	1	1		1			1								**5**
Swertia perennis	8					2	8		2	4			1			1	**18**
Symphyotrichum ascendens	5							2						1			**3**
Symphyotrichum boreale	7				1												**1**
Symphyotrichum campestre var. campestre	NCA											1					**1**
Symphyotrichum foliaceum var. foliaceum	5	2				2	2	5	1	2			1				**15**
Symphyotrichum laeve var. geyeri	6			1													**1**
Symphyotrichum lanceolatum ssp. hesperium var. hesperium	5				1			4	3	4	2		1				**15**
Symphyotrichum spathulatum var. spathulatum	6		2		4			4	1	1	2	1			1		**16**
Taraxacum officinale	*	1	1		4	4	2	9	8	7	3	2	2	1	4	1	**49**
Thalictrum alpinum	8	1	2	4	2	1	3	4	2	4	2			1	1		**27**
Thalictrum fendleri	6							3	1	1							**5**
Thalictrum sparsiflorum	5								1								**1**
Thelypodium integrifolium	6					1		1							1		**3**
Thelypodium wrightii ssp. oklahomense	7										1						**1**
Thermopsis montana	6							1	2								**3**
Thlaspi arvense	*					1		3	2		1	1		1	1	1	**11**
Thlaspi montanum var. montanum	5								1	1							**2**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Tragopogon dubius	*					1		1							1	1	**4**
Tragopogon pratensis	*				1						1						**2**
Trichophorum pumilum	10			2													**2**
Trifolium parryi	8									1							**1**
Trifolium pratense	*							2	1					1		1	**5**
Trifolium repens	*				3	2	1	4	2	1					1		**14**
Triglochin maritimum	6	1	2	4	2	1			2		2						**14**
Triglochin palustre	7	1	2	6	3	1		3	1			2			1		**20**
Tripleurospermum perforata	*							4									**4**
Trisetum spicatum	7					1		4	1	3							**9**
Trisetum wolfii	7						3	1		2	1					1	**8**
Trollius laxus ssp. albiflorus	8						2									1	**3**
Typha angustifolia	*					1											**1**
Urtica dioica ssp. holosericea	3							1									**1**
Urtica gracilis Aiton subsp. gracilis	3								1							1	**2**
Utricularia macrorhiza	7		1	1	1		1		1								**5**
Utricularia ochroleuca	10		1	1													**2**
Vaccinium caespitosum	7						3		1	2			1			1	**8**
Vaccinium myrtillus var. oreophilum	6						3			1							**4**
Vaccinium scoparium	7						2									1	**3**
Valeriana acutiloba var. acutiloba	8							1	1				1				**3**
Valeriana edulis	7			1			1	4	2		3				1		**12**
Valeriana occidentalis	7							1		4							**5**
Veratrum tenuipetalum	4									1						1	**2**
Verbascum thapsus	*							1									**1**
Veronica americana	6				1	1		1	4	5	1		2			1	**16**

Values in table = number of plots species was present		Extremely Rich Fen			Fen			Riparian Shrubland			Riverine Wet Meadow			Slope Wet Meadow			
Species	**C Value[20]**	Hig Imp[21]	Imp[22]	Ref[23]	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	Hig Imp	Imp	Ref	**Total # of Plots**
Veronica anagallis-aquatica	*								1								**1**
Veronica serpyllifolia ssp. humifusa	6									3							**3**
Veronica wormskjoldii	7					1	3		1	6			1			1	**13**
Vicia americana	6							6	1	3					1	1	**12**
Vicia ludoviciana ssp. ludoviciana	7							1	1								**2**
Viola macloskeyi ssp. pallens	NCA				1												**1**
Viola renifolia	7					1		1	1				1				**4**
Viola sororia	8						3			1			1		1		**6**
Zigadenus elegans ssp. elegans	6		1	2												1	**4**
	Grand Total	**52**	**97**	**233**	**227**	**234**	**295**	**546**	**468**	**537**	**154**	**85**	**134**	**70**	**146**	**115**	**3393**

APPENDIX E: COEFFICIENTS OF CONSERVATISM FOR COLORADO FLORA

Coefficient of Conservatism[24]	PLANTS Database Name	University of Colorado Herbarium Synonym (~Weber's East/West Slope Flora names)	Family	Lifeform	Region 5 Wetland Indicator Status[25]	Region 8 Wetland Indicator Status
5	Abies concolor	Abies concolor (Gordon & Glendower) Lindley ex Hildebrand	Pinaceae	Tree	NI	FACU
5	Abies lasiocarpa	Abies lasiocarpa (Hooker) Nuttall	Pinaceae	Tree	NI	FACU
5	Abies lasiocarpa var. arizonica	Abies arizonica Merriam	Pinaceae	Tree	NO	FACU
Not Assigned	Abronia argillosa	Abronia argillosa Welsh & Goodrich	Nyctaginaceae	Forb	NO	UPL
Not Assigned	Abronia carletonii	Abronia carletonii Coulter & Fisher	Nyctaginaceae	Forb	UPL	UPL
4	Abronia elliptica	Abronia elliptica A. Nelson	Nyctaginaceae	Forb	NO	UPL
6	Abronia fragrans	Abronia fragrans Nuttall ex Hooker	Nyctaginaceae	Forb	UPL	UPL
Not Assigned	Abronia nana	Abronia nana S. Watson	Nyctaginaceae	Forb	NO	UPL
Not Assigned	Abutilon incanum	Abutilon incanum (Link) Sweet	Malvaceae	Shrub		
Not Assigned	Abutilon parvulum	Abutilon parvulum A. Gray	Malvaceae	Forb	UPL	NO
*	Abutilon theophrasti	Abutilon theophrasti Medicus	Malvaceae	Forb	UPL	UPL
7	Acer glabrum	Acer glabrum Torrey	Aceraceae	Shrub	FAC	FAC
10	Acer grandidentatum	Acer grandidentatum Nuttall ex Torrey & Gray	Aceraceae	Shrub	FACU	FACU
*	Acer negundo	Negundo aceroides (L.) Moench	Aceraceae	Tree	FAC	FACW
		Negundo aceroides (L.) Moench subsp. violaceus (Kirchner in Petzold & Kirchner) W. A. Weber	FAC	Aceraceae	Tree	FAC*
7	Acer negundo var. interius	Negundo aceroides (L.) Moench subsp. interius (Britton & Shafer) Loeve & Loeve	Aceraceae	Tree	FAC	FACW
*	Achillea millefolium	Achillea millefolium L.	Asteraceae	Forb	FACU	FACU
4	Achillea millefolium var. occidentalis	Achillea lanulosa Nuttall	Asteraceae	Forb	FACU	FACU
10	Achnatherum ×bloomeri	Achnatherum x bloomeri (Bolander) Barkworth	Poaceae	Graminoid		
7	Achnatherum aridum	Achnatherum aridum (Jones) Barkworth	Poaceae	Graminoid	UPL	UPL
5	Achnatherum hymenoides	Achnatherum hymenoides - (Roemer & J.A. Schultes) Barkworth	Poaceae	Graminoid	FACU	UPL
6	Achnatherum lettermanii	Achnatherum lettermanii (Vasey) Barkworth	Poaceae	Graminoid		

[24] C value with * = non-native species to Colorado
[25] Red Wetland Indicator Status = tentatively assigned by author or Colorado Floristic Quality Assessment Panel

Coefficient of Conservatism[24]	**PLANTS Database Name**	**University of Colorado Herbarium Synonym** (~Weber's East/West Slope Flora names)	**Family**	**Lifeform**	**Region 5 Wetland Indicator Status**[25]	**Region 8 Wetland Indicator Status**
6	Achnatherum nelsonii	Achnatherum nelsonii (Scribner) Barkworth	Poaceae	Graminoid		
6	Achnatherum nelsonii ssp. nelsonii	Stipa williamsii Scribner	Poaceae	Graminoid		
6	Achnatherum pinetorum	Achnatherum pinetorum (Jones) Barkworth	Poaceae	Graminoid		
6	Achnatherum richardsonii	Achnatherum richardsonii (Link) Barkworth	Poaceae	Graminoid	NO	NI
3	Achnatherum robustum	Achnatherum robustum (Vasey) Barkworth	Poaceae	Graminoid		
7	Achnatherum scribneri	Achnatherum scribneri (Vasey) Barkworth	Poaceae	Graminoid		
8	Achnatherum speciosum	Achnatherum speciosum (Trinius & Ruprecht) Barkworth	Poaceae	Graminoid		
Not Assigned	Achnatherum webberi	Achnatherum webberi (Thurber) Barkworth	Poaceae	Graminoid		
8	Aconitum columbianum	Aconitum columbianum Nuttall ex Torrey & Gray	Ranunculaceae	Forb	FACW	FACW
		Aconitum columbianum Nuttall ex Torrey & Gray var. columbianum	FACW	Ranunculaceae	Forb	FACW
8	Aconitum columbianum ssp. columbianum	Aconitum columbianum Nuttall ex Torrey & Gray var. bakeri (Greene) Harrington	Ranunculaceae	Forb	FACW	FACW
5	Acorus calamus	Acorus calamus L.	Acoraceae	Forb	OBL	OBL
*****	Acroptilon repens	Acroptilon repens (L.) De Candolle	Asteraceae	Forb		
9	Actaea rubra ssp. arguta	Actaea rubra (Aiton) Willdenow subsp. arguta (Nuttall in Torrey & Gray) Hulten	Ranunculaceae	Forb		
9	Adiantum capillus-veneris	Adiantum capillus-veneris L.	Pteridaceae	Forb	NO	FACW
10	Adoxa moschatellina	Adoxa moschatellina L.	Adoxaceae	Forb	NI	FACU
*****	Aegilops cylindrica	Cylindropyrum cylindricum (Host) Loeve	Poaceae	Graminoid		
10	Agalinis tenuifolia	Agalinis tenuifolia (M. Vahl) Rafinesque	Scrophulariaceae	Forb	FACW	NI
3	Agastache foeniculum	Agastache foeniculum Kuntze	Lamiaceae	Forb		
5	Agastache pallidiflora ssp. pallidiflora	Agastache pallidiflora (Heller) Rydberg subsp. pallidiflora var. greenei (Briquet) R. Sanders	Lamiaceae	Forb		
5	Agastache urticifolia	Agastache urticifolia (Bentham) Kuntze	Lamiaceae	Forb	NI	NI
Not Assigned	Ageratina herbacea	Ageratina herbacea (A. Gray) King & Robinson	Asteraceae	Forb		
6	Agoseris aurantiaca	Agoseris aurantiaca (Hooker) Greene	Asteraceae	Forb	NI	FACU
6	Agoseris glauca	Agoseris glauca (Pursh) Rafinesque	Asteraceae	Forb	FACU	FACU
		Agoseris glauca (Pursh) Rafinesque var. glauca	FACU	Asteraceae	Forb	FACU
Not Assigned	Agoseris glauca var. agrestis	Agoseris glauca (Pursh) Rafinesque var. agrestis (Osterhout) Q. Jones ex Cronquist	Asteraceae	Forb	FACU	FACU

Coefficient of Conservatism[24]	**PLANTS Database Name**	**University of Colorado Herbarium Synonym** (~Weber's East/West Slope Flora names)	**Family**	**Lifeform**	**Region 5 Wetland Indicator Status**[25]	**Region 8 Wetland Indicator Status**
7	Agoseris glauca var. dasycephala	Agoseris glauca (Pursh) Rafinesque var. dasycephala (Torrey & Gray) Jepson	Asteraceae	Forb	FACU	FACU
7	Agoseris glauca var. laciniata	Agoseris glauca (Pursh) Rafinesque var. laciniata (D. C. Eaton) Smiley	Asteraceae	Forb	FACU	FACU
Not Assigned	Agoseris heterophylla	Agoseris heterophylla (Nuttall) Greene	Asteraceae	Forb		
7	Agrimonia striata	Agrimonia striata Michaux	Rosaceae	Forb	FACU	FAC
*****	Agropyron cristatum	Agropyron cristatum (L.) Gaertner (sensu lato)	Poaceae	Graminoid		
		Agropyron cristatum (L.) Gaertner subsp. cristatum		Poaceae	Graminoid	
*****	Agropyron cristatum ssp. pectinatum	Agropyron pectiniforme Roemer & Schultes	Poaceae	Graminoid		
*****	Agropyron desertorum	Agropyron cristatum (L.) Gaertner subsp. desertorum (Fischer) Loeve	Poaceae	Graminoid		
		Agropyron desertorum Fischer ex Link		Poaceae	Graminoid	
*****	Agropyron fragile	Agropyron cristatum (L.) Gaertner subsp. fragile (Roth) Loeve	Poaceae	Graminoid		
		Agropyron mongolicum Keng		Poaceae	Graminoid	
*****	Agrostemma brachyloba	Agrostemma gracilis Boissier. A waif in a Boulder garden. Not seen again.	Caryophyllaceae	Forb		
*****	Agrostis exarata	Agrostis exarata Trinius	Poaceae	Graminoid	FACW	FACW
*****	Agrostis gigantea	Agrostis gigantea Roth	Poaceae	Graminoid	NI	FACW
10	Agrostis humilis	Agrostis humilis Vasey	Poaceae	Graminoid	FACW	OBL
		Agrostis thurberiana A. S. Hitchcock	NI	Poaceae	Graminoid	FACW
Not Assigned	Agrostis idahoensis	Agrostis idahoensis Nash	Poaceae	Graminoid	NI	FAC
Not Assigned	Agrostis mertensii	Agrostis mertensii Trinius	Poaceae	Graminoid	NI	FACU
4	Agrostis scabra	Agrostis scabra Willdenow	Poaceae	Graminoid	FAC	FAC
*****	Agrostis stolonifera	Agrostis stolonifera L.	Poaceae	Graminoid	FAC+	FACW
4	Agrostis variabilis	Agrostis variabilis Rydberg	Poaceae	Graminoid		
*****	Ailanthus altissima	Ailanthus altissima (P. Miller) Swingle	Simaroubaceae	Tree	NI	NI
*****	Alcea rosea	Alcea rosea L.	Malvaceae	Forb		
7	Aletes acaulis	Aletes acaulis (Torrey) Coulter & Rose	Apiaceae	Forb		
6	Aletes anisatus	Aletes anisatus (A. Gray) Theobald & Tseng	Apiaceae	Forb		
7	Aletes humilis	Aletes humilis Coulter & Rose	Apiaceae	Forb		

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10	Aletes macdougalii ssp. breviradiatus	Aletes macdougalii Coulter & Rose subsp. breviradiatus Theobald & Tseng	Apiaceae	Forb		
10	Aletes sessiliflorus	Aletes sessiliflorus Theobald & Tseng	Apiaceae	Forb		
*	Alhagi maurorum	Alhagi maurorum Medikus	Fabaceae	Shrub	NO	NI
4	Alisma gramineum	Alisma gramineum Lejeune	Alismataceae	Forb	OBL	OBL
3	Alisma triviale	Alisma triviale Pursh	Alismataceae	Forb	OBL	OBL
*	Alliaria petiolata	Alliaria petiolata (Bieberstein) Cavara & Grande	Brassicaceae	Forb	FACW	NI
Not Assigned	Allionia choisyi	Allionia choisyi Standley	Nyctaginaceae	Forb		
6	Allionia incarnata	Allionia incarnata L.	Nyctaginaceae	Forb		
8	Allium acuminatum	Allium acuminatum Hooker	Liliaceae	Forb		
Not Assigned	Allium brandegeei	Allium brandegei S. Watson	Liliaceae	Forb		
8	Allium brevistylum	Allium brevistylum S. Watson	Liliaceae	Forb		
5	Allium cernuum	Allium cernuum Roth	Liliaceae	Forb	NI	FACU*
5	Allium geyeri	Allium geyeri S. Watson	Liliaceae	Forb	FACU	FACU
5	Allium geyeri var. tenerum	Allium rubrum Osterhout	Liliaceae	Forb		
7	Allium macropetalum	Allium macropetalum Rydberg	Liliaceae	Forb		
8	Allium nevadense	Allium nevadense S. Watson	Liliaceae	Forb		
*	Allium sativum	Allium sativum L.	Liliaceae	Forb		
7	Allium schoenoprasum var. sibiricum	Allium schoenoprasum L. var. sibiricum (L.) C. J. Hartman	Liliaceae	Forb	NO	FACW
5	Allium textile	Allium textile Nelson & Macbride	Liliaceae	Forb		
4	Almutaster pauciflorus	Almutaster pauciflorus (Nuttall) Loeve & Loeve	Asteraceae	Forb	FACW	FACW
6	Alnus incana ssp. tenuifolia	Alnus incana (L.) Moench subsp. tenuifolia (Nuttall) Breitung	Betulaceae	Shrub	NI	FACW
4	Alopecurus aequalis	Alopecurus aequalis Sobolewski	Poaceae	Graminoid	OBL	OBL
7	Alopecurus alpinus	Alopecurus alpinus L. subsp. glaucus (Lessing) Hulten	Poaceae	Graminoid	NO	FACW
*	Alopecurus carolinianus	Alopecurus carolinianus Walter	Poaceae	Graminoid	FACW	FACW
*	Alopecurus geniculatus	Alopecurus geniculatus L.	Poaceae	Graminoid	OBL	OBL
*	Alopecurus pratensis	Alopecurus pratensis L.	Poaceae	Graminoid	FACW	NI
*	Alyssum alyssoides	Alyssum alyssoides L.	Brassicaceae	Forb		
*	Alyssum desertorum	Alyssum desertorum Stapf	Brassicaceae	Forb		
*	Alyssum minus var. micranthum	Alyssum parviflorum Bieberstein	Brassicaceae	Forb		

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*	Alyssum murale	Alyssum murale Waldstein & Kitaibel	Brassicaceae	Forb		
*	Amaranthus albus	Amaranthus albus L.	Amaranthaceae	Forb	FACU	FACU
		Amaranthus pubescens (Uline & Bray) Rydberg	FACU	Amaranthaceae	Forb	FACU
5	Amaranthus arenicola	Amaranthus arenicola I. M. Johnston	Amaranthaceae	Forb	FACU	FAC
4	Amaranthus blitoides	Amaranthus blitoides S. Watson	Amaranthaceae	Forb	FACW	FACU
Not Assigned	Amaranthus hybridus	Amaranthus hybridus L.	Amaranthaceae	Forb		
*	Amaranthus palmeri	Amaranthus palmeri S. Watson	Amaranthaceae	Forb	FACU	FACU
5	Amaranthus powellii	Amaranthus powellii S. Watson	Amaranthaceae	Forb		
*	Amaranthus retroflexus	Amaranthus retroflexus L.	Amaranthaceae	Forb	FACU	FACU
6	Amaranthus wrightii	Amaranthus wrightii S. Watson	Amaranthaceae	Forb		
4	Ambrosia acanthicarpa	Ambrosia acanthicarpa Hooker	Asteraceae	Forb		
*	Ambrosia artemisiifolia var. elatior	Ambrosia artemisiifolia L. var. elatior (L.) Descourtils	Asteraceae	Forb	FACU	FACU
6	Ambrosia confertiflora	Ambrosia confertiflora De Candolle	Asteraceae	Forb		
0	Ambrosia grayi	Ambrosia grayi (A. Nelson) Shinners	Asteraceae	Forb	FAC	NO
4	Ambrosia linearis	Ambrosia linearis (Rydberg) Payne	Asteraceae	Shrub		
3	Ambrosia psilostachya	Ambrosia psilostachya De Candolle var. coronopifolia (Torrey & Gray) Farwell	Asteraceae	Forb	FAC	FACU*
3	Ambrosia tomentosa	Ambrosia tomentosa Nuttall	Asteraceae	Forb		
*	Ambrosia trifida	Ambrosia trifida L.	Asteraceae	Forb	FACW	FAC*
6	Amelanchier alnifolia	Amelanchier alnifolia Nuttall	Rosaceae	Shrub	FACU-	FACU-
6	Amelanchier utahensis	Amelanchier utahensis Koehne	Rosaceae	Shrub	NI	NI
Not Assigned	Ammannia robusta	Ammannia robusta Heer & Regel	Lythraceae	Forb	OBL	OBL
10	Amorpha canescens	Amorpha canescens Pursh	Fabaceae	Shrub		
7	Amorpha fruticosa	Amorpha fruticosa L.	Fabaceae	Shrub	OBL	FACW
7	Amorpha nana	Amorpha nana Nuttall	Fabaceae	Shrub	NI	NI
*	Amsinckia lycopsoides	Amsinckia lycopsoides Lehmann	Boraginaceae	Forb		
*	Amsinckia menziesii	Amsinckia menziesii (Lehmann) Nelson & Macbride	Boraginaceae	Forb		
*	Amsinckia menziesii var. menziesii	Amsinckia retrorsa Suksdorf	Boraginaceae	Forb		
10	Amsonia jonesii	Amsonia jonesii Woodson	Apocynaceae	Forb		
*	Anagallis arvensis ssp. foemina	Anagallis arvensis L. fma coerulea (Schreb.) Baumgartner	Primulaceae	Forb	FAC	FAC+

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Not Assigned	Anagallis minima	Anagallis minima (L.) Krause in Sturm	Primulaceae	Forb		OBL
4	Anaphalis margaritacea	Anaphalis margaritacea (L.) Bentham & Hooker	Asteraceae	Forb		
*****	Anchusa azurea	Anchusa azurea P. Miller	Boraginaceae	Forb		
*****	Anchusa officinalis	Anchusa officinalis L.	Boraginaceae	Forb		
9	Andropogon gerardii	Andropogon gerardii Vitman	Poaceae	Graminoid	FAC-	FACU
8	Andropogon hallii	Andropogon hallii Hackel	Poaceae	Graminoid		
9	Androsace chamaejasme ssp. carinata	Androsace chamaejasme Host subsp. carinata (Torrey) Hulten	Primulaceae	Forb	NO	FACU
8	Androsace filiformis	Androsace filiformis Retzius	Primulaceae	Forb	NI	OBL
9	Androsace occidentalis	Androsace occidentalis Pursh	Primulaceae	Forb	FACU	FACU
6	Androsace septentrionalis	Androsace septentrionalis L.	Primulaceae	Forb	NI	FACU
8	Androstephium breviflorum	Androstephium breviflorum S. Watson	Liliaceae	Forb		
8	Anemone canadensis	Anemonidium canadense (L.) Loeve & Loeve	Ranunculaceae	Forb	FACW	NI
5	Anemone cylindrica	Anemone cylindrica A. Gray	Ranunculaceae	Forb		
10	Anemone multifida	Anemone multifida Poiret	Ranunculaceae	Forb		
10	Anemone multifida var. hudsoniana	Anemone multifida Poiret var. globosa (Nuttall) Torrey & Gray	Ranunculaceae	Forb		
10	Anemone multifida var. saxicola	Anemone multifida Poiret subsp. saxicola (Boivin) W. A. Weber	Ranunculaceae	Forb		
10	Anemone narcissiflora var. zephyra	Anemonastrum narcissiflorum (L.) Holub subsp. zephyrum (A. Nelson) W. A. Weber	Ranunculaceae	Forb		
6	Anemone parviflora	Anemone parviflora Michaux	Ranunculaceae	Forb	NO	FACU
10	Anemone virginiana L. var. alba	Anemone riparia Fernald	Ranunculaceae	Forb	NI	
*****	Anemopsis californica	Anemopsis californica Hooker	Saururaceae	Forb	NI	OBL
4	Angelica ampla	Angelica ampla A. Nelson	Apiaceae	Forb	NI	FACW+
10	Angelica grayi	Angelica grayi (Coulter & Rose) Coulter & Rose	Apiaceae	Forb		
5	Angelica pinnata	Angelica pinnata S. Watson	Apiaceae	Forb	NI	FAC
*****	Anoda cristata	Anoda cristata (L.) Schlechtendal	Malvaceae	Forb	NI	NO
5	Antennaria anaphaloides	Antennaria pulcherrima (Hooker) Greene subsp. anaphaloides (Rydberg) W. A. Weber	Asteraceae	Forb		
5	Antennaria corymbosa	Antennaria corymbosa E. Nelson	Asteraceae	Forb	NI	FACW
6	Antennaria dimorpha	Antennaria dimorpha (Nuttall) Torrey & Gray	Asteraceae	Forb		

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5	Antennaria howellii ssp. neodioica	Antennaria howellii Greene subsp. neodioica (Greene) Bayer	Asteraceae	Forb		
5	Antennaria luzuloides	Antennaria luzuloides Torrey & Gray	Asteraceae	Forb		
7	Antennaria marginata	Antennaria marginata Greene	Asteraceae	Forb		
5	Antennaria media	Antennaria media Greene	Asteraceae	Forb	NI	NI
5	Antennaria microphylla	Antennaria microphylla Rydberg	Asteraceae	Forb		
		Antennaria parvifolia Nuttall	Asteraceae	Forb		
5	Antennaria pulcherrima	Antennaria pulcherrima (Hooker) Greene subsp. pulcherrima	Asteraceae	Forb	NO	FAC
5	Antennaria rosea	Antennaria rosea Greene	Asteraceae	Forb		
5	Antennaria rosulata	Antennaria rosulata Rydberg	Asteraceae	Forb		
8	Antennaria umbrinella	Antennaria umbrinella Rydberg	Asteraceae	Forb	NI	FACU-
*	Anthemis arvensis	Anthemis arvensis L.	Asteraceae	Forb		
*	Anthemis cotula	Anthemis cotula L.	Asteraceae	Forb	FACU	FACU+
*	Anthemis tinctoria	Anthemis tinctoria L.	Asteraceae	Forb		
*	Anthoxanthum odoratum	Anthoxanthum odoratum L.	Poaceae	Graminoid	NI	NI
*	Apera interrupta	Apera interrupta (L.) P. Beauvois	Poaceae	Graminoid		
3	Apios americana	Apios americana Medicus	Fabaceae	Vine, Forb/herb	FACW	NI
Not Assigned	Apocynum ×floribundum	Apocynum medium Greene	Apocynaceae	Forb		
1	Apocynum androsaemifolium	Apocynum androsaemifolium L.	Apocynaceae	Forb	NI	NI
2	Apocynum cannabinum	Apocynum cannabinum L.	Apocynaceae	Forb	FAC	FAC
10	Aquilegia barnebyi	Aquilegia barnebyi Munz	Ranunculaceae	Forb		
8	Aquilegia caerulea	Aquilegia coerulea James ex Torrey	Ranunculaceae	Forb	NO	FACU
9	Aquilegia chrysantha var. rydbergii	Aquilegia chrysantha A. Gray var. rydbergii Munz	Ranunculaceae	Forb	NO	FAC
10	Aquilegia elegantula	Aquilegia elegantula Greene	Ranunculaceae	Forb		
10	Aquilegia micrantha	Aquilegia micrantha Eastwood	Ranunculaceae	Forb		
*	Aquilegia pubescens	Aquilegia pubescens Coville	Ranunculaceae	Forb		
9	Aquilegia saximontana	Aquilegia saximontana Rydberg ex B. L. Robinson in A. Gray	Ranunculaceae	Forb		
10	Arabidopsis salsuginea	Thellungiella salsuginea (Pallas) O. E. Schulz	Brassicaceae	Forb		
7	Arabis ×divaricarpa	Boechera divaricarpa (A. Nelson) Loeve & Loeve	Brassicaceae	Forb	FACU	FACU
7	Arabis crandallii	Boechera crandallii (B. L. Robinson) W. A. Weber	Brassicaceae	Forb		
5	Arabis drummondii	Boechera drummondii (A. Gray) Loeve & Loeve	Brassicaceae	Forb	FACU	FACU

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8	Arabis fendleri	Boechera fendleri (S. Watson) W. A. Weber subsp. fendleri	Brassicaceae	Forb		
6	Arabis fendleri var. fendleri	Boechera fendleri (S. Watson) W. A. Weber	Brassicaceae	Forb		
9	Arabis fendleri var. spatifolia	Boechera fendleri (S. Watson) W. A. Weber subsp. spatifolia (Rydberg) W. A. Weber	Brassicaceae	Forb		
10	Arabis fernaldiana var. fernaldiana	Boechera fernaldiana (Rollins) W. A. Weber	Brassicaceae	Forb		
*	Arabis glabra	Turritis glabra L.	Brassicaceae	Forb		
8	Arabis gunnisoniana	Boechera gunnisoniana (Rollins) W. A. Weber	Brassicaceae	Forb		
3	Arabis hirsuta var. pycnocarpa	Arabis hirsuta (L.) Scopoli var. pycnocarpa (Hopkins) Rollins	Brassicaceae	Forb	FACU	FACU
7	Arabis holboellii var. retrofracta	Boechera retrofracta (R. Graham) Loeve & Loeve	Brassicaceae	Forb	UPL	UPL
7	Arabis lemmonii var. lemmonii	Boechera lemmonii (S. Watson) W. A. Weber	Brassicaceae	Forb	NO	UPL
8	Arabis lignifera	Boechera lignifera (A. Nelson) W. A. Weber	Brassicaceae	Forb		
7	Arabis oxylobula	Boechera oxylobula (Greene) W. A. Weber	Brassicaceae	Forb		
7	Arabis pallidifolia	Boechera pallidifolia (Rollins) Weber	Brassicaceae	Forb		
7	Arabis perennans	Boechera perennans (S. Watson) W. A. Weber	Brassicaceae	Forb		
8	Arabis pulchra var. pallens	Boechera pulchra (Jones ex S. Watson) W. A. Weber subsp. pallens (Jones) W. A. Weber	Brassicaceae	Forb		
8	Arabis selbyi	Boechera selbyi (Rydberg) W. A. Weber	Brassicaceae	Forb		
9	Aralia nudicaulis	Aralia nudicaulis L.	Araliaceae	Forb	FACU	FAC
9	Aralia racemosa	Aralia racemosa L.	Araliaceae	Forb	NI	NI
5	Arceuthobium americanum	Arceuthobium americanum Nuttall ex Engelmann	Viscaceae	Shrub		
5	Arceuthobium cyanocarpum	Arceuthobium cyanocarpum Coulter & Nelson	Viscaceae	Shrub		
5	Arceuthobium divaricatum	Arceuthobium divaricatum Engelmann	Viscaceae	Shrub		
5	Arceuthobium douglasii	Arceuthobium douglasii Engelmann	Viscaceae	Shrub		
5	Arceuthobium vaginatum ssp. cryptopodum	Arceuthobium vaginatum (Willdenow) K. Presl subsp. cryptopodum (Engelmann) Hawksworth & Wiens	Viscaceae	Shrub		
*	Arctium lappa	Arctium lappa L.	Asteraceae	Forb		
*	Arctium minus	Arctium minus (J. Hill) Bernhardi	Asteraceae	Forb	NI	NI
*	Arctium tomentosum	Arctium tomentosum P. Miller	Asteraceae	Forb		
8	Arctostaphylos patula	Arctostaphylos patula Greene fma platyphylla (A. Gray) P. V. Wells	Ericaceae	Shrub		

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6	Arctostaphylos uva-ursi	Arctostaphylos adenotricha (Fernald & Macbride) Loeve et al.	Ericaceae	Shrub	FACU	UPL
		Arctostaphylos uva-ursi (L.) Sprengel subsp. coactilis (Fernald & Macbride) Loeve et al.	Ericaceae	Shrub	FACU	UPL
8	Arenaria congesta var. congesta	Eremogone congesta (Nuttall ex Torrey & Gray) Ikonnikov	Caryophyllaceae	Forb		
6	Arenaria fendleri var. fendleri	Eremogone fendleri (A. Gray) Ikonnikov	Caryophyllaceae	Forb		
6	Arenaria hookeri	Eremogone hookeri (Nuttall ex Torrey & Gray) W. A. Weber subsp. hookeri	Caryophyllaceae	Forb		
Not Assigned	Arenaria hookeri ssp. desertorum	Eremogone hookeri (Nuttall ex Torrey & Gray) W. A. Weber subsp. desertorum (Maguire) W. A. Weber	Caryophyllaceae	Forb		
8	Arenaria hookeri ssp. hookeri	Eremogone hookeri (Nuttall ex Torrey & Gray) W.A. Weber	Caryophyllaceae	Forb		
Not Assigned	Arenaria hookeri ssp. pinetorum	Eremogone hookeri (Nuttall ex Torrey & Gray) W. A. Weber subsp. pinetorum (A. Nelson) W. A. Weber	Caryophyllaceae	Forb		
6	Arenaria kingii ssp. uintahensis	Eremogone kingii (S. Watson) Ikonnikov subsp. uintahensis (A. Nelson) W. A. Weber	Caryophyllaceae	Forb		
Not Assigned	Arenaria lanuginosa ssp. saxosa	Spergulastrum lanuginosum Michaux subsp. saxosum (A. Gray) W. A. Weber	Caryophyllaceae	Forb		FACU
*****	Arenaria serpyllifolia	Arenaria serpyllifolia L.	Caryophyllaceae	Forb	FAC	FACU
5	Argemone hispida	Argemone hispida A. Gray	Papaveraceae	Forb		
3	Argemone polyanthemos	Argemone polyanthemos (Fedde) G. Ownbey	Papaveraceae	Forb		
5	Argemone squarrosa	Argemone squarrosa Greene	Papaveraceae	Forb		
3	Argentina anserina	Argentina anserina (L.) Rydberg var. anserina	Rosaceae	Forb	OBL	OBL
		Argentina anserina (L.) Rydberg var. concolor Rydberg	Rosaceae	Forb	OBL	OBL
7	Argyrochosma fendleri	Argyrochosma fendleri (Kunze) Windham	Pteridaceae	Forb		
Not Assigned	Argythamnia humilis	Argythamnia humilis (Engelmann & Gray) Muller-Argoviensis	Euphorbiaceae	Forb		
Not Assigned	Argythamnia mercurialina	Argythamnia mercurialina (Nuttall) Muller-Argoviensis	Euphorbiaceae	Forb		

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*	Aristida adscensionis	Aristida adscensionis L.	Poaceae	Graminoid		
Not Assigned	Aristida arizonica	Aristida arizonica Vasey	Poaceae	Graminoid		
7	Aristida basiramea	Aristida basiramea Engelmann	Poaceae	Graminoid		
5	Aristida divaricata	Aristida divaricata Humboldt & Bonpland ex Willdenow	Poaceae	Graminoid		
Not Assigned	Aristida havardii	Aristida havardii Vasey	Poaceae	Graminoid		
3	Aristida purpurea	Aristida purpurea Nuttall	Poaceae	Graminoid		
4	Aristida purpurea var. longiseta	Aristida purpurea Nuttall var. longiseta (Steudel) Vasey	Poaceae	Graminoid		
2	Aristida purpurea var. purpurea	Aristida purpurea Nuttall var. purpurea	Poaceae	Graminoid		
Not Assigned	Aristida purpurea var. wrightii	Aristida wrightii Nash	Poaceae	Graminoid		
9	Armeria maritima ssp. sibirica	Armeria scabra Pallas subsp. sibirica (Turczaninov ex Boissier) Hylander	Plumbaginaceae	Forb		NI
*	Armoracia rusticana	Armoracia rusticana Gaertner, Meyer, & Scherbius	Brassicaceae	Forb	NI	NI
10	Arnica angustifolia ssp. tomentosa	Arnica alpina (L.) Olin & Ladau subsp. tomentosa (Macoun) Maguire	Asteraceae	Forb		
8	Arnica chamissonis ssp. foliosa	Arnica chamissonis Lessing subsp. foliosa (Nuttall) Maguire	Asteraceae	Forb	NO	FACW
7	Arnica cordifolia	Arnica cordifolia Hooker	Asteraceae	Forb		
6	Arnica fulgens	Arnica fulgens Pursh	Asteraceae	Forb	NI	NI
8	Arnica latifolia	Arnica latifolia Bongard	Asteraceae	Forb	NI	FACU
10	Arnica longifolia	Arnica longifolia D. C. Eaton	Asteraceae	Forb	NI	FAC
7	Arnica mollis	Arnica mollis Hooker	Asteraceae	Forb	NI	FAC*
8	Arnica parryi	Arnica parryi A. Gray	Asteraceae	Forb		
10	Arnica rydbergii	Arnica rydbergii Greene	Asteraceae	Forb		
*	Arrhenatherum elatius	Arrhenatherum elatius (L.) P. Beauvois ex J. & K. Presl	Poaceae	Graminoid	NI	UPL
*	Artemisia abrotanum	Artemisia abrotanum L.	Asteraceae	Shrub		
*	Artemisia absinthium	Artemisia absinthium L.	Asteraceae	Forb		
*	Artemisia annua	Artemisia annua L.	Asteraceae	Forb	FACU-	NI
7	Artemisia arbuscula	Seriphidium arbusculum (Nuttall) W.A. Weber subsp. arbusculum	Asteraceae	Shrub		
6	Artemisia arbuscula ssp. arbuscula	Seriphidium arbusculum (Nuttall) W. A. Weber	Asteraceae	Shrub		

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6	Artemisia arbuscula ssp. longiloba	Seriphidium arbusculum (Nuttall) W. A. Weber subsp. longilobum (Osterhout) W. A. Weber	Asteraceae	Shrub	NO	NI
9	Artemisia arctica ssp. arctica	Artemisia arctica Lessing subsp. saxicola (Rydberg) Hulten	Asteraceae	Shrub		
*****	Artemisia biennis	Artemisia biennis Willdenow	Asteraceae	Forb	FACU-	FACW
7	Artemisia bigelovii	Artemisia bigelovii A. Gray	Asteraceae	Shrub		
5	Artemisia campestris ssp. borealis var. borealis	Oligosporus groenlandicus (Hornemann) Loeve & Loeve	Asteraceae	Forb		
5	Artemisia campestris ssp. borealis var. scouleriana	Oligosporus pacificus (Nuttall) Poljakov	Asteraceae	Forb		
5	Artemisia campestris ssp. caudata	Oligosporus caudatus (Michaux) Poljakov	Asteraceae	Forb		
5	Artemisia cana ssp. cana	Seriphidium canum (Pursh) W. A. Weber	Asteraceae	Shrub	FACU	FAC*
5	Artemisia carruthii	Artemisia carruthii Wood {ex} Carruth	Asteraceae	Forb		
3	Artemisia dracunculus	Oligosporus dracunculus (L.) Poljakov	Asteraceae	Forb		
3	Artemisia dracunculus	Oligosporus dracunculus (L.) Poljakov subsp. dracunculinus (S. Watson) W. A. Weber	Asteraceae	Forb		
		Oligosporus dracunculus (L.) Poljakov subsp. glaucus (Pallas) Loeve & Loeve	Asteraceae	Forb		
5	Artemisia filifolia	Oligosporus filifolius (Torrey) Poljakov	Asteraceae	Shrub		
4	Artemisia franserioides	Artemisia franserioides Greene	Asteraceae	Forb		
4	Artemisia frigida	Artemisia frigida Willdenow	Asteraceae	Shrub		FACU
Not Assigned	Artemisia longifolia	Artemisia longifolia Nuttall	Asteraceae	Shrub		
4	Artemisia ludoviciana	Artemisia ludoviciana Nuttall	Asteraceae	Forb	FACU-	FACU
		Artemisia ludoviciana Nuttall subsp. ludoviciana	Asteraceae	Forb	FACU-	FACU
Not Assigned	Artemisia ludoviciana ssp. albula	Artemisia ludoviciana Nuttall subsp. albula (Wooton) Keck	Asteraceae	Forb	FACU-	FACU
3	Artemisia ludoviciana ssp. incompta	Artemisia ludoviciana Nuttall subsp. incompta (Nuttall) Keck	Asteraceae	Forb	FACU-	FACU
2	Artemisia ludoviciana ssp. mexicana	Artemisia ludoviciana Nuttall subsp. mexicana (Willdenow) Keck	Asteraceae	Forb	FACU-	FACU
4	Artemisia michauxiana	Artemisia michauxiana Besser in Hooker	Asteraceae	Forb		
6	Artemisia nova	Seriphidium novum (A. Nelson) W. A. Weber	Asteraceae	Shrub		

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Not Assigned	Artemisia parryi	Artemisia laciniata Willdenow subsp. parryi (A. Gray) W. A. Weber	Asteraceae	Forb		
9	Artemisia pattersonii	Artemisia pattersonii A. Gray	Asteraceae	Forb		
6	Artemisia pedatifida	Oligosporus pedatifidus (Nuttall) Poljakov	Asteraceae	Shrub		
6	Artemisia pygmaea	Seriphidium pygmaeum (A. Gray) W. A. Weber	Asteraceae	Shrub		
6	Artemisia scopulorum	Artemisia scopulorum A. Gray	Asteraceae	Forb		
4	Artemisia tridentata	Seriphidium tridentatum (Nuttall) W.A. Weber subsp. tridentatum	Asteraceae	Shrub		FACU
4	Artemisia tridentata ssp. tridentata	Seriphidium tridentatum (Nuttall) W. A. Weber	Asteraceae	Shrub		FACU
5	Artemisia tridentata ssp. vaseyana	Seriphidium vaseyanum (Rydberg) W. A. Weber	Asteraceae	Shrub		FAC
5	Artemisia tridentata ssp. wyomingensis	Seriphidium tridentatum (Nuttall) W. A. Weber subsp. wyomingensis (Beetle & Young) W. A. Weber	Asteraceae	Shrub		FACU
5	Artemisia tripartita ssp. tripartita	Seriphidium tripartitum (Rydberg) W. A. Weber	Asteraceae	Shrub		
7	Asclepias arenaria	Asclepias arenaria Torrey	Asclepiadaceae	Forb		
8	Asclepias asperula ssp. asperula	Asclepias asperula (Decaisne) Woodson subsp. asperula	Asclepiadaceae	Forb		
8	Asclepias cryptoceras	Asclepias cryptoceras S. Watson	Asclepiadaceae	Forb		
5	Asclepias engelmanniana	Asclepias engelmanniana Woodson	Asclepiadaceae	Forb		
6	Asclepias hallii	Asclepias hallii A. Gray	Asclepiadaceae	Forb		
4	Asclepias incarnata	Asclepias incarnata L.	Asclepiadaceae	Forb	OBL	OBL
6	Asclepias involucrata	Asclepias involucrata Engelmann ex Torrey	Asclepiadaceae	Forb		
		Asclepias macrosperma Eastwood	Asclepiadaceae	Forb		
4	Asclepias latifolia	Asclepias latifolia (Torrey) Rafinesque	Asclepiadaceae	Forb		
8	Asclepias macrotis	Asclepias macrotis Torrey	Asclepiadaceae	Shrub		
8	Asclepias oenotheroides	Asclepias oenotheroides Chamisso & Schlechtendal	Asclepiadaceae	Forb	FACU-	NI
4	Asclepias pumila	Asclepias pumila (A. Gray) Vail	Asclepiadaceae	Forb		
3	Asclepias speciosa	Asclepias speciosa Torrey	Asclepiadaceae	Forb	FAC	FACW
7	Asclepias stenophylla	Asclepias stenophylla A. Gray	Asclepiadaceae	Forb		
3	Asclepias subverticillata	Asclepias subverticillata (A. Gray) Vail	Asclepiadaceae	Forb	FACU	FACU
7	Asclepias tuberosa ssp. interior	Asclepias tuberosa L. subsp. terminalis Woodson	Asclepiadaceae	Forb		
8	Asclepias uncialis	Asclepias uncialis Greene	Asclepiadaceae	Forb		

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6	Asclepias viridiflora	Asclepias viridiflora Rafinesque	Asclepiadaceae	Forb		
*****	Asparagus officinalis	Asparagus officinalis L.	Liliaceae	Forb	FACU-	FACU
*****	Asperugo procumbens	Asperugo procumbens L.	Boraginaceae	Forb	NI	NI
9	Asplenium adiantum-nigrum	Asplenium adiantum-nigrum L.	Aspleniaceae	Forb		
10	Asplenium platyneuron	Asplenium platyneuron (L.) Britton, Sterns, & Poggenberg	Aspleniaceae	Forb	FACU	NI
10	Asplenium resiliens	Asplenium resiliens Kunze	Aspleniaceae	Forb		
9	Asplenium septentrionale	Asplenium septentrionale (L.) Hoffmann	Aspleniaceae	Forb		
10	Asplenium trichomanes	Asplenium trichomanes L.	Aspleniaceae	Forb		
10	Asplenium trichomanes-ramosum	Asplenium trichomanes-ramosum L.	Aspleniaceae	Forb	NI	UPL
9	Aster alpinus var. vierhapperi	Aster alpinus L. var. vierhapperi (Onno) Cronquist	Asteraceae	Forb		
6	Astragalus agrestis	Astragalus agrestis Douglas ex G. Don	Fabaceae	Forb	FAC+	FAC
Not Assigned	Astragalus allochrous var. playanus	Astragalus wootonii Sheldon var. wootonii	Fabaceae	Forb		
6	Astragalus alpinus	Astragalus alpinus L.	Fabaceae	Forb	NI	FAC
Not Assigned	Astragalus americanus	Astragalus americanus (Hooker) Jones	Fabaceae	Forb	NO	NI
5	Astragalus amphioxys var. vespertinus	Astragalus amphioxys A. Gray var. vespertinus (Sheldon) Jones	Fabaceae	Forb		
6	Astragalus anisus	Astragalus anisus Jones	Fabaceae	Forb		
Not Assigned	Astragalus aretioides	Orophaca aretioides (Jones) Rydberg	Fabaceae	Forb		
6	Astragalus argophyllus	Astragalus argophyllus Nuttall ex Torrey & Gray	Fabaceae	Forb		
Not Assigned	Astragalus argophyllus var. martinii	Astragalus argophyllus Nuttall ex Torrey & Gray var. martinii Jones	Fabaceae	Forb		
		Astragalus argophyllus Nuttall ex Torrey & Gray var. pephragmenoides Barneby	Fabaceae	Forb		
8	Astragalus asclepiadoides	Astragalus asclepiadoides Jones	Fabaceae	Forb		
Not Assigned	Astragalus australis	Astragalus aboriginum Richardson	Fabaceae	Forb		
		Astragalus aboriginum Richardson var. fastigiorum Jones	Fabaceae	Forb		
		Astragalus aboriginum Richardson var. glabriusculus (Hooker) Rydberg	Fabaceae	Forb		
5	Astragalus bisulcatus	Astragalus bisulcatus (Hooker) A. Gray	Fabaceae	Forb		
5	Astragalus bisulcatus var. haydenianus	Astragalus haydenianus A. Gray	Fabaceae	Forb		

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Not Assigned	Astragalus bodinii	Astragalus bodinii Sheldon	Fabaceae	Forb	NI	FACU-
Not Assigned	Astragalus brandegeei	Astragalus brandegeei T. C. Porter in Porter & Coulter	Fabaceae	Forb		
7	Astragalus calycosus	Astragalus calycosus Torrey ex S. Watson	Fabaceae	Forb		
7	Astragalus calycosus var. calycosus	Astragalus calycosus Torrey ex S. Watson var. calycosus	Fabaceae	Forb		
Not Assigned	Astragalus calycosus var. scaposus	Astragalus calycosus Torrey ex S. Watson var. scaposus Jones	Fabaceae	Forb		
5	Astragalus canadensis	Astragalus canadensis L. var. canadensis	Fabaceae	Forb	FACU	FACW
7	Astragalus ceramicus	Astragalus ceramicus Sheldon	Fabaceae	Forb		
6	Astragalus ceramicus var. ceramicus	Astragalus ceramicus Sheldon var. ceramicus	Fabaceae	Forb		
7	Astragalus ceramicus var. filifolius	Astragalus ceramicus Sheldon var. filifolius (A. Gray) F. J. Hermann	Fabaceae	Forb		
Not Assigned	Astragalus cerussatus	Astragalus cerussatus Sheldon	Fabaceae	Forb		
7	Astragalus chamaeleuce	Astragalus chamaeleuce A. Gray	Fabaceae	Forb		
Not Assigned	Astragalus cibarius	Astragalus cibarius Sheldon	Fabaceae	Forb		
*****	Astragalus cicer	Astragalus cicer L.	Fabaceae	Forb		
6	Astragalus coltonii var. moabensis	Astragalus coltonii Jones var. moabensis Jones	Fabaceae	Forb		
6	Astragalus convallarius	Astragalus convallarius Greene	Fabaceae	Forb		
Not Assigned	Astragalus convallarius var. convallarius	Astragalus convallarius Greene var. convallarius	Fabaceae	Forb		
Not Assigned	Astragalus convallarius var. scopulorum	Astragalus convallarius Greene var. scopulorum Barneby	Fabaceae	Forb		
6	Astragalus crassicarpus	Astragalus crassicarpus Nuttall	Fabaceae	Forb		
6	Astragalus crassicarpus var. crassicarpus	Astragalus crassicarpus Nuttall var. crassicarpus	Fabaceae	Forb		
7	Astragalus crassicarpus var. paysonii	Astragalus crassicarpus Nuttall var. paysonii (L. Kelso) Barneby	Fabaceae	Forb		
4	Astragalus cronquistii	Astragalus cronquistii Barneby	Fabaceae	Forb		
8	Astragalus debequaeus	Astragalus debequaeus Welsh	Fabaceae	Forb		
Not Assigned	Astragalus desperatus	Astragalus desperatus Jones	Fabaceae	Forb		
9	Astragalus deterior	Astragalus deterior (Barneby) Barneby	Fabaceae	Forb		
8	Astragalus detritalis	Astragalus detritalis Jones	Fabaceae	Forb		

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6	Astragalus drummondii	Astragalus drummondii Douglas ex Hooker	Fabaceae	Forb		
9	Astragalus duchesnensis	Astragalus duchesnensis Jones	Fabaceae	Forb		
8	Astragalus eastwoodiae	Astragalus eastwoodiae Jones	Fabaceae	Forb		
Not Assigned	Astragalus eucosmus	Astragalus eucosmus B. L. Robinson	Fabaceae	Forb	NI	FAC
*	Astragalus falcatus	Astragalus falcatus Lamarck	Fabaceae	Forb		
5	Astragalus flavus	Astragalus flavus Nuttall	Fabaceae	Forb		
6	Astragalus flexuosus	Astragalus flexuosus (Hooker) G. Don	Fabaceae	Forb		
6	Astragalus flexuosus var. diehlii	Astragalus flexuosus (Hooker) G. Don var. diehlii (Jones) Barneby	Fabaceae	Forb		
Not Assigned	Astragalus flexuosus var. flexuosus	Astragalus flexuosus (Hooker) G. Don var. flexuosus	Fabaceae	Forb		
Not Assigned	Astragalus geyeri	Astragalus geyeri A. Gray	Fabaceae	Forb		
9	Astragalus gilviflorus var. gilviflorus	Orophaca triphylla Britton	Fabaceae	Forb		
6	Astragalus gracilis	Astragalus gracilis Nuttall	Fabaceae	Forb		
Not Assigned	Astragalus hallii	Astragalus hallii A. Gray	Fabaceae	Forb		
8	Astragalus hamiltonii	Astragalus lonchocarpus Torrey var. hamiltonii (C. L. Porter) Isely	Fabaceae	Forb		
		Astragalus lonchocarpus Torrey var. lonchocarpus	Fabaceae	Forb		
9	Astragalus humillimus	Astragalus humillimus A. Gray	Fabaceae	Forb		
9	Astragalus hyalinus	Orophaca hyalina (Jones) Isely	Fabaceae	Forb		
Not Assigned	Astragalus iodopetalus	Astragalus iodopetalus (Greene ex Rydberg) Barneby	Fabaceae	Forb		
Not Assigned	Astragalus jejunus	Astragalus jejunus S. Watson	Fabaceae	Forb		
8	Astragalus kentrophyta	Astragalus kentrophyta A. Gray	Fabaceae	Forb		
Not Assigned	Astragalus kentrophyta var. elatus	Astragalus kentrophyta A. Gray subsp. elatus (S. Watson) W. A. Weber	Fabaceae	Forb		
7	Astragalus kentrophyta var. kentrophyta	Astragalus kentrophyta A. Gray subsp. kentrophyta	Fabaceae	Forb		
Not Assigned	Astragalus kentrophyta var. tegetarius	Astragalus kentrophyta A. Gray subsp. implexus (Canby ex Porter & Coulter) W. A. Weber	Fabaceae	Forb		
Not Assigned	Astragalus laxmannii var. robustior	Astragalus adsurgens Pallas var. robustior Hooker	Fabaceae	Forb		
5	Astragalus lentiginosus	Astragalus lentiginosus Douglas ex Hooker	Fabaceae	Forb	NO	NI

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Not Assigned	Astragalus lentiginosus var. chartaceus	Astragalus lentiginosus Douglas ex Hooker var. platyphyllidius (Rydberg) M. Peck	Fabaceae	Forb	NO	NI
Not Assigned	Astragalus lentiginosus var. diphysus	Astragalus lentiginosus Douglas ex Hooker var. diphysus (A. Gray) Jones	Fabaceae	Forb	NO	NI
Not Assigned	Astragalus lentiginosus var. palans	Astragalus lentiginosus Douglas ex Hooker var. palans (Jones) Jones	Fabaceae	Forb	NO	NI
8	Astragalus leptaleus	Astragalus leptaleus A. Gray	Fabaceae	Forb	NI	NI
8	Astragalus linifolius	Astragalus linifolius Osterhout	Fabaceae	Forb		
6	Astragalus lonchocarpus	Astragalus lonchocarpus Torrey	Fabaceae	Forb		
6	Astragalus lotiflorus	Astragalus lotiflorus Hooker	Fabaceae	Forb		
9	Astragalus lutosus	Astragalus lutosus Jones	Fabaceae	Forb		
7	Astragalus megacarpus	Astragalus megacarpus (Nuttall) A. Gray	Fabaceae	Forb		
7	Astragalus microcymbus	Astragalus microcymbus Barneby	Fabaceae	Forb		
6	Astragalus miser var. oblongifolius	Astragalus miser Douglas in Hooker var. oblongifolius (Rydberg) Cronquist	Fabaceae	Forb		
6	Astragalus missouriensis	Astragalus missouriensis Nuttall	Fabaceae	Forb		
Not Assigned	Astragalus missouriensis var. amphibolus	Astragalus missouriensis Nuttall var. amphibolus Barneby	Fabaceae	Forb		
6	Astragalus missouriensis var. humistratus	Astragalus missouriensis Nuttall var. humistratus Isely	Fabaceae	Forb		
6	Astragalus missouriensis var. missouriensis	Astragalus missouriensis Nuttall var. missouriensis	Fabaceae	Forb		
5	Astragalus mollissimus	Astragalus mollissimus Torrey	Fabaceae	Forb		
4	Astragalus mollissimus var. mollissimus	Astragalus mollissimus Torrey var. mollissimus	Fabaceae	Forb		
5	Astragalus mollissimus var. thompsoniae	Astragalus mollissimus Torrey var. thompsoniae (S. Watson) Barneby	Fabaceae	Forb		
8	Astragalus molybdenus	Astragalus molybdenus Barneby	Fabaceae	Forb		
Not Assigned	Astragalus monumentalis var. cottamii	Astragalus monumentalis Barneby var. cottamii (Welsh) Isely	Fabaceae	Forb		
9	Astragalus musiniensis	Astragalus musiniensis Jones	Fabaceae	Forb		
5	Astragalus naturitensis	Astragalus naturitensis Payson	Fabaceae	Forb		
Not Assigned	Astragalus nelsonianus	Astragalus nelsonianus Barneby	Fabaceae	Forb		
Not Assigned	Astragalus newberryi	Astragalus newberryi A. Gray	Fabaceae	Forb		

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0	Astragalus nuttallianus var. micranthiformis	Astragalus nuttallianus De Candolle var. micranthiformis Barneby	Fabaceae	Forb		
7	Astragalus oocalycis	Astragalus oocalycis Jones	Fabaceae	Forb		
7	Astragalus oophorus var. caulescens	Astragalus oophorus Jones var. caulescens (Jones) Jones	Fabaceae	Forb		
8	Astragalus osterhoutii	Astragalus osterhoutii Jones	Fabaceae	Forb		
Not Assigned	Astragalus parryi	Astragalus parryi A. Gray	Fabaceae	Forb		
6	Astragalus pattersonii	Astragalus pattersonii A. Gray	Fabaceae	Forb		
5	Astragalus pectinatus	Astragalus pectinatus (Hooker) Douglas in Hooker	Fabaceae	Forb		
7	Astragalus piscator	Astragalus piscator Barneby & Welsh	Fabaceae	Forb		
7	Astragalus plattensis	Astragalus plattensis Nuttall ex Torrey & Gray	Fabaceae	Forb		
5	Astragalus praelongus	Astragalus praelongus Sheldon	Fabaceae	Forb		
Not Assigned	Astragalus praelongus var. ellisiae	Astragalus praelongus Sheldon var. ellisiae (Rydberg) Barneby	Fabaceae	Forb		
5	Astragalus praelongus var. praelongus	Astragalus praelongus Sheldon var. praelongus	Fabaceae	Forb		
7	Astragalus proximus	Astragalus proximus (Rydberg) Wooton & Standley	Fabaceae	Forb		
Not Assigned	Astragalus pubentissimus	Astragalus pubentissimus Torrey & Gray	Fabaceae	Forb		
6	Astragalus puniceus	Astragalus puniceus Osterhout	Fabaceae	Forb		
7	Astragalus purshii	Astragalus purshii Douglas ex Hooker	Fabaceae	Forb		
Not Assigned	Astragalus racemosus	Astragalus racemosus Pursh	Fabaceae	Forb		
Not Assigned	Astragalus racemosus var. longisetus	Astragalus racemosus Pursh var. longisetus Jones	Fabaceae	Forb		
5	Astragalus racemosus var. racemosus	Astragalus racemosus Pursh var. racemosus	Fabaceae	Forb		
8	Astragalus rafaelensis	Astragalus rafaelensis Jones	Fabaceae	Forb		
7	Astragalus ripleyi	Astragalus ripleyi Barneby	Fabaceae	Forb		
Not Assigned	Astragalus robbinsii var. minor	Astragalus robbinsii (Oakes) A. Gray var. minor (Hooker) Barneby	Fabaceae	Forb	NO	FAC+
8	Astragalus schmolliae	Astragalus schmolliae C. L. Porter	Fabaceae	Forb		
7	Astragalus scopulorum	Astragalus scopulorum T. C. Porter in Porter & Coulter	Fabaceae	Forb		
7	Astragalus sericoleucus	Orophaca sericea (Nuttall) Britton	Fabaceae	Forb		
9	Astragalus sesquiflorus	Astragalus sesquiflorus S. Watson	Fabaceae	Forb		
7	Astragalus shortianus	Astragalus shortianus Nuttall in Torrey & Gray	Fabaceae	Forb		

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6	Astragalus sparsiflorus	Astragalus sparsiflorus A. Gray	Fabaceae	Forb		
6	Astragalus spatulatus	Astragalus spatulatus Sheldon	Fabaceae	Forb		
6	Astragalus tenellus	Astragalus tenellus Pursh	Fabaceae	Forb		
10	Astragalus tortipes	Astragalus tortipes J.L. Anderson & J.M. Porter	Fabaceae	Forb		
7	Astragalus tridactylicus	Orophaca tridactylica (A. Gray) Rydberg	Fabaceae	Forb		
8	Astragalus wetherillii	Astragalus wetherillii Jones	Fabaceae	Forb		
8	Astragalus wingatanus	Astragalus wingatanus S. Watson	Fabaceae	Forb		
Not Assigned	Astrolepis integerrima	Astrolepis integerrima (Hooker) Benham & Windham	Pteridaceae	Forb		
10	Athyrium americanum	Athyrium distentifolium Tausch ex Opiz	Dryopteridaceae	Forb	NI	FACU
9	Athyrium filix-femina	Athyrium filix-femina (L.) Roth ex Mertens	Dryopteridaceae	Forb	FAC	FAC+
10	Athyrium filix-femina ssp. angustum	Athyrium filix-femina (L.) Roth ex Mertens subsp. angustum (Willdenow) Hulten	Dryopteridaceae	Forb	FAC	FAC+
10	Athyrium filix-femina ssp. cyclosorum	Athyrium filix-femina (L.) Roth ex Mertens subsp. cyclosorum (Ruprecht) C. Christensen	Dryopteridaceae	Forb	FAC	FAC+
Not Assigned	Atriplex ×aptera	Atriplex aptera	Chenopodiaceae	Shrub		
Not Assigned	Atriplex argentea	Atriplex argentea Nuttall	Chenopodiaceae	Forb	FAC	FAC
7	Atriplex canescens	Atriplex canescens (Pursh) Nuttall	Chenopodiaceae	Shrub	FACU-	UPL
		Atriplex canescens (Pursh) Nuttall subsp. canescens	Chenopodiaceae	Shrub	FACU-	UPL
6	Atriplex confertifolia	Atriplex confertifolia (Torrey & Fremont) S. Watson	Chenopodiaceae	Shrub	NI	NI
8	Atriplex corrugata	Atriplex corrugata S. Watson	Chenopodiaceae	Shrub		
6	Atriplex gardneri	Atriplex gardneri (Moquin) Standley	Chenopodiaceae	Shrub		
Not Assigned	Atriplex garrettii	Atriplex canescens (Pursh) Nuttall subsp. garrettii (Rydberg) Hall & Clements	Chenopodiaceae	Shrub		
Not Assigned	Atriplex graciliflora	Atriplex graciliflora Jones	Chenopodiaceae	Forb		
*	Atriplex hortensis	Atriplex hortensis L.	Chenopodiaceae	Forb	FACW	FAC
*	Atriplex micrantha	Atriplex heterosperma Bunge	Chenopodiaceae	Forb		
5	Atriplex obovata	Atriplex obovata Moquin	Chenopodiaceae	Shrub		
Not Assigned	Atriplex pachypoda	Atriplex pachypoda Stutz & Chu	Chenopodiaceae	Forb		
*	Atriplex patula	Atriplex patula L.	Chenopodiaceae	Forb	FACW	FACW
Not Assigned	Atriplex powellii	Atriplex powellii S. Watson	Chenopodiaceae	Forb		

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*	Atriplex rosea	Atriplex rosea L.	Chenopodiaceae	Forb	FACU	FACU
Not Assigned	Atriplex saccaria	Atriplex saccaria S. Watson	Chenopodiaceae	Forb		
Not Assigned	Atriplex truncata	Atriplex truncata (Torrey) A. Gray	Chenopodiaceae	Forb	NI	FAC
Not Assigned	Atriplex wolfii	Atriplex wolfii S. Watson	Chenopodiaceae	Forb		
*	Aurinia saxatilis	Aethionema saxatile (L.) R. Br.	Brassicaceae	Forb		
*	Avena fatua	Avena fatua L.	Poaceae	Graminoid		
		Avenua fatua L. var. fatua	Poaceae	Graminoid		
*	Avena sativa	Avena fatua L. var. sativa (L.) Haussknecht	Poaceae	Graminoid		
*	Axyris amaranthoides	Axyris amaranthoides L.	Chenopodiaceae	Forb		
Not Assigned	Azolla mexicana	Azolla mexicana K. Presl	Azollaceae	Forb	OBL	OBL
7	Baccharis salicina	Baccharis salicina Torrey & Gray	Asteraceae	Shrub	FAC	FACW
8	Baccharis wrightii	Baccharis wrightii A. Gray	Asteraceae	Shrub	FAC	
Not Assigned	Bacopa rotundifolia	Bacopa rotundifolia (Michaux) Wettstein in Engler & Prantl	Scrophulariaceae	Forb	OBL	OBL
5	Bahia dissecta	Bahia dissecta (A. Gray) Britton	Asteraceae	Forb		
*	Balsamita major	Balsamita major Desfontaines, non L.	Asteraceae	Forb		
5	Balsamorhiza hookeri var. hispidula	Balsamorhiza hispidula W. M. Sharp	Asteraceae	Forb		
5	Balsamorhiza sagittata	Balsamorhiza sagittata (Pursh) Nuttall	Asteraceae	Forb		
5	Barbarea orthoceras	Barbarea orthoceras Ledebour	Brassicaceae	Forb	OBL	OBL
*	Barbarea vulgaris	Barbarea vulgaris R. Brown	Brassicaceae	Forb	FAC	NI
*	Bassia hyssopifolia	Bassia hyssopifolia (Pallas) Kuntze	Chenopodiaceae	Vine, Forb/herb	FACW	FACW
4	Beckmannia syzigachne	Beckmannia syzigachne (Steudel) Fernald subsp. baicalensis (Kuznetzow) Koyama & Kuwano	Poaceae	Graminoid	OBL	OBL
5	Berberis fendleri	Berberis fendleri A. Gray	Berberidaceae	Shrub		
*	Berberis vulgaris	Berberis vulgaris L.	Berberidaceae	Shrub	NI	NI
Not Assigned	Bergia texana	Bergia texana (Hooker) Seubert ex Walpers	Elatinaceae	Forb	OBL	OBL
9	Berlandiera lyrata	Berlandiera lyrata Bentham	Asteraceae	Forb		
*	Berteroa incana	Berteroa incana (L.) De Candolle	Brassicaceae	Forb		
*	Berula erecta	Berula erecta (Hudson) Coville	Apiaceae	Forb	OBL	OBL
9	Besseya alpina	Besseya alpina (A. Gray) Rydberg	Scrophulariaceae	Forb		
8	Besseya plantaginea	Besseya plantaginea (Bentham in De Candolle) Rydberg	Scrophulariaceae	Forb	NI	NI
7	Besseya ritteriana	Besseya ritteriana (Eastwood) Rydberg	Scrophulariaceae	Forb		

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6	Besseya wyomingensis	Besseya wyomingensis (A. Nelson) Rydberg	Scrophulariaceae	Forb		
9	Betula nana	Betula glandulosa Michaux	Betulaceae	Shrub	OBL	OBL
8	Betula occidentalis	Betula fontinalis Sargent	Betulaceae	Shrub	FACW	FACW
8	Betula papyrifera x occidentalis	Betula papyrifera H. Marshall	Betulaceae	Tree	FACU	FACU
Not Assigned	Bidens bigelovii	Bidens bigelovii A. Gray	Asteraceae	Forb	OBL	NI
*	Bidens cernua	Bidens cernua L.	Asteraceae	Forb	OBL	OBL
*	Bidens frondosa	Bidens frondosa L.	Asteraceae	Forb	FACW	FACW
		Bidens frondosa L. var. frondosa	Asteraceae	Forb	FACW	FACW
Not Assigned	Bidens tenuisecta	Bidens tenuisecta A. Gray	Asteraceae	Forb	NI	FACW
Not Assigned	Bidens tripartita	Bidens comosa (A. Gray) Wiegand	Asteraceae	Forb	OBL	FACW
Not Assigned	Bidens vulgata	Bidens frondosa L. var. puberula Wiegand	Asteraceae	Forb	NI	NI
8	Blepharoneuron tricholepis	Blepharoneuron tricholepis (Torrey) Nash	Poaceae	Graminoid		
5	Bothriochloa barbinodis	Bothriochloa barbinodis (Lagasca) Herter	Poaceae	Graminoid	NO	NI
*	Bothriochloa bladhii	Bothriochloa bladhii (Retzius) S. T. Blake	Poaceae	Graminoid	NI	NO
*	Bothriochloa ischaemum var. songarica	Bothriochloa ischaemum (L.) Keng var. songarica (Ruprecht ex Fischer & Meyer) Celarier & Harlan	Poaceae	Graminoid		
2	Bothriochloa laguroides ssp. torreyana	Bothriochloa laguroides (De Candolle) Herter subsp. torreyana (Steudel) Allred & Gould	Poaceae	Graminoid		
6	Bothriochloa springfieldii	Bothriochloa springfieldii Gould	Poaceae	Graminoid		
8	Botrychium campestre	Botrychium campestre Wagner & Farrar	Ophioglossaceae	Forb		
6	Botrychium echo	Botrychium echo W. H. Wagner	Ophioglossaceae	Forb		
6	Botrychium hesperium	Botrychium hesperium (Maxon & Clausen) Wagner & Lellinger	Ophioglossaceae	Forb	FACU	FACU
4	Botrychium lanceolatum	Botrychium lanceolatum (S. G. Gmelin) Angstrom	Ophioglossaceae	Forb	NI	FACW
7	Botrychium lineare	Botrychium lineare W. H. Wagner, {ined}.	Ophioglossaceae	Forb		
4	Botrychium lunaria	Botrychium lunaria (L.) Swartz subsp. occidentalis Loeve et al.	Ophioglossaceae	Forb	NI	FACW
4	Botrychium minganense	Botrychium minganense	Ophioglossaceae	Forb		
7	Botrychium multifidum	Botrychium multifidum (S. G. Gmelin) Ruprecht subsp. coulteri (Underwood) Clausen	Ophioglossaceae	Forb	FAC	FACU
4	Botrychium pallidum	Botrychium pallidum W. H. Wagner	Ophioglossaceae	Forb		
4	Botrychium pinnatum	Botrychium pinnatum St. John	Ophioglossaceae	Forb	NI	FACU-
4	Botrychium simplex	Botrychium simplex A. S. Hitchcock	Ophioglossaceae	Forb	FAC	FACU

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9	Botrychium virginianum	Botrypus virginianus (L.) Holub subsp. europaeus (Angstrom) Holub	Ophioglossaceae	Forb	FACU	FACU
7	Bouteloua barbata	Chondrosum barbatum (Lagasca) Clayton	Poaceae	Graminoid		
6	Bouteloua curtipendula	Bouteloua curtipendula (Michaux) Torrey	Poaceae	Graminoid		
Not Assigned	Bouteloua curtipendula var. caespitosa	Bouteloua curtipendula (Michaux) Torrey var. caespitosa Gould & Kapadia	Poaceae	Graminoid		
5	Bouteloua curtipendula var. curtipendula	Bouteloua curtipendula (Michaux) Torrey var. curtipendula	Poaceae	Graminoid		
7	Bouteloua eriopoda	Chondrosum eriopodum Torrey	Poaceae	Graminoid		
4	Bouteloua gracilis	Chondrosum gracile Humboldt, Bonpland, & Kunth	Poaceae	Graminoid		
6	Bouteloua hirsuta var. hirsuta	Chondrosum hirsutum (Lagasca) Sweet	Poaceae	Graminoid		
*	Bouteloua simplex	Chondrosum prostratum (Lagasca) Sweet	Poaceae	Graminoid		
*	Brachypodium distachyon	Brachypodium distachyon (L.) P. Beauvois	Poaceae	Graminoid		
*	Brassica elongata	Brassica elongata Ehrhart var. integrifolia (Boissier) Breistroffer	Brassicaceae	Forb		
*	Brassica juncea	Brassica juncea (L.) Cosson	Brassicaceae	Forb		
*	Brassica napus	Brassica napus L.	Brassicaceae	Forb		
*	Brassica nigra	Brassica nigra (L.) K. Koch	Brassicaceae	Forb		
*	Brassica rapa	Brassica rapa L.	Brassicaceae	Forb		
10	Braya glabella ssp. glabella	Braya glabella (Richardson) S. Watson var. glabella	Brassicaceae	Forb		
10	Braya humilis	Braya humilis (C. A. Meyer) B. L. Robinson	Brassicaceae	Forb	NO	UPL
8	Brickellia brachyphylla	Brickellia brachyphylla A. Gray	Asteraceae	Forb		
7	Brickellia californica	Brickellia californica (Torrey & Gray) A. Gray	Asteraceae	Shrub	FAC	UPL
6	Brickellia eupatorioides	Brickellia eupatorioides (L.) Shinners	Asteraceae	Forb		
5	Brickellia eupatorioides var. chlorolepis	Brickellia rosmarinifolia (Ventenat) W. A. Weber subsp. chlorolepis (Wooton & Standley) W. A. Weber	Asteraceae	Forb		
8	Brickellia grandiflora	Brickellia grandiflora (Hooker) Nuttall	Asteraceae	Forb		
7	Brickellia longifolia	Brickellia longifolia S. Watson	Asteraceae	Shrub		
9	Brickellia microphylla var. scabra	Brickellia microphylla (Nuttall) A. Gray subsp. scabra (A. Gray) W. A. Weber	Asteraceae	Shrub		

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8	Brickellia oblongifolia	Brickellia oblongifolia Nuttall	Asteraceae	Forb		
*	Briza maxima	Briza maxima L.	Poaceae	Graminoid		
*	Briza media	Briza media L.	Poaceae	Graminoid	NI	NI
*	Bromus briziformis	Bromus briziformis Fischer & Meyer	Poaceae	Graminoid	NI	NI
*	Bromus carinatus	Ceratochloa carinata (Hooker & Arnott) Tutin	Poaceae	Graminoid		
*	Bromus catharticus	Ceratochloa unioloides (Willdenow) P. Beauvois	Poaceae	Graminoid		
6	Bromus ciliatus	Bromopsis canadensis (Michaux) Holub subsp. canadensis	Poaceae	Graminoid	FACW	FACU
5	Bromus ciliatus var. ciliatus	Bromopsis canadensis (Michaux) Holub	Poaceae	Graminoid	FACW	FACU
5	Bromus ciliatus var. richardsonii	Bromopsis canadensis (Michaux) Holub subsp. richardsonii (Link) Tsvelev	Poaceae	Graminoid		
*	Bromus commutatus	Bromus commutatus Schrader	Poaceae	Graminoid		
*	Bromus diandrus	Anisantha diandra (Roth) Tutin	Poaceae	Graminoid		
*	Bromus hordeaceus	Bromus hordeaceus L.	Poaceae	Graminoid	UPL	UPL
*	Bromus inermis ssp. inermis var. inermis	Bromopsis inermis (Leysser) Holub	Poaceae	Graminoid		
6	Bromus inermis ssp. pumpellianus var. pumpellianus	Bromopsis pumpelliana (Scribner) Holub	Poaceae	Graminoid		
*	Bromus japonicus	Bromus japonicus Thunberg	Poaceae	Graminoid	FACU	UPL
6	Bromus lanatipes	Bromopsis lanatipes (Shear) Holub	Poaceae	Graminoid		
5	Bromus porteri	Bromopsis porteri (Coulter) Holub	Poaceae	Graminoid		
Not Assigned	Bromus pubescens	Bromopsis pubescens (Mühlenberg ex Willdenow) Holub	Poaceae	Graminoid	NI	NI
*	Bromus racemosus	Bromus racemosus L.	Poaceae	Graminoid		
*	Bromus secalinus	Bromus secalinus L.	Poaceae	Graminoid		
*	Bromus squarrosus	Bromus squarrosus L.	Poaceae	Graminoid		
*	Bromus sterilis	Anisantha sterilis (L.) Nevski	Poaceae	Graminoid		
*	Bromus tectorum	Anisantha tectorum (L.) Nevski	Poaceae	Graminoid		
4	Buchloe dactyloides	Buchloe dactyloides (Nuttall) Engelmann	Poaceae	Graminoid	FACU	NI
*	Buglossoides arvensis	Buglossoides arvense (L.) I. M. Johnston	Boraginaceae	Forb		
10	Bupleurum americanum	Bupleurum triradiatum Adams subsp. arcticum (Regel) Hulten	Apiaceae	Forb		
6	Caesalpinia drepanocarpa	Hoffmanseggia drepanocarpa A. Gray	Fabaceae	Forb		

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6	Caesalpinia jamesii	Caesalpinia jamesii (Torrey & Gray) Fisher	Fabaceae	Forb		
6	Calamagrostis canadensis	Calamagrostis canadensis (Michaux) P. Beauvois	Poaceae	Graminoid	OBL	OBL
6	Calamagrostis montanensis	Calamagrostis montanensis (Scribner) Scribner in Vasey	Poaceae	Graminoid		
7	Calamagrostis purpurascens	Calamagrostis purpurascens R. Brown in Richardson	Poaceae	Graminoid		
6	Calamagrostis rubescens	Calamagrostis rubescens Buckley	Poaceae	Graminoid		
8	Calamagrostis scopulorum	Calamagrostis scopulorum Jones	Poaceae	Graminoid	NI	FAC
7	Calamagrostis stricta	Calamagrostis stricta (Timm) Koeler	Poaceae	Graminoid	FACW	FACW
7	Calamovilfa gigantea	Calamovilfa gigantea (Nuttall) Scribner & Merrill	Poaceae	Graminoid		
7	Calamovilfa longifolia	Calamovilfa longifolia (Hooker) Scribner in Hackel	Poaceae	Graminoid		
5	Callirhoe involucrata	Callirhoe involucrata (Torrey & Gray) A. Gray	Malvaceae	Forb		
5	Callitriche hermaphroditica	Callitriche hermaphroditica L.	Callitrichaceae	Forb	OBL	OBL
6	Callitriche heterophylla	Callitriche heterophylla Pursh emend. Darby	Callitrichaceae	Forb	OBL	OBL
5	Callitriche palustris	Callitriche verna L. emend. Lonnroth	Callitrichaceae	Forb	OBL	OBL
8	Calochortus aureus	Calochortus nuttallii Torrey var. aureus (S. Watson) M. Ownbey	Liliaceae	Forb		
5	Calochortus flexuosus	Calochortus flexuosus S. Watson	Liliaceae	Vine, Forb/herb		
7	Calochortus gunnisonii	Calochortus gunnisonii S. Watson	Liliaceae	Forb		
7	Calochortus nuttallii	Calochortus nuttallii Torrey var. nuttallii	Liliaceae	Forb		
7	Caltha leptosepala ssp. leptosepala var. leptosepala	Psychrophila leptosepala (De Candolle) W. A. Weber	Ranunculaceae	Forb	NO	OBL
8	Calylophus berlandieri	Calylophus berlandieri Spach	Onagraceae	Forb		
7	Calylophus hartwegii ssp. pubescens	Calylophus hartwegii (Bentham) Raven subsp. pubescens (A. Gray) Towner & Raven	Onagraceae	Forb		
7	Calylophus lavandulifolius	Calylophus lavandulifolius (Torrey & Gray) Raven	Onagraceae	Forb		
7	Calylophus serrulatus	Calylophus serrulatus (Nuttall) Raven	Onagraceae	Forb		
8	Calypso bulbosa	Calypso bulbosa (L.) Oakes	Orchidaceae	Forb	FACW	FACU
2	Calystegia macounii	Calystegia macounii (Greene) Brummitt	Convolvulaceae	Vine, Forb		
2	Calystegia sepium ssp. angulata	Calystegia sepium (L.) R. Brown subsp. angulata Brummitt	Convolvulaceae	Vine, Forb	FAC	FACU

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*	Camelina microcarpa	Camelina microcarpa Andrzejowski ex De Candolle	Brassicaceae	Forb	NI	FACU
*	Camelina rumelica	Camelina rumelica Velenovsky	Brassicaceae	Forb		
Not Assigned	Camissonia andina	Camissonia andina (Nuttall) Raven	Onagraceae	Forb	NO	NI
Not Assigned	Camissonia breviflora	Camissonia breviflora (Torrey & Gray) Raven	Onagraceae	Forb	NO	FAC
8	Camissonia eastwoodiae	Camissonia eastwoodiae (Munz) Raven	Onagraceae	Forb		
Not Assigned	Camissonia minor	Camissonia minor (A. Nelson) Raven	Onagraceae	Forb		
Not Assigned	Camissonia parvula	Camissonia parvula (Nuttall ex Torrey & Gray) Raven	Onagraceae	Forb		
7	Camissonia scapoidea	Camissonia scapoidea (Torrey & Gray) Raven	Onagraceae	Forb		
Not Assigned	Camissonia subacaulis	Camissonia subacaulis (Pursh) Raven	Onagraceae	Forb	NO	FAC
Not Assigned	Camissonia walkeri	Camissonia walkeri (A. Nelson) Raven	Onagraceae	Forb		
10	Campanula aparinoides	Campanula aparinoides Pursh	Campanulaceae	Forb	OBL	OBL
7	Campanula parryi	Campanula parryi A. Gray	Campanulaceae	Forb	NI	FACU
*	Campanula rapunculoides	Campanula rapunculoides L.	Campanulaceae	Forb		
5	Campanula rotundifolia	Campanula rotundifolia L.	Campanulaceae	Forb	FAC	FACU
8	Campanula uniflora	Campanula uniflora L.	Campanulaceae	Forb	NI	FACU-
*	Campsis radicans	Campsis radicans (L.) Seemann	Bignoniaceae	Vine	FAC-	NI
*	Cannabis sativa	Cannabis sativa L.	Cannabaceae	Forb	FACU-	FACU
*	Capsella bursa-pastoris	Capsella bursa-pastoris (L.) Medicus	Brassicaceae	Forb	FACU	FACU
*	Caragana arborescens	Caragana arborescens Lamarck	Fabaceae	Shrub		
*	Caragana aurantiaca	Caragana aurantiaca Koehne	Fabaceae	Shrub		
Not Assigned	Cardamine breweri	Cardamine breweri S. Watson	Brassicaceae	Forb	NI	OBL
8	Cardamine cordifolia	Cardamine cordifolia A. Gray	Brassicaceae	Forb	NI	FACW+
Not Assigned	Cardamine oligosperma	Cardamine oligosperma Nutt. ex T. & G. var. oligosperma	Brassicaceae	Forb	NI	NI
9	Cardamine pensylvanica	Cardamine pensylvanica Mühlenberg ex Willdenow	Brassicaceae	Forb	OBL	OBL
*	Cardaria chalapensis	Cardaria chalepensis (L.) Handel-Mazzetti	Brassicaceae	Forb		
*	Cardaria draba	Cardaria draba (L.) Desvaux	Brassicaceae	Forb		
*	Cardaria pubescens	Cardaria pubescens (C. A. Meyer) Jarmolenko	Brassicaceae	Forb	NI	NI
*	Carduus acanthoides	Carduus acanthoides L.	Asteraceae	Forb		

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*	Carduus nutans ssp. macrolepis	Carduus nutans L. subsp. macrolepis (Peterman) Kazmi	Asteraceae	Forb		
8	Carex albonigra	Carex albo-nigra Mackenzie in Rydberg	Cyperaceae	Graminoid	NI	UPL
6	Carex aquatilis	Carex aquatilis Wahlenberg	Cyperaceae	Graminoid	OBL	OBL
		Carex aquatilis Wahlenberg subsp. aquatilis	Cyperaceae	Graminoid	OBL	OBL
5	Carex aquatilis var. stans	Carex aquatilis Wahlenberg subsp. stans (Drejer) Hulten	Cyperaceae	Graminoid	OBL	OBL
10	Carex arapahoensis	Carex arapahoensis Clokey	Cyperaceae	Graminoid		
6	Carex atherodes	Carex atherodes Sprengel	Cyperaceae	Graminoid	OBL	OBL
7	Carex athrostachya	Carex athrostachya Olney	Cyperaceae	Graminoid	NI	FAC
8	Carex atrosquama	Carex atrosquama Mackenzie	Cyperaceae	Graminoid	NO	FACU
7	Carex aurea	Carex aurea Nuttall	Cyperaceae	Graminoid	FACW	OBL
9	Carex backii	Carex backii F. Boott	Cyperaceae	Graminoid		
7	Carex bebbii	Carex bebbii (L. H. Bailey) Fernald	Cyperaceae	Graminoid	OBL	OBL
9	Carex bella	Carex bella L. H. Bailey	Cyperaceae	Graminoid	NI	FACU
5	Carex brevior	Carex brevior (Dewey) Mackenzie	Cyperaceae	Graminoid	FAC	FAC
9	Carex brunnescens	Carex brunnescens (Persoon) Poiret in Lamarck	Cyperaceae	Graminoid	NI	FACW
9	Carex buxbaumii	Carex buxbaumii Wahlenberg	Cyperaceae	Graminoid	OBL	OBL
8	Carex canescens	Carex canescens L.	Cyperaceae	Graminoid	NI	OBL
9	Carex capillaris	Carex capillaris L.	Cyperaceae	Graminoid	NI	FACW
10	Carex capitata ssp. arctogena	Carex capitata L. subsp. arctogena (H. Smith) Bocher	Cyperaceae	Graminoid	NO	FACW
9	Carex concinna	Carex concinna R. Brown	Cyperaceae	Graminoid	NO	FACU
Not Assigned	Carex crawei	Carex crawei Dewey	Cyperaceae	Graminoid	FACW	OBL
8	Carex deweyana	Carex deweyana Schweinitz	Cyperaceae	Graminoid	UPL	FACW
9	Carex diandra	Carex diandra Schrank	Cyperaceae	Graminoid	OBL	OBL
9	Carex disperma	Carex disperma Dewey	Cyperaceae	Graminoid	NI	FACW
5	Carex douglasii	Carex douglasii F. Boott in Hooker	Cyperaceae	Graminoid	FAC	FACU
7	Carex duriuscula	Carex stenophylla Wahlenberg subsp. eleocharis (L. H. Bailey) Hulten	Cyperaceae	Graminoid		
4	Carex ebenea	Carex ebenea Rydberg	Cyperaceae	Graminoid		FAC
9	Carex echinata ssp. echinata	Carex angustior Mackenzie in Rydberg	Cyperaceae	Graminoid	NI	OBL
Not Assigned	Carex egglestonii	Carex egglestonii Mackenzie	Cyperaceae	Graminoid		

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8	Carex elynoides	Carex elynoides Holm	Cyperaceae	Graminoid		
5	Carex emoryi	Carex emoryi Dewey in Torrey	Cyperaceae	Graminoid	OBL	OBL
10	Carex engelmannii	Carex engelmannii L. H. Bailey	Cyperaceae	Graminoid		
10	Carex exsiccata	Carex exsiccata L. H. Bailey	Cyperaceae	Graminoid	NO	OBL
6	Carex filifolia	Carex filifolia Nuttall	Cyperaceae	Graminoid		
6	Carex foenea	Carex foenea Willdenow	Cyperaceae	Graminoid	NI	NI
7	Carex geophila	Carex geophila Mackenzie	Cyperaceae	Graminoid		
6	Carex geyeri	Carex geyeri F. Boott	Cyperaceae	Graminoid		
4	Carex gravida var. lunelliana	Carex gravida L. H. Bailey var. lunelliana (Mackenzie) F. J. Hermann	Cyperaceae	Graminoid		
10	Carex gynocrates	Carex dioica L. subsp. gynocrates (Wormskiold) Hulten	Cyperaceae	Graminoid	NO	OBL
9	Carex hallii	Carex parryana Dewey subsp. hallii (Olney) D. Murray	Cyperaceae	Graminoid	FACW-	OBL
7	Carex hassei	Carex hassei L. H. Bailey	Cyperaceae	Graminoid	NI	FACW
9	Carex haydeniana	Carex haydeniana Olney	Cyperaceae	Graminoid	NI	FAC*
8	Carex heteroneura var. brevisquama	Carex atrata L.	Cyperaceae	Graminoid	NI	FAC
9	Carex heteroneura var. chalciolepis	Carex chalciolepis Holm	Cyperaceae	Graminoid		FAC
Not Assigned	Carex heteroneura var. epapillosa	Carex epapillosa Mackenzie in Rydberg	Cyperaceae	Graminoid		FAC
6	Carex hoodii	Carex hoodii F. Boott in Hooker	Cyperaceae	Graminoid	NI	NI
6	Carex hystericina	Carex hystericina Muhlenberg ex Willdenow	Cyperaceae	Graminoid	OBL	OBL
9	Carex illota	Carex illota L. H. Bailey	Cyperaceae	Graminoid	NI	OBL
7	Carex inops ssp. heliophila	Carex pensylvanica Lamarck subsp. heliophila (Mackenzie) W. A. Weber	Cyperaceae	Graminoid		
7	Carex interior	Carex interior L. H. Bailey	Cyperaceae	Graminoid	OBL	FACW
9	Carex jonesii	Carex jonesii L. H. Bailey	Cyperaceae	Graminoid	NO	FACW
10	Carex lachenalii	Carex lachenalii Schkuhr	Cyperaceae	Graminoid		
Not Assigned	Carex laeviculmis	Carex laeviculmis Meinshausen	Cyperaceae	Graminoid	NO	FACW
8	Carex lasiocarpa	Carex lasiocarpa Ehrhart	Cyperaceae	Graminoid	OBL	OBL
9	Carex lenticularis var. lipocarpa	Carex lenticularis Michaux var. lipocarpa (Holm) L. Standley	Cyperaceae	Graminoid	NI	OBL
10	Carex leptalea	Carex leptalea Wahlenberg	Cyperaceae	Graminoid	OBL	OBL
9	Carex limosa	Carex limosa L.	Cyperaceae	Graminoid	OBL	OBL

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10	Carex livida	Carex livida (Wahlenberg) Willdenow	Cyperaceae	Graminoid	NI	NI
Not Assigned	Carex macloviana	Carex macloviana D'Urville	Cyperaceae	Graminoid	NI	NI
9	Carex magellanica ssp. irrigua	Carex magellanica Lamarck subsp. irrigua (J. E. Smith) Hulten	Cyperaceae	Graminoid		OBL
10	Carex maritima	Carex maritima Gunnerus	Cyperaceae	Graminoid		
9	Carex microglochin	Carex microglochin Wahlenberg	Cyperaceae	Graminoid	NI	OBL
5	Carex microptera	Carex festivella Mackenzie	Cyperaceae	Graminoid	NI	FAC
		Carex limnophila F. J. Hermann	Cyperaceae	Graminoid	NI	OBL
		Carex microptera Mackenzie	Cyperaceae	Graminoid	NI	FAC
9	Carex misandra	Carex misandra R. Brown	Cyperaceae	Graminoid	NI	FACU
Not Assigned	Carex molesta	Carex molesta Mackenzie	Cyperaceae	Graminoid	FAC	NI
10	Carex nardina var. hepburnii	Carex nardina E. Fries subsp. hepburnii (F. Boott) Loeve et al.	Cyperaceae	Graminoid	NO	UPL
5	Carex nebrascensis	Carex nebrascensis Dewey	Cyperaceae	Graminoid	OBL	OBL
9	Carex nelsonii	Carex nelsonii Mackenzie	Cyperaceae	Graminoid	NI	OBL
Not Assigned	Carex neurophora	Carex neurophora Mackenzie in Abrams	Cyperaceae	Graminoid	NI	FACW
8	Carex nigricans	Carex nigricans C. A. Meyer	Cyperaceae	Graminoid	NI	FACW
8	Carex norvegica	Carex norvegica Retzius	Cyperaceae	Graminoid	NI	FACW
		Carex norvegica Retzius subsp. norvegica	Cyperaceae	Graminoid	NI	FACW
8	Carex norvegica ssp. stevenii	Carex norvegica Retzius subsp. stevenii (Holm) D. Murray	Cyperaceae	Graminoid	NO	FACW
10	Carex nova	Carex nova A. Nelson	Cyperaceae	Graminoid	NI	FAC
8	Carex obtusata	Carex obtusata Liljeblad	Cyperaceae	Graminoid		
7	Carex occidentalis	Carex occidentalis L. H. Bailey	Cyperaceae	Graminoid		
8	Carex oreocharis	Carex oreocharis Holm	Cyperaceae	Graminoid		
Not Assigned	Carex pachystachya	Carex pachystachya Chamisso ex Steudel	Cyperaceae	Graminoid	NI	FACU
7	Carex parryana	Carex parryana Dewey	Cyperaceae	Graminoid	FACW	FACW
		Carex parryana Dewey subsp. parryana	Cyperaceae	Graminoid	FACW	FACW
10	Carex peckii	Carex peckii E. C. Howe	Cyperaceae	Graminoid	UPL	
6	Carex pellita	Carex lanuginosa Michaux	Cyperaceae	Graminoid	OBL	OBL
10	Carex pelocarpa	Carex pelocarpa F. J. Hermann	Cyperaceae	Graminoid	NI	FACU
10	Carex perglobosa	Carex perglobosa Mackenzie	Cyperaceae	Graminoid		
Not Assigned	Carex petasata	Carex petasata Dewey	Cyperaceae	Graminoid	NI	NI

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9	Carex phaeocephala	Carex phaeocephala Piper	Cyperaceae	Graminoid	NI	UPL
8	Carex pityophila	Carex pityophila Mackenzie	Cyperaceae	Graminoid		
9	Carex praeceptorium	Carex praeceptorum Mackenzie	Cyperaceae	Graminoid	NO	OBL
5	Carex praegracilis	Carex praegracilis F. Boott	Cyperaceae	Graminoid	FACW	FACW
6	Carex praticola	Carex praticola Rydberg	Cyperaceae	Graminoid	FACW	FACU*
10	Carex pseudoscirpoidea	Carex pseudoscirpoidea Rydberg	Cyperaceae	Graminoid	NO	FACU
10	Carex pyrenaica ssp. pyrenaica	Carex crandallii Gandoger	Cyperaceae	Graminoid		FACW
8	Carex raynoldsii	Carex raynoldsii Dewey	Cyperaceae	Graminoid	NI	FAC*
7	Carex retrorsa	Carex retrorsa Schweinitz	Cyperaceae	Graminoid	NO	OBL
6	Carex rossii	Carex brevipes F. Boott	Cyperaceae	Graminoid		
		Carex rossii F. Boott in Hooker	Cyperaceae	Graminoid		
9	Carex rupestris var. drummondiana	Carex rupestris Allioni subsp. drummondiana (Dewey) Holub	Cyperaceae	Graminoid	NO	UPL
9	Carex sartwellii	Carex sartwellii Dewey	Cyperaceae	Graminoid	OBL	OBL
8	Carex saxatilis	Carex saxatilis L. subsp. laxa (Trautvetter) Kalela	Cyperaceae	Graminoid	NI	OBL
10	Carex saximontana	Carex saximontana Mackenzie	Cyperaceae	Graminoid		
9	Carex scirpoidea	Carex scirpoidea Michaux (also see C. pseudoscirpoidea)	Cyperaceae	Graminoid	NO	FACU
6	Carex scoparia	Carex scoparia Schkuhr ex Willdenow	Cyperaceae	Graminoid	FACW	FACW
7	Carex scopulorum	Carex scopulorum Holm	Cyperaceae	Graminoid	NI	FACW
6	Carex simulata	Carex simulata Mackenzie	Cyperaceae	Graminoid	NI	FACW+
10	Carex sprengelii	Carex sprengelii Dewey ex Sprengel	Cyperaceae	Graminoid	FAC-	FAC
Not Assigned	Carex stenoptila	Carex stenoptila F. J. Hermann	Cyperaceae	Graminoid		
Not Assigned	Carex stipata	Carex stipata Mühlenberg ex Willdenow	Cyperaceae	Graminoid	OBL	OBL
*	Carex sychnocephala	Carex sychnocephala Carey	Cyperaceae	Graminoid	NI	FACW
10	Carex tenuiflora	Carex tenuiflora Wahlenberg	Cyperaceae	Graminoid	NO	OBL
8	Carex torreyi	Carex torreyi Tuckerman	Cyperaceae	Graminoid	UPL	UPL
5	Carex utriculata	Carex utriculata F. Boott	Cyperaceae	Graminoid	OBL	OBL
Not Assigned	Carex vallicola	Carex vallicola Dewey	Cyperaceae	Graminoid		
10	Carex vernacula	Carex vernacula L. H. Bailey	Cyperaceae	Graminoid	NI	FACW
*	Carex vesicaria	Carex vesicaria L.	Cyperaceae	Graminoid	OBL	OBL
9	Carex viridula	Carex viridula Michaux	Cyperaceae	Graminoid	OBL	OBL

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5	Carex vulpinoidea	Carex vulpinoidea Michaux	Cyperaceae	Graminoid	OBL	OBL
Not Assigned	Carex xerantica	Carex xerantica L. H. Bailey	Cyperaceae	Graminoid		
*	Carthamus tinctorius	Carthamus tinctorius L.	Asteraceae	Forb		
*	Carum carvi	Carum carvi L.	Apiaceae	Forb	NI	FACU
*	Caryopteris ×clandonensis	Caryopteris clandonensis A. Simmonds ex Rehder	Verbenaceae	Shrub		
7	Castilleja applegatei ssp. martinii	Castilleja chromosa A. Nelson	Scrophulariaceae	Forb		
7	Castilleja flava	Castilleja flava S. Watson	Scrophulariaceae	Forb		
9	Castilleja haydenii	Castilleja haydenii (A. Gray) Cockerell	Scrophulariaceae	Forb		
6	Castilleja integra	Castilleja integra A. Gray in Torrey	Scrophulariaceae	Forb		
6	Castilleja linariifolia	Castilleja linariifolia Bentham in De Candolle	Scrophulariaceae	Forb		
8	Castilleja lineata	Castilleja lineata Greene	Scrophulariaceae	Forb	NI	FACW
7	Castilleja miniata	Castilleja miniata Douglas ex Hooker	Scrophulariaceae	Forb	NI	FAC
8	Castilleja minor	Castilleja minor A. Gray	Scrophulariaceae	Forb	NI	OBL
8	Castilleja occidentalis	Castilleja occidentalis Torrey	Scrophulariaceae	Forb	NI	FACU
8	Castilleja puberula	Castilleja puberula Rydberg	Scrophulariaceae	Forb		
8	Castilleja rhexiifolia	Castilleja rhexiifolia Rydberg	Scrophulariaceae	Forb	NI	FACU
9	Castilleja scabrida	Castilleja scabrida Eastwood	Scrophulariaceae	Forb		
7	Castilleja sessiliflora	Castilleja sessiliflora Pursh	Scrophulariaceae	Forb		
7	Castilleja sulphurea	Castilleja sulphurea Rydberg	Scrophulariaceae	Forb	NI	FACU
7	Catabrosa aquatica	Catabrosa aquatica (L.) P. Beauvois	Poaceae	Graminoid	OBL	OBL
6	Caulanthus crassicaulis	Caulanthus crassicaulis (Torrey) S. Watson	Brassicaceae	Forb		
7	Ceanothus fendleri	Ceanothus fendleri A. Gray	Rhamnaceae	Shrub		
7	Ceanothus herbaceus	Ceanothus herbaceus Rafinesque	Rhamnaceae	Shrub		
7	Ceanothus martinii	Ceanothus martinii Jones	Rhamnaceae	Shrub		
7	Ceanothus velutinus	Ceanothus velutinus Douglas ex Hooker	Rhamnaceae	Shrub		
6	Celtis laevigata var. reticulata	Celtis reticulata Torrey	Ulmaceae	Shrub	FACW	FAC
1	Cenchrus longispinus	Cenchrus longispinus (Hackel in Kneucker) Fernald	Poaceae	Graminoid		
*	Centaurea biebersteinii	Acosta maculosa (L.) Holub	Asteraceae	Forb		
*	Centaurea cyanus	Leucacantha cyanus (L.) Nieuwland & Lunell	Asteraceae	Forb		
*	Centaurea diffusa	Acosta diffusa (Lamarck) Sojak	Asteraceae	Forb		
*	Centaurea eriophora	Jacea pratensis Lamarck	Asteraceae	Forb		

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*	Centaurea macrocephala	Grossheimia macrocephala (Mussin-Puschkin) Sosnowsky & Takhtajan	Asteraceae	Forb		
*	Centaurea solstitialis	Leucantha solstitialis (L.) Loeve & Loeve	Asteraceae	Forb		
7	Centaurium calycosum	Centaurium calycosum (Buckley) Fernald	Gentianaceae	Forb	NO	FACW
7	Centaurium exaltatum	Centaurium exaltatum (Grisebach) W. F. Wight ex Piper	Gentianaceae	Forb	OBL	FACW
*	Centaurium pulchellum	Centaurium pulchellum (Swartz) Druce	Gentianaceae	Forb	NI	NO
5	Cerastium arvense ssp. strictum	Cerastium strictum L. {emend.} Haenke	Caryophyllaceae	Forb	FACU	UPL
7	Cerastium beeringianum ssp. earlei	Cerastium beeringianum Chamisso & Schlechtendal subsp. earlei (Rydberg) Hulten	Caryophyllaceae	Forb	NO	FAC
Not Assigned	Cerastium brachypodum	Cerastium nutans Rafinesque var. brachypodum Engelmann ex A. Gray	Caryophyllaceae	Forb	FACU	FAC
*	Cerastium fontanum	Cerastium fontanum Baumgartner	Caryophyllaceae	Forb		FACU
*	Ceratocephala testiculata	Ceratocephala orthoceras De Candolle	Ranunculaceae	Forb		
1	Ceratophyllum demersum	Ceratophyllum demersum L.	Ceratophyllaceae	Forb	OBL	OBL
8	Cercocarpus intricatus	Cercocarpus intricatus S. Watson	Rosaceae	Shrub		
7	Cercocarpus ledifolius	Cercocarpus ledifolius Nuttall ex Torrey & Gray	Rosaceae	Shrub		
6	Cercocarpus montanus	Cercocarpus montanus Rafinesque	Rosaceae	Shrub		
5	Chaenactis douglasii	Chaenactis douglasii (Hooker) Hooker & Arnott	Asteraceae	Forb		
6	Chaenactis douglasii var. alpina	Chaenactis alpina (A. Gray) Jones	Asteraceae	Forb		
3	Chaenactis stevioides	Chaenactis stevioides Hooker & Arnott	Asteraceae	Forb		
*	Chaenorhinum minus	Chaenorrhinum minus (L.) J. Lange in Willkomm & Lange	Scrophulariaceae	Forb		
4	Chaetopappa ericoides	Chaetopappa ericoides (A. Gray) Nesom	Asteraceae	Forb		
9	Chamaechaenactis scaposa	Chamaechaenactis scaposa (Eastwood) Rydberg	Asteraceae	Forb		
Not Assigned	Chamaerhodos erecta ssp. nuttallii	Chamaerhodos erecta (L.) Bunge subsp. nuttallii (Pickering ex Rydberg) Hulten	Rosaceae	Forb		
5	Chamaesaracha coniodes	Chamaesaracha coniodes (Moricand) Britton	Solanaceae	Forb		
5	Chamaesaracha coronopus	Chamaesaracha coronopus (Dunal) A. Gray	Solanaceae	Forb		
5	Chamaesyce fendleri	Chamaesyce fendleri (Torrey & Gray) Small	Euphorbiaceae	Forb		
5	Chamaesyce geyeri	Chamaesyce geyeri (Engelmann) Small	Euphorbiaceae	Forb		
2	Chamaesyce glyptosperma	Chamaesyce glyptosperma (Engelmann) Small	Euphorbiaceae	Forb		
7	Chamaesyce lata	Chamaesyce lata (Engelmann) Small	Euphorbiaceae	Forb		

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*	Chamaesyce maculata	Chamaesyce supina (Rafinesque) Moldenke	Euphorbiaceae	Forb		UPL
6	Chamaesyce missurica	Chamaesyce missurica (Rafinesque) Shinners	Euphorbiaceae	Forb		
Not Assigned	Chamaesyce parryi	Chamaesyce parryi (Engelmann) Rydberg	Euphorbiaceae	Forb		
4	Chamaesyce revoluta	Chamaesyce revoluta (Engelmann) Small	Euphorbiaceae	Forb		
*	Chamaesyce serpens	Chamaesyce serpens (Humboldt, Bonpland, & Kunth) Small	Euphorbiaceae	Forb	UPL	NO
*	Chamaesyce serpyllifolia	Chamaesyce serpyllifolia (Persoon) Small	Euphorbiaceae	Forb		
1	Chamaesyce stictospora	Chamaesyce stictospora (Engelmann) Small	Euphorbiaceae	Forb		
4	Chamerion angustifolium ssp. circumvagum	Chamerion danielsii D. Loeve	Onagraceae	Forb	FAC	FACU
7	Chamerion latifolium	Chamerion subdentatum (Rydberg) Loeve & Loeve	Onagraceae	Forb	NO	FACW
9	Cheilanthes eatonii	Cheilanthes eatonii J. G. Baker in Hooker & Baker	Pteridaceae	Forb		
9	Cheilanthes feei	Cheilanthes feei T. Moore	Pteridaceae	Forb		
9	Cheilanthes fendleri	Cheilanthes fendleri Hooker	Pteridaceae	Forb		
9	Cheilanthes wootonii	Cheilanthes wootonii Maxon	Pteridaceae	Forb		
*	Chenopodium album	Chenopodium album L.	Chenopodiaceae	Forb	FAC	FACU
2	Chenopodium album var. missouriense	Chenopodium missouriense Aellen	Chenopodiaceae	Forb		
3	Chenopodium album var. striatum	Chenopodium strictum Roth	Chenopodiaceae	Forb		
*	Chenopodium ambrosioides var. ambrosioides	Teloxys ambrosioides (L.) W. A. Weber	Chenopodiaceae	Forb	FAC	FAC-
5	Chenopodium atrovirens	Chenopodium aridum Nelson	Chenopodiaceae	Forb		
		Chenopodium atrovirens Rydberg	Chenopodiaceae	Forb		
2	Chenopodium berlandieri	Chenopodium berlandieri Moquin	Chenopodiaceae	Forb		
*	Chenopodium botrys	Teloxys botrys (L.) W. A. Weber	Chenopodiaceae	Forb	FACU	FACU
*	Chenopodium capitatum	Chenopodium capitatum (L.) Ascherson	Chenopodiaceae	Forb		
9	Chenopodium cycloides	Chenopodium cycloides A. Nelson	Chenopodiaceae	Forb		
3	Chenopodium desiccatum	Chenopodium desiccatum A. Nelson	Chenopodiaceae	Forb		
		Chenopodium leptophyllum (Nuttall ex Moquin) S. Watson var. oblongifolium S. Watson	Chenopodiaceae	Forb	NI	FACU
*	Chenopodium foliosum	Chenopodium foliosum (Moench) Ascherson	Chenopodiaceae	Forb	NI	FACU*
6	Chenopodium fremontii	Chenopodium fremontii S. Watson	Chenopodiaceae	Forb	UPL	FACU

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*	Chenopodium glaucum	Chenopodium glaucum L.	Chenopodiaceae	Forb	FACW	FACW
*	Chenopodium graveolens	Teloxys graveolens (Willdenow) W. A. Weber	Chenopodiaceae	Forb		
Not Assigned	Chenopodium hians	Chenopodium hians Standley	Chenopodiaceae	Forb		
5	Chenopodium incanum	Chenopodium incanum (S. Watson) Heller	Chenopodiaceae	Forb		
5	Chenopodium leptophyllum	Chenopodium leptophyllum (Nuttall ex Moquin) S. Watson	Chenopodiaceae	Forb	NI	FACU
		Chenopodium leptophyllum (Nuttall ex Moquin) S. Watson var. leptophyllum	Chenopodiaceae	Forb	FACU	FACU
4	Chenopodium pratericola	Chenopodium pratericola Rydberg	Chenopodiaceae	Forb		
2	Chenopodium rubrum	Chenopodium rubrum L.	Chenopodiaceae	Forb	OBL	OBL
2	Chenopodium simplex	Chenopodium simplex (Torrey) Rafinesque	Chenopodiaceae	Forb		
5	Chenopodium subglabrum	Chenopodium subglabrum (S. Watson) A. Nelson	Chenopodiaceae	Forb		
4	Chenopodium watsonii	Chenopodium watsonii A. Nelson	Chenopodiaceae	Forb		
9	Chimaphila umbellata ssp. occidentalis	Chimaphila umbellata (L.) W. Barton subsp. occidentalis (Rydberg) Hulten	Pyrolaceae	Shrub		
9	Chionophila jamesii	Chionophila jamesii Bentham in De Candolle	Scrophulariaceae	Forb	NI	FACU
1	Chloris verticillata	Chloris verticillata Nuttall	Poaceae	Graminoid		
*	Chloris virgata	Chloris virgata Swartz	Poaceae	Graminoid	NI	NI
*	Chorispora tenella	Chorispora tenella (Pallas) De Candolle	Brassicaceae	Forb		
*	Chrysanthemum coccineum	Chrysanthemum coccineum Willdenow	Asteraceae	Forb		
*	Chrysanthemum coronarium	Chrysanthemum coronarium L.	Asteraceae	Forb		
10	Chrysosplenium tetrandrum	Chrysosplenium tetrandrum (N. Lund) Th. Fries	Saxifragaceae	Forb	NI	OBL
3	Chrysothamnus baileyi	Chrysothamnus pulchellus (A. Gray) Greene subsp. baileyi (Wooton & Standley) Hall & Clements	Asteraceae	Shrub		
6	Chrysothamnus depressus	Chrysothamnus depressus Nuttall	Asteraceae	Shrub		
6	Chrysothamnus greenei	Chrysothamnus greenei (A. Gray) Greene	Asteraceae	Shrub		
		Chrysothamnus greenei (A. Gray) Greene subsp. filifolius (Rydberg) Hall & Clements	Asteraceae	Shrub		
		Chrysothamnus greenei (A. Gray) Greene subsp. greenei	Asteraceae	Shrub		
6	Chrysothamnus linifolius	Chrysothamnus linifolius Greene	Asteraceae	Shrub	NO	FAC
Not Assigned	Chrysothamnus vaseyi	Chrysothamnus vaseyi (A. Gray) Greene	Asteraceae	Shrub		
5	Chrysothamnus viscidiflorus	Chrysothamnus viscidiflorus (Hooker) Nuttall	Asteraceae	Shrub		

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Not Assigned	Chrysothamnus viscidiflorus ssp. axillaris	Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. axillaris (Keck) L. C. Anderson	Asteraceae	Shrub		
5	Chrysothamnus viscidiflorus ssp. lanceolatus	Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. elegans (Greene) Hall & Clements	Asteraceae	Shrub		
		Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. lanceolatus (Nuttall) Hall & Clements	Asteraceae	Shrub		
Not Assigned	Chrysothamnus viscidiflorus ssp. puberulus	Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. puberulus (D. C. Eaton) Hall & Clements	Asteraceae	Shrub		
4	Chrysothamnus viscidiflorus ssp. viscidiflorus	Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. viscidiflorus	Asteraceae	Shrub		
Not Assigned	Chrysothamnus viscidiflorus ssp. viscidiflorus var. latifolius	Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. latifolius (D. C. Eaton) Hall & Clements	Asteraceae	Shrub		
4	Chrysothamnus viscidiflorus ssp. viscidiflorus var. stenophyllus	Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. stenophyllus (A. Gray) Hall & Clements	Asteraceae	Shrub		
4	Chrysothamnus viscidiflorus ssp. viscidiflorus var. viscidiflorus	Chrysothamnus viscidiflorus (Hooker) Nuttall subsp. pumilus (Nuttall) Hall & Clements	Asteraceae	Shrub		
*	Cichorium intybus	Cichorium intybus L.	Asteraceae	Forb	NI	FACU
3	Cicuta douglasii	Cicuta douglasii (De Candolle) Coulter & Rose	Apiaceae	Forb	NI	OBL
6	Cinna latifolia	Cinna latifolia (Treviranus) Grisebach in Ledebour	Poaceae	Graminoid	NI	OBL
8	Circaea alpina	Circaea alpina L.	Onagraceae	Forb	FACW	FACW
8	Circaea alpina ssp. alpina	Circaea alpina L. subsp. alpina	Onagraceae	Forb	FACW	FACW
8	Circaea alpina ssp. pacifica	Circaea alpina L. subsp. pacifica (Ascherson & Magnus) Raven	Onagraceae	Forb	FACW	FACW
5	Cirsium araneans	Cirsium araneans Rydberg	Asteraceae	Forb		
*	Cirsium arvense	Breea arvensis (L.) Lessing	Asteraceae	Forb	FACU	FACU
		Breea incana (S. G. Gmelin) W. A. Weber, ined.	Asteraceae	Forb	FACU	FACU
6	Cirsium barnebyi	Cirsium barnebyi Welsh & Neese	Asteraceae	Forb		
8	Cirsium calcareum	Cirsium calcareum (Jones) Wooton & Standley	Asteraceae	Forb		
6	Cirsium canescens	Cirsium canescens Nuttall	Asteraceae	Forb		
6	Cirsium eatonii	Cirsium eatonii (Gray) Robinson	Asteraceae	Forb		
		Cirsium tweedyi (Rydberg) Petrak	Asteraceae	Forb		
3	Cirsium flodmanii	Cirsium flodmanii (Rydberg) Arthur	Asteraceae	Forb	NI	NI
4	Cirsium neomexicanum	Cirsium neomexicanum A. Gray	Asteraceae	Forb		

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4	Cirsium ochrocentrum	Cirsium ochrocentrum A. Gray	Asteraceae	Forb		
6	Cirsium osterhoutii	Cirsium osterhoutii (Rydberg) Petrak	Asteraceae	Forb		
9	Cirsium ownbeyi	Cirsium ownbeyi Welsh	Asteraceae	Forb		
Not Assigned	Cirsium pallidum	Cirsium pallidum Wooton & Standley	Asteraceae	Forb	NO	FACW
5	Cirsium parryi	Cirsium parryi (A. Gray) Petrak	Asteraceae	Forb	NI	FACW
6	Cirsium perplexans	Cirsium perplexans (Rydberg) Petrak	Asteraceae	Forb		
6	Cirsium remotifolium ssp. oregonense	Cirsium centaureae (Rydberg) K. Schumann	Asteraceae	Forb		
Not Assigned	Cirsium scapanolepis	Cirsium scapanolepis Petrak	Asteraceae	Forb		
6	Cirsium scariosum	Cirsium scariosum Nuttall	Asteraceae	Forb	NO	NI
6	Cirsium scopulorum	Cirsium hesperium (Eastwood) Petrak	Asteraceae	Forb		
		Cirsium scopulorum (Greene) Cockerell	Asteraceae	Forb		
5	Cirsium tioganum var. coloradense	Cirsium coloradense (Rydberg) Cockerell	Asteraceae	Forb	NI	NI
5	Cirsium undulatum	Cirsium undulatum (Nuttall) Sprengel	Asteraceae	Forb	FACU	FACU
5	Cirsium undulatum var. tracyi	Cirsium tracyi (Rydberg) Petrak	Asteraceae	Forb		
*****	Cirsium vulgare	Cirsium vulgare (Savi) Tenore	Asteraceae	Forb	UPL	FAC
7	Claytonia lanceolata	Claytonia lanceolata Pursh	Portulacaceae	Forb	NI	UPL
8	Claytonia megarhiza	Claytonia megarhiza (Parry ex A. Gray) S. Watson	Portulacaceae	Forb	NI	FACU-
7	Claytonia rosea	Claytonia rosea Rydberg	Portulacaceae	Forb		
7	Claytonia rubra	Claytonia rubra (Howell) Tidestrom	Portulacaceae	Forb		FAC-
6	Clematis columbiana	Atragene occidentalis Hornemann	Ranunculaceae	Vine		
6	Clematis columbiana var. columbiana	Atragene columbiana Nuttall	Ranunculaceae	Vine		
6	Clematis hirsutissima var. hirsutissima	Coriflora hirsutissima (Pursh) W. A. Weber	Ranunculaceae	Forb		
6	Clematis hirsutissima var. scottii	Coriflora scottii (T. C. Porter in Porter & Coulter) W. A. Weber	Ranunculaceae	Forb		
4	Clematis ligusticifolia	Clematis ligusticifolia Nuttall ex Torrey & Gray	Ranunculaceae	Vine	FACU	FACU
*****	Clematis orientalis	Viticella orientalis (L.) W. A. Weber	Ranunculaceae	Vine		
3	Cleome lutea	Cleome lutea Hooker	Capparaceae	Forb	FACU	UPL
4	Cleome multicaulis	Cleome multicaulis Sesse & Mocino ex De Candolle	Capparaceae	Forb		FACW
2	Cleome serrulata	Cleome serrulata Pursh	Capparaceae	Forb	FACU	FACU
6	Cleomella angustifolia	Cleomella angustifolia Torrey	Capparaceae	Forb	FAC	NI
Not Assigned	Cleomella palmeriana	Cleomella palmerana Jones	Capparaceae	Forb		

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*	Clinopodium vulgare	Clinopodium vulgare L.	Lamiaceae	Forb		
7	Coeloglossum viride var. virescens	Coeloglossum viride (L.) C. J. Hartman subsp. bracteatum (Muhlenberg ex Willdenow) Hulten	Orchidaceae	Forb	FAC	FAC
6	Coleogyne ramosissima	Coleogyne ramosissima Torrey	Rosaceae	Shrub		
4	Collinsia parviflora	Collinsia parviflora Douglas in Lindley	Scrophulariaceae	Forb		
5	Collomia grandiflora	Collomia grandiflora Douglas ex Lindley	Polemoniaceae	Forb		
4	Collomia linearis	Collomia linearis Nuttall	Polemoniaceae	Forb	FACU	FACU
*	Colutea arborescens	Colutea arborescens L.	Fabaceae	Shrub		
5	Comandra umbellata ssp. pallida	Comandra umbellata (L.) Nuttall subsp. pallida (A. De Candolle) Piehl	Santalaceae	Forb	UPL	UPL
9	Comarum palustre	Comarum palustre L.	Rosaceae	Forb	OBL	OBL
9	Commelina dianthifolia	Commelina dianthifolia Delile	Commelinaceae	Forb		
5	Commelina erecta var. angustifolia	Commelina erecta L. var. angustifolia (Michaux) Fernald	Commelinaceae	Forb		
10	Conimitella williamsii	Conimitella williamsii (D. C. Eaton) Rydberg	Saxifragaceae	Forb		
7	Conioselinum scopulorum	Conioselinum scopulorum (A. Gray) Coulter & Rose	Apiaceae	Forb	NI	FACW
*	Conium maculatum	Conium maculatum L.	Apiaceae	Forb	FACW	FACW
Not Assigned	Conopholis alpina var. mexicana	Conopholis alpina Liebmann var. mexicana (A. Gray ex S. Watson) Haynes	Orobanchaceae	Forb		
		Orobanche multiflora Nuttall var. multiflora	Orobanchaceae	Forb		
*	Conringia orientalis	Conringia orientalis (L.) Dumont de Cours	Brassicaceae	Forb		
*	Convolvulus arvensis	Convolvulus arvensis L.	Convolvulaceae	Vine, Forb/herb		
2	Convolvulus equitans	Convolvulus equitans Bentham	Convolvulaceae	Vine, Forb/herb	NI	NI
*	Conyza canadensis	Conyza canadensis (L.) Cronquist	Asteraceae	Forb	FACW	UPL
7	Corallorrhiza maculata	Corallorhiza maculata Rafinesque	Orchidaceae	Forb	UPL	UPL
7	Corallorrhiza striata	Corallorhiza striata Lindley	Orchidaceae	Forb	UPL	FACU-
8	Corallorrhiza trifida	Corallorhiza trifida (L.) Chatelain	Orchidaceae	Forb	FAC	FAC
Not Assigned	Corallorrhiza wisteriana	Corallorhiza wisteriana Conrad	Orchidaceae	Forb	FACU	FACU
5	Cordylanthus ramosus	Cordylanthus ramosus Nuttall	Scrophulariaceae	Forb		
5	Cordylanthus wrightii	Cordylanthus wrightii A. Gray	Scrophulariaceae	Forb		
*	Coreopsis lanceolata	Coreopsis lanceolata L.	Asteraceae	Forb	UPL	NI
3	Coreopsis tinctoria	Coreopsis tinctoria Nuttall	Asteraceae	Forb	FAC	NI

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4	Corispermum americanum	Corispermum americanum (Nuttall) Nuttall	Chenopodiaceae	Forb		
*	Corispermum americanum var. rydbergii	Corispermum hyssopifolium L.	Chenopodiaceae	Forb	FACU	FACU
6	Corispermum navicula	Corispermum navicula Mosyakin	Chenopodiaceae	Forb		
Not Assigned	Corispermum villosum	Corispermum villosum Rydberg	Chenopodiaceae	Forb		
9	Cornus canadensis	Chamaepericlymenum canadense (L.) Ascherson & Graebner	Cornaceae	Forb	FAC	FAC
7	Cornus sericea ssp. sericea	Swida sericea (L.) Holub	Cornaceae	Shrub	FACW	FACW
*	Coronilla varia	Securigera varia (L.) Lassen	Fabaceae	Vine, Forb/herb		
5	Corydalis aurea	Corydalis aurea Willdenow	Fumariaceae	Forb		
7	Corydalis caseana	Corydalis caseana A. Gray subsp. brandegei (S. Watson) G. Ownbey	Fumariaceae	Forb	NI	FACW
5	Corydalis curvisiliqua ssp. occidentalis	Corydalis curvisiliqua Engelmann subsp. occidentalis (Engelmann ex A. Gray) W. A. Weber	Fumariaceae	Forb		
8	Corylus cornuta	Corylus cornuta H. Marshall	Betulaceae	Shrub	UPL	FACU
*	Cosmos bipinnatus	Cosmos bipinnatus Cavanilles	Asteraceae	Forb	NI	FACW
*	Cosmos parviflorus	Cosmos parviflorus (Jacquin) Humboldt, Bonpland, & Kunth	Asteraceae	Forb	NI	NI
Not Assigned	Crassula aquatica	Crassula aquatica (L.) Schonland	Crassulaceae	Forb	NO	OBL
5	Crataegus chrysocarpa	Crataegus chrysocarpa Ashe	Rosaceae	Shrub		
6	Crataegus erythropoda	Crataegus erythropoda Ashe	Rosaceae	Shrub	NI	NI
6	Crataegus rivularis	Crataegus rivularis Nuttall	Rosaceae	Shrub		FAC
6	Crataegus saligna	Crataegus saligna Greene	Rosaceae	Shrub		
5	Crataegus succulenta	Crataegus macracantha Loddiges var. occidentalis (Britton) Eggleston	Rosaceae	Shrub		
		Crataegus succulenta Schrader ex Link	Rosaceae	Shrub		
6	Crepis acuminata ssp. acuminata	Psilochenia acuminata (Nuttall) W. A. Weber	Asteraceae	Forb		
Not Assigned	Crepis atribarba ssp. atribarba	Psilochenia atribarba (Heller) W. A. Weber	Asteraceae	Forb		
*	Crepis capillaris	Crepis capillaris (L.) Wallroth	Asteraceae	Forb	NI	FACU*
6	Crepis intermedia	Psilochenia intermedia (A. Gray) W. A. Weber	Asteraceae	Forb		
Not Assigned	Crepis modocensis ssp. modocensis	Psilochenia modocensis (Greene) W. A. Weber	Asteraceae	Forb		
9	Crepis nana ssp. nana	Askellia nana (Richardson) W. A. Weber	Asteraceae	Forb		

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3	Crepis occidentalis	Psilochenia occidentalis (Nuttall) Nuttall subsp. occidentalis	Asteraceae	Forb		
Not Assigned	Crepis occidentalis ssp. costata	Psilochenia occidentalis (Nuttall) Nuttall subsp. costata (A. Gray) W. A. Weber	Asteraceae	Forb		
6	Crepis occidentalis ssp. occidentalis	Psilochenia occidentalis (Nuttall) Nuttall	Asteraceae	Forb		
6	Crepis runcinata ssp. runcinata	Psilochenia runcinata (James ex Torrey) Loeve & Loeve	Asteraceae	Forb	FAC	FACW
2	Croton texensis	Croton texensis (Klotsch) Muller-Argoviensis in De Candolle	Euphorbiaceae	Forb		
*****	Crypsis alopecuroides	Crypsis alopecuroides (Piller & Mitterp) Schrader	Poaceae	Graminoid	NO	OBL
Not Assigned	Cryptantha ambigua	Cryptantha ambigua (A. Gray) Greene	Boraginaceae	Forb		
5	Cryptantha aperta	Oreocarya aperta Eastwood	Boraginaceae	Shrub		
6	Cryptantha bakeri	Oreocarya bakeri Greene	Boraginaceae	Forb		
Not Assigned	Cryptantha breviflora	Oreocarya breviflora Osterhout	Boraginaceae	Forb		
Not Assigned	Cryptantha caespitosa	Oreocarya caespitosa A. Nelson	Boraginaceae	Forb		
9	Cryptantha cana	Oreocarya cana A. Nelson	Boraginaceae	Forb		
6	Cryptantha celosioides	Oreocarya celosioides Eastwood	Boraginaceae	Forb		
6	Cryptantha cinerea var. jamesii	Oreocarya suffruticosa (Torrey) Greene	Boraginaceae	Forb		
8	Cryptantha cinerea var. pustulosa	Oreocarya pustulosa Rydberg	Boraginaceae	Forb		
Not Assigned	Cryptantha circumscissa	Cryptantha circumscissa (Hooker & Arnott) I. M. Johnston	Boraginaceae	Forb		
3	Cryptantha crassisepala	Cryptantha crassisepala (Torrey & Gray) Greene	Boraginaceae	Forb		
4	Cryptantha crassisepala var. crassisepala	Cryptantha crassisepala (Torrey & Gray) Greene var. crassisepala	Boraginaceae	Forb		
0	Cryptantha crassisepala var. elachantha	Cryptantha crassisepala (Torrey & Gray) Greene var. elachantha I.M. Johnston	Boraginaceae	Forb		
8	Cryptantha elata	Oreocarya elata Eastwood	Boraginaceae	Forb		
3	Cryptantha fendleri	Cryptantha fendleri (A. Gray) Greene	Boraginaceae	Forb		
7	Cryptantha flava	Oreocarya flava A. Nelson	Boraginaceae	Forb		
7	Cryptantha flavoculata	Oreocarya flavoculata A. Nelson	Boraginaceae	Forb		
6	Cryptantha fulvocanescens var. nitida	Oreocarya nitida Greene	Boraginaceae	Forb		
8	Cryptantha gracilis	Cryptantha gracilis Osterhout	Boraginaceae	Forb		

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6	Cryptantha humilis	Oreocarya humilis Greene subsp. nana (Eastwood) W. A. Weber	Boraginaceae	Forb		
7	Cryptantha longiflora	Oreocarya longiflora A. Nelson	Boraginaceae	Forb		
Not Assigned	Cryptantha mensana	Oreocarya mensana (Jones) Payson	Boraginaceae	Forb		
3	Cryptantha minima	Cryptantha minima Rydberg	Boraginaceae	Forb		
Not Assigned	Cryptantha osterhoutii	Oreocarya osterhoutii Payson	Boraginaceae	Forb		
8	Cryptantha paradoxa	Oreocarya paradoxa A. Nelson	Boraginaceae	Forb		
8	Cryptantha pterocarya	Cryptantha pterocarya (Torrey) Greene	Boraginaceae	Forb		
8	Cryptantha recurvata	Cryptantha recurvata Coville	Boraginaceae	Forb		
8	Cryptantha rollinsii	Oreocarya rollinsii (I. M. Johnston) W. A. Weber	Boraginaceae	Forb		
Not Assigned	Cryptantha scoparia	Cryptantha scoparia A. Nelson	Boraginaceae	Forb		
7	Cryptantha sericea	Oreocarya sericea (A. Gray) Greene	Boraginaceae	Forb		
Not Assigned	Cryptantha stricta	Oreocarya stricta Osterhout	Boraginaceae	Forb		
6	Cryptantha thyrsiflora	Oreocarya thyrsiflora Greene	Boraginaceae	Forb		
5	Cryptantha virgata	Oreocarya virgata (T. C. Porter) Greene	Boraginaceae	Forb		
Not Assigned	Cryptantha watsonii	Cryptantha watsonii (A. Gray) Greene	Boraginaceae	Forb		
Not Assigned	Cryptantha weberi	Oreocarya weberi (I. M. Johnston) W. A. Weber	Boraginaceae	Shrub		
8	Cryptogramma acrostichoides	Cryptogramma acrostichoides R. Brown in Richardson	Pteridaceae	Forb		
10	Cryptogramma stelleri	Cryptogramma stelleri (S. G. Gmelin) Prantl	Pteridaceae	Forb	NI	UPL
2	Cucurbita foetidissima	Cucurbita foetidissima Humboldt, Bonpland, & Kunth	Cucurbitaceae	Vine, Forb/herb		
*****	Cuscuta approximata	Cuscuta epithymum (L.) L. subsp. approximata (Babington) Rouy	Cuscutaceae	Vine, Forb/herb		
Not Assigned	Cuscuta californica var. breviflora	Grammica occidentalis (Millspaugh) Hadac & Chrtek	Cuscutaceae	Vine, Forb/herb		
1	Cuscuta cuspidata	Grammica cuspidata (Engelmann) Hadac & Chrtek	Cuscutaceae	Vine, Forb/herb		
Not Assigned	Cuscuta denticulata var. denticulata	Grammica denticulata (Engelmann in Parry) W. A. Weber	Cuscutaceae	Vine, Forb/herb		
Not Assigned	Cuscuta gronovii var. gronovii	Grammica umbrosa (Hooker) W. A. Weber	Cuscutaceae	Vine, Forb/herb		
4	Cuscuta indecora var. neuropetala	Grammica indecora (Choisy) W. A. Weber var. neuropetala (Engelmann) W. A. Weber	Cuscutaceae	Vine, Forb/herb		
1	Cuscuta pentagona var. pentagona	Grammica campestris (Yuncker) Hadac & Chrtek	Cuscutaceae	Vine, Forb/herb		

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3	Cuscuta umbellata	Grammica umbellata (Humboldt, Bonpland, & Kunth) Hadac & Chrtek	Cuscutaceae	Vine, Forb/herb		
0	Cyclanthera dissecta	Cyclanthera dissecta (Torrey & Gray) Arnott	Cucurbitaceae	Vine, Forb/herb		
2	Cycloloma atriplicifolium	Cycloloma atriplicifolium (Sprengel) Coulter	Chenopodiaceae	Forb	FAC	FACU
*****	Cymbalaria muralis	Cymbalaria muralis P.G. Gaertn., B. Mey. & Scherb.	Scrophulariaceae	Forb		
6	Cymopterus acaulis	Cymopterus acaulis (Pursh) Rafinesque	Apiaceae	Forb		
Not Assigned	Cymopterus acaulis var. fendleri	Cymopterus fendleri A. Gray	Apiaceae	Forb		
5	Cymopterus bulbosus	Cymopterus bulbosus A. Nelson	Apiaceae	Forb		
Not Assigned	Cymopterus duchesnensis	Cymopterus duchesnensis Jones	Apiaceae	Forb		
6	Cymopterus montanus	Cymopterus montanus Torrey & Gray	Apiaceae	Forb		
6	Cymopterus planosus	Cymopterus planosus (Osterhout) Mathias	Apiaceae	Forb		
5	Cymopterus purpurascens	Cymopterus purpurascens (A. Gray) Jones	Apiaceae	Forb		
5	Cymopterus purpureus	Cymopterus purpureus S. Watson	Apiaceae	Forb		
*****	Cynodon dactylon	Cynodon dactylon (L.) Persoon	Poaceae	Graminoid	FACU	FAC
*****	Cynoglossum officinale	Cynoglossum officinale L.	Boraginaceae	Forb	NI	FACU
*****	Cynosurus cristatus	Cynosurus cristatus L.	Poaceae	Graminoid	NI	NI
Not Assigned	Cyperus acuminatus	Cyperus acuminatus Torrey & Hooker	Cyperaceae	Graminoid	OBL	OBL
10	Cyperus bipartitus	Cyperus rivularis Kunth	Cyperaceae	Graminoid	FACW	NI
*****	Cyperus erythrorhizos	Cyperus erythrorhizus Muhlenberg	Cyperaceae	Graminoid	OBL	OBL
*****	Cyperus esculentus	Cyperus esculentus L.	Cyperaceae	Graminoid	FACW	FACW
7	Cyperus fendlerianus	Mariscus fendlerianus (Bockeler) Koyama	Cyperaceae	Graminoid	NI	FAC
4	Cyperus lupulinus ssp. lupulinus	Mariscus filiculmis (M. Vahl) Koyama	Cyperaceae	Graminoid	FACU	NI
*****	Cyperus odoratus	Cyperus odoratus L.	Cyperaceae	Graminoid	FACW	NI
6	Cyperus schweinitzii	Mariscus schweinitzii (Torrey) Koyama	Cyperaceae	Graminoid	FACU	FACU
5	Cyperus squarrosus	Cyperus aristatus Rottboel	Cyperaceae	Graminoid	OBL	OBL
9	Cypripedium fasciculatum	Cypripedium fasciculatum Kellogg ex S. Watson	Orchidaceae	Forb	NI	FACU
9	Cypripedium parviflorum	Cypripedium calceolus L. subsp. parviflorum (Salisbury) Hulten	Orchidaceae	Forb	FACW	FACW
9	Cystopteris fragilis	Cystopteris fragilis (L.) Bernhardi	Dryopteridaceae	Forb	FACU	FACU
10	Cystopteris montana	Cystopteris montana (Lamarck) Bernhardi ex Desvaux	Dryopteridaceae	Forb	NO	FAC+
9	Cystopteris reevesiana	Cystopteris reevesiana Lellinger	Dryopteridaceae	Forb		

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9	Cystopteris tenuis	Cystopteris tenuis (Michaux) Desvaux	Dryopteridaceae	Forb		
9	Cystopteris utahensis	Cystopteris utahensis Windham & Haufler	Dryopteridaceae	Forb		
*	Dactylis glomerata	Dactylis glomerata L.	Poaceae	Graminoid	FACU	FACU
6	Dalea aurea	Dalea aurea Nuttall ex Pursh	Fabaceae	Forb		
7	Dalea candida var. oligophylla	Dalea candida Willdenow var. oligophylla (Torrey) Shinners	Fabaceae	Forb		
8	Dalea cylindriceps	Dalea cylindriceps Barneby	Fabaceae	Forb		
7	Dalea enneandra	Dalea enneandra Nuttall	Fabaceae	Forb		
10	Dalea formosa	Dalea formosa Torrey	Fabaceae	Shrub		
8	Dalea jamesii	Dalea jamesii (Torrey) Torrey & Gray	Fabaceae	Forb		
6	Dalea lanata	Dalea lanata Sprengel	Fabaceae	Forb		
9	Dalea leporina	Dalea leporina (Aiton) Bullock	Fabaceae	Forb	NI	NI
Not Assigned	Dalea multiflora	Dalea multiflora (Nuttall) Shinners	Fabaceae	Forb		
6	Dalea nana var. nana	Dalea nana Torrey var. nana	Fabaceae	Forb		
5	Dalea purpurea	Dalea purpurea Ventenat	Fabaceae	Forb		
8	Dalea tenuifolia	Dalea tenuifolia (A. Gray) Shinners	Fabaceae	Forb		
7	Dalea villosa	Dalea villosa Sprengel	Fabaceae	Forb		
7	Danthonia californica	Danthonia californica Bolander	Poaceae	Graminoid	NI	FAC-
8	Danthonia intermedia	Danthonia intermedia Vasey	Poaceae	Graminoid	NI	FACU
8	Danthonia parryi	Danthonia parryi Scribner	Poaceae	Graminoid		
7	Danthonia spicata	Danthonia spicata (L.) P. Beauvois ex Roemer & Schultes var. pinetorum Piper	Poaceae	Graminoid		
9	Danthonia unispicata	Danthonia unispicata (Thurber) Munro	Poaceae	Graminoid		
4	Dasiphora floribunda	Pentaphylloides floribunda (Pursh) Loeve	Rosaceae	Shrub		FACW*
6	Dasyochloa pulchella	Dasyochloa pulchella (Humboldt, Bonpland, & Kunth) Willdenow ex Rydberg	Poaceae	Graminoid		
*	Datura stramonium	Datura stramonium L.	Solanaceae	Forb		
3	Datura wrightii	Datura wrightii Regel	Solanaceae	Forb		
*	Daucus carota	Daucus carota L.	Apiaceae	Forb		
5	Delphinium ×occidentale	Delphinium occidentale (S. Watson) S. Watson	Ranunculaceae	Forb		FACU
		Delphinium occidentale (S. Watson) S. Watson subsp. cucullatum (A. Nelson) Ewan	Ranunculaceae	Forb		FACU

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		Delphinium occidentale (S. Watson) S. Watson subsp. occidentale	Ranunculaceae	Forb		FACU
		Delphinium occidentale (S. Watson) S. Watson subsp. quercicola Ewan	Ranunculaceae	Forb		FACU
6	Delphinium alpestre	Delphinium ramosum Rydberg var. alpestre (Rydberg) W. A. Weber	Ranunculaceae	Forb		
7	Delphinium barbeyi	Delphinium barbeyi (Huth) Huth	Ranunculaceae	Forb	NI	FAC
5	Delphinium carolinianum ssp. virescens	Delphinium carolinianum Walter subsp. virescens (Nuttall) M. C. Johnston	Ranunculaceae	Forb		
5	Delphinium geyeri	Delphinium geyeri Greene	Ranunculaceae	Forb		
6	Delphinium nuttallianum	Delphinium nuttallianum Pritzel ex Walpers	Ranunculaceae	Forb		
5	Delphinium ramosum	Delphinium ramosum Rydberg	Ranunculaceae	Forb		
		Delphinium ramosum Rydberg var. ramosum	Ranunculaceae	Forb		
6	Delphinium robustum	Delphinium robustum Rydberg	Ranunculaceae	Forb		
6	Delphinium scaposum	Delphinium andersonii A. Gray var. scaposum (Greene) Welsh	Ranunculaceae	Forb		
4	Delphinium wootonii	Delphinium wootonii Rydberg	Ranunculaceae	Forb		
4	Deschampsia caespitosa	Deschampsia cespitosa (L.) P. Beauvois	Poaceae	Graminoid		FACW
		Deschampsia cespitosa (L.) P. Beauvois subsp. alpicola (Rydberg) Loeve et al.	Poaceae	Graminoid		FACW
		Deschampsia cespitosa (L.) P. Beauvois subsp. cespitosa	Poaceae	Graminoid		FACW
3	Descurainia californica	Descurainia californica (A. Gray) O. E. Schulz	Brassicaceae	Forb	NI	UPL
2	Descurainia incana	Descurainia incana (Bernhardi ex Fischer & Meyer) Dorn	Brassicaceae	Forb		
2	Descurainia incana ssp. incisa	Descurainia incisa (Engelmann ex Gray) Britton	Brassicaceae	Forb		
		Descurainia incisa (Engelmann ex Gray) Britton subsp. incisa	Brassicaceae	Forb		
		Descurainia incisa (Engelmann ex Gray) Britton subsp. viscosa (Rydberg) Rollins	Brassicaceae	Forb		
2	Descurainia pinnata	Descurainia pinnata (Walter) Britton	Brassicaceae	Forb		
2	Descurainia pinnata ssp. filipes	Descurainia incisa (Engelmann ex Gray) Britton subsp. filipes (Gray) Rollins	Brassicaceae	Forb		

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2	Descurainia ramosissima	Descurainia ramosissima Rollins	Brassicaceae	Forb		
*	Descurainia sophia	Descurainia sophia (L.) Webb ex Prantl	Brassicaceae	Forb		
9	Desmanthus cooleyi	Desmanthus cooleyi (A. Eaton) Trelease	Fabaceae	Forb		
6	Desmanthus illinoensis	Desmanthus illinoensis (Michaux) MacMillan ex Robinson & Fernald	Fabaceae	Forb	FACU	FACU
Not Assigned	Desmodium obtusum	Desmodium rigidum (Elliott) De Candolle	Fabaceae	Forb		
*	Dianthus armeria	Dianthus armeria L.	Caryophyllaceae	Forb	NI	NI
*	Dianthus deltoides	Dianthus deltoides L.	Caryophyllaceae	Forb	NI	NI
9	Dicentra uniflora	Dicentra uniflora Kellogg	Fumariaceae	Forb		
8	Dichanthelium acuminatum	Dichanthelium acuminatum (Swartz) Gould & Clark	Poaceae	Graminoid	FAC	FACW
		Dichanthelium acuminatum (Swarz) Gould & Clark var. acuminatum	Poaceae	Graminoid	FAC	FACW
Not Assigned	Dichanthelium acuminatum var. sericeum	Dichanthelium acuminatum (Swartz) Gould & Clark var. sericeum (Schmoll) Freckmann	Poaceae	Graminoid	FAC	FACW
7	Dichanthelium linearifolium	Dichanthelium linearifolium (Scribner) Gould	Poaceae	Graminoid		
6	Dichanthelium oligosanthes var. scribnerianum	Dichanthelium oligosanthes (Schultes) Gould var. scribnerianum (Nash) Gould	Poaceae	Graminoid	FACU	FAC
Not Assigned	Dichanthelium wilcoxianum	Dichanthelium wilcoxianum (Vasey) Freckmann	Poaceae	Graminoid		
Not Assigned	Dicoria canescens ssp. brandegeei	Dicoria brandegei A. Gray	Asteraceae	Forb		
*	Digitalis purpurea	Digitalis purpurea L.	Scrophulariaceae	Forb	NI	NI
9	Digitaria californica	Digitaria californica (Bentham) Henrard	Poaceae	Graminoid		
*	Digitaria ischaemum	Digitaria ischaemum (Schreber) Schreber ex Mühlenberg	Poaceae	Graminoid	UPL	FACU
*	Digitaria sanguinalis	Digitaria sanguinalis (L.) Scopoli	Poaceae	Graminoid	FACU	FACU
*	Dimorphocarpa wislizeni	Dimorphocarpa wislizeni (Engelmann) Rollins	Brassicaceae	Forb		
*	Diplotaxis muralis	Diplotaxis muralis (L.) A. De Candolle	Brassicaceae	Forb		
*	Dipsacus fullonum	Dipsacus fullonum L.	Dipsacaceae	Forb	NI	NI
*	Dipsacus laciniatus	Dipsacus laciniatus L.	Dipsacaceae	Forb		
8	Disporum trachycarpum	Prosartes trachycarpa S. Watson	Liliaceae	Forb	NI	NI
4	Distichlis spicata	Distichlis stricta (Torrey) Rydberg	Poaceae	Graminoid	NI	FAC+*
8	Dodecatheon pulchellum	Dodecatheon pulchellum (Rafinesque) Merrill	Primulaceae	Forb	FAC	FACW
Not Assigned	Draba albertina	Draba albertina Greene	Brassicaceae	Forb	NI	NI

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7	Draba aurea	Draba aurea M. Vahl ex Hornemann	Brassicaceae	Forb	NI	UPL
9	Draba borealis	Draba borealis De Candolle	Brassicaceae	Forb		
Not Assigned	Draba breweri var. cana	Draba breweri Watson var. cana (Rydberg) Rollins	Brassicaceae	Forb		
10	Draba crassa	Draba crassa Rydberg	Brassicaceae	Forb		
7	Draba crassifolia	Draba crassifolia R. Graham	Brassicaceae	Forb		
5	Draba cuneifolia	Draba cuneifolia Nuttall ex Torrey & Gray	Brassicaceae	Forb		
9	Draba exunguiculata	Draba exunguiculata (O. E. Schulz) C. L. Hitchcock	Brassicaceae	Forb		
10	Draba fladnizensis	Draba fladnizensis Wulfen	Brassicaceae	Forb		
Not Assigned	Draba globosa	Draba globosa Payson	Brassicaceae	Forb		
9	Draba graminea	Draba graminea Greene	Brassicaceae	Forb		
9	Draba grayana	Draba grayana (Rydberg) C. L. Hitchcock	Brassicaceae	Forb		
9	Draba helleriana	Draba helleriana Greene	Brassicaceae	Forb	NI	FAC
Not Assigned	Draba incerta	Draba incerta Payson	Brassicaceae	Forb		
Not Assigned	Draba lonchocarpa	Draba lonchocarpa Rydberg	Brassicaceae	Forb		
*****	Draba nemorosa	Draba nemorosa L.	Brassicaceae	Forb		
Not Assigned	Draba oligosperma	Draba oligosperma Hooker	Brassicaceae	Forb		
Not Assigned	Draba porsildii	Draba porsildii Mulligan	Brassicaceae	Forb		
Not Assigned	Draba rectifructa	Draba rectifructa C. L. Hitchcock	Brassicaceae	Forb		
4	Draba reptans	Draba reptans (Lamarck) Fernald	Brassicaceae	Forb		
9	Draba smithii	Draba smithii Gilg ex O. E. Schulz	Brassicaceae	Forb		
8	Draba spectabilis	Draba spectabilis Greene	Brassicaceae	Forb	NI	FACU-
10	Draba streptobrachia	Draba streptobrachia Price	Brassicaceae	Forb		
8	Draba streptocarpa	Draba streptocarpa A. Gray	Brassicaceae	Forb		
Not Assigned	Draba ventosa	Draba ventosa A. Gray	Brassicaceae	Forb		
6	Draba weberi	Draba weberi Price & Rollins	Brassicaceae	Forb		
3	Dracocephalum parviflorum	Dracocephalum parviflorum Nuttall	Lamiaceae	Forb	FACU	FACU
10	Drosera rotundifolia	Drosera rotundifolia L.	Droseraceae	Forb	NO	OBL
9	Dryas octopetala ssp. hookeriana	Dryas octopetala L. subsp. hookeriana (Juzepczuk) Hulten	Rosaceae	Forb		
*****	Drymaria effusa var. depressa	Drymaria effusa A. Gray var. depressa (Greene) Duke	Caryophyllaceae	Forb		

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10	Dryopteris expansa	Dryopteris expansa (K. Presl) Fraser-Jenkins & Jermy	Dryopteridaceae	Forb	FACW	NI
9	Dryopteris filix-mas	Dryopteris filix-mas (L.) Schott	Dryopteridaceae	Forb		
2	Dyssodia papposa	Dyssodia papposa (Ventenat) A. S. Hitchcock	Asteraceae	Forb		
8	Echinacea angustifolia	Echinacea angustifolia De Candolle	Asteraceae	Forb		
*****	Echinacea purpurea	Echinacea purpurea	Asteraceae	Forb		
Not Assigned	Echinocereus coccineus var. coccineus	Echinocereus triglochidiatus Engelmann var. melanacanthus (Engelmann) L. Benson	Cactaceae	Shrub		
Not Assigned	Echinocereus fendleri	Echinocereus fendleri (Engelmann) Rumpler	Cactaceae	Shrub		
9	Echinocereus reichenbachii var. perbellus	Echinocereus reichenbachii (Terschek) Haage var. perbellus (Britton & Rose) L. Benson	Cactaceae	Shrub		
7	Echinocereus triglochidiatus	Echinocereus triglochidiatus Engelmann	Cactaceae	Shrub		
5	Echinocereus triglochidiatus var. triglochidiatus	Echinocereus triglochidiatus Engelmann var. gonacanthus (Engelmann & Bigelow) Boissevain & Davidson	Cactaceae	Shrub		
		Echinocereus triglochidiatus Engelmann var. triglochidiatus	Cactaceae	Shrub		
6	Echinocereus viridiflorus	Echinocereus viridiflorus Engelmann	Cactaceae	Shrub		
*****	Echinochloa crus-galli	Echinochloa crus-galli (L.) P. Beauvois	Poaceae	Graminoid	FACW	FACW
3	Echinocystis lobata	Echinocystis lobata (Michaux) Torrey & Gray	Cucurbitaceae	Vine, Forb/herb	FAC	FAC
*****	Echinops sphaerocephalus	Echinops sphaerocephalus L.	Asteraceae	Forb		
*****	Echium vulgare	Echium vulgare L.	Boraginaceae	Forb		
*****	Elaeagnus angustifolia	Elaeagnus angustifolia L.	Elaeagnaceae	Shrub	FAC	FAC
*****	Elaeagnus commutata	Elaeagnus commutata Bernhardi	Elaeagnaceae	Shrub		NI
*****	Elatine rubella	Elatine triandra Schkuhr	Elatinaceae	Forb	OBL	OBL
5	Eleocharis acicularis	Eleocharis acicularis (L.) Roemer & Schultes	Cyperaceae	Graminoid	OBL	OBL
Not Assigned	Eleocharis atropurpurea	Eleocharis atropurpurea (Retzius) K. Presl	Cyperaceae	Graminoid	FACW	FACW+
7	Eleocharis bolanderi	Eleocharis bolanderi A. Gray	Cyperaceae	Graminoid	NO	FACW
7	Eleocharis compressa	Eleocharis elliptica Kunth var. compressa (Sullivant) Drapalik & Mohlenbrock	Cyperaceae	Graminoid	FACW	NI
4	Eleocharis engelmannii	Eleocharis obtusa (Willdenow) Schultes var. detonsa (A. Gray) Drapalik & Mohlenbrock	Cyperaceae	Graminoid	OBL	FACW
Not Assigned	Eleocharis montevidensis	Eleocharis montevidensis Kunth	Cyperaceae	Graminoid	FACW	NI

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Not Assigned	Eleocharis obtusa	Eleocharis obtusa (Willdenow) Schultes	Cyperaceae	Graminoid	OBL	OBL
		Eleocharis obtusa (Willdenow) Schultes var. obtusa	Cyperaceae	Graminoid	OBL	OBL
3	Eleocharis palustris	Eleocharis palustris (L.) Roemer & Schultes	Cyperaceae	Graminoid	OBL	OBL
		Eleocharis xyridiformis (Fernald) Brackett	Cyperaceae	Graminoid	OBL	OBL
4	Eleocharis parvula	Eleocharis parvula (Roemer & Schultes) Link var. anachaeta (Torrey) Svenson	Cyperaceae	Graminoid	OBL	OBL
8	Eleocharis quinqueflora	Eleocharis quinqueflora (F. X. Hartman) Schwartz	Cyperaceae	Graminoid	OBL	OBL
6	Eleocharis rostellata	Eleocharis rostellata Torrey	Cyperaceae	Graminoid	OBL	OBL
10	Eleocharis wolfii	Eleocharis wolfii A. Gray	Cyperaceae	Graminoid	OBL	NO
*****	Eleusine indica	Eleusine indica (L.) Gaertner	Poaceae	Graminoid	FACU	FACU
3	Ellisia nyctelea	Ellisia nyctelea (L.) L.	Hydrophyllaceae	Forb	FAC	FACU
Not Assigned	Elodea bifoliata	Elodea bifoliata St. John	Hydrocharitaceae	Forb	NI	NI
		Elodea longivaginata St. John	Hydrocharitaceae	Forb	NI	OBL
3	Elodea canadensis	Elodea canadensis Richardson in Michaux	Hydrocharitaceae	Forb	OBL	OBL
Not Assigned	Elodea nuttallii	Elodea nuttallii (Planchon) St. John	Hydrocharitaceae	Forb	OBL	OBL
Not Assigned	Elyhordeum macounii	Elymus macounii Vasey	Poaceae	Graminoid		FAC
4	Elymus ×saundersii	Elymus saundersii Vasey	Poaceae	Graminoid		
Not Assigned	Elymus bakeri	Elymus trachycaulus (Link) Gould ex Shinners subsp. bakeri (E. Nelson) Loeve	Poaceae	Graminoid		
4	Elymus canadensis	Elymus canadensis L.	Poaceae	Graminoid	FACU	FACU
4	Elymus elymoides	Elymus elymoides (Rafinesque) Swezey	Poaceae	Graminoid	FACU	UPL
Not Assigned	Elymus elymoides ssp. brevifolius	Elymus longifolius (J. G. Smith) Gould	Poaceae	Graminoid		
7	Elymus glaucus	Elymus glaucus Buckley	Poaceae	Graminoid	NI	FACU
4	Elymus lanceolatus	Elymus lanceolatus (Scribner & Smith) Gould	Poaceae	Graminoid	FAC	UPL
Not Assigned	Elymus multisetus	Elymus multisetus (J. G. Smith) Davy	Poaceae	Graminoid		
*****	Elymus repens	Elytrigia repens (L.) Nevski	Poaceae	Graminoid	FAC	FACU
7	Elymus scribneri	Elymus scribneri (Vasey) Jones	Poaceae	Graminoid		
4	Elymus trachycaulus	Elymus trachycaulus (Link) Gould ex Shinners	Poaceae	Graminoid		
2	Elymus trachycaulus ssp. subsecundus	Elymus trachycaulus (Link) Gould ex Shinners subsp. subsecundus (Link) Loeve & Loeve	Poaceae	Graminoid		
3	Elymus trachycaulus ssp. trachycaulus	Elymus trachycaulus (Link) Gould ex Shinners subsp. andinus (Scribner & Smith) Loeve & Loeve	Poaceae	Graminoid	FAC	FACU

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		Elymus trachycaulus (Link) Gould ex Shinners subsp. trachycaulus	Poaceae	Graminoid	FACU	FACU
5	Elymus virginicus	Elymus virginicus L.	Poaceae	Graminoid	FAC	FACW
7	Enceliopsis nudicaulis	Enceliopsis nudicaulis (A. Gray) A. Nelson	Asteraceae	Forb	NO	NI
7	Enceliopsis nutans	Enceliopsis nutans (Eastwood) A. Nelson	Asteraceae	Forb		
Not Assigned	Endolepis dioica	Atriplex suckleyi (Torrey) Rydberg	Chenopodiaceae	Forb		
3	Engelmannia peristenia	Engelmannia peristenia (Rafinesque) Goodman & Lawson	Asteraceae	Forb		
Not Assigned	Enneapogon desvauxii	Enneapogon desvauxii P. Beauvois	Poaceae	Graminoid		
Not Assigned	Ephedra cutleri	Ephedra viridis Coville var. viscida (Cutler) L. Benson	Ephedraceae	Shrub		
6	Ephedra torreyana	Ephedra torreyana S. Watson	Ephedraceae	Shrub		
6	Ephedra viridis	Ephedra viridis Coville	Ephedraceae	Shrub		
6		Ephedra viridis Coville var. viridis	Ephedraceae	Shrub		
6	Epilobium anagallidifolium	Epilobium anagallidifolium Lamarck	Onagraceae	Forb	NI	FACW
2	Epilobium brachycarpum	Epilobium brachycarpum K. Presl	Onagraceae	Forb	NI	UPL
4	Epilobium ciliatum ssp. ciliatum	Epilobium brevistylum Barbey	Onagraceae	Forb	OBL	FAC
		Epilobium leptocarpum Haussknecht var. macounii Trelease	Onagraceae	Forb		NI
4	Epilobium ciliatum ssp. glandulosum	Epilobium ciliatum Rafinesque subsp. glandulosum (Lehmann) Hoch & Raven	Onagraceae	Forb	OBL	FAC
10	Epilobium clavatum	Epilobium clavatum Trelease	Onagraceae	Forb	NI	FACU
8	Epilobium halleanum	Epilobium halleanum Haussknecht	Onagraceae	Forb	NI	FAC+
6	Epilobium hornemannii	Epilobium hornemannii Reichenbach	Onagraceae	Forb	FACW	FACW+
7	Epilobium lactiflorum	Epilobium lactiflorum Haussknecht	Onagraceae	Forb	NI	FACW
8	Epilobium leptophyllum	Epilobium leptophyllum Rafinesque	Onagraceae	Forb	FACW+	OBL
Not Assigned	Epilobium palustre	Epilobium palustre L. var. grammadophyllum Haussknecht	Onagraceae	Forb	OBL	OBL
6	Epilobium saximontanum	Epilobium saximontanum Haussknecht	Onagraceae	Forb	FACW	FAC
9	Epipactis gigantea	Epipactis gigantea Douglas ex Hooker	Orchidaceae	Forb	NI	OBL
*****	Epipactis helleborine	Epipactis helleborine (L.) Crantz	Orchidaceae	Forb	NI	NI
4	Equisetum arvense	Equisetum arvense L.	Equisetaceae	Forb	FAC	FAC+
4	Equisetum hyemale var. affine	Hippochaete hyemalis (L.) Bruhin	Equisetaceae	Forb	FACW	FACW

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4	Equisetum laevigatum	Hippochaete laevigata (A. Braun) Farwell	Equisetaceae	Forb	FACW	FACW
6	Equisetum pratense	Equisetum pratense Ehrhart (annotated to E. arvense)	Equisetaceae	Forb	NI	NI
5	Equisetum variegatum var. variegatum	Hippochaete variegata (Schleicher) Bruhin	Equisetaceae	Forb	FACW	FACW+
*	Eragrostis barrelieri	Eragrostis barrelieri Daveau in Morot	Poaceae	Graminoid		
*	Eragrostis cilianensis	Eragrostis cilianensis (Allioni) F. T. Hubbard	Poaceae	Graminoid	FACU	FACU
Not Assigned	Eragrostis curtipedicellata	Eragrostis curtipedicellata Buckley	Poaceae	Graminoid		
*	Eragrostis curvula	Eragrostis curvula (Schrader) Nees	Poaceae	Graminoid		
*	Eragrostis hypnoides	Eragrostis hypnoides (Lamarck) Britton, Sterns, & Poggenberg	Poaceae	Graminoid	FAC	OBL
Not Assigned	Eragrostis lutescens	Eragrostis lutescens Scribner	Poaceae	Graminoid	NI	NI
Not Assigned	Eragrostis mexicana ssp. virescens	Eragrostis mexicana (Hornemann) Link subsp. virescens (J. Presl in K. Presl) Koch & Sanchez	Poaceae	Graminoid		
*	Eragrostis minor	Eragrostis minor Host	Poaceae	Graminoid		
1	Eragrostis pectinacea	Eragrostis pectinacea (Michaux) Nees	Poaceae	Graminoid	FAC	FACU
Not Assigned	Eragrostis pectinacea var. pectinacea	Eragrostis diffusa Buckley	Poaceae	Graminoid		
*	Eragrostis pilosa	Eragrostis pilosa (L.) P. Beauvois	Poaceae	Graminoid	FACU	FACU
8	Eragrostis secundiflora ssp. oxylepis	Eragrostis secundiflora J. Presl in K. Presl subsp. oxylepis (Torrey) S. D. Koch	Poaceae	Graminoid	FACU-	
3	Eragrostis spectabilis	Eragrostis spectabilis (Pursh) Steudel	Poaceae	Graminoid	FACU	NI
*	Eragrostis trichodes	Eragrostis trichodes (Nuttall) Wood	Poaceae	Graminoid		
*	Eremopyrum triticeum	Eremopyrum triticeum (Gaertner) Nevski	Poaceae	Graminoid		
*	Eriastrum diffusum	Eriastrum diffusum (A. Gray) Mason	Polemoniaceae	Forb		
Not Assigned	Ericameria discoidea	Ericameria discoidea (Nuttall) Nesom	Asteraceae	Shrub		
3	Ericameria nauseosa ssp. consimilis var. leiosperma	Chrysothamnus nauseosus (Pallas ex Pursh) Britton subsp. leiospermus (A. Gray) Hall & Clements	Asteraceae	Shrub		
3	Ericameria nauseosa ssp. consimilis var. oreophila	Chrysothamnus nauseosus (Pallas ex Pursh) Britton subsp. consimilis (Greene) Hall & Clements	Asteraceae	Shrub		
3	Ericameria nauseosa ssp. nauseosa var. bigelovii	Chrysothamnus nauseosus (Pallas ex Pursh) Britton subsp. bigelovii (A. Gray) Hall & Clements	Asteraceae	Shrub		

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3	Ericameria nauseosa ssp. nauseosa var. glabrata	Chrysothamnus nauseosus (Pallas ex Pursh) Britton subsp. graveolens (Nuttall) Piper	Asteraceae	Shrub		
*****	Ericameria nauseosa ssp. nauseosa var. hololeuca	Chrysothamnus nauseosus (Pallas) Britton subsp. hololeucus (Gray) Hall & Clements	Asteraceae	Shrub		
3	Ericameria nauseosa ssp. nauseosa var. nauseosa	Chrysothamnus nauseosus (Pallas ex Pursh) Britton	Asteraceae	Shrub		
		Chrysothamnus nauseosus (Pallas ex Pursh) Britton subsp. nauseosus	Asteraceae	Shrub		
3	Ericameria parryi var. affinis	Chrysothamnus parryi (A. Gray) Greene subsp. affinis (A. Nelson) L. C. Anderson	Asteraceae	Shrub		
2	Ericameria parryi var. attenuata	Chrysothamnus parryi (A. Gray) Greene subsp. attenuatus (Jones) Hall & Clements	Asteraceae	Shrub		
4	Ericameria parryi var. howardii	Chrysothamnus parryi (A. Gray) Greene subsp. howardii (Parry ex A. Gray) Hall & Clements	Asteraceae	Shrub		
4	Ericameria parryi var. parryi	Chrysothamnus parryi (A. Gray) Greene	Asteraceae	Shrub		
		Chrysothamnus parryi (A. Gray) Greene subsp. parryi	Asteraceae	Shrub		
Not Assigned	Erigeron acris ssp. politus	Trimorpha elongata (Ledebour) Vierhapper	Asteraceae	Forb		FACU
Not Assigned	Erigeron aphanactis	Erigeron aphanactis (A. Gray) Greene	Asteraceae	Forb		
4	Erigeron bellidiastrum	Erigeron bellidiastrum Nuttall	Asteraceae	Forb		
9	Erigeron caespitosus	Erigeron caespitosus Nuttall	Asteraceae	Forb		
6	Erigeron canus	Erigeron canus A. Gray	Asteraceae	Forb		
6	Erigeron colomexicanus	Erigeron colo-mexicanus A. Nelson	Asteraceae	Forb		
6	Erigeron compositus	Erigeron compositus Pursh	Asteraceae	Forb		
6	Erigeron concinnus	Erigeron concinnus (Hooker & Arnott) Torrey & Gray	Asteraceae	Forb		
5	Erigeron concinnus var. concinnus	Erigeron pumilus Nuttall var. concinnoides Cronquist	Asteraceae	Forb		
Not Assigned	Erigeron consimilis	Erigeron consimilis Cronquist	Asteraceae	Forb		
8	Erigeron coulteri	Erigeron coulteri T. C. Porter	Asteraceae	Forb	NI	FACW
4	Erigeron divergens	Erigeron divergens Torrey & Gray	Asteraceae	Forb		
7	Erigeron eatonii var. eatonii	Erigeron eatonii A. Gray var. eatonii	Asteraceae	Forb		
7	Erigeron elatior	Erigeron elatior (A. Gray) Greene	Asteraceae	Forb	NI	FAC

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6	Erigeron engelmannii	Erigeron engelmannii A. Nelson	Asteraceae	Forb		
7	Erigeron eximius	Erigeron eximius Greene	Asteraceae	Forb		
3	Erigeron flagellaris	Erigeron flagellaris A. Gray	Asteraceae	Forb	FAC	FACU
		Erigeron flagellaris A. Gray fma breviligulatus W. A. Weber	Asteraceae	Forb	FAC	FACU
6	Erigeron formosissimus	Erigeron formosissimus Greene	Asteraceae	Forb	NI	FACU
		Erigeron formosissimus Greene var. formosissimus	Asteraceae	Forb	NI	FACU
Not Assigned	Erigeron formosissimus var. viscidus	Erigeron formosissimus Greene var. viscidus (Rydberg) Cronquist	Asteraceae	Forb		FACU
6	Erigeron glabellus	Erigeron glabellus Nuttall	Asteraceae	Forb		
Not Assigned	Erigeron grandiflorus	Erigeron grandiflorus Hooker	Asteraceae	Forb		
Not Assigned	Erigeron humilis	Erigeron humilis R. Graham	Asteraceae	Forb	NO	UPL
10	Erigeron kachinensis	Erigeron kachinensis Welsh & Moore	Asteraceae	Forb	NO	OBL
Not Assigned	Erigeron lanatus	Erigeron lanatus Hooker	Asteraceae	Forb	NO	FACU
9	Erigeron leiomerus	Erigeron leiomerus A. Gray	Asteraceae	Forb		
5	Erigeron lonchophyllus	Trimorpha lonchophylla (Hooker) Nesom	Asteraceae	Forb		FACW
8	Erigeron melanocephalus	Erigeron melanocephalus A. Nelson	Asteraceae	Forb	NI	FAC
Not Assigned	Erigeron nematophyllus	Erigeron nematophyllus Rydberg	Asteraceae	Forb		
7	Erigeron peregrinus ssp. callianthemus	Erigeron peregrinus (Banks ex Pursh) Greene subsp. callianthemus (Greene) Cronquist	Asteraceae	Forb		FACW
9	Erigeron philadelphicus	Erigeron philadelphicus L.	Asteraceae	Forb	FAC	OBL
8	Erigeron pinnatisectus	Erigeron pinnatisectus (A. Gray) A. Nelson	Asteraceae	Forb		
Not Assigned	Erigeron pulcherrimus	Erigeron pulcherrimus Heller	Asteraceae	Forb		
5	Erigeron pumilus	Erigeron pumilus Nuttall	Asteraceae	Forb		
5	Erigeron pumilus ssp. pumilus	Erigeron pumilus Nuttall var. pumilus	Asteraceae	Forb		
9	Erigeron simplex	Erigeron simplex Greene	Asteraceae	Forb		
5	Erigeron speciosus	Erigeron speciosus (Lindley) De Candolle	Asteraceae	Forb		
Not Assigned	Erigeron speciosus var. macranthus	Erigeron speciosus (Lindley) De Candolle var. macranthus (Nuttall) Cronquist	Asteraceae	Forb		
6	Erigeron speciosus var. speciosus	Erigeron speciosus (Lindley) De Candolle var. speciosus	Asteraceae	Forb		
*****	Erigeron strigosus var. strigosus	Stenactis strigosa (Muhlenberg ex Willdenow) De Candolle	Asteraceae	Forb	FACU	NI

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Not Assigned	Erigeron subtrinervis	Erigeron subtrinervis Rydberg	Asteraceae	Forb		
Not Assigned	Erigeron uintahensis	Erigeron uintahensis Cronquist	Asteraceae	Forb		
7	Erigeron ursinus	Erigeron ursinus D. C. Eaton	Asteraceae	Forb		
7	Erigeron utahensis	Erigeron utahensis A. Gray	Asteraceae	Forb		
Not Assigned	Erigeron utahensis var. sparsifolius	Erigeron utahensis A. Gray var. sparsifolius (Eastwood) Cronquist	Asteraceae	Forb		
7	Erigeron utahensis var. utahensis	Erigeron utahensis A. Gray var. tetrapleuris (A. Gray) Cronquist	Asteraceae	Forb		
9	Erigeron vagus	Erigeron vagus Payson	Asteraceae	Forb		
6	Erigeron vetensis	Erigeron vetensis Rydberg	Asteraceae	Forb		
Not Assigned	Erigeron vreelandii	Erigeron vreelandii Greene	Asteraceae	Forb		
10	Erigeron wilkenii	Erigeron wilkenii O'Kane	Asteraceae	Forb		
0	Eriochloa contracta	Eriochloa contracta A. S. Hitchcock	Poaceae	Graminoid	FACU	NI
Not Assigned	Eriogonum acaule	Eriogonum acaule Nuttall	Polygonaceae	Forb		
5	Eriogonum alatum var. alatum	Pterogonum alatum (Torrey) Gross	Polygonaceae	Forb		
4	Eriogonum annuum	Eriogonum annuum Nuttall	Polygonaceae	Forb		
7	Eriogonum batemanii	Eriogonum batemanii Jones	Polygonaceae	Forb		
9	Eriogonum bicolor	Eriogonum bicolor Jones	Polygonaceae	Forb		
7	Eriogonum brandegeei	Eriogonum brandegeei Rydberg	Polygonaceae	Forb		
7	Eriogonum brevicaule	Eriogonum brevicaule Nuttall	Polygonaceae	Forb		
5	Eriogonum cernuum	Eriogonum cernuum Nuttall	Polygonaceae	Forb		
6	Eriogonum clavellatum	Eriogonum clavellatum Small	Polygonaceae	Forb		
		Eriogonum pelinophilum Reveal	Polygonaceae	Forb		
6	Eriogonum coloradense	Eriogonum coloradense Small	Polygonaceae	Forb		
5	Eriogonum contortum	Eriogonum contortum Small in Rydberg	Polygonaceae	Forb		
5	Eriogonum corymbosum	Eriogonum corymbosum Bentham in A De Candolle	Polygonaceae	Shrub		
6	Eriogonum corymbosum var. corymbosum	Eriogonum corymbosum Bentham in A. De Candolle var. corymbosum	Polygonaceae	Shrub		
5	Eriogonum corymbosum var. orbiculatum	Eriogonum corymbosum Bentham in A. De Candolle var. orbiculatum (S. Stokes) Reveal & Brotherson	Polygonaceae	Shrub		
Not Assigned	Eriogonum divaricatum	Eriogonum divaricatum Hooker	Polygonaceae	Forb		

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5	Eriogonum effusum	Eriogonum effusum Nuttall	Polygonaceae	Shrub		
8	Eriogonum ephedroides	Eriogonum ephedroides Reveal	Polygonaceae	Forb		
5	Eriogonum exilifolium	Eriogonum exilifolium Reveal	Polygonaceae	Forb		
6	Eriogonum flavum	Eriogonum flavum Nuttall (see E. jamesii)	Polygonaceae	Forb		
Not Assigned	Eriogonum fusiforme	Eriogonum inflatum Torrey & Fremont var. fusiforme (Small) Reveal	Polygonaceae	Forb		
5	Eriogonum gordonii	Eriogonum gordonii Bentham	Polygonaceae	Forb		
Not Assigned	Eriogonum heracleoides	Eriogonum heracleoides Nuttall	Polygonaceae	Forb		
Not Assigned	Eriogonum hookeri	Eriogonum hookeri S. Watson	Polygonaceae	Forb		
4	Eriogonum inflatum	Eriogonum inflatum Torrey & Fremont	Polygonaceae	Forb		
5	Eriogonum inflatum var. inflatum	Eriogonum inflatum Torrey & Fremont var. inflatum	Polygonaceae	Forb		
6	Eriogonum jamesii	Eriogonum jamesii Bentham in A. De Candolle	Polygonaceae	Forb		
Not Assigned	Eriogonum jamesii var. flavescens	Eriogonum jamesii Bentham in A. De Candolle var. flavescens S. Watson	Polygonaceae	Forb		
7	Eriogonum jamesii var. jamesii	Eriogonum jamesii Bentham in A. De Candolle var. jamesii	Polygonaceae	Forb		
Not Assigned	Eriogonum jamesii var. xanthum	Eriogonum jamesii Bentham in A. De Candolle var. xanthum	Polygonaceae	Forb		
7	Eriogonum lachnogynum	Eriogonum lachnogynum Torrey ex Bentham in A. De Candolle	Polygonaceae	Forb		
8	Eriogonum leptocladon	Eriogonum leptocladon Torrey & Gray	Polygonaceae	Shrub		
7	Eriogonum leptocladon var. leptocladon	Eriogonum leptocladon Torrey & Gray var. leptocladon	Polygonaceae	Shrub		
7	Eriogonum leptocladon var. ramosissimum	Eriogonum leptocladon Torrey & Gray var. ramosissimum (Eastwood) Reveal	Polygonaceae	Shrub		
8	Eriogonum leptophyllum	Eriogonum leptophyllum (Torrey) Wooton & Standley	Polygonaceae	Shrub		
4	Eriogonum lonchophyllum	Eriogonum lonchophyllum Torrey & Gray	Polygonaceae	Forb		
Not Assigned	Eriogonum lonchophyllum var. fendlerianum	Eriogonum fendlerianum (Bentham in De Candolle) Small	Polygonaceae	Forb		
8	Eriogonum lonchophyllum var. saurinum	Eriogonum saurinum Reveal	Polygonaceae	Forb		

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6	Eriogonum microthecum	Eriogonum microthecum Nuttall	Polygonaceae	Shrub		
6	Eriogonum microthecum var. laxiflorum	Eriogonum microthecum Nuttall var. laxiflorum Hooker	Polygonaceae	Shrub		
6	Eriogonum microthecum var. simpsonii	Eriogonum microthecum Nuttall var. simpsonii (Bentham in A. De Candolle) Reveal	Polygonaceae	Shrub		
7	Eriogonum ovalifolium	Eriogonum ovalifolium Nuttall	Polygonaceae	Forb		
4	Eriogonum palmerianum	Eriogonum palmerianum Reveal in Munz	Polygonaceae	Forb		
Not Assigned	Eriogonum pauciflorum	Eriogonum pauciflorum Pursh	Polygonaceae	Forb		
Not Assigned	Eriogonum pauciflorum var. gnaphalodes	Eriogonum pauciflorum Pursh var. gnaphalodes (Bentham in Hooker) Reveal	Polygonaceae	Forb		
Not Assigned	Eriogonum pauciflorum var. pauciflorum	Eriogonum pauciflorum Pursh var. pauciflorum	Polygonaceae	Forb		
6	Eriogonum racemosum	Eriogonum racemosum Nuttall	Polygonaceae	Forb		
Not Assigned	Eriogonum rotundifolium	Eriogonum rotundifolium Bentham in A. De Candolle	Polygonaceae	Forb		
4	Eriogonum scabrellum	Eriogonum scabrellum Reveal	Polygonaceae	Forb		
6	Eriogonum shockleyi var. shockleyi	Eriogonum shockleyi S. Watson var. longilobum (S. Stokes) Reveal	Polygonaceae	Forb		
7	Eriogonum tenellum	Eriogonum tenellum Torrey	Polygonaceae	Forb		
7	Eriogonum tumulosum	Eriogonum tumulosum (Barneby) Reveal	Polygonaceae	Forb		
6	Eriogonum umbellatum	Eriogonum umbellatum Torrey	Polygonaceae	Forb		
6	Eriogonum umbellatum var. aureum	Eriogonum umbellatum Torrey var. aureum (Gandoger) Reveal	Polygonaceae	Forb		
		Eriogonum umbellatum Torrey var. porteri (Small) S. Stokes	Polygonaceae	Forb		
Not Assigned	Eriogonum umbellatum var. majus	Eriogonum subalpinum Greene	Polygonaceae	Forb		
Not Assigned	Eriogonum umbellatum var. subaridum	Eriogonum umbellatum Torrey subsp. subaridum (S. Stokes) Munz in Munz & Keck	Polygonaceae	Forb		
6	Eriogonum umbellatum var. umbellatum	Eriogonum umbellatum Torrey var. umbellatum	Polygonaceae	Forb		
Not Assigned	Eriogonum viridulum	Eriogonum viridulum Reveal	Polygonaceae	Forb		
Not Assigned	Eriogonum wetherillii	Eriogonum wetherillii Eastwood	Polygonaceae	Forb		
6	Erioneuron pilosum	Erioneuron pilosum (Buckley) Nash	Poaceae	Graminoid		

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10	Eriophorum altaicum var. neogaeum	Eriophorum altaicum Meinshausen var. neogaeum Raymond	Cyperaceae	Graminoid		
9	Eriophorum angustifolium	Eriophorum angustifolium Honckeny	Cyperaceae	Graminoid	OBL	OBL
10	Eriophorum gracile	Eriophorum gracile W.D.J. Koch in Roth	Cyperaceae	Graminoid	OBL	OBL
9	Eritrichium nanum var. aretioides	Eritrichum aretioides (Chamisso) De Candolle	Boraginaceae	Forb		
*****	Erodium cicutarium	Erodium cicutarium (L.) L'Heritier	Geraniaceae	Forb		
*****	Eryngium planum	Eryngium planum L.	Apiaceae	Forb		
5	Erysimum capitatum	Erysimum capitatum (Douglas) Greene	Brassicaceae	Forb		
4	Erysimum capitatum var. capitatum	Erysimum asperum (Nuttall) De Candolle	Brassicaceae	Forb		
*****	Erysimum cheiranthoides	Erysimum cheiranthoides L. subsp. altum Ahti	Brassicaceae	Forb	FACU	FACU-
Not Assigned	Erysimum inconspicuum	Erysimum inconspicuum (S. Watson) MacMillan	Brassicaceae	Forb		
*****	Erysimum repandum	Erysimum repandum L.	Brassicaceae	Forb		
7	Erythronium grandiflorum	Erythronium grandiflorum Pursh	Liliaceae	Forb	NI	FACU
*****	Eschscholzia californica	Eschscholzia californica Chamisso	Papaveraceae	Forb		
7	Escobaria missouriensis var. missouriensis	Coryphantha missouriensis (Sweet) Britton & Rose	Cactaceae	Shrub		
6	Escobaria vivipara var. vivipara	Coryphantha vivipara (Nuttall) Britton & Rose var. vivipara	Cactaceae	Shrub		
6	Eucephalus elegans	Eucephalus perelegans (Nelson & Macbride) W. A. Weber	Asteraceae	Forb		
7	Eucephalus engelmannii	Eucephalus engelmannii (D. C. Eaton) Greene	Asteraceae	Forb		
*****	Euclidium syriacum	Euclidium syriacum (L.) R. Brown	Brassicaceae	Forb		
8	Eupatorium maculatum var. bruneri	Eupatorium maculatum L. subsp. bruneri (A. Gray) G. W. Douglas	Asteraceae	Forb	OBL	OBL
6	Euphorbia brachycera	Tithymalus brachyceras (Engelmann) Small	Euphorbiaceae	Forb		
Not Assigned	Euphorbia crenulata	Tithymalus crenulatus (Engelmann in Torrey) Heller	Euphorbiaceae	Forb		
*****	Euphorbia cyparissias	Tithymalus cyparissias (L.) Lamarck	Euphorbiaceae	Forb		
1	Euphorbia dentata var. dentata	Poinsettia dentata (Michaux) Klotsch & Garcke	Euphorbiaceae	Forb		
*****	Euphorbia esula var. esula	Tithymalus esula (L.) Scopoli	Euphorbiaceae	Forb		
*****	Euphorbia esula var. uralensis	Tithymalus uralensis (Fischer ex Link) Prokhanov	Euphorbiaceae	Forb		
3	Euphorbia hexagona	Zygophyllidium hexagonum (Nuttall) Small	Euphorbiaceae	Forb		
Not Assigned	Euphorbia incisa	Tithymalus incisus (Engelmann) W. A. Weber	Euphorbiaceae	Forb		

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1	Euphorbia marginata	Agaloma marginata (Pursh) Loeve & Loeve	Euphorbiaceae	Forb	FACU	UPL
*****	Euphorbia myrsinites	Tithymalus myrsinites (L.) J. Hill	Euphorbiaceae	Forb		
*****	Euphorbia peplus	Tithymalus peplus (L.) J. Hill	Euphorbiaceae	Forb		
Not Assigned	Euphorbia spathulata	Tithymalus spathulatus (Lamarck) W. A. Weber	Euphorbiaceae	Forb	FACU	NI
6	Eurybia glauca	Eucephalus glaucus Nuttall	Asteraceae	Forb		
Not Assigned	Eurybia horrida	Herrickia horrida Wooton & Standley	Asteraceae	Forb		
7	Eustoma exaltatum ssp. russellianum	Eustoma grandiflorum (Rafinesque) Shinners	Gentianaceae	Forb	FACW	
Not Assigned	Euthamia graminifolia	Euthamia graminifolia (L.) Nuttall	Asteraceae	Forb	FACW	NI
Not Assigned	Euthamia gymnospermoides	Euthamia gymnospermoides Greene	Asteraceae	Forb	FACW	NO
9	Euthamia occidentalis	Euthamia occidentalis Nuttall	Asteraceae	Forb	OBL	OBL
9	Eutrema penlandii	Eutrema edwardsii R. Brown subsp. penlandii (Rollins) W. A. Weber	Brassicaceae	Forb	NO	OBL
2	Evax prolifera	Evax prolifera Nuttall ex De Candolle	Asteraceae	Forb		
6	Evolvulus nuttallianus	Evolvulus nuttallianus Schultes	Convolvulaceae	Forb		
*****	Fagopyrum esculentum	Fagopyrum esculentum Moench	Polygonaceae	Forb		
6	Fallugia paradoxa	Fallugia paradoxa (D. Don) Endlicher	Rosaceae	Shrub		
8	Fendlera rupicola	Fendlera rupicola A. Gray	Hydrangeaceae	Shrub		
8	Fendlerella utahensis	Fendlerella utahensis (S. Watson) Heller	Hydrangeaceae	Shrub		
6	Festuca arizonica	Festuca arizonica Vasey	Poaceae	Graminoid		
9	Festuca baffinensis	Festuca baffinensis Polunin	Poaceae	Graminoid		
7	Festuca brachyphylla ssp. coloradensis	Festuca brachyphylla Schultes subsp. coloradensis Fredriksen	Poaceae	Graminoid		
9	Festuca campestris	Festuca campestris Rydberg	Poaceae	Graminoid		
8	Festuca dasyclada	Argillochloa dasyclada (Hackel ex Beal) W. A. Weber	Poaceae	Graminoid		
Not Assigned	Festuca earlei	Festuca earlei Rydberg	Poaceae	Graminoid		
9	Festuca hallii	Festuca hallii (Vasey) Piper	Poaceae	Graminoid		
7	Festuca idahoensis	Festuca idahoensis Elmer	Poaceae	Graminoid	NI	NI
7	Festuca minutiflora	Festuca minutiflora Rydberg	Poaceae	Graminoid		
*****	Festuca ovina	Festuca ovina L.	Poaceae	Graminoid	NI	NI
5	Festuca rubra	Festuca rubra L.	Poaceae	Graminoid	FAC	FAC
7	Festuca saximontana	Festuca saximontana Rydberg	Poaceae	Graminoid		
Not Assigned	Festuca sororia	Festuca sororia Piper	Poaceae	Graminoid		

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Not Assigned	Festuca subulata	Festuca subulata Trinius	Poaceae	Graminoid	NO	FACU
8	Festuca thurberi	Festuca thurberi Vasey in Rothrock	Poaceae	Graminoid		
*****	Filipendula ulmaria	Filipendula ulmaria (L.) Maxim	Rosaceae	Forb		
9	Fimbristylis puberula var. interior	Fimbristylis puberula (Michaux) Vail var. interior (Britton) Kral	Cyperaceae	Graminoid	OBL	
6	Flaveria campestris	Flaveria campestris J. R. Johnston	Asteraceae	Forb	FACW	FACW
Not Assigned	Floerkea proserpinacoides	Floerkea proserpinacoides Willdenow	Limnanthaceae	Forb	NO	OBL
6	Forestiera pubescens	Forestiera pubescens Nuttall	Oleaceae	Shrub	OBL	FAC+
5	Fragaria vesca ssp. bracteata	Fragaria vesca L. subsp. bracteata (Heller) Staudt	Rosaceae	Forb		
5	Fragaria virginiana ssp. glauca	Fragaria virginiana P. Miller subsp. glauca (S. Watson) Staudt	Rosaceae	Forb	FACU	FACU
*****	Frangula alnus	Frangula alnus P. Miller	Rhamnaceae	Shrub	NI	NI
8	Frankenia jamesii	Frankenia jamesii Torrey ex A. Gray	Frankeniaceae	Shrub		
7	Frasera albomarginata	Frasera albomarginata S. Watson	Gentianaceae	Forb		
8	Frasera coloradensis	Frasera coloradensis (C. M. Rogers) D. Post	Gentianaceae	Forb		
7	Frasera paniculata	Frasera paniculata Torrey	Gentianaceae	Forb		
6	Frasera speciosa	Frasera speciosa Douglas ex Grisebach	Gentianaceae	Forb	NI	UPL
*****	Fraxinus americana	Fraxinus americana L.	Oleaceae	Tree	FACU	NI
7	Fraxinus anomala	Fraxinus anomala Torrey ex S. Watson	Oleaceae	Shrub		
*****	Fraxinus pennsylvanica	Fraxinus pennsylvanica H. Marshall var. lanceolata (Borkhausen) Sargent	Oleaceae	Tree	FACW	FACW*
8	Fritillaria atropurpurea	Fritillaria atropurpurea Nuttall	Liliaceae	Forb		
8	Fritillaria pudica	Fritillaria pudica (Pursh) Sprengel	Liliaceae	Forb		
6	Froelichia floridana var. campestris	Froelichia floridana (Nuttall) Moquin var. campestris (Small) Fernald	Amaranthaceae	Forb		
4	Froelichia gracilis	Froelichia gracilis (Hooker) Moquin	Amaranthaceae	Forb		
*****	Fumaria vaillantii	Fumaria vaillantii Loiseleur	Fumariaceae	Forb		
7	Funastrum crispum	Sarcostemma crispum Bentham	Asclepiadaceae	Vine		
4	Gaillardia aristata	Gaillardia aristata Pursh	Asteraceae	Forb		
6	Gaillardia pinnatifida	Gaillardia pinnatifida Torrey	Asteraceae	Forb		
5	Gaillardia pulchella	Gaillardia pulchella Fougeroux	Asteraceae	Forb		
Not Assigned	Gaillardia spathulata	Gaillardia spathulata A. Gray	Asteraceae	Forb		
*****	Galeopsis bifida	Galeopsis bifida Bonningshausen	Lamiaceae	Forb		

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*	Galinsoga parviflora	Galinsoga parviflora Cavanilles	Asteraceae	Forb		
*	Galinsoga quadriradiata	Galinsoga quadriradiata Ruiz & Pavon	Asteraceae	Forb		
*	Galium aparine	Galium aparine L.	Rubiaceae	Forb	FACU	FACU
7	Galium bifolium	Galium bifolium S. Watson	Rubiaceae	Forb		
6	Galium boreale	Galium septentrionale Roemer & Schultes	Rubiaceae	Forb	FAC	FACU
7	Galium coloradoense	Galium coloradoense W. F. Wight	Rubiaceae	Forb		
7	Galium mexicanum ssp. asperrimum	Galium mexicanum Humboldt, Bonpland, & Kunth subsp. asperrimum (A. Gray) Dempster	Rubiaceae	Vine, Forb/herb		FAC
*	Galium odoratum	Galium odoratum (L.) Scopoli	Rubiaceae	Forb		
*	Galium spurium	Galium spurium L.	Rubiaceae	Forb		
7	Galium trifidum ssp. subbiflorum	Galium trifidum L. subsp. subbiflorum (Wiegand) Puff	Rubiaceae	Forb	OBL	OBL
7	Galium triflorum	Galium triflorum Michaux	Rubiaceae	Forb	FACU	FACU
*	Galium verum	Galium verum L.	Rubiaceae	Vine, Forb		
8	Gaultheria humifusa	Gaultheria humifusa (R. Graham) Rydberg	Ericaceae	Shrub	NI	FACU
5	Gaura coccinea	Gaura coccinea Nuttall ex Pursh	Onagraceae	Forb		
1	Gaura mollis	Gaura mollis James	Onagraceae	Forb	NI	NI
8	Gaura neomexicana	Gaura neomexicana Wooton	Onagraceae	Forb	OBL	FACW
		Gaura neomexicana Wooton subsp. neomexicana	Onagraceae	Forb	OBL	FACW
8	Gaura neomexicana ssp. coloradensis	Gaura neomexicana Wooton subsp. coloradensis (Rydberg) Raven & Gregory	Onagraceae	Forb	OBL	FACW
5	Gaura villosa	Gaura villosa Torrey	Onagraceae	Forb		
Not Assigned	Gayophytum decipiens	Gayophytum decipiens Lewis & Szweykowski	Onagraceae	Forb		
4	Gayophytum diffusum ssp. parviflorum	Gayophytum diffusum Torrey & Gray subsp. parviflorum Lewis & Szweykowski	Onagraceae	Forb		
5	Gayophytum racemosum	Gayophytum racemosum Torrey & Gray	Onagraceae	Forb	NI	NI
6	Gayophytum ramosissimum	Gayophytum ramosissimum Torrey & Gray	Onagraceae	Forb		
8	Gentiana affinis	Pneumonanthe affinis (Grisebach) Greene	Gentianaceae	Forb	NI	FACU
		Pneumonanthe bigelovii (A. Gray) Greene	Gentianaceae	Forb	NI	FACU
9	Gentiana algida	Gentianodes algida (Pallas) Loeve & Loeve	Gentianaceae	Forb	NI	FAC
9	Gentiana andrewsii var. andrewsii	Pneumonanthe andrewsii (Grisebach in Hooker) W. A. Weber	Gentianaceae	Forb	FACW	
9	Gentiana fremontii	Chondrophylla aquatica (L.) W. A. Weber	Gentianaceae	Forb	NI	OBL

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9	Gentiana nutans	Chondrophylla nutans (Bunge) W. A. Weber	Gentianaceae	Forb		
9	Gentiana parryi	Pneumonanthe parryi (Engelmann) Greene	Gentianaceae	Forb	NI	FAC
9	Gentiana prostrata	Chondrophylla prostrata (Haenke ex Jacquin) J. P. Anderson	Gentianaceae	Forb	NI	OBL
8	Gentianella amarella ssp. acuta	Gentianella acuta (Michaux) Hiitonen	Gentianaceae	Forb	OBL	FAC
		Gentianella strictiflora (Rydberg) W. A. Weber	Gentianaceae	Forb	OBL	FAC
8	Gentianella amarella ssp. heterosepala	Gentianella heterosepala (Engelmann) Holub	Gentianaceae	Forb		FAC
10	Gentianella tenella ssp. tenella	Comastoma tenellum (Rottboel) Toyokuni	Gentianaceae	Forb		FAC+
8	Gentianella tortuosa	Gentianella tortuosa (Jones) J. M. Gillett	Gentianaceae	Forb		
9	Gentianopsis barbellata	Gentianopsis barbellata (Engelmann) Iltis	Gentianaceae	Forb	NI	FACU
8	Gentianopsis thermalis	Gentianopsis thermalis (Kuntze) Iltis	Gentianaceae	Forb	NI	OBL
7	Geranium atropurpureum var. atropurpureum	Geranium caespitosum James ex Torrey subsp. atropurpureum (Heller) W. A. Weber	Geraniaceae	Forb		
Not Assigned	Geranium bicknellii	Geranium bicknellii Britton var. longipes (S. Watson) Fernald	Geraniaceae	Forb		
6	Geranium caespitosum	Geranium caespitosum James ex Torrey	Geraniaceae	Forb		
4	Geranium caespitosum var. caespitosum	Geranium caespitosum James ex Torrey subsp. caespitosum	Geraniaceae	Forb		
*	Geranium columbinum	Geranium columbinum L.	Geraniaceae	Forb		
*	Geranium ibericum	Geranium ibericum Cav.	Geraniaceae	Forb		
6	Geranium richardsonii	Geranium richardsonii Fischer & Trautvetter	Geraniaceae	Forb	NI	FACU
5	Geranium viscosissimum var. incisum	Geranium viscosissimum Fischer & Meyer subsp. nervosum (Rydberg) W. A. Weber	Geraniaceae	Forb	NI	FACU*
6	Geum aleppicum	Geum aleppicum Jacquin subsp. strictum (Aiton) Clausen	Rosaceae	Forb	FACU	FACU
6	Geum macrophyllum var. perincisum	Geum macrophyllum Willdenow var. perincisum Raup	Rosaceae	Forb	OBL	OBL
5	Geum rivale	Geum rivale L.	Rosaceae	Forb	NI	FACW
7	Geum rossii var. turbinatum	Acomastylis rossii (R. Brown) Greene subsp. turbinata (Rydberg) W. A. Weber	Rosaceae	Forb		UPL
7	Geum triflorum var. triflorum	Erythrocoma triflora (Pursh) Greene	Rosaceae	Forb		UPL
7	Gilia clokeyi	Gilia clokeyi Mason	Polemoniaceae	Forb		
4	Gilia haydenii	Gilia haydenii A. Gray	Polemoniaceae	Forb		

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7	Gilia inconspicua	Gilia inconspicua (J. E. Smith) Douglas	Polemoniaceae	Forb		
Not Assigned	Gilia micromeria	Gilia micromeria A. Gray	Polemoniaceae	Forb		
6	Gilia ophthalmoides	Gilia ophthalmoides Brand	Polemoniaceae	Forb		
10	Gilia penstemonoides	Gilia penstemonoides Jones	Polemoniaceae	Forb		
5	Gilia pinnatifida	Gilia pinnatifida Nuttall	Polemoniaceae	Forb		NI
6	Gilia rigidula ssp. acerosa	Giliastrum rigidulum (Bentham) Rydberg subsp. acerosum (A. Gray) W. A. Weber	Polemoniaceae	Forb		
6	Gilia sinistra	Gilia sinistra Jones	Polemoniaceae	Forb		
Not Assigned	Gilia sinuata	Gilia sinuata Douglas ex Bentham	Polemoniaceae	Forb		
9	Gilia stenothyrsa	Gilia stenothyrsa A. Gray	Polemoniaceae	Forb		
7	Gilia subnuda	Gilia subnuda Torrey	Polemoniaceae	Forb		
Not Assigned	Gilia tricolor	Gilia tricolor Bentham	Polemoniaceae	Forb		
Not Assigned	Gilia triodon	Gilia triodon Eastwood	Polemoniaceae	Forb		
6	Gilia tweedyi	Gilia tweedyi Rydberg	Polemoniaceae	Forb		
3	Glandularia bipinnatifida	Glandularia bipinnatifida (Nuttall) Nuttall	Verbenaceae	Forb		
*****	Glaucium corniculatum	Glaucium corniculatum (L.) Rudolph	Papaveraceae	Forb		
*****	Glaucium flavum	Glaucium flavum Crantz	Papaveraceae	Forb		
7	Glaux maritima	Glaux maritima L. var. angustifolia Boivin	Primulaceae	Forb	OBL	OBL
*****	Glechoma hederacea	Glecoma hederacea L.	Lamiaceae	Forb	FACU	UPL
1	Gleditsia triacanthos	Gleditsia triacanthos L.	Fabaceae	Shrub	FAC	FAC
10	Glossopetalon planitierum	Forsellesia planitierum Ensign	Crossosomataceae	Shrub		
8	Glossopetalon spinescens var. meionandrum	Forsellesia meionandra (Koehne) Heller	Crossosomataceae	Shrub		
8	Glyceria borealis	Glyceria borealis (Nash) Batchelder	Poaceae	Graminoid	OBL	OBL
6	Glyceria grandis	Glyceria grandis S. Watson in A. Gray	Poaceae	Graminoid	OBL	OBL
6	Glyceria striata	Glyceria elata (Nash ex Rydberg) Jones	Poaceae	Graminoid	OBL	OBL
		Glyceria striata (Lamarck) A. S. Hitchcock var. stricta (Scribner) Fernald	Poaceae	Graminoid	OBL	OBL
3	Glycyrrhiza lepidota	Glycyrrhiza lepidota Pursh	Fabaceae	Forb	FACU	FAC-
5	Gnaphalium palustre	Gnaphalium palustre Nuttall	Asteraceae	Forb	OBL	FACW
5	Gnaphalium uliginosum	Gnaphalium uliginosum L.	Asteraceae	Forb	FACW	FACW
9	Goodyera oblongifolia	Goodyera oblongifolia Rafinesque	Orchidaceae	Forb	NI	UPL
9	Goodyera repens	Goodyera repens (L.) R. Brown	Orchidaceae	Forb	NI	UPL

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Not Assigned	Gratiola neglecta	Gratiola neglecta Torrey	Scrophulariaceae	Forb	OBL	OBL
6	Grayia spinosa	Atriplex grayi Collotzi ex W. A. Weber	Chenopodiaceae	Shrub		
Not Assigned	Grindelia arizonica var. stenophylla	Grindelia arizonica A. Gray var. stenophylla Steyermark	Asteraceae	Forb		
Not Assigned	Grindelia decumbens	Grindelia decumbens Greene	Asteraceae	Forb		
Not Assigned	Grindelia decumbens var. decumbens	Grindelia decumbens Greene var. decumbens	Asteraceae	Forb		
Not Assigned	Grindelia decumbens var. subincisa	Grindelia decumbens Greene var. subincisa (Greene) Steyermark	Asteraceae	Forb		
Not Assigned	Grindelia fastigiata	Grindelia fastigiata Greene	Asteraceae	Forb		
3	Grindelia inornata	Grindelia inornata Greene	Asteraceae	Forb		
Not Assigned	Grindelia nuda var. aphanactis	Grindelia aphanactis Rydberg	Asteraceae	Forb		
Not Assigned	Grindelia nuda var. nuda	Grindelia squarrosa (Pursh) Dunal var. nuda (Wood) A. Gray	Asteraceae	Forb	FACU-	FACU
2	Grindelia papposa	Prionopsis ciliata (Nuttall) Nuttall	Asteraceae	Forb	UPL	
Not Assigned	Grindelia revoluta	Grindelia revoluta Steyermark	Asteraceae	Forb		
1	Grindelia squarrosa	Grindelia squarrosa (Pursh) Dunal	Asteraceae	Forb	FACU-	FACU
4	Grindelia squarrosa var. quasiperennis	Grindelia squarrosa (Pursh) Dunal var. quasiperennis Lunell	Asteraceae	Forb		FACU
4	Grindelia squarrosa var. serrulata	Grindelia squarrosa (Pursh) Dunal var. serrulata (Rydberg) Steyermark	Asteraceae	Forb		FACU
4	Grindelia subalpina	Grindelia subalpina Greene	Asteraceae	Forb		
Not Assigned	Guilleminea densa	Guilleminea densa (Willdenow ex Roemer & Schultes) Moquin	Amaranthaceae	Forb		
Not Assigned	Gutierrezia microcephala	Gutierrezia microcephala (De Candolle) A. Gray	Asteraceae	Shrub		
3	Gutierrezia sarothrae	Gutierrezia sarothrae (Pursh) Britton & Rusby	Asteraceae	Forb		
10	Gymnocarpium ×brittonianum	Gymnocarpium x brittonianum (Sarvela) Pryer & Haufler	Dryopteridaceae	Forb		
9	Gymnocarpium dryopteris	Gymnocarpium dryopteris (L.) Newman	Dryopteridaceae	Forb	NI	FACU
5	Gymnosteris parvula	Gymnosteris parvula Heller	Polemoniaceae	Forb	NI	NI
*****	Gypsophila elegans	Gypsophila elegans Bieberstein	Caryophyllaceae	Forb		
*****	Gypsophila paniculata	Gypsophila paniculata L.	Caryophyllaceae	Forb		
*****	Gypsophila scorzonerifolia	Gypsophila scorzonerifolia Seringe in De Candolle	Caryophyllaceae	Forb		
Not Assigned	Hackelia besseyi	Hackelia besseyi (Rydberg) J. L. Gentry	Boraginaceae	Forb		

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3	Hackelia floribunda	Hackelia floribunda (Lehmann) I. M. Johnston	Boraginaceae	Forb	FAC	FACU
9	Hackelia gracilenta	Hackelia gracilenta (Eastwood) I. M. Johnston	Boraginaceae	Forb		
Not Assigned	Hackelia micrantha	Hackelia micrantha (Eastwood) J. L. Gentry	Boraginaceae	Forb	NO	NI
Not Assigned	Halimolobos virgata	Halimolobos virgata (Nuttall) O. E. Schulz	Brassicaceae	Forb	NI	NI
*****	Halogeton glomeratus	Halogeton glomeratus (Bieberstein) C. A. Meyer	Chenopodiaceae	Forb		
6	Harbouria trachypleura	Harbouria trachypleura (A. Gray) Coulter & Rose	Apiaceae	Forb		
6	Hedeoma drummondii	Hedeoma drummondii Bentham	Lamiaceae	Forb		
5	Hedeoma hispida	Hedeoma hispidum Pursh	Lamiaceae	Forb		
5	Hedyotis nigricans	Hedyotis nigricans (Lamarck) Fosberg	Rubiaceae	Shrub		
6	Hedysarum boreale	Hedysarum boreale Nuttall	Fabaceae	Forb		
5	Hedysarum occidentale	Hedysarum occidentale Greene	Fabaceae	Forb		
5	Helenium autumnale var. montanum	Helenium autumnale L. var. montanum (Nuttall) Fernald	Asteraceae	Forb	FACW	FACW+
4	Helenium microcephalum	Helenium microcephalum De Candolle	Asteraceae	Forb	NI	NI
Not Assigned	Helianthella microcephala	Helianthella microcephala (A. Gray) A. Gray	Asteraceae	Forb		
5	Helianthella parryi	Helianthella parryi A. Gray	Asteraceae	Forb		
7	Helianthella quinquenervis	Helianthella quinquenervis (Hooker) A. Gray	Asteraceae	Forb	NI	UPL
6	Helianthella uniflora	Helianthella uniflora (Nuttall) Torrey & Gray	Asteraceae	Forb		
Not Assigned	Helianthemum bicknellii	Crocanthemum bicknellii (Fernald) Janchen	Cistaceae	Forb		
1	Helianthus annuus	Helianthus annuus L.	Asteraceae	Forb	FACU	FACU
*****	Helianthus ciliaris	Helianthus ciliaris De Candolle	Asteraceae	Forb	FAC	NI
5	Helianthus maximiliani	Helianthus maximilianii Schrader	Asteraceae	Forb	UPL	FACU
3	Helianthus nuttallii	Helianthus nuttallii Torrey & Gray	Asteraceae	Forb	FAC	FACW
6	Helianthus pauciflorus ssp. subrhomboideus	Helianthus rigidus (Cassini) Desfontaines subsp. subrhomboideus (Rydberg) Heiser	Asteraceae	Forb		
2	Helianthus petiolaris	Helianthus petiolaris Nuttall	Asteraceae	Forb		
4	Helianthus pumilus	Helianthus pumilus Nuttall	Asteraceae	Forb		
*****	Helianthus tuberosus	Helianthus tuberosus L.	Asteraceae	Forb	FAC	NI
Not Assigned	Helictotrichon hookeri	Avenula hookeri (Scribner in Hackel) Holub	Poaceae	Graminoid		
Not Assigned	Helictotrichon mortonianum	Helictotrichon mortonianum (Scribner) Henrard	Poaceae	Graminoid		
4	Heliomeris multiflora	Heliomeris multiflora Nuttall	Asteraceae	Forb		
Not Assigned	Heliopsis helianthoides var. scabra	Heliopsis helianthoides (L.) Sweet var. scabra (Dunal) Fernald	Asteraceae	Forb		

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8	Heliotropium convolvulaceum	Euploca convolvulacea Nuttall subsp. convolvulacea	Boraginaceae	Forb		
Not Assigned	Heliotropium convolvulaceum var. californicum	Euploca convolvulacea Nuttall subsp. californica (Greene) Abrams	Boraginaceae	Forb		
*	Heliotropium curassavicum	Heliotropium curassavicum L. subsp. oculatum (Heller) Thorne	Boraginaceae	Forb	OBL	OBL
6	Heracleum maximum	Heracleum sphondylium L. subsp. montanum (Schleicher ex Gaudin) Briquet in Schinz & Thellung	Apiaceae	Forb	FACW	FAC
*	Hesperis matronalis	Hesperis matronalis L.	Brassicaceae	Forb	NI	NI
Not Assigned	Hesperochiron pumilus	Hesperochiron pumilus (Douglas) T. C. Porter	Hydrophyllaceae	Forb	NO	FACW
6	Hesperostipa comata	Hesperostipa comata (Trinius & Ruprecht) Barkworth	Poaceae	Graminoid		
8	Hesperostipa neomexicana	Hesperostipa neomexicana (Thurber) Barkworth	Poaceae	Graminoid		
10	Hesperostipa spartea	Hesperostipa spartea (Trinius) Barkworth	Poaceae	Graminoid		
Not Assigned	Heteranthera dubia	Zosterella dubia (Jacquin) Small	Pontederiaceae	Forb		NO
Not Assigned	Heteranthera limosa	Heteranthera limosa (Swartz) Willdenow	Pontederiaceae	Forb	OBL	NI
Not Assigned	Heterocodon rariflorum	Heterocodon rariflorus Nuttall	Campanulaceae	Forb	NO	FAC
6	Heterosperma pinnatum	Heterosperma pinnatum Cavanilles	Asteraceae	Forb		
6	Heterotheca canescens	Heterotheca canescens (De Candolle) Shinners	Asteraceae	Forb		
5	Heterotheca fulcrata	Heterotheca fulcrata (Greene) Shinners (see H. foliosa)	Asteraceae	Forb		
2	Heterotheca pumila	Heterotheca pumila (Greene) Semple	Asteraceae	Forb		
Not Assigned	Heterotheca subaxillaris	Heterotheca latifolia Buckley	Asteraceae	Forb	FACU	UPL
3	Heterotheca villosa	Heterotheca villosa (Pursh) Shinners	Asteraceae	Forb		
Not Assigned	Heterotheca villosa var. foliosa	Heterotheca foliosa (Nuttall) Shinners	Asteraceae	Forb		
Not Assigned	Heterotheca villosa var. minor	Heterotheca villosa (Pursh) Shinners var. hispida (Hooker) V. Harms	Asteraceae	Forb		
Not Assigned	Heterotheca villosa var. pedunculata	Heterotheca villosa (Pursh) Shinners var. pedunculata (Greene) V. Harms ex Semple	Asteraceae	Forb		
2	Heterotheca villosa var. villosa	Heterotheca villosa (Pursh) Shinners var. villosa	Asteraceae	Forb		
8	Heuchera bracteata	Heuchera bracteata (Torrey) Seringe	Saxifragaceae	Forb		
7	Heuchera hallii	Heuchera hallii A. Gray	Saxifragaceae	Forb		

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7	Heuchera parvifolia	Heuchera parvifolia Nuttall ex Torrey & Gray	Saxifragaceae	Forb		
Not Assigned	Heuchera parvifolia var. nivalis	Heuchera parvifolia Nuttall ex Torrey & Gray var. nivalis (Rosendahl) Loeve et al.	Saxifragaceae	Forb		
6	Heuchera parvifolia var. parvifolia	Heuchera parvifolia Nuttall ex Torrey & Gray var. parvifolia	Saxifragaceae	Forb		
9	Heuchera richardsonii	Heuchera richardsonii R. Brown	Saxifragaceae	Forb	FAC	FACU
9	Heuchera rubescens	Heuchera rubescens Torrey in Stansbury	Saxifragaceae	Forb	NO	UPL
Not Assigned	Heuchera rubescens var. versicolor	Heuchera versicolor Greene	Saxifragaceae	Forb	NI	NI
*****	Hibiscus trionum	Hibiscus trionum L.	Malvaceae	Forb		
5	Hieracium albiflorum	Chlorocrepis albiflora (Hooker) W. A. Weber	Asteraceae	Forb		
*****	Hieracium aurantiacum	Hieracium aurantiacum L.	Asteraceae	Forb		
Not Assigned	Hieracium fendleri var. fendleri	Chlorocrepis fendleri (Schultz-Bipontinus) W. A. Weber	Asteraceae	Forb		
6	Hieracium gracile var. gracile	Chlorocrepis tristis (Willdenow ex Sprengel) Loeve & Loeve subsp. gracilis (Hooker) W. A. Weber	Asteraceae	Forb		
9	Hierochloe hirta ssp. arctica	Hierochloe hirta (Schrank) Borbas subsp. arctica (J. Presl in K. Presl) G. Weimarck	Poaceae	Graminoid		FACW
6	Hippuris vulgaris	Hippuris vulgaris L.	Hippuridaceae	Forb	OBL	OBL
5	Hoffmannseggia glauca	Hoffmanseggia glauca (Ortega) Eifert	Fabaceae	Forb	FACU	FACU-
*****	Holcus lanatus	Holcus lanatus L.	Poaceae	Graminoid	FACW	NI
8	Holodiscus dumosus	Holodiscus dumosus (Nuttall ex Hooker) Heller	Rosaceae	Shrub		
*****	Holosteum umbellatum	Holosteum umbellatum L.	Caryophyllaceae	Forb		
Not Assigned	Hordeum brachyantherum ssp. brachyantherum	Critesion brachyantherum (Nevski) Barkworth & Dewey	Poaceae	Graminoid		FACW-
2	Hordeum jubatum ssp. jubatum	Critesion jubatum (L.) Nevski	Poaceae	Graminoid	FACW	FAC*
*****	Hordeum murinum ssp. glaucum	Critesion glaucum (Steudel) Loeve	Poaceae	Graminoid		
1	Hordeum pusillum	Critesion pusillum (Nuttall) Loeve	Poaceae	Graminoid	FAC	FAC
*****	Hordeum vulgare	Hordeum vulgare L.	Poaceae	Graminoid		
		Hordeum vulgare L. var. trifurcatum (Schlechtendal) Alefeld	Poaceae	Graminoid		
		Hordeum vulgare L. var. vulgare	Poaceae	Graminoid		

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5	Humulus lupulus	Humulus lupulus L. subsp. americanus (Nuttall) Loeve & Loeve	Cannabaceae	Vine	NI	NI
Not Assigned	Huperzia haleakalae	Huperzia haleakalae (Brackenridge) Holub	Lycopodiaceae	Shrub	NI	NI
Not Assigned	Hutchinsia procumbens	Hymenolobus procumbens (L.) Nuttall ex Torrey & Gray	Brassicaceae	Forb	NO	NI
7	Hybanthus verticillatus	Hybanthus verticillatus (Ortega) Baillon	Violaceae	Forb		
8	Hydrophyllum capitatum	Hydrophyllum capitatum Douglas ex Bentham	Hydrophyllaceae	Forb		
7	Hydrophyllum fendleri	Hydrophyllum fendleri (A. Gray) Heller	Hydrophyllaceae	Forb	NI	FAC
6	Hymenopappus filifolius	Hymenopappus filifolius Hooker	Asteraceae	Forb		
Not Assigned	Hymenopappus filifolius var. cinereus	Hymenopappus filifolius Hooker var. cinereus (Rydberg) I. M. Johnston	Asteraceae	Forb		
Not Assigned	Hymenopappus filifolius var. luteus	Hymenopappus filifolius Hooker var. luteus (Nuttall) B. Turner	Asteraceae	Forb		
Not Assigned	Hymenopappus filifolius var. megacephalus	Hymenopappus filifolius Hooker var. megacephalus B. Turner	Asteraceae	Forb		
Not Assigned	Hymenopappus filifolius var. parvulus	Hymenopappus filifolius Hooker var. parvulus (Greene) B. Turner	Asteraceae	Forb		
Not Assigned	Hymenopappus filifolius var. pauciflorus	Hymenopappus filifolius Hooker var. pauciflorus (I. M. Johnston) B. Turner	Asteraceae	Forb		
5	Hymenopappus filifolius var. polycephalus	Hymenopappus filifolius Hooker var. polycephalus (Osterhout) B. Turner	Asteraceae	Forb		
6	Hymenopappus flavescens	Hymenopappus flavescens A. Gray	Asteraceae	Forb		
Not Assigned	Hymenopappus newberryi	Hymenopappus newberryi (A. Gray) I. M. Johnston	Asteraceae	Forb		
6	Hymenopappus tenuifolius	Hymenopappus tenuifolius Pursh	Asteraceae	Forb		
Not Assigned	Hymenoxys helenioides	Picradenia helenioides Rydberg	Asteraceae	Forb		
5	Hymenoxys hoopesii	Dugaldia hoopesii (A. Gray) Rydberg	Asteraceae	Forb		FACU
4	Hymenoxys odorata	Picradenia odorata (De Candolle) Britton	Asteraceae	Forb	NI	NO
4	Hymenoxys richardsonii var. richardsonii	Picradenia richardsonii Hooker	Asteraceae	Forb		
*****	Hyoscyamus niger	Hyoscyamus niger L.	Solanaceae	Forb		
Not Assigned	Hypericum majus	Hypericum majus (A. Gray) Britton	Clusiaceae	Forb	FACW	FACW
*****	Hypericum perforatum	Hypericum perforatum L.	Clusiaceae	Forb		

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7	Hypericum scouleri ssp. nortoniae	Hypericum formosum Humboldt, Bonpland, & Kunth	Clusiaceae	Forb		FACW
*	Hypochaeris radicata	Hypochaeris radicata L.	Asteraceae	Forb		NO
10	Hypoxis hirsuta	Hypoxis hirsuta (L.) Coville	Liliaceae	Forb	FACW	FACW
*	Hyssopus officinalis	Hyssopus officinalis L.	Lamiaceae	Forb		
*	Iberis amara	Iberis amara L.	Brassicaceae	Forb		
9	Iliamna crandallii	Iliamna crandallii (Rydberg) Wiggins	Malvaceae	Forb		
7	Iliamna grandiflora	Iliamna grandiflora (Rydberg) Wiggins	Malvaceae	Forb	NO	NI
8	Iliamna rivularis	Iliamna rivularis (Douglas) Greene	Malvaceae	Forb	NI	FAC
*	Impatiens capensis	Impatiens capensis Meerburgh	Balsaminaceae	Forb	FACW	FACW+
6	Ipomoea leptophylla	Ipomoea leptophylla Torrey	Convolvulaceae	Forb		
*	Ipomoea purpurea	Ipomoea purpurea L.	Convolvulaceae	Vine, Forb/herb	FACU	UPL
5	Ipomopsis aggregata	Ipomopsis aggregata (Pursh) V. Grant	Polemoniaceae	Forb		
6	Ipomopsis aggregata ssp. aggregata	Ipomopsis aggregata (Pursh) V. Grant subsp. aggregata	Polemoniaceae	Forb		
6	Ipomopsis aggregata ssp. attenuata	Ipomopsis aggregata (Pursh) V. Grant subsp. attenuata (A. Gray) V. & A. Grant	Polemoniaceae	Forb		
Not Assigned	Ipomopsis aggregata ssp. candida	Ipomopsis aggregata (Pursh) V. Grant subsp. candida (Rydberg) V. & A. Grant	Polemoniaceae	Forb		
Not Assigned	Ipomopsis aggregata ssp. collina	Ipomopsis aggregata (Pursh) V. Grant subsp. collina (Greene) Wilken & Allard	Polemoniaceae	Forb		
5	Ipomopsis aggregata ssp. formosissima	Ipomopsis aggregata (Pursh) V. Grant subsp. formosissima (Greene) Wherry	Polemoniaceae	Forb		
5	Ipomopsis aggregata ssp. weberi	Ipomopsis aggregata (Pursh) V. Grant subsp. weberi Grant & Wilken	Polemoniaceae	Forb		
7	Ipomopsis congesta	Ipomopsis congesta (Hooker) V. Grant	Polemoniaceae	Forb		
7	Ipomopsis congesta ssp. congesta	Ipomopsis congesta (Hooker) V. Grant subsp. congesta	Polemoniaceae	Forb		
Not Assigned	Ipomopsis congesta ssp. crebrifolia	Ipomopsis congesta (Hooker) V. Grant subsp. crebrifolia (Rydberg) Day	Polemoniaceae	Forb		
Not Assigned	Ipomopsis congesta ssp. frutescens	Ipomopsis congesta (Hooker) V. Grant subsp. frutescens (Rydberg) Day	Polemoniaceae	Forb		
10	Ipomopsis globularis	Ipomopsis globularis (Brand) W. A. Weber	Polemoniaceae	Forb		

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Not Assigned	Ipomopsis gunnisonii	Ipomopsis gunnisonii (Torrey & Gray) V. Grant	Polemoniaceae	Forb		
3	Ipomopsis laxiflora	Ipomopsis laxiflora (Coulter) V. Grant	Polemoniaceae	Forb		
7	Ipomopsis longiflora	Ipomopsis longiflora (Torrey) V. Grant	Polemoniaceae	Forb		
Not Assigned	Ipomopsis multiflora	Ipomopsis multiflora (Nuttall) V. Grant	Polemoniaceae	Forb		
2	Ipomopsis polyantha	Ipomopsis polyantha (Rydberg) V. Grant	Polemoniaceae	Forb		
4	Ipomopsis polycladon	Ipomopsis polycladon Torrey	Polemoniaceae	Forb		
8	Ipomopsis pumila	Ipomopsis pumila (Nuttall) V. Grant	Polemoniaceae	Forb		
8	Ipomopsis roseata	Ipomopsis roseata (Rydberg) V. Grant	Polemoniaceae	Shrub		
8	Ipomopsis spicata	Ipomopsis spicata (Nuttall) V. Grant	Polemoniaceae	Forb		
8	Ipomopsis tenuituba	Ipomopsis tenuituba (Rydberg) V. Grant	Polemoniaceae	Forb		
4	Iris missouriensis	Iris missouriensis Nuttall	Iridaceae	Forb	OBL	OBL*
*****	Isatis tinctoria	Isatis tinctoria L.	Brassicaceae	Forb		
Not Assigned	Isocoma drummondii	Isocoma drummondii (Torrey & Gray) Greene	Asteraceae	Forb		
Not Assigned	Isocoma pluriflora	Isocoma pluriflora (Torrey & Gray) Greene	Asteraceae	Forb		
10	Isoetes bolanderi	Isoetes bolanderi Engelmann	Isoetaceae	Graminoid	NI	OBL
10	Isoetes lacustris	Isoetes lacustris L.	Isoetaceae	Graminoid		OBL
10	Isoetes tenella	Isoetes setacea Lamarck subsp. muricata (Durieu) Holub	Isoetaceae	Graminoid		OBL
1	Iva acerosa	Oxytenia acerosa Nuttall	Asteraceae	Forb	NI	FACU
2	Iva axillaris	Iva axillaris Pursh	Asteraceae	Forb	FAC	FACW
2	Iva xanthifolia	Cyclachaena xanthifolia (Nuttall) Fresenius	Asteraceae	Forb	FAC	FAC+
4	Ivesia gordonii	Ivesia gordonii (Hooker) Torrey & Gray	Rosaceae	Shrub		
7	Jamesia americana	Jamesia americana Torrey & Gray	Hydrangeaceae	Shrub	NI	UPL
5	Juncus acuminatus	Juncus acuminatus Michaux	Juncaceae	Graminoid	OBL	OBL
10	Juncus albescens	Juncus albescens (J. Lange) Fernald	Juncaceae	Graminoid	NI	OBL
9	Juncus alpinoarticulatus	Juncus alpino-articulatus Chaix in Villars	Juncaceae	Graminoid	OBL	OBL
*****	Juncus articulatus	Juncus articulatus L.	Juncaceae	Graminoid	NI	OBL
4	Juncus balticus var. montanus	Juncus arcticus Willdenow subsp. ater (Rydberg) Hulten	Juncaceae	Graminoid	OBL	FACW
10	Juncus biglumis	Juncus biglumis L.	Juncaceae	Graminoid	NI	OBL
5	Juncus brachycephalus	Juncus brachycephalus (Engelmann) Buchenau	Juncaceae	Graminoid	NI	OBL
5	Juncus brevicaudatus	Juncus brevicaudatus (Engelmann) Fernald	Juncaceae	Graminoid	NI	OBL

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9	Juncus bryoides	Juncus bryoides F. J. Hermann	Juncaceae	Graminoid	NO	OBL
3	Juncus bufonius	Juncus bufonius L. var. bufonius	Juncaceae	Graminoid	OBL	OBL
Not Assigned	Juncus bufonius var. occidentalis	Juncus bufonius L. var. occidentalis F. J. Hermann	Juncaceae	Graminoid	NI	
9	Juncus castaneus	Juncus castaneus J. E. Smith	Juncaceae	Graminoid	NI	FACW+
*****	Juncus compressus	Juncus compressus Jacquin	Juncaceae	Graminoid	NI	OBL
5	Juncus confusus	Juncus confusus Coville	Juncaceae	Graminoid	NI	FAC+
*****	Juncus dichotomus	Juncus platyphyllus (Wiegand) Fernald	Juncaceae	Graminoid	NI	FACW-
6	Juncus drummondii	Juncus drummondii E. Meyer	Juncaceae	Graminoid	NI	FACW*
5	Juncus dudleyi	Juncus dudleyi Wiegand	Juncaceae	Graminoid		
*****	Juncus effusus	Juncus effusus L.	Juncaceae	Graminoid	OBL	OBL
6	Juncus ensifolius	Juncus ensifolius Wikstrom	Juncaceae	Graminoid	NI	FACW+
9	Juncus filiformis	Juncus filiformis L.	Juncaceae	Graminoid	NI	OBL
*****	Juncus gerardii	Juncus gerardii Loiseleur	Juncaceae	Graminoid	NI	OBL
Not Assigned	Juncus hallii	Juncus hallii Engelmann	Juncaceae	Graminoid	NI	FAC
5	Juncus interior	Juncus interior Wiegand	Juncaceae	Graminoid	FAC	FAC
6	Juncus longistylis	Juncus longistylis Torrey	Juncaceae	Graminoid	FACW	FACW+
Not Assigned	Juncus marginatus	Juncus marginatus Rostkovius	Juncaceae	Graminoid	FACW	FACW+
7	Juncus mertensianus	Juncus mertensianus Bongard	Juncaceae	Graminoid	NI	OBL*
Not Assigned	Juncus nevadensis	Juncus nevadensis S. Watson	Juncaceae	Graminoid	NI	FACW*
6	Juncus nodosus	Juncus nodosus L.	Juncaceae	Graminoid	OBL	OBL
7	Juncus parryi	Juncus parryi Engelmann	Juncaceae	Graminoid	NI	FAC*
6	Juncus saximontanus	Juncus saximontanus A. Nelson	Juncaceae	Graminoid	NI	FACW+
*****	Juncus tenuis	Juncus tenuis Willdenow	Juncaceae	Graminoid	FAC	FAC
5	Juncus torreyi	Juncus torreyi Coville	Juncaceae	Graminoid	FACW	FACW+
6	Juncus tracyi	Juncus tracyi Rydberg	Juncaceae	Graminoid	NI	FACW+
10	Juncus triglumis	Juncus triglumis L.	Juncaceae	Graminoid	NI	FACW+
Not Assigned	Juncus tweedyi	Juncus tweedyi Rydberg	Juncaceae	Graminoid	NI	OBL
Not Assigned	Juncus vaseyi	Juncus vaseyi Engelmann	Juncaceae	Graminoid	OBL	FACW
6	Juniperus communis var. montana	Juniperus communis L. subsp. alpina (J. E. Smith) Celakovsky	Cupressaceae	Shrub		
6	Juniperus monosperma	Sabina monosperma (Engelmann) Rydberg	Cupressaceae	Shrub		
5	Juniperus osteosperma	Sabina osteosperma (Torrey) Antoine	Cupressaceae	Tree		

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5	Juniperus scopulorum	Sabina scopulorum (Sargent) Rydberg	Cupressaceae	Shrub		
4	Juniperus virginiana var. virginiana	Sabina virginiana (L.) Antoine	Cupressaceae	Tree	FACU-	
1	Kallstroemia parviflora	Kallstroemia parviflora Norton	Zygophyllaceae	Forb		
9	Kalmia microphylla	Kalmia microphylla (Hooker) Heller	Ericaceae	Shrub	NI	OBL
*****	Knautia arvensis	Knautia arvensis (L.) Coulter	Dipsacaceae	Forb		
9	Kobresia myosuroides	Kobresia myosuroides (Villars) Fiori & Paoli	Cyperaceae	Graminoid	NI	FAC
10	Kobresia sibirica	Kobresia schoenoides (C. A. Meyer) Steudel	Cyperaceae	Graminoid	NI	FACW*
10	Kobresia simpliciuscula	Kobresia simpliciuscula (Wahlenberg) Mackenzie	Cyperaceae	Graminoid	NI	FACW
0	Kochia americana	Kochia americana S. Watson	Chenopodiaceae	Shrub	NI	FACU
*****	Kochia scoparia	Bassia sieversiana (Pallas) W. A. Weber	Chenopodiaceae	Forb	FACU	FACU
6	Koeleria macrantha	Koeleria macrantha (Ledebour) Schultes	Poaceae	Graminoid		
9	Koenigia islandica	Koenigia islandica L.	Polygonaceae	Forb	NI	OBL
8	Krameria lanceolata	Krameria lanceolata Torrey	Krameriaceae	Shrub		
8	Krascheninnikovia lanata	Krascheninnikovia lanata (Pursh) Meeuse & Smit	Chenopodiaceae	Shrub		
Not Assigned	Krigia biflora	Krigia biflora (Walter) S. F. Blake	Asteraceae	Forb	UPL	FACU
*****	Lactuca biennis	Lactuca biennis (Moench) Fernald	Asteraceae	Forb	NI	FAC
Not Assigned	Lactuca canadensis	Lactuca canadensis L.	Asteraceae	Forb	FACU	FACU
Not Assigned	Lactuca graminifolia	Lactuca graminifolia Michaux	Asteraceae	Forb	NI	NI
3	Lactuca ludoviciana	Lactuca ludoviciana (Nuttall) Riddell	Asteraceae	Forb	FAC	NI
*****	Lactuca serriola	Lactuca serriola L.	Asteraceae	Forb	FAC	FACU
3	Lactuca tatarica var. pulchella	Lactuca tatarica (L.) C. A. Meyer subsp. pulchella (Pursh) Stebbins	Asteraceae	Forb		FAC
Not Assigned	Laennecia coulteri	Conyza coulteri A. Gray	Asteraceae	Forb	NI	FAC
*****	Laennecia schiedeana	Conyza schiedeana (Lessing) Cronquist	Asteraceae	Forb		
*****	Lamium amplexicaule	Lamium amplexicaule L.	Lamiaceae	Forb		
*****	Lamium purpureum	Lamium purpureum L.	Lamiaceae	Forb		
*****	Lappula marginata	Lappula marginata (Bieberstein) Guerke	Boraginaceae	Forb		
2	Lappula occidentalis var. occidentalis	Lappula redowskii (Hornemann) Greene	Boraginaceae	Forb		
*****	Lappula squarrosa	Lappula squarrosa (Retzius) Dumont de Cours	Boraginaceae	Forb		
*****	Lapsana communis	Lapsana communis L.	Asteraceae	Forb	NI	NI
8	Lathyrus brachycalyx ssp. zionis	Lathyrus brachycalyx Rydberg var. zionis (C. L. Hitchcock) Welsh	Fabaceae	Vine, Forb/herb		

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6	Lathyrus eucosmus	Lathyrus eucosmus Butters & St. John	Fabaceae	Vine, Forb/herb		
6	Lathyrus lanszwertii var. leucanthus	Lathyrus leucanthus Rydberg	Fabaceae	Vine, Forb/herb		
*	Lathyrus latifolius	Lathyrus latifolius L.	Fabaceae	Vine, Forb		
8	Lathyrus pauciflorus	Lathyrus pauciflorus Fernald	Fabaceae	Vine, Forb/herb		
6	Lathyrus polymorphus ssp. incanus	Lathyrus polymorphus Nuttall subsp. incanus (Small & Rydberg) C. L. Hitchcock	Fabaceae	Vine, Forb/herb		
5	Lathyrus polymorphus ssp. polymorphus	Lathyrus polymorphus Nuttall subsp. polymorphus	Fabaceae	Vine, Forb/herb		
*	Leersia oryzoides	Leersia oryzoides (L.) Swartz	Poaceae	Graminoid	OBL	OBL
Not Assigned	Lemna gibba	Lemna gibba L.	Lemnaceae	Forb	OBL	OBL
2	Lemna minor	Lemna minor L.	Lemnaceae	Forb	OBL	OBL
Not Assigned	Lemna minuta	Lemna minuscula Herter	Lemnaceae	Forb	OBL	OBL
5	Lemna trisulca	Lemna trisulca L.	Lemnaceae	Forb	OBL	OBL
Not Assigned	Lemna turionifera	Lemna turionifera Landolt	Lemnaceae	Forb	NI	NI
Not Assigned	Lemna valdiviana	Lemna valdiviana Philippi	Lemnaceae	Forb	OBL	OBL
*	Leonurus cardiaca	Leonurus cardiaca L.	Lamiaceae	Forb		
3	Lepidium alyssoides	Lepidium alyssoides Gray	Brassicaceae	Forb		
4	Lepidium alyssoides var. alyssoides	Lepidium alyssoides Gray var. alyssoides	Brassicaceae	Shrub		
		Lepidium montanum Nuttall subsp. alyssoides (A. Gray) C. L. Hitchcock	Brassicaceae	Shrub		NI
4	Lepidium alyssoides var. eastwoodiae	Lepidium alyssoides Gray var. eastwoodiae	Brassicaceae	Forb		
*	Lepidium campestre	Neolepia campestris (L.) W. A. Weber	Brassicaceae	Forb		
Not Assigned	Lepidium crenatum	Lepidium crenatum (Greene) Rydberg	Brassicaceae	Shrub		
Not Assigned	Lepidium crenatum	Lepidium montanum Nuttall var. spathulatum (B. L. Robinson) C. L. Hitchcock	Brassicaceae	Shrub		NI
*	Lepidium densiflorum	Lepidium densiflorum Schrader	Brassicaceae	Forb	FAC	FACU
5	Lepidium lasiocarpum	Lepidium lasiocarpum Nuttall	Brassicaceae	Forb		
*	Lepidium latifolium	Cardaria latifolia (L.) Spach	Brassicaceae	Forb	FACW	FAC
5	Lepidium montanum	Lepidium montanum Nuttall	Brassicaceae	Forb	NI	NI
		Lepidium montanum Nuttall var. coloradense	Brassicaceae	Forb	NI	UPL
		Lepidium montanum Nuttall var. jonesii	Brassicaceae	Forb	NI	UPL
		Lepidium montanum Nuttall var. montanum	Brassicaceae	Forb	NI	UPL
		Lepidium montanum Nuttall var. wyomingense	Brassicaceae	Forb	NI	UPL

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5	Lepidium montanum var. tenellum	Lepidium montanum Nuttall var. tenellum (L. Williams) C. L. Hitchcock	Brassicaceae	Forb		NI
*****	Lepidium perfoliatum	Lepidium perfoliatum L.	Brassicaceae	Forb	FAC	FACU-
2	Lepidium ramosissimum	Lepidium ramosissimum A. Nelson	Brassicaceae	Forb		
Not Assigned	Lepidium ramosissimum var. bourgeauanum	Lepidium bourgeauanum Thellung	Brassicaceae	Forb		
*****	Lepidium sativum	Lepidium sativum	Brassicaceae	Forb		
*****	Lepidium strictum	Lepidium strictum (S. Watson) Rattan	Brassicaceae	Forb		
2	Lepidium virginicum	Lepidium virginicum L.	Brassicaceae	Forb	FACU	FACU
5	Leptochloa dubia	Diplachne dubia (Kunth) Scribner	Poaceae	Graminoid		
4	Leptochloa fusca ssp. fascicularis	Diplachne fascicularis (Lamarck) P. Beauvois	Poaceae	Graminoid	OBL	OBL
6	Leptodactylon caespitosum	Leptodactylon caespitosum Nuttall	Polemoniaceae	Shrub		
6	Leptodactylon pungens	Leptodactylon pungens (Torrey) Rydberg	Polemoniaceae	Shrub		
Not Assigned	Leptodactylon watsonii	Leptodactylon watsonii (A. Gray) Rydberg	Polemoniaceae	Shrub		
8	Lesquerella alpina	Lesquerella alpina (Nuttall ex Torrey & Gray) S. Watson	Brassicaceae	Forb		
Not Assigned	Lesquerella alpina var. alpina	Lesquerella alpina (Nuttall ex Torrey & Gray) S. Watson subsp. alpina	Brassicaceae	Forb		
Not Assigned	Lesquerella arenosa var. argillosa	Lesquerella arenosa (Richardson) Rydberg var. argillosa Rollins & Shaw	Brassicaceae	Forb		
8	Lesquerella calcicola	Lesquerella calcicola Rollins	Brassicaceae	Forb		
9	Lesquerella congesta	Lesquerella congesta Rollins	Brassicaceae	Forb		
8	Lesquerella fendleri	Lesquerella fendleri (A. Gray) S. Watson	Brassicaceae	Forb		
6	Lesquerella ludoviciana	Lesquerella ludoviciana (Nuttall) S. Watson	Brassicaceae	Forb		
5	Lesquerella montana	Lesquerella montana (A. Gray) S. Watson	Brassicaceae	Forb		
8	Lesquerella ovalifolia	Lesquerella ovalifolia Rydberg	Brassicaceae	Forb		
7	Lesquerella parviflora	Lesquerella parviflora Rollins	Brassicaceae	Forb		
Not Assigned	Lesquerella parvula	Lesquerella alpina (Nuttall ex Torrey & Gray) S. Watson subsp. parvula (Greene) Rollins & Shaw	Brassicaceae	Forb		
7	Lesquerella pruinosa	Lesquerella pruinosa Greene	Brassicaceae	Forb		
6	Lesquerella rectipes	Lesquerella rectipes Wooton & Standley	Brassicaceae	Forb		
6	Lesquerella vicina	Lesquerella vicina Anderson, Reveal & Rollins	Brassicaceae	Forb		
*****	Leucanthemum maximum	Leucanthemum maximum (Ramond) DC	Asteraceae	Forb		

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*	Leucanthemum vulgare	Leucanthemum vulgare Lamarck	Asteraceae	Forb	NI	NI
6	Leucocrinum montanum	Leucocrinum montanum Nuttall ex A. Gray	Liliaceae	Forb		
6	Leucopoa kingii	Leucopoa kingii (S. Watson) W. A. Weber	Poaceae	Graminoid		
*	Levisticum officinale	Levisticum officinale W. Koch	Apiaceae	Forb		
8	Lewisia pygmaea	Oreobroma nevadensis (A. Gray) T. J. Howell	Portulacaceae	Forb	NI	FACU
		Oreobroma pygmaea (A. Gray) T. J. Howell	Portulacaceae	Forb	NI	FACU
7	Lewisia rediviva	Lewisia rediviva Pursh	Portulacaceae	Forb		
9	Lewisia triphylla	Erocallis triphylla (S. Watson) Rydberg	Portulacaceae	Forb	NI	FACU
6	Leymus ambiguus	Leymus ambiguus (Vasey & Scribner) D. Dewey	Poaceae	Graminoid		
5	Leymus cinereus	Leymus cinereus (Scribner & Merrill) Loeve	Poaceae	Graminoid	NI	NI
6	Leymus salinus	Leymus salina (Jones) Loeve	Poaceae	Graminoid		
5	Leymus triticoides	Leymus triticoides (Buckley) Pilger	Poaceae	Graminoid	NI	FAC+
Not Assigned	Liatris lancifolia	Liatris lancifolia (Greene) Kittell	Asteraceae	Forb	FACW	NO
8	Liatris ligulistylis	Liatris ligulistylis (A. Nelson) K. Schumann	Asteraceae	Forb	NI	FAC
6	Liatris punctata	Liatris punctata Hooker	Asteraceae	Forb		
Not Assigned	Liatris squarrosa var. glabrata	Liatris squarrosa (L.) Michaux var. glabrata (Rydberg) Gaiser	Asteraceae	Forb		
7	Ligusticum porteri	Ligusticum porteri Coulter & Rose	Apiaceae	Forb	NI	FACU-
8	Ligusticum tenuifolium	Ligusticum filicinum S. Watson var. tenuifolium (S. Watson) Mathias & Constance	Apiaceae	Forb	NI	FAC
9	Lilium philadelphicum	Lilium philadelphicum L.	Liliaceae	Forb	FACW	FACU
7	Limosella aquatica	Limosella aquatica L.	Scrophulariaceae	Forb	OBL	OBL
4	Linanthus nuttallii ssp. nuttallii	Linanthastrum nuttallii (A. Gray) Ewan	Polemoniaceae	Forb		UPL
6	Linanthus septentrionalis	Linanthus harknessii (Curran) Greene var. septentrionalis (Mason) Jepson & Bailey	Polemoniaceae	Forb		
*	Linaria dalmatica ssp. dalmatica	Linaria genistifolia (L.) P. Miller subsp. dalmatica (L.) Maire et al.	Scrophulariaceae	Forb		
*	Linaria vulgaris	Linaria vulgaris P. Miller	Scrophulariaceae	Forb		
Not Assigned	Lindernia dubia var. anagallidea	Lindernia dubia (L.) Pennell var. anagallidea (Michaux) Cooperrider	Scrophulariaceae	Forb	OBL	OBL
9	Linnaea borealis ssp. americana	Linnaea borealis L. subsp. americana (Forbes) Hulten ex Clausen	Caprifoliaceae	Forb		FACU

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Not Assigned	Linum aristatum	Mesynium aristatum (Engelmann in Wislizenus) W. A. Weber	Linaceae	Forb		
Not Assigned	Linum australe var. australe	Mesynium australe (Heller) W. A. Weber	Linaceae	Forb		
*	Linum grandiflorum	Adenolinum grandiflorum (Desvaux) W. A. Weber	Linaceae	Forb		
Not Assigned	Linum kingii	Mesyniopsis kingii (S. Watson) W. A. Weber	Linaceae	Forb		
4	Linum lewisii var. lewisii	Adenolinum lewisii (Pursh) Loeve & Loeve	Linaceae	Forb	FACU	FAC
Not Assigned	Linum pratense	Adenolinum pratense (Norton) W. A. Weber	Linaceae	Forb		
6	Linum puberulum	Mesynium puberulum (Engelmann in A. Gray) W. A. Weber	Linaceae	Forb		
5	Linum rigidum var. rigidum	Mesynium rigidum (Pursh) Loeve & Loeve	Linaceae	Forb		
*	Linum usitatissimum	Linum usitatissimum L.	Linaceae	Forb		
Not Assigned	Lipocarpha aristulata	Hemicarpha micrantha Pax var. aristulata Coville	Cyperaceae	Graminoid	OBL	FACW
9	Listera borealis	Listera borealis Morong	Orchidaceae	Forb	NI	FACU
10	Listera convallarioides	Listera convallarioides (Swartz) Nuttall	Orchidaceae	Forb	NI	FACW
9	Listera cordata var. nephrophylla	Listera cordata (L.) R. Brown subsp. nephrophylla (Rydberg) Loeve & Loeve	Orchidaceae	Forb		FACU
7	Lithophragma glabrum	Lithophragma glabrum Nuttall	Saxifragaceae	Forb		
7	Lithophragma parviflorum	Lithophragma parviflorum (Hooker) Nuttall ex Torrey & Gray	Saxifragaceae	Forb		
8	Lithophragma tenellum	Lithophragma tenellum Nuttall	Saxifragaceae	Forb		
7	Lithospermum caroliniense var. croceum	Lithospermum croceum Fernald	Boraginaceae	Forb		
5	Lithospermum incisum	Lithospermum incisum Lehmann	Boraginaceae	Forb		
5	Lithospermum multiflorum	Lithospermum multiflorum Torrey ex A. Gray	Boraginaceae	Forb		
4	Lithospermum ruderale	Lithospermum ruderale Douglas ex Lehmann	Boraginaceae	Forb		
8	Lloydia serotina	Lloydia serotina (L.) Salisbury ex Reichenbach	Liliaceae	Forb	NI	FACU-
7	Lobelia cardinalis	Lobelia cardinalis L. subsp. graminea (Lamarck) McVaugh	Campanulaceae	Forb	OBL	OBL
7	Lobelia siphilitica var. ludoviciana	Lobelia siphilitica L. var. ludoviciana A. De Candolle	Campanulaceae	Forb	OBL	
*	Lobularia maritima	Lobularia maritima (L.) Desvaux	Brassicaceae	Forb		
*	Lolium arundinaceum	Festuca arundinacea Schreber	Poaceae	Graminoid	FACU	FACW-

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*	Lolium perenne	Lolium perenne L. subsp. italicum (A. Braun) Syme	Poaceae	Graminoid	FACU	FACU
*	Lolium pratense	Festuca pratensis Hudson	Poaceae	Graminoid	FAC	FACU
Not Assigned	Lomatium bicolor var. leptocarpum	Lomatium bicolor (S. Watson) Coulter & Rose var. leptocarpum (Nuttall ex Torrey & Gray) Schlessman	Apiaceae	Forb	NI	FACU-
7	Lomatium concinnum	Lomatium concinnum (Osterhout) Mathias	Apiaceae	Forb		
7	Lomatium dissectum var. multifidum	Lomatium dissectum (Nuttall) Mathias & Constance var. multifidum (Nuttall) Mathias & Constance	Apiaceae	Forb		
7	Lomatium eastwoodiae	Aletes eastwoodiae (Coulter & Rose) W. A. Weber	Apiaceae	Forb		
6	Lomatium foeniculaceum ssp. foeniculaceum	Lomatium foeniculaceum (Nuttall) Coulter & Rose subsp. foeniculaceum	Apiaceae	Forb		
Not Assigned	Lomatium foeniculaceum ssp. macdougalii	Lomatium foeniculaceum (Nuttall) Coulter & Rose subsp. macdougalii (Coulter & Rose) Theobald	Apiaceae	Forb		
7	Lomatium grayi	Lomatium grayi Coulter & Rose	Apiaceae	Forb		
Not Assigned	Lomatium juniperinum	Lomatium juniperinum (Jones) Coulter & Rose	Apiaceae	Forb		
9	Lomatium latilobum	Aletes latilobus (Rydberg) W. A. Weber	Apiaceae	Forb		
6	Lomatium macrocarpum	Lomatium macrocarpum (Hooker & Arnott) Coulter & Rose	Apiaceae	Forb		
6	Lomatium nuttallii	Aletes nuttallii (A. Gray) W. A. Weber	Apiaceae	Forb		
6	Lomatium orientale	Lomatium orientale Coulter & Rose	Apiaceae	Forb		
Not Assigned	Lomatium simplex var. simplex	Lomatium triternatum (Pursh) Coulter & Rose subsp. platycarpum (Torrey) Cronquist	Apiaceae	Forb		
9	Lomatogonium rotatum	Lomatogonium rotatum (L.) Grisebach subsp. tenuifolium (Grisebach) Porsild	Gentianaceae	Forb	NI	OBL
7	Lonicera involucrata var. involucrata	Distegia involucrata (Banks ex Sprengel) Cockerell	Caprifoliaceae	Shrub		FAC
*	Lonicera morrowii	Lonicera morrowii A. Gray in Perry	Caprifoliaceae	Shrub	NI	NI
*	Lonicera tatarica	Lonicera tatarica L.	Caprifoliaceae	Shrub	NI	NI
*	Lotus tenuis	Lotus tenuis Waldstein & Kitaibel	Fabaceae	Forb	NI	
6	Lotus wrightii	Lotus wrightii (A. Gray) Greene	Fabaceae	Forb		

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*	Lunaria annua	Lunaria annua L.	Brassicaceae	Forb		
7	Lupinus ammophilus	Lupinus ammophilus Greene	Fabaceae	Forb		
5	Lupinus argenteus	Lupinus argenteus Pursh	Fabaceae	Forb		
7	Lupinus bakeri	Lupinus bakeri Greene	Fabaceae	Forb		
Not Assigned	Lupinus bakeri ssp. amplus	Lupinus bakeri Greene subsp. amplus (Greene) Fleak & Dunn	Fabaceae	Forb		
7	Lupinus bakeri ssp. bakeri	Lupinus bakeri Greene subsp. bakeri	Fabaceae	Forb		
6	Lupinus brevicaulis	Lupinus brevicaulis S. Watson	Fabaceae	Forb		
Not Assigned	Lupinus caespitosus	Lupinus caespitosus Nuttall	Fabaceae	Forb		
5	Lupinus caudatus	Lupinus caudatus Kellogg	Fabaceae	Forb		
7	Lupinus crassus	Lupinus crassus Payson	Fabaceae	Forb		
7	Lupinus kingii	Lupinus kingii S. Watson	Fabaceae	Forb	NI	UPL
7	Lupinus parviflorus ssp. parviflorus	Lupinus parviflorus Nuttall subsp. parviflorus	Fabaceae	Forb		
6	Lupinus plattensis	Lupinus plattensis S. Watson	Fabaceae	Forb		
6	Lupinus prunophilus	Lupinus prunophilus Jones	Fabaceae	Forb	NO	FACU-
6	Lupinus pusillus	Lupinus pusillus Pursh	Fabaceae	Forb		
5	Lupinus pusillus ssp. pusillus	Lupinus pusillus Pursh subsp. pusillus	Fabaceae	Forb		
Not Assigned	Lupinus pusillus ssp. rubens	Lupinus pusillus Pursh subsp. rubens (Rydberg) Dunn	Fabaceae	Forb		
6	Lupinus sericeus	Lupinus sericeus Pursh	Fabaceae	Forb		
Not Assigned	Lupinus sericeus ssp. sericeus var. egglestonianus	Lupinus sericeus Pursh var. egglestonianus C. P. Smith	Fabaceae	Forb		
Not Assigned	Lupinus sericeus ssp. sericeus var. flexuosus	Lupinus sericeus Pursh var. flexuosus (Lindley) C. P. Smith	Fabaceae	Forb		
7	Luzula comosa	Luzula comosa E. Meyer	Juncaceae	Graminoid		
7	Luzula parviflora	Luzula parviflora (Ehrhart) Desvaux	Juncaceae	Graminoid	NI	FAC
8	Luzula spicata	Luzula spicata (L.) De Candolle	Juncaceae	Graminoid	NI	FACU
8	Luzula subcapitata	Luzula subcapitata (Rydberg) Harrington	Juncaceae	Graminoid	NI	OBL
*	Lychnis coronaria	Coronaria coriacea (Moench) Shishkin & Gorschkova	Caryophyllaceae	Forb		
*	Lycium barbarum	Lycium barbarum L.	Solanaceae	Vine, Shrub	NI	NI
5	Lycium pallidum	Lycium pallidum Miers	Solanaceae	Shrub		
7	Lycopodium annotinum	Lycopodium annotinum L.	Lycopodiaceae	Shrub	FAC-	FACU

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		Lycopodium dubium Zoega	Lycopodiaceae	Shrub	FAC-	FACU
5	Lycopus americanus	Lycopus americanus Muhlenberg ex W. Barton	Lamiaceae	Forb	OBL	OBL
5	Lycopus asper	Lycopus asper Greene	Lamiaceae	Forb	OBL	OBL
Not Assigned	Lycopus uniflorus	Lycopus uniflorus Michaux	Lamiaceae	Forb	OBL	OBL
8	Lycurus setosus	Lycurus setosus (Nuttall) C. Reeder	Poaceae	Graminoid		
Not Assigned	Lygodesmia arizonica	Lygodesmia arizonica Tomb	Asteraceae	Forb		
6	Lygodesmia doloresensis	Lygodesmia doloresensis Tomb	Asteraceae	Forb		
5	Lygodesmia grandiflora	Lygodesmia grandiflora (Nuttall) Torrey & Gray	Asteraceae	Forb		
4	Lygodesmia juncea	Lygodesmia juncea (Pursh) D. Don	Asteraceae	Forb		
6	Lysimachia ciliata	Lysimachia ciliata L.	Primulaceae	Forb	FACW	FACW+
*****	Lysimachia nummularia	Lysimachia nummularia L.	Primulaceae	Forb	OBL	NI
Not Assigned	Lysimachia thyrsiflora	Naumburgia thyrsiflora (L.) Reichenbach	Primulaceae	Forb	OBL	OBL
*****	Lysimachia vulgaris	Lysimachia vulgaris L.	Primulaceae	Forb	NI	NI
7	Lythrum alatum	Lythrum alatum Pursh	Lythraceae	Forb	OBL	NI
*****	Lythrum salicaria	Lythrum salicaria L.	Lythraceae	Forb	OBL	OBL
3	Machaeranthera bigelovii	Machaeranthera bigelovii (A. Gray) Greene	Asteraceae	Forb		
5	Machaeranthera bigelovii var. bigelovii	Machaeranthera pattersonii (A. Gray) Greene	Asteraceae	Forb	NI	NI
Not Assigned	Machaeranthera bigelovii var. commixta	Machaeranthera commixta Greene	Asteraceae	Forb		
4	Machaeranthera canescens	Machaeranthera canescens (Pursh) A. Gray	Asteraceae	Forb		
		Machaeranthera canescens (Pursh) A. Gray var. aristata (Eastwood) B. Turner	Asteraceae	Forb		
Not Assigned	Machaeranthera canescens ssp. canescens var. ambigua	Machaeranthera canescens (Pursh) A. Gray var. ambigua B. Turner	Asteraceae	Forb		
Not Assigned	Machaeranthera canescens ssp. glabra	Machaeranthera canescens (Pursh) A. Gray var. glabra A. Gray	Asteraceae	Forb		
6	Machaeranthera coloradoensis	Machaeranthera coloradoensis (A. Gray) Osterhout	Asteraceae	Shrub		
7	Machaeranthera coloradoensis var. brandegeei	Machaeranthera coloradoensis (A. Gray) Osterhout var. brandegei (Rydberg) T. J. Watson, {ined.}	Asteraceae	Shrub		
9	Machaeranthera coloradoensis var. coloradoensis	Machaeranthera coloradoensis (A. Gray) Osterhout var. coloradoensis	Asteraceae	Shrub		

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Not Assigned	Machaeranthera gracilis	Machaeranthera gracilis (Nuttall) Shinners	Asteraceae	Forb		
4	Machaeranthera grindelioides	Machaeranthera grindelioides (Nuttall) Shinners	Asteraceae	Forb		
Not Assigned	Machaeranthera parviflora	Machaeranthera parviflora A. Gray	Asteraceae	Forb		
4	Machaeranthera pinnatifida	Machaeranthera pinnatifida (Hooker) Shinners	Asteraceae	Forb		
Not Assigned	Machaeranthera pinnatifida ssp. gooddingii var. paradoxa	Machaeranthera pinnatifida (Hooker) Shinners var. paradoxa Turner & Hartman	Asteraceae	Forb		
4	Machaeranthera pinnatifida ssp. pinnatifida var. glaberrima	Machaeranthera pinnatifida (Hooker) Shinners var. glaberrima (Rydberg) Turner & Hartman	Asteraceae	Forb		
4	Machaeranthera pinnatifida ssp. pinnatifida var. pinnatifida	Machaeranthera pinnatifida (Hooker) Shinners var. pinnatifida	Asteraceae	Forb		
2	Machaeranthera tanacetifolia	Machaeranthera tanacetifolia (Humboldt, Bonpland, & Kunth) Nees	Asteraceae	Forb		
*	Maclura pomifera	Maclura pomifera (Rafinesque) C. K. Schneider	Moraceae	Shrub	UPL	UPL
*	Madia glomerata	Madia glomerata Hooker	Asteraceae	Forb	FACU	FACU
6	Mahonia fremontii	Mahonia fremontii (Torrey) Fedde	Berberidaceae	Shrub		
5	Mahonia haematocarpa	Mahonia haematocarpa (Wooton) Fedde	Berberidaceae	Shrub		
5	Mahonia repens	Mahonia repens (Lindley) G. Don	Berberidaceae	Shrub		
7	Maianthemum racemosum ssp. amplexicaule	Maianthemum amplexicaule (Nuttall) W. A. Weber	Liliaceae	Forb	NI	FAC-
7	Maianthemum stellatum	Maianthemum stellatum (L.) Link	Liliaceae	Forb	FAC	FAC
5	Malacothrix sonchoides	Malacothrix sonchoides (Nuttall) Torrey & Gray	Asteraceae	Forb		
Not Assigned	Malacothrix torreyi	Malacothrix torreyi A. Gray	Asteraceae	Forb		
10	Malaxis brachypoda	Malaxis monophyllos (L.) Solander ex Swartz subsp. brachypoda (A. Gray) Loeve & Loeve	Orchidaceae	Forb	NI	NI
*	Malcolmia africana	Malcolmia africana (L.) R. Brown	Brassicaceae	Forb		
*	Malus pumila	Malus domestica Borkhausen	Rosaceae	Tree		
*	Malva crispa	Malva crispa (L.) L.	Malvaceae	Forb		
*	Malva neglecta	Malva neglecta Wallroth	Malvaceae	Forb		
*	Malva parviflora	Malva parviflora L.	Malvaceae	Forb		
7	Malvella leprosa	Malvella leprosa (Ortega) Krapovickas	Malvaceae	Forb	FACW	FAC
Not Assigned	Malvella sagittifolia	Malvella sagittifolia (A. Gray) Fryxell	Malvaceae	Forb		
*	Marrubium vulgare	Marrubium vulgare L.	Lamiaceae	Forb	FAC	FACU
7	Marsilea vestita ssp. vestita	Marsilea mucronata A. Braun	Marsileaceae	Forb	OBL	OBL

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*	Matricaria discoidea	Lepidotheca suaveolens (Pursh) Nuttall	Asteraceae	Forb	FACU	FACU
*	Medicago lupulina	Medicago lupulina L.	Fabaceae	Forb	FAC	FAC
*	Medicago sativa	Medicago sativa L.	Fabaceae	Forb	NI	NI
6	Melampodium leucanthum	Melampodium leucanthum Torrey & Gray	Asteraceae	Forb		
6	Melica bulbosa	Bromelica bulbosa (Geyer ex Porter & Coulter) W. A. Weber	Poaceae	Graminoid	NO	UPL
9	Melica porteri	Melica porteri Scribner	Poaceae	Graminoid		
8	Melica spectabilis	Bromelica spectabilis (Scribner) W. A. Weber	Poaceae	Graminoid	NI	UPL
Not Assigned	Melica subulata	Bromelica subulata (Grisebach) Farwell	Poaceae	Graminoid		
*	Melilotus officinalis	Melilotus albus Medicus	Fabaceae	Forb	FACU	FACU
		Melilotus officinale (L.) Pallas	Fabaceae	Forb	FACU	FACU
9	Menodora scabra	Menodora scabra (Engelmann) A. Gray	Oleaceae	Forb		
*	Mentha aquatica	Mentha piperita L.	Lamiaceae	Forb	NO	OBL
4	Mentha arvensis	Mentha arvensis L.	Lamiaceae	Forb	FACW	FACW
*	Mentha spicata	Mentha spicata L.	Lamiaceae	Forb	OBL	FACW
4	Mentzelia albicaulis	Acrolasia albicaulis (Douglas ex Hooker) Rydberg	Loasaceae	Forb		
		Acrolasia gracilis Rydberg	Loasaceae	Forb		
9	Mentzelia argillosa	Nuttallia argillosa (J. Darlington) W. A. Weber	Loasaceae	Forb		
4	Mentzelia chrysantha	Nuttallia chrysantha (Engelmann ex Brandegee) Greene	Loasaceae	Forb		
Not Assigned	Mentzelia cronquistii	Nuttallia cronquistii (Thompson & Prigge) W. A. Weber	Loasaceae	Forb		
5	Mentzelia decapetala	Nuttallia decapetala (Pursh ex Sims) Greene	Loasaceae	Forb		
4	Mentzelia densa	Nuttallia densa (Greene) Greene	Loasaceae	Forb		
Not Assigned	Mentzelia dispersa var. dispersa	Acrolasia dispersa (S. Watson) Davidson	Loasaceae	Forb		
Not Assigned	Mentzelia humilis	Acrolasia humilis Osterhout	Loasaceae	Forb		
		Nuttallia humilis (Gray) Rydberg	Loasaceae	Forb		
Not Assigned	Mentzelia laciniata	Nuttallia laciniata (Rydberg) Wooton & Standley	Loasaceae	Forb		
Not Assigned	Mentzelia marginata	Nuttallia marginata Osterhout	Loasaceae	Forb		
4	Mentzelia multicaulis var. multicaulis	Nuttallia multicaulis (Osterhout) Osterhout	Loasaceae	Forb		
5	Mentzelia multiflora var. multiflora	Nuttallia multiflora (Nuttall) Greene	Loasaceae	Forb		
4	Mentzelia nuda var. nuda	Nuttallia nuda (Pursh) Greene	Loasaceae	Forb		
5	Mentzelia oligosperma	Mentzelia oligosperma Nuttall ex Sims	Loasaceae	Forb		

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Not Assigned	Mentzelia pterosperma	Nuttallia pterosperma (Eastwood) Greene	Loasaceae	Forb		
5	Mentzelia reverchonii	Nuttallia reverchonii (Urban & Gilg) W. A. Weber	Loasaceae	Forb		
4	Mentzelia rusbyi	Nuttallia rusbyi (Wooton) Rydberg	Loasaceae	Forb		
5	Mentzelia sinuata	Nuttallia sinuata (Rydberg) Daniels	Loasaceae	Forb		
5	Mentzelia speciosa	Nuttallia speciosa (Osterhout) Greene	Loasaceae	Forb		
9	Menyanthes trifoliata	Menyanthes trifoliata L.	Menyanthaceae	Forb	OBL	OBL
9	Mertensia alpina	Mertensia alpina (Torrey) G. Don	Boraginaceae	Forb		
Not Assigned	Mertensia arizonica	Mertensia arizonica Greene var. grahamii L. Williams	Boraginaceae	Forb		
8	Mertensia brevistyla	Mertensia brevistyla S. Watson	Boraginaceae	Forb		
7	Mertensia ciliata	Mertensia ciliata (James ex Torrey) G. Don	Boraginaceae	Forb	NI	OBL
8	Mertensia franciscana	Mertensia franciscana Heller	Boraginaceae	Forb	NI	OBL
Not Assigned	Mertensia humilis	Mertensia humilis Rydberg	Boraginaceae	Forb		
6	Mertensia lanceolata	Mertensia lanceolata (Pursh) A. De Candolle	Boraginaceae	Forb		
Not Assigned	Mertensia lanceolata var. lanceolata	Mertensia lanceolata (Pursh) A. De Candolle var. lanceolata	Boraginaceae	Forb		
4	Mertensia oblongifolia	Mertensia fusiformis Greene	Boraginaceae	Forb	FAC	
		Mertensia lanceolata (Pursh) A. De Candolle var. viridis A. Nelson	Boraginaceae	Forb		
		Mertensia oblongifolia (Nuttall) G. Don	Boraginaceae	Forb		
5	Microseris nutans	Microseris nutans (Geyer ex Hooker) Schultz-Bipontinus	Asteraceae	Forb		
6	Mimosa borealis	Mimosa borealis A. Gray	Fabaceae	Shrub		
6	Mimosa microphylla	Schrankia uncinata Willdenow	Fabaceae	Vine, Forb/herb		
Not Assigned	Mimosa rupertiana	Schrankia occidentalis (Wooton & Standley) Standley	Fabaceae	Forb		
10	Mimulus breweri	Mimulus breweri (Greene) Coville	Scrophulariaceae	Forb	NI	NI
10	Mimulus eastwoodiae	Mimulus eastwoodiae Rydberg	Scrophulariaceae	Forb	NO	OBL
10	Mimulus floribundus	Mimulus floribundus Douglas in Lindley	Scrophulariaceae	Forb	OBL	OBL
9	Mimulus gemmiparus	Mimulus gemmiparus W. A. Weber	Scrophulariaceae	Forb		
5	Mimulus glabratus	Mimulus glabratus Humboldt, Bonpland, & Kunth	Scrophulariaceae	Forb	OBL	OBL
		Mimulus glabratus Humboldt, Bonpland, & Kunth var. utahensis Pennell	Scrophulariaceae	Forb	OBL	OBL

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6	Mimulus glabratus var. jamesii	Mimulus glabratus Humboldt, Bonpland, & Kunth var. fremontii (Bentham) Adele Grant	Scrophulariaceae	Forb	OBL	OBL
8	Mimulus guttatus	Mimulus guttatus De Candolle	Scrophulariaceae	Forb	OBL	OBL
8	Mimulus lewisii	Mimulus lewisii Pursh	Scrophulariaceae	Forb	NO	OBL
9	Mimulus moschatus	Mimulus moschatus Douglas in Lindley	Scrophulariaceae	Forb	NI	OBL
Not Assigned	Mimulus ringens	Mimulus ringens L.	Scrophulariaceae	Forb	OBL	NO
Not Assigned	Mimulus rubellus	Mimulus rubellus A. Gray	Scrophulariaceae	Forb	NI	FAC+
6	Mimulus suksdorfii	Mimulus suksdorfii	Scrophulariaceae	Forb	NI	FAC
10	Mimulus tilingii	Mimulus tilingii Regel	Scrophulariaceae	Forb	NI	OBL
10	Minuartia macrantha	Alsinanthe macrantha (Rydberg) W. A. Weber	Caryophyllaceae	Forb		
Not Assigned	Minuartia nuttallii ssp. nuttallii	Minuopsis nuttallii (Pax) W. A. Weber	Caryophyllaceae	Forb		
8	Minuartia obtusiloba	Lidia obtusiloba (Rydberg) Loeve & Loeve	Caryophyllaceae	Forb	NI	UPL
Not Assigned	Minuartia rubella	Tryphane rubella (Wahlenberg) Reichenbach	Caryophyllaceae	Forb	NI	UPL
10	Minuartia stricta	Alsinanthe stricta (Swartz) Reichenbach	Caryophyllaceae	Forb	NI	
Not Assigned	Mirabilis alipes	Mirabilis alipes (S. Watson) Pilz	Nyctaginaceae	Forb		
Not Assigned	Mirabilis comata	Oxybaphus comatus (Small) Weatherby	Nyctaginaceae	Forb		
5	Mirabilis glabra	Oxybaphus carletonii (Standley) Weatherby	Nyctaginaceae	Forb		
		Oxybaphus exaltatus (Standley) Weatherby	Nyctaginaceae	Forb		
		Oxybaphus glaber S. Watson	Nyctaginaceae	Forb		
6	Mirabilis hirsuta	Oxybaphus hirsutus (Pursh) Sweet in De Candolle	Nyctaginaceae	Forb		
5	Mirabilis linearis	Oxybaphus decumbens (Nuttall) Sweet	Nyctaginaceae	Forb	NI	NI
		Oxybaphus linearis (Pursh) B. L. Robinson	Nyctaginaceae	Forb	NI	NI
7	Mirabilis multiflora	Mirabilis multiflora (Torrey) A. Gray	Nyctaginaceae	Forb		
Not Assigned	Mirabilis multiflora var. glandulosa	Mirabilis glandulosa (Standley) W. A. Weber	Nyctaginaceae	Forb		
2	Mirabilis nyctaginea	Oxybaphus nyctagineus (Michaux) T. C. Porter in Porter & Coulter	Nyctaginaceae	Forb	UPL	NI
7	Mirabilis oxybaphoides	Mirabilis oxybaphoides (A. Gray) A. Gray	Nyctaginaceae	Forb		
8	Mirabilis rotundifolia	Oxybaphus rotundifolius (Greene) Standley	Nyctaginaceae	Forb		
*****	Miscanthus sinensis	Miscanthus sinensis Andersson	Poaceae	Graminoid	NI	NI
9	Mitella pentandra	Mitella pentandra Hooker	Saxifragaceae	Forb	NI	FACW
10	Mitella stauropetala var. stenopetala	Mitella stauropetala Piper var. stenopetala (Piper) Rosendahl	Saxifragaceae	Forb		FAC
8	Moehringia lateriflora	Moehringia lateriflora (L.) Fenzl	Caryophyllaceae	Forb	UPL	FAC

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8	Moehringia macrophylla	Moehringia macrophylla (Hooker) Torrey	Caryophyllaceae	Forb		
*****	Mollugo verticillata	Mollugo verticillata L.	Molluginaceae	Forb	FAC	FAC
6	Monarda fistulosa	Monarda fistulosa L. var. menthifolia (R. Graham) Fernald	Lamiaceae	Shrub	FACU-	FAC
5	Monarda pectinata	Monarda pectinata Nuttall	Lamiaceae	Forb		
8	Monardella odoratissima	Monardella odoratissima Bentham	Lamiaceae	Forb	NO	UPL
9	Moneses uniflora	Moneses uniflora (L.) A. Gray	Pyrolaceae	Forb		FACU
4	Monolepis nuttalliana	Monolepis nuttalliana (Schultes) Greene	Chenopodiaceae	Forb	FACW	FACW
1	Monolepis pusilla	Monolepis pusilla Torrey	Chenopodiaceae	Forb		
8	Monotropa hypopithys	Hypopitys monotropa Crantz	Monotropaceae	Forb		
4	Monroa squarrosa	Monroa squarrosa (Nuttall) Torrey	Poaceae	Graminoid		
8	Montia chamissoi	Crunocallis chamissoi (Ledebour ex Sprengel) Rydberg	Portulacaceae	Forb	NI	OBL
*****	Morus alba	Morus alba L.	Moraceae	Shrub	FAC	NI
Not Assigned	Muhlenbergia andina	Muhlenbergia andina (Nuttall) A. S. Hitchcock	Poaceae	Graminoid	NI	FACW
Not Assigned	Muhlenbergia arenacea	Muhlenbergia arenacea (Buckley) A. S. Hitchcock	Poaceae	Graminoid		
Not Assigned	Muhlenbergia arenicola	Muhlenbergia arenicola Buckley	Poaceae	Graminoid		
4	Muhlenbergia asperifolia	Muhlenbergia asperifolia (Nees & Meyen ex Trinius) Parodi	Poaceae	Graminoid	FACW	FACW+
Not Assigned	Muhlenbergia brevis	Muhlenbergia brevis Goodding	Poaceae	Graminoid		
6	Muhlenbergia cuspidata	Muhlenbergia cuspidata (Torrey) Rydberg	Poaceae	Graminoid		
Not Assigned	Muhlenbergia depauperata	Muhlenbergia depauperata Scribner	Poaceae	Graminoid		
4	Muhlenbergia filiculmis	Muhlenbergia filiculmis Vasey	Poaceae	Graminoid		
8	Muhlenbergia filiformis	Muhlenbergia filiformis (Thurber ex S. Watson) Rydberg	Poaceae	Graminoid	FACW	FACW+
5	Muhlenbergia glomerata	Muhlenbergia glomerata (Willdenow) Trinius	Poaceae	Graminoid	FACW	FACW
Not Assigned	Muhlenbergia mexicana	Muhlenbergia mexicana (L.) Trinius	Poaceae	Graminoid	FACW	FAC
8	Muhlenbergia minutissima	Muhlenbergia minutissima (Steudel) Swallen	Poaceae	Graminoid	NI	FAC
7	Muhlenbergia montana	Muhlenbergia montana (Nuttall) A. S. Hitchcock	Poaceae	Graminoid	NI	UPL
Not Assigned	Muhlenbergia pauciflora	Muhlenbergia pauciflora Buckley	Poaceae	Graminoid		
Not Assigned	Muhlenbergia porteri	Muhlenbergia porteri Scribner	Poaceae	Graminoid		
6	Muhlenbergia pungens	Muhlenbergia pungens Thurber ex A. Gray	Poaceae	Graminoid		

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5	Muhlenbergia racemosa	Muhlenbergia racemosa (Michaux) Britton, Sterns, & Poggenberg	Poaceae	Graminoid	FACW	FACU
Not Assigned	Muhlenbergia ramulosa	Muhlenbergia wolfii (Vasey) Rydberg	Poaceae	Graminoid	NO	FACU-
8	Muhlenbergia richardsonis	Muhlenbergia richardsonis (Trinius) Rydberg	Poaceae	Graminoid	FAC	FACU*
*****	Muhlenbergia schreberi	Muhlenbergia schreberi J. F. Gmelin	Poaceae	Graminoid	FACU	NI
Not Assigned	Muhlenbergia thurberi	Muhlenbergia thurberi (Scribner) Rydberg	Poaceae	Graminoid		
5	Muhlenbergia torreyi	Muhlenbergia torreyi (Kunth) A. S. Hitchcock ex Bush	Poaceae	Graminoid		
7	Muhlenbergia wrightii	Muhlenbergia wrightii Vasey ex Coulter	Poaceae	Graminoid	NI	FACU
5	Musineon divaricatum	Musineon divaricatum (Pursh) Rafinesque	Apiaceae	Forb		
Not Assigned	Musineon divaricatum var. divaricatum	Musineon divaricatum (Pursh) Rafinesque var. divaricatum	Apiaceae	Forb		
Not Assigned	Musineon divaricatum var. hookeri	Musineon divaricatum (Pursh) Rafinesque var. hookeri Torrey & Gray	Apiaceae	Forb		
Not Assigned	Musineon tenuifolium	Aletes tenuifolius (Nuttall ex Torrey & Gray) W. A. Weber	Apiaceae	Forb		
10	Myosotis asiatica	Myosotis asiatica (Vestergren) Schischkin & Sergievskaya	Boraginaceae	Forb	FACW	FACW
*****	Myosotis scorpioides	Myosotis scorpioides L.	Boraginaceae	Forb	NI	OBL
5	Myosurus apetalus	Myosurus apetalus Gay	Ranunculaceae	Forb		
5	Myosurus apetalus var. montanus	Myosurus minimus L. subsp. montanus Campbell	Ranunculaceae	Forb		OBL
5	Myosurus cupulatus	Myosurus cupulatus S. Watson	Ranunculaceae	Forb	NO	FAC
5	Myosurus minimus	Myosurus minimus L.	Ranunculaceae	Forb	FACW	OBL
		Myosurus minimus L. subsp. minimus	Ranunculaceae	Forb	FACW	OBL
3	Myriophyllum sibiricum	Myriophyllum sibiricum Komarov	Haloragaceae	Forb	OBL	OBL
Not Assigned	Myriophyllum verticillatum	Myriophyllum verticillatum L.	Haloragaceae	Forb	OBL	OBL
*****	Najas guadalupensis	Najas guadalupensis (Sprengel) Magnus	Najadaceae	Forb	OBL	OBL
Not Assigned	Nama densum	Nama densum Lemmon	Hydrophyllaceae	Forb		
10	Nama dichotomum	Nama dichotomum (Ruiz & Pavon) Choisy	Hydrophyllaceae	Forb		
Not Assigned	Nama hispidum	Nama hispidum A. Gray	Hydrophyllaceae	Forb		
4	Nassella viridula	Nassella viridula (Trinius) Barkworth	Poaceae	Graminoid		
5	Navarretia breweri	Navarretia breweri (A. Gray) Greene	Polemoniaceae	Forb		
Not Assigned	Navarretia leucocephala ssp. minima	Navarretia minima Nuttall	Polemoniaceae	Forb		FAC

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Not Assigned	Nemophila breviflora	Nemophila breviflora A. Gray	Hydrophyllaceae	Forb		
9	Neoparrya lithophila	Aletes lithophilus (Mathias) W. A. Weber	Apiaceae	Forb		
*	Nepeta cataria	Nepeta cataria L.	Lamiaceae	Forb	FACU	FACU
*	Nicandra physalodes	Nicandra physalodes (L.) Persoon	Solanaceae	Forb		
3	Nicotiana attenuata	Nicotiana attenuata Torrey ex S. Watson	Solanaceae	Forb	NI	UPL
10	Nolina texana	Nolina texana S. Watson	Liliaceae	Shrub		
4	Nothocalais cuspidata	Nothocalais cuspidata (Pursh) Greene	Asteraceae	Forb		
10	Notholaena standleyi	Notholaena standleyi Maxon	Pteridaceae	Forb		
7	Nuphar lutea ssp. polysepala	Nuphar lutea Sibthorp & Smith subsp. polysepala (Engelmann) Beal	Nymphaeaceae	Forb	OBL	OBL
Not Assigned	Nuttallanthus texanus	Linaria canadensis Dumont de Cours var. texana (Scheele) Pennell	Scrophulariaceae	Forb		
*	Nymphaea odorata	Nymphaea odorata Solander in Aiton	Nymphaeaceae	Forb	OBL	OBL
*	Oenothera ?kleinii	Oenothera kleinii Wagner & Mill	Onagraceae	Forb		
4	Oenothera acutissima	Oenothera acutissima W. L. Wagner	Onagraceae	Forb		
6	Oenothera albicaulis	Oenothera albicaulis Pursh	Onagraceae	Forb		
5	Oenothera caespitosa	Oenothera caespitosa Nuttall ex Fraser	Onagraceae	Forb		
5	Oenothera caespitosa ssp. caespitosa	Oenothera caespitosa Nuttall ex Fraser subsp. caespitosa	Onagraceae	Forb		
3	Oenothera caespitosa ssp. macroglottis	Oenothera caespitosa Nuttall ex Fraser subsp. macroglottis (Rydberg) W. L. Wagner et al.	Onagraceae	Forb		
3	Oenothera caespitosa ssp. marginata	Oenothera caespitosa Nuttall ex Fraser subsp. marginata (Nuttall) W. L. Wagner et al.	Onagraceae	Forb		
3	Oenothera caespitosa ssp. navajoensis	Oenothera caespitosa Nuttall ex Fraser subsp. navajoensis W. L. Wagner et al.	Onagraceae	Forb		
4	Oenothera canescens	Oenothera canescens Torrey & Fremont	Onagraceae	Forb	FACW-	NI
4	Oenothera coronopifolia	Oenothera coronopifolia Torrey & Gray	Onagraceae	Forb		
5	Oenothera elata ssp. hirsutissima	Oenothera elata Humboldt, Bonpland, & Kunth subsp. hirsutissima (A. Gray ex S. Watson) Dietrich & Wagner	Onagraceae	Forb	FAC	FACW
5	Oenothera engelmannii	Oenothera engelmannii (Small) Munz	Onagraceae	Forb		
6	Oenothera flava	Oenothera flava (A. Nelson) Garrett	Onagraceae	Forb	FACW	FACW
4	Oenothera grandis	Oenothera grandis (Britton) Smyth	Onagraceae	Forb	FACU-	

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6	Oenothera harringtonii	Oenothera harringtonii W. L. Wagner et al in W. L. Wagner	Onagraceae	Forb		
5	Oenothera howardii	Oenothera howardii (A. Nelson) W. L. Wagner	Onagraceae	Forb		
5	Oenothera latifolia	Oenothera latifolia (Rydberg) Munz	Onagraceae	Forb		
Not Assigned	Oenothera longissima	Oenothera longissima Rydberg	Onagraceae	Forb	NI	OBL
4	Oenothera nuttallii	Oenothera nuttallii Sweet	Onagraceae	Forb		
4	Oenothera pallida	Oenothera pallida Lindley	Onagraceae	Forb		
Not Assigned	Oenothera pallida ssp. pallida	Oenothera pallida Lindley subsp. pallida	Onagraceae	Forb		
Not Assigned	Oenothera pallida ssp. runcinata	Oenothera pallida Lindley subsp. runcinata (Engelmann) Munz & Klein	Onagraceae	Forb		
Not Assigned	Oenothera pallida ssp. trichocalyx	Oenothera pallida Lindley subsp. trichocalyx (Nuttall ex Torrey & Gray) Munz & Klein	Onagraceae	Forb		
4	Oenothera villosa ssp. strigosa	Oenothera villosa Thunberg subsp. strigosa (Rydberg) Dietrich & Raven	Onagraceae	Forb	FACU	FAC
Not Assigned	Oligoneuron album	Unamia alba (Nuttall) Rydberg	Asteraceae	Forb		
4	Oligoneuron rigidum	Oligoneuron rigidum (L.) Small	Asteraceae	Forb		FACU-
*****	Onobrychis viciifolia	Onobrychis viciifolia Scopoli	Fabaceae	Forb		
9	Onoclea sensibilis	Onoclea sensibilis L.	Dryopteridaceae	Forb	FACW	NI
*****	Onopordum acanthium	Onopordum acanthium L.	Asteraceae	Forb		
*****	Onopordum tauricum	Onopordum tauricum Willdenow	Asteraceae	Forb		
5	Onosmodium molle ssp. occidentale	Onosmodium molle Michaux subsp. occidentale (Mackenzie) Cochrane	Boraginaceae	Forb		
5	Oonopsis engelmannii	Oonopsis engelmannii (A. Gray) Greene	Asteraceae	Shrub		
6	Oonopsis foliosa	Oonopsis foliosa (A. Gray) Greene	Asteraceae	Shrub		
5	Opuntia erinacea var. erinacea	Opuntia erinacea Engelmann & Bigelow var. erinacea	Cactaceae	Shrub		
5	Opuntia erinacea var. utahensis	Opuntia erinacea Engelmann & Bigelow var. utahensis (Engelmann) L. Benson	Cactaceae	Shrub		
3	Opuntia fragilis	Opuntia fragilis (Nuttall) Haworth	Cactaceae	Shrub		
5	Opuntia fragilis var. brachyarthra	Opuntia fragilis (Nuttall) Haworth var. brachyarthra (Engelmann & Bigelow) Coulter	Cactaceae	Shrub		
5	Opuntia fragilis var. fragilis	Opuntia fragilis (Nuttall) Haworth var. fragilis	Cactaceae	Shrub		
Not Assigned	Opuntia heacockiae	Opuntia heacockiae Arp	Cactaceae	Shrub		

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4	Opuntia imbricata var. imbricata	Cylindropuntia imbricata (Haworth) Knuth	Cactaceae	Shrub		
3	Opuntia macrorhiza	Opuntia macrorhiza Engelmann	Cactaceae	Shrub		
5	Opuntia phaeacantha	Opuntia phaeacantha Engelmann	Cactaceae	Shrub		
5	Opuntia phaeacantha var. camanchica	Opuntia phaeacantha Engelmann var. camanchica (Engelmann & Bigelow) L. Benson	Cactaceae	Shrub		
5	Opuntia phaeacantha var. major	Opuntia phaeacantha Engelmann var. major Engelmann	Cactaceae	Shrub		
4	Opuntia polyacantha	Opuntia polyacantha Haworth	Cactaceae	Shrub		
5	Opuntia polyacantha var. polyacantha	Opuntia polyacantha Haworth var. polyacantha	Cactaceae	Shrub		
Not Assigned	Opuntia polyacantha var. rufispina	Opuntia polyacantha Haworth var. rufispina (Engelmann) L. Benson	Cactaceae	Shrub		
5	Opuntia whipplei	Cylindropuntia whipplei (Engelmann & Bigelow) Knuth	Cactaceae	Shrub		
8	Oreochrysum parryi	Oreochrysum parryi (A. Gray) Rydberg	Asteraceae	Forb		
10	Oreoxis alpina ssp. alpina	Oreoxis alpina (A. Gray) Coulter & Rose subsp. alpina	Apiaceae	Forb		
Not Assigned	Oreoxis alpina ssp. puberulenta	Oreoxis alpina (A. Gray) Coulter & Rose subsp. puberulenta W. A. Weber	Apiaceae	Forb		
10	Oreoxis bakeri	Oreoxis bakeri Coulter & Rose	Apiaceae	Forb		
6	Oreoxis humilis	Oreoxis humilis Rafinesque	Apiaceae	Forb		
5	Orobanche fasciculata	Aphyllon fasciculatum (Nuttall) Torrey & Gray	Orobanchaceae	Forb		
6	Orobanche ludoviciana	Orobanche ludoviciana Nuttall	Orobanchaceae	Forb		
Not Assigned	Orobanche ludoviciana ssp. ludoviciana	Orobanche multiflora Nuttall var. arenosa (Suksdorf) Munz	Orobanchaceae	Forb		
6	Orobanche ludoviciana ssp. multiflora	Orobanche multiflora Nuttall	Orobanchaceae	Forb		
6	Orobanche uniflora	Aphyllon uniflorum (L.) Torrey & Gray	Orobanchaceae	Forb	UPL	FACU
7	Orogenia linearifolia	Orogenia linearifolia S. Watson	Apiaceae	Forb		
8	Orthilia secunda	Orthilia secunda (L.) House	Pyrolaceae	Shrub	FACU	UPL
6	Orthocarpus luteus	Orthocarpus luteus Nuttall	Scrophulariaceae	Forb	FACU	FACU
7	Orthocarpus purpureoalbus	Orthocarpus purpureoalbus A. Gray	Scrophulariaceae	Forb		
7	Oryzopsis asperifolia	Oryzopsis asperifolia Michaux	Poaceae	Graminoid		
5	Osmorhiza berteroi	Osmorhiza chilensis Hooker & Arnott	Apiaceae	Forb	NI	
7	Osmorhiza depauperata	Osmorhiza depauperata Philippi	Apiaceae	Forb		

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8	Osmorhiza longistylis	Osmorhiza longistylis (Torrey) De Candolle	Apiaceae	Forb	FAC	FACU
7	Osmorhiza occidentalis	Osmorhiza occidentalis (Nuttall) Torrey	Apiaceae	Forb		
Not Assigned	Oxalis stricta	Oxalis dillenii Jacquin	Oxalidaceae	Forb	FACU	FACU
		Oxalis stricta L.	Oxalidaceae	Forb	FACU	NI
7	Oxalis violacea	Oxalis violacea L.	Oxalidaceae	Forb		
7	Oxypolis fendleri	Oxypolis fendleri (A. Gray) Heller	Apiaceae	Forb	NI	OBL
7	Oxyria digyna	Oxyria digyna (L.) J. Hill	Polygonaceae	Forb	NI	UPL
6	Oxytropis besseyi var. obnapiformis	Oxytropis besseyi (Rydberg) Blankinship var. obnapiformis (C. L. Porter) Welsh	Fabaceae	Forb		
Not Assigned	Oxytropis borealis var. viscida	Oxytropis viscida Nuttall ex Torrey & Gray	Fabaceae	Forb		
Not Assigned	Oxytropis campestris	Oxytropis campestris (L.) DC	Fabaceae	Forb		
Not Assigned	Oxytropis campestris var. cusickii	Oxytropis campestris (L.) De Candolle var. cusickii (Greenman) Barneby	Fabaceae	Forb		
Not Assigned	Oxytropis deflexa	Oxytropis deflexa (Pallas) De Candolle subsp. deflexa	Fabaceae	Forb	NI	FACU
Not Assigned	Oxytropis deflexa var. sericea	Oxytropis deflexa (Pallas) De Candolle var. sericea Torrey & Gray	Fabaceae	Forb	NI	NI
4	Oxytropis lambertii	Oxytropis lambertii Pursh	Fabaceae	Forb	FACU	UPL
		Oxytropis lambertii Pursh subsp. lambertii	Fabaceae	Forb	FACU	UPL
6	Oxytropis lambertii var. bigelovii	Oxytropis lambertii Pursh subsp. bigelovii (A. Gray) W. A. Weber	Fabaceae	Forb		UPL
5	Oxytropis monticola	Oxytropis campestris (L.) De Candolle var. gracilis (A. Nelson) Barneby	Fabaceae	Forb		
Not Assigned	Oxytropis multiceps	Oxytropis multiceps Nuttall	Fabaceae	Forb		
6	Oxytropis parryi	Oxytropis parryi A. Gray	Fabaceae	Forb	NI	UPL
Not Assigned	Oxytropis podocarpa	Oxytropis podocarpa A. Gray	Fabaceae	Forb		
5	Oxytropis sericea	Oxytropis sericea Nuttall	Fabaceae	Forb		
Not Assigned	Oxytropis splendens	Oxytropis splendens Douglas ex Hooker	Fabaceae	Forb	NI	FAC
6	Packera cana	Packera cana (Hooker) Weber & Loeve	Asteraceae	Forb		
6	Packera crocata	Packera crocata (Rydberg) Weber & Loeve	Asteraceae	Forb		FACW
10	Packera debilis	Packera debilis (Nuttall) Weber & Loeve	Asteraceae	Forb		FACW
6	Packera dimorphophylla	Packera dimorphophylla (Greene) Weber & Loeve	Asteraceae	Forb		

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7	Packera dimorphophylla ssp. dimorphophylla	Packera dimorphophylla (Greene) Weber & Loeve var. dimorphophylla	Asteraceae	Forb		
8	Packera dimorphophylla var. intermedia	Packera dimorphophylla (Greene) Weber & Loeve subsp. intermedia (T. Barkley) Weber & Loeve	Asteraceae	Forb		
4	Packera fendleri	Packera fendleri (A. Gray) Weber & Loeve	Asteraceae	Forb		
5	Packera multilobata	Packera multilobata (Torrey & Gray ex A. Gray) Weber & Loeve	Asteraceae	Forb		
8	Packera neomexicana	Packera neomexicana (A. Gray) Weber & Loeve	Asteraceae	Forb		
9	Packera pauciflora	Packera pauciflora (Pursh) Loeve & Loeve	Asteraceae	Forb		NI
Not Assigned	Packera paupercula	Packera paupercula (Michaux) Loeve	Asteraceae	Forb	FACW	FACW+
6	Packera plattensis	Packera plattensis (Nuttall) Weber & Loeve	Asteraceae	Forb	FACU	NI
Not Assigned	Packera porteri	Ligularia porteri (Greene) W. A. Weber	Asteraceae	Forb		
7	Packera pseudaurea	Packera pseudaurea (Rydberg) Weber & Loeve	Asteraceae	Forb		FACW
Not Assigned	Packera pseudaurea var. flavula	Packera pseudaurea (Rydberg) Weber & Loeve subsp. flavula (Greene) Weber & Loeve	Asteraceae	Forb		
7	Packera pseudaurea var. pseudaurea	Packera pseudaurea (Rydberg) Weber & Loeve subsp. pseudaurea	Asteraceae	Forb	FACU	FACW
8	Packera streptanthifolia	Packera oodes (Rydberg) W. A. Weber	Asteraceae	Forb		NI
Not Assigned		Packera streptanthifolia (Greene) Weber & Loeve	Asteraceae	Forb		FACU
7	Packera tridenticulata	Packera tridenticulata (Rydberg) Weber & Loeve	Asteraceae	Forb		
7	Packera werneriifolia	Packera werneriifolia (A. Gray) Weber & Loeve	Asteraceae	Forb		FACU
6	Palafoxia rosea var. macrolepis	Palafoxia rosea (Bush) Cory var. macrolepis (Rydberg) B. Turner	Asteraceae	Forb		
5	Palafoxia sphacelata	Palafoxia sphacelata (Nuttall ex Torrey) Cory	Asteraceae	Forb		
*	Panicum capillare	Panicum capillare L.	Poaceae	Graminoid	FAC	FACU
*	Panicum dichotomiflorum	Panicum dichotomiflorum Michaux	Poaceae	Graminoid	FAC	FACW
8	Panicum hallii	Panicum hallii Vasey	Poaceae	Graminoid	FACU	UPL
Not Assigned	Panicum hillmanii	Panicum hillmanii Chase	Poaceae	Graminoid	FAC-	NO
*	Panicum miliaceum	Panicum miliaceum L.	Poaceae	Graminoid		
4	Panicum obtusum	Panicum obtusum Humboldt, Bonpland, & Kunth	Poaceae	Graminoid	FACW	FACU
5	Panicum virgatum	Panicum virgatum L.	Poaceae	Graminoid	FAC	FAC
*	Papaver croceum	Papaver croceum Ledebour	Papaveraceae	Forb		

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*	Papaver orientale	Papaver orientale L.	Papaveraceae	Forb		
9	Papaver radicatum ssp. kluanense	Papaver kluanense D. Loeve	Papaveraceae	Forb		
0	Parietaria pensylvanica	Parietaria pensylvanica Muhlenberg ex Willdenow	Urticaceae	Forb	FAC	FACU
8	Parnassia fimbriata	Parnassia fimbriata Konig	Saxifragaceae	Forb	NI	OBL
8	Parnassia kotzebuei	Parnassia kotzebuei Chamisso & Schlechtendal	Saxifragaceae	Forb	NI	OBL
7	Parnassia palustris var. parviflora	Parnassia parviflora De Candolle	Saxifragaceae	Forb		OBL
6	Paronychia jamesii	Paronychia jamesii Torrey & Gray	Caryophyllaceae	Forb		
9	Paronychia pulvinata	Paronychia pulvinata A. Gray	Caryophyllaceae	Shrub		
7	Paronychia sessiliflora	Paronychia sessiliflora Nuttall	Caryophyllaceae	Forb		
Not Assigned	Parryella filifolia	Parryella filifolia Torrey & Gray	Fabaceae	Shrub		
7	Parthenium alpinum	Bolophyta alpina Nuttall	Asteraceae	Forb		
6	Parthenium ligulatum	Bolophyta ligulata (Jones) W. A. Weber	Asteraceae	Forb		
8	Parthenium tetraneuris	Bolophyta tetraneuris (Barneby) W. A. Weber	Asteraceae	Forb		
*	Parthenocissus quinquefolia	Parthenocissus inserta (Kerner) Fritsch	Vitaceae	Vine	FAC	NI
		Parthenocissus quinquefolia (L.) Planchon	Vitaceae	Vine	FAC	NI
5	Pascopyrum smithii	Pascopyrum smithii (Rydberg) Loeve	Poaceae	Graminoid	FACU	FACU
*	Paspalum dilatatum	Paspalum dilatatum Poiret	Poaceae	Graminoid	NO	NI
*	Paspalum pubiflorum	Paspalum pubiflorum Ruprecht ex Fournier var. glabrum Vasey & Scribner	Poaceae	Graminoid	FAC	NI
*	Paspalum racemosum	Paspalum racemosum Lamarck	Poaceae	Graminoid	NI	NI
*	Paspalum setaceum	Paspalum setaceum Michaux var. stramineum (Nash) D. Banks	Poaceae	Graminoid	FAC	NO
*	Pastinaca sativa	Pastinaca sativa L.	Apiaceae	Forb		
7	Paxistima myrsinites	Paxistima myrsinites (Pursh) Rafinesque	Celastraceae	Shrub		
4	Pectis angustifolia	Pectis angustifolia Torrey	Asteraceae	Forb		
7	Pedicularis bracteosa var. paysoniana	Pedicularis bracteosa Bentham in Hooker subsp. paysoniana (Pennell) W. A. Weber	Scrophulariaceae	Forb		
Not Assigned	Pedicularis canadensis ssp. fluviatilis	Pedicularis canadensis L. subsp. fluviatilis (Heller) W. A. Weber	Scrophulariaceae	Forb	FACU	FAC
8	Pedicularis centranthera	Pedicularis centranthera A. Gray	Scrophulariaceae	Forb		
7	Pedicularis crenulata	Pedicularis crenulata Bentham in De Candolle	Scrophulariaceae	Forb	NI	OBL
8	Pedicularis groenlandica	Pedicularis groenlandica Retzius	Scrophulariaceae	Forb	NI	OBL
9	Pedicularis parryi	Pedicularis parryi A. Gray	Scrophulariaceae	Forb	NI	FACU-

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		Pedicularis parryi A. Gray subsp. parryi	Scrophulariaceae	Forb	NI	FACU-
10	Pedicularis parryi ssp. mogollonica	Pedicularis parryi A. Gray subsp. mogollonica (Greene) Carr	Scrophulariaceae	Forb		
8	Pedicularis procera	Pedicularis procera A. Gray	Scrophulariaceae	Forb	NI	FACU
7	Pedicularis racemosa ssp. alba	Pedicularis racemosa Douglas ex Hooker subsp. alba Pennell	Scrophulariaceae	Forb		
8	Pedicularis sudetica ssp. scopulorum	Pedicularis scopulorum A. Gray	Scrophulariaceae	Forb		FACW
6	Pediocactus simpsonii	Pediocactus simpsonii (Engelmann) Britton & Rose	Cactaceae	Shrub		
6	Pediocactus simpsonii var. minor	Pediocactus simpsonii (Engelmann) Britton & Rose var. minor (Engelmann) Cockerell	Cactaceae	Shrub		
6	Pediocactus simpsonii var. simpsonii	Pediocactus simpsonii (Engelmann) Britton & Rose var. simpsonii	Cactaceae	Shrub		
7	Pediomelum argophyllum	Psoralidium argophyllum (Pursh) Rydberg	Fabaceae	Forb		
6	Pediomelum aromaticum	Pediomelum aromaticum (Payson) W. A. Weber	Fabaceae	Forb		
8	Pediomelum cuspidatum	Pediomelum cuspidatum (Pursh) Rydberg	Fabaceae	Forb		
9	Pediomelum digitatum	Psoralidium digitatum (Nuttall) Rydberg	Fabaceae	Forb		
7	Pediomelum esculentum	Pediomelum esculentum (Pursh) Rydberg	Fabaceae	Forb		
9	Pediomelum hypogaeum	Pediomelum hypogaeum (Nuttall ex Torrey & Gray) Rydberg	Fabaceae	Forb		
8	Pediomelum linearifolium	Psoralidium linearifolium (Torrey & Gray) Rydberg	Fabaceae	Forb		
7	Pediomelum megalanthum	Pediomelum megalanthum (Wooton & Standley) Rydberg	Fabaceae	Forb		
9	Pellaea atropurpurea	Pellaea atropurpurea (L.) Link	Pteridaceae	Forb		
9	Pellaea breweri	Pellaea breweri D. C. Eaton	Pteridaceae	Forb		
9	Pellaea glabella	Pellaea glabella Mettenius ex Kuhn	Pteridaceae	Forb		
9	Pellaea glabella ssp. simplex	Pellaea glabella Mettenius ex Kuhn subsp. simplex (Butters) Loeve & Loeve	Pteridaceae	Forb		
Not Assigned	Pellaea truncata	Pellaea truncata Goodding	Pteridaceae	Forb		
9	Pellaea wrightiana	Pellaea wrightiana Hooker	Pteridaceae	Forb		
Not Assigned	Pennellia micrantha	Pennellia micrantha (A. Gray) Nieuwland	Brassicaceae	Forb		
*****	Pennisetum glaucum	Setaria glauca (L.) P. Beauvois	Poaceae	Graminoid		FACU

Coefficient of Conservatism[24]	**PLANTS Database Name**	**University of Colorado Herbarium Synonym** (~Weber's East/West Slope Flora names)	**Family**	**Lifeform**	**Region 5 Wetland Indicator Status**[25]	**Region 8 Wetland Indicator Status**
*	Pennisetum setaceum	Pennisetum setaceum (Forskal) Chiovenda	Poaceae	Graminoid		
*	Pennisetum villosum	Pennisetum villosum R. Brown	Poaceae	Graminoid		
5	Penstemon albidus	Penstemon albidus Nuttall	Scrophulariaceae	Forb		
7	Penstemon ambiguus	Leiostemon ambiguus (Torrey) Greene	Scrophulariaceae	Forb		
5	Penstemon angustifolius	Penstemon angustifolius Nuttall ex Pursh	Scrophulariaceae	Forb		
5	Penstemon angustifolius var. angustifolius	Penstemon angustifolius Nuttall ex Pursh subsp. angustifolius	Scrophulariaceae	Forb		
5	Penstemon angustifolius var. caudatus	Penstemon angustifolius Nuttall ex Pursh subsp. caudatus (Heller) Keck	Scrophulariaceae	Forb		
Not Assigned	Penstemon angustifolius var. vernalensis	Penstemon angustifolius Nuttall var. vernalensis N. Holmgren	Scrophulariaceae	Forb		
5	Penstemon arenicola	Penstemon arenicola A. Nelson	Scrophulariaceae	Forb		
7	Penstemon auriberbis	Penstemon auriberbis Pennell	Scrophulariaceae	Forb		
6	Penstemon barbatus	Penstemon barbatus Torrey	Scrophulariaceae	Forb		
7	Penstemon barbatus ssp. torreyi	Penstemon barbatus (Cavanilles) Roth subsp. torreyi (Bentham in De Candolle) Keck	Scrophulariaceae	Forb		
7	Penstemon barbatus ssp. trichander	Penstemon barbatus Torrey subsp. trichander (A. Gray) Keck	Scrophulariaceae	Forb		
6	Penstemon breviculus	Penstemon breviculus (Keck) Nisbet & Jackson	Scrophulariaceae	Forb		
8	Penstemon buckleyi	Penstemon buckleyi Pennell	Scrophulariaceae	Forb		
7	Penstemon caespitosus	Penstemon caespitosus Nuttall ex A. Gray	Scrophulariaceae	Forb		
10	Penstemon cobaea	Penstemon cobaea Nuttall	Scrophulariaceae	Forb		
7	Penstemon comarrhenus	Penstemon comarrhenus A. Gray	Scrophulariaceae	Forb		
Not Assigned	Penstemon crandallii ssp. atratus	Penstemon crandallii A. Nelson subsp. atratus Keck	Scrophulariaceae	Forb		
Not Assigned	Penstemon crandallii ssp. procumbens	Penstemon crandallii A. Nelson subsp. procumbens (Greene) Keck	Scrophulariaceae	Forb		
8	Penstemon cyanocaulis	Penstemon cyanocaulis Payson	Scrophulariaceae	Forb		
7	Penstemon cyathophorus	Penstemon cyathophorus Rydberg	Scrophulariaceae	Forb		
9	Penstemon debilis	Penstemon debilis O'Kane & Anderson	Scrophulariaceae	Forb		
8	Penstemon degeneri	Penstemon degeneri Crosswhite	Scrophulariaceae	Forb		
7	Penstemon eatonii	Penstemon eatonii A. Gray	Scrophulariaceae	Forb		
6	Penstemon eatonii ssp. eatonii	Penstemon eatonii A. Gray subsp. eatonii	Scrophulariaceae	Forb		

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6	Penstemon eatonii ssp. undosus	Penstemon eatonii A. Gray subsp. undosus (Jones) Keck	Scrophulariaceae	Forb		
5	Penstemon eriantherus	Penstemon eriantherus Pursh	Scrophulariaceae	Forb		
5	Penstemon fendleri	Penstemon fendleri A. Gray	Scrophulariaceae	Forb		
9	Penstemon fremontii	Penstemon fremontii Torrey & Gray	Scrophulariaceae	Forb		
Not Assigned	Penstemon fremontii var. fremontii	Penstemon fremontii Torrey & Gray var. fremontii	Scrophulariaceae	Forb		
Not Assigned	Penstemon fremontii var. glabrescens	Penstemon fremontii Torrey & Gray var. glabrescens Dorn & Lichvar	Scrophulariaceae	Forb		
10	Penstemon gibbensii	Penstemon gibbensii Dorn	Scrophulariaceae	Forb		
Not Assigned	Penstemon glaber var. brandegeei	Penstemon brandegei (T. C. Porter) T. C. Porter ex Rydberg	Scrophulariaceae	Forb		
5	Penstemon glaber var. glaber	Penstemon glaber Pursh var. glaber	Scrophulariaceae	Forb		
5	Penstemon gracilis	Penstemon gracilis Nuttall	Scrophulariaceae	Forb	FACU-	FACU
8	Penstemon grahamii	Penstemon grahamii Keck ex E. Graham	Scrophulariaceae	Forb		
6	Penstemon grandiflorus	Penstemon grandiflorus Nuttall	Scrophulariaceae	Forb		
Not Assigned	Penstemon griffinii	Penstemon griffinii A. Nelson	Scrophulariaceae	Forb		
Not Assigned	Penstemon hallii	Penstemon hallii A. Gray	Scrophulariaceae	Forb		
10	Penstemon harbourii	Penstemon harbourii A. Gray	Scrophulariaceae	Forb		
6	Penstemon harringtonii	Penstemon harringtonii Penland	Scrophulariaceae	Forb		
Not Assigned	Penstemon humilis	Penstemon humilis Nuttall ex A. Gray	Scrophulariaceae	Forb		
6	Penstemon jamesii	Penstemon jamesii Bentham	Scrophulariaceae	Forb		
Not Assigned	Penstemon laricifolius ssp. exilifolius	Penstemon laricifolius Hooker & Arnott subsp. exilifolius (A. Nelson) Keck	Scrophulariaceae	Forb		
6	Penstemon lentus	Penstemon lentus Pennell	Scrophulariaceae	Forb		
6	Penstemon linarioides	Penstemon linarioides A. Gray	Scrophulariaceae	Forb		
5	Penstemon mensarum	Penstemon mensarum Pennell	Scrophulariaceae	Forb		
6	Penstemon moffatii	Penstemon moffatii Eastwood	Scrophulariaceae	Forb		
Not Assigned	Penstemon nitidus	Penstemon nitidus Douglas ex Bentham in DeCandolle	Scrophulariaceae	Forb		
Not Assigned	Penstemon ophianthus	Penstemon ophianthus Pennell	Scrophulariaceae	Forb		
6	Penstemon osterhoutii	Penstemon osterhoutii Pennell	Scrophulariaceae	Forb		

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6	Penstemon pachyphyllus var. mucronatus	Penstemon pachyphyllus A. Gray ex Rydberg var. mucronatus (N. Holmgren) Neese	Scrophulariaceae	Forb		
7	Penstemon parviflorus	Penstemon parviflorus Pennell	Scrophulariaceae	Forb		
9	Penstemon penlandii	Penstemon penlandii W. A. Weber	Scrophulariaceae	Forb		
6	Penstemon procerus var. procerus	Penstemon confertus Douglas in Lindley subsp. procerus (Douglas ex R. Graham) D. Clark	Scrophulariaceae	Forb		FAC*
Not Assigned	Penstemon radicosus	Penstemon radicosus A. Nelson	Scrophulariaceae	Forb		
6	Penstemon retrorsus	Penstemon retrorsus Payso ex Pennell	Scrophulariaceae	Forb		
Not Assigned	Penstemon rostriflorus	Penstemon bridgesii A. Gray	Scrophulariaceae	Forb		
		Penstemon rostriflorus Kellogg (see Penstemon bridgesii)	Scrophulariaceae	Forb		
7	Penstemon rydbergii	Penstemon rydbergii A. Nelson	Scrophulariaceae	Forb	NI	FAC
Not Assigned	Penstemon saxosorum	Penstemon saxosorum Pennell	Scrophulariaceae	Forb		
5	Penstemon scariosus	Penstemon scariosus Pennell	Scrophulariaceae	Forb		
7	Penstemon scariosus var. albifluvis	Penstemon albifluvis England	Scrophulariaceae	Forb		
Not Assigned	Penstemon scariosus var. albifluvis	Penstemon scariosus Pennell var. albifluvis (England) N. Holmgren	Scrophulariaceae	Forb		
Not Assigned	Penstemon scariosus var. cyanomontanus	Penstemon scariosus Pennell var. cyanomontanus Neese	Scrophulariaceae	Forb		
6	Penstemon secundiflorus	Penstemon secundiflorus Bentham in De Candolle	Scrophulariaceae	Forb		
5	Penstemon strictus	Penstemon strictus Bentham in De Candolle	Scrophulariaceae	Forb		
Not Assigned	Penstemon unilateralis	Penstemon virgatus A. Gray subsp. asa-grayi Crosswhite	Scrophulariaceae	Forb		FACU
7	Penstemon utahensis	Penstemon utahensis Eastwood	Scrophulariaceae	Forb		
7	Penstemon virens	Penstemon virens Pennell ex Rydberg	Scrophulariaceae	Forb		
5	Penstemon watsonii	Penstemon watsonii A. Gray	Scrophulariaceae	Forb		
7	Penstemon whippleanus	Penstemon whippleanus A. Gray	Scrophulariaceae	Forb	NI	FACU
6	Penstemon yampaensis	Penstemon acaulis L. Williams var. yampaensis (Penland) Neese	Scrophulariaceae	Forb		
7	Peraphyllum ramosissimum	Peraphyllum ramosissimum Nuttall ex Torrey & Gray	Rosaceae	Shrub		
6	Pericome caudata	Pericome caudata A. Gray var. caudata	Asteraceae	Shrub		

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5	Pericome caudata	Pericome caudata A. Gray var. glandulosa (Goodman) Harrington	Asteraceae	Shrub		
5	Perideridia gairdneri ssp. borealis	Perideridia gairdneri (Hooker & Arnott) Mathias subsp. borealis Chuang & Constance	Apiaceae	Forb		FACU
8	Petasites sagittatus	Petasites sagittatus (Banks ex Pursh) A. Gray	Asteraceae	Forb	NI	OBL
6	Petradoria pumila	Petradoria pumila (Nuttall) Greene	Asteraceae	Forb		
8	Petrophyton caespitosum	Petrophyton caespitosum (Nuttall) Rydberg	Rosaceae	Shrub		
2	Phacelia alba	Phacelia alba Rydberg	Hydrophyllaceae	Forb		
Not Assigned	Phacelia bakeri	Phacelia bakeri (Brand) Macbride	Hydrophyllaceae	Forb		
Not Assigned	Phacelia constancei	Phacelia constancei Atwood	Hydrophyllaceae	Forb		
3	Phacelia crenulata	Phacelia crenulata Torrey	Hydrophyllaceae	Forb		
Not Assigned	Phacelia demissa	Phacelia demissa A. Gray	Hydrophyllaceae	Forb		
6	Phacelia denticulata	Phacelia denticulata Osterhout	Hydrophyllaceae	Forb		
8	Phacelia formosula	Phacelia formosula Osterhout	Hydrophyllaceae	Forb		
6	Phacelia glandulosa	Phacelia glandulosa Nuttall	Hydrophyllaceae	Forb		
5	Phacelia hastata	Phacelia hastata Douglas ex Lehmann	Hydrophyllaceae	Forb		
6	Phacelia heterophylla	Phacelia heterophylla Pursh	Hydrophyllaceae	Forb	NI	UPL
Not Assigned	Phacelia incana	Phacelia incana Brand	Hydrophyllaceae	Forb		
Not Assigned	Phacelia integrifolia	Phacelia integrifolia Torrey	Hydrophyllaceae	Forb		
4	Phacelia ivesiana	Phacelia ivesiana Torrey	Hydrophyllaceae	Forb		
8	Phacelia scopulina var. submutica	Phacelia submutica J. T. Howell	Hydrophyllaceae	Forb		
6	Phacelia sericea	Phacelia sericea (R. Graham) A. Gray	Hydrophyllaceae	Forb		
Not Assigned	Phacelia sericea ssp. ciliosa	Phacelia sericea (R. Graham) A. Gray subsp. ciliosa (Rydberg) G. W. Gillett	Hydrophyllaceae	Forb		
5	Phacelia sericea ssp. sericea	Phacelia sericea (R. Graham) A. Gray subsp. sericea	Hydrophyllaceae	Forb		
7	Phacelia splendens	Phacelia splendens Eastwood	Hydrophyllaceae	Forb		
Not Assigned	Phacelia tanacetifolia	Phacelia tanacetifolia Bentham	Hydrophyllaceae	Forb		
*****	Phalaris arundinacea	Phalaroides arundinacea (L.) Rauschert	Poaceae	Graminoid	FACW+	OBL
*****	Phalaris canariensis	Phalaris canariensis L.	Poaceae	Graminoid	FACU	FACU
*****	Phalaris caroliniana	Phalaris caroliniana Walter	Poaceae	Graminoid	FACW	FACW
*****	Phalaris minor	Phalaris minor Retzius	Poaceae	Graminoid		
Not Assigned	Phegopteris connectilis	Phegopteris connectilis (Michaux) Watt	Thelypteridaceae	Forb	NO	NO

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7	Philadelphus microphyllus	Philadelphus microphyllus A. Gray	Hydrangeaceae	Shrub		
9	Phippsia algida	Phippsia algida (Phipps) R. Brown	Poaceae	Graminoid	NI	OBL
6	Phleum alpinum	Phleum commutatum Gaudin	Poaceae	Graminoid	NI	FAC
*****	Phleum pratense	Phleum pratense L.	Poaceae	Graminoid	FACU	FACU
6	Phlox andicola	Phlox andicola (Nuttall ex Torrey & Gray) E. Nelson	Polemoniaceae	Forb		
6	Phlox austromontana	Phlox austromontana Coville	Polemoniaceae	Forb		
4	Phlox caryophylla	Phlox caryophylla Wherry	Polemoniaceae	Shrub		
9	Phlox condensata	Phlox condensata (A. Gray) E. Nelson	Polemoniaceae	Forb		
Not Assigned	Phlox gracilis ssp. humilis	Microsteris gracilis (Douglas ex Hooker) Greene subsp. humilis (Greene) V. Grant	Polemoniaceae	Forb	UPL	UPL
5	Phlox hoodii	Phlox hoodii Richardson	Polemoniaceae	Forb		
6	Phlox hoodii ssp. muscoides	Phlox bryoides Nuttall	Polemoniaceae	Forb		
		Phlox muscoides Nuttall	Polemoniaceae	Forb		
6	Phlox longifolia	Phlox longifolia Nuttall	Polemoniaceae	Forb		
5	Phlox multiflora	Phlox multiflora A. Nelson	Polemoniaceae	Forb		
9	Phlox pulvinata	Phlox sibirica L. subsp. pulvinata (Wherry) W. A. Weber	Polemoniaceae	Forb		
5	Phoradendron juniperinum	Phoradendron juniperinum Engelmann	Viscaceae	Shrub		
3	Phragmites australis	Phragmites australis (Cavanilles) Trinius ex Steudel	Poaceae	Shrub	FACW	FACW+
4	Phyla cuneifolia	Phyla cuneifolia (Torrey) Greene	Verbenaceae	Forb	FAC	NI
1	Phyla lanceolata	Phyla lanceolata (Michaux) Greene	Verbenaceae	Vine, Forb/herb	OBL	OBL
4	Physalis hederifolia	Physalis hederifolia A. Gray	Solanaceae	Forb		
5	Physalis hederifolia var. comata	Physalis hederifolia A. Gray var. comata (Rydberg) Waterfall	Solanaceae	Forb		
5	Physalis hederifolia var. fendleri	Physalis hederifolia A. Gray var. cordifolia (A. Gray) Waterfall	Solanaceae	Forb		
5	Physalis heterophylla	Physalis heterophylla Nees	Solanaceae	Forb		
5	Physalis hispida	Physalis pumila Nuttall subsp. hispida (Waterfall) Hinton	Solanaceae	Forb		
*****	Physalis pubescens var. integrifolia	Physalis pruinosa L.	Solanaceae	Forb	FAC	

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4	Physalis subulata var. neomexicana	Physalis foetens Poiret var. neomexicana (Rydberg) Waterfall	Solanaceae	Forb		
4	Physalis virginiana	Physalis virginiana P. Miller	Solanaceae	Forb		
6	Physaria acutifolia	Physaria acutifolia Rydberg	Brassicaceae	Forb		
7	Physaria alpina	Physaria alpina Rollins	Brassicaceae	Forb		
4	Physaria bellii	Physaria bellii Mulligan	Brassicaceae	Forb		
6	Physaria floribunda	Physaria floribunda Rydberg	Brassicaceae	Forb		
6	Physaria floribunda var. osterhoutii	Physaria osterhoutii Payson	Brassicaceae	Forb		
6	Physaria obcordata	Physaria obcordata Rollins	Brassicaceae	Forb		
7	Physaria rollinsii	Physaria rollinsii Mulligan	Brassicaceae	Forb		
6	Physaria vitulifera	Physaria vitulifera Rydberg	Brassicaceae	Forb		
Not Assigned	Physocarpus alternans	Physocarpus alternans (Jones) J. T. Howell	Rosaceae	Shrub		
7	Physocarpus monogynus	Physocarpus monogynus (Torrey) Coulter	Rosaceae	Shrub	FAC	FACU
8	Physocarpus opulifolius	Physocarpus opulifolius (L.) Maximovicz	Rosaceae	Shrub	FACU	FACU
5	Picea engelmannii	Picea engelmannii Parry ex Engelmann	Pinaceae	Tree	NI	FACU-*
6	Picea pungens	Picea pungens Engelmann	Pinaceae	Tree	NI	FAC-
2	Picradeniopsis oppositifolia	Picradeniopsis oppositifolia (Nuttall) Rydberg	Asteraceae	Forb		
4	Picradeniopsis woodhousei	Picradeniopsis woodhousei (A. Gray) Rydberg	Asteraceae	Forb		
6	Picrothamnus desertorum	Picrothamnus desertorum Nuttall	Asteraceae	Shrub		
9	Pinus aristata	Pinus aristata Engelmann	Pinaceae	Tree		
5	Pinus contorta var. latifolia	Pinus contorta Douglas ex Loudon var. latifolia Engelmann	Pinaceae	Tree	FACU-	FACU-*
6	Pinus edulis	Pinus edulis Engelmann	Pinaceae	Tree		
7	Pinus flexilis	Pinus flexilis James	Pinaceae	Tree		
5	Pinus ponderosa var. scopulorum	Pinus ponderosa Douglas ex P. & C. Lawson subsp. scopulorum (S. Watson) W. A. Weber	Pinaceae	Tree	FACU-	FACU-*
7	Pinus strobiformis	Pinus strobiformis Engelmann	Pinaceae	Tree		
10	Piperia unalascensis	Piperia unalascensis (Sprengel) Rydberg	Orchidaceae	Forb	NI	FACU
Not Assigned	Piptatherum exiguum	Oryzopsis exigua Thurber	Poaceae	Graminoid		
7	Piptatherum micranthum	Piptatherum micranthum (Trinius & Ruprecht) Barkworth	Poaceae	Graminoid		
Not Assigned	Piptatherum pungens	Oryzopsis pungens (Torrey ex Sprengel) A. S. Hitchcock	Poaceae	Graminoid		

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3	Plagiobothrys scouleri	Plagiobothrys scouleri (Hooker & Arnott) I. M. Johnston subsp. penicillata (Greene) Loeve	Boraginaceae	Forb	NI	OBL
Not Assigned	Plantago elongata	Plantago elongata Pursh	Plantaginaceae	Forb	FAC	FACW
5	Plantago eriopoda	Plantago eriopoda Torrey	Plantaginaceae	Forb	FAC	FAC+
*	Plantago lanceolata	Plantago lanceolata L.	Plantaginaceae	Forb	FAC	FACU
*	Plantago major	Plantago major L.	Plantaginaceae	Forb	FAC	FAC
2	Plantago patagonica	Plantago patagonica Jacquin	Plantaginaceae	Forb	UPL	UPL
5	Plantago tweedyi	Plantago tweedyi A. Gray	Plantaginaceae	Forb		
8	Platanthera dilatata var. albiflora	Limnorchis dilatata (Pursh) Rydberg subsp. albiflora (Chamisso) Loeve & Simon	Orchidaceae	Forb		FACW
7	Platanthera hyperborea var. hyperborea	Limnorchis hyperborea (L.) Rydberg	Orchidaceae	Forb	FACW	FACW
10	Platanthera obtusata	Lysiella obtusata (Banks ex Pursh) Britton & Rydberg	Orchidaceae	Forb	NI	FACW
9	Platanthera sparsiflora var. ensifolia	Limnorchis ensifolia Rydberg	Orchidaceae	Forb		FACW
8	Platanthera stricta	Limnorchis stricta (Lindley) Rydberg	Orchidaceae	Forb	NI	FACW
10	Platanthera zothecina	Limnorchis zothecina (Higgins & Welsh) W. A. Weber	Orchidaceae	Forb		
6	Platyschkuhria integrifolia var. oblongifolia	Platyschkuhria integrifolia (A. Gray) Rydberg var. oblongifolia (A. Gray) Ellison	Asteraceae	Forb		
6	Pleuraphis jamesii	Hilaria jamesii (Torrey) Bentham	Poaceae	Graminoid		
4	Poa abbreviata ssp. pattersonii	Poa abbreviata R. Brown subsp. pattersonii (Vasey) Loeve et al.	Poaceae	Graminoid	NI	FAC+
7	Poa alpina	Poa alpina L.	Poaceae	Graminoid	NI	FACU*
*	Poa annua	Poa annua L.	Poaceae	Graminoid	FACU	FAC
7	Poa arctica	Poa arctica R. Brown	Poaceae	Graminoid	NI	FACU
7	Poa arctica ssp. aperta	Poa arctica R. Brown subsp. aperta (Scribner & Merrill) Soreng	Poaceae	Graminoid		FACU
5	Poa arida	Poa arida Vasey	Poaceae	Graminoid	FAC	UPL
		Poa glaucifolia Scribner & Williams	Poaceae	Graminoid	FACW	FACU*
6	Poa bigelovii	Poa bigelovii Vasey & Scribner	Poaceae	Graminoid		
*	Poa bulbosa	Poa bulbosa L.	Poaceae	Graminoid		
*	Poa compressa	Poa compressa L.	Poaceae	Graminoid	FACU	FACU

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7	Poa cusickii	Poa cusickii Vasey	Poaceae	Graminoid		
Not Assigned	Poa cusickii ssp. cusickii	Poa cusickii Vasey subsp. cusickii	Poaceae	Graminoid		
7	Poa cusickii ssp. epilis	Poa cusickii Vasey subsp. epilis (Scribner) W. A. Weber	Poaceae	Graminoid		
6	Poa cusickii ssp. pallida	Poa cusickii Vasey subsp. pallida Soreng	Poaceae	Graminoid		
7	Poa fendleriana	Poa fendleriana (Steudel) Vasey	Poaceae	Graminoid	UPL	UPL
7	Poa glauca ssp. rupicola	Poa glauca M. Vahl subsp. rupicola (Nash) W. A. Weber	Poaceae	Graminoid		
8	Poa leptocoma	Poa leptocoma Trinius	Poaceae	Graminoid	NI	FACW
8	Poa lettermanii	Poa lettermanii Vasey	Poaceae	Graminoid		
6	Poa nemoralis ssp. interior	Poa nemoralis L. subsp. interior (Rydberg) W. A. Weber	Poaceae	Graminoid	FAC-	FAC-
7	Poa nervosa	Poa nervosa (Hooker) Vasey	Poaceae	Graminoid	NI	FACU
Not Assigned	Poa occidentalis	Poa occidentalis Vasey	Poaceae	Graminoid		
6	Poa palustris	Poa palustris L.	Poaceae	Graminoid	FACU	FACW
*****	Poa pratensis	Poa pratensis L.	Poaceae	Graminoid	FACU	FACU
4	Poa pratensis ssp. pratensis	Poa agassizensis Boivin & D. Loeve	Poaceae	Graminoid		
8	Poa reflexa	Poa reflexa Vasey & Scribner	Poaceae	Graminoid		FACW
6	Poa secunda	Poa juncifolia Scribner	Poaceae	Graminoid	FAC-	FAC
		Poa secunda J. Presl in K. Presl	Poaceae	Graminoid	NI	UPL
Not Assigned	Poa stenantha	Poa macroclada Rydberg	Poaceae	Graminoid	NI	FAC
Not Assigned	Poa tracyi	Poa tracyi Vasey	Poaceae	Graminoid		
*****	Poa trivialis	Poa trivialis L.	Poaceae	Graminoid	FACW	FACW
8	Podistera eastwoodiae	Podistera eastwoodiae (Coulter & Rose) Mathias & Constance	Apiaceae	Forb		
1	Polanisia dodecandra	Polanisia dodecandra (L.) De Candolle	Capparaceae	Forb	UPL	FACU
6	Polanisia jamesii	Polanisia jamesii (Torrey & Gray) Iltis	Capparaceae	Forb		
Not Assigned	Polemonium brandegeei	Polemonium brandegei (A. Gray) Greene	Polemoniaceae	Forb		
10	Polemonium confertum	Polemonium confertum A. Gray	Polemoniaceae	Forb		
7	Polemonium foliosissimum	Polemonium foliosissimum (A. Gray) A. Gray	Polemoniaceae	Forb	NI	FACU
8	Polemonium occidentale ssp. occidentale	Polemonium caeruleum L. subsp. amygdalinum (Wherry) Munz	Polemoniaceae	Forb	NI	FACW-

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8	Polemonium pulcherrimum ssp. delicatum	Polemonium pulcherrimum Hooker subsp. delicatum (Rydberg) Brand	Polemoniaceae	Forb		
8	Polemonium viscosum	Polemonium viscosum Nuttall	Polemoniaceae	Forb		
6	Poliomintha incana	Poliomintha incana (Torrey) A. Gray	Lamiaceae	Shrub		
6	Polygala alba	Polygala alba Nuttall	Polygalaceae	Forb		
4	Polygala subspinosa	Polygala subspinosa S. Watson	Polygalaceae	Shrub		
*	Polygonum achoreum	Polygonum erectum L. subsp. achoreum (S. F. Blake) Loeve & Loeve	Polygonaceae	Forb	FAC	NI
4	Polygonum amphibium var. emersum	Persicaria amphibia (L.) S. Gray	Polygonaceae	Forb	OBL	OBL
		Persicaria coccinea (Mühlenberg ex Willdenow) Greene	Polygonaceae	Forb		
*	Polygonum arenastrum	Polygonum arenastrum Boreau	Polygonaceae	Forb	NI	
*	Polygonum argyrocoleon	Polygonum argyrocoleon Steudel ex Kuntze	Polygonaceae	Forb	NI	FAC
*	Polygonum aubertii	Fallopia aubertii (Henry) Holub	Polygonaceae	Vine, Subshrub		
*	Polygonum aviculare	Polygonum aviculare L. var. aviculare	Polygonaceae	Forb		UPL
*	Polygonum bellardii	Polygonum aviculare L. var. angustissimum Meissner	Polygonaceae	Forb	FACW	
7	Polygonum bistortoides	Bistorta bistortoides (Pursh) Small	Polygonaceae	Forb	NI	FAC*
*	Polygonum convolvulus var. convolvulus	Fallopia convolvulus (L.) Loeve	Polygonaceae	Vine, Forb/herb	FACU	FACU
*	Polygonum cuspidatum	Reynoutria japonica Houttuyn	Polygonaceae	Forb	FACU	NI
3	Polygonum douglasii	Polygonum douglasii Greene	Polygonaceae	Forb	FACU-	UPL
4	Polygonum douglasii ssp. engelmannii	Polygonum engelmannii Greene	Polygonaceae	Forb		
*	Polygonum hydropiper	Persicaria hydropiper (L.) Opiz	Polygonaceae	Forb	OBL	OBL
*	Polygonum lapathifolium	Persicaria lapathifolia (L.) S. Gray	Polygonaceae	Forb	OBL	OBL
7	Polygonum minimum	Polygonum minimum S. Watson	Polygonaceae	Forb	NI	FAC
4	Polygonum pensylvanicum	Persicaria bicornis (Rafinesque) Nieuwland	Polygonaceae	Forb	FACW+	OBL
		Persicaria pensylvanica (L.) Gomez	Polygonaceae	Forb	FACW+	OBL
*	Polygonum persicaria	Persicaria maculata (L.) S. Gray	Polygonaceae	Forb	OBL	FACW
Not Assigned	Polygonum polygaloides ssp. kelloggii	Polygonum polygaloides Meissner subsp. kelloggii (Greene) Hickman	Polygonaceae	Forb	NI	FACU
*	Polygonum punctatum var. punctatum	Persicaria punctata (Elliott) Small	Polygonaceae	Forb	OBL	OBL
2	Polygonum ramosissimum	Polygonum ramosissimum Michaux	Polygonaceae	Forb	FAC	FACU

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Not Assigned	Polygonum sagittatum	Truellum sagittatum (L.) Sojak	Polygonaceae	Vine, Forb	OBL	OBL
*	Polygonum scandens var. scandens	Fallopia scandens (L.) Holub	Polygonaceae	Vine, Forb/herb	FACU	FACU
8	Polygonum viviparum	Bistorta vivipara (L.) S. Gray	Polygonaceae	Forb	NI	FAC+
10	Polypodium hesperium	Polypodium hesperium Maxon	Polypodiaceae	Forb		
9	Polypodium saximontanum	Polypodium saximontanum Windham	Polypodiaceae	Forb		
Not Assigned	Polypogon elongatus	Polypogon elongatus Humboldt, Bonpland, & Kunth	Poaceae	Graminoid	NI	NI
*	Polypogon interruptus	Polypogon interruptus Humboldt, Bonpland & Kunth	Poaceae	Graminoid	OBL	NI
*	Polypogon monspeliensis	Polypogon monspeliensis (L.) Desfontaines	Poaceae	Graminoid	OBL	FACW+
*	Polypogon viridis	Polypogon viridis (Gouan) Breistroffer	Poaceae	Graminoid	OBL	
10	Polystichum lonchitis	Polystichum lonchitis (L.) Roth	Dryopteridaceae	Forb	NI	UPL
10	Polystichum scopulinum	Polystichum scopulinum (D. C. Eaton) Maxon	Dryopteridaceae	Forb		
5	Populus ×acuminata	Populus acuminata Rydberg	Salicaceae	Tree	FAC	
5	Populus angustifolia	Populus angustifolia James	Salicaceae	Tree	FACW	FAC*
6	Populus balsamifera	Populus balsamifera L.	Salicaceae	Tree	FACW	FACW
4	Populus deltoides	Populus deltoides H. Marshall subsp. wislizenii (S. Watson) Eckenwalder	Salicaceae	Tree	FAC	FACW*
3	Populus deltoides ssp. monilifera	Populus deltoides H. Marshall subsp. monilifera (Aiton) Eckenwalder	Salicaceae	Tree	FAC	
5	Populus tremuloides	Populus tremuloides Michaux	Salicaceae	Tree	FAC	FAC
Not Assigned	Portulaca halimoides	Portulaca halimoides L.	Portulacaceae	Forb	NI	NI
*	Portulaca oleracea	Portulaca oleracea L.	Portulacaceae	Forb	FAC	FAC
5	Potamogeton alpinus	Potamogeton alpinus Balbis	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton amplifolius	Potamogeton amplifolius Tuckerman	Potamogetonaceae	Forb	OBL	OBL
*	Potamogeton crispus	Potamogeton crispus L.	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton diversifolius	Potamogeton diversifolius Rafinesque	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton epihydrus	Potamogeton epihydrus Rafinesque var. nuttallii (Chamisso & Schlechtendal) Fernald	Potamogetonaceae	Forb	OBL	OBL
4	Potamogeton foliosus	Potamogeton foliosus Rafinesque	Potamogetonaceae	Forb	OBL	OBL
4	Potamogeton gramineus	Potamogeton gramineus L.	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton illinoensis	Potamogeton illinoensis Morong	Potamogetonaceae	Forb	OBL	OBL
4	Potamogeton natans	Potamogeton natans L.	Potamogetonaceae	Forb	OBL	OBL

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5	Potamogeton nodosus	Potamogeton nodosus Poiret in Lamarck	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton praelongus	Potamogeton praelongus Wulfen	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton pusillus	Potamogeton pusillus L.	Potamogetonaceae	Forb	OBL	OBL
		Potamogeton pusillus L. var. pusillus	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton pusillus ssp. tenuissimus	Potamogeton pusillus L. var. tenuissimus Mertens & Koch in Rohling	Potamogetonaceae	Forb	OBL	OBL
5	Potamogeton richardsonii	Potamogeton perfoliatus L. subsp. richardsonii (Bennett) Hulten	Potamogetonaceae	Forb	OBL	OBL
5	Potentilla ambigens	Potentilla ambigens Greene	Rosaceae	Forb		
*****	Potentilla anglica	Potentilla anglica Laicharding	Rosaceae	Forb		
*****	Potentilla argentea	Potentilla argentea L.	Rosaceae	Forb	FACU	FACU
7	Potentilla arguta ssp. arguta	Drymocallis arguta (Pursh) Rydberg	Rosaceae	Forb	FACU	FACU
4	Potentilla biennis	Potentilla biennis Greene	Rosaceae	Forb	NI	FAC
6	Potentilla concinna	Potentilla concinna Richardson	Rosaceae	Forb	NI	NI
Not Assigned	Potentilla concinna var. bicrenata	Potentilla concinna Richardson var. bicrenata (Rydberg) Welsh & Johnston	Rosaceae	Forb		
Not Assigned	Potentilla concinna var. concinna	Potentilla concinna Richardson var. concinna	Rosaceae	Forb		
Not Assigned	Potentilla crinita	Potentilla crinita A. Gray	Rosaceae	Forb		
6	Potentilla diversifolia	Potentilla diversifolia Lehmann	Rosaceae	Forb	NI	FACU
4	Potentilla effusa	Potentilla effusa Douglas ex Lehmann	Rosaceae	Forb		
5	Potentilla fissa	Drymocallis fissa (Nuttall) Rydberg	Rosaceae	Forb		
Not Assigned	Potentilla glandulosa	Drymocallis glandulosa (Lindley) Rydberg	Rosaceae	Forb	NO	FACU
5	Potentilla gracilis	Potentilla gracilis Douglas	Rosaceae	Forb	NI	FAC-
Not Assigned	Potentilla gracilis var. flabelliformis	Potentilla flabelliformis Lehmann	Rosaceae	Forb		
5	Potentilla hippiana	Potentilla hippiana Lehmann	Rosaceae	Forb		
Not Assigned	Potentilla hookeriana	Potentilla hookeriana Lehmann	Rosaceae	Forb		
8	Potentilla nivea	Potentilla nivea L.	Rosaceae	Forb		
*****	Potentilla norvegica	Potentilla norvegica L.	Rosaceae	Forb	FAC	FAC-
7	Potentilla ovina	Potentilla ovina Macoun	Rosaceae	Forb		
0	Potentilla paradoxa	Potentilla supina L. subsp. paradoxa (Nuttall ex Torrey & Gray) Sojak	Rosaceae	Forb	FAC	OBL
6	Potentilla pensylvanica	Potentilla pensylvanica L.	Rosaceae	Forb		
7	Potentilla plattensis	Potentilla plattensis Nuttall ex Torrey & Gray	Rosaceae	Forb	NI	OBL

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5	Potentilla pulcherrima	Potentilla pulcherrima Lehmann	Rosaceae	Forb		
*****	Potentilla recta	Potentilla recta L.	Rosaceae	Forb		
5	Potentilla rivalis	Potentilla rivalis Nuttall ex Torrey & Gray	Rosaceae	Forb	FACW+	OBL
Not Assigned	Potentilla rubricaulis	Potentilla rubricaulis Lehmann	Rosaceae	Forb		
7	Potentilla rupincola	Potentilla rupincola Osterhout	Rosaceae	Forb		
8	Potentilla subjuga	Potentilla subjuga Rydberg	Rosaceae	Forb		
Not Assigned	Potentilla subviscosa	Potentilla subviscosa Greene	Rosaceae	Forb		
8	Potentilla uniflora	Potentilla uniflora Ledebour	Rosaceae	Forb		
Not Assigned	Prenanthella exigua	Prenanthella exigua (A. Gray) Rydberg	Asteraceae	Forb		
Not Assigned	Prenanthes racemosa	Prenanthes racemosa Michaux	Asteraceae	Forb	FAC	FACU-
7	Primula angustifolia	Primula angustifolia Torrey	Primulaceae	Forb	NI	FACU-
10	Primula egaliksensis	Primula egaliksensis Wormskiold	Primulaceae	Forb	NO	FACW
9	Primula incana	Primula incana Jones	Primulaceae	Forb	NI	FACW
8	Primula parryi	Primula parryi A. Gray	Primulaceae	Forb	NI	FACW
8	Proatriplex pleiantha	Proatriplex pleiantha (W. A. Weber) Stutz & Chu	Chenopodiaceae	Forb		
1	Proboscidea louisianica	Proboscidea louisianica (P. Miller) Thellung	Pedaliaceae	Forb	FACU	UPL
8	Prosopis glandulosa	Prosopis glandulosa Torrey	Fabaceae	Shrub	NI	NI
4	Prunella vulgaris	Prunella vulgaris L.	Lamiaceae	Forb	FAC	FACU
6	Prunus americana	Prunus americana H. Marshall	Rosaceae	Shrub	UPL	FACU
5	Prunus angustifolia	Prunus angustifolia H. Marshall	Rosaceae	Shrub		
*****	Prunus armeniaca	Armeniaca vulgaris Lamarck	Rosaceae	Tree		
Not Assigned	Prunus gracilis	Prunus gracilis Engelmann & Gray	Rosaceae	Shrub		
6	Prunus pensylvanica var. pensylvanica	Cerasus pensylvanica (L. f.) Loiseleur	Rosaceae	Shrub		FACU
10	Prunus pumila var. besseyi	Cerasus pumila (L.) Michaux subsp. besseyi (L. H. Bailey) W. A. Weber	Rosaceae	Shrub		
6	Prunus rivularis	Prunus rivularis Scheele	Rosaceae	Shrub		
4	Prunus virginiana var. melanocarpa	Padus virginiana (L.) P. Miller subsp. melanocarpa (A. Nelson) W. A. Weber	Rosaceae	Shrub	FACU	FACU
*****	Psathyrostachys juncea	Psathyrostachys juncea (Fischer) Nevski	Poaceae	Graminoid	FAC	FACU
Not Assigned	Pseudelymus saxicola	Elymus saxicola Scribner & Smith	Poaceae	Graminoid		
6	Pseudocymopterus montanus	Pseudocymopterus montanus (A. Gray) Coulter & Rose	Apiaceae	Forb		

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Not Assigned	Pseudognaphalium canescens	Pseudognaphalium canescens (De Candolle) W. A. Weber	Asteraceae	Forb		FACU
*	Pseudognaphalium macounii	Pseudognaphalium viscosum (HBK) W. A. Weber	Asteraceae	Forb		
*	Pseudognaphalium stramineum	Pseudognaphalium stramineum (Humboldt, Bonpland & Kunth) W. A. Weber	Asteraceae	Forb		FAC
7	Pseudoroegneria spicata ssp. inermis	Pseudoroegneria spicata (Pursh) Loeve subsp. inermis (Scribner & Smith) Loeve	Poaceae	Graminoid		FAC
7	Pseudoroegneria spicata ssp. spicata	Pseudoroegneria spicata (Pursh) Loeve subsp. spicata	Poaceae	Graminoid	UPL	UPL
6	Pseudostellaria jamesiana	Pseudostellaria jamesiana (Torrey) Weber & Hartman	Caryophyllaceae	Forb		
5	Pseudotsuga menziesii	Pseudotsuga menziesii (Mirbel) Franco	Pinaceae	Tree	NI	NI
4	Psilostrophe bakeri	Psilostrophe bakeri Greene	Asteraceae	Forb		
*	Psilostrophe tagetina	Psilostrophe tagetina (Nuttall) Greene	Asteraceae	Forb		
5	Psoralidium lanceolatum	Psoralidium lanceolatum (Pursh) Rydberg	Fabaceae	Forb		
5	Psoralidium tenuiflorum	Psoralidium tenuiflorum (Pursh) Rydberg	Fabaceae	Forb		
7	Ptelea trifoliata	Ptelea trifoliata L.	Rutaceae	Shrub	UPL	FACU
5	Pteridium aquilinum var. pubescens	Pteridium aquilinum (L.) Kuhn subsp. lanuginosum (Bongard) Hulten	Dennstaedtiaceae	Forb	FACU	FACU
7	Pterospora andromedea	Pterospora andromedea Nuttall	Monotropaceae	Forb		
Not Assigned	Pteryxia hendersonii	Cymopterus longilobus (Rydberg) W. A. Weber	Apiaceae	Forb		
Not Assigned	Pteryxia petraea	Aletes petraeus (Jones) W. A. Weber	Apiaceae	Forb		
Not Assigned	Pteryxia terebinthina var. albiflora	Cymopterus terebinthinus (Hooker) Torrey & Gray var. calcareus (Jones) Cronquist	Apiaceae	Forb		
10	Ptilagrostis porteri	Ptilagrostis porteri (Rydberg) W. A. Weber	Poaceae	Graminoid		OBL
*	Puccinellia distans	Puccinellia distans (L.) Parlatore	Poaceae	Graminoid	OBL	OBL
6	Puccinellia nuttalliana	Puccinellia airoides Watson & Coulter	Poaceae	Graminoid	OBL	OBL
7	Pulsatilla patens ssp. multifida	Pulsatilla patens (L.) P. Miller subsp. multifida (Pritzel) Zamels	Ranunculaceae	Forb		
6	Purshia stansburiana	Purshia stansburiana (Torrey) Henrickson	Rosaceae	Shrub		
6	Purshia tridentata	Purshia tridentata (Pursh) De Candolle	Rosaceae	Shrub		
8	Pyrola asarifolia ssp. asarifolia	Pyrola rotundifolia L. subsp. asarifolia (Michaux) Loeve	Pyrolaceae	Shrub	NI	FACW

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8	Pyrola chlorantha	Pyrola chlorantha Swartz	Pyrolaceae	Shrub	FACU	FACW
8	Pyrola minor	Pyrola minor L.	Pyrolaceae	Shrub	NI	UPL
8	Pyrola picta	Pyrola picta J. E. Smith	Pyrolaceae	Shrub		
6	Pyrrocoma clementis	Pyrrocoma clementis Rydberg	Asteraceae	Forb		
5	Pyrrocoma crocea	Pyrrocoma crocea (A. Gray) Greene	Asteraceae	Forb		
Not Assigned	Pyrrocoma lanceolata	Pyrrocoma lanceolata (Hooker) Greene	Asteraceae	Forb		FAC
Not Assigned	Pyrrocoma uniflora	Pyrrocoma uniflora (Hooker) Greene	Asteraceae	Forb		FAC
6	Quercus ×pauciloba	Quercus undulata Torrey	Fagaceae	Shrub		
Not Assigned	Quercus ajoensis	Quercus ajoensis C. J. Muller	Fagaceae	Shrub		
5	Quercus gambelii	Quercus gambelii Nuttall	Fagaceae	Shrub		
7	Quercus grisea	Quercus grisea Liebmann	Fagaceae	Shrub		
5	Quercus havardii var. tuckeri	Quercus havardii Rydberg var. tuckeri Welsh	Fagaceae	Shrub		
6	Quercus turbinella	Quercus turbinella Greene	Fagaceae	Shrub		
3	Quincula lobata	Quincula lobata (Torrey) Rafinesque	Solanaceae	Forb		
Not Assigned	Ranunculus abortivus	Ranunculus abortivus L. subsp. acrolasius (Fernald) Kapoor & Loeve	Ranunculaceae	Forb	FACW	NI
Not Assigned	Ranunculus acriformis	Ranunculus acriformis A. Gray	Ranunculaceae	Forb	NI	FACW+
8	Ranunculus adoneus	Ranunculus adoneus A. Gray	Ranunculaceae	Forb	NI	FACW+
6	Ranunculus alismifolius var. montanus	Ranunculus alismifolius Geyer ex Bentham var. montanus S. Watson	Ranunculaceae	Forb		FACW
8	Ranunculus cardiophyllus	Ranunculus cardiophyllus Hooker	Ranunculaceae	Forb	FACW	FACW+
4	Ranunculus cymbalaria	Halerpestes cymbalaria (Pursh) Greene subsp. saximontana (Fernald) Moldenke	Ranunculaceae	Forb	OBL	OBL
7	Ranunculus eschscholtzii	Ranunculus eschscholtzii Schlechtendal	Ranunculaceae	Forb	NI	FACW
5	Ranunculus flammula var. flammula	Ranunculus reptans L. var. ovalis Torrey & Gray	Ranunculaceae	Forb		FACW
5	Ranunculus glaberrimus var. ellipticus	Ranunculus glaberrimus Hooker var. ellipticus Greene	Ranunculaceae	Forb	FAC	FACU
6	Ranunculus gmelinii	Ranunculus gmelinii De Candolle var. hookeri (D. Don) L. Benson	Ranunculaceae	Forb	FACW	FACW+
8	Ranunculus hyperboreus	Ranunculus hyperboreus Rottboel subsp. intertextus (Greene) Kapoor & Loeve	Ranunculaceae	Forb	NI	OBL
7	Ranunculus inamoenus	Ranunculus inamoenus Greene	Ranunculaceae	Forb	FACW	FACW-
Not Assigned	Ranunculus jovis	Ranunculus jovis A. Nelson	Ranunculaceae	Forb	NO	FACW

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9	Ranunculus karelinii	Ranunculus gelidus Karilin & Kirilow subsp. grayi (Britton) Hulten	Ranunculaceae	Forb	NO	UPL*
10	Ranunculus longirostris	Batrachium circinatum (Sibthorp) E. Fries subsp. subrigidum (Drew) Loeve & Loeve	Ranunculaceae	Forb	OBL	OBL
		Batrachium longirostre (Godron) F. Schultz	Ranunculaceae	Forb	OBL	OBL
10	Ranunculus macauleyi	Ranunculus macauleyi A. Gray	Ranunculaceae	Forb	NO	FACW
7	Ranunculus macounii	Ranunculus macounii Britton	Ranunculaceae	Forb	OBL	OBL
7	Ranunculus pedatifidus	Ranunculus pedatifidus J. E. Smith	Ranunculaceae	Forb	NI	FACW
9	Ranunculus pygmaeus	Ranunculus pygmaeus Wahlenberg	Ranunculaceae	Forb	NI	FACW
Not Assigned	Ranunculus ranunculinus	Cyrtorhyncha ranunculina Nuttall ex Torrey & Gray	Ranunculaceae	Forb	NI	FACU
*	Ranunculus repens	Ranunculus repens L.	Ranunculaceae	Forb	NI	FACW-
1	Ranunculus sceleratus var. sceleratus	Hecatonia scelerata (L.) Fourreau	Ranunculaceae	Forb	OBL	OBL
10	Ranunculus trichophyllus var. trichophyllus	Batrachium trichophyllum (Chaix) van den Bosch	Ranunculaceae	Forb	OBL	OBL
6	Ranunculus uncinatus	Ranunculus uncinatus D.Don	Ranunculaceae	Forb	NI	FACU
Not Assigned	Ranunculus uncinatus var. earlei	Ranunculus uncinatus D. Don var. earlei (Greene) L. Benson	Ranunculaceae	Forb		
Not Assigned	Ranunculus uncinatus var. parviflorus	Ranunculus uncinatus D. Don var. parviflorus (Torrey) L. Benson	Ranunculaceae	Forb		NI
*	Raphanus raphanistrum	Raphanus raphanistrum L.	Brassicaceae	Forb		
*	Raphanus sativus	Raphanus sativus L.	Brassicaceae	Forb	NI	NI
4	Ratibida columnifera	Ratibida columnifera (Nuttall) Wooton & Standley	Asteraceae	Forb		
4	Ratibida tagetes	Ratibida tagetes (James) Barnhart	Asteraceae	Forb		
Not Assigned	Rayjacksonia annua	Rayjacksonia annua (Rydberg) Hartman & Lane	Asteraceae	Forb		
8	Redfieldia flexuosa	Redfieldia flexuosa (Thurber ex A. Gray) Vasey	Poaceae	Graminoid		
*	Reseda lutea	Reseda lutea L.	Resedaceae	Forb	NI	NI
*	Reseda luteola	Reseda luteola L.	Resedaceae	Forb		
10	Reverchonia arenaria	Reverchonia arenaria A. Gray	Euphorbiaceae	Forb		
*	Rhamnus cathartica	Rhamnus cathartica L.	Rhamnaceae	Shrub	FACU	NI
7	Rhamnus smithii	Rhamnus smithii Greene	Rhamnaceae	Shrub		
*	Rheum rhabarbarum	Rheum rhaponticum L.	Polygonaceae	Forb		

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6	Rhinanthus minor ssp. minor	Rhinanthus minor L. subsp. borealis (Sterneck) Loeve	Scrophulariaceae	Forb	NO	FACU-
8	Rhodiola integrifolia	Rhodiola integrifolia Rafinesque	Crassulaceae	Forb		FACU
8	Rhodiola rhodantha	Clementsia rhodantha (A. Gray) Rose	Crassulaceae	Forb		FACW+
8	Rhododendron albiflorum	Azaleastrum albiflorum (Hooker) Rydberg	Ericaceae	Shrub	NI	FACU
6	Rhus glabra	Rhus glabra L.	Anacardiaceae	Shrub		
5	Rhus trilobata var. pilosissima	Rhus aromatica Aiton subsp. pilosissima (Engelmann) W. A. Weber	Anacardiaceae	Shrub	NI	
5	Rhus trilobata var. trilobata	Rhus aromatica Aiton subsp. trilobata (Nuttall ex Torrey & Gray) W. A. Weber	Anacardiaceae	Shrub	NI	NI
7	Ribes americanum	Ribes americanum P. Miller	Grossulariaceae	Shrub	FACW	NI
6	Ribes aureum	Ribes aureum Pursh	Grossulariaceae	Shrub	NI	FACW
*****	Ribes aureum var. villosum	Ribes odoratum Wendland	Grossulariaceae	Shrub	FAC	NI
6	Ribes cereum	Ribes cereum Douglas	Grossulariaceae	Shrub	UPL	NI
Not Assigned	Ribes divaricatum	Ribes divaricatum Douglas	Grossulariaceae	Shrub		
5	Ribes inerme	Ribes inerme Rydberg	Grossulariaceae	Shrub	NI	FAC+
		Ribes inerme Rydberg fma incisum W. A. Weber	Grossulariaceae	Shrub	NI	FAC+
7	Ribes lacustre	Ribes lacustre (Persoon) Poiret	Grossulariaceae	Shrub	NI	FACW
Not Assigned	Ribes laxiflorum	Ribes coloradense Coville	Grossulariaceae	Shrub		
7	Ribes leptanthum	Ribes leptanthum A. Gray	Grossulariaceae	Shrub		
6	Ribes montigenum	Ribes montigenum McClatchie	Grossulariaceae	Shrub		
7	Ribes viscosissimum	Ribes viscosissimum Pursh	Grossulariaceae	Shrub	NO	NI
7	Ribes wolfii	Ribes wolfii Rothrock	Grossulariaceae	Shrub	NI	FAC
4	Robinia neomexicana	Robinia neomexicana A. Gray	Fabaceae	Shrub		
*****	Robinia pseudoacacia	Robinia pseudo-acacia L.	Fabaceae	Tree	UPL	FACU
Not Assigned	Rorippa alpina	Rorippa curvipes Greene var. alpina (S. Watson) Stuckey	Brassicaceae	Forb	NI	
7	Rorippa coloradensis	Rorippa coloradensis Stuckey	Brassicaceae	Forb	NO	OBL
5	Rorippa curvipes	Rorippa curvipes Greene var. curvipes	Brassicaceae	Forb	NI	OBL
*****	Rorippa nasturtium-aquaticum	Nasturtium officinale R. Brown	Brassicaceae	Forb	OBL	OBL
Not Assigned	Rorippa palustris	Rorippa palustris (L.) Besser	Brassicaceae	Forb	OBL	OBL
Not Assigned	Rorippa palustris ssp. fernaldiana	Rorippa palustris (L.) Besser var. glabra (O. E. Schulz) Stuckey	Brassicaceae	Forb	OBL	

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Not Assigned	Rorippa palustris ssp. hispida	Rorippa palustris (L.) Besser subsp. hispida (Desvaux) Jonsell	Brassicaceae	Forb	OBL	
4	Rorippa sinuata	Rorippa sinuata (Nuttall in Torrey & Gray) A. S. Hitchcock	Brassicaceae	Forb	FACW	FACW
4	Rorippa sphaerocarpa	Rorippa sphaerocarpa (A. Gray) Britton	Brassicaceae	Forb	NI	OBL
*****	Rorippa sylvestris	Rorippa sylvestris (L.) Besser	Brassicaceae	Forb	OBL	
Not Assigned	Rorippa tenerrima	Rorippa tenerrima Greene	Brassicaceae	Forb	FAC	NI
5	Rorippa teres	Rorippa teres (Michaux) Stuckey	Brassicaceae	Forb	FACW	OBL
5	Rosa acicularis ssp. sayi	Rosa sayi Schweinitz	Rosaceae	Shrub	FACU	FACU
5	Rosa arkansana	Rosa arkansana T. C. Porter	Rosaceae	Shrub	NI	NI
*****	Rosa eglanteria	Rosa rubiginosa L.	Rosaceae	Shrub	NI	NI
5	Rosa nutkana var. hispida	Rosa nutkana Presl var. hispida Fernald	Rosaceae	Shrub		NI
5	Rosa woodsii	Rosa woodsii Lindley	Rosaceae	Shrub	FACU	FAC-
Not Assigned	Rotala ramosior	Rotala ramosior (L.) Koehne	Lythraceae	Forb	NI	NI
9	Rubus arcticus ssp. acaulis	Cylactis arctica (L.) W. A. Weber subsp. acaulis (Michaux) W. A. Weber	Rosaceae	Forb	NO	OBL
6	Rubus deliciosus	Oreobatus deliciosus (James ex Torrey) Rydberg	Rosaceae	Shrub		
*****	Rubus discolor	Rubus discolor Weihe & Nees	Rosaceae	Shrub	NO	FACW
5	Rubus idaeus ssp. strigosus	Rubus idaeus L. subsp. melanolasius (Dieck) Focke	Rosaceae	Shrub	NI	FACU
*****	Rubus laciniatus	Rubus laciniatus Willdenow	Rosaceae	Vine, Shrub	NI	NI
7	Rubus neomexicanus	Oreobatus deliciosus (James ex Torrey) Rydberg subsp. neomexicanus (Rydberg) Weber	Rosaceae	Shrub		
*****	Rubus occidentalis	Rubus occidentalis L.	Rosaceae	Shrub		
7	Rubus parviflorus var. parviflorus	Rubacer parviflorum (Nuttall) Rydberg	Rosaceae	Shrub		FAC
7	Rubus pubescens var. pubescens	Cylactis pubescens (Rafinesque) W. A. Weber	Rosaceae	Forb		FAC+
6	Rudbeckia hirta	Rudbeckia hirta L.	Asteraceae	Forb	FACU	FACU
6	Rudbeckia laciniata var. ampla	Rudbeckia ampla A. Nelson	Asteraceae	Forb	FAC	FAC+
7	Rudbeckia montana	Rudbeckia occidentalis Nuttall var. montana (A. Gray) Perdue	Asteraceae	Forb		FACU
*****	Rudbeckia triloba	Rudbeckia triloba L.	Asteraceae	Forb	FACU	NI
*****	Rumex acetosella	Acetosella vulgaris (K. Koch) Fourreau	Polygonaceae	Forb	FAC	FAC-
0	Rumex altissimus	Rumex altissimus Wood	Polygonaceae	Forb	FAC	OBL

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5	Rumex aquaticus var. fenestratus	Rumex aquaticus L. subsp. occidentalis (S. Watson) Hulten	Polygonaceae	Forb	OBL	OBL
*****	Rumex crispus	Rumex crispus L.	Polygonaceae	Forb	FACW	FACW
5	Rumex densiflorus	Rumex densiflorus Osterhout	Polygonaceae	Forb	NI	FACW+
4	Rumex hymenosepalus	Rumex hymenosepalus Torrey	Polygonaceae	Forb		
Not Assigned	Rumex maritimus	Rumex maritimus L. subsp. fueginus (Philippi) Hulten	Polygonaceae	Forb	FACW	FACW
*****	Rumex obtusifolius	Rumex obtusifolius L.	Polygonaceae	Forb	FAC	FACW
Not Assigned	Rumex paucifolius ssp. paucifolius	Acetosella paucifolia (Nuttall) Loeve	Polygonaceae	Forb		OBL
4	Rumex salicifolius var. denticulatus	Rumex utahensis Rechinger	Polygonaceae	Forb		
4	Rumex salicifolius var. mexicanus	Rumex triangulivalvis (Danser) Rechinger f.	Polygonaceae	Forb	FAC	FACW
*****	Rumex stenophyllus	Rumex stenophyllus Ledebour	Polygonaceae	Forb	FACW+	NI
4	Rumex venosus	Rumex venosus Pursh	Polygonaceae	Forb	FAC	UPL
Not Assigned	Ruppia cirrhosa	Ruppia cirrhosa (Petagna) Grande subsp. occidentalis (S. Watson) Loeve & Loeve	Ruppiaceae	Forb	OBL	OBL
*****	Saccharum ravennae	Erianthus ravennae (L.) Beauvois	Poaceae	Graminoid		NI
*****	Sagina apetala	Sagina apetala Ard	Carophyllaceae	Forb	NO	NO
7	Sagina saginoides	Sagina saginoides (L.) Karsten	Caryophyllaceae	Forb	NI	FACW
Not Assigned	Sagittaria calycina var. calycina	Sagittaria montevidensis Chamisso & Schlechtendal subsp. calycina (Engelmann) Bogin	Alismataceae	Forb	OBL	
6	Sagittaria cuneata	Sagittaria cuneata Sheldon	Alismataceae	Forb	OBL	OBL
Not Assigned	Sagittaria graminea	Sagittaria graminea Michaux	Alismataceae	Forb	OBL	NI
5	Sagittaria latifolia	Sagittaria latifolia Willdenow	Alismataceae	Forb	OBL	OBL
4	Salicornia rubra	Salicornia europaea L. subsp. rubra (A. Nelson) Breitung	Chenopodiaceae	Forb	OBL	OBL
*****	Salix ×sepulcralis	Salix babylonica L.	Salicaceae	Tree	FACW	FACW
*****	Salix alba	Salix alba L. var. vitellina (L.) J. Stokes	Salicaceae	Tree	FACW	FAC
5	Salix amygdaloides	Salix amygdaloides Andersson	Salicaceae	Tree	FACW	FACW
6	Salix bebbiana	Salix bebbiana Sargent	Salicaceae	Shrub	FACW	FACW+
7	Salix boothii	Salix boothii Dorn	Salicaceae	Shrub	NI	OBL*
8	Salix brachycarpa	Salix brachycarpa Nuttall	Salicaceae	Shrub	NI	FACW
10	Salix calcicola	Salix calcicola Fernald & Wiegand	Salicaceae	Shrub		

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		Salix lanata L. subsp. calcicola (Fernald & Wiegand) Hulten	Salicaceae	Shrub		
9	Salix candida	Salix candida Fluegge	Salicaceae	Shrub	NI	OBL
6	Salix drummondiana	Salix drummondiana Barratt	Salicaceae	Shrub	NI	FACW+
6	Salix eriocephala	Salix eriocephala Michaux	Salicaceae	Shrub	FACW	FACW
3	Salix exigua	Salix exigua Nuttall	Salicaceae	Shrub	OBL	OBL
		Salix exigua Nuttall subsp. exigua	Salicaceae	Shrub	OBL	FACW
*	Salix fragilis	Salix fragilis L.	Salicaceae	Tree	FAC	FAC
6	Salix geyeriana	Salix geyeriana Andersson	Salicaceae	Shrub	NI	OBL
8	Salix glauca	Salix glauca L. var. villosa Andersson	Salicaceae	Shrub	NO	FAC*
4	Salix interior	Salix exigua Nuttall subsp. interior (Rowlee) Cronquist	Salicaceae	Shrub	OBL	
7	Salix irrorata	Salix irrorata Andersson	Salicaceae	Shrub	NI	FACW+
7	Salix ligulifolia	Salix ligulifolia Ball	Salicaceae	Shrub	NI	OBL
		Salix ligulifolia Ball ex Schneid.	Salicaceae	Shrub	OBL	OBL
7	Salix lucida	Salix lucida Muhlenberg subsp. caudata (Nuttall) E. Murray (see S. lasiandra var. caudata)	Salicaceae	Shrub	FACW	FACW
		Salix lucida Muhlenberg subsp. lasiandra (Bentham) E. Murray (see S. lasiandra var. lasiandra)	Salicaceae	Shrub	FACW	FACW+
6	Salix lucida ssp. caudata	Salix lasiandra Bentham var. caudata (Nutt.) Sudworth	Salicaceae	Shrub	FACW	OBL
6	Salix lucida ssp. lasiandra	Salix lasiandra Bentham var. lasiandra	Salicaceae	Shrub	NI	OBL
6	Salix lutea	Salix lutea Nuttall (also see Salix ligulifolia)	Salicaceae	Shrub	OBL	OBL
*	Salix matsudana	Salix matsudana Koidzumi	Salicaceae	Shrub		
Not Assigned	Salix melanopsis	Salix melanopsis Nuttall	Salicaceae	Shrub	NO	FACW+
6	Salix monticola	Salix monticola Bebb in Coulter	Salicaceae	Shrub	NI	OBL
10	Salix myrtillifolia	Salix myrtillifolia Andersson	Salicaceae	Shrub	NI	FACW+
7	Salix nigra	Salix nigra Marshall	Salicaceae	Tree	OBL	OBL
9	Salix nivalis	Salix reticulata L. subsp. nivalis (Hooker) Loeve et al.	Salicaceae	Shrub		FACW
8	Salix petiolaris	Salix gooddingii Ball	Salicaceae	Tree	OBL	NI
		Salix gracilis Andersson	Salicaceae	Tree	OBL	OBL*

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8	Salix petrophila	Salix arctica Pallas subsp. petraea (Andersson) Loeve et al.	Salicaceae	Shrub		FACW
7	Salix planifolia	Salix planifolia Pursh	Salicaceae	Shrub	NI	OBL
*	Salix purpurea	Salix purpurea L.	Salicaceae	Shrub	NI	NI
6	Salix scouleriana	Salix scouleriana Barratt ex Hooker	Salicaceae	Shrub	NI	FAC*
9	Salix serissima	Salix serissima (L. H. Bailey) Fernald	Salicaceae	Shrub	OBL	NI
8	Salix wolfii	Salix wolfii Bebb	Salicaceae	Shrub	NI	OBL
*	Salsola collina	Salsola collina Pallas	Chenopodiaceae	Forb		
*	Salsola tragus	Salsola australis R. Brown	Chenopodiaceae	Forb	FACU	FACU
*	Salvia aethiopis	Salvia aethiopis L.	Lamiaceae	Forb		
*	Salvia azurea var. grandiflora	Salvia azurea Michaux & Lamarck var. grandiflora Bentham	Lamiaceae	Forb		
*	Salvia nemorosa	Salvia nemorosa L.	Lamiaceae	Forb		
*	Salvia pratensis	Salvia pratensis L.	Lamiaceae	Forb		
2	Salvia reflexa	Salvia reflexa Hornemann	Lamiaceae	Forb		
*	Salvia sclarea	Salvia sclarea L.	Lamiaceae	Forb		
*	Sambucus nigra ssp. canadensis	Sambucus canadensis L.	Caprifoliaceae	Shrub	FAC	FACW
6	Sambucus nigra ssp. cerulea	Sambucus coerulea Rafinesque	Caprifoliaceae	Shrub		FACU
6	Sambucus racemosa var. racemosa	Sambucus microbotrys Rydberg	Caprifoliaceae	Shrub		FACU
*	Sanguisorba minor	Sanguisorba minor Scopoli	Rosaceae	Forb	NI	FACU-
8	Sanicula marilandica	Sanicula marilandica L.	Apiaceae	Forb	NI	NI
6	Sapindus saponaria var. drummondii	Sapindus drummondii Hooker & Arnott	Sapindaceae	Shrub	UPL	
*	Saponaria officinalis	Saponaria officinalis L.	Caryophyllaceae	Forb	FACU	FACU-
4	Sarcobatus vermiculatus	Sarcobatus vermiculatus (Hooker) Torrey	Chenopodiaceae	Shrub	FACU	FACU*
10	Saussurea weberi	Saussurea weberi Hulten	Asteraceae	Forb		
10	Saxifraga adscendens ssp. oregonensis	Muscaria adscendens (L.) Small	Saxifragaceae	Forb		UPL
8	Saxifraga bronchialis ssp. austromontana	Ciliaria austromontana (Wiegand) W. A. Weber	Saxifragaceae	Forb		FACU-
10	Saxifraga caespitosa ssp. delicatula	Muscaria delicatula Small	Saxifragaceae	Forb		FACU
10	Saxifraga caespitosa ssp. monticola	Muscaria micropetala (Small) Fedde	Saxifragaceae	Forb		FACU
10	Saxifraga caespitosa ssp. monticola	Muscaria monticola (Small) Fedde	Saxifragaceae	Forb		FACU
9	Saxifraga cernua	Saxifraga cernua L.	Saxifragaceae	Forb	NI	FACW

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8	Saxifraga chrysantha	Hirculus serpyllifolius (Pursh) W. A. Weber subsp. chrysanthus (A. Gray) W. A. Weber	Saxifragaceae	Forb	NI	FACU
9	Saxifraga flagellaris ssp. crandallii	Hirculus platysepalus (Trautvetter) W. A. Weber subsp. crandallii (Gandoger) W. A. Weber	Saxifragaceae	Forb		
10	Saxifraga foliolosa	Spatularia foliolosa (R. Brown) Small	Saxifragaceae	Forb	NO	OBL
9	Saxifraga hirculus	Hirculus prorepens (Fischer ex Sternberg) Loeve & Loeve	Saxifragaceae	Forb	NI	OBL
8	Saxifraga odontoloma	Micranthes odontoloma (Piper) Heller	Saxifragaceae	Forb	NI	FACW+
8	Saxifraga oregana	Micranthes oregana (T. J. Howell) Small	Saxifragaceae	Forb	NI	OBL
8	Saxifraga rhomboidea	Micranthes rhomboidea (Greene) Small	Saxifragaceae	Forb	NI	FACW
9	Saxifraga rivularis	Saxifraga hyperborea R. Brown subsp. debilis (Engelmann ex A. Gray) Loeve et al.	Saxifragaceae	Forb	NI	FACW
		Saxifraga rivularis L.	Saxifragaceae	Forb	NI	FACW
2	Schedonnardus paniculatus	Schedonnardus paniculatus (Nuttall) Trelease	Poaceae	Graminoid		
8	Schizachne purpurascens	Schizachne purpurascens (Torrey) Swallen	Poaceae	Graminoid	FACU	FACU
5	Schizachyrium scoparium	Schizachyrium scoparium (Michaux) Nash	Poaceae	Graminoid	FACU	FACU
6	Schkuhria multiflora	Bahia neomexicana A. Gray	Asteraceae	Forb		
6	Schoenocrambe linearifolia	Schoenocrambe linearifolia (A. Gray) Rollins	Brassicaceae	Forb		
6	Schoenocrambe linifolia	Schoenocrambe linifolia (Nuttall) Greene	Brassicaceae	Forb		
3	Schoenoplectus acutus var. acutus	Schoenoplectus lacustris (L.) Palla subsp. acutus (Muhlenberg ex Bigelow) Loeve & Loeve	Cyperaceae	Graminoid	OBL	OBL
Not Assigned	Schoenoplectus fluviatilis	Bolboschoenus maritimus (L.) Palla subsp. fluviatilis (Torrey) Loeve & Loeve	Cyperaceae	Graminoid	OBL	OBL
5	Schoenoplectus maritimus	Bolboschoenus maritimus (L.) Palla subsp. paludosus (A. Nelson) Loeve & Loeve	Cyperaceae	Graminoid	NI	OBL
4	Schoenoplectus pungens	Schoenoplectus pungens (M. Vahl) Palla	Cyperaceae	Graminoid	OBL	OBL
8	Schoenoplectus saximontanus	Schoenoplectus saximontanus (Fernald) Raynal	Cyperaceae	Graminoid	OBL	
3	Schoenoplectus tabernaemontani	Schoenoplectus lacustris (L.) Palla subsp. creber (Fernald) Loeve & Loeve	Cyperaceae	Graminoid	OBL	OBL
5	Scirpus microcarpus	Scirpus microcarpus J. & K. Presl	Cyperaceae	Graminoid	NI	OBL
7	Scirpus nevadensis	Amphiscirpus nevadensis (S. Watson) Oteng-Yeboah	Cyperaceae	Graminoid	NI	OBL
5	Scirpus pallidus	Scirpus pallidus (Britton) Fernald	Cyperaceae	Graminoid	OBL	OBL

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*	Scirpus pendulus	Scirpus lineatus Michaux	Cyperaceae	Graminoid	NI	NI
8	Sclerocactus glaucus	Sclerocactus glaucus (K. Schumann) L. Benson	Cactaceae	Shrub		
9	Sclerocactus mesae-verdae	Sclerocactus mesa-verdae (Boissevain & Davidson) L. Benson	Cactaceae	Shrub		
5	Sclerocactus parviflorus	Sclerocactus parviflorus CLoever & Jotter	Cactaceae	Shrub		
*	Sclerochloa dura	Sclerochloa dura (L.) P. Beauvois	Poaceae	Graminoid		
Not Assigned	Scleropogon brevifolius	Scleropogon brevifolius Philippi	Poaceae	Graminoid		
*	Scorzonera laciniata	Podospermum laciniatum (L.) De Candolle	Asteraceae	Forb		
5	Scrophularia lanceolata	Scrophularia lanceolata Pursh	Scrophulariaceae	Forb	FAC	UPL
6	Scutellaria brittonii	Scutellaria brittonii T. C. Porter	Lamiaceae	Forb		
7	Scutellaria galericulata	Scutellaria galericulata L. var. epilobiifolia (Hamilton) Jordal	Lamiaceae	Forb	OBL	OBL
10	Scutellaria lateriflora	Scutellaria lateriflora L.	Lamiaceae	Forb	OBL	NO
*	Scutellaria resinosa	Scutellaria resinosa Torrey	Lamiaceae	Shrub		
*	Secale cereale	Secale cereale L.	Poaceae	Graminoid		
*	Sedum acre	Sedum acre L.	Crassulaceae	Forb		
5	Sedum lanceolatum ssp. lanceolatum	Amerosedum lanceolatum (Torrey) Loeve & Loeve	Crassulaceae	Forb		
*	Sedum spurium	Spathulata spuria (Bieberstein) Loeve & Loeve	Crassulaceae	Forb		
6	Selaginella densa	Selaginella densa Rydberg	Selaginellaceae	Forb		
7	Selaginella mutica	Selaginella mutica D. C. Eaton	Selaginellaceae	Forb		
8	Selaginella selaginoides	Selaginella selaginoides (L.) Link	Selaginellaceae	Forb	NO	OBL
7	Selaginella underwoodii	Selaginella underwoodii Hieronymus	Selaginellaceae	Forb		
7	Selaginella weatherbiana	Selaginella weatherbiana Tryon	Selaginellaceae	Forb		
8	Senecio amplectens var. amplectens	Ligularia amplectens (A. Gray) W. A. Weber	Asteraceae	Forb		FACW
9	Senecio amplectens var. holmii	Ligularia holmii (Greene) W. A. Weber	Asteraceae	Forb		FACW
5	Senecio atratus	Senecio atratus Greene	Asteraceae	Forb		
7	Senecio bigelovii var. hallii	Ligularia bigelovii (A. Gray) W. A. Weber var. hallii (A. Gray) W. A. Weber	Asteraceae	Forb		
7	Senecio crassulus	Senecio crassulus A. Gray	Asteraceae	Forb	NI	FACU
4	Senecio eremophilus var. kingii	Senecio eremophilus Richardson subsp. kingii (Rydberg) Douglas & R.-Douglas	Asteraceae	Forb		FACU

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7	Senecio fremontii var. blitoides	Senecio flaccidus Lessing var. douglasii (DeCandolle) Turner & Barkley	Asteraceae	Forb		
		Senecio fremontii Torrey & Gray subsp. blitoides (Greene) W. A. Weber	Asteraceae	Forb		
6	Senecio hydrophilus	Senecio hydrophilus Nuttall	Asteraceae	Forb	OBL	OBL
5	Senecio integerrimus	Senecio integerrimus Nuttall	Asteraceae	Forb	FACW-	FAC
Not Assigned	Senecio pudicus	Ligularia pudica (Greene) W. A. Weber	Asteraceae	Forb		
Not Assigned	Senecio rapifolius	Senecio rapifolius Nuttall	Asteraceae	Forb		
5	Senecio riddellii	Senecio riddellii Torrey & Gray	Asteraceae	Forb		
6	Senecio serra	Senecio serra Hooker	Asteraceae	Forb	NI	FACU
		Senecio serra Hooker var. serra	Asteraceae	Forb	NI	FACU
7	Senecio serra var. admirabilis	Senecio serra Hooker var. admirabilis (Greene) A. Nelson	Asteraceae	Forb		FACU
9	Senecio soldanella	Ligularia soldanella (A. Gray) W. A. Weber	Asteraceae	Forb		
5	Senecio spartioides	Senecio spartioides Torrey & Gray	Asteraceae	Forb		
Not Assigned	Senecio spartioides var. multicapitatus	Senecio multicapitatus Greenman in Rydberg	Asteraceae	Forb		
9	Senecio taraxacoides	Ligularia taraxacoides (A. Gray) W. A. Weber	Asteraceae	Forb		
7	Senecio triangularis	Senecio triangularis Hooker	Asteraceae	Forb	NI	OBL
*****	Senecio vulgaris	Senecio vulgaris L.	Asteraceae	Forb	FAC	UPL
7	Senecio wootonii	Senecio wootonii Greene	Asteraceae	Forb		
*****	Sesuvium verrucosum	Sesuvium verrucosum Rafinesque	Aizoaceae	Forb	FACW	FACW+
*****	Setaria italica	Setaria italica (L.) P. Beauvois	Poaceae	Graminoid	FACU	FAC
Not Assigned	Setaria leucopila	Setaria leucopila (Scribner & Merrill) K. Schumann	Poaceae	Graminoid		
*****	Setaria verticillata	Setaria verticillata (L.) P. Beauvois	Poaceae	Graminoid	FAC	FACU
*****	Setaria viridis	Setaria viridis (L.) P. Beauvois	Poaceae	Graminoid		
7	Shepherdia argentea	Shepherdia argentea (Pursh) Nuttall	Elaeagnaceae	Shrub	NI	
7	Shepherdia canadensis	Shepherdia canadensis (L.) Nuttall	Elaeagnaceae	Shrub	NI	NI
7	Shinnersoseris rostrata	Shinnersoseris rostrata (A. Gray) Tomb	Asteraceae	Forb		
6	Sibbaldia procumbens	Sibbaldia procumbens L.	Rosaceae	Forb	NI	
5	Sidalcea candida	Sidalcea candida A. Gray	Malvaceae	Forb	NI	FACW+
5	Sidalcea neomexicana	Sidalcea neomexicana A. Gray	Malvaceae	Forb	NI	FACW

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7	Silene acaulis var. subacaulescens	Silene acaulis (L.) L. subsp. subacaulescens (F. N. Williams) Hitchcock & Maguire	Caryophyllaceae	Forb		UPL
*	Silene antirrhina	Silene antirrhina L.	Caryophyllaceae	Forb		
*	Silene conoidea	Conosilene conica (L.) Fourr. ssp. conoidea (L.) A.Löve & Kjellq.	Carophyllaceae	Forb		
*	Silene csereii	Silene csereii Baumgartner	Caryophyllaceae	Forb		
*	Silene dichotoma	Silene dichotoma Ehrhart	Caryophyllaceae	Forb		
*	Silene dioica	Melandrium dioicum (L.) Cosson & Germain	Caryophyllaceae	Forb		
6	Silene drummondii var. drummondii	Gastrolychnis drummondii (Hooker) Loeve & Loeve	Caryophyllaceae	Forb		
*	Silene gallica	Silene gallica L.	Caryophyllaceae	Forb		
Not Assigned	Silene kingii	Gastrolychnis kingii (S. Watson) W. A. Weber	Caryophyllaceae	Forb		
Not Assigned	Silene menziesii ssp. menziesii var. menziesii	Anotites menziesii (Hooker) Greene	Caryophyllaceae	Forb		FAC
*	Silene noctiflora	Silene noctiflora L.	Caryophyllaceae	Forb		
5	Silene scouleri ssp. hallii	Silene scouleri Hooker subsp. hallii (S. Watson) Hitchcock & Maguire	Caryophyllaceae	Forb		
Not Assigned	Silene uralensis	Gastrolychnis apetala (L.) Tolmatchev & Kozhanchikov subsp. uralensis (Ruprecht) Loeve & Loeve	Caryophyllaceae	Forb	NI	UPL
*	Silene vulgaris	Silene vulgaris (Moench) Garcke	Caryophyllaceae	Forb		
7	Silphium integrifolium	Silphium integrifolium Michaux	Asteraceae	Forb		
Not Assigned	Silphium laciniatum	Silphium laciniatum L.	Asteraceae	Forb		
*	Sinapis alba	Sinapis alba L.	Brassicaceae	Forb		
*	Sinapis arvensis	Sinapis arvensis L.	Brassicaceae	Forb		
*	Sisymbrium altissimum	Sisymbrium altissimum L.	Brassicaceae	Forb	FACU	FACU-
*	Sisymbrium austriacum	Sisymbrium austriacum Jacquin	Brassicaceae	Forb		
*	Sisymbrium loeselii	Sisymbrium loeselii L.	Brassicaceae	Forb		
*	Sisymbrium officinale	Sisymbrium officinale (L.) Scopoli	Brassicaceae	Forb		
7	Sisyrinchium demissum	Sisyrinchium demissum Greene	Iridaceae	Forb	NI	OBL
7	Sisyrinchium idahoense var. occidentale	Sisyrinchium idahoense Bicknell var. occidentale (Bicknell) D. Henderson	Iridaceae	Forb		OBL
6	Sisyrinchium montanum	Sisyrinchium montanum Greene	Iridaceae	Forb	FAC	FAC-

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7	Sisyrinchium pallidum	Sisyrinchium pallidum Cholewa & Henderson	Iridaceae	Forb		FACW
6	Sium suave	Sium suave Walter	Apiaceae	Forb	OBL	OBL
9	Smelowskia calycina	Smelowskia calycina (Stephan ex Willdenow) C. A. Meyer	Brassicaceae	Forb		
7	Smilax lasioneura	Smilax lasioneuron Hooker	Smilacaceae	Vine, Forb/herb		
2	Solanum americanum	Solanum americanum P. Miller	Solanaceae	Shrub	FAC	FACU+
*	Solanum carolinense	Solanum carolinense L.	Solanaceae	Forb	UPL	NI
*	Solanum dulcamara	Solanum dulcamara L.	Solanaceae	Forb	FAC	FAC
*	Solanum elaeagnifolium	Solanum elaeagnifolium Cavanilles	Solanaceae	Forb		
*	Solanum heterodoxum	Solanum heterodoxum Dunal	Solanaceae	Forb		
3	Solanum jamesii	Solanum jamesii Torrey	Solanaceae	Forb		
*	Solanum physalifolium	Solanum physalifolium Rusby var. nitidibaccatum (Bitter) Edmonds	Solanaceae	Forb		
*	Solanum rostratum	Solanum rostratum Dunal	Solanaceae	Forb		
2	Solanum triflorum	Solanum triflorum Nuttall	Solanaceae	Forb		
5	Solidago canadensis	Solidago canadensis L.	Asteraceae	Forb	FACU	FACU
6	Solidago gigantea	Solidago serotinoides Loeve & Loeve (see Solidago gigantea)	Asteraceae	Forb	FACW	FACW
5	Solidago missouriensis	Solidago missouriensis Nuttall	Asteraceae	Forb		
6	Solidago mollis	Solidago mollis Bartling	Asteraceae	Forb		
5	Solidago multiradiata var. scopulorum	Solidago multiradiata Aiton var. scopulorum A. Gray	Asteraceae	Forb		FACU
6	Solidago nana	Solidago nana Nuttall	Asteraceae	Forb		
5	Solidago nemoralis var. longipetiolata	Solidago nemoralis Aiton var. longipetiolata (Mackenzie & Bush) Palmer & Steyermark	Asteraceae	Forb		
6	Solidago simplex ssp. simplex	Solidago simplex Humboldt, Bonpland, & Kunth var. simplex	Asteraceae	Forb		FACU-
6	Solidago simplex ssp. simplex var. nana	Solidago simplex Humboldt, Bonpland, & Kunth var. nana	Asteraceae	Forb		FACU-
		Solidago spathulata De Candolle var. nana (A. Gray) Cronquist (see S. simplex var. nana)	Asteraceae	Forb		FACU-
6	Solidago simplex ssp. simplex var. simplex	Solidago spathulata De Candolle var. neomexicana (A. Gray) Cronquist (see S. simplex var. simplex)	Asteraceae	Forb		FACU-

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Not Assigned	Solidago speciosa var. pallida	Solidago speciosa Nuttall var. pallida T. C. Porter	Asteraceae	Forb		
6	Solidago velutina	Solidago velutina De Candolle	Asteraceae	Forb		
7	Solidago wrightii var. adenophora	Solidago wrightii A. Gray var. adenophora S. F. Blake	Asteraceae	Forb		
*	Sonchus arvensis	Sonchus arvensis L.	Asteraceae	Forb	FAC	FACU
*	Sonchus arvensis ssp. uliginosus	Sonchus uliginosus Bieberstein	Asteraceae	Forb		
*	Sonchus asper	Sonchus asper (L.) J. Hill	Asteraceae	Forb	FACW	FACU
*	Sonchus oleraceus	Sonchus oleraceus L.	Asteraceae	Forb	FACU	UPL
5	Sophora nuttalliana	Vexibia nuttalliana (B. Turner) W. A. Weber	Fabaceae	Forb		
7	Sorbus scopulina	Sorbus scopulina Greene	Rosaceae	Shrub	NI	NI
10	Sorghastrum nutans	Sorghastrum avenaceum (Michaux) Nash	Poaceae	Graminoid	FACU	FACW
*	Sorghum bicolor ssp. bicolor	Sorghum vulgare Persoon	Poaceae	Graminoid		FACU
*	Sorghum halepense	Sorghum halepense (L.) Persoon	Poaceae	Graminoid	FACU	FACU+
7	Sparganium angustifolium	Sparganium angustifolium Michaux	Sparganiaceae	Forb	NI	OBL
		Sparganium emersum Rehmann	Sparganiaceae	Forb	NI	OBL
6	Sparganium eurycarpum	Sparganium eurycarpum Engelmann ex A. Gray	Sparganiaceae	Forb	OBL	OBL
8	Sparganium natans	Sparganium minimum Wallroth	Sparganiaceae	Forb		OBL
7	Spartina gracilis	Spartina gracilis Trinius	Poaceae	Graminoid	FACW	FACW
7	Spartina pectinata	Spartina pectinata Link	Poaceae	Graminoid	FACW	OBL
*	Spergula arvensis	Spergula arvensis L.	Caryophyllaceae	Forb		
*	Spergularia maritima	Spergularia media (L.) K. Presl	Caryophyllaceae	Forb	NI	OBL
*	Spergularia rubra	Spergularia rubra (L.) J. & K. Presl	Caryophyllaceae	Forb	NI	FACU
4	Spergularia salina	Spergularia marina (L.) Grisebach	Caryophyllaceae	Forb	OBL	OBL
5	Sphaeralcea angustifolia	Sphaeralcea angustifolia (Cavanilles) G. Don var. cuspidata A. Gray	Malvaceae	Forb		
4	Sphaeralcea coccinea	Sphaeralcea coccinea (Pursh) Rydberg	Malvaceae	Forb		
4	Sphaeralcea coccinea ssp. coccinea	Sphaeralcea coccinea (Pursh) Rydberg subsp. coccinea	Malvaceae	Forb		
		Sphaeralcea coccinea (Pursh) Rydberg subsp. dissecta (Nuttall) Kearney	Malvaceae	Forb		
4	Sphaeralcea coccinea ssp. elata	Sphaeralcea coccinea subsp. elata (E. G. Baker) Kearney	Malvaceae	Forb		
Not Assigned	Sphaeralcea fendleri	Sphaeralcea fendleri A. Gray	Malvaceae	Forb		

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Not Assigned	Sphaeralcea leptophylla	Sphaeralcea leptophylla (A. Gray) Rydberg	Malvaceae	Forb		
5	Sphaeralcea parvifolia	Sphaeralcea parvifolia A. Nelson	Malvaceae	Forb		
Not Assigned	Sphaeromeria argentea	Sphaeromeria argentea Nuttall	Asteraceae	Forb		
9	Sphaeromeria capitata	Sphaeromeria capitata Nuttall	Asteraceae	Forb		
*****	Sphaerophysa salsula	Sphaerophysa salsula (Pallas) De Candolle	Fabaceae	Forb	NI	FAC
5	Sphenopholis obtusata	Sphenopholis obtusata (Michaux) Scribner	Poaceae	Graminoid	FACW	FACW-
Not Assigned	Spiraea douglasii var. menziesii	Spiraea douglasii Hooker var. menziesii (Hooker) K. Presl	Rosaceae	Shrub		
7	Spiranthes diluvialis	Spiranthes diluvialis Sheviak	Orchidaceae	Forb	NI	
7	Spiranthes romanzoffiana	Spiranthes romanzoffiana Chamisso	Orchidaceae	Forb	OBL	FACW*
*****	Spirodela polyrhiza	Spirodela polyrhiza (L.) Schleiden	Lemnaceae	Forb	OBL	OBL
5	Sporobolus airoides	Sporobolus airoides (Torrey) Torrey	Poaceae	Graminoid	FAC	FAC
4	Sporobolus compositus var. compositus	Sporobolus asper (Michaux) Kunth	Poaceae	Graminoid	FACU	UPL
4	Sporobolus contractus	Sporobolus contractus A. S. Hitchcock	Poaceae	Graminoid		
2	Sporobolus cryptandrus	Sporobolus cryptandrus (Torrey) A. Gray	Poaceae	Graminoid	FACU-	FACU-
6	Sporobolus flexuosus	Sporobolus flexuosus (Thurber) Rydberg	Poaceae	Graminoid	UPL	UPL
6	Sporobolus giganteus	Sporobolus giganteus Nash	Poaceae	Graminoid	FAC	NI
9	Sporobolus heterolepis	Sporobolus heterolepis (A. Gray) A. Gray	Poaceae	Graminoid	FACU	NI
9	Sporobolus nealleyi	Sporobolus nealleyi Vasey	Poaceae	Graminoid		
Not Assigned	Sporobolus neglectus	Sporobolus neglectus Nash	Poaceae	Graminoid	UPL	NI
7	Sporobolus texanus	Sporobolus texanus Vasey	Poaceae	Graminoid		NI
Not Assigned	Stachys pilosa var. pilosa	Stachys palustris L. subsp. pilosa (Nuttall) Epling	Lamiaceae	Forb	FACW	OBL
4	Stanleya albescens	Stanleya albescens Jones	Brassicaceae	Forb		
5	Stanleya pinnata	Stanleya pinnata (Pursh) Britton	Brassicaceae	Forb		
Not Assigned	Stanleya pinnata var. integrifolia	Stanleya pinnata (Pursh) Britton var. integrifolia (James) Rollins	Brassicaceae	Forb		
Not Assigned	Stanleya pinnata var. pinnata	Stanleya pinnata (Pursh) Britton var. pinnata	Brassicaceae	Forb		
Not Assigned	Stanleya viridiflora	Stanleya viridiflora Nuttall	Brassicaceae	Forb		
8	Stellaria calycantha	Stellaria calycantha (Ledebour) Bongard	Caryophyllaceae	Forb	NI	FACW+
7	Stellaria crassifolia	Stellaria crassifolia Ehrhart	Caryophyllaceae	Forb	OBL	OBL
*****	Stellaria graminea	Stellaria graminea L.	Caryophyllaceae	Forb	NI	FAC
9	Stellaria irrigua	Stellaria irrigua Bunge	Caryophyllaceae	Forb		

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7	Stellaria longifolia	Stellaria longifolia Muhlenberg ex Willdenow	Caryophyllaceae	Forb	OBL	FACW
8	Stellaria longipes	Stellaria longipes Goldie	Caryophyllaceae	Forb	NI	FACW+
*****	Stellaria media ssp. media	Alsine media L.	Caryophyllaceae	Forb	UPL	FACU
Not Assigned	Stellaria obtusa	Stellaria obtusa Engelmann	Caryophyllaceae	Forb	NO	FACW
8	Stellaria umbellata	Stellaria umbellata Turczaninov ex Karilin & Kirilow	Caryophyllaceae	Forb	NI	FAC+
Not Assigned	Stenogonum flexum	Stenogonum flexum (Jones) Reveal & Howell	Polygonaceae	Forb		
1	Stenogonum salsuginosum	Stenogonum salsuginosum Nuttall	Polygonaceae	Forb		
7	Stenosiphon linifolius	Stenosiphon linifolius (Nuttall in F. James) Heynhold	Onagraceae	Forb		
6	Stenotus acaulis	Stenotus acaulis Nuttall	Asteraceae	Forb		
7	Stenotus armerioides	Stenotus armerioides Nuttall	Asteraceae	Forb		
5	Stephanomeria exigua	Stephanomeria exigua Nuttall	Asteraceae	Forb		
5	Stephanomeria pauciflora	Stephanomeria pauciflora (Torrey) A. Nelson	Asteraceae	Forb		
5	Stephanomeria runcinata	Stephanomeria runcinata Nuttall	Asteraceae	Forb		
5	Stephanomeria wrightii	Stephanomeria wrightii A. Gray	Asteraceae	Forb		
Not Assigned	Stillingia sylvatica	Stillingia sylvatica Garden ex L.	Euphorbiaceae	Forb		
5	Streptanthella longirostris	Streptanthella longirostris (S. Watson) Rydberg	Brassicaceae	Forb		
8	Streptanthus cordatus	Streptanthus cordatus Nuttall ex Torrey & Gray	Brassicaceae	Forb		
7	Streptopus amplexifolius var. chalazatus	Streptopus fassettii Loeve & Loeve	Liliaceae	Forb		FACW
5	Strophostyles leiosperma	Strophostyles leiosperma (Torrey & Gray) Piper	Fabaceae	Vine, Forb/herb		
5	Stuckenia filiformis ssp. filiformis	Potamogeton filiformis Persoon	Potamogetonaceae	Forb	OBL	OBL
3	Stuckenia pectinatus	Potamogeton pectinatus L.	Potamogetonaceae	Forb	OBL	OBL
Not Assigned	Stuckenia vaginatus	Potamogeton vaginatus Turczaninov	Potamogetonaceae	Forb		OBL
3	Suaeda calceoliformis	Suaeda calceoliformis (Hooker) Moquin	Chenopodiaceae	Forb	FACW	FACW
3	Suaeda moquinii	Suaeda moquinii Torrey	Chenopodiaceae	Forb	FAC	FAC
		Suaeda nigra (Rafinesque) Macbride	Chenopodiaceae	Forb	FACW	FACW
Not Assigned	Subularia aquatica	Subularia aquatica L.	Brassicaceae	Forb	NI	OBL
4	Suckleya suckleyana	Suckleya suckleyana (Torrey) Rydberg	Chenopodiaceae	Forb	FACW	FAC
10	Sullivantia hapemanii var. purpusii	Sullivantia hapemanii (Coulter & Fisher) Coulter var. purpusii (Brandegee) Soltis	Saxifragaceae	Forb	NO	OBL
8	Swertia perennis	Swertia perennis L.	Gentianaceae	Forb	NI	FACW-

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6	Symphoricarpos albus	Symphoricarpos albus (L.) S. F. Blake	Caprifoliaceae	Shrub	FACU	FACU+
8	Symphoricarpos longiflorus	Symphoricarpos longiflorus A. Gray	Caprifoliaceae	Shrub		
3	Symphoricarpos occidentalis	Symphoricarpos occidentalis Hooker	Caprifoliaceae	Shrub	NI	
5	Symphoricarpos rotundifolius	Symphoricarpos rotundifolius A. Gray	Caprifoliaceae	Shrub		
Not Assigned	Symphyotrichum ×amethystinum	Virgulus amethystinus (Nuttall) Reveal & Keener	Asteraceae	Forb		
5	Symphyotrichum ascendens	Aster orthophyllus Greene	Asteraceae	Forb		FACU
		Virgulaster ascendens (Lindley ex Hooker) Semple	Asteraceae	Forb		
7	Symphyotrichum boreale	Aster junciformis Rydberg	Asteraceae	Forb	OBL	OBL
Not Assigned	Symphyotrichum campestre var. campestre	Virgulus campestris (Nuttall) Reveal & Keener	Asteraceae	Forb		
Not Assigned	Symphyotrichum ciliatum	Brachyactis ciliata Ledebour subsp. angusta (Lindley) A. Jones	Asteraceae	Forb	FACW	FACW
Not Assigned	Symphyotrichum eatonii	Aster bracteolatus Nuttall	Asteraceae	Forb		FAC
4	Symphyotrichum ericoides var. ericoides	Virgulus ericoides (L.) Reveal & Keener	Asteraceae	Forb	FACU	NI
4	Symphyotrichum falcatum var. falcatum	Virgulus falcatus (Lindley) Reveal & Keener	Asteraceae	Forb	FAC	FAC
6	Symphyotrichum fendleri	Virgulus fendleri (A. Gray) Reveal & Keener	Asteraceae	Forb		
5	Symphyotrichum foliaceum var. foliaceum	Aster foliaceus Lindley ex De Candolle var. foliaceus	Asteraceae	Forb		FACU
Not Assigned	Symphyotrichum frondosum	Brachyactis frondosa (Nuttall) A. Gray	Asteraceae	Forb		OBL
6	Symphyotrichum laeve var. geyeri	Aster laevis L. var. geyeri A. Gray	Asteraceae	Forb		
5	Symphyotrichum lanceolatum ssp. hesperium var. hesperium	Aster lanceolatus Willdenow subsp. hesperius (A. Gray) Semple & Chmielewski	Asteraceae	Forb	OBL	OBL
5	Symphyotrichum novae-angliae	Virgulus novae-angliae (L.) Reveal & Keener	Asteraceae	Forb		
5	Symphyotrichum oblongifolium	Virgulus oblongifolius (Nuttall) Reveal & Keener	Asteraceae	Forb		
6	Symphyotrichum porteri	Aster porteri A. Gray	Asteraceae	Forb		NI
6	Symphyotrichum spathulatum var. spathulatum	Aster spathulatus Lindley ex De Candolle	Asteraceae	Forb		FAC
*****	Symphytum officinale	Symphytum officinale L.	Boraginaceae	Forb		
7	Talinum calycinum	Talinum calycinum Engelmann	Portulacaceae	Forb		
6	Talinum parviflorum	Talinum parviflorum Nuttall ex Torrey & Gray	Portulacaceae	Forb		
*****	Tamarix parviflora	Tamarix parviflora De Candolle	Tamaricaceae	Shrub	FACW	FACW

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*	Tamarix ramosissima	Tamarix ramosissima Ledebour	Tamaricaceae	Shrub	FACW	FACW
*	Tanacetum parthenium	Tanacetum parthenium (L.) Schultz-Bipontinus	Asteraceae	Forb		
*	Tanacetum vulgare	Tanacetum vulgare L.	Asteraceae	Forb	NI	
6	Taraxacum eriophorum	Taraxacum eriophorum Rydberg	Asteraceae	Forb		
Not Assigned	Taraxacum lyratum	Taraxacum scopulorum (A. Gray) Rydberg	Asteraceae	Forb		
*	Taraxacum officinale	Taraxacum officinale G. H. Weber ex Wiggers	Asteraceae	Forb	FACU	FACU+
Not Assigned	Taraxacum officinale ssp. ceratophorum	Taraxacum dumetorum Greene	Asteraceae	Forb		
		Taraxacum ovinum Greene	Asteraceae	Forb		
9	Telesonix jamesii	Telesonix jamesii (Torrey) Rafinesque	Saxifragaceae	Forb		
6	Tetradymia canescens	Tetradymia canescens De Candolle	Asteraceae	Shrub		
Not Assigned	Tetradymia nuttallii	Tetradymia nuttallii Torrey & Gray	Asteraceae	Shrub		
6	Tetradymia spinosa	Tetradymia spinosa Hooker & Arnott	Asteraceae	Shrub		
6	Tetraneuris acaulis	Tetraneuris acaulis (Pursh) Greene	Asteraceae	Forb		
Not Assigned	Tetraneuris acaulis var. caespitosa	Tetraneuris brevifolia Greene	Asteraceae	Forb		
9	Tetraneuris grandiflora	Rydbergia brandegei (T. C. Porter) Rydberg	Asteraceae	Forb		
		Rydbergia grandiflora (Torrey & Gray) Greene	Asteraceae	Forb		
6	Tetraneuris ivesiana	Tetraneuris ivesiana Greene	Asteraceae	Forb		
7	Tetraneuris scaposa	Tetraneuris scaposa (De Candolle) Greene	Asteraceae	Forb		
7	Tetraneuris torreyana	Tetraneuris torreyana (Nuttall) Greene	Asteraceae	Forb		
3	Teucrium canadense var. occidentale	Teucrium canadense L. subsp. occidentale (A. Gray) W. A. Weber	Lamiaceae	Forb	FACW	FACW
6	Teucrium laciniatum	Teucrium laciniatum Torrey	Lamiaceae	Forb		
8	Thalictrum alpinum	Thalictrum alpinum L.	Ranunculaceae	Forb	NI	FAC
7	Thalictrum dasycarpum	Thalictrum dasycarpum Fischer & Ave-Lallemant	Ranunculaceae	Forb	FACW	FACW
6	Thalictrum fendleri	Thalictrum fendleri Engelmann ex A. Gray	Ranunculaceae	Forb	NI	UPL
9	Thalictrum heliophilum	Thalictrum heliophilum Wilken & DeMott	Ranunculaceae	Forb		
Not Assigned	Thalictrum revolutum	Thalictrum revolutum De Candolle	Ranunculaceae	Forb	NI	NI
5	Thalictrum sparsiflorum	Thalictrum sparsiflorum Turczaninov ex Fischer & Ave-Lallemant	Ranunculaceae	Forb	NI	FAC+
7	Thalictrum venulosum	Thalictrum venulosum Trelease	Ranunculaceae	Forb	NI	FACU*
Not Assigned	Thamnosma texana	Thamnosma texana (A. Gray) Torrey	Rutaceae	Forb		

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5	Thelesperma filifolium var. intermedium	Thelesperma filifolium (Hooker) A. Gray var. intermedium (Rydberg) Shinners	Asteraceae	Forb		
5	Thelesperma megapotamicum	Thelesperma megapotamicum (Sprengel) Kuntze	Asteraceae	Forb		
6	Thelesperma subnudum	Thelesperma subnudum A. Gray	Asteraceae	Forb		
8	Thelypodiopsis aurea	Thelypodiopsis aurea (Eastwood) Rydberg	Brassicaceae	Forb		
6	Thelypodiopsis elegans	Thelypodiopsis elegans (Jones) Rydberg	Brassicaceae	Forb		
6	Thelypodiopsis juniperorum	Thelypodiopsis juniperorum (Payson) Rydberg	Brassicaceae	Forb		
6	Thelypodium integrifolium	Thelypodium integrifolium (Nuttall) Endlicher	Brassicaceae	Forb	FAC	FAC
8	Thelypodium laxiflorum	Thelypodium laxiflorum Al-Shehbaz	Brassicaceae	Forb		
Not Assigned	Thelypodium paniculatum	Thelypodium paniculatum A. Nelson	Brassicaceae	Forb		
7	Thelypodium wrightii ssp. oklahomense	Thelypodium sagittatum (Nuttall) Endlicher subsp. sagittatum	Brassicaceae	Forb		
		Thelypodium wrightii A. Gray subsp. oklahomensis Al-Shehbaz	Brassicaceae	Forb		
6	Thermopsis divaricarpa	Thermopsis divaricarpa A. Nelson	Fabaceae	Forb		
6	Thermopsis montana	Thermopsis montana Nuttall ex Torrey & Gray	Fabaceae	Forb		
5	Thermopsis rhombifolia	Thermopsis rhombifolia (Nuttall ex Pursh) Richardson	Fabaceae	Forb	FACU	FAC*
*****	Thinopyrum intermedium	Thinopyrum intermedium (Host) Barkworth & Dewey	Poaceae	Graminoid		
		Thinopyrum intermedium (Host) Barkworth & Dewey subsp. barbulatum (Schur) Barkworth & Dewey	Poaceae	Graminoid		
*****	Thinopyrum ponticum	Thinopyrum ponticum (Podpera) Barkworth & Dewey	Poaceae	Graminoid		
*****	Thlaspi arvense	Thlaspi arvense L.	Brassicaceae	Forb	NI	NI
5	Thlaspi montanum var. montanum	Noccaea montana (L.) F. K. Meyer	Brassicaceae	Forb		
7	Thymophylla aurea	Thymophylla aurea (A. Gray) Greene	Asteraceae	Forb		
3	Tidestromia lanuginosa	Cladothrix lanuginosa (Nuttall ex Moquin) Bentham & Hooker	Amaranthaceae	Forb		
Not Assigned	Tiquilia nuttallii	Tiquilia nuttallii (Bentham) A. Richard	Boraginaceae	Forb	NO	NI
5	Tonestus lyallii	Tonestus lyallii (A. Gray) A. Nelson	Asteraceae	Forb		
8	Tonestus pygmaeus	Tonestus pygmaeus (Torrey & Gray) A. Nelson	Asteraceae	Forb		

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5	Torreyochloa pallida var. pauciflora	Torreyochloa pauciflora (J. Presl in K. Presl) Church	Poaceae	Graminoid	NI	OBL
Not Assigned	Townsendia alpigena var. alpigena	Townsendia montana Jones	Asteraceae	Forb		
3	Townsendia annua	Townsendia annua Beaman	Asteraceae	Forb		
Not Assigned	Townsendia eximia	Townsendia eximia A. Gray	Asteraceae	Forb		
6	Townsendia exscapa	Townsendia exscapa (Richardson) T. C. Porter	Asteraceae	Forb		
Not Assigned	Townsendia fendleri	Townsendia fendleri A. Gray	Asteraceae	Forb		
6	Townsendia glabella	Townsendia glabella A. Gray	Asteraceae	Forb		
6	Townsendia grandiflora	Townsendia grandiflora Nuttall	Asteraceae	Forb		
6	Townsendia hookeri	Townsendia hookeri Beaman	Asteraceae	Forb		
6	Townsendia incana	Townsendia incana Nuttall	Asteraceae	Forb		
Not Assigned	Townsendia leptotes	Townsendia leptotes (A. Gray) Osterhout	Asteraceae	Forb		
8	Townsendia rothrockii	Townsendia rothrockii A. Gray ex Rothrock	Asteraceae	Forb		
Not Assigned	Townsendia strigosa	Townsendia strigosa Nuttall	Asteraceae	Forb		
3	Toxicodendron rydbergii	Toxicodendron rydbergii (Small ex Rydberg) Greene	Anacardiaceae	Shrub	FAC	FACU
5	Tradescantia occidentalis var. scopulorum	Tradescantia occidentalis (Britton) Smyth var. scopulorum (Rose) Anderson & Woodson	Commelinaceae	Forb		FACU
6	Tragia ramosa	Tragia ramosa (Muller-Argoviensis in De Candolle) Torrey	Euphorbiaceae	Forb		
*****	Tragopogon dubius	Tragopogon dubius Scopoli subsp. major (Jacquin) Vollmann	Asteraceae	Forb		
*****	Tragopogon porrifolius	Tragopogon porrifolius L.	Asteraceae	Forb		
*****	Tragopogon pratensis	Tragopogon pratensis L.	Asteraceae	Forb		
9	Trautvetteria caroliniensis	Trautvetteria caroliniensis (Walter) Vail	Ranunculaceae	Forb	NI	FAC
*****	Tribulus terrestris	Tribulus terrestris L.	Zygophyllaceae	Forb		
10	Trichophorum pumilum	Trichophorum pumilum (M. Vahl) Schinz & Thellung	Cyperaceae	Graminoid		OBL
Not Assigned	Tridens muticus var. elongatus	Tridens muticus (Torrey) Nash var. elongatus (Buckley) Shinners	Poaceae	Graminoid	NI	
Not Assigned	Trifolium andinum	Trifolium andinum Nuttall	Fabaceae	Forb		
8	Trifolium attenuatum	Trifolium attenuatum Greene	Fabaceae	Forb		
8	Trifolium brandegeei	Trifolium brandegeei S. Wats.	Fabaceae	Forb		

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8	Trifolium dasyphyllum	Trifolium dasyphyllum Torrey & Gray	Fabaceae	Forb	NI	FACU-
*	Trifolium fragiferum	Trifolium fragiferum L.	Fabaceae	Forb	FAC	FACW-
6	Trifolium gymnocarpon	Trifolium gymnocarpon Nuttall	Fabaceae	Forb		
*	Trifolium hybridum	Trifolium hybridum L.	Fabaceae	Forb	FACU	FAC-
9	Trifolium kingii	Trifolium kingii S. Watson	Fabaceae	Forb	NO	FACW
Not Assigned	Trifolium longipes ssp. pygmaeum	Trifolium rusbyi Greene	Fabaceae	Forb		FACU
7	Trifolium longipes ssp. reflexum	Trifolium rusbyi Greene subsp. reflexum (A. Nelson) Heller & Zohary	Fabaceae	Forb		FACU
9	Trifolium nanum	Trifolium nanum Torrey	Fabaceae	Forb	NI	UPL
8	Trifolium parryi	Trifolium parryi A. Gray	Fabaceae	Forb	NI	FACU
9	Trifolium parryi ssp. salictorum	Trifolium rusbyi Greene subsp. rusbyi	Fabaceae	Forb		
9	Trifolium parryi ssp. salictorum	Trifolium salictorum Greene ex Rydberg	Fabaceae	Forb		
*	Trifolium pratense	Trifolium pratense L.	Fabaceae	Forb	FACU	FACU
*	Trifolium repens	Trifolium repens L.	Fabaceae	Forb	FACU	FACU
5	Trifolium wormskioldii	Trifolium wormskioldii Lehmann	Fabaceae	Forb	NI	OBL
6	Triglochin maritimum	Triglochin debilis (Jones) Loeve & Loeve	Juncaginaceae	Graminoid	OBL	OBL
		Triglochin maritima L.	Juncaginaceae	Graminoid	OBL	OBL
7	Triglochin palustre	Triglochin palustris L.	Juncaginaceae	Graminoid	OBL	OBL
10	Trillium ovatum	Trillium ovatum Pursh	Liliaceae	Forb	NO	NI
Not Assigned	Triodanis holzingeri	Triodanis holzingeri McVaugh	Campanulaceae	Forb		
3	Triodanis leptocarpa	Triodanis leptocarpa (Nuttall) Nieuwland	Campanulaceae	Forb		
*	Triodanis perfoliata	Triodanis perfoliata (L.) Nieuwland	Campanulaceae	Forb	FAC	FACU
7	Triplasis purpurea	Triplasis purpurea (Walter) Chapman	Poaceae	Graminoid		
*	Tripleurospermum perforata	Matricaria perforata Merat	Asteraceae	Forb		NI
Not Assigned	Tripterocalyx carnea var. wootonii	Tripterocalyx carneus (Greene) Galloway var. wootonii (Standley) Galloway	Nyctaginaceae	Forb		
6	Tripterocalyx micranthus	Tripterocalyx micranthus (Torrey) Hooker	Nyctaginaceae	Forb		
7	Trisetum spicatum	Trisetum montanum Vasey	Poaceae	Graminoid	NI	FACU-
		Trisetum spicatum (L.) Richter	Poaceae	Graminoid	NI	FACU-
		Trisetum spicatum (L.) Richter subsp. alaskanum Hulten	Poaceae	Graminoid	NI	FACU-
		Trisetum spicatum (L.) Richter subsp. congdonii (Scribner & Merrill) Hulten	Poaceae	Graminoid	NI	FACU-

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		Trisetum spicatum (L.) Richter subsp. molle (Michaux) Hulten (see Trisetum spicatum subsp. alaskanum)	Poaceae	Graminoid	NI	FACU-
7	Trisetum wolfii	Trisetum wolfii Vasey in Rothrock	Poaceae	Graminoid	NI	FACW-
9	Triteleia grandiflora	Triteleia grandiflora Lindl.	Liliaceae	Forb		
*****	Triticum aestivum	Triticum aestivum L.	Poaceae	Graminoid		
8	Trollius laxus ssp. albiflorus	Trollius albiflorus (A. Gray) Rydberg	Ranunculaceae	Forb		OBL
*****	Typha angustifolia	Typha angustifolia L.	Typhaceae	Forb	OBL	OBL
4	Typha domingensis	Typha domingensis Persoon	Typhaceae	Forb	OBL	OBL
2	Typha latifolia	Typha latifolia L.	Typhaceae	Forb	OBL	OBL
*****	Ulmus pumila	Ulmus pumila L.	Ulmaceae	Tree		
3	Urtica gracilis Aiton subsp. gracilis	Urtica gracilis Aiton subsp. gracilis	Urticaceae	Forb		FAC
3	Urtica dioica ssp. holosericea	Urtica gracilis Aiton subsp. holosericea (Nuttall) W. A. Weber	Urticaceae	Forb		FAC
7	Utricularia macrorhiza	Utricularia macrorhiza LeConte	Lentibulariaceae	Forb	OBL	OBL
9	Utricularia minor	Utricularia minor L.	Lentibulariaceae	Forb	OBL	OBL
10	Utricularia ochroleuca	Utricularia ochroleuca R. Hartman	Lentibulariaceae	Forb	NO	OBL
*****	Vaccaria hispanica	Vaccaria pyramidata Medicus	Caryophyllaceae	Forb	NI	NI
7	Vaccinium caespitosum	Vaccinium cespitosum Michaux	Ericaceae	Shrub		FAC
6	Vaccinium myrtillus var. oreophilum	Vaccinium myrtillus L. subsp. oreophilum (Rydberg) Loeve et al.	Ericaceae	Shrub		NI
7	Vaccinium scoparium	Vaccinium scoparium Leiberg ex Coville	Ericaceae	Shrub	NI	FACU-
Not Assigned	Vaccinium stamineum	Vaccinium globulare Rydberg	Ericaceae	Shrub		
Not Assigned	Vahlodea atropurpurea	Vahlodea atropurpurea (Wahlenberg) E. Fries subsp. paramushirensis (Kudo) Hulten	Poaceae	Graminoid	NI	FAC+
8	Valeriana acutiloba var. acutiloba	Valeriana capitata Pallas ex Link subsp. acutiloba (Rydberg) F. G. Meyer	Valerianaceae	Forb		FACU
Not Assigned	Valeriana arizonica	Valeriana arizonica A. Gray	Valerianaceae	Forb		
7	Valeriana edulis	Valeriana edulis Nuttall	Valerianaceae	Forb	NI	FACW-
7	Valeriana occidentalis	Valeriana occidentalis Heller	Valerianaceae	Forb	NI	FAC-
4	Veratrum tenuipetalum	Veratrum tenuipetalum Heller	Liliaceae	Forb		
*****	Verbascum ×pterocaulon	Verbascum pterocaulon Franchet	Scrophulariaceae	Forb		
*****	Verbascum blattaria	Verbascum blattaria L.	Scrophulariaceae	Forb	UPL	UPL

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*	Verbascum phlomoides	Verbascum phlomoides L.	Scrophulariaceae	Forb		
*	Verbascum thapsus	Verbascum thapsus L.	Scrophulariaceae	Forb	NI	
*	Verbena bracteata	Verbena bracteata Lagasca & Rodriguez	Verbenaceae	Forb	FACU	FACU
4	Verbena hastata	Verbena hastata L.	Verbenaceae	Forb	FACW	FACW
2	Verbena macdougalii	Verbena macdougalii Heller	Verbenaceae	Forb	NI	UPL
Not Assigned	Verbena plicata	Verbena plicata Greene	Verbenaceae	Forb		
3	Verbena stricta	Verbena stricta Ventenat	Verbenaceae	Forb		
*	Verbesina encelioides ssp. encelioides	Ximenesia encelioides Cavanilles	Asteraceae	Forb	FAC	FACU
4	Vernonia baldwinii ssp. interior	Vernonia baldwinii Torrey subsp. interior (Small) Faust	Asteraceae	Forb	FACW-	
7	Vernonia fasciculata ssp. corymbosa	Vernonia fasciculata Michaux subsp. corymbosa (Schweinitz) Loeve & Loeve	Asteraceae	Forb	FAC	
6	Vernonia marginata	Vernonia marginata (Torrey) Rafinesque	Asteraceae	Forb	FAC	NI
6	Veronica americana	Veronica americana Schweinitz ex Bentham	Scrophulariaceae	Forb	OBL	OBL
*	Veronica anagallis-aquatica	Veronica anagallis-aquatica L.	Scrophulariaceae	Forb	OBL	OBL
		Veronica catenata Pennell	Scrophulariaceae	Forb	OBL	OBL
*	Veronica biloba	Pocilla biloba (L.) W. A. Weber	Scrophulariaceae	Forb		
*	Veronica peregrina ssp. xalapensis	Veronica peregrina L. subsp. xalapensis (Humboldt, Bonpland, & Kunth) Pennell	Scrophulariaceae	Forb	OBL	
*	Veronica polita	Pocilla polita (E. Fries) Fourreau	Scrophulariaceae	Forb		
6	Veronica scutellata	Veronica scutellata L.	Scrophulariaceae	Forb	NI	OBL
6	Veronica serpyllifolia ssp. humifusa	Veronicastrum serpyllifolium L. subsp. humifusum (Dickson) W. A. Weber	Scrophulariaceae	Forb	OBL	FACW
7	Veronica wormskjoldii	Veronica nutans Bongard	Scrophulariaceae	Forb	NI	FACU
6	Viburnum edule	Viburnum edule (Michaux) Rafinesque	Caprifoliaceae	Shrub	NI	FACW
*	Viburnum lantana	Viburnum lantana L.	Caprifoliaceae	Shrub		
*	Viburnum lentago	Viburnum lentago L.	Caprifoliaceae	Shrub	FAC	NI
5	Vicia americana	Vicia americana Muhlenberg ex Willdenow	Fabaceae	Vine	FAC	NI
		Vicia americana Muhlenberg ex Willdenow var. americana	Fabaceae	Vine	FAC	NI
6	Vicia americana ssp. minor	Vicia americana Muhlenberg var. minor Hooker	Fabaceae	Vine		NI
7	Vicia ludoviciana ssp. ludoviciana	Vicia ludoviciana Nuttall var. texana (Torrey & Gray) Shinners	Fabaceae	Vine, Forb/herb	NI	UPL

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*	Vicia sativa ssp. nigra	Vicia angustifolia L.	Fabaceae	Vine, Forb/herb		FACU
*	Vicia villosa	Vicia villosa Roth	Fabaceae	Vine, Forb/herb		
6	Viola adunca	Viola adunca J. E. Smith	Violaceae	Forb	NI	FAC
9	Viola affinis	Viola sororia Willdenow var. affinis (Le Conte) McKinney	Violaceae	Forb	NI	NO
*	Viola bicolor	Viola kitaibeliana Roemer & Schultes var. rafinesquei (Greene) Fernald	Violaceae	Forb	FAC-	UPL
Not Assigned	Viola biflora	Viola biflora L.	Violaceae	Forb	NI	FACW
7	Viola canadensis var. scopulorum	Viola rydbergii Greene	Violaceae	Forb		
		Viola scopulorum (A. Gray) Greene	Violaceae	Forb		
9	Viola labradorica	Viola labradorica Schrank	Violaceae	Forb	NI	NI
Not Assigned	Viola macloskeyi ssp. pallens	Viola macloskeyi Lloyd subsp. pallens (Banks ex De Candolle) M. S. Baker	Violaceae	Forb	NI	FACW+
5	Viola nuttallii	Viola nuttallii Pursh	Violaceae	Forb		
*	Viola odorata	Viola odorata L.	Violaceae	Forb		
7	Viola pedatifida	Viola pedatifida G. Don	Violaceae	Forb	FACU	UPL
7	Viola praemorsa	Viola praemorsa Douglas ex Lindley	Violaceae	Forb		
8	Viola praemorsa ssp. linguifolia	Viola praemorsa Douglas ex Lindley subsp. linguifolia (Nuttall) Baker & Clausen	Violaceae	Forb		
Not Assigned	Viola purpurea ssp. venosa	Viola purpurea Kellogg subsp. venosa (S. Watson) Baker & Clausen	Violaceae	Forb		
7	Viola renifolia	Viola renifolia A. Gray var. brainerdii (Greene) Fernald	Violaceae	Forb	NI	FACW
8	Viola selkirkii	Viola selkirkii Pursh ex Goldie	Violaceae	Forb		
Not Assigned	Viola sheltonii	Viola sheltonii Torrey	Violaceae	Forb		
8	Viola sororia	Viola sororia Willdenow	Violaceae	Forb	FAC	FAC*
		Viola sororia Willdenow var. sororia	Violaceae	Forb	FACW	FACW
Not Assigned	Viola utahensis	Viola utahensis Baker & Clausen	Violaceae	Forb		
7	Viola vallicola	Viola vallicola A. Nelson	Violaceae	Forb		
8	Viola vallicola var. major	Viola praemorsa Douglas ex Lindley subsp. major (Hooker) M. S. Baker	Violaceae	Forb		
6	Vitis acerifolia	Vitis acerifolia Rafinesque	Vitaceae	Vine		
5	Vitis riparia	Vitis riparia Michaux subsp. riparia	Vitaceae	Vine	FAC	FACW

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3	Vulpia octoflora	Vulpia octoflora (Walter) Rydberg	Poaceae	Graminoid	UPL	UPL
Not Assigned	Wolffia borealis	Wolffia borealis (Engelmann) Landolt	Lemnaceae	Forb	OBL	OBL
Not Assigned	Wolffia columbiana	Wolffia columbiana Karsten	Lemnaceae	Forb	OBL	NO
10	Woodsia neomexicana	Woodsia neomexicana Windham	Dryopteridaceae	Forb		
10	Woodsia oregana	Woodsia oregana Eaton	Dryopteridaceae	Forb		
7	Woodsia oregana ssp. cathcartiana	Woodsia oregana subsp. cathcartiana (Robinson) Windham	Dryopteridaceae	Forb		
10	Woodsia oregana ssp. oregana	Woodsia oregana D. C. Eaton subsp. oregana	Dryopteridaceae	Forb		
8	Woodsia plummerae	Woodsia plummerae Lemmon	Dryopteridaceae	Forb		
8	Woodsia scopulina	Woodsia scopulina D. C. Eaton	Dryopteridaceae	Forb		
3	Wyethia ×magna	Wyethia magna A. Nelson ex W. A. Weber	Asteraceae	Forb		
3	Wyethia amplexicaulis	Wyethia amplexicaulis (Nuttall) Nuttall	Asteraceae	Forb	NI	FACU
3	Wyethia arizonica	Wyethia arizonica A. Gray	Asteraceae	Forb		
3	Wyethia scabra var. canescens	Wyethia scabra Hooker var. canescens W. A. Weber	Asteraceae	Forb		
3	Wyethia scabra var. scabra	Wyethia scabra Hooker var. scabra	Asteraceae	Forb		
*****	Xanthium spinosum	Acanthoxanthium spinosum (L.) Fourreau	Asteraceae	Forb	FACU	FACU
*****	Xanthium strumarium	Xanthium strumarium L.	Asteraceae	Forb	FAC	FAC
6	Xylorhiza glabriuscula	Xylorhiza glabriuscula Nuttall	Asteraceae	Forb		
5	Xylorhiza venusta	Xylorhiza venusta (Jones) Heller	Asteraceae	Shrub		
6	Yucca baccata	Yucca baccata Torrey	Agavaceae	Forb		
4	Yucca glauca	Yucca glauca Nuttall in Fraser	Agavaceae	Forb		
7	Yucca harrimaniae	Yucca harrimaniae Trelease	Agavaceae	Forb		
2	Zannichellia palustris	Zannichellia palustris L.	Zannichelliaceae	Forb	OBL	OBL
6	Zigadenus elegans ssp. elegans	Anticlea elegans (Pursh) Rydberg	Liliaceae	Forb	FAC	FACU
Not Assigned	Zigadenus paniculatus	Toxicoscordion paniculatum (Nuttall) Rydberg	Liliaceae	Forb		
9	Zigadenus vaginatus	Anticlea vaginata Rydberg	Liliaceae	Forb	NO	
5	Zigadenus venenosus var. venenosus	Toxicoscordion venenosum (S. Watson) Rydberg	Liliaceae	Forb	FAC	FAC*
5	Zigadenus virescens	Anticlea virescens (Kunth) Rydberg	Liliaceae	Forb	NO	NO
7	Zinnia grandiflora	Zinnia grandiflora Nuttall	Asteraceae	Shrub		
Not Assigned	Zizia aptera	Zizia aptera (A. Gray) Fernald	Apiaceae	Forb	FAC	FAC
7	Zuckia brandegeei	Zuckia brandegei (A. Gray) Welsh & Stutz	Chenopodiaceae	Shrub		