FLORISTIC QUALITY ASSESSMENT WITH WETLAND CATEGORIES AND EXAMPLES OF COMPUTER APPLICATIONS FOR THE STATE OF MICHIGAN

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Kim D. Herman
Wildlife Division
Michigan Department of Natural Resources
6833 Hwys US-2, 41 & M-35
Gladstone, Michigan 49837

Linda A. Masters
Conservation Research Institute
375 W. First St.
Elmhurst, Illinois 60126

Michael R. Penskar
Michigan Natural Features Inventory
P.O. Box 30444
Lansing, Michigan 48909-7944

Anton A. Reznicek
University of Michigan Herbarium
North University Building
Ann Arbor, Michigan 48109-1057

Gerould S. Wilhelm
Conservation Research Institute
375 W. First St.
Elmhurst, Illinois 60126

William W. Brodovich
King & MacGregor Environmental, Inc.
5860 N. Canton Center Road, Suite 387
Canton, Michigan 48187

Kevin P. Gardiner
Natural Heritage Program, Wildlife Division
Michigan Department of Natural Resources
P.O. Box 30444
Lansing, Michigan 48909-7944

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For information or assistance on this publication, contact the MICHIGAN DEPARTMENT OF NATURAL RESOURCES, NATURAL HERITAGE PROGRAM, WILDLIFE, P.O. BOX 30180, LANSING, MI 48909.

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I. FLORISTIC QUALITY ASSESSMENT

INTRODUCTION

Large areas of Michigan have been modified extensively from their presettlement condition (Chapman 1984, Crispin and Rankin 1994, Comer and Albert 1993, Comer et al. 1993b, 1994). Primary effects on the landscape have been due to extensive logging and farming. More recently, residential, urban, industrial, and recreational development have markedly altered the Michigan landscape. Hydrology, fire, and other important abiotic processes have been disrupted or altered. According to the Michigan Department of Natural Resources (1988), over 70 percent of Michigan's original wetlands have been drained or filled, while many remaining wetlands are no longer representative of original landscape types (Comer et al. 1993b).

As a consequence, much of Michigan's native biota is now restricted to relatively small and often isolated tracts of landscape across the state. With intensive pressure on Michigan's remaining natural lands, particularly in southern Lower Michigan, there is a need for a consistent and practical method for identifying and recognizing the potential significance of remnant areas for the long-term survival of Michigan's native biodiversity. Presented here is a simple, consistent, and repeatable method for evaluating the relative significance of tracts of land in terms of their native floristic composition.

Floristic Quality Assessment (FQA) is a tool to assist environmental consultants, scientists, natural resource managers, land stewards, environmental decision-makers, and restorationists in assessing the floristic, and implicitly, natural significance of any given area throughout Michigan. Floristic Quality Assessment will not replace criteria or methodology already employed by various resource agencies. This assessment system is not intended for use as a stand-alone method, but it can be applied to complement and corroborate other methods of evaluating the natural quality of a site.

Applications of this system include the identification of remnant habitats of native floristic significance, comparisons between different sites, long-term monitoring of floristic quality, monitoring the progress of habitat restoration, and the use of National Wetland Categories to assist in the identification of wetlands. FQA can also be used to help make permitting decisions and to develop performance standards and mitigation criteria (Wilhelm 1991, 1992, and 1993, Andreas and Lichvar 1995, Herman 1994).

METHODOLOGY

The Floristic Quality Assessment system for Michigan is modeled after that developed for the Chicago Region described in Swink and Wilhelm (1994). To develop the FQA for Michigan it was essential to compile a thorough list of the vascular plants known to occur in the state (Penskar et al. 2001, Appendix C). The Michigan Plant Database in Appendix C comprises 1,815 native taxa and 914 non-native (adventive) taxa, for a total of 2,729 taxa (Figure 1). This list is not to be regarded as a definitive flora, but as a utility database, only to be used as a reference for applications of the FQA for Michigan. The revisions to the database include: the addition of 11 native and 38 non-native taxa, changes in nomenclature (i.e., synonyms such as *Scirpus* to *Schoenoplectus*), the addition of life history (annual, biennial, perennial) to the physiognomic categories, and an update of the status category (endangered, threatened, special concern or extirpated) to match the March 1999 Michigan Special Plants List.

Life history categories largely follow Wilhelm and Masters (1995) and Taft et al (1997). Gray's manual of botany (Fernald, 1950) and the online USDA Plant Database (see Section IV – Resources) were also consulted. Nomenclature largely follows Michigan Flora (Voss 1996, 1985, 1972). Other references consulted include Case (1987) for all Michigan orchids, Case and Case (1997) for trillium, Gleason and Cronquist (1991) for selected genera, and Barnes and Wagner (1981) for several woody plant taxa. For pteridophytes (ferns and fern allies), we followed the treatments provided in the Flora of North America, Volume 2 (Morin et al. 1993).

Coefficients of Conservatism

The concept of species conservatism is the foundation for floristic quality assessment. Each native Michigan species was assigned a **coefficient of conservatism** (*C*)[1] following the methodology and philosophy detailed in Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 - 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be pre-European settlement condition (Figure 1). A *C* of 0, therefore, is given to plants such as *Acer negundo* (box elder) that have demonstrated little fidelity to any remnant natural community, *i.e.* may be found almost anywhere, while a *C* of 10 is applied to those plants like *Potentilla fruticosa* (shrubby cinquefoil) that are almost always restricted to a presettlement remnant, *i.e.* a high quality natural area. Intermediate values are assigned to taxa such as *Quercus bicolor* (swamp white oak) or *Trillium grandiflorum* (large white trillium), when it is certain it is faithful to remnant natural communities, but it is uncertain that the condition of the community from which it comes is still representative of presettlement condition, *i.e.* the community may be degraded.

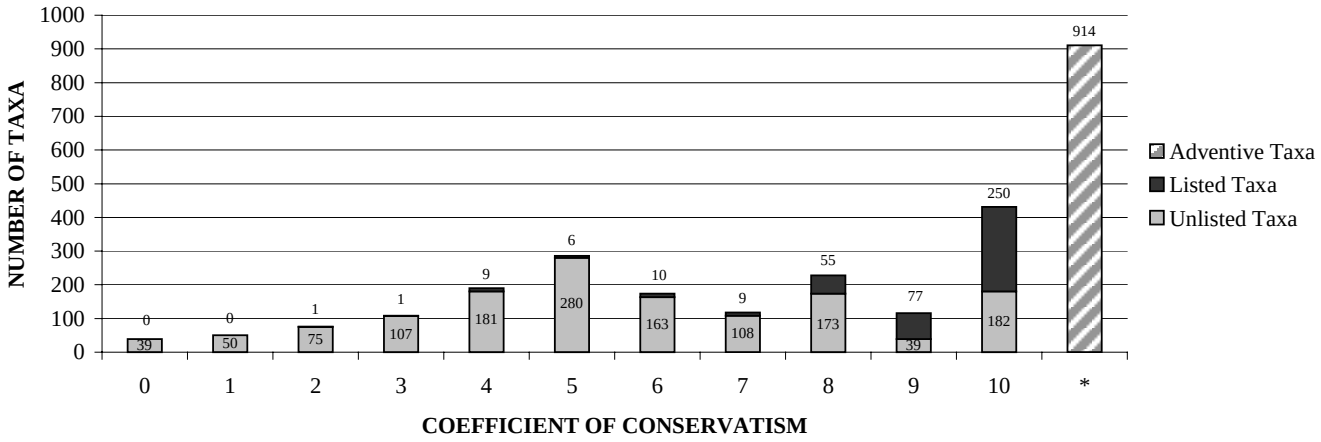

Figure 1: Number of adventive[2] plants and the distribution of coefficients of conservatism for native Michigan plant taxa, including the proportion of listed[3] plant taxa for each coefficient of conservatism.

In Michigan, certain species are known to exhibit varying degrees of conservatism over their statewide range, and thus the *C* assigned reflects what would be expected most commonly

[1] Coefficients of conservatism were assigned by Anton Reznicek, Michael Penskar, and William Brodovich with assistance from Gerould Wilhelm.

[2] Adventive taxa are plants spreading into Michigan from a source outside of Michigan since pre European settlement.

[3] Listed taxa refer to plant taxa listed as endangered, threatened , extirpated, or special concern by the State of Michigan.

throughout the state.[4] For example, *Thuja occidentalis* (northern white cedar) in southern Michigan is highly restricted to relatively few habitats and would justify a *C* of 8 or 9. Northward, however, this species inhabits a much broader range of natural communities and disturbed sites and would justify a *C* of 1 or 2; in this case, the assigned *C* is 4. While a number of species are widely distributed within the state, a small percentage exhibits a bimodal range of conservatism. Such species however, will have little influence on the measured floristic quality of any given site. Note the normal distribution of the coefficients of conservatism from 0 - 9 (Figure 1). By including those taxa with *C* = 10 with the distribution of coefficients of conservatism, the overall distribution becomes left skewed (Figure 1), similar to that for Illinois (Taft 1997).

The fidelity or faithfulness concept is not new. Phytosociologists have long used this as a practical application of empirical observation (Braun-Blanquet 1932). It is theoretically possible to measure empirically the fidelity of each of the approximately 1815 native plant taxa in Michigan (Figure 1) to given natural communities. We recognized it is not possible to take such measurements in the near future and that coefficients of conservatism have been effectively applied to different geographic regions without such measurements (Coastal Plain – Allain, pers. comm.; Northeast Ohio - Andreas and Lichvar 1995; Ohio – Andreas et al. in prep.; Wisconsin – Bernthal, pers. comm.; Iowa – Drobney pers. comm.; Missouri - Ladd 1997; Southern Ontario – Oldham et al. 1995; Chicago Region - Swink and Wilhelm 1979, 1994; Kentucky – Shea et al. in prep.; Illinois - Taft et al. 1997; Northern Great Plains – Northern Great Plains Working Group 2001). Therefore, we placed the "subjectivity up front" in assigning *a priori* a coefficient of conservatism to each native species in Michigan. As stated in Swink and Wilhelm (1994) *we cannot know the presettlement vegetational composition or structure for any given site, nor can we know how it would have changed over time* in the absence of European settlement. Therefore, we have employed as benchmarks our collective knowledge and understanding of species fidelity to the remaining high quality natural communities and otherwise disturbed lands in Michigan.

Floristic Quality Index

Floristic Quality Assessment is applied by calculating a **mean coefficient of conservatism** ($\overline{C}$) and a **floristic quality index** (*FQI*) from a comprehensive list of plant species obtained from a particular site. This is done by summing the coefficients of conservatism (*C*) of an inventory of plants and dividing by the total number of plant taxa (*n*), yielding an average or the mean coefficient of conservatism ($\overline{C} = \sum C/n$). The $\overline{C}$ is then multiplied by the square root of the total number of plants ($\sqrt{n}$) to yield the floristic quality index ($FQI = \overline{C}\sqrt{n}$). The square root of *n* is used as a multiplier to transform the mean coefficient of conservatism and allow for better comparison of the *FQI* between large sites with a high number of species and small sites with fewer species. Sites with the same $\overline{C}$ may have different *FQIs*, and sites with the same *FQI* may have different $\overline{C}s$ (Figures 2 and 3) (Goforth et al. 2001, Taft et al. 1997). For further discussion of this variation, refer to Taft et al. (1997) and Wilhelm and Masters (1995) in Appendix F. Some have found the $\overline{C}$ may be a more predictable indicator of floristic quality when comparing among similar natural communities such as remnant hardwood forests in Ontario (Frances et al. 2000) and river floodplains in Michigan, although this may be due to small sample sizes and narrow dispersion of $\overline{C}$ values (Goforth et al. 2001).

[4] The Michigan FQA differs from the Chicago Region application in that coefficients of conservatism were developed for a considerably larger geographic area and over a greater north to south gradient.

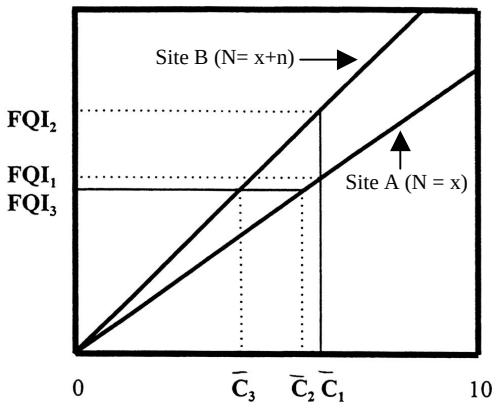

Figure 2: Baseline model comparing the Floristic Quality Index (FQI) and Mean Coefficients of Conservatism ($\overline{C}$) from two sites with differing total species richness (N). The example illustrates where two sites with different total species richness but similar mean coefficient of conservatism ($\overline{C}_1$) will differ in floristic quality indices (FQI_1 and FQI_2) and where two sites with similar floristic quality indices (FQI_3) will differ in mean coefficients of conservatism ($\overline{C}$) (Taft et al. 1997).

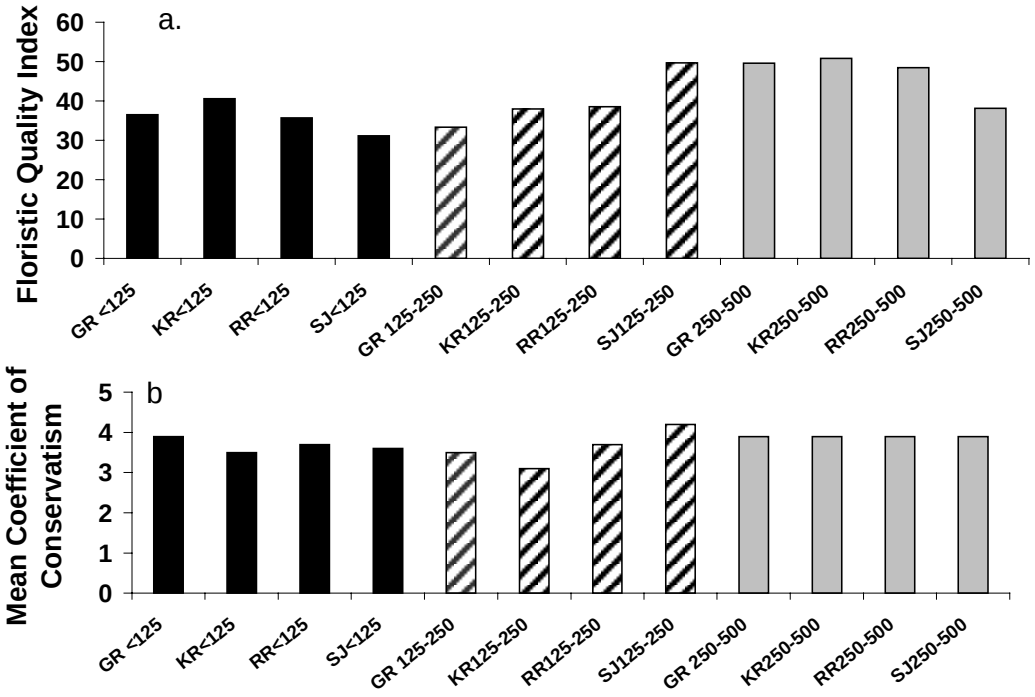

Figure 3: Floristic data from 12 riparian sites (GR = Grand River, KR = Kalamazoo River, RR = River Raisin , SJ = St. Joseph River) in southern Michigan grouped by buffer width (<125m black, 125-250m striped, 250-500m gray) showing equal mean coefficients of conservatism (b) and different floristic quality indices (a) in the 250-500 buffer width. The Kalamazoo River and Raisin River 125 – 250m buffer sites show similar floristic quality indices (a) with different mean coefficients of conservatism (b) (Goforth et al. 2001).

Based upon recent tests of the FQA system in Michigan in a wide variety of habitats, certain patterns have emerged. The range of coefficients of conservatism (*C*) of the plant taxa found in most of our undeveloped lands is 0 - 2, whereas 85% of the total native flora has a *C* of 4 or greater (Figure 1). The entire native flora has a $\overline{C}$ of 6.5. This indicates the principal elements of our native systems are poorly represented in the landscape today. Most of the remaining undeveloped land registers floristic quality indices (*FQI*) of less than 20 and has minimal significance from a natural quality perspective. Areas with a *FQI* higher than 35 possess sufficient conservatism and richness that they are floristically important from a statewide perspective. Areas registering in the 50s and higher are extremely rare and represent a significant component of Michigan's native biodiversity and natural landscapes.

Coefficients of Wetness

Analogs to the coefficients of conservatism are derived from the five main National Wetland Indicator Categories given by Reed (1988) and are referred to as **coefficients of wetness** (*W*) (Wilhelm 1992 - Appendix G). Michigan taxa not treated by Reed (1399 taxa) were assigned wetland indicator categories *de novo*.[5] The National Wetland Indicator Categories define the estimated probability for which a species occurs in wetlands (Table 1) (Reed 1988, Wilhelm 1989, 1992). Positive signs (+) indicating a wet tendency and negative signs (-) indicating a dry tendency are attached to the three "facultative" categories to express these exaggerated tendencies for those species (Reed 1988). Coefficients of wetness (*W*) have been assigned by Wilhelm (1989, 1992) to the eleven wetland indicator categories:

OBL = -5, FACW+ = -4, FACW = -3, FACW- = -2, FAC+ = -1, FAC = 0, FAC- = 1, FACU+ = 2, FACU = 3, FACU- = 4, UPL = 5.

Table 1: Wetland category definitions and coefficients of wetness (*W*).

Wetland Category	Symbol	*W*	Definition
Upland	UPL	5	Occurs almost never in wetlands under natural conditions (estimated < 1% probability).
Facultative Upland	FACU	3	Occasionally occurs in wetlands, but usually occur in non-wetlands (estimated 1% - 33% probability).
Facultative	FAC	0	Equally likely to occur in wetlands or non-wetlands (estimated 34% - 66% probability).
Facultative Wetland	FACW	-3	Usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67% - 99% probability).
Obligate Wetland	OBL	-5	Occurs almost always in wetlands under natural conditions (estimated > 99% probability).

[5] Wetland categories for taxa not treated by Reed (1988) were taken from Swink and Wilhelm (1994). Taxa not treated by Swink and Wilhelm were assigned by Anton Reznicek and Michael Penskar.

Wetness Index

Coefficients of wetness (*W*) of taxa recorded from a site inventory (*n*) can be averaged and the mean regarded as a **wetness index** ($\overline{W} = \sum W/n$). If the wetness index ($\overline{W}$) is zero or below, then the site has a predominance of wetland species (Wilhelm 1989). The $\overline{W}$ does not consider dominance as measured by percent cover of any species. Wilhelm (1989, 1991, 1992, 1993) hypothesizes that a wetness index calculated using only native species is a stronger indication of wetland status than a wetness index that includes adventive species. This is demonstrated by comparing the distribution of wetland status between native and adventive taxa. The 1815 native Michigan taxa show sensitivity to soil moisture ranging from wet to dry conditions as indicated by their inverse normal distribution (Figure 4). The 914 adventive plant taxa show a skewed distribution, with substantially more taxa in the upland categories (617) relative to all wetland categories combined (297) (Figure 5). Consult the Computer Program Application Section that follows and Appendix G for a more detailed explanation of this hypothesis and the application of the wetness index.

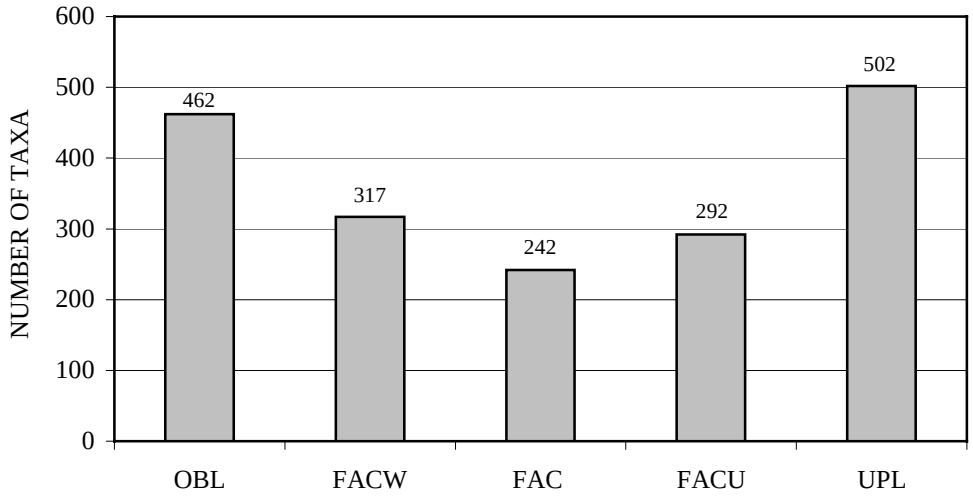

Figure 4: The distribution of wetland categories for the native plant taxa of Michigan**.**

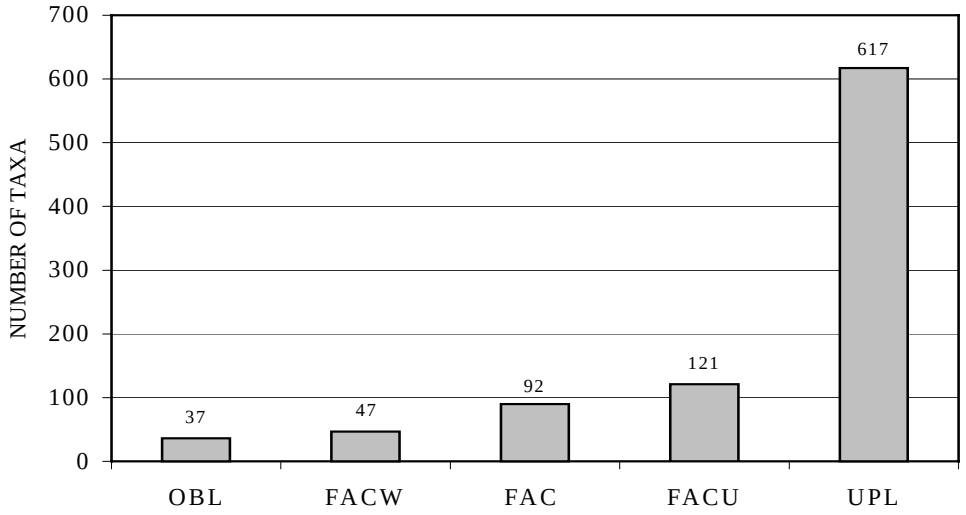

Figure 5: The distribution of wetland categories for adventive plant taxa in Michigan.

Physiognomy

The computer applications for FQA and the associated plant data bases traditionally include the physiognomic classes, since it is possible for community structure to change overtime without correlative changes in the *FQI* or $\overline{C}$ (Taft et al. 1997). The distribution of plant taxa by physiognomic classes show most plants in Michigan are native, perennial, dicot forbs (811), followed by adventive, perennial, dicot forbs (323) and adventive, annual, dicot forbs (291) (Figure 6). Native sedges and grasses comprise 23% of Michigan's native taxa and predominate in numbers over the adventive sedges and grasses (Figure 6). Life history categories are useful for protecting annual and biennial plants from over collection and potential local extirpation.

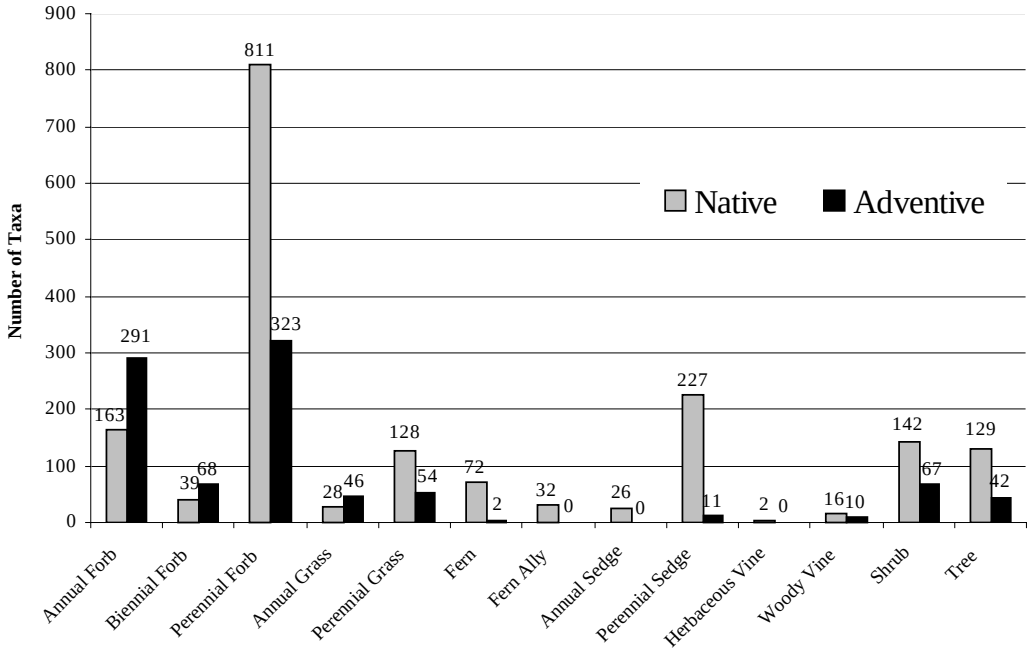

Figure 6: Distribution of native and adventive taxa of Michigan by physiognomic class

APPLICATION

Usefulness in deriving information from selected indicator species has long been valued by plant ecologists for community classification along environmental gradients (Magurran 1988, Whittaker 1975). Floristic Quality Assessment goes further in recognizing that all plant species at a location convey information about a site due to their adaptation to a unique set of biotic and abiotic conditions. As applied by the FQA system, plant taxa, when assessed in the aggregate, can give more information than an individual indicator taxon or even a group of indicators, often used for classification purposes.

Plant lists are often compiled during environmental site assessments and provided as appendices in environmental documents with little or no analysis beyond determining their wetland affinities or their legal status under federal and state endangered species acts. Often the ecological importance of species richness is not emphasized or recognized. Thus, FQA helps to give meaning to a group of

plant species, beyond their presence on a list, by providing the mean coefficient of conservatism ($\overline{C}$) and the floristic quality index (*FQI*), which anyone can utilize and interpret.

The application of FQA is dependent on the aggregate presence of species in any area. With consistent application of the FQA system, the information derived from the $\overline{C}$ of the entire constellation of species within a site gives the system its robustness. Therefore, it is important the site surveyor be diligent and consistent in writing down ALL plant taxa observed at a site and to sufficiently cover the site's territory during standardly accepted times of the growing season. Essential to the successful use and application of the FQA system is the participation of botanists with a good knowledge of the Michigan flora and experience in conducting field inventories.

There are several applications of FQA. The following four are discussed in Swink and Wilhelm (1994) and by Wilhelm and Masters (1995 - Appendix F): (1) the identification of remnant native habitats of floristic significance, (2) the comparison of floristic quality among different sites, (3) long-term monitoring of floristic quality in natural areas, and (4) monitoring of habitat restoration. Use of the wetland categories as an aid in the identification of wetlands is discussed below and in Appendix G.

Floristic Quality Assessment can also be used to assist in making permitting decisions and developing performance standards and mitigation criteria (Andreas and Lichvar 1995, DuPage County Stormwater Management Committee 1992, Herman 1994, Swink and Wilhelm 1994, Wilhelm 1991, 1992, 1993, Wilhelm and Masters 1995 - Appendix F). The floristic quality index derived from an inventory provides information regarding a site's natural quality potential, which can also be used in certain sampling protocols. The *FQI* of individual quadrats established along a transect may be used to establish baseline data serving as a benchmark for future monitoring of changes in floristic quality during site restoration or site rehabilitation efforts. If one is comparing floristic quality data among similar communities, i.e. fen to fen, or bog to bog, data must be obtained using a standard ecological sampling design for comparison between sites. Details of survey methods and effort should accompany any reporting of inventory or sampling results derived from applying the FQA because indiscriminate comparisons of floristic quality with dissimilar methods used in evaluation can be misleading (Taft et al. 1997).

In addition, as discussed in the following by Taft et al. 1997, the assessment of ecosystem integrity based on a single index will be insufficient to account for all relevant aspects. For example, the *FQI* or $\overline{C}$ when reported alone can be misleading (Figure 2). Species richness (number of species) by itself can also be an insensitive indicator of habitat quality since it is possible for a degraded site to support a similar or greater number of taxa than an intact, high quality site. Six measures of biological integrity for wetlands have been suggested by Keddy et al. 1993. These include species diversity, indicator guilds, exotic species, rare species, plant biomass and amphibian biomass. Keddy et al. (1993) views diversity as an essential indicator of integrity, but also recommends assessing guild diversity. FQA readily addresses the first four recommended measures, provides a wetness index and can be applied to wetland and upland vegetation. Moreover, it can be expanded to include other community traits or other particular interests (Taft et al. 1997) (see summary tables in Appendices A and B). The transect computer application as shown in Appendix B also allows for the calculation of relative frequency, relative dominance, and importance values.

Two examples from Michigan, not detailed in Appendices B and F, are presented here. The first example discusses uses of the FQA in helping to make resource-permitting decisions and to establish

performance standards and mitigation criteria. The second example discusses the use of the wetness index ($\overline{W}$) in the identification of problematic wetlands and their boundaries.

Permitting, Performance Standards, and Mitigation Criteria

Michigan has a variety of resource protection laws where the application of FQA can be useful. These include Parts 365 (Endangered Species Protection), 303 (Wetland Protection), 301 (Inland Lakes and Streams) and 353 (Sand Dunes Protection and Management) of Public Act 451 of 1994 (as amended). The following is an example excerpted from Herman (1994) where the FQA system was used as a performance standard and for establishing mitigation criteria in an endangered species permit for the Detroit Metropolitan Wayne County Airport expansion.

In 1989, expansion of the Detroit Metro Airport was expected to result in the on-site loss of three plant species listed as threatened under the M-ESA. The three species were *Aristida longispica* (slender three-awned grass), *Juncus brachycarpus* (short fruited rush), and *Ludwigia alternifolia* (seed box). The three species were found within remnant lakeplain wet-mesic prairies and mesic sand prairies. The statutory requirements of Part 365 (Endangered Species Protection) of P.A. 451 of 1994 were enhanced by making compliance with this act a condition of the state wetland permit. The provisions of the endangered species permit allowed the translocation of affected plants and seed bank to an off-site location, which had been excavated and graded to match the land contours and hydrology of the airport site. Unaffected areas on the airport were required to be protected and monitored as a baseline to compare the success of the translocated plants. Hydrology, soil moisture, and vegetation are being monitored for ten years.

The criteria for success, required by the permit, states that at the off-site mitigation location, populations of threatened plants must be at least as large and viable as populations eliminated by the airport expansion. In addition, the mitigation area is required to be free of aggressive weeds such as *Lythrum salicaria* (purple loosestrife), the species **diversity index** should be stable or show an increase in native species diversity throughout the monitoring period, and it should show a stable or increasing floristic quality index and mean coefficient of conservatism. As a contingency measure, the permit requires that if the mitigation fails, then a similar but larger and intact lakeplain prairie in Wayne or Monroe counties must be purchased and managed.

DuPage County, Illinois in implementing its stormwater and flood plain ordinance uses a $\overline{C}$ = 3.5 as a criteria for identifying "critical" wetlands and requires mitigation for the loss of these wetlands in the form of 3:1 acre wetland replacement (DuPage County Stormwater Management Committee, 1992). Administrative rules to the Illinois Wetland Policy Act of 1989 (20 ILCS 830, 17 Ill. Adm. Code 1090) also requires a 5.5:1 replacement ratio for mitigating loss of wetlands with a native floristic quality greater than 20 ($FQI \geq 20$) or a mean coefficient of conservatism greater than or equal to 4 ($\overline{C} \geq 4.0$). Wilhelm (1991, 1992, 1993) suggests, based on monitoring data obtained from Chicago region restoration sites, that areas with known high floristic quality ($FQI \geq 35$) cannot be routinely restored to their original floristic quality and therefore are unmitigable. Conversely, lower quality wetlands registering *FQI* in the teens and twenties may be mitigable.

Identification of Problematic Wetlands

Some Michigan natural communities that may be classified as wetlands are considered problematic because they can be difficult to distinguish from adjacent uplands (MacKinnon 1994). These natural communities are exemplified by some wooded dune and swale complexes, wet and wet-mesic prairies, including lakeplain prairies, coastal plain marshes, and alvars (MNFI 1990). These problematic communities, with the exception of alvars, all overlay coarse, well drained soils and often support a mix of wetland and upland species, especially at the upland-wetland boundaries (MacKinnon 1994). These communities often are not recognized as wetlands because of the upland vegetation component, sandy soils, and either small size or non-contiguousness to an inland lake or stream. Thus they are vulnerable to development largely because it is mistakenly assumed that wetland permits are not needed (MacKinnon 1994)[6].

Comer and Albert (1993) compared elevations along transects with the wetland indices ($\overline{W}$) for species from corresponding ridges and swales in Michigan to help clarify the relationship between landforms and vegetation within wooded dune and swale complexes in Michigan and to help determine their wetland status under the Goemare-Anderson Wetlands Act. At Sturgeon Bay (Emmet County), high wind-sorted dune ridges support upland vegetation clearly distinguishable from adjacent swales (Figures 4 and 5). Forested beach ridges, with soils of medium to course sand, show wetness indices from 0 - 3 indicating a proportionally higher number of plants in upland categories. Soil moisture conditions can change dramatically, with slight elevational changes reflected in the development of soil organic material and plant species. On lower ridges, moisture may be noticeably higher and soil organic material accumulation is greater (4-25 cm) with $\overline{W}$ below 0 indicating a higher proportion of plants in wetland categories.

MacKinnon (1994) points out that most swales in wooded dune and swale complexes are protected by the Michigan wetlands act because they are contiguous to the Great Lakes or a nearby surface water. However, it is often less clear for wetlands found in the glacial lakeplain counties of Michigan where topographic relief is measured in only a few feet. The FQA methodology combined with the use of wetness indices may become extremely useful in helping not only to determine a wetland boundary based on the presence of native wetland plants, but also to help practitioners recognize a wetland and its floristic significance in the first place. It is precisely the remnant lakeplain prairies on the glacial lakeplain that are rarest and most at risk of being unknowingly destroyed (MacKinnon 1994; Comer et al. 1995).

[6] Michigan's wetlands are regulated under "Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, Act 451 of the Public Acts of 1994, being sections 324.30301 to 324.30323 of the Michigan Compiled Laws Annotated. Permits are required for filling in, dredging from, constructing or developing in, or draining surface waters from wetlands. Wetlands less than five acres in size, that are not contiguous to surface waters, and all non-contiguous wetlands in counties with populations of under 100,000 are not subject to permit review (MacKinnon 1994).

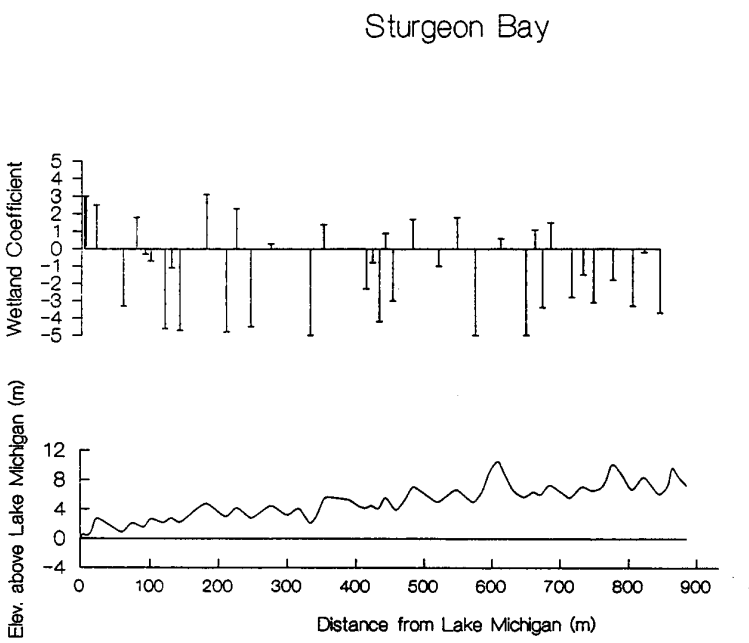

Figure 7: Elevational transect and corresponding wetness indices ($\overline{W}$) for the Sturgeon Bay wooded dune and swale complex Emmet County, MI (Comer and Albert 1993).

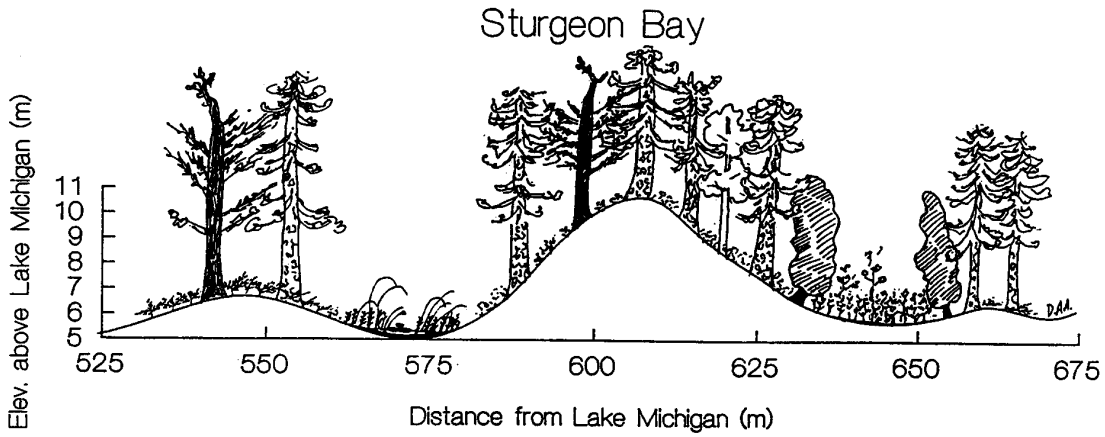

Figure 8: Illustration of the vegetation associated with a 150 meter portion of the transect at Sturgeon Bay, Emmet County, MI (Comer and Albert 1993).

DISCUSSION

The coefficient of conservatism is applied to a plant based upon its fidelity to a presettlement landscape, not its rarity or legal status. Although many plant species listed as endangered, threatened, or special concern by the State of Michigan are highly conservative, *C* = 8, 9, or 10, many are not, *C* = 4 - 7 (Figure 1). Many conservative, listed species are faithful to rare, high quality natural communities in Michigan. Such communities include prairies, where species rarity is largely attributable to habitat loss, and southern Michigan fens and bogs that have always been relatively rare. Losses of rare, high quality communities can have a serious impact on native biodiversity. Conversely, a number of rare species do not have a high fidelity to specific communities, or the communities to which they are faithful are relatively frequent. For example, the state threatened *Beckmannia syzigachne* (slough grass), *C* = 4, generally grows in wet places (Voss 1972), while respectively, the state threatened *Panax quinquefolius* (American ginseng), *C* = 10, grows in rich, mesic woods. Finally, many highly conservative species, such as *Potentilla fruticosa* (shrubby cinquefoil), with a *C* of 10 are not rare at all throughout Michigan.

All too frequently, areas where legally protected species are absent are considered expendable under current formal environmental evaluations. It is precisely because Floristic Quality Assessment is not based on species rarity or legal status that makes it a useful tool for assessing the natural quality of an area. Instead, FQA validates each plant taxa and goes beyond the simple measurement of species richness and abundance as defined and reviewed by Magurran (1988). FQA measures the extent and proportion to which constellations of conservative plants are present on a site (Swink and Wilhelm 1994, Wilhelm and Masters 1995 - Appendix F). Areas with a greater proportion of conservative species will have a greater $\overline{C}$ and higher *FQI,* alerting us to its or any community's floristic quality, potentially restorable floristic quality, and implicitly natural quality.

The decision to develop and provide a FQA system for Michigan was made because we recognized that its application could be useful in filling gaps in current natural quality assessment methods. The assignment of coefficients of conservatism for Michigan's native plants may be regarded as subjective, but it is based on the best estimates of botanists familiar with the flora and natural communities of Michigan. The methodology, however, is not subjective; it is standardized and repeatable, and requires only a skilled botanist to make an accurate and complete record of the plant species growing in a particular site.

Twenty three percent (418 species) of Michigan's native flora are extirpated, endangered, threatened, or listed as special concern by the State of Michigan. (Figure 1). Significant numbers of natural communities with conservative plants and associated animals are being lost piecemeal at an unprecedented rate throughout Michigan. We hope that the application of FQA on a statewide basis will help diminish somewhat the current rate of habitat loss due to ignorance of habitat or floristic quality. At a minimum, the use of the Floristic Quality Assessment system can provide decision makers with a standard, repeatable test for assessing the potential floristic and natural quality of a site, to be used in conjunction with other pertinent data and assessment tools prior to making important land-use decisions.

II. APPLICATION COMPUTER PROGRAMS

Those familiar with the first edition of the Floristic Quality Assessment will notice this edition is not accompanied by the original software application. In summer 2000, a new Windows-based program including both inventory and transect assessments was developed by Conservation Design Forum. This "stand-alone" software includes an up to date Michigan plant database. Copies of this program are available for purchase from The Conservation Research Institute, 375 W. First St., Elmhurst, IL 60126, or by telephone at (630) 559-2018.

The new program facilitates the application of the Floristic Quality Assessment system for the State of Michigan. The database consists of each species'[7] acronym, scientific name, common name, nativity, coefficient of conservatism (*C*) (0 = weedy, 10 = conservative, * = adventive), physiognomy, and National Wetland Category (Reed 1988) with its corresponding coefficient of wetness (*W*) (-5 = OBL, 0 = FAC, 5 = UPL). Adventive species are shown in ALL CAPS. See Appendix C for a listing of the database. There are two computer programs that use this database. The first evaluates a site inventory, and the second evaluates a sampling or monitoring transect. See Appendices A and B for examples of the Inventory and Transect Programs, respectively.

Both the Inventory and Transect programs access each species' record in the database through six letter acronyms. These acronyms are derived from the plant species' scientific name. **Using the acronym, eliminates the need to enter the full scientific name.**

Species -- The acronym of a binomial (two names) consists of the first three letters of the genus and the first three of the specific epithet. For example, the acronym for *Andropogon gerardii* is ANDGER. **An exception to this rule is the genus *Carex*.** Their acronyms consist of CX, followed by the first four letters of the epithet, for example, *Carex aggregata* = CXAGGR. Most acronyms are intuitive, but in some cases, where duplication occurs, non-intuitive acronyms are used to avoid data extraction errors. For example, ACESAU is the acronym for *Acer saccharum* and ACESAI is the acronym for *Acer saccharinum.* See Appendix C for a list of acronyms for all Michigan plants; see Appendix D for a list of non-intuitive acronyms[8].

Subspecies and Variety -- In the case of plants with recognized subspecies and varieties, the acronym consists of the first three letters of the genus, the first two letters of the species, and the first letter of the variety or subspecies. For example, the acronym for *Maianthemum canadense* var. *interius* is MAICAI. MAICAC is the acronym for *Maianthemum canadense* var. *canadense* where the typical variety is implied in the name. MAICAN, the intuitive acronym, in this nomenclatural context would be ambiguous and does not extract any plant in the database. As in the case of binomials, most trinomial acronyms are intuitive, but in some cases non-intuitive acronyms are used to avoid data extraction error. See Appendix D for a list of non-intuitive acronyms.

[7] The database also includes varieties and subspecies.

[8] In the new floristic quality assessment software, choices are presented if a duplicate acronym is entered. However, we have retained acronym lists in Appendices C and D as a useful reference.

III. LITERATURE CITED

Andreas, B. K. and R. W. Lichvar. 1995. "Floristic index for establishing assessment standards: A case study for northern Ohio." Technical Report WRP-DE-8, U. S. Army Waterways Experiment Station, Vicksburg, MS. 16 pp. + Appendices.

Andreas, B. K., J. McCormac, and J. J. Mack. In Prep. Floristic Quality Assessment Index for Ohio. Ohio Biological Survey, Museum of Biological Diversity, Ohio State University, Columbus, Ohio.

Barnes, B. V. and W. H. Wagner, Jr. 1981. Michigan trees. Univ. Mich. Press, Ann Arbor, MI. 383 pp.

Braun-Blanquet, J. 1932. Plant sociology - the study of plant communities. McGraw-Hill Book Co., Inc., New York, NY. 439 pp.

Case, F. W., Jr. 1987. Orchids of the Western Great Lakes Region. Cranbrook Inst. Sci. Bull. 48. 147 pp.

Case, F.W., Jr. and R. B. Case. 1997. Trilliums. Timber Press. Portland, OR. 285 pp.

Chapman, K. A. 1984. An ecological investigation of grassland in southern lower Michigan. Masters Thesis. Western Michigan Univ., Kalamazoo, MI. 235 pp.

Comer, P. J. and D. A. Albert. 1993. A survey of wooded dune and swales complexes in Michigan. (CZM Project 13C-4.0) Michigan Natural Features Inventory, Lansing, MI. 159 pp. + Appendices.

Comer, P. J., D. A. Albert, L. Scrimger, T. Leibfried, D. Schuen, and H. Jones. 1993a. Historical wetlands of Michigan's coastal zone and southeastern lakeplain (CZM Project 309-5). Michigan Natural Features Inventory, Lansing, MI. 110 pp.

Comer, P. J., D. A. Albert, T. Leibfried, H. Wells, B. Hart, and M. Austin. 1993b. Historical wetlands of the Saginaw Bay watershed. Michigan Natural Features Inventory, Lansing, MI. Report for the Saginaw Bay Watershed Initiative, Office of Policy and Program Development, Michigan Department of Natural Resources. 67 pp.

Comer, P. J., B. Hart, H. Wells, T. Leibfried, K. Korroch, and D. Albert. 1994. Pre-European settlement landscape of the eastern half of northern Michigan. Michigan Natural Features Inventory, Lansing, MI. Report for the Hiawatha National Forest. 36 pp.

Comer, P. J., W. A. MacKinnon, M. L. Rabe, D. L. Cuthrell, M. R. Penskar, and D. A. Albert. 1995. A survey of lakeplain prairie in Michigan (CZM Project 94D-0.04). Michigan Natural Features Inventory, Lansing, MI. 234 pp.

Crispin, S. and D. Rankin. 1994. The conservation of biological diversity in the Great Lakes ecosystem: Issues and Opportunities. The Nature Conservancy Great Lakes Program Office, Chicago, IL. 118 pp.

DuPage County Stormwater Management Committee. 1992. Appendix E. Technical guidance for the DuPage Countywide stormwater and floodplain ordinance. DuPage County Stormwater Management Division, IL. 24 pp.

Francis, C. M., M. J. W. Austen, J. M. Bowles, and W. B. Draper. 2000. Assessing floristic quality in southern Ontario woodlands. Natural Areas Journal 20(1): 66 – 77.

Gleason, H. A. and A. Cronquist. 1963. Manual of vascular plants of Northeastern United States and adjacent Canada. Van Nostrand Co., Princeton, NJ. 810 pp.

Goforth, R. R.; D. S. Stagliano, J. Cohen, M. Penskar, Y. Lee, and J. Cooper. 2001. Biodiversity analysis of selected riparian ecosystems within a fragmented landscape. Michigan Natural Features Inventory Report No. 2001-06, Lansing, MI. 95 pp. + Appendix.

Herman, K. D. 1994. Uncharted territory - relocating threatened plants and reconstructing lakeplain prairie habitat. In Proceedings of a Symposium on Ecological Restoration, U. S. EPA, Washington, DC. EPA 841-B-94-003:143-154.

Herman, K. D., L. A. Masters, M. R. Penskar, A. A. Reznicek, G. S. Wilhelm, and W. W. Brodowicz. 1997. Floristic quality assessment: development and application in the State of Michigan (USA). Natural Areas Journal 17(3): 256-279.

Keddy, P. A., H. T. Lee and I. C. Wisheu. 1993. Choosing indicators of ecosystem integrity: wetlands as a model system. Pages 61 – 82 in S. Woodley, J. Kay and G. Francis, eds. Ecological integrity and the management of ecosystems. St. Lucie Press, Boca Raton, Florida. in Taft, J. B., G. Wilhelm, D. M. Ladd, and L. A. Masters. 1997. Floristic quality assessment for Illinois. Erigenia 15(1).

Ladd, D. 1997. Coefficients of conservatism for Missouri vascular flora. Unpublished report, The Nature Conservancy, St. Louis, MO. 53 pp.

MacKinnon, W. A. 1994. Report on the critical wetlands project: expanded identification of regulatory jurisdiction in non-contiguous wetlands, Part II: Results. Michigan Natural Features Inventory, Lansing, MI. 186 pp.

Magurran, A. E. 1988. Ecological diversity and its measurement. Princeton University Press, Princeton, NJ. 179 pp.

Michigan Department of Natural Resources, Land and Water Management Division. 1988. Wetland protection guidebook. Lansing, MI. 15 pp.

Michigan Natural Features Inventory. 1990. Draft description of Michigan natural community types. Lansing, MI. (Unpublished manuscript revised April 2, 1990). 34 pp.

Oldham, M., W. Bakowsky, and D. Sutherland. 1995. Floristic quality assessment for southern Ontario. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario.

Penskar, M. R., A. A. Reznicek, W. W. Brodovich, G. S. Wilhelm, L. A. Masters, K. D. Herman, and K. P. Gardiner. 2001. Michigan plants database. In Herman, K. D., L. A. Masters, M. R. Penskar, A. A. Reznicek, G. S. Wilhelm, W. W. Brodovich, and K. P. Gardiner. 2001. Floristic Quality Assessment with Wetland Categories and Examples of Computer Applications for the State of Michigan. Michigan Department of Natural Resources, Wildlife Division, Natural Heritage Program. Lansing, MI. 19 pp. + Appendices.

Reed, P. 1988. National list of plant species that occur in wetlands: Michigan. U. S. Fish and Wildlife Service, Department of Interior Biological Report: NERC-88/18.22.23. 31 pp. + Appendices.

Semple, J. C. and G. S. Ringius. 1983. The goldenrods of Ontario. Univ. of Waterloo Biology Series No. 26. Waterloo, Ontario. 84 pp.

Semple, J. C. and S. B. Heard. 1987. The asters of Ontario: *Aster* L. and *Virgulus* Raf. Univ. of Waterloo Biology Series No. 26. Waterloo, Ontario. 88 pp.

Shea, M., D. White, M. Evans, and D. Ladd. in prep. Floristic quality assessment for Kentucky, Kentucky Academy of Sciences.

Swink, F. & G. Wilhelm. 1979. Plants of the Chicago Region. Third Edition. Morton Arboretum, Lisle, IL. 922 pp.

Swink, F. & G. Wilhelm. 1994. Plants of the Chicago Region. Fourth Edition. Indiana Academy of Science, Indianapolis, IN. 921 pp.

Taft, J. B., G. Wilhelm, D. M. Ladd, and L. A. Masters. 1997. Floristic quality assessment for Illinois. Erigenia. 15(1).

The Northern Great Plains Floristic Quality Assessment Panel. 2001. Coefficients of conservatism for the vascular flora of the Dakotas and adjacent grasslands. U.S. Geological Survey, Biological Resources Division, Information and Technology Report USGS/BRD/ITR--2001-0001. 33pp

Voss, E. G. 1972. Michigan Flora. Part I. Gymnosperms and monocots. Bull. Cranbrook Inst. Sci. 55 and Univ. Michigan Herbarium, MI. 488 pp.

Voss, E. G. 1985. Michigan Flora. Part II. Dicots (Sauraceae-Cornaceae). Bull. Cranbrook Inst. Sci. 59 and Univ. Michigan Herbarium, MI. 724 pp.

Voss, E.G. 1996. Michigan Flora. Part III. Dicots (Pyrolaceae-Compositae). Bull. Cranbrook Inst. Sci. 61 and Univ. of Michigan Herbarium. xix + 622 pp.

Whittaker, R. H. 1975. Communities and ecosystems. Macmillan Publishing Co., Inc., New York, NY. 385 pp.

Wilhelm, G. & D. Ladd. 1988. Natural area assessment in the Chicago Region. Trans. 53rd N. A. Wild. and Nat. Res. Conf. pp. 361 - 375.

Wilhelm, G. 1989. Wetland vegetation and quality assessment of wetland areas at the three areas along Michigan roadsides in Berrien County. Unpublished Report to the Michigan Department of Transportation. Morton Arboretum, Lisle, IL. 15 pp.

Wilhelm, G. 1991. Vascular vegetation of Lake County, Illinois, with special reference to its use in wetland mitigation. Morton Arboretum, Lisle, IL. 64 pp.

Wilhelm, G. 1992. Technical comments on the proposed revisions to the 1989 wetland delineation manual. Erigenia 12:41 -50.

Wilhelm, G. 1993. The limits of wetland mitigation. Unpublished Presentation to EPA Ecol. Rest. Conf., Chicago, IL.

Wilhelm, G. & L. A. Masters. 1995. Floristic quality assessment in the Chicago Region and application computer programs. Morton Arboretum, Lisle, IL. 17 pp.

IV. RESOURCES

Websites

The following is a list of useful web sites for those searching for information and photos of Michigan's Flora and related assessment systems.

Aquatic Plants Database
http://aquat1.ifas.ufl.edu/database.html

Biota of North America Home Page (Synonymized Checklist for North America Plants)
http://www.bonap.org/

Northern Prairie Biological Resources
http://www.npwrc.usgs.gov/resource/taxa_P.htm

Links to Plant Databases
http://botany.about.com/science/botany/msub8.htm?once=true&

Orchids of Wisconsin
http://www.wisc.edu/botany/Orchids/Orchids_of_Wisconsin.html

Stein's Virtual Herbarium (Photos of several Michigan species)
http://home.usit.net/~info7/plants.html

University of Michigan Herbarium
http://www.herb.lsa.umich.edu/

USDA Plants National Database
http://plants.usda.gov/

Vascular Plants of Wisconsin
http://wiscinfo.doit.wisc.edu/herbarium/

Contacts

The following is a list of contacts for Floristic Quality Assessments that have been or are being developed for other geographic regions.

Coastal Plain – Contact Larry Allain. Email: Larry_Allain@usgs.gov

Chicago Region – Contact Sara Utter, The Conservation Research Institute, 375 W. First St., Elmhurst, IL 60126. Email: SUtter@cdfinc.com

Illinois - in Eregenia, No. 15, November 1997 available for $10. Contact the Illinois Native Plant Society c/o George Johnson, 9917 Reese Road, Harvard, IL 60033. Email: geomarjo@mc.net

Iowa – Contact Pauline Drobney, US Fish and Wildlife Service. Email: Pauline_Drobney@fws.gov

Ohio – Contact Barbara Andreas, c/o Ohio Biological Survey, Museum of Biological Diversity, Ohio State University, Columbus, OH 43212-1192. Email: Barbara.Andreas@tri-c.cc-oh.us

Kentucky – Contact Margaret Shea; Bernheim, PO Box 130, Clermont, KY 40110.
Email: mshea@bernheim.org.

Michigan – Contact Kim Herman, Michigan Department of Natural Resources, 6833 Hwys US-2, 41 & M-35, Gladstone, MI 49837. Email: hermank@state.mi.us

Missouri – Contact Beth Churchwell, The Nature Conservancy, St. Louis Field Office**,**
2800 S. Brentwood Blvd., St. Louis, MO 63144. Email: bchurchwell@tnc.org

Northern Great Plains - Contact David Mushet, U.S.Geological Survey, Northern Prairie Wildlife Research Center, 8711 37th Street SE, Jamestown, ND 58401.

Ontario – Contact Michael Oldham, Natural Heritage Information Centre, Ministry of Natural Resources, 300 Water Street, 2nd Floor, North Tower, Peterborough, Ontario K9J 8M5,Canada.
Email: michael.oldham@mnr.gov.on.ca

Wisconsin - Contact Thomas Bernthal, Wetland Ecologist, Wisconsin Department of Natural Resources, P.O. Box 7924, Madison, WI 53707-7921. Email: berntt@dnr.state.wi.us

APPENDIX A

APPENDIX A

EXAMPLE - INVENTORY PROGRAM

On the opposing page is an example of the Inventory Program output (Table 1). Each species is preceded by its six letter database acronym (ACRONYM) and coefficient of conservatism (C), followed by its wetness coefficient (W), corresponding Michigan Wetland Category (WETNESS) (OBL = obligate wetland species, FAC = facultative species, UPL = upland species), and physiognomy (PHYSIOG.). Native taxa are shown in lower case in the SCIENTIFIC NAME column and are preceded by an N in the PHYSIOG. column. Adventive species are shown in ALL CAPS in the SCIENTIFIC NAME column, are defaulted to 0 (zero) in the C column, and are preceded by "Ad" in the PHYSIOG. column.

The table in the upper left-hand corner provides an analysis of the floristic quality of the site. It shows the number of native species and total number of all species present, the mean coefficient of conservatism (MEAN C), the Floristic Quality Index (FQI), derived by multiplying the MEAN C by the square root of the number of native species, and mean wetness (MEAN W). These are calculated separately for natives and then including adventive species (W/Adventives). The tables in the upper center and right-hand corner indicate the number of species in each physiognomic class, NATIVE *versus* ADVENTIVE along with their percentage of the total inventory.

Table 1: Inventory Program

SITE: Woodland Site 1
LOCALE: Berrien County
DATE 20 July 1993
BY: Surveyor
FILE: WOOD-1

FLORISTIC QUALITY DATA	**NATIVE**	**93.0%**	**ADVENTIVE**	**7.0%**
40 NATIVE SPECIES	2 Tree	4.7%	0 Tree	0.0%
43 Total Species	1 Shrub	2.3%	0 Shrub	0.0%
3.45 NATIVE MEAN C	4 Vine	9.3%	1 Vine	2.3%
3.21 W/Adventives	30 Forb	69.8%	2 Forb	4.7%
21.82 NATIVE FQI	3 Grass	7.0%	0 Grass	0.0%
21.04 W/Adventives	0 Sedge	0.0%	0 Sedge	0.0%
1.0 NATIVE MEAN W	0 Fern	0.0%		
0.9 W/Adventives				
AVG: FACULTATIVE (-)				

ACRONYM	**C**	**SCIENTIFIC NAME**	**W**	**WETNESS**	**PHYSIOG.**	**COMMON NAME**
ACARHO	0	Acalypha rhomboidea	3	FACU	N Forb	THREE-SEEDED MERCURY
ALLPET	0	ALLIARIA PETIOLATA	0	FAC	A Forb	GARLIC MUSTARD
ARITRI	5	Arisaema triphyllum	-2	FACW	N Forb	JACK-IN -THE-PULPIT
ASTLAN	2	Aster lanceolatus	-3	[FACW]	N Forb	EASTERN LINED ASTER
ASTURO	2	Aster urophyllus	5	[UPL]	N Forb	ARROW-LEAVED ASTER
BIDFRO	1	Bidens frondosa	-3	FACW	N Forb	COMMON BEGGARS-TICKS
BOECYL	5	Boehmeria cylindrica	-5	OBL	N Forb	FALSE NETTLE
CAMAME	8	Campanula americana	0	FAC	N Forb	TALL BELLFLOWER
CIRLUT	2	Circaea lutetiana	3	FACU	N Forb	ENCHANTER'S-NIGHTSHADE
EUPRUG	4	Eupatorium rugosum	3	FACU	N Forb	WHITE SNAKEROOT
FESSUB	5	Festuca subverticillata	2	FACU+	N Grass	NODDING FESCUE
GALCIR	4	Galium circaezans	4	FACU-	N Forb	WHITE WILD
GALTRO	4	Galium triflorum	2	FACU+	N Forb	FRAGRANT BEDSTRAW
GERMAC	4	Geranium maculatum	3	FACU	N Forb	WILD GERANIUM
GEUCAN	1	Geum canadense	0	FAC	N Forb	WHITE AVENS
HACVIR	1	Hackelia virginiana	1	FAC-	N Forb	STICKSEED; BEGGAR'S
HELHIR	10	Helianthus hirsutus <SC>	5	UPL	N Forb	OBLONG SUNFLOWER
HELSTR	4	Helianthus strumosus	5	UPL	N Forb	PALE-LEAVED SUNFLOWER
IMPPAL	6	Impatiens pallida	-3	FACW	N Forb	PALE TOUCH-ME-NOT
JUNTEN	1	Juncus tenuis	0	FAC	N Forb	ROADSIDE RUSH;
LEEORY	3	Leersia oryzoides	-5	OBL	N Grass	CUT GRASS
MENCAN	5	Menispermum canadense	0	FAC	N Vine	MOON SEED
OXASTR	0	Oxalis stricta	3	FACU	N Forb	COMMON YELLOW
PARQUI	5	Parthenocissus quinquefolia	1	FAC-	N Vine	VIRGINIA CREEPER
PHAARU	0	Phalaris arundinacea	-4	FACW+	N Grass	REED CANARY
PILPUM	5	Pilea pumila	3	FACW	N Forb	CLEARWEED
PLARUG	0	Plantago rugelii	0	FAC	N Forb	RED-STALKED PLANTAIN
POLREP	10	Polemonium reptans <T>	0	FAC	N Forb	JACOB'S
POLBIB	4	Polygonatum biflorum	3	FACU	N Forb	SOLOMON-SEAL
POTSIM	2	Potentilla simplex	4	FACU-	N Forb	OLD-FIELD or
PRUVUL	0	PRUNELLA VULGARIS	0	FAC	A Forb	LAWN PRUNELLA
QUEMAC	5	Quercus macrocarpa	1	FAC-	N Tree	BUR OAK
QUERUB	5	Quercus rubra	3	FACU	N Tree	RED OAK
RANABO	0	Ranunculus abortivus	-2	FACW-	N Forb	SMALL-FLOWERED BUTTERCUP
RUBOCC	1	Rubus occidentalis	5	UPL	N Shrub	BLACK RASPBERRY
SANGRE	2	Sanicula gregaria	-1	FAC+	N Forb	BLACK SNAKEROOT
SMIRAC	5	Smilacina racemosa	3	FACU	N Forb	FALSE SPIKENARD
SMIECI	6	Smilax ecirrhata	5	UPL	N Forb	UPRIGHT CARRION-FLOWER
VITRIP	3	Vitis riparia	-2	FACW-	N Vine	RIVERBANK GRAPE
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	A Vine	BITTERSWEET NIGHTSHADE
SOLALT	1	Solidago altissima	3	FACU	N Forb	TALL GOLDENROD
SOLULM	5	Solidago ulmifolia	5	UPL	N Forb	ELM-LEAVED GOLDENROD
TOXRAR	2	Toxicodendron radicans	-1	FAC+	N Vine	POISON-IVY

APPENDIX B

APPENDIX B

EXAMPLE - TRANSECT PROGRAM

The following pages provide an example of the Transect Program output. The output has been divided into tables for description. Table 1 is a summary of each quadrat in the transect showing quadrat number, mean coefficient of conservatism (MC), floristic quality index (FQI), mean wetness (MW), and number of taxa (NT) calculated separately for natives and then including the adventive species (W/Ad). These data are averaged (AVG) for the entire transect along with the standard deviation (STD), both values are shown below each column. The columns to the far right are sequential averages [(x+n+y)/3] of the MW and its corresponding W/Ad columns and is useful in discerning or graphing the hydric vegetation along the catena in straight line transects (MW SEQ = native species only). See Figure 1.

Table 2 treats the transect as a whole. The left hand table shows the number of native species in each coefficient of conservatism category (0 to 10), and the percentage of these species in three conservatism classes (0 to 3, 4 to 6, 7 to 10). The table on the right summarizes the number of species, mean coefficient of conservatism (MEAN C), floristic quality index (FQI), derived by multiplying the MEAN C by the square root of the number of native species, and mean wetness (MEAN W) for all native species in the transect. These are calculated separately for natives and then including adventive species (W/Adventives).

Table 3 shows the number and percent of species for each physiognomic group. The table on the right shows the relative importance of each physiognomic group. Relative importance (RIV) is calculated by relativizing the frequency (FRQ) and the cover class (COV) of each group found in the transect. These are summed, and divided by two to achieve the RIV [(RFRQ + RCOV)/2].

Table 4 is a relative importance table for individual species, calculated in the same way as the physiognomic relative importance table. Each scientific name is followed by its coefficient of conservatism and wetness category.

Table 5 is an inventory comprised of a list of acronyms, Latin names, and common names of all of the species which appeared in the transect.

This is followed by Table 6, the Transect String, which is a printout of the raw data showing each quadrat, with its species and corresponding cover number.

Table 1: Quadrat summary

SITE: Wetland Site 1
LOCALE: Berrien County
DATE 23 July 1993
BY: Surveyor
FILE: WETSITE1

TRANSECT DATA, QUADRAT

QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS	MW SEQ	W/Ad
1	0.0	0.0	0.0	0.0	0.0	5.0	0	1	0.0	3.4
2	0.0	0.0	0.0	0.0	0.0	1.9	1	7	-0.3	2.6
3	1.0	0.5	2.2	1.5	-1.0	0.8	5	11	-1.1	0.4
4	1.3	0.9	3.3	2.7	-2.2	-1.6	6	9	-1.9	-0.8
5	1.6	1.1	3.6	3.0	-2.4	-1.7	5	7	-2.3	-1.9
6	1.4	1.4	3.1	3.1	-2.4	-2.4	5	5	-2.4	-2.2
7	1.2	1.2	2.7	2.7	-2.4	-2.4	5	5	-2.3	-2.3
8	1.2	1.2	2.7	2.7	-2.0	-2.0	5	5	-1.6	-1.7
9	1.5	1.2	3.0	2.7	-0.3	-0.8	4	5	-1.5	-1.7
10	1.8	1.4	3.5	3.1	-2.3	-2.4	4	5	-1.6	-1.8
11	1.8	1.8	3.5	3.5	-2.3	-2.3	4	4	-2.3	-2.3
12	1.8	1.8	3.5	3.5	-2.3	-2.3	4	4	-2.4	-2.4
13	2.0	2.0	4.5	4.5	-2.6	-2.6	5	5	-2.1	-1.7
14	1.7	1.0	2.9	2.2	-1.3	-0.2	3	5	-1.5	-0.8
15	1.6	1.0	3.6	2.8	-0.6	0.5	5	8	-0.9	0.2
16	0.7	0.5	1.2	1.0	-0.7	0.3	3	4	-0.4	0.8
17	0.5	0.2	1.0	0.7	0.0	1.7	4	9	-0.3	1.0
AVG	1.2	1.0	2.6	2.3	-1.4	-0.6	4.0	5.8		
STD	0.6	0.6	1.3	1.2	1.0	2.0	1.5	2.3		

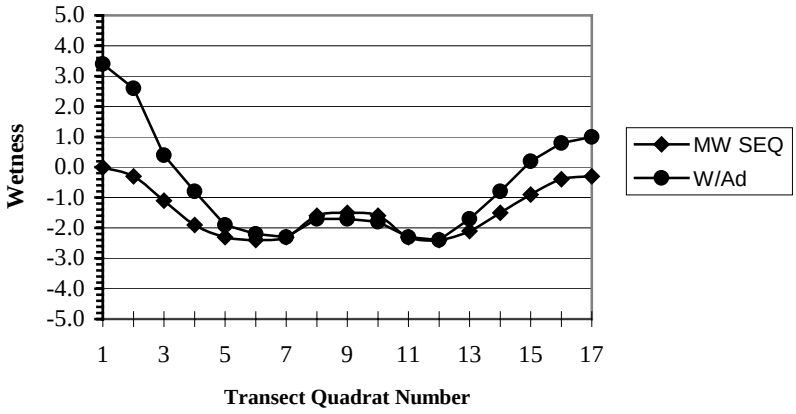

Figure 1: Example of a wetland delineation graph using the numbers in columns MW SEQ and the following column (W/Ad). These are the Mean Wetness columns sequentially averaged by threes for native plants only (MW SEQ) and all plant taxa including adventive species (W/Ad). This graph is not part of the Transect Program output. See Appendix G for further discussion.

Table 2: Transect summary

C	NUMBER			
0	7		16	NATIVE SPECIES
1	4		28	TOTAL SPECIES
2	3	0 to 3	1.1	NATIVE MEAN C
3	1	93.8%	0.6	W/Adventives
4	0		4.5	NATIVE FQI
5	1		3.4	W/Adventives
6	0	4 to 7	-2.3	NATIVE MEAN W
7	0	6.3%	-0.8	W/Adventives
8	0			
9	0	8 to 10		
10	0	0.0%		

Table 3: Physiognomic summary

PHYSIOGNOMY

NATIVE	16	57.1%
Tree	0	0.0%
Shrub	0	0.0%
Vine	0	0.0%
Forb	13	46.4%
Grass	1	3.6%
Sedge	2	7.1%
Fern	0	0.0%
ADVENTIVE	12	42.9%
Tree	0	0.0%
Shrub	0	0.0%
Vine	0	0.0%
Forb	7	25.0%
Grass	5	17.9%
Sedge	0	0.0%

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOG.	FRQ	COV	RFRQ	RCOV	RIV
N Forb	61	164	61.6	71.6	66.6
A Grass	17	39	17.2	17.0	17.1
A Forb	14	19	14.1	8.3	11.2
N Sedge	6	6	6.1	2.6	4.3
N Grass	1	1	1.0	0.4	0.7

This example is continued on the next page.

Table 4: Species relative importance values

SCIENTIFIC NAME	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
Bidens comosa	5	FACW	13	67	13.1	29.3	21.2
Ambrosia artemisiifolia	0	FACU	14	51	14.1	22.3	18.2
AGROPYRON REPENS	0	FACU	8	25	8.1	10.9	9.5
Polygonum pensylvanicum	0	FACW+	10	17	10.1	7.4	8.8
Carex pellita	2	OBL	5	5	5.1	2.2	3.6
Potentilla norvegica	0	FAC	5	5	5.1	2.2	3.6
SETARIA GLAUCA	0	FAC	4	5	4.0	2.2	3.1
Bidens vulgata	0	FACW	3	6	3.0	2.6	2.8
CIRSIUM ARVENSE	0	FACU	3	6	3.0	2.6	2.8
Aster pilosus	1	FACU+	3	3	3.0	1.3	2.2
Bidens frondosa	1	FACW	3	3	3.0	1.3	2.2
BROMUS INERMIS	0	UPL	2	5	2.0	2.2	2.1
ATRIPLEX PATULA	0	FACW-	2	3	2.0	1.3	1.7
CIRSIUM VULGARE	0	FACU-	2	3	2.0	1.3	1.7
Eupatorium serotinum	0	FAC+	2	3	2.0	1.3	1.7
Polygonum hydropiper	1	OBL	2	3	2.0	1.3	1.7
DAUCUS CAROTA	0	UPL	2	2	2.0	0.9	1.4
ECHINOCHLOA CRUSGALLI	0	FACW	2	2	2.0	0.9	1.4
Lycopus americanus	2	OBL	2	2	2.0	0.9	1.4
POLYGONUM PERSICARIA	0	FACW	2	2	2.0	0.9	1.4
Rorippa palustris	1	OBL	2	2	2.0	0.9	1.4
SOLANUM CAROLINENSE	0	FACU-	2	2	2.0	0.9	1.4
POA PRATENSIS	0	FAC-	1	2	1.0	0.9	0.9
Acalypha rhomboidea	0	FACU	1	1	1.0	0.4	0.7
Aster lanceolatus	2	[FACW]	1	1	1.0	0.4	0.7
Carex cristatella	3	FACW+	1	1	1.0	0.4	0.7
Phalaris arundinacea	0	FACW+	1	1	1.0	0.4	0.7
RUMEX CRISPUS	0	FAC+	1	1	1.0	0.4	0.7
			99	229			

Table 5: Transect inventory

ACRONYM	SCIENTIFIC NAME	COMMON NAME
ACARHO	Acalypha rhomboidea	THREE-SEEDED MERCURY
AGRREP	AGROPYRON REPENS	QUACK GRASS
AMBART	Ambrosia artemisiifolia	COMMON RAGWEED
ASTLAN	Aster lanceolatus	EASTERN LINED ASTER
ASTPIL	Aster pilosus	HAIRY ASTER
ATRPAT	ATRIPLEX PATULA	SPEARSCALE
BIDCOM	Bidens comosa	SWAMP TICKSEED
BIDFRO	Bidens frondosa	COMMON BEGGAR-TICKS
BIDVUL	Bidens vulgata	TALL BEGGAR-TICKS
BROINE	BROMUS INERMIS	HUNGARIAN BROME; SMOOTH BROME
CXCRIS	Carex cristatella	SEDGE
CXPELL	Carex pellita	SEDGE
CIRARV	CIRSIUM ARVENSE	CANADIAN-THISTLE
CIRVUL	CIRSIUM VULGARE	BULL-THISTLE
DAUCAR	DAUCUS CAROTA	WILD CARROT; QUEEN-ANNE'S-LACE
ECHCRU	ECHINOCHLOA CRUSGALLI	BARNYARD GRASS
EUPSEO	Eupatorium serotinum	LATE BONESET
LYCAME	Lycopus americanus	COMMON WATER HOREHOUND
PHAARU	Phalaris arundinacea	REED CANARY GRASS
POAPRA	POA PRATENSIS	KENTUCKY BLUEGRASS
POLHYR	Polygonum hydropiper	WATER-PEPPER
POLPEN	Polygonum pensylvanicum	PINKWEED; BIGSEED SMARTWEED
POLPER	POLYGONUM PERSICARIA	LADY'S THUMB; HEART'S-EASE
POTNOR	Potentilla norvegica	ROUGH CINQUEFOIL
RORPAL	Rorippa palustris	YELLOW CRESS
RUMCRI	RUMEX CRISPUS	SOUR or CURLY DOCK
SETGLA	SETARIA GLAUCA	YELLOW FOXTAIL
SOLCAR	SOLANUM CAROLINENSE	HORSE NETTLE

Table 6: Transect string

```
TRANSECT STRING
>
QUAD 1
ACRONYM COVER
BROINE 1
>
QUAD 2
ACRONYM COVER
AGRREP 4
ATRPAT 1
BROINE 4
CIRARV 2
POTNOR 1
SETGLA 1
SOLCAR 1
>
QUAD 3
ACRONYM COVER
AGRREP 5
AMBART 5
ATRPAT 2
BIDCOM 3
CIRARV 1
CIRVUL 2
DAUCAR 1
EUPSEO 2
POAPRA 2
POLPEN 1
POTNOR 1
>
QUAD 4
ACRONYM COVER
AGRREP 1
AMBART 5
BIDCOM 5
BIDFRO 1
EUPSEO 1
LYCAME 1
POLPEN 2
POLPER 1
RUMCRI 1
>
QUAD 5
ACRONYM COVER
AGRREP 1
AMBART 5
ASTLAN 1
BIDCOM 5
POLPEN 2
POLPER 1
RORPAL 1
>
QUAD 6
ACRONYM COVER
AMBART 4
BIDCOM 6
BIDFRO 1
POLPEN 2
RORPAL 1
>
QUAD 7
ACRONYM COVER
AMBART 4
BIDCOM 6
BIDVUL 2
POLHYR 1
POLPEN 2
>
QUAD 8
ACRONYM COVER
AMBART 2
BIDCOM 6
BIDFRO 1
BIDVUL 2
POLPEN 1
>
QUAD 9
ACRONYM COVER
AMBART 3
ASTPIL 1
BIDCOM 6
BIDVUL 2
ECHCRU 1
>
QUAD 10
ACRONYM COVER
AMBART 3
BIDCOM 6
CXPELL 1
ECHCRU 1
POLPEN 2
>
QUAD 11
ACRONYM COVER
AMBART 3
BIDCOM 5
CXPELL 1
POLPEN 2
>
QUAD 12
ACRONYM COVER
AMBART 3
BIDCOM 5
CXPELL 1
POLPEN 2
>
QUAD 13
ACRONYM COVER
AMBART 3
BIDCOM 5
CXCRIS 1
CXPELL 1
POLPEN 1
>
QUAD 14
ACRONYM COVER
AGRREP 1
AMBART 4
BIDCOM 6
PHAARU 1
SETGLA 1
>
QUAD 15
ACRONYM COVER
AGRREP 1
AMBART 6
ASTPIL 1
BIDCOM 3
CXPELL 1
POTNOR 1
SETGLA 2
SOLCAR 1
>
QUAD 16
ACRONYM COVER
AGRREP 6
AMBART 1
LYCAME 1
POTNOR 1
>
QUAD 17
ACRONYM COVER
ACARHO 1
AGRREP 6
ASTPIL 1
CIRARV 3
CIRVUL 1
DAUCAR 1
POLHYR 2
POTNOR 1
SETGLA 1
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APPENDIX C

APPENDIX C

MICHIGAN PLANTS DATABASE - 2001

Compiled by:

M. R. Penskar, A. A. Reznicek, W. W. Brodovich, G. S. Wilhelm, L. A. Masters, K. D. Herman, and K. P. Gardiner.

This state flora database was developed for use with the Floristic Quality Assessment system for the State of Michigan for which the application is discussed in the main body of this publication. Although the list is quite comprehensive, it represents a **utility database only** and should not be considered a state flora treatment. The list was compiled by consulting several floristic and taxonomic sources, and also represents our collective field knowledge and taxonomic judgment for numerous taxa. Because the list was prepared in this way, it cannot be fully reconciled with treatments prepared by such floristicians as Voss (1996, 1985, 1972), Gleason & Cronquist (1991), or others. It is anticipated that the list will be periodically updated to incorporate information on new taxa identified for Michigan and to adopt contemporary nomenclature where we feel it is appropriate. Questions or comments about this database and its compilation can be directed primarily to M. R. Penskar and A. A. Reznicek.

This database is sorted alphabetically by scientific name.

KEY

ACRONYM = Six digit reference code for each taxa
C = Coefficient of conservatism
***** = Adventive taxa [defaults to 0 (zero) in the 2000 FQA Computer Program]
ST = Status as recognized by the State of MI
X = Extirpated
E = Endangered
T = Threatened
SC = Special concern

W = Wetness coefficient
WET = Michigan wetland categories
[ ] = Assigned for Michigan

PHYS = Physiognomy
AD = Adventive taxa
NT = Native taxa
A = Annual
B = Biennial
P = Perennial

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
ABEESC	*	ABELMOSCHUS ESCULENTUS		5	[UPL]	Ad A-Forb	OKRA; GUMBO
ABIBAL	3	Abies balsamea		-3	FACW	Nt Tree	BALSAM FIR
ABUTHE	*	ABUTILON THEOPHRASTI		4	FACU-	Ad A-Forb	VELVETLEAF
ACAGRA	*	ACALYPHA GRACILENS		5	[UPL]	Ad A-Forb	SLENDER MERCURY
ACARHO	0	Acalypha rhomboidea		3	FACU	Nt A-Forb	THREE-SEEDED MERCURY
ACAVIR	*	ACALYPHA VIRGINICA		3	FACU	Ad A-Forb	THREE-SEEDED MERCURY
ACEGIN	*	ACER GINNALA		5	[UPL]	Ad Tree	AMUR MAPLE
ACENEG	0	Acer negundo		-2	FACW-	Nt Tree	BOX ELDER
ACENIG	4	Acer nigrum		3	[FACU]	Nt Tree	BLACK MAPLE
ACEPEN	5	Acer pensylvanicum		3	FACU	Nt Tree	STRIPED MAPLE
ACEPLA	*	ACER PLATANOIDES		5	[UPL]	Ad Tree	NORWAY MAPLE
ACEPSE	*	ACER PSEUDOPLATANUS		5	[UPL]	Ad Tree	SYCAMORE MAPLE
ACERUB	1	Acer rubrum		0	FAC	Nt Tree	RED MAPLE
ACESAI	2	Acer saccharinum		-3	FACW	Nt Tree	SILVER MAPLE
ACESAU	5	Acer saccharum		3	FACU	Nt Tree	SUGAR MAPLE
ACESPI	5	Acer spicatum		3	FACU	Nt Tree	MOUNTAIN MAPLE
ACHFIL	*	ACHILLEA FILIPENDULINA		5	[UPL]	Ad P-Forb	YELLOW YARROW

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
ACHMIL	1	Achillea millefolium		3	FACU	Nt P-Forb	YARROW
ACHPTA	*	ACHILLEA PTARMICA		0	[FAC]	Ad P-Forb	SNEEZEWEED
ACIARV	*	ACINOS ARVENSIS (SATUREJA ACINOS)		5	[UPL]	Ad A-Forb	CALAMINT
ACOCAL	6	Acorus calamus		-5	OBL	Nt P-Forb	SWEET-FLAG
ACTPAC	7	Actaea pachypoda		5	[UPL]	Nt P-Forb	DOLL'S-EYES
ACTRUB	7	Actaea rubra		5	[UPL]	Nt P-Forb	RED BANEBERRY
ADEBIC	8	Adenocaulon bicolor		3	[FACU]	Nt P-Forb	TRAIL-PLANT
ADIPED	6	Adiantum pedatum		1	FAC-	Nt Fern	MAIDENHAIR FERN
ADLFUN	4	Adlumia fungosa	SC	5	[UPL]	Nt B-Forb	CLIMBING FUMITORY
AEGCYL	*	AEGILOPS CYLINDRICA		5	[UPL]	Ad A-Grass	JOINTED GOAT-GRASS
AEGPOD	*	AEGOPODIUM PODAGRARIA		0	FAC	Ad P-Forb	GOUTWEED
AESGLA	6	Aesculus glabra		-1	FAC+	Nt Tree	OHIO BUCKEYE
AESHIP	*	AESCULUS HIPPOCASTANUM		5	[UPL]	Ad Tree	HORSE-CHESTNUT
AETCYN	*	AETHUSA CYNAPIUM		5	[UPL]	Ad A-Forb	FOOL'S PARSLEY
AGAGAT	10	Agalinis gattingeri (Gerardia g.)	E	-3	[FACW]	Nt A-Forb	GATTINGER'S GERARDIA
AGAPUR	7	Agalinis purpurea (Gerardia p.)		-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGASKI	10	Agalinis skinneriana	E	-3	[FACW]	Nt A-Forb	SKINNER'S GERARDIA
AGATEN	5	Agalinis tenuifolia		-3	FACW	Nt A-Forb	COMMON GERARDIA
AGAFOE	*	AGASTACHE FOENICULUM		5	[UPL]	Ad P-Forb	BLUE GIANT HYSSOP
AGANEP	5	Agastache nepetoides		3	FACU	Nt P-Forb	YELLOW GIANT HYSSOP
AGASCR	5	Agastache scrophulariaefolia		5	[UPL]	Nt P-Forb	PURPLE GIANT HYSSOP
AGOGLA	9	Agoseris glauca	T	3	FACU	Nt P-Forb	PRAIRIE or PALE AGOSERIS
AGRGRY	2	Agrimonia gryposepala		2	FACU+	Nt P-Forb	TALL AGRIMONY
AGRPAR	4	Agrimonia parviflora		-1	FAC+	Nt P-Forb	SWAMP AGRIMONY
AGRPUB	5	Agrimonia pubescens		5	[UPL]	Nt P-Forb	SOFT AGRIMONY
AGRROS	8	Agrimonia rostellata	SC	3	FACU	Nt P-Forb	BEAKED AGRIMONY
AGRSTR	3	Agrimonia striata		1	FAC-	Nt P-Forb	AGRIMONY
AGRDAS	10	Agropyron dasystachyum		4	FACU-	Nt P-Grass	WHEAT GRASS
AGRREP	*	AGROPYRON REPENS		3	FACU	Ad P-Grass	QUACK GRASS
AGRSMI	*	AGROPYRON SMITHII		2	FACU+	Ad P-Grass	SMITH'S WHEAT GRASS
AGRSPI	10	Agropyron spicatum	X	5	[UPL]	Nt P-Grass	BLUEBUNCH WHEAT GRASS
AGRTRA	8	Agropyron trachycaulum		0	FAC	Nt P-Grass	SLENDER WHEAT GRASS
AGRGIT	*	AGROSTEMMA GITHAGO		3	[FACU]	Ad P-Forb	CORN-COCKLE
AGRCAN	*	AGROSTIS CANINA		5	[UPL]	Ad P-Grass	VELVET BENT
AGRGIG	*	AGROSTIS GIGANTEA		0	[FAC]	Ad P-Grass	REDTOP
AGRHYE	4	Agrostis hyemalis		1	FAC-	Nt P-Grass	TICKLEGRASS
AGRPER	5	Agrostis perennans		1	FAC-	Nt P-Grass	AUTUMN BENT GRASS
AGRSTO	*	AGROSTIS STOLONIFERA		-3	FACW	Ad P-Grass	CREEPING BENT
AGRTEN	*	AGROSTIS TENUIS		4	[FACU-]	Ad P-Grass	COLONIAL BENT
AILALT	*	AILANTHUS ALTISSIMA		5	UPL	Ad Tree	TREE-OF-HEAVEN
AJUGEN	*	AJUGA GENEVENSIS		5	[UPL]	Ad P-Forb	BUGLE
AJUREP	*	AJUGA REPTANS		5	[UPL]	Ad P-Forb	CARPET BUGLE
AKEQUI	*	AKEBIA QUINATA		5	[UPL]	Ad W-Vine	CHOCOLATE-VINE
ALEFAR	10	Aletris farinosa		0	FAC	Nt P-Forb	COLIC ROOT
ALIPLA	1	Alisma plantago-aquatica		-5	OBL	Nt P-Forb	WATER-PLANTAIN
ALLPET	*	ALLIARIA PETIOLATA		0	FAC	Ad B-Forb	GARLIC MUSTARD
ALLBUR	7	Allium burdickii		3	[FACU]	Nt P-Forb	WILD LEEK
ALLCAN	4	Allium canadense		3	FACU	Nt P-Forb	WILD GARLIC
ALLCEP	*	ALLIUM CEPA		5	[UPL]	Ad P-Forb	ONION
ALLCER	5	Allium cernuum		5	[UPL]	Nt P-Forb	NODDING WILD ONION

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
ALLROT	*	ALLIUM ROTUNDUM		5	[UPL]	Ad P-Forb	ONION
ALLSAT	*	ALLIUM SATIVUM		5	[UPL]	Ad P-Forb	GARLIC
ALSCSC	*	ALLIUM SCHOENOPRASUM		-1	FAC+	Ad P-Forb	CHIVES
ALSCSI	10	Allium schoenoprasum var. sibiricum	T	3	[FACU]	Nt P-Forb	WILD CHIVES
ALLSTE	10	Allium stellatum		5	[UPL]	Nt P-Forb	WILD ONION
ALLTRI	5	Allium tricoccum		2	FACU+	Nt P-Forb	WILD LEEK
ALLTUB	*	ALLIUM TUBEROSUM		5	[UPL]	Ad P-Forb	CHINESE CHIVES
ALLVIN	*	ALLIUM VINEALE		3	FACU	Ad P-Forb	FIELD GARLIC
ALNCRI	10	Alnus crispa		0	FAC	Nt Shrub	MOUNTAIN ALDER
ALNGLU	*	ALNUS GLUTINOSA		-2	FACW-	Ad Tree	BLACK ALDER
ALNRUG	5	Alnus rugosa		-5	OBL	Nt Shrub	TAG ALDER
ALOAEQ	4	Alopecurus aequalis		-5	OBL	Nt P-Grass	SHORT-AWNED FOXTAIL
ALOCAR	*	ALOPECURUS CAROLINIANUS		-3	FACW	Ad A-Grass	CAROLINA FOXTAIL
ALOGEN	*	ALOPECURUS GENICULATUS		-5	OBL	Ad P-Grass	MARSH FOXTAIL
ALOMYO	*	ALOPECURUS MYOSUROIDES		-3	FACW	Ad A-Grass	MOUSE FOXTAIL
ALOPRA	*	ALOPECURUS PRATENSIS		-3	FACW	Ad P-Grass	MEADOW FOXTAIL
ALTOFF	*	ALTHAEA OFFICINALIS		0	[FAC]	Ad P-Forb	MARSH MALLOW
ALTROS	*	ALTHAEA ROSEA		5	[UPL]	Ad P-Forb	HOLLYHOCK
ALYALY	*	ALYSSUM ALYSSOIDES		5	[UPL]	Ad A-Forb	PALE ALYSSUM
ALYMUR	*	ALYSSUM MURALE		5	[UPL]	Ad P-Forb	YELLOWTUFT
ALYSAX	*	ALYSSUM SAXATILE		5	[UPL]	Ad P-Forb	GOLDENTUFT
AMAALB	0	Amaranthus albus		3	FACU	Nt A-Forb	TUMBLEWEED
AMAARE	*	AMARANTHUS ARENICOLA		3	FACU	Ad A-Forb	AMARANTH
AMABLI	*	AMARANTHUS BLITOIDES		5	[UPL]	Ad A-Forb	AMARANTH
AMACAU	*	AMARANTHUS CAUDATUS		5	[UPL]	Ad A-Forb	LOVE-LIES-BLEEDING
AMACRU	*	AMARANTHUS CRUENTUS		5	[UPL]	Ad A-Forb	PURPLE AMARANTH
AMAGRA	*	AMARANTHUS GRACILIS		5	[UPL]	Ad A-Forb	AMARANTH
AMAHYB	*	AMARANTHUS HYBRIDUS		5	[UPL]	Ad P-Forb	GREEN AMARANTH
AMAHYP	*	AMARANTHUS HYPOCHONDRIACUS		5	[UPL]	Ad A-Forb	AMARANTH
AMAPOW	*	AMARANTHUS POWELLII		5	[UPL]	Ad A-Forb	TALL AMARANTH
AMARET	*	AMARANTHUS RETROFLEXUS		2	FACU+	Ad A-Forb	ROUGH AMARANTH
AMATRI	*	AMARANTHUS TRICOLOR		5	[UPL]	Ad A-Forb	AMARANTH
AMATUB	6	Amaranthus tuberculatus		-5	OBL	Nt A-Forb	WATER-HEMP
AMBART	0	Ambrosia artemisiifolia		3	FACU	Nt A-Forb	COMMON RAGWEED
AMBPSI	*	AMBROSIA PSILOSTACHYA		1	FAC-	Ad P-Forb	WESTERN RAGWEED
AMBTRI	0	Ambrosia trifida		-1	FAC+	Nt A-Forb	GIANT RAGWEED
AMEARB	4	Amelanchier arborea		3	FACU	Nt Tree	JUNEBERRY
AMEBAR	8	Amelanchier bartramiana		0	FAC	Nt Shrub	NORTHERN JUNEBERRY
AMEINT	4	Amelanchier interior		5	[UPL]	Nt Tree	SERVICEBERRY
AMELAE	4	Amelanchier laevis		5	[UPL]	Nt Tree	SMOOTH SHADBUSH
AMESAN	5	Amelanchier sanguinea		5	[UPL]	Nt Shrub	ROUND-LEAVED SERVICEBERRY
AMESPI	4	Amelanchier spicata		3	FACU	Nt Shrub	SHADBUSH SERVICEBERRY
AMEROT	10	Amerorchis rotundifolia (Orchis r.)	E	-5	OBL	Nt P-Forb	ROUND-LEAVED ORCHIS
AMMROB	6	Ammannia robusta		-5	[OBL]	Nt A-Forb	SESSILE TOOTH-CUP
AMMBRE	10	Ammophila breviligulata		5	[UPL]	Nt P-Grass	MARRAM GRASS
AMOCAN	8	Amorpha canescens	SC	5	[UPL]	Nt Shrub	LEAD PLANT
AMOFRU	*	AMORPHA FRUTICOSA		-4	FACW+	Ad Shrub	FALSE INDIGO
	*	AMPELOPSIS ACONITIFOLIA		5	[UPL]	Ad W-Vine	MONKSHOD VINE
AMPBRE	*	AMPELOPSIS BREVIPEDUNCULATA		5	[UPL]	Ad W-Vine	TURQUOISE BERRY
AMPBRA	5	Amphicarpaea bracteata		0	FAC	Nt A-Forb	HOG-PEANUT

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
ANAARV	*	ANAGALLIS ARVENSIS		4	[FACU-]	Ad A-Forb	SCARLET PIMPERNEL
ANAMAR	3	Anaphalis margaritacea		5	[UPL]	Nt P-Forb	PEARLY EVERLASTING
ANCAZU	*	ANCHUSA AZUREA		5	[UPL]	Ad P-Forb	SHOWY BUGLOSS
ANCOFF	*	ANCHUSA OFFICINALIS		5	[UPL]	Ad P-Forb	COMMON BUGLOSS
ANDGLA	10	Andromeda glaucophylla		-5	OBL	Nt Shrub	BOG ROSEMARY
ANDGER	5	Andropogon gerardii		1	FAC-	Nt P-Grass	BIG BLUESTEM
ANDSCO	5	Andropogon scoparius (Schizachyrium s.)		3	[FACU]	Nt P-Grass	LITTLE BLUESTEM GRASS
ANDVIR	4	Andropogon virginicus		1	FAC-	Nt P-Grass	BROOM-SEDGE
ANDOCC	6	Androsace occidentalis	E	4	FACU-	Nt A-Forb	ROCK-JASMINE
ANECAN	4	Anemone canadensis		-3	FACW	Nt P-Forb	CANADA ANEMONE
ANECYL	6	Anemone cylindrica		5	[UPL]	Nt P-Forb	THIMBLEWEED
ANEMUL	10	Anemone multifida		5	[UPL]	Nt P-Forb	RED ANEMONE
ANEQUI	5	Anemone quinquefolia		0	FAC	Nt P-Forb	WOOD ANEMONE
ANEVIR	3	Anemone virginiana		5	UPL	Nt P-Forb	THIMBLEWEED
ANETHA	8	Anemonella thalictroides		5	[UPL]	Nt P-Forb	RUE ANEMONE
ANEGRA	*	ANETHUM GRAVEOLENS		5	[UPL]	Ad A-Forb	DILL
ANGATR	6	Angelica atropurpurea		-5	OBL	Nt P-Forb	ANGELICA
ANGVEN	8	Angelica venenosa	SC	3	[FACU]	Nt P-Forb	HAIRY ANGELICA
ANTHOW	2	Antennaria howellii		5	[UPL]	Nt P-Forb	SMALL PUSSYTOES
ANTNEG	3	Antennaria neglecta		5	[UPL]	Nt P-Forb	CAT'S FOOT
ANTPAL	2	Antennaria parlinii (A. plantaginifolia)		5	[UPL]	Nt P-Forb	SMOOTH PUSSYTOES
ANTPAV	4	Antennaria parvifolia	SC	5	[UPL]	Nt P-Forb	SMALL-LEAVED PUSSYTOES
ANTROS	10	Antennaria rosea	T	5	[UPL]	Nt P-Forb	ROSY PUSSYTOES
ANTARV	*	ANTHEMIS ARVENSIS		5	[UPL]	Ad A-Forb	FIELD CHAMOMILE
ANTCOT	*	ANTHEMIS COTULA		3	FACU	Ad A-Forb	DOG FENNEL
ANTTIN	*	ANTHEMIS TINCTORIA		5	[UPL]	Ad P-Forb	YELLOW CHAMOMILE
ANTODO	*	ANTHOXANTHUM ODORATUM		3	FACU	Ad P-Grass	SWEET VERNAL GRASS
ANTSYL	*	ANTHRISCUS SYLVESTRIS		5	[UPL]	Ad B-Forb	FALSE CHERVIL
ANTVUL	*	ANTHYLLIS VULNERARIA		5	[UPL]	Ad A-Forb	WOUNDWORT
ANTMAJ	*	ANTIRRHINUM MAJUS		5	[UPL]	Ad P-Forb	SNAPDRAGON
APEINT	*	APERA INTERRUPTA		5	[UPL]	Ad A-Grass	APERA
APESPI	*	APERA SPICA-VENTI		5	[UPL]	Ad A-Grass	APERA
APIAME	3	Apios americana		-3	FACW	Nt P-Forb	GROUNDNUT
APLHYE	10	Aplectrum hyemale		1	FAC-	Nt P-Forb	PUTTY ROOT
APOAND	3	Apocynum androsaemifolium		5	[UPL]	Nt P-Forb	SPREADING DOGBANE
APOCAN	3	Apocynum cannabinum		0	FAC	Nt P-Forb	INDIAN HEMP
APOSIB	3	Apocynum sibiricum		-1	FAC+	Nt P-Forb	CLASPING DOGBANE
AQUCAN	5	Aquilegia canadensis		1	FAC-	Nt P-Forb	WILD COLUMBINE
AQUVUL	*	AQUILEGIA VULGARIS		3	[FACU]	Ad P-Forb	GARDEN COLUMBINE
ARATHA	*	ARABIDOPSIS THALIANA		5	[UPL]	Ad A-Forb	MOUSE-EAR CRESS
ARACAN	7	Arabis canadensis		5	[UPL]	Nt B-Forb	SICKLE-POD
ARACAU	*	ARABIS CAUCASICA		5	[UPL]	Ad P-Forb	WALL ROCK CRESS
ARADIV	6	Arabis divaricarpa		3	FACU	Nt B-Forb	ROCK CRESS
ARADRU	6	Arabis drummondii		3	FACU	Nt B-Forb	DRUMMOND ROCK CRESS
ARAGLA	3	Arabis glabra		5	[UPL]	Nt B-Forb	TOWER MUSTARD
ARAHIR	6	Arabis hirsuta		3	FACU	Nt B-Forb	HAIRY ROCK CRESS
ARAHOL	10	Arabis holboellii		5	[UPL]	Nt B-Forb	ROCK CRESS
ARALAE	5	Arabis laevigata		5	[UPL]	Nt B-Forb	SMOOTH BANK CRESS
ARALYR	7	Arabis lyrata		4	FACU-	Nt B-Forb	SAND CRESS
ARAMIS	10	Arabis missouriensis var. deamii	SC	5	[UPL]	Nt B-Forb	MISSOURI ROCK CRESS

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ARAPER	9	Arabis perstellata	T	5	[UPL]	Nt P-Forb	ROCK CRESS
ARAPRO	*	ARABIS PROCURRENS		5	[UPL]	Ad P-Forb	HUNGARIAN ROCK CRESS
ARAELA	*	ARALIA ELATA		5	[UPL]	Ad Shrub	HERCULES-CLUB
ARAHIS	3	Aralia hispida		5	[UPL]	Nt Shrub	BRISTLY SARSAPARILLA
ARANUD	5	Aralia nudicaulis		3	FACU	Nt P-Forb	WILD SARSAPARILLA
ARARAC	8	Aralia racemosa		5	[UPL]	Nt P-Forb	SPIKENARD
ARCPUS	10	Arceuthobium pusillum		0	[FAC]	Nt Shrub	DWARF MISTLETOE
ARCLAP	*	ARCTIUM LAPPA		2	[FACU+]	Ad B-Forb	GREAT BURDOCK
ARCMIN	*	ARCTIUM MINUS		5	[UPL]	Ad B-Forb	COMMON BURDOCK
ARCUVA	8	Arctostaphylos uva-ursi		5	[UPL]	Nt Shrub	BEARBERRY
ARELAT	5	Arenaria lateriflora		3	[FACU]	Nt P-Forb	WOOD SANDWORT
AREMAC	10	Arenaria macrophylla	T	-2	[FACW-]	Nt P-Forb	BIG-LEAF SANDWORT
ARESER	*	ARENARIA SERPYLLIFOLIA		0	FAC	Ad A-Forb	THYME-LEAVED SANDWORT
ARESTR	10	Arenaria stricta		5	[UPL]	Nt P-Forb	ROCK SANDWORT
AREBUL	10	Arethusa bulbosa		-5	OBL	Nt P-Forb	DRAGON'S MOUTH
ARGALB	*	ARGEMONE ALBIFLORA		5	[UPL]	Ad A-Forb	WHITE PRICKLY POPPY
ARGMEX	*	ARGEMONE MEXICANA		5	[UPL]	Ad A-Forb	MEXICAN PRICKLY POPPY
ARIDRA	8	Arisaema dracontium		-3	FACW	Nt P-Forb	GREEN DRAGON
ARITRI	5	Arisaema triphyllum		-2	FACW-	Nt P-Forb	JACK-IN-THE-PULPIT
ARIBAS	3	Aristida basiramea		5	[UPL]	Nt A-Grass	FORK-TIPPED THREE-AWNED GRASS
ARIDIC	5	Aristida dichotoma	X	3	FACU	Nt A-Grass	POVERTY GRASS
ARILON	6	Aristida longispica	T	4	FACU-	Nt A-Grass	THREE-AWNED GRASS
ARINEC	4	Aristida necopina		5	[UPL]	Nt A-Grass	THREE-AWNED GRASS
ARIOLI	*	ARISTIDA OLIGANTHA		5	[UPL]	Ad A-Grass	PLAINS THREE-AWNED GRASS
ARIPUR	8	Aristida purpurascens		5	[UPL]	Nt P-Grass	THREE-AWNED GRASS
ARITUB	9	Aristida tuberculosa	T	5	[UPL]	Nt A-Grass	BEACH THREE-AWNED GRASS
ARICLE	*	ARISTOLOCHIA CLEMATITIS		5	[UPL]	Ad P-Forb	BIRTHWORT
ARIMAC	*	ARISTOLOCHIA MACROPHYLLA		5	[UPL]	Ad W-Vine	DUTCHMAN'S PIPE
ARISER	10	Aristolochia serpentaria	T	5	[UPL]	Nt P-Forb	VIRGINIA-SNAKEROOT
ARMLAC	8	Armoracia lacustris (A. aquatica)	T	-5	OBL	Nt P-Forb	LAKE CRESS
ARMRUS	*	ARMORACIA RUSTICANA		0	FAC	Ad P-Forb	HORSERADISH
ARNCOR	9	Arnica cordifolia	E	5	[UPL]	Nt P-Forb	HEART-LEAVED ARNICA
ARNMIN	*	ARNOSERIS MINIMA		5	[UPL]	Ad A-Forb	DWARF NIPPLEWORT
AROPRU	5	Aronia prunifolia (A. melanocarpa)		-3	FACW	Nt Shrub	BLACK CHOKEBERRY
ARRELA	*	ARRHENATHERUM ELATIUS		3	FACU	Ad P-Grass	TALL OATGRASS
ARTABR	*	ARTEMISIA ABROTANUM		5	[UPL]	Ad Shrub	SOUTHERNWOOD
ARTABS	*	ARTEMISIA ABSINTHIUM		5	[UPL]	Ad P-Forb	ABSINTHE WORMWOOD
ARTANN	*	ARTEMISIA ANNUA		3	FACU	Ad A-Forb	SWEET WORMWOOD
ARTBIE	*	ARTEMISIA BIENNIS		-2	FACW-	Ad B-Forb	BIENNIAL WORMWOOD
ARTCAM	5	Artemisia campestris		0	[FAC]	Nt B-Forb	WORMWOOD
ARTCAR	*	ARTEMISIA CARRUTHII		5	[UPL]	Ad P-Forb	KANSAS MUGWORT
ARTFRI	*	ARTEMISIA FRIGIDA		5	[UPL]	Ad P-Forb	PRAIRIE SAGEWORT
ARTLON	*	ARTEMISIA LONGIFOLIA		5	[UPL]	Ad P-Forb	LONG-LEAVED WORMWOOD
ARTLUD	8	Artemisia ludoviciana	T	5	[UPL]	Nt P-Forb	WHITE SAGE
ARTPON	*	ARTEMISIA PONTICA		5	[UPL]	Ad Shrub	WORMWOOD
ARTSTE	*	ARTEMISIA STELLERIANA		4	FACU-	Ad P-Forb	DUSTY MILLER
ARTVUL	*	ARTEMISIA VULGARIS		5	[UPL]	Ad P-Forb	MUGWORT
ARUDIO	*	ARUNCUS DIOICUS		3	FACU	Ad P-Forb	GOATSBEARD
ASACAN	5	Asarum canadense		5	[UPL]	Nt P-Forb	WILD-GINGER
ASCAMP	10	Asclepias amplexicaulis		5	[UPL]	Nt P-Forb	CLASPING MILKWEED

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ASCEXA	6	Asclepias exaltata		5	[UPL]	Nt P-Forb	POKE MILKWEED
ASCHIR	10	Asclepias hirtella	T	5	[UPL]	Nt P-Forb	TALL GREEN MILKWEED
ASCINC	6	Asclepias incarnata		-5	OBL	Nt P-Forb	SWAMP MILKWEED
ASCOVA	10	Asclepias ovalifolia	E	5	[UPL]	Nt P-Forb	DWARF MILKWEED
ASCPUR	10	Asclepias purpurascens	SC	3	FACU	Nt P-Forb	PURPLE MILKWEED
ASCSPE	*	ASCLEPIAS SPECIOSA		0	[FAC]	Ad P-Forb	SHOWY MILKWEED
ASCSUL	9	Asclepias sullivantii	T	5	[UPL]	Nt P-Forb	SULLIVANT'S MILKWEED
ASCSYR	1	Asclepias syriaca		5	[UPL]	Nt P-Forb	COMMON MILKWEED
ASCTUB	5	Asclepias tuberosa		5	[UPL]	Nt P-Forb	BUTTERFLY-WEED
ASCVER	1	Asclepias verticillata		5	[UPL]	Nt P-Forb	WHORLED MILKWEED
ASCVIR	8	Asclepias viridiflora		5	[UPL]	Nt P-Forb	GREEN MILKWEED
ASITRI	9	Asimina triloba		0	FAC	Nt Tree	PAWPAW
ASPOFF	*	ASPARAGUS OFFICINALIS		3	FACU	Ad P-Forb	ASPARAGUS
ASPMON	10	Asplenium montanum	X	5	[UPL]	Nt Fern	MOUNTAIN SPLEENWORT
ASPPLA	2	Asplenium platyneuron		3	FACU	Nt Fern	EBONY SPLEENWORT
ASPRHI	10	Asplenium rhizophyllum	T	5	[UPL]	Nt Fern	WALKING FERN
ASPRUT	10	Asplenium ruta-muraria	E	5	[UPL]	Nt Fern	WALL-RUE
ASPSCO	10	Asplenium scolopendrium (Phyllitis s.)	E	5	[UPL]	Nt Fern	HART'S-TONGUE FERN
ASPTRI	10	Asplenium trichomanes		5	[UPL]	Nt Fern	MAIDENHAIR SPLEENWORT
ASPTRR	10	Asplenium trichomanes-ramosum (A. viride)	T	5	[UPL]	Nt Fern	GREEN SPLEENWORT
ASTBOR	9	Aster borealis		-5	[OBL]	Nt P-Forb	NORTHERN BOG-ASTER
ASTBRA	*	ASTER BRACHYACTIS		0	FAC	Ad P-Forb	RAYLESS ASTER
ASTCIL	4	Aster ciliolatus		4	[FACU-]	Nt P-Forb	NORTHERN HEART-LEAVED ASTER
ASTCOR	4	Aster cordifolius		5	[UPL]	Nt P-Forb	HEART-LEAVED ASTER
ASTDUM	7	Aster dumosus		-1	FAC+	Nt P-Forb	BUSHY ASTER
ASTERI	3	Aster ericoides (Virgulus e.)		4	FACU-	Nt P-Forb	HEATH ASTER
ASTFIR	4	Aster firmus (A. lucidulus)		-5	OBL	Nt P-Forb	SMOOTH SWAMP ASTER
ASTFUR	10	Aster furcatus	T	2	[FACU+]	Nt P-Forb	FORKED ASTER
ASTLAE	5	Aster laevis		5	[UPL]	Nt P-Forb	SMOOTH ASTER
ASTLAN	2	Aster lanceolatus		-3	[FACW]	Nt P-Forb	EASTERN LINED ASTER
ASTLAT	2	Aster lateriflorus		-2	FACW-	Nt P-Forb	SIDE-FLOWERING ASTER
ASTLON	9	Aster longifolius		-2	[FACW-]	Nt P-Forb	LONG-LEAVED ASTER
ASTMAC	4	Aster macrophyllus		5	[UPL]	Nt P-Forb	BIG-LEAVED ASTER
ASTMOD	8	Aster modestus	T	-1	FAC+	Nt P-Forb	GREAT NORTHERN ASTER
ASTNEM	10	Aster nemoralis		-5	OBL	Nt P-Forb	BOG ASTER
ASTNOV	3	Aster novae-angliae (Virgulus n.)		-3	FACW	Nt P-Forb	NEW ENGLAND ASTER
ASTONT	6	Aster ontarionis		0	[FAC]	Nt P-Forb	ONTARIO ASTER
ASTOOL	4	Aster oolentangiensis (A. azureus)		5	[UPL]	Nt P-Forb	PRAIRIE HEART-LEAVED ASTER
ASTPAT	*	ASTER PATERNUS		5	[UPL]	Ad P-Forb	WHITE TOPPED ASTER
ASTPIL	1	Aster pilosus		2	FACU+	Nt P-Forb	HAIRY ASTER
ASTPRA	6	Aster praealtus	SC	-3	FACW	Nt P-Forb	WILLOW ASTER
ASTPUN	5	Aster puniceus (A. lucidulus)		-5	OBL	Nt P-Forb	SWAMP ASTER
ASTSAG	2	Aster sagittifolius		5	[UPL]	Nt P-Forb	ARROW-LEAVED ASTER
ASTSER	10	Aster sericeus (Virgulus s.)	T	5	[UPL]	Nt P-Forb	WESTERN SILVER-LEAVED ASTER
ASTSHO	5	Aster shortii		5	[UPL]	Nt P-Forb	SHORT'S ASTER
ASTSOL	*	ASTER SOLIDAGINEUS		5	[UPL]	Ad P-Ford	NARROWLEAF WHITETOP ASTER
ASTSUB	*	ASTER SUBULATUS		-5	[OBL]	Ad A-Forb	SMALL SALT-MARSH ASTER
ASTTAT	*	ASTER TATARICUS		5	[UPL]	Ad P-Forb	TATARIAN ASTER
ASTUMB	5	Aster umbellatus		-3	FACW	Nt P-Forb	TALL FLAT-TOP WHITE ASTER

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ASTCAN	9	Astragalus canadensis	T	-1	FAC+	Nt P-Forb	CANADIAN MILK-VETCH
ASTCIC	*	ASTRAGALUS CICER		5	[UPL]	Ad P-Forb	CHICK-PEA MILK-VETCH
ASTNEG	9	Astragalus neglectus	SC	4	FACU-	Nt P-Forb	COOPER'S MILK-VETCH
ATHFIL	4	Athyrium filix-femina		0	FAC	Nt Fern	LADY FERN
ATHPYC	10	Athyrium pycnocarpon		1	FAC-	Nt Fern	NARROW-LEAVED SPLEENWORT
ATHTHE	6	Athyrium thelypterioides		0	FAC	Nt Fern	SILVERY SPLEENWORT
ATRHOR	*	ATRIPLEX HORTENSIS		0	FAC	Ad A-Forb	GARDEN ORACH
ATRPAT	*	ATRIPLEX PATULA		-2	FACW-	Ad A-Forb	SPEARSCALE
ATRROS	*	ATRIPLEX ROSEA		2	FACU+	Ad A-Forb	SALTBUSH
ATRBEL	*	ATROPA BELLADONNA		5	[UPL]	Ad P-Forb	DEADLY NIGHTSHADE
AURFLA	10	Aureolaria flava		5	[UPL]	Nt P-Forb	SMOOTH FALSE FOXGLOVE
AURPED	10	Aureolaria pedicularia		5	[UPL]	Nt A-Forb	ANNUAL FALSE FOXGLOVE
AURVIR	10	Aureolaria virginica		5	[UPL]	Nt P-Forb	DOWNY FALSE FOXGLOVE
AVEFAT	*	AVENA FATUA		5	[UPL]	Ad A-Grass	WILD OATS
AVESAT	*	AVENA SATIVA		5	[UPL]	Ad A-Grass	OATS
AZOCAR	10	Azolla caroliniana		-5	[OBL]	Nt Fern	WATER FERN
BAPLAC	10	Baptisia lactea (B. leucantha)	SC	3	FACU	Nt P-Forb	WHITE FALSE INDIGO
BAPLEU	10	Baptisia leucophaea	E	5	[UPL]	Nt P-Forb	CREAM WILD INDIGO
BAPTIN	10	Baptisia tinctoria		5	[UPL]	Nt P-Forb	WILD INDIGO
BARORT	10	Barbarea orthoceras		-5	OBL	Nt B-Forb	NORTHERN WINTER CRESS
BARVER	*	BARBAREA VERNA		5	[UPL]	Ad B-Forb	EARLY WINTER CRESS
BARVUL	*	BARBAREA VULGARIS		0	FAC	Ad B-Forb	YELLOW ROCKET
BARPAN	10	Bartonia paniculata	T	-5	[OBL]	Nt A-Forb	PANICLED SCREW-STEM
BARVIR	7	Bartonia virginica		-4	FACW+	Nt A-Forb	SCREW-STEM
BECSYZ	4	Beckmannia syzigachne	T	-5	OBL	Nt A-Forb	SLOUGH GRASS
BELCHI	*	BELAMCANDA CHINENSIS		5	[UPL]	Ad P-Forb	BLACKBERRY-LILY
BELPER	*	BELLIS PERENNIS		5	[UPL]	Ad P-Forb	ENGLISH DAISY
BERTHU	*	BERBERIS THUNBERGII		4	FACU-	Ad Shrub	JAPANESE BARBERRY
BERVUL	*	BERBERIS VULGARIS		3	FACU	Ad Shrub	COMMON BARBERRY
BERINC	*	BERTEROA INCANA		5	[UPL]	Ad A-Forb	HOARY ALYSSUM
BERERE	10	Berula erecta (B. pusilla)	T	-5	OBL	Nt P-Forb	WATER-PARSNIP
BESBUL	10	Besseya bullii	T	5	[UPL]	Nt P-Forb	KITTENTAILS
BETVUL	*	BETA VULGARIS		5	[UPL]	Ad B-Forb	BEET
BETALL	7	Betula alleghaniensis		0	FAC	Nt Tree	YELLOW BIRCH
BETMUR	10	Betula murrayana	SC	-4	[FACW+]	Nt Tree	MURRAY BIRCH
BETPAP	2	Betula papyrifera		2	FACU+	Nt Tree	PAPER BIRCH
BETPEN	*	BETULA PENDULA		-4	[FACW+]	Ad Tree	EUROPEAN WHITE BIRCH
BETPOP	4	Betula populifolia		0	FAC	Nt Tree	GRAY BIRCH
BETPUM	8	Betula pumila		-5	OBL	Nt Shrub	BOG BIRCH
BIDARI	1	Bidens aristosus		-3	FACW	Nt A-Forb	SWAMP-MARIGOLD
BIDCER	3	Bidens cernuus		-5	OBL	Nt A-Forb	NODDING BUR-MARIGOLD
BIDCOM	5	Bidens comosus		-3	FACW	Nt A-Forb	SWAMP TICKSEED
BIDCON	5	Bidens connatus		-5	OBL	Nt A-Forb	PURPLE-STEMMED TICKSEED
BIDCOR	7	Bidens coronatus		-5	OBL	Nt A-Forb	TALL SWAMP-MARIGOLD
BIDDIS	7	Bidens discoideus		-3	FACW	Nt A-Forb	SWAMP BEGGAR-TICKS
BIDFRO	1	Bidens frondosus		-3	FACW	Nt A-Forb	COMMON BEGGAR-TICKS
BIDPOL	*	BIDENS POLYLEPIS		4	[FACU-]	Ad A-Forb	OZARK TICKSEED SUNFLOWER
BIDVUL	0	Bidens vulgatus		-3	[FACW]	Nt A-Forb	TALL BEGGAR-TICKS
BLECIL	7	Blephilia ciliata		5	[UPL]	Nt P-Forb	OHIO HORSE MINT
BLEHIR	8	Blephilia hirsuta		4	FACU-	Nt P-Forb	WOOD MINT

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
BOECYL	**5**	Boehmeria cylindrica		-5	OBL	Nt P-Forb	FALSE NETTLE
BOLFLU	**6**	Bolboschoenus fluviatilis (Scirpus f.)		-5	OBL	Nt P-Sedge	BULRUSH
BOLMAR	*	BOLBOSCHOENUS MARITIMUS (SCIRPUS PALUDOSUS)		-5	[OBL]	Ad P-Sedge	BULRUSH
BOLAST	**5**	Boltonia asteroides		-3	FACW	Nt P-Forb	FALSE ASTER
BOROFF	*	BORAGO OFFICINALIS		5	[UPL]	Ad A-Forb	BORAGE
BOTACU	**10**	Botrychium acuminatum	**E**	5	[UPL]	Nt Fern	MOONWORT
BOTCAM	**10**	Botrychium campestre	**T**	5	[UPL]	Nt Fern	PRAIRIE MOONWORT
BOTDIS	**5**	Botrychium dissectum		0	FAC	Nt Fern	CUT-LEAVED GRAPE-FERN
BOTHES	**10**	Botrychium hesperium	**T**	5	[UPL]	Nt Fern	WESTERN MOONWORT
BOTLAN	**7**	Botrychium lanceolatum		-3	FACW	Nt Fern	LANCE-LEAVED MOONWORT
BOTLUN	**7**	Botrychium lunaria		-3	FACW	Nt Fern	MOONWORT
BOTMAT	**5**	Botrychium matricariaefolium		3	FACU	Nt Fern	DAISY-LEAVED MOONWORT
BOTMIN	**7**	Botrychium minganense		5	[UPL]	Nt Fern	MINGAN MOONWORT
BOTMOR	**10**	Botrychium mormo	**T**	5	[UPL]	Nt Fern	GOBLIN MOONWORT
BOTMUL	**5**	Botrychium multifidum		3	FACU	Nt Fern	LEATHER GRAPE-FERN
BOTONE	**7**	Botrychium oneidense		5	[UPL]	Nt Fern	BLUNT-LEAVED GRAPE-FERN
BOTPAL	**10**	Botrychium pallidum	**SC**	5	[UPL]	Nt Fern	PALE MOONWORT
BOTRUG	**6**	Botrychium rugulosum		5	[UPL]	Nt Fern	TERNATE GRAPE-FERN
BOTSIM	**5**	Botrychium simplex		0	FAC	Nt Fern	LEAST MOONWORT
BOTVIR	**5**	Botrychium virginianum		3	FACU	Nt Fern	RATTLESNAKE FERN
BOUCUR	**10**	Bouteloua curtipendula	**T**	5	[UPL]	Nt P-Grass	SIDE-OATS GRAMA
BOUGRA	*	BOUTELOUA GRACILIS		5	[UPL]	Ad P-Grass	SLENDER GRAMA GRASS
BRAERE	**7**	Brachyelytrum erectum		5	[UPL]	Nt P-Grass	LONG-AWNED WOOD GRASS
BRASCH	**6**	Brasenia schreberi		-5	OBL	Nt P-Grass	WATER SHIELD
BRAALB	*	BRASSICA ALBA		5	[UPL]	Ad A-Forb	WHITE MUSTARD
BRAJUN	*	BRASSICA JUNCEA		5	[UPL]	Ad A-Forb	INDIAN MUSTARD
BRAKAB	*	BRASSICA KABER		5	[UPL]	Ad A-Forb	WILD MUSTARD
BRANAP	*	BRASSICA NAPUS		5	[UPL]	Ad A-Forb	RUTABAGA
BRANIG	*	BRASSICA NIGRA		5	[UPL]	Ad A-Forb	BLACK MUSTARD
BRARAP	*	BRASSICA RAPA		5	[UPL]	Ad A-Forb	FIELD MUSTARD
BRAHUM	**10**	Braya humilis	**T**	3	FACU	Nt P-Forb	LOW NORTHERN ROCK CRESS
BRIMED	*	BRIZA MEDIA		0	FAC	Ad P-Grass	QUAKING GRASS
BROBRI	*	BROMUS BRIZIFORMIS		5	[UPL]	Ad A-Grass	RATTLESNAKE-CHESS
BROCIL	**6**	Bromus ciliatus		-3	FACW	Nt P-Grass	FRINGED BROME
BROCOM	*	BROMUS COMMUTATUS		5	[UPL]	Ad A-Grass	HAIRY CHESS
BROERE	*	BROMUS ERECTUS		5	[UPL]	Ad P-Grass	ERECT BROME
BROINE	*	BROMUS INERMIS		5	[UPL]	Ad P-Grass	SMOOTH BROME
BROJAP	*	BROMUS JAPONICUS		3	FACU	Ad A-Grass	JAPANESE BROME
BROKAL	**8**	Bromus kalmii		0	FAC	Nt P-Grass	PRAIRIE BROME
BROLAT	**6**	Bromus latiglumis		-2	FACW-	Nt P-Grass	EAR-LEAVED BROME
BROMOF	*	BROMUS MOLLIFORMIS		5	[UPL]	Ad A-Grass	BROME
BROMOS	*	BROMUS MOLLIS		5	[UPL]	Ad A-Grass	SOFT CHESS
BROPUB	**5**	Bromus pubescens		3	[FACU]	Nt P-Grass	CANADA BROME
BROPUM	**10**	Bromus pumpellianus	**T**	5	[UPL]	Nt P-Grass	PUMPELL'S BROME
BRORAC	*	BROMUS RACEMOSUS		5	[UPL]	Ad A-Grass	SMOOTH CHESS
BROSEC	*	BROMUS SECALINUS		5	[UPL]	Ad A-Grass	CHESS
BROSQU	*	BROMUS SQUARROSUS		5	[UPL]	Ad A-Grass	BROME
BROSTE	*	BROMUS STERILIS		5	[UPL]	Ad A-Grass	POVERTY BROME
BROTEC	*	BROMUS TECTORUM		5	[UPL]	Ad A-Grass	CHEAT GRASS

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
BUCAME	**10**	Buchnera americana	**X**	1	FAC-	Nt P-Forb	BLUE-HEARTS
BUDDAV	*	BUDDLEJA DAVIDII		5	[UPL]	Ad Shrub	BUTTERFLY-BUSH
BULCAP	**4**	Bulbostylis capillaris		2	FACU+	Nt A-Sedge	SEDGE
BUNORI	*	BUNIAS ORIENTALIS		5	[UPL]	Ad B-Forb	TURKISH ROCKET
BUPROT	*	BUPLEURUM ROTUNDIFOLIUM		5	[UPL]	Ad A-Forb	THOROUGHWAX
BUTUMB	*	BUTOMUS UMBELLATUS		-5	OBL	Ad P-Forb	FLOWERING-RUSH
CABCAR	*	CABOMBA CAROLINIANA		-5	OBL	Ad P-Forb	FANWORT
CACATR	**10**	Cacalia atriplicifolia		5	[UPL]	Nt P-Forb	PALE INDIAN PLANTAIN
CACPLA	**10**	Cacalia plantaginea (C. tuberosa)	**SC**	0	[FAC]	Nt P-Forb	TUBEROUS INDIAN PLANTAIN
CAKEDE	**5**	Cakile edentula		3	FACU	Nt A-Forb	SEA ROCKET
CALCAN	**3**	Calamagrostis canadensis		-5	OBL	Nt P-Grass	BLUE-JOINT GRASS
CALEPI	*	CALAMAGROSTIS EPIGEIOS		0	FAC	Ad P-Grass	REEDGRASS
CALINE	**8**	Calamagrostis inexpansa		-4	FACW+	Nt P-Grass	BOG REEDGRASS
CALLAC	**10**	Calamagrostis lacustris	**T**	-3	[FACW]	Nt P-Grass	NORTHERN REEDGRASS
CALSTR	**10**	Calamagrostis stricta	**T**	-4	[FACW+]	Nt P-Grass	NARROW-LEAVED REEDGRASS
CALARK	**10**	Calamintha arkansana		-3	[FACW]	Nt P-Forb	LOW CALAMINT
CALLON	**10**	Calamovilfa longifolia		5	[UPL]	Nt P-Grass	SAND REED GRASS
CALOFF	*	CALENDULA OFFICINALIS		5	[UPL]	Ad A-Forb	POT MARIGOLD
CALLPA	**10**	Calla palustris		-5	OBL	Nt P-Forb	WILD CALLA
CALINV	*	CALLIRHOE INVOLUCRATA		5	[UPL]	Ad P-Forb	POPPY MALLOW
CALCHI	*	CALLISTEPHUS CHINENSIS		5	[UPL]	Ad A-Forb	CHINA ASTER
CALHER	**9**	Callitriche hermaphroditica	**SC**	-5	OBL	Nt A-Forb	AUTUMNAL WATER-STARWORT
CALHET	**9**	Callitriche heterophylla	**T**	-5	OBL	Nt A-Forb	LARGE WATER-STARWORT
CALTER	*	CALLITRICHE TERRESTRIS		-3	[FACW]	Ad A-Forb	TERRESTRIAL WATER-STARWORT
CALVER	**6**	Callitriche verna (C. palustris)		-5	OBL	Nt P-Forb	WATER-STARWORT
CALVUL	*	CALLUNA VULGARIS		5	[UPL]	Ad Shrub	HEATHER or LING
CALTUB	**9**	Calopogon tuberosus		-5	OBL	Nt P-Forb	GRASS-PINK
CALTPA	**6**	Caltha palustris		-5	OBL	Nt P-Forb	MARSH-MARIGOLD
CALSER	*	CALYLOPHUS SERRULATUS (OENOTHERA S.)		5	[UPL]	Ad P-Forb	TOOTHED EVENING-PRIMROSE
CALBUL	**10**	Calypso bulbosa	**T**	-3	FACW	Nt P-Forb	CALYPSO
CALHED	*	CALYSTEGIA HEDERACEA		5	[UPL]	Ad P-Forb	JAPANESE BINDWEED
CALSEP	**2**	Calystegia sepium		0	FAC	Nt P-Forb	HEDGE BINDWEED
CALSPI	**8**	Calystegia spithamaea		5	[UPL]	Nt P-Forb	LOW BINDWEED
CAMSCI	**9**	Camassia scilloides	**T**	-1	FAC+	Nt P-Forb	WILD HYACINTH
CAMMIC	*	CAMELINA MICROCARPA		5	[UPL]	Ad A-Forb	SMALL-FRUITED FALSE FLAX
CAMSAT	*	CAMELINA SATIVA		1	FAC-	Ad A-Forb	FALSE FLAX
CAMAME	**8**	Campanula americana		0	FAC	Nt A-Forb	TALL BELLFLOWER
CAMAPR	**7**	Campanula aparinoides		-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CAMAPU	**7**	Campanula aparinoides ssp. uliginosa		-5	[OBL]	Nt P-Forb	MARSH BELLFLOWER
CAMCAR	*	CAMPANULA CARPATICA		5	[UPL]	Ad P-Forb	TUSSOCK BELLFLOWER
CAMGLO	*	CAMPANULA GLOMERATA		5	[UPL]	Ad P-Forb	CLUSTERED BELLFLOWER
CAMMED	*	CAMPANULA MEDIUM		5	[UPL]	Ad P-Forb	CANTERBURY BELLS
CAMPER	*	CAMPANULA PERSICIFOLIA		5	[UPL]	Ad P-Forb	WILLOW HAREBELL
CAMRAP	*	CAMPANULA RAPUNCULOIDES		5	[UPL]	Ad P-Forb	ROVING BELLFLOWER
CAMROT	**6**	Campanula rotundifolia		1	FAC-	Nt P-Forb	HAREBELL
CAMTRA	*	CAMPANULA TRACHELIUM		5	[UPL]	Ad P-Forb	THROATWORT
CAMRAD	*	CAMPSIS RADICANS		0	[FAC]	Ad W-Vine	TRUMPET VINE
CANSAT	*	CANNABIS SATIVA		0	FAC	Ad A-Forb	HEMP
CAPBUR	*	CAPSELLA BURSA-PASTORIS		1	FAC-	Ad A-Forb	SHEPHERD'S PURSE

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CARARB	*	CARAGANA ARBORESCENS		5	[UPL]	Ad Shrub	PEA-TREE
CARBUL	4	Cardamine bulbosa		-5	OBL	Nt P-Forb	SPRING CRESS
CARDOU	6	Cardamine douglassii		-3	FACW	Nt P-Forb	PINK SPRING CRESS
CARFLE	*	CARDAMINE FLEXUOSA		5	[UPL]	Ad A-Forb	BITTER CRESS
CARHIR	*	CARDAMINE HIRSUTA		3	FACU	Ad A-Forb	HOARY BITTER CRESS
CARIMP	*	CARDAMINE IMPATIENS		5	[UPL]	Ad A-Forb	BITTER CRESS
CARPAR	10	Cardamine parviflora		0	FAC	Nt A-Forb	DRYLAND BITTER CRESS
CARPEN	1	Cardamine pensylvanica		-4	FACW+	Nt B-Forb	PENNSYLVANIA BITTER CRESS
CARPRA	10	Cardamine pratensis		-5	OBL	Nt P-Forb	CUCKOO-FLOWER
CARDRA	*	CARDARIA DRABA		5	[UPL]	Ad P-Forb	HOARY CRESS
CARPUB	*	CARDARIA PUBESCENS		5	[UPL]	Ad P-Forb	WHITE-TOP
CARHAL	*	CARDIOSPERMUM HALICACABUM		0	FAC	Ad A-Forb	BALLOON-VINE
CARACA	*	CARDUUS ACANTHOIDES		5	[UPL]	Ad B-Forb	PLUMELESS THISTLE
CARCRI	*	CARDUUS CRISPUS		5	[UPL]	Ad B-Forb	WELTED PLUMELESS THISTLE
CARNUT	*	CARDUUS NUTANS		5	UPL	Ad B-Forb	MUSK THISTLE
CXACUT	*	CAREX ACUTIFORMIS		-5	[OBL]	Ad P-Sedge	SEDGE
CXADUS	4	Carex adusta		5	[UPL]	Nt P-Sedge	SEDGE
CXAGGR	1	Carex aggregata		5	[UPL]	Nt P-Sedge	SEDGE
CXALAT	10	Carex alata		-5	[OBL]	Nt P-Sedge	WINGED SEDGE
CXALBI	3	Carex albicans (C. artitecta, C. emmonsii)		5	[UPL]	Nt P-Sedge	SEDGE
CXALBO	8	Carex albolutescens	T	-3	FACW	Nt P-Sedge	GREENISH-WHITE SEDGE
CXALBU	5	Carex albursina		5	[UPL]	Nt P-Sedge	SEDGE
CXALOP	3	Carex alopecoidea		-4	FACW+	Nt P-Sedge	SEDGE
CXAMPH	8	Carex amphibola		-2	FACW-	Nt P-Sedge	SEDGE
CXANNE	1	Carex annectens		-3	FACW	Nt P-Sedge	SEDGE
CXAQUA	7	Carex aquatilis		-5	OBL	Nt P-Sedge	SEDGE
CXARTA	8	Carex arcta		-5	[OBL]	Nt P-Sedge	SEDGE
CXARTT	3	Carex arctata		5	UPL	Nt P-Sedge	SEDGE
CXARGY	6	Carex argyrantha		4	[FACU-]	Nt P-Sedge	SEDGE
CXASSI	9	Carex assiniboinensis	T	5	[UPL]	Nt P-Sedge	ASSINIBOIA SEDGE
CXATHE	5	Carex atherodes		-5	OBL	Nt P-Sedge	SEDGE
CXATLA	7	Carex atlantica (C. howei)		-3	FACW	Nt P-Sedge	SEDGE
CXATRA	10	Carex atratiformis	T	-2	FACW-	Nt P-Sedge	SEDGE
CXAURE	3	Carex aurea		-4	FACW+	Nt P-Sedge	SEDGE
CXBACK	8	Carex backii		5	[UPL]	Nt P-Sedge	SEDGE
CXBEBB	4	Carex bebbii		-5	OBL	Nt P-Sedge	SEDGE
CXBICK	10	Carex bicknellii		1	FAC-	Nt P-Sedge	SEDGE
CXBLAN	1	Carex blanda		0	FAC	Nt P-Sedge	SEDGE
CXBREV	3	Carex brevior		0	FAC	Nt P-Sedge	SEDGE
CXBROM	6	Carex bromoides		-4	FACW+	Nt P-Sedge	SEDGE
CXBRUN	5	Carex brunnescens		-3	FACW	Nt P-Sedge	SEDGE
CXBUSH	*	CAREX BUSHII		-3	[FACW]	Ad P-Sedge	BUSH'S SEDGE
CXBUXB	10	Carex buxbaumii		-5	OBL	Nt P-Sedge	SEDGE
CXCANE	8	Carex canescens		-5	OBL	Nt P-Sedge	SEDGE
CXCAPI	9	Carex capillaris		-3	FACW	Nt P-Sedge	SEDGE
CXCARE	10	Carex careyana		5	[UPL]	Nt P-Sedge	SEDGE
CXCAST	6	Carex castanea		-4	FACW+	Nt P-Sedge	SEDGE
CXCEPD	5	Carex cephaloidea		2	FACU+	Nt P-Sedge	SEDGE
CXCEPP	3	Carex cephalophora		3	FACU	Nt P-Sedge	SEDGE
CXCHOR	10	Carex chordorrhiza		-5	OBL	Nt P-Sedge	SEDGE

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CXCOMM	2	Carex communis		5	[UPL]	Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa		-5	OBL	Nt P-Sedge	SEDGE
CXCONC	10	Carex concinna	SC	2	FACU+	Nt P-Sedge	BEAUTY SEDGE
CXCONJ	10	Carex conjuncta	T	-4	[FACW+]	Nt P-Sedge	SEDGE
CXCONO	9	Carex conoidea		2	FACU+	Nt P-Sedge	BEAUTY SEDGE
CXCRAE	10	Carex crawei		-3	FACW	Nt P-Sedge	SEDGE
CXCRAF	4	Carex crawfordii		-1	FAC+	Nt P-Sedge	SEDGE
CXCRIN	4	Carex crinita		-4	FACW+	Nt P-Sedge	SEDGE
CXCRIS	3	Carex cristatella		-4	FACW+	Nt P-Sedge	SEDGE
CXCRUS	10	Carex crus-corvi	T	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	Carex cryptolepis		-5	OBL	Nt P-Sedge	SEDGE
CXCUMU	8	Carex cumulata		4	FACU-	Nt P-Sedge	SEDGE
CXDAVI	8	Carex davisii	SC	-1	FAC+	Nt P-Sedge	DAVIS' SEDGE
CXDEBD	6	Carex debilis		-3	FACW	Nt P-Sedge	SWAMP SEDGE
CXDEBR	10	Carex debilis var. rudgei		-3	[FACW]	Nt P-Sedge	SEDGE
CXDECO	10	Carex decomposita	X	-5	OBL	Nt P-Sedge	LOG SEDGE
CXDEFL	5	Carex deflexa		3	[FACU]	Nt P-Sedge	SEDGE
CXDEWE	3	Carex deweyana		4	FACU-	Nt P-Sedge	SEDGE
CXDIAN	8	Carex diandra		-5	OBL	Nt P-Sedge	SEDGE
CXDIGI	5	Carex digitalis		5	[UPL]	Nt P-Sedge	SEDGE
CXDISP	10	Carex disperma		-5	OBL	Nt P-Sedge	SEDGE
CXDURI	*	CAREX DURIUSCULA (C. STENOPHYLLA)		5	[UPL]	Ad P-Sedge	SEDGE
CXEBUR	7	Carex eburnea		4	FACU-	Nt P-Sedge	SEDGE
CXECHI	6	Carex echinata (cephalantha/angustior)		-5	OBL	Nt P-Sedge	SEDGE
CXEMOR	7	Carex emoryi		-5	OBL	Nt P-Sedge	SEDGE
CXEXIL	10	Carex exilis		-5	OBL	Nt P-Sedge	SEDGE
CXFEST	8	Carex festucacea	SC	0	FAC	Nt P-Sedge	FESCUE SEDGE
CXFLAC	*	CAREX FLACCA		0	[FAC]	Ad P-Sedge	SEDGE
CXFLAV	4	Carex flava		-5	OBL	Nt P-Sedge	SEDGE
CXFOEN	3	Carex foenea (C. aenea)		5	[UPL]	Nt P-Sedge	SEDGE
CXFOLL	10	Carex folliculata		-5	[OBL]	Nt P-Sedge	SEDGE
CXFORM	10	Carex formosa		-2	FACW-	Nt P-Sedge	SEDGE
CXFRAN	4	Carex frankii	SC	-5	OBL	Nt P-Sedge	FRANK'S SEDGE
CXGARB	8	Carex garberi		-3	FACW	Nt P-Sedge	SEDGE
CXGRAS	5	Carex gracilescens		5	[UPL]	Nt P-Sedge	SEDGE
CXGRAA	4	Carex gracillima		3	FACU	Nt P-Sedge	SEDGE
CXGRAN	2	Carex granularis		-4	FACW+	Nt P-Sedge	SEDGE
CXGRAV	10	Carex gravida	X	5	[UPL]	Nt P-Sedge	SEDGE
CXGRAY	6	Carex grayi		-4	FACW+	Nt P-Sedge	SEDGE
CXGRIS	3	Carex grisea		-3	[FACW]	Nt P-Sedge	SEDGE
CXGYNA	3	Carex gynandra		-4	[FACW+]	Nt P-Sedge	SEDGE
CXGYNO	10	Carex gynocrates		-5	OBL	Nt P-Sedge	SEDGE
CXHAYD	8	Carex haydenii	X	-5	[OBL]	Nt P-Sedge	HAYDEN'S SEDGE
CXHELE	10	Carex heleonastes	E	-5	[OBL]	Nt P-Sedge	SEDGE
CXHIRS	3	Carex hirsutella		5	[UPL]	Nt P-Sedge	SEDGE
CXHIRA	*	CAREX HIRTA		4	[FACU-]	Ad P-Sedge	SEDGE
CXHIRI	5	Carex hirtifolia		5	[UPL]	Nt P-Sedge	SEDGE
CXHITC	5	Carex hitchcockiana		5	[UPL]	Nt P-Sedge	SEDGE
CXHOUG	5	Carex houghtoniana		5	[UPL]	Nt P-Sedge	SEDGE
CXHYAL	4	Carex hyalinolepis		-5	OBL	Nt P-Sedge	SEDGE

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CXHYST	2	Carex hystericina		-5	OBL	Nt P-Sedge	SEDGE
CXINTE	3	Carex interior		-5	OBL	Nt P-Sedge	SEDGE
CXINTU	3	Carex intumescens		-4	FACW+	Nt P-Sedge	SEDGE
CXJAME	8	Carex jamesii		5	[UPL]	Nt P-Sedge	JAMES' SEDGE
CXLACU	6	Carex lacustris		-5	OBL	Nt P-Sedge	SEDGE
CXLAEV	8	Carex laevivaginata		-5	OBL	Nt P-Sedge	SEDGE
CXLASI	8	Carex lasiocarpa		-5	OBL	Nt P-Sedge	SEDGE
CXLAXC	8	Carex laxiculmis		5	[UPL]	Nt P-Sedge	SEDGE
CXLAXF	8	Carex laxiflora		0	[FAC]	Nt P-Sedge	SEDGE
CXLEAV	*	CAREX LEAVENWORTHII		5	[UPL]	Ad P-Sedge	SEDGE
CXLENT	10	Carex lenticularis		-5	OBL	Nt P-Sedge	SEDGE
CXLEPA	5	Carex leptalea		-5	OBL	Nt P-Sedge	SEDGE
CXLEPO	3	Carex leptonervia		0	FAC	Nt P-Sedge	SEDGE
CXLIMO	10	Carex limosa		-5	OBL	Nt P-Sedge	BOG SEDGE
CXLIVI	10	Carex livida		-5	OBL	Nt P-Sedge	SEDGE
CXLONG	6	Carex longii		-5	OBL	Nt P-Sedge	SEDGE
CXLUCO	4	Carex lucorum		5	[UPL]	Nt P-Sedge	SEDGE
CXLUPS	10	Carex lupuliformis	T	-4	FACW+	Nt P-Sedge	SEDGE
CXLUPA	4	Carex lupulina		-5	OBL	Nt P-Sedge	SEDGE
CXLURI	3	Carex lurida		-5	OBL	Nt P-Sedge	SEDGE
CXMEAD	8	Carex meadii		0	FAC	Nt P-Sedge	SEDGE
CXMEDI	10	Carex media	T	0	FAC	Nt P-Sedge	SEDGE
CXMERR	4	Carex merritt-fernaldii		5	[UPL]	Nt P-Sedge	SEDGE
CXMESO	*	CAREX MESOCHOREA		5	[UPL]	Ad P-Sedge	SEDGE
CXMICH	10	Carex michauxiana		-5	OBL	Nt P-Sedge	SEDGE
CXMOLE	2	Carex molesta		2	[FACU+]	Nt P-Sedge	SEDGE
CXMUHL	7	Carex muhlenbergii		5	[UPL]	Nt P-Sedge	SEDGE
CXMURI	*	CAREX MURICATA		5	[UPL]	Ad P-Sedge	SEDGE
CXMUSK	6	Carex muskingumensis		-5	OBL	Nt P-Sedge	SEDGE
CXNIGR	7	Carex nigra	E	-5	[OBL]	Nt P-Sedge	BLACK SEDGE
CXNORM	5	Carex normalis		-3	FACW	Nt P-Sedge	SEDGE
CXNOVA	9	Carex novae-angliae	T	5	[UPL]	Nt P-Sedge	NEW ENGLAND SEDGE
CXOLIC	8	Carex oligocarpa	T	5	[UPL]	Nt P-Sedge	SEDGE
CXOLIS	10	Carex oligosperma		-5	OBL	Nt P-Sedge	SEDGE
CXORMO	5	Carex ormostachya		5	[UPL]	Nt P-Sedge	SEDGE
CXPALL	5	Carex pallescens		3	[FACU]	Nt P-Sedge	PALE SEDGE
CXPAUC	10	Carex pauciflora		-5	OBL	Nt P-Sedge	SEDGE
CXPAUP	8	Carex paupercula		-5	OBL	Nt P-Sedge	SEDGE
CXPECK	3	Carex peckii		5	[UPL]	Nt P-Sedge	SEDGE
CXPEDU	5	Carex pedunculata		5	[UPL]	Nt P-Sedge	SEDGE
CXPELL	2	Carex pellita (C. lanuginosa)		-5	OBL	Nt P-Sedge	SEDGE
CXPENS	4	Carex pensylvanica		5	[UPL]	Nt P-Sedge	SEDGE
CXPLAN	8	Carex plantaginea		5	[UPL]	Nt P-Sedge	SEDGE
CXPLAT	10	Carex platyphylla	T	5	[UPL]	Nt P-Sedge	BROAD-LEAVED SEDGE
CXPRAE	*	CAREX PRAEGRACILIS		-3	FACW	Ad P-Sedge	SEDGE
CXPRAI	10	Carex prairea		-4	FACW+	Nt P-Sedge	SEDGE
CXPRAS	10	Carex prasina		-5	OBL	Nt P-Sedge	SEDGE
CXPRAT	10	Carex praticola		0	FAC	Nt P-Sedge	SEDGE
CXPROJ	3	Carex projecta		-4	FACW+	Nt P-Sedge	SEDGE
CXPSEU	5	Carex pseudo-cyperus		-5	OBL	Nt P-Sedge	SEDGE

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CXRADI	2	Carex radiata		1	[FAC-]	Nt P-Sedge	STRAIGHT-STYLED WOOD SEDGE
CXRETF	1	Carex retroflexa		5	[UPL]	Nt P-Sedge	SEDGE
CXRETS	3	Carex retrorsa		-5	OBL	Nt P-Sedge	SEDGE
CXRICH	9	Carex richardsonii	SC	5	UPL	Nt P-Sedge	RICHARDSON'S SEDGE
CXROSE	2	Carex rosea (C. convoluta)		5	[UPL]	Nt P-Sedge	CURLY-STYLED WOOD SEDGE
CXROSS	10	Carex rossii	T	5	[UPL]	Nt P-Sedge	ROSS' SEDGE
CXROST	10	Carex rostrata		-5	OBL	Nt P-Sedge	SEDGE
CXRUGO	4	Carex rugosperma		5	[UPL]	Nt P-Sedge	SEDGE
CXSART	5	Carex sartwellii		-4	FACW+	Nt P-Sedge	SEDGE
CXSCAB	4	Carex scabrata		-5	OBL	Nt P-Sedge	SEDGE
CXSCHW	10	Carex schweinitzii		-5	OBL	Nt P-Sedge	SEDGE
CXSCIR	10	Carex scirpoidea	T	3	FACU	Nt P-Sedge	BULRUSH SEDGE
CXSCOP	4	Carex scoparia		-3	FACW	Nt P-Sedge	SEDGE
CXSEOR	10	Carex seorsa	T	-4	FACW+	Nt P-Sedge	SEDGE
CXSICC	5	Carex siccata (C. foenea)		5	[UPL]	Nt P-Sedge	SEDGE
CXSPAR	5	Carex sparganioides		0	FAC	Nt P-Sedge	SEDGE
CXSPIC	*	CAREX SPICATA		5	[UPL]	Ad P-Sedge	SEDGE
CXSPRE	5	Carex sprengelii		0	FAC	Nt P-Sedge	SEDGE
CXSQUA	9	Carex squarrosa	SC	-5	OBL	Nt P-Sedge	SEDGE
CXSTER	10	Carex sterilis		-5	OBL	Nt P-Sedge	SEDGE
CXSTIP	1	Carex stipata		-5	[OBL]	Nt P-Sedge	SEDGE
CXSTRA	10	Carex straminea	E	-5	OBL	Nt P-Sedge	STRAW SEDGE
CXSTRI	4	Carex stricta		-5	OBL	Nt P-Sedge	SEDGE
CXSUBE	8	Carex suberecta		-5	OBL	Nt P-Sedge	SEDGE
CXSWAN	4	Carex swanii		3	FACU	Nt P-Sedge	SEDGE
CXSYCH	6	Carex sychnocephala		-4	FACW+	Nt P-Sedge	LONG-BEAKED SEDGE
CXTENE	4	Carex tenera		-1	FAC+	Nt P-Sedge	SEDGE
CXTENU	10	Carex tenuiflora		-5	OBL	Nt P-Sedge	SEDGE
CXTETA	9	Carex tetanica		-3	FACW	Nt P-Sedge	SEDGE
CXTINC	4	Carex tincta	SC	4	[FACU-]	Nt P-Sedge	SEDGE
CXTONT	5	Carex tonsa		5	[UPL]	Nt P-Sedge	SEDGE
CXTONR	4	Carex tonsa var. rugosperma		5	[UPL]	Nt P-Sedge	SEDGE
CXTRIB	3	Carex tribuloides		-4	FACW+	Nt P-Sedge	SEDGE
CXTRIC	8	Carex trichocarpa	SC	-5	OBL	Nt P-Sedge	HAIRY-FRUITED SEDGE
CXTRIS	9	Carex trisperma		-5	OBL	Nt P-Sedge	SEDGE
CXTUCK	8	Carex tuckermanii		-5	OBL	Nt P-Sedge	SEDGE
CXTYPH	9	Carex typhina	T	-5	OBL	Nt P-Sedge	CAT-TAIL SEDGE
CXUMBE	5	Carex umbellata		5	[UPL]	Nt P-Sedge	SEDGE
CXUTRI	5	Carex utriculata		-5	[OBL]	Nt P-Sedge	SEDGE
CXVAGI	10	Carex vaginata		-5	OBL	Nt P-Sedge	SEDGE
CXVESI	7	Carex vesicaria		-5	OBL	Nt P-Sedge	SEDGE
CXVIRE	8	Carex virescens		3	[FACU]	Nt P-Sedge	SEDGE
CXVIRI	4	Carex viridula		-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	Carex vulpinoidea		-5	OBL	Nt P-Sedge	SEDGE
CXWIEG	9	Carex wiegandii	T	-5	[OBL]	Nt P-Sedge	WIEGAND'S SEDGE
CXWOOD	8	Carex woodii		0	FAC	Nt P-Sedge	SEDGE
CARCAO	6	Carpinus caroliniana		0	FAC	Nt Tree	BLUE-BEECH
CARCAV	*	CARUM CARVI		5	[UPL]	Ad B-Forb	CARAWAY
CARCOR	5	Carya cordiformis		0	FAC	Nt Tree	BITTERNUT HICKORY
CARGLA	5	Carya glabra (C. ovalis)		3	FACU	Nt Tree	PIGNUT HICKORY

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CARLAC	9	Carya laciniosa		-3	FACW	Nt Tree	SHELLBARK HICKORY
CAROVA	5	Carya ovata		3	FACU	Nt Tree	SHAGBARK HICKORY
CASCHA	2	Cassia chamaecrista (C. fasciculata)		4	FACU-	Nt A-Forb	PARTRIDGE-PEA
CASHEB	5	Cassia hebecarpa		-3	FACW	Nt P-Forb	WILD SENNA
CASNIC	3	Cassia nictitans		4	FACU-	Nt A-Forb	WILD SENSITIVE PLANT
CASTOR	*	CASSIA TORA		5	[UPL]	Ad A-Forb	SICKLE-POD
CASDEN	9	Castanea dentata	E	5	[UPL]	Nt Tree	AMERICAN CHESTNUT
CASCOC	8	Castilleja coccinea		0	FAC	Nt A-Forb	INDIAN PAINTBRUSH
CASSEP	10	Castilleja septentrionalis	T	-4	[FACW+]	Nt P-Forb	PALE INDIAN PAINTBRUSH
CATSPE	*	CATALPA SPECIOSA		3	FACU	Ad Tree	NORTHERN CATALPA
CAUGIG	5	Caulophyllum giganteum		5	[UPL]	Nt P-Forb	BLUE COHOSH
CAUTHA	5	Caulophyllum thalictroides		5	[UPL]	Nt P-Forb	BLUE COHOSH
CEAAME	8	Ceanothus americanus		5	[UPL]	Nt Shrub	NEW JERSEY-TEA
CEAHER	9	Ceanothus herbaceus		5	[UPL]	Nt Shrub	NEW JERSEY-TEA
CEASAN	10	Ceanothus sanguineus	T	5	[UPL]	Nt Shrub	REDSTEM CEANOTHUS
CELORB	*	CELASTRUS ORBICULATA		5	UPL	Ad W-Vine	ORIENTAL BITTERSWEET
CELSCA	3	Celastrus scandens		3	FACU	Nt W-Vine	AMERICAN BITTERSWEET
CELOCC	5	Celtis occidentalis		1	FAC-	Nt Tree	HACKBERRY
CELTEN	5	Celtis tenuifolia	SC	5	[UPL]	Nt Shrub	DWARF HACKBERRY
CENLON	0	Cenchrus longispinus		5	[UPL]	Nt A-Grass	SANDBUR
CENCYA	*	CENTAUREA CYANUS		5	[UPL]	Ad A-Forb	BACHELOR'S BUTTON
CENDIF	*	CENTAUREA DIFFUSA		5	[UPL]	Ad A-Forb	SPREADING STAR THISTLE
CENJAC	*	CENTAUREA JACEA		5	[UPL]	Ad P-Forb	BROWN KNAPWEED
CENMAR	*	CENTAUREA MACROCEPHALA		5	[UPL]	Ad P-Forb	LARGE-HEADED KNAPWEED
CENMAU	*	CENTAUREA MACULOSA		5	[UPL]	Ad B-Forb	SPOTTED BLUET
CENMON	*	CENTAUREA MONTANA		5	[UPL]	Ad P-Forb	MOUNTAIN KNAPWEED
CENNIA	*	CENTAUREA NIGRA		5	[UPL]	Ad P-Forb	BLACK KNAPWEED
CENNIS	*	CENTAUREA NIGRESCENS		5	[UPL]	Ad P-Forb	SHORT-FRINGED KNAPWEED
CENREP	*	CENTAUREA REPENS		5	[UPL]	Ad P-Forb	RUSSIAN KNAPWEED
CENSOL	*	CENTAUREA SOLSTITIALIS		5	[UPL]	Ad P-Forb	YELLOW STARTHISTLE
CENVIR	*	CENTAUREA VIRGATA		5	[UPL]	Ad P-Forb	TURKISH KNAPWEED
CENPRA	*	CENTAUREA XPRATENSIS		5	[UPL]	Ad P-Forb	RADIATE BLACK KNAPWEED
CENERY	*	CENTAURIUM ERYTHRAEA		-4	[FACW+]	Ad B-Forb	FORKING CENTAURY
CENPUL	*	CENTAURIUM PULCHELLUM		4	[FACU-]	Ad A-Forb	BRANCHING CENTAURY
CEPOCC	7	Cephalanthus occidentalis		-5	OBL	Nt Shrub	BUTTONBUSH
CERARV	6	Cerastium arvense		4	FACU-	Nt P-Forb	FIELD CHICKWEED
CERFON	*	CERASTIUM FONTANUM		3	[FACU]	Ad P-Forb	MOUSE-EAR CHICKWEED
CERGLO	*	CERASTIUM GLOMERATUM		5	[UPL]	Ad P-Forb	CHICKWEED
CERNUT	4	Cerastium nutans		2	FACU+	Nt A-Forb	NODDING CHICKWEED
CERPUM	*	CERASTIUM PUMILUM		5	[UPL]	Ad A-Forb	MOUSE-EAR CHICKWEED
CERSEM	*	CERASTIUM SEMIDECANDRUM		5	UPL	Ad A-Forb	SMALL MOUSE-EAR CHICKWEED
CERTOM	*	CERASTIUM TOMENTOSUM		5	[UPL]	Ad P-Forb	SNOW-IN-SUMMER
CERDEM	1	Ceratophyllum demersum		-5	OBL	Nt P-Forb	COONTAIL
CERECH	10	Ceratophyllum echinatum		-5	[OBL]	Nt P-Forb	SPINY HORNWORT
CERCAN	8	Cercis canadensis		3	FACU	Nt Tree	REDBUD
CHAMIN	*	CHAENORRHINUM MINUS		5	[UPL]	Ad A-Forb	DWARF SNAPDRAGON
CHAPRO	8	Chaerophyllum procumbens		-1	FAC+	Nt A-Forb	WILD CHERVIL
CHAMAR	*	CHAITURUS MARRUBIASTRUM		5	[UPL]	Ad B-Forb	MINT
CHACAL	8	Chamaedaphne calyculata		-5	OBL	Nt Shrub	LEATHERLEAF
CHALUT	*	CHAMAELIRIUM LUTEUM		4	FACU-	Ad P-Forb	BLAZING-STAR

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CHANUK	9	Chamaerhodos nuttallii var. keweenawensis	E	5	[UPL]	Nt Shrub	KEWEENAW ROCK-ROSE
CHALAT	10	Chasmanthium latifolium (Uniola latifolia)	T	-3	FACW	Nt P-Grass	WILD-OATS
CHEMAJ	*	CHELIDONIUM MAJUS		5	[UPL]	Ad B-Forb	CELANDINE
CHEGLB	7	Chelone glabra		-5	OBL	Nt P-Forb	TURTLEHEAD
CHEOBL	9	Chelone obliqua	E	-5	OBL	Nt P-Forb	RED TURTLEHEAD
CHEALB	*	CHENOPODIUM ALBUM		1	FAC-	Ad A-Forb	LAMB'S QUARTERS
CHEAMB	*	CHENOPODIUM AMBROSIOIDES		1	FAC-	Ad A-Forb	WORMSEED
CHEARI	*	CHENOPODIUM ARISTATUM		1	[FAC-]	Ad A-Forb	GOOSEFOOT
CHEBON	*	CHENOPODIUM BONUS-HENRICUS		5	[UPL]	Ad P-Forb	GOOD-KING-HENRY
CHEBOT	*	CHENOPODIUM BOTRYS		4	FACU-	Ad A-Forb	JERUSALEM-OAK
CHECAP	5	Chenopodium capitatum		5	[UPL]	Nt A-Forb	STRAWBERRY BLITE
CHEGLC	*	CHENOPODIUM GLAUCUM		-3	FACW	Ad A-Forb	OAK-LEAVED GOOSEFOOT
CHEHYB	1	Chenopodium hybridum		5	[UPL]	Nt A-Forb	MAPLE-LEAVED GOOSEFOOT
CHEMUR	*	CHENOPODIUM MURALE		5	[UPL]	Ad A-Forb	NETTLE-LEAVED GOOSEFOOT
CHERUB	*	CHENOPODIUM RUBRUM		-5	OBL	Ad A-Forb	COAST BLIGHT
CHESTA	5	Chenopodium standleyanum		5	[UPL]	Nt A-Forb	WOODLAND GOOSEFOOT
CHESUB	*	CHENOPODIUM SUBGLABRUM		5	[UPL]	Ad A-Forb	GOOSEFOOT
CHEURB	*	CHENOPODIUM URBICUM		5	[UPL]	Ad A-Forb	CITY GOOSEFOOT
CHEVUL	*	CHENOPODIUM VULVARIA		5	[UPL]	Ad A-Forb	STINKING GOOSEFOOT
CHIMAC	8	Chimaphila maculata		5	[UPL]	Nt Shrub	SPOTTED WINTERGREEN
CHIUMB	8	Chimaphila umbellata		5	[UPL]	Nt Shrub	PIPSISSEWA
CHLVER	*	CHLORIS VERTICILLATA		5	[UPL]	Ad P-Grass	WINDMILL GRASS
CHOJUN	*	CHONDRILLA JUNCEA		5	[UPL]	Ad P-Forb	SKELETON-WEED
CHOTEN	*	CHORISPORA TENELLA		5	[UPL]	Ad A-Forb	PURPLE ROCKET
CHRBAL	*	CHRYSANTHEMUM BALSAMITA		5	[UPL]	Ad P-Forb	COSTMARY
CHRLEU	*	CHRYSANTHEMUM LEUCANTHEMUM		5	[UPL]	Ad P-Forb	OX-EYE DAISY
CHRPAR	*	CHRYSANTHEMUM PARTHENIUM		5	[UPL]	Ad P-Forb	FEVERFEW
CHRSUP	*	CHRYSANTHEMUM XSUPERBUM		5	[UPL]	Ad P-Forb	SHASTA DAISY
CHRCAM	*	CHRYSOPSIS CAMPORUM		5	[UPL]	Ad P-Forb	PRAIRIE GOLDEN ASTER
CHRVIL	*	CHRYSOPSIS VILLOSA		5	[UPL]	Ad P-Forb	GOLDEN ASTER
CHRAME	6	Chrysosplenium americanum		-5	OBL	Nt P-Forb	GOLDEN SAXIFRAGE
CICINT	*	CICHORIUM INTYBUS		5	[UPL]	Ad P-Forb	CHICORY
CICBUL	5	Cicuta bulbifera		-5	OBL	Nt P-Forb	WATER HEMLOCK
CICMAC	4	Cicuta maculata		-5	OBL	Nt B-Forb	WATER HEMLOCK
CIMRAC	*	CIMICIFUGA RACEMOSA		3	[FACU]	Ad P-Forb	BLACK SNAKEROOT
CINARU	7	Cinna arundinacea		-3	FACW	Nt P-Grass	WOOD REEDGRASS
CINLAT	5	Cinna latifolia		-4	FACW+	Nt P-Grass	WOOD REEDGRASS
CIRALP	4	Circaea alpina		-3	FACW	Nt P-Forb	SMALL ENCHANTER'S-NIGHTSHADE
CIRLUT	2	Circaea lutetiana		3	FACU	Nt P-Forb	ENCHANTER'S-NIGHTSHADE
CIRALT	5	Cirsium altissimum		5	[UPL]	Nt P-Forb	TALL THISTLE
CIRARV	*	CIRSIUM ARVENSE		3	FACU	Ad P-Forb	CANADIAN-THISTLE
CIRDIS	4	Cirsium discolor		5	[UPL]	Nt B-Forb	PASTURE-THISTLE
CIRFLO	*	CIRSIUM FLODMANII		5	[UPL]	Ad P-Forb	PRAIRIE-THISTLE
CIRHIL	8	Cirsium hillii	SC	5	[UPL]	Nt P-Forb	HILL'S THISTLE
CIRMUT	6	Cirsium muticum		-5	OBL	Nt B-Forb	SWAMP-THISTLE
CIRPAL	*	CIRSIUM PALUSTRE		-4	[FACW+]	Ad B-Forb	MARSH-THISTLE
CIRPIT	10	Cirsium pitcheri	T	5	[UPL]	Nt B-Forb	PITCHER'S THISTLE
CIRUND	*	CIRSIUM UNDULATUM		1	FAC-	Ad P-Forb	WAVY-LEAVED THISTLE
CIRVUL	*	CIRSIUM VULGARE		4	FACU-	Ad B-Forb	BULL-THISTLE
CITLAN	*	CITRULLUS LANATUS		5	[UPL]	Ad A-Forb	WATERMELON

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CLAMAR	10	Cladium mariscoides		-5	OBL	Nt P-Sedge	TWIG-RUSH
CLACAR	6	Claytonia caroliniana		3	FACU	Nt P-Forb	CAROLINA SPRING-BEAUTY
	*	CLAYTONIA SIBIRICA		1	[FAC-]	Ad P-Forb	SIBERIAN SPRING-BEAUTY
CLAVIR	4	Claytonia virginica		3	FACU	Nt P-Forb	SPRING-BEAUTY
CLEOCC	9	Clematis occidentalis (C. verticillaris)	SC	5	[UPL]	Nt H-Vine	PURPLE CLEMATIS
CLEVIR	4	Clematis virginiana		0	FAC	Nt W-Vine	VIRGIN'S BOWER
CLEHAS	*	CLEOME HASSLERIANA		5	[UPL]	Ad A-Forb	SPIDER PLANT
CLESER	*	CLEOME SERRULATA		4	FACU-	Ad A-Forb	ROCKY MOUNTAIN BEE PLANT
CLIVUL	3	Clinopodium vulgare (Satureja vulgaris)		5	[UPL]	Nt P-Forb	WILD BASIL
CLIBOR	5	Clintonia borealis		-1	FAC+	Nt P-Forb	BLUEBEAD-LILY; CORN-LILY
COEVIR	8	Coeloglossum viride		0	FAC	Nt P-Forb	LONG-BRACTED GREEN ORCHID
COIMON	*	COINCYA MONENSIS		5	[UPL]	Ad B-Forb	WALLFLOWER CABBAGE
COLPAR	8	Collinsia parviflora	T	4	[FACU-]	Nt A-Forb	SMALL BLUE-EYED MARY
COLVER	10	Collinsia verna		3	FACU	Nt A-Forb	BLUE-EYED MARY
COLCAN	8	Collinsonia canadensis		0	FAC	Nt P-Forb	RICHWEED
COLLIN	*	COLLOMIA LINEARIS		3	[FACU]	Ad A-Forb	SLENDER GILIA
COMUMB	5	Comandra umbellata		3	FACU	Nt P-Forb	BASTARD-TOADFLAX
COMCOM	*	COMMELINA COMMUNIS		0	FAC	Ad A-Forb	COMMON DAY FLOWER
COMERE	9	Commelina erecta	X	5	[UPL]	Nt P-Forb	SLENDER DAYFLOWER
COMPER	6	Comptonia peregrina		5	[UPL]	Nt Shrub	SWEET-FERN
CONCHI	10	Conioselinum chinense		-5	[OBL]	Nt P-Forb	HEMLOCK PARSLEY
CONMAC	*	CONIUM MACULATUM		-3	FACW	Ad B-Forb	POISON HEMLOCK
CONAME	10	Conopholis americana		5	[UPL]	Nt P-Forb	SQUAWROOT
CONORI	*	CONRINGIA ORIENTALIS		5	[UPL]	Ad A-Forb	HARE'S EAR MUSTARD
CONAMB	*	CONSOLIDA AMBIGUA		5	[UPL]	Ad A-Forb	LARKSPUR
CONMAJ	*	CONVALLARIA MAJALIS		5	[UPL]	Ad P-Forb	LILY-OF-THE-VALLEY
CONARV	*	CONVOLVULUS ARVENSIS		5	[UPL]	Ad P-Forb	FIELD BINDWEED
CONCAN	0	Conyza canadensis (Erigeron c.)		1	FAC-	Nt A-Forb	HORSEWEED
COPTRI	5	Coptis trifolia (C. groenlandica)		-3	FACW	Nt P-Forb	GOLDTHREAD
CORMAC	5	Corallorhiza maculata		4	FACU-	Nt P-Forb	SPOTTED CORAL-ROOT
CORODO	8	Corallorhiza odontorhiza		5	[UPL]	Nt P-Forb	FALL CORAL-ROOT
CORSTR	6	Corallorhiza striata		4	FACU-	Nt P-Forb	STRIPED CORAL-ROOT
CORTRF	6	Corallorhiza trifida		-2	FACW-	Nt P-Forb	NORTHERN CORAL-ROOT
CORGRA	*	COREOPSIS GRANDIFLORA		5	[UPL]	Ad P-Forb	LARGE-FLOWERED COREOPSIS
CORLAN	8	Coreopsis lanceolata		3	FACU	Nt P-Forb	SAND COREOPSIS
CORPAL	10	Coreopsis palmata	T	5	[UPL]	Nt P-Forb	PRAIRIE COREOPSIS
CORTIN	*	COREOPSIS TINCTORIA		1	[FAC-]	Ad P-Forb	GOLDEN COREOPSIS
CORTRP	7	Coreopsis tripteris		0	FAC	Nt P-Forb	TALL COREOPSIS
CORSAT	*	CORIANDRUM SATIVUM		5	[UPL]	Ad A-Forb	CORIANDER
CORHYS	3	Corispermum hyssopifolium		3	FACU	Nt A-Forb	COMMON BUGSEED
CORORI	*	CORISPERMUM ORIENTALE		5	[UPL]	Ad A-Forb	BUGSEED
CORALT	5	Cornus alternifolia		5	[UPL]	Nt Tree	ALTERNATE-LEAVED DOGWOOD
CORAMO	2	Cornus amomum		-4	FACW+	Nt Shrub	SILKY DOGWOOD
CORCAA	6	Cornus canadensis		0	FAC	Nt Shrub	BUNCHBERRY
CORDRU	6	Cornus drummondii		0	FAC	Nt Shrub	ROUGH-LEAVED DOGWOOD
CORFLO	8	Cornus florida		4	FACU-	Nt Tree	FLOWERING DOGWOOD
CORFOE	1	Cornus foemina (C. racemosa)		-2	FACW-	Nt Shrub	GRAY DOGWOOD
CORRUG	6	Cornus rugosa		5	[UPL]	Nt Shrub	ROUND-LEAVED DOGWOOD
CORSTO	2	Cornus stolonifera		-3	FACW	Nt Shrub	RED-OSIER DOGWOOD
CORVAR	*	CORONILLA VARIA		5	[UPL]	Ad P-Forb	CROWN-VETCH

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CORAUR	5	Corydalis aurea		5	[UPL]	Nt A-Forb	GOLDEN CORYDALIS
CORFLA	8	Corydalis flavula	T	-4	FACW+	Nt B-Forb	YELLOW HARLEQUIN
CORSEM	5	Corydalis sempervirens		5	[UPL]	Nt B-Forb	PINK or PALE CORYDALIS
CORSOL	*	CORYDALIS SOLIDA		5	[UPL]	Ad P-Forb	BULBUS CORYDALIS
CORAME	5	Corylus americana		4	FACU-	Nt Shrub	HAZELNUT
CORCOR	5	Corylus cornuta		5	[UPL]	Nt Shrub	BEAKED HAZELNUT
CORCAE	*	CORYNEPHORUS CANESCENS		5	[UPL]	Ad P-Grass	SILVER GRASS
COSBIP	*	COSMOS BIPINNATUS		-5	[OBL]	Ad A-Forb	COMMON COSMOS
COSSUL	*	COSMOS SULPHUREUS		-5	[OBL]	Ad A-Forb	ORANGE COSMOS
COTCOG	*	COTINUS COGGYGRIA		5	[UPL]	Ad Shrub	SMOKE TREE
CRAAPI	4	Crataegus apiomorpha		5	[UPL]	Nt Tree	HAWTHORN
CRABAS	4	Crataegus basilica		5	[UPL]	Nt Tree	HAWTHORN
CRABEA	4	Crataegus beata		5	[UPL]	Nt Tree	HAWTHORN
CRABRA	4	Crataegus brainerdii		5	[UPL]	Nt Tree	HAWTHORN
CRABRU	4	Crataegus brumalis		5	[UPL]	Nt Tree	HAWTHORN
CRACAL	5	Crataegus calpodendron		5	[UPL]	Nt Tree	HAWTHORN
CRACHR	4	Crataegus chrysocarpa		5	[UPL]	Nt Tree	HAWTHORN
CRACOL	4	Crataegus coleae		5	[UPL]	Nt Tree	HAWTHORN
CRACOM	4	Crataegus compta		5	[UPL]	Nt Tree	HAWTHORN
CRACRU	5	Crataegus crus-galli		0	FAC	Nt Tree	COCKSPUR THORN
CRADIL	4	Crataegus dilatata		5	[UPL]	Nt Tree	HAWTHORN
CRADIS	4	Crataegus disperma		5	[UPL]	Nt Tree	HAWTHORN
CRADOD	4	Crataegus dodgei		5	[UPL]	Nt Tree	HAWTHORN
CRADOU	7	Crataegus douglasii	SC	0	FAC	Nt Tree	BLACK HAWTHORN
CRAFIL	4	Crataegus filipes		5	[UPL]	Nt Tree	HAWTHORN; THORNAPPLE
CRAFOE	4	Crataegus foetida		5	[UPL]	Nt Tree	HAWTHORN
CRAFON	4	Crataegus fontanesiana		5	[UPL]	Nt Tree	HAWTHORN
CRAGRA	4	Crataegus gravis		5	[UPL]	Nt Tree	HAWTHORN
CRAHIL	4	Crataegus hillii		5	[UPL]	Nt Tree	HAWTHORN
CRAHOL	4	Crataegus holmesiana		5	[UPL]	Nt Tree	HAWTHORN
CRAIMM	4	Crataegus immanis		5	[UPL]	Nt Tree	HAWTHORN
CRAINT	4	Crataegus intricata		5	[UPL]	Nt Tree	HAWTHORN
CRAIRA	4	Crataegus iracunda		5	[UPL]	Nt Tree	HAWTHORN
CRAIRR	6	Crataegus irrasa		5	[UPL]	Nt Tree	HAWTHORN
CRAJES	4	Crataegus jesupii		5	[UPL]	Nt Tree	HAWTHORN
CRALAE	*	CRATAEGUS LAEVIGATA		5	[UPL]	Ad Tree	ENGLISH HAWTHORN
CRALEI	4	Crataegus leiophylla		5	[UPL]	Nt Tree	HAWTHORN
CRALEV	4	Crataegus levis		5	[UPL]	Nt Tree	HAWTHORN
CRALUC	4	Crataegus lucorum		5	[UPL]	Nt Tree	HAWTHORN
CRAMAC	5	Crataegus macrosperma		5	[UPL]	Nt Tree	HAWTHORN
CRAMAR	5	Crataegus margaretta		5	[UPL]	Nt Tree	HAWTHORN
CRAMER	4	Crataegus merita		5	[UPL]	Nt Tree	HAWTHORN
CRAMOL	2	Crataegus mollis		-2	FACW-	Nt Tree	HAWTHORN
CRAMON	*	CRATAEGUS MONOGYNA		5	[UPL]	Ad Tree	ENGLISH HAWTHORN
CRANIT	4	Crataegus nitidula		5	[UPL]	Nt Tree	HAWTHORN
CRAPED	4	Crataegus pedicellata		5	[UPL]	Nt Tree	HAWTHORN
CRAPHA	*	CRATAEGUS PHAENOPYRUM		0	FAC	Ad Tree	WASHINGTON THORN
CRAPIN	4	Crataegus pinguis		5	[UPL]	Nt Tree	HAWTHORN
CRAPOP	4	Crataegus populnea		5	[UPL]	Nt Tree	HAWTHORN
CRAPRI	4	Crataegus pringlei		5	[UPL]	Nt Tree	HAWTHORN

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CRAPRU	6	Crataegus pruinosa		5	[UPL]	Nt Tree	HAWTHORN
CRAPUN	1	Crataegus punctata		5	[UPL]	Nt Tree	DOTTED HAWTHORN
CRARUG	4	Crataegus rugosa		5	[UPL]	Nt Tree	HAWTHORN
CRASUB	4	Crataegus submollis		5	[UPL]	Nt Tree	HAWTHORN
CRASUC	5	Crataegus succulenta		5	[UPL]	Nt Tree	HAWTHORN
CRECAP	*	CREPIS CAPILLARIS		5	[UPL]	Ad A-Forb	HAWK'S BEARD
CRETEC	*	CREPIS TECTORUM		5	[UPL]	Ad A-Forb	HAWK'S BEARD
CROSAG	*	CROTALARIA SAGITTALIS		5	[UPL]	Ad A-Forb	RATTLEBOX
CROGLA	*	CROTON GLANDULOSUS		5	[UPL]	Ad A-Forb	TOOTH-LEAVED CROTON
CROMON	*	CROTON MONANTHOGYNUS		5	[UPL]	Ad A-Forb	PRAIRIE-TEA
CRYSCH	*	CRYPSIS SCHOENOIDES		3	FACU	Ad A-Grass	FALSE-TIMOTHY
CRYACR	10	Cryptogramma acrostichoides	E	5	[UPL]	Nt Fern	AMERICAN ROCK-BRAKE
CRYSTE	10	Cryptogramma stelleri	SC	3	FACU	Nt Fern	SLENDER ROCK-BRAKE
CRYCAN	2	Cryptotaenia canadensis		0	FAC	Nt P-Forb	HONEWORT
CUCMEL	*	CUCUMIS MELO		5	[UPL]	Ad A-Forb	MELON
CUCSAT	*	CUCUMIS SATIVUS		5	[UPL]	Ad A-Forb	CUCUMBER
CUCFOE	*	CUCURBITA FOETIDISSIMA		3	[FACU]	Ad P-Forb	MISSOURI GOURD
CUCMAX	*	CUCURBITA MAXIMA		4	[FACU-]	Ad A-Forb	SQUASH
CUCPEP	*	CUCURBITA PEPO		4	[FACU-]	Ad A-Forb	PUMPKIN
CUSCAM	10	Cuscuta campestris	SC	5	[UPL]	Nt A-Forb	FIELD DODDER
CUSCEP	6	Cuscuta cephalanthi		5	[UPL]	Nt A-Forb	BUTTONBUSH DODDER
CUSCOR	8	Cuscuta coryli		5	[UPL]	Nt A-Forb	HAZEL DODDER
CUSEPL	*	CUSCUTA EPILINUM		5	[UPL]	Ad A-Forb	FLAX DODDER
CUSEPT	*	CUSCUTA EPITHYMUM		5	[UPL]	Ad A-Forb	CLOVER DODDER
CUSGLO	10	Cuscuta glomerata	SC	0	[FAC]	Nt A-Forb	ROPE DODDER
CUSGRO	3	Cuscuta gronovii		-3	[FACW]	Nt A-Forb	COMMON DODDER
CUSIND	10	Cuscuta indecora	SC	0	[FAC]	Nt A-Forb	DODDER
CUSPEN	10	Cuscuta pentagona	SC	5	[UPL]	Nt A-Forb	FIVE-CORNERED DODDER
CUSPOL	9	Cuscuta polygonorum	SC	5	[UPL]	Nt A-Forb	KNOTWEED DODDER
CYCATR	*	CYCLOLOMA ATRIPLICIFOLIUM		3	FACU	Ad A-Forb	WINGED PIGWEED
CYMMUR	*	CYMBALARIA MURALIS		5	[UPL]	Ad P-Forb	KENILWORTH IVY
CYNDAC	*	CYNODON DACTYLON		3	FACU	Ad P-Grass	BERMUDA GRASS
CYNBOR	7	Cynoglossum boreale		5	[UPL]	Nt P-Forb	WILD COMFREY
CYNOFF	*	CYNOGLOSSUM OFFICINALE		5	[UPL]	Ad B-Forb	HOUND'S TONGUE
CYNCRI	*	CYNOSURUS CRISTATUS		0	FAC	Ad P-Grass	DOGTAIL
CYNECH	*	CYNOSURUS ECHINATUS		5	[UPL]	Ad A-Grass	DOGTAIL
CYPACU	6	Cyperus acuminatus	X	-5	OBL	Nt A-Sedge	UMBRELLA SEDGE
CYPDIA	5	Cyperus diandrus		-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
CYPENG	4	Cyperus engelmannii		-5	OBL	Nt A-Sedge	UMBRELLA SEDGE
CYPERY	6	Cyperus erythrorhizos		-5	OBL	Nt A-Sedge	UMBRELLA SEDGE
CYPESC	1	Cyperus esculentus		-3	FACW	Nt P-Sedge	FIELD NUT SEDGE
CYPFIL	2	Cyperus filiculmis		4	FACU-	Nt P-Sedge	SLENDER SAND SEDGE
CYPFLA	5	Cyperus flavescens	SC	-5	OBL	Nt A-Sedge	YELLOW FLAT SEDGE
CYPHOU	5	Cyperus houghtonii		5	[UPL]	Nt P-Sedge	SMOOTH SAND SEDGE
CYPODO	3	Cyperus odoratus		-3	FACW	Nt A-Sedge	UMBRELLA SEDGE
CYPRIV	3	Cyperus rivularis		-4	FACW+	Nt A-Sedge	BROOK NUT SEDGE
CYPSCH	5	Cyperus schweinitzii		2	FACU+	Nt P-Sedge	ROUGH SAND SEDGE
CYPSQU	5	Cyperus squarrosus (C. aristatus)		-5	[OBL]	Nt A-Sedge	UMBRELLA SEDGE
CYPSTR	3	Cyperus strigosus		-3	FACW	Nt P-Sedge	LONG SCALED NUT SEDGE
CYPACA	5	Cypripedium acaule		-3	FACW	Nt P-Forb	PINK LADY'S-SLIPPER; MOCCASIN FLOWER

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
CYPARI	10	Cypripedium arietinum	SC	-4	FACW+	Nt P-Forb	RAM'S HEAD LADY'S-SLIPPER
CYCAPA	7	Cypripedium calceolus var. parviflorum		-1	FAC+	Nt P-Forb	SMALL YELLOW LADY'S-SLIPPER
CYCAPU	5	Cypripedium calceolus var. pubescens		-1	FAC+	Nt P-Forb	LARGE YELLOW LADY'S-SLIPPER
CYPCAN	10	Cypripedium candidum	T	-5	OBL	Nt P-Forb	WHITE LADY'S-SLIPPER
CYPREG	9	Cypripedium reginae		-4	FACW+	Nt P-Forb	SHOWY or QUEEN'S LADY-SLIPPER
CYSBUL	5	Cystopteris bulbifera		-2	FACW-	Nt Fern	BULBLET FERN
CYSFRA	4	Cystopteris fragilis		3	FACU	Nt Fern	FRAGILE FERN
CYSLAU	9	Cystopteris laurentiana	SC	5	[UPL]	Nt Fern	LAURENTIAN FRAGILE FERN
CYSPRO	5	Cystopteris protrusa		5	[UPL]	Nt Fern	FRAGILE FERN
CYSTEN	5	Cystopteris tenuis		5	[UPL]	Nt Fern	FRAGILE FERN
CYTSCO	*	CYTISUS SCOPARIUS		5	[UPL]	Ad P-Forb	SCOTCH BROOM
DACGLO	*	DACTYLIS GLOMERATA		3	FACU	Ad P-Grass	ORCHARD GRASS
DALLEP	*	DALEA LEPORINA (D. ALOPECUROIDES)		5	UPL	Ad A-Forb	PRAIRIE-CLOVER
DALPUR	10	Dalea purpurea (Petalostemum p.)	X	5	[UPL]	Nt P-Forb	PURPLE PRAIRIE-CLOVER
DALREP	10	Dalibarda repens	T	4	FACU-	Nt P-Forb	FALSE VIOLET; DEWDROP
DANCOM	7	Danthonia compressa	SC	5	[UPL]	Nt P-Grass	FLAT OATGRASS
DANINT	8	Danthonia intermedia	SC	0	FAC	Nt P-Grass	OATGRASS
DANSPI	4	Danthonia spicata		5	[UPL]	Nt P-Grass	POVERTY GRASS; OATGRASS
	*	DAPHNE MEZEREUM		1	[FAC-]	Ad Shrub	PARADISE PLANT
DASMAC	10	Dasistoma macrophylla (Dasystoma m., Seymeria m.)	T	5	[UPL]	Nt A-Forb	MULLEIN FOXGLOVE
DATINO	*	DATURA INOXIA		5	[UPL]	Ad P-Forb	INDIAN APPLE
DATSTR	*	DATURA STRAMONIUM		5	[UPL]	Ad A-Forb	JIMSON-WEED
DAUCAR	*	DAUCUS CAROTA		5	[UPL]	Ad B-Forb	QUEEN-ANNE'S-LACE
DECVER	7	Decodon verticillatus		-5	OBL	Nt Shrub	WHORLED or SWAMP LOOSESTRIFE
DELELA	*	DELPHINIUM ELATUM		5	[UPL]	Ad P-Forb	LARKSPUR
DENPUN	3	Dennstaedtia punctilobula	X	5	[UPL]	Nt Fern	HAY-SCENTED FERN
DENDIP	5	Dentaria diphylla (Cardamine d.)		5	[UPL]	Nt P-Forb	TWO-LEAVED TOOTHWORT
DENLAC	5	Dentaria laciniata		3	[FACU]	Nt P-Forb	CUT-LEAVED TOOTHWORT
DENMAX	10	Dentaria maxima	T	5	[UPL]	Nt P-Forb	LARGE TOOTHWORT
DESCES	9	Deschampsia cespitosa		-4	FACW+	Nt P-Grass	HAIR GRASS
DESFLE	6	Deschampsia flexuosa		5	[UPL]	Nt P-Grass	HAIR GRASS
DESPIN	*	DESCURAINIA PINNATA		5	[UPL]	Ad A-Forb	TANSY MUSTARD
DESSOP	*	DESCURAINIA SOPHIA		5	[UPL]	Ad A-Forb	FLIXWEED
DESCAD	3	Desmodium canadense		1	FAC-	Nt P-Forb	SHOWY TICK-TREFOIL
DESCAS	5	Desmodium canescens		5	[UPL]	Nt P-Forb	HOARY TICK-TREFOIL
DESCIL	10	Desmodium ciliare		5	[UPL]	Nt P-Forb	HAIRY TICK-TREFOIL
DESCUS	5	Desmodium cuspidatum		5	[UPL]	Nt P-Forb	SMOOTH-BRACTED TICK-TREFOIL
DESGLU	5	Desmodium glutinosum		5	[UPL]	Nt P-Forb	CLUSTERED-LEAVED TICK-TREFOIL
DESILL	6	Desmodium illinoense		5	[UPL]	Nt P-Forb	PRAIRIE TICK-TREFOIL
DESMAR	7	Desmodium marilandicum		5	[UPL]	Nt P-Forb	SMALL-LEAVED TICK TREFOIL
DESNUD	7	Desmodium nudiflorum		5	[UPL]	Nt P-Forb	NAKED TICK-TREFOIL
DESOBT	9	Desmodium obtusum (D. rigidum)		5	[UPL]	Nt P-Forb	STIFF TICK-TREFOIL
DESPAN	4	Desmodium paniculatum		3	FACU	Nt P-Forb	PANICLED TICK-TREFOIL
DESROT	8	Desmodium rotundifolium		5	[UPL]	Nt P-Forb	ROUND-LEAVED TICK-TREFOIL
DESSES	8	Desmodium sessilifolium		5	[UPL]	Nt P-Forb	SESSILE-LEAVED TICK-TREFOIL
DIAARM	*	DIANTHUS ARMERIA		5	[UPL]	Ad A-Forb	DEPTFORD PINK
DIABAR	*	DIANTHUS BARBATUS		5	[UPL]	Ad P-Forb	SWEET WILLIAM
DIACAR	*	DIANTHUS CARTHUSIANORUM		5	[UPL]	Ad P-Forb	CLUSTER-HEAD PINK
DIADEL	*	DIANTHUS DELTOIDES		5	[UPL]	Ad P-Forb	MAIDEN PINK

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
DIAPLU	*	DIANTHUS PLUMARIUS		5	[UPL]	Ad P-Forb	GARDEN or GRASS PINK
DIASYL	*	DIANTHUS SYLVESTRIS		5	[UPL]	Ad P-Forb	PINK
DIAOBO	9	Diarrhena obovata (D. americana)	T	-3	[FACW]	Nt P-Grass	BEAK GRASS
DICCAN	7	Dicentra canadensis		5	[UPL]	Nt P-Forb	SQUIRREL CORN
DICCUC	7	Dicentra cucullaria		5	[UPL]	Nt P-Forb	DUTCHMAN'S BREECHES
DICEXI	*	DICENTRA EXIMIA		5	[UPL]	Ad P-Forb	WILD BLEEDING-HEART
DICALB	*	DICTAMNUS ALBUS		5	[UPL]	Ad P-Forb	GAS-PLANT
DIELON	4	Diervilla lonicera		5	[UPL]	Nt Shrub	BUSH HONEYSUCKLE
DIGGRA	*	DIGITALIS GRANDIFLORA		5	[UPL]	Ad P-Forb	YELLOW FOXGLOVE
DIGLAN	*	DIGITALIS LANATA		5	[UPL]	Ad P-Forb	GRECIAN FOXGLOVE
DIGLUT	*	DIGITALIS LUTEA		5	[UPL]	Ad P-Forb	YELLOW FOXGLOVE
DIGPUR	*	DIGITALIS PURPUREA		4	[FACU-]	Ad B-Forb	COMMON FOXGLOVE
DIGFIL	10	Digitaria filiformis	X	5	[UPL]	Nt A-Grass	SLENDER CRAB GRASS
DIGISC	*	DIGITARIA ISCHAEMUM		3	FACU	Ad A-Grass	SMOOTH CRAB GRASS
DIGSAN	*	DIGITARIA SANGUINALIS		3	FACU	Ad A-Grass	HAIRY CRAB GRASS
DIOTER	*	DIODIA TERES		3	[FACU]	Ad A-Forb	BUTTONWEED
DIOVIL	4	Dioscorea villosa		1	[FAC-]	Nt P-Forb	WILD YAM
DIPCOM	5	Diphasiastrum complanatum (Lycopodium c.)		2	[FACU+]	Nt Fern Ally	GROUND-CEDAR
DIPDIG	3	Diphasiastrum digitatum (Lycopodium d.)		5	[UPL]	Nt Fern Ally	GROUND-CEDAR
DIPTRI	7	Diphasiastrum tristrachyum (Lycopodium t.)		5	[UPL]	Nt Fern Ally	GROUND-CEDAR
DIPSAB	10	Diphasiastrum Xsabinifolium (Lycopodium sabinifolium)		5	[UPL]	Nt Fern Ally	SAVIN-LEAVED CLUBMOSS
DIPMUR	*	DIPLOTAXIS MURALIS		5	[UPL]	Ad A-Forb	WALL ROCKET
DIPTEN	*	DIPLOTAXIS TENUIFOLIA		5	[UPL]	Ad P-Forb	SAND ROCKET
DIPFUL	*	DIPSACUS FULLONUM		5	[UPL]	Ad P-Forb	COMMON TEASEL
DIPLAC	*	DIPSACUS LACINIATUS		5	[UPL]	Ad B-Forb	CUT-LEAVED TEASEL
DIRPAL	8	Dirca palustris		0	FAC	Nt Shrub	LEATHERWOOD
DODMEA	10	Dodecatheon meadia	E	3	FACU	Nt P-Forb	SHOOTING STAR
DRAARA	10	Draba arabisans	SC	5	[UPL]	Nt P-Forb	ROCK WHITLOW-GRASS
DRACAN	10	Draba cana	T	5	[UPL]	Nt P-Forb	ASHY WHITLOW-GRASS
DRAGLA	10	Draba glabella	E	5	[UPL]	Nt P-Forb	SMOOTH WHITLOW-GRASS
DRAINC	10	Draba incana	T	5	[UPL]	Nt B-Forb	TWISTED WHITLOW-GRASS
DRANEM	10	Draba nemorosa	X	5	[UPL]	Nt A-Forb	WHITLOW-GRASS
DRAREP	8	Draba reptans	T	5	[UPL]	Nt A-Forb	COMMON WHITLOW-GRASS
DRAPAR	*	DRACOCEPHALUM PARVIFLORUM		3	FACU	Ad B-Forb	AMERICAN DRAGONHEAD
DRATHY	*	DRACOCEPHALUM THYMIFLORUM		5	[UPL]	Ad P-Forb	THYME-LEAVED DRAGONHEAD
DROINT	8	Drosera intermedia		-5	OBL	Nt P-Forb	SUNDEW
DROLIN	10	Drosera linearis		-5	OBL	Nt P-Forb	LINEAR-LEAVED SUNDEW
DROROT	6	Drosera rotundifolia		-5	OBL	Nt P-Forb	ROUND-LEAVED SUNDEW
DROANG	10	Drosera Xanglica	SC	-5	[OBL]	Nt P-Forb	ENGLISH SUNDEW
DRYCAR	5	Dryopteris carthusiana (D. spinulosa)		-2	[FACW-]	Nt Fern	SPINULOSE WOODFERN
DRYCEL	10	Dryopteris celsa	T	-5	OBL	Nt Fern	LOG FERN
DRYCLI	8	Dryopteris clintoniana		-4	FACW+	Nt Fern	CLINTON'S WOODFERN
DRYCRI	6	Dryopteris cristata		-5	OBL	Nt Fern	CRESTED SHIELD FERN
DRYEXP	9	Dryopteris expansa (D. assimilis)		5	[UPL]	Nt Fern	EXPANDED WOODFERN
DRYFIL	10	Dryopteris filix-mas	SC	5	[UPL]	Nt Fern	MALE FERN
DRYFRA	10	Dryopteris fragrans	SC	5	[UPL]	Nt Fern	FRAGRANT WOODFERN
DRYGOL	10	Dryopteris goldiana		0	FAC	Nt Fern	GOLDIE'S WOODFERN
DRYINT	5	Dryopteris intermedia		0	FAC	Nt Fern	EVERGREEN WOODFERN

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
DRYMAR	5	Dryopteris marginalis		3	FACU	Nt Fern	MARGINAL WOODFERN
DUCIND	*	DUCHESNEA INDICA		4	FACU-	Ad P-Forb	INDIAN STRAWBERRY
DULARU	8	Dulichium arundinaceum		-5	OBL	Nt P-Sedge	THREE-WAY SEDGE
DYSPAP	*	DYSSODIA PAPPOSA		5	[UPL]	Ad A-Forb	STINKING MARIGOLD
ECHPAL	*	ECHINACEA PALLIDA		5	[UPL]	Ad P-Forb	PALE CONEFLOWER
ECHPUA	*	ECHINACEA PURPUREA		5	[UPL]	Ad P-Forb	PURPLE CONEFLOWER
ECHPUN	10	Echinacea purpurea	X	5	[UPL]	Nt P-Forb	PURPLE CONEFLOWER
ECHCRU	*	ECHINOCHLOA CRUSGALLI		-3	FACW	Ad A-Grass	BARNYARD GRASS
ECHMUR	1	Echinochloa muricata		-5	OBL	Nt A-Grass	BARNYARD GRASS
ECHWAL	7	Echinochloa walteri		-5	OBL	Nt A-Grass	SALT-MARSH COCKSPUR GRASS
ECHLOB	2	Echinocystis lobata		-2	FACW-	Nt A-Forb	WILD CUCUMBER
ECHTEN	10	Echinodorus tenellus (E. parvulus)	E	-5	OBL	Nt P-Forb	DWARF BURHEAD
ECHSPH	*	ECHINOPS SPHAEROCEPHALUS		5	[UPL]	Ad P-Forb	GLOBE THISTLE
ECHVUL	*	ECHIUM VULGARE		5	[UPL]	Ad B-Forb	VIPER'S BUGLOSS
ECLPRO	4	Eclipta prostrata		-5	[OBL]	Nt A-Forb	YERBA-DE-TAJO
ELAANG	*	ELAEAGNUS ANGUSTIFOLIA		4	FACU-	Ad Tree	RUSSIAN-OLIVE
ELAUMB	*	ELAEAGNUS UMBELLATA		3	[FACU]	Ad Shrub	AUTUMN-OLIVE
ELAMIN	10	Elatine minima		-5	OBL	Nt A-Forb	WATERWORT
ELEACI	7	Eleocharis acicularis		-5	OBL	Nt P-Sedge	SPIKE-RUSH
ELEATR	9	Eleocharis atropurpurea	E	-5	[OBL]	Nt A-Sedge	PURPLE SPIKE-RUSH
ELECAR	9	Eleocharis caribaea	T	-3	FACW	Nt A-Sedge	SPIKE-RUSH
ELECOM	9	Eleocharis compressa	T	-3	FACW	Nt P-Sedge	FLATTENED SPIKE RUSH
ELEELL	6	Eleocharis elliptica		-3	[FACW]	Nt P-Sedge	GOLDEN-SEEDED SPIKE RUSH
ELEENG	8	Eleocharis engelmannii	SC	-3	FACW	Nt A-Sedge	ENGELMANN'S SPIKE-RUSH
ELEEQU	9	Eleocharis equisetoides	SC	-5	OBL	Nt P-Sedge	HORSETAIL SPIKE RUSH
ELEERY	4	Eleocharis erythropoda		-5	OBL	Nt P-Sedge	SPIKE-RUSH
ELEINT	7	Eleocharis intermedia		-3	FACW	Nt A-Sedge	SPIKE-RUSH
ELEMEL	9	Eleocharis melanocarpa	SC	-4	FACW+	Nt P-Sedge	BLACK-FRUITED SPIKE-RUSH
ELEMIC	10	Eleocharis microcarpa	E	-5	OBL	Nt A-Sedge	SMALL-FRUITED SPIKE-RUSH
ELENIT	10	Eleocharis nitida	E	-5	[OBL]	Nt P-Sedge	SLENDER SPIKE-RUSH
ELEOBT	3	Eleocharis obtusa		-5	OBL	Nt A-Sedge	SPIKE-RUSH
ELEOLI	7	Eleocharis olivacea		-5	OBL	Nt P-Sedge	SPIKE-RUSH
ELEOVA	8	Eleocharis ovata		-5	OBL	Nt A-Sedge	SPIKE-RUSH
ELEPAR	10	Eleocharis parvula	T	-5	OBL	Nt P-Sedge	DWARF SPIKE-RUSH
ELEQUA	8	Eleocharis quadrangulata		-5	OBL	Nt P-Sedge	FOUR-SIDED SPIKE-RUSH
ELEQUI	10	Eleocharis quinqueflora (E. pauciflora)		-5	[OBL]	Nt P-Sedge	SPIKE-RUSH
ELERAD	10	Eleocharis radicans	X	-5	OBL	Nt P-Sedge	SPIKE-RUSH
ELEROB	8	Eleocharis robbinsii		-5	OBL	Nt P-Sedge	SPIKE-RUSH
ELEROS	10	Eleocharis rostellata		-5	OBL	Nt P-Sedge	SPIKE-RUSH
ELESMA	5	Eleocharis smallii		-5	OBL	Nt P-Sedge	SPIKE-RUSH
ELETRI	10	Eleocharis tricostata	T	-5	OBL	Nt P-Sedge	THREE-RIBBED SPIKE-RUSH
ELEIND	*	ELEUSINE INDICA		3	FACU	Ad A-Grass	GOOSE GRASS
ELLNYC	*	ELLISIA NYCTELEA		-1	[FAC+]	Ad A-Forb	AUNT LUCY
ELOCAN	1	Elodea canadensis		-5	OBL	Nt P-Forb	COMMON WATERWEED
ELONUT	5	Elodea nuttallii		-5	OBL	Nt P-Forb	SLENDER WATERWEED
ELYARE	*	ELYMUS ARENARIUS		3	FACU	Ad P-Grass	LYME GRASS
ELYCAN	7	Elymus canadensis		1	FAC-	Nt P-Grass	CANADA WILD-RYE
ELYGLA	8	Elymus glaucus	SC	3	FACU	Nt P-Grass	BLUE WILD-RYE
ELYMOL	10	Elymus mollis (Leymus m.)	SC	5	[UPL]	Nt P-Grass	AMERICAN DUNE WILD-RYE
ELYRAC	*	ELYMUS RACEMOSUS		5	[UPL]	Ad P-Grass	RYE GRASS

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ELYRIP	8	Elymus riparius		-3	FACW	Nt P-Grass	RIVERBANK WILD-RYE
ELYVIL	5	Elymus villosus		3	FACU	Nt P-Grass	SILKY WILD-RYE
ELYVIR	4	Elymus virginicus		-2	FACW-	Nt P-Grass	VIRGINIA WILD-RYE
ELYWIE	8	Elymus wiegandii		0	FAC	Nt P-Grass	WILD-RYE
EMPNIG	10	Empetrum nigrum	T	-2	FACW-	Nt Shrub	BLACK CROWBERRY
EPIVIR	10	Epifagus virginiana		5	[UPL]	Nt P-Forb	BEECH DROPS
EPIREP	7	Epigaea repens		5	[UPL]	Nt Shrub	TRAILING ARBUTUS
EPIANG	3	Epilobium angustifolium		0	FAC	Nt P-Forb	FIREWEED
EPICIL	3	Epilobium ciliatum		3	FACU	Nt P-Forb	WILLOW-HERB
EPICOL	3	Epilobium coloratum		-5	OBL	Nt P-Forb	CINNAMON WILLOW-HERB
EPIHIR	*	EPILOBIUM HIRSUTUM		-4	[FACW+]	Ad P-Forb	GREAT HAIRY WILLOW-HERB
EPILEP	6	Epilobium leptophyllum		-5	OBL	Nt P-Forb	FEN WILLOW-HERB
EPIPAL	10	Epilobium palustre		-5	OBL	Nt P-Forb	MARSH WILLOW-HERB
EPIPAR	*	EPILOBIUM PARVIFLORUM		3	[FACU]	Ad P-Forb	WILLOW-HERB
EPISTR	8	Epilobium strictum		-5	OBL	Nt P-Forb	DOWNY WILLOW-HERB
EPIHEL	*	EPIPACTIS HELLEBORINE		5	[UPL]	Ad P-Forb	HELLEBORINE
EQUARV	0	Equisetum arvense		0	FAC	Nt Fern Ally	COMMON HORSETAIL
EQUFLU	7	Equisetum fluviatile		-5	OBL	Nt Fern Ally	WATER HORSETAIL
EQUHYE	2	Equisetum hyemale		-2	FACW-	Nt Fern Ally	SCOURING RUSH
EQULAE	2	Equisetum laevigatum		-3	FACW	Nt Fern Ally	SMOOTH SCOURING RUSH
EQUPAL	10	Equisetum palustre		-3	FACW	Nt Fern Ally	MARSH-HORSETAIL
EQUPRA	10	Equisetum pratense		-3	FACW	Nt Fern Ally	MEADOW-HORSETAIL
EQUSCI	7	Equisetum scirpoides		-1	FAC+	Nt Fern Ally	DWARF SCOURING RUSH
EQUSYL	5	Equisetum sylvaticum		-3	FACW	Nt Fern Ally	WOODLAND HORSETAIL
EQUTEL	10	Equisetum telmateia	X	-5	OBL	Nt Fern Ally	GIANT HORSETAIL
EQUVAR	8	Equisetum variegatum		-3	FACW	Nt Fern Ally	VARIEGATED SCOURING RUSH
ERACAP	4	Eragrostis capillaris	SC	5	[UPL]	Nt A-Grass	LACE GRASS
ERACIL	*	ERAGROSTIS CILIANENSIS		3	FACU	Ad A-Grass	STINK GRASS
ERAFRA	4	Eragrostis frankii		-3	FACW	Nt A-Grass	SANDBAR LOVE GRASS
ERAHYP	8	Eragrostis hypnoides		-5	OBL	Nt A-Grass	CREEPING LOVE GRASS
ERAMIN	*	ERAGROSTIS MINOR		5	[UPL]	Ad A-Grass	LOW LOVE GRASS
ERAPEC	0	Eragrostis pectinacea		0	FAC	Nt A-Grass	LOVE GRASS
ERAPIL	4	Eragrostis pilosa	SC	3	FACU	Nt A-Grass	SMALL LOVE GRASS
ERASPE	3	Eragrostis spectabilis		5	[UPL]	Nt P-Grass	PURPLE LOVE GRASS
ERATEP	*	ERAGROSTIS TEPHROSANTHOS		-5	[OBL]	Ad A-Grass	LOVE GRASS
ERATRI	*	ERAGROSTIS TRICHODES		5	[UPL]	Ad P-Grass	LARGE PURPLE LOVE GRASS
EREHIE	2	Erechtites hieraciifolia		3	FACU	Nt A-Forb	FIREWEED
ERIRAV	*	ERIANTHUS RAVENNAE		5	[UPL]	Ad P-Grass	PLUME GRASS
ERIBUL	10	Erigenia bulbosa		5	[UPL]	Nt P-Forb	HARBINGER-OF-SPRING
ERIACR	9	Erigeron acris	SC	0	FAC	Nt P-Forb	FLEABANE
ERIANN	0	Erigeron annuus		1	FAC-	Nt B-Forb	ANNUAL FLEABANE
ERIFLA	*	ERIGERON FLAGELLARIS		5	[UPL]	Ad B-Forb	DAISY FLEABANE
ERIHYS	10	Erigeron hyssopifolius	T	-3	FACW	Nt P-Forb	HYSSOP-LEAVED FLEABANE
ERIPHI	2	Erigeron philadelphicus		-3	FACW	Nt P-Forb	MARSH FLEABANE
ERIPUL	5	Erigeron pulchellus		3	FACU	Nt P-Forb	ROBIN'S PLANTAIN
ERISTR	4	Erigeron strigosus		1	FAC-	Nt P-Forb	DAISY FLEABANE
ERISEP	9	Eriocaulon septangulare		-5	OBL	Nt P-Forb	PIPEWORT
ERIANG	10	Eriophorum angustifolium		-5	OBL	Nt P-Sedge	NARROW-LEAVED COTTON-GRASS
ERIGRA	10	Eriophorum gracile		-5	OBL	Nt P-Sedge	SLENDER COTTON-GRASS
ERISPI	10	Eriophorum spissum		-5	OBL	Nt P-Sedge	COTTON-GRASS

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ERITEN	10	Eriophorum tenellum		-5	OBL	Nt P-Sedge	COTTON-GRASS
ERIVIG	8	Eriophorum virginicum		-5	OBL	Nt P-Sedge	TAWNY COTTON-GRASS
ERIVID	8	Eriophorum viridi-carinatum		-5	OBL	Nt P-Sedge	GREEN-KEELED COTTON-GRASS
EROCIC	*	ERODIUM CICUTARIUM		5	[UPL]	Ad B-Forb	STORKSBILL; ALFILERIA
EROVER	*	EROPHILA VERNA		5	[UPL]	Ad A-Forb	WHITLOW-GRASS
ERUVES	*	ERUCA VESICARIA		5	[UPL]	Ad A-Forb	ROCKET SALAD; GARDEN SALAD
ERUGAL	*	ERUCASTRUM GALLICUM		5	[UPL]	Ad A-Forb	DOG MUSTARD
ERYPLA	*	ERYNGIUM PLANUM		5	[UPL]	Ad P-Forb	ERYNGO
ERYYUC	10	Eryngium yuccifolium	T	-1	FAC+	Nt P-Forb	RATTLESNAKE-MASTER
ERYCAP	*	ERYSIMUM CAPITATUM		5	[UPL]	Ad B-Forb	WESTERN WALLFLOWER
ERYCHE	*	ERYSIMUM CHEIRANTHOIDES		3	FACU	Ad A-Forb	WORMSEED MUSTARD
ERYHIE	*	ERYSIMUM HIERACIIFOLIUM		5	[UPL]	Ad P-Forb	TALL WORMSEED MUSTARD
ERYINC	*	ERYSIMUM INCONSPICUUM		5	[UPL]	Ad P-Forb	SMALL WORMSEED MUSTARD
ERYREP	*	ERYSIMUM REPANDUM		5	[UPL]	Ad A-Forb	TREACLE MUSTARD
ERYALB	7	Erythronium albidum		5	[UPL]	Nt P-Forb	WHITE TROUT LILY
ERYAME	5	Erythronium americanum		5	[UPL]	Nt P-Forb	YELLOW TROUT LILY
ESCCAL	*	ESCHSCHOLZIA CALIFORNICA		5	[UPL]	Ad A-Forb	CALIFORNIA POPPY
EUOALA	*	EUONYMUS ALATA		5	[UPL]	Ad Shrub	WINGED WAHOO
EUOATR	8	Euonymus atropurpurea	SC	1	FAC-	Nt Shrub	WAHOO; BURNING-BUSH
EUOEUR	*	EUONYMUS EUROPAEA		5	[UPL]	Ad Shrub	SPINDLE TREE
EUOFOR	*	EUONYMUS FORTUNEI		5	[UPL]	Ad W-Vine	WINTERCREEPER
EUOHAM	*	EUONYMUS HAMILTONIANA		5	[UPL]	Ad Shrub	JAPANESE SPINDLE TREE
EUOOBO	5	Euonymus obovata		5	[UPL]	Nt Shrub	RUNNING STRAWBERRY BUSH
EUPALT	0	Eupatorium altissimum		3	[FACU]	Nt P-Forb	TALL BONESET
EUPCOE	*	EUPATORIUM COELESTINUM		-1	[FAC+]	Ad P-Forb	MISTFLOWER
EUPFIS	10	Eupatorium fistulosum	T	-5	[OBL]	Nt P-Forb	HOLLOW JOE-PYE WEED
EUPMAM	4	Eupatorium maculatum		-5	[OBL]	Nt P-Forb	JOE-PYE WEED
EUPPER	4	Eupatorium perfoliatum		-4	FACW+	Nt P-Forb	COMMON BONESET
EUPPUR	5	Eupatorium purpureum		0	[FAC]	Nt P-Forb	PURPLE JOE-PYE WEED
EUPRUG	4	Eupatorium rugosum		3	[FACU]	Nt P-Forb	WHITE SNAKEROOT
EUPSEM	0	Eupatorium serotinum		-1	[FAC+]	Nt P-Forb	LATE BONESET
EUPSES	10	Eupatorium sessilifolium	T	5	[UPL]	Nt P-Forb	UPLAND BONESET
EUPCOM	8	Euphorbia commutata	T	5	[UPL]	Nt P-Forb	TINTED SPURGE
EUPCOR	4	Euphorbia corollata		5	[UPL]	Nt P-Forb	FLOWERING SPURGE
EUPCYP	*	EUPHORBIA CYPARISSIAS		5	[UPL]	Ad P-Forb	CYPRESS SPURGE
EUPDEN	*	EUPHORBIA DENTATA		5	[UPL]	Ad A-Forb	TOOTHED SPURGE
EUPESU	*	EUPHORBIA ESULA		5	[UPL]	Ad P-Forb	LEAFY SPURGE
EUPGEY	*	EUPHORBIA GEYERI		5	[UPL]	Ad A-Forb	DUNE SPURGE
EUPGLY	*	EUPHORBIA GLYPTOSPERMA		5	[UPL]	Ad A-Forb	RIDGE-SEEDED SPURGE
EUPHEL	*	EUPHORBIA HELIOSCOPIA		5	[UPL]	Ad A-Forb	SUN SPURGE
EUPHIR	*	EUPHORBIA HIRTA		5	[UPL]	Ad A-Forb	SPURGE
EUPMAA	0	Euphorbia maculata		4	FACU-	Nt A-Forb	NODDING SPURGE
EUPMAR	*	EUPHORBIA MARGINATA		4	FACU-	Ad A-Forb	SNOW-ON-THE-MOUNTAIN
EUPNUT	0	Euphorbia nutans		3	FACU	Nt A-Forb	EYEBANE
EUPOBT	5	Euphorbia obtusata		3	FACU	Nt A-Forb	BLUNT-LEAVED SPURGE
EUPPEP	*	EUPHORBIA PEPLUS		5	[UPL]	Ad A-Forb	PETTY SPURGE
EUPPLA	*	EUPHORBIA PLATYPHYLLA		5	[UPL]	Ad A-Forb	SPURGE
EUPPOL	10	Euphorbia polygonifolia		5	[UPL]	Nt A-Forb	SEASIDE SPURGE
EUPSEA	*	EUPHORBIA SERPYLLIFOLIA		5	[UPL]	Ad A-Forb	SPURGE
EUPVER	*	EUPHORBIA VERMICULATA		5	[UPL]	Ad A-Forb	HAIRY SPURGE

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EUPHUD	8	Euphrasia hudsoniana	T	2	[FACU+]	Nt A-Forb	EYEBRIGHT
EUPNEM	8	Euphrasia nemorosa (E. arctica)	T	2	FACU+	Nt A-Forb	EYEBRIGHT
EUPSTR	*	EUPHRASIA STRICTA (E. OFFICINALIS)		-3	[FACW]	Ad A-Forb	EUROPEAN EYEBRIGHT
EUTGRA	3	Euthamia graminifolia (Solidago g.)		-2	FACW-	Nt P-Forb	GRASS-LEAVED GOLDENROD
EUTREM	10	Euthamia remota (Solidago r.)		-3	[FACW]	Nt P-Forb	LAKES FLAT-TOPPED GOLDENROD
FAGESC	*	FAGOPYRUM ESCULENTUM		5	[UPL]	Ad A-Forb	BUCKWHEAT
FAGGRA	6	Fagus grandifolia		3	FACU	Nt Tree	AMERICAN BEECH
FESARU	*	FESTUCA ARUNDINACEA		2	FACU+	Ad P-Grass	TALL FESCUE
FESGIG	*	FESTUCA GIGANTEA		0	[FAC]	Ad P-Grass	GIGANTIC FESCUE
FESMYU	*	FESTUCA MYUROS		5	[UPL]	Ad A-Grass	FESCUE
FESOCC	6	Festuca occidentalis		5	[UPL]	Nt P-Grass	WESTERN FESCUE
FESOCT	5	Festuca octoflora		4	[FACU-]	Nt A-Grass	SIX-WEEKS FESCUE
FESOVI	*	FESTUCA OVINA		5	[UPL]	Ad P-Grass	SHEEP FESCUE
FESPRA	*	FESTUCA PRATENSIS		4	FACU-	Ad P-Grass	MEADOW FESCUE
FESRUB	*	FESTUCA RUBRA		1	[FAC-]	Ad P-Grass	RED FESCUE
FESSAX	6	Festuca saximontana		5	[UPL]	Nt P-Grass	FESCUE
FESSCA	9	Festuca scabrella	T	5	[UPL]	Nt P-Grass	ROUGH FESCUE
FESSUB	5	Festuca subverticillata (F. obtusa)		2	FACU+	Nt P-Grass	NODDING FESCUE
FESTEN	*	FESTUCA TENUIFOLIA		5	[UPL]	Ad P-Grass	FESCUE
FILARV	*	FILAGO ARVENSIS		5	[UPL]	Ad A-Forb	FILAGO
FILRUB	10	Filipendula rubra	T	-4	FACW+	Nt P-Forb	QUEEN-OF-THE-PRAIRIE
FIMAUT	6	Fimbristylis autumnalis		-4	FACW+	Nt A-Sedge	AUTUMN SEDGE
FIMPUB	10	Fimbristylis puberula	X	-5	OBL	Nt P-Sedge	CHESTNUT SEDGE
FLOPRO	7	Floerkea proserpinacoides		-1	FAC+	Nt A-Forb	FALSE MERMAID
FOEVUL	*	FOENICULUM VULGARE		5	[UPL]	Ad P-Forb	FENNEL
FRAVES	2	Fragaria vesca		4	[FACU-]	Nt P-Forb	WOODLAND STRAWBERRY
FRAVIR	2	Fragaria virginiana		1	FAC-	Nt P-Forb	WILD STRAWBERRY
FRACAR	10	Frasera caroliniensis (Swertia c.)		5	[UPL]	Nt B-Forb	AMERICAN COLUMBO
FRAAME	5	Fraxinus americana		3	FACU	Nt Tree	WHITE ASH
FRANIG	6	Fraxinus nigra		-4	FACW+	Nt Tree	BLACK ASH
FRAPEN	2	Fraxinus pennsylvanica		-3	FACW	Nt Tree	RED ASH
FRAPRO	9	Fraxinus profunda	T	-5	[OBL]	Nt Tree	PUMPKIN ASH
FRAQUA	8	Fraxinus quadrangulata		5	[UPL]	Nt Tree	BLUE ASH
	*	FROELICHIA FLORIDANA		5	[UPL]	Ad A-Forb	PLAINS SNAKECOTTON
FROGRA	*	FROELICHIA GRACILIS		5	[UPL]	Ad A-Forb	COTTONWEED
FUISQU	10	Fuirena squarrosa (F. pumila)	T	-5	OBL	Nt P-Sedge	UMBRELLA-GRASS
FUMOFF	*	FUMARIA OFFICINALIS		5	[UPL]	Ad A-Forb	FUMITORY
GAIARI	*	GAILLARDIA ARISTATA		5	[UPL]	Ad P-Forb	COMMON BLANKET-FLOWER
GAIPUL	*	GAILLARDIA PULCHELLA		5	[UPL]	Ad A-Forb	BLANKET-FLOWER
GALSPE	10	Galearis spectabilis (Orchis s.)	T	5	[UPL]	Nt P-Forb	SHOWY ORCHIS
	*	GALEGA OFFICINALIS		5	[UPL]	Ad P-Forb	PROFESSOR-WEED
GALLAD	*	GALEOPSIS LADANUM		5	[UPL]	Ad A-Forb	RED HEMP NETTLE
GALTET	*	GALEOPSIS TETRAHIT		5	[UPL]	Ad A-Forb	COMMON HEMP NETTLE
GALPAR	*	GALINSOGA PARVIFLORA		5	[UPL]	Ad A-Forb	QUICKWEED
GALQUA	*	GALINSOGA QUADRIRADIATA		5	[UPL]	Ad A-Forb	QUICKWEED
GALAPA	0	Galium aparine		3	FACU	Nt A-Forb	ANNUAL BEDSTRAW
GALASP	5	Galium asprellum		-5	OBL	Nt P-Forb	ROUGH BEDSTRAW
GALBOR	3	Galium boreale		0	FAC	Nt P-Forb	NORTHERN BEDSTRAW
GALBRE	6	Galium brevipes		-5	[OBL]	Nt P-Forb	SHORT-STALKED BEDSTRAW
GALCIR	4	Galium circaezans		4	FACU-	Nt P-Forb	WHITE WILD LICORICE

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GALCON	5	Galium concinnum		3	FACU	Nt P-Forb	SHINING BEDSTRAW
GALKAM	10	Galium kamtschaticum	T	4	[FACU-]	Nt P-Forb	WOODRUFF
GALLAB	8	Galium labradoricum		-5	OBL	Nt P-Forb	BOG BEDSTRAW
GALLAN	4	Galium lanceolatum		5	[UPL]	Nt P-Forb	YELLOW WILD LICORICE
GALMOL	*	GALIUM MOLLUGO		5	[UPL]	Ad P-Forb	WHITE BEDSTRAW
GALOBT	5	Galium obtusum		-5	[OBL]	Nt P-Forb	WILD MADDER
GALODO	*	GALIUM ODORATUM		5	[UPL]	Ad P-Forb	SWEET WOODRUFF
GALPAL	3	Galium palustre		-5	[OBL]	Nt P-Forb	MARSH BEDSTRAW
GALPIL	6	Galium pilosum		5	[UPL]	Nt P-Forb	HAIRY BEDSTRAW
GALSYL	*	GALIUM SYLVATICUM		5	[UPL]	Ad P-Forb	WOODRUFF
GALTIN	5	Galium tinctorium		-5	OBL	Nt P-Forb	STIFF BEDSTRAW
GALTRD	6	Galium trifidum		-4	FACW+	Nt P-Forb	SMALL BEDSTRAW
GALTRR	4	Galium triflorum		2	FACU+	Nt P-Forb	FRAGRANT BEDSTRAW
GALVEC	*	GALIUM VERRUCOSUM		5	[UPL]	Ad A-Forb	WOODRUFF
GALVEM	*	GALIUM VERUM		5	[UPL]	Ad P-Forb	YELLOW BEDSTRAW
GAUHIS	8	Gaultheria hispidula		-3	FACW	Nt Shrub	CREEPING SNOWBERRY
GAUPRO	5	Gaultheria procumbens		3	FACU	Nt Shrub	WINTERGREEN
GAUBIE	2	Gaura biennis		4	FACU-	Nt B-Forb	BIENNIAL GAURA
GAUCOC	*	GAURA COCCINEA		5	[UPL]	Ad P-Forb	SCARLET GAURA
GAULON	*	GAURA LONGIFLORA (G. BIENNIS)		5	[UPL]	Ad B-Forb	BIENNIAL GAURA
GAYBAC	7	Gaylussacia baccata		3	FACU	Nt Shrub	HUCKLEBERRY
GENAND	5	Gentiana andrewsii		-3	FACW	Nt P-Forb	BOTTLE GENTIAN
GENFLA	10	Gentiana flavida (G. alba)	E	3	[FACU]	Nt P-Forb	YELLOWISH GENTIAN
GENLIN	10	Gentiana linearis	T	-2	[FACW-]	Nt P-Forb	NARROW-LEAVED GENTIAN
GENPUB	10	Gentiana puberulenta (G. puberula)	E	3	[FACU]	Nt P-Forb	PRAIRIE GENTIAN
GENRUB	7	Gentiana rubricaulis		-5	OBL	Nt P-Forb	GREAT LAKES GENTIAN
GENSAP	10	Gentiana saponaria	X	-2	FACW-	Nt P-Forb	SOAPWORT GENTIAN
GENQUI	9	Gentianella quinquefolia	T	0	FAC	Nt A-Forb	STIFF GENTIAN
GENCRI	8	Gentianopsis crinita (Gentiana c.)		-4	FACW+	Nt A-Forb	FRINGED GENTIAN
GENPRO	8	Gentianopsis procera (Gentiana p.)		-5	OBL	Nt A-Forb	SMALL FRINGED GENTIAN
GEOLIV	9	Geocaulon lividum		-2	FACW-	Nt P-Forb	GEOCAULON
GERBIC	4	Geranium bicknellii		5	[UPL]	Nt A-Forb	NORTHERN CRANE'S-BILL
GERCAR	4	Geranium carolinianum		5	[UPL]	Nt A-Forb	CAROLINA CRANE'S-BILL
GERCOL	*	GERANIUM COLUMBINUM		5	[UPL]	Ad A-Forb	LONG-STALKED CRANE'S-BILL
GERMAC	4	Geranium maculatum		3	FACU	Nt P-Forb	WILD GERANIUM
GERMOL	*	GERANIUM MOLLE		5	[UPL]	Ad A-Forb	DOVE'S FOOT CRANE'S-BILL
GERPUS	*	GERANIUM PUSILLUM		5	[UPL]	Ad A-Forb	SMALL GERANIUM
GERPYR	*	GERANIUM PYRENAICUM		5	[UPL]	Ad P-Forb	GERANIUM; CRANE'S-BILL
GERROB	3	Geranium robertianum		5	[UPL]	Nt A-Forb	HERB ROBERT
GERSAN	*	GERANIUM SANGUINEUM		5	[UPL]	Ad P-Forb	BLOODY CRANE'S-BILL
GEUALE	3	Geum aleppicum		-1	FAC+	Nt P-Forb	YELLOW AVENS
GEUCAN	1	Geum canadense		0	FAC	Nt P-Forb	WHITE AVENS
GEULAC	2	Geum laciniatum		-3	FACW	Nt P-Forb	ROUGH AVENS
GEUMAC	5	Geum macrophyllum		-4	FACW+	Nt P-Forb	LARGE-LEAVED AVENS
GEURIV	7	Geum rivale		-5	OBL	Nt P-Forb	PURPLE AVENS
GEUTRI	10	Geum triflorum	T	4	FACU-	Nt P-Forb	PRAIRIE AVENS
GEUURB	*	GEUM URBANUM		5	[UPL]	Ad P-Forb	AVENS
GEUVER	6	Geum vernum		1	FAC-	Nt P-Forb	SPRING AVENS
GEUVIR	6	Geum virginianum	SC	4	FACU-	Nt P-Forb	PALE AVENS
GILSTI	*	GILLENIA STIPULATA (PORTERANTHUS		5	[UPL]	Ad P-Forb	AMERICAN IPECAC

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
		S.)					
GILTRI	8	Gillenia trifoliata (Porteranthus t.)	T	5	[UPL]	Nt P-Forb	BOWMAN'S ROOT
GLAFLA	*	GLAUCIUM FLAVUM		5	[UPL]	Ad B-Forb	HORNED POPPY
GLEHED	*	GLECHOMA HEDERACEA		3	FACU	Ad P-Forb	GROUND IVY
GLETRI	8	Gleditsia triacanthos		0	FAC	Nt Tree	HONEY LOCUST
GLYACU	10	Glyceria acutiflora	X	-5	OBL	Nt P-Grass	MANNA GRASS
GLYBOR	6	Glyceria borealis		-5	OBL	Nt P-Grass	NORTHERN MANNA GRASS
GLYCAN	8	Glyceria canadensis		-5	OBL	Nt P-Grass	RATTLESNAKE GRASS
GLYGRA	6	Glyceria grandis		-5	[OBL]	Nt P-Grass	REED MANNA GRASS
GLYSEP	7	Glyceria septentrionalis		-5	OBL	Nt P-Grass	FLOATING MANNA GRASS
GLYSTR	4	Glyceria striata		-5	OBL	Nt P-Grass	FOWL MANNA GRASS
GLYMAX	*	GLYCINE MAX		5	[UPL]	Ad A-Forb	SOYBEAN
GNAHEL	5	Gnaphalium helleri		4	[FACU-]	Nt A-Forb	CUDWEED
GNAMAC	2	Gnaphalium macounii		5	[UPL]	Nt A-Forb	CLAMMY CUDWEED
GNAOBT	2	Gnaphalium obtusifolium		5	[UPL]	Nt A-Forb	OLD-FIELD BALSAM
GNAPUR	0	Gnaphalium purpureum		3	[FACU]	Nt A-Forb	EARLY CUDWEED
GNASYL	5	Gnaphalium sylvaticum	T	5	[UPL]	Nt P-Forb	WOODLAND CUDWEED
GNAULI	3	Gnaphalium uliginosum		0	[FAC]	Nt A-Forb	LOW CUDWEED
GOOOBL	6	Goodyera oblongifolia		5	[UPL]	Nt P-Forb	MENZIES' RATTLESNAKE PLANTAIN
GOOPUB	7	Goodyera pubescens		0	FAC	Nt P-Forb	DOWNY RATTLESNAKE PLANTAIN
GOOREP	9	Goodyera repens		3	FACU	Nt P-Forb	CREEPING RATTLESNAKE PLANTAIN
GOOTES	6	Goodyera tesselata		3	FACU	Nt P-Forb	TESSELATED RATTLESNAKE PLANTAIN
GRAAUR	10	Gratiola aurea (G. lutea)	T	-5	OBL	Nt P-Forb	GOLDEN HEDGE-HYSSOP; GOLDENPERT
GRANEG	5	Gratiola neglecta		-5	OBL	Nt A-Forb	CLAMMY HEDGE HYSSOP
GRAVIR	5	Gratiola virginiana	T	-5	OBL	Nt A-Forb	ROUND-FRUITED HEDGE HYSSOP
GRISQU	*	GRINDELIA SQUARROSA		3	FACU	Ad B-Forb	GUM-WEED
GUIABY	*	GUIZOTIA ABYSSINICA		5	[UPL]	Ad A-Forb	NIGER SEED
GYMDRY	5	Gymnocarpium dryopteris		0	FAC	Nt Fern	OAK FERN
GYMJES	10	Gymnocarpium jessoense	E	5	[UPL]	Nt Fern	NORTHERN OAK FERN
GYMROB	10	Gymnocarpium robertianum	T	3	FACU	Nt Fern	LIMESTONE OAK FERN
GYMDIO	9	Gymnocladus dioicus	SC	5	[UPL]	Nt Tree	KENTUCKY COFFEE TREE
GYPELE	*	GYPSOPHILA ELEGANS		5	[UPL]	Ad A-Forb	BABY'S BREATH
GYPMUR	*	GYPSOPHILA MURALIS		5	[UPL]	Ad A-Forb	BABY'S BREATH
GYPPAN	*	GYPSOPHILA PANICULATA		5	[UPL]	Ad P-Forb	BABY'S BREATH
GYPSCO	*	GYPSOPHILA SCORZONERIFOLIA		2	[FACU+]	Ad P-Forb	BABY'S BREATH
HACDEF	2	Hackelia deflexa		5	[UPL]	Nt P-Forb	STICKSEED
HACVIR	1	Hackelia virginiana		1	FAC-	Nt P-Forb	BEGGAR'S LICE
HALDEF	7	Halenia deflexa		0	FAC	Nt A-Forb	SPURRED GENTIAN
HALCAR	*	HALESIA CAROLINA		5	[UPL]	Ad Tree	SILVER-BELL TREE
HAMVIR	5	Hamamelis virginiana		3	FACU	Nt Shrub	WITCH-HAZEL
HAPCIL	*	HAPLOPAPPUS CILIATUS		5	[UPL]	Ad A-Forb	WAX-GOLDENWEED
HEDHIS	3	Hedeoma hispida		5	UPL	Nt A-Forb	ROUGH PENNYROYAL
HEDPUL	4	Hedeoma pulegioides		5	UPL	Nt A-Forb	AMERICAN PENNYROYAL
HEDNIG	8	Hedyotis nigricans	X	5	UPL	Nt P-Forb	HEDYOTIS; BLUETS
HEDALP	10	Hedysarum alpinum	E	5	[UPL]	Nt P-Forb	ALPINE SAINFOIN
HELAUT	5	Helenium autumnale		-4	FACW+	Nt P-Forb	SNEEZEWEED
HELFLE	*	HELENIUM FLEXUOSUM		-1	FAC+	Ad P-Forb	SNEEZEWEED
HELBIC	10	Helianthemum bicknellii		5	[UPL]	Nt P-Forb	ROCKROSE
HELCAN	8	Helianthemum canadense		5	[UPL]	Nt P-Forb	COMMON ROCKROSE
HELANN	*	HELIANTHUS ANNUUS		1	FAC-	Ad A-Forb	GARDEN SUNFLOWER

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
HELDEC	5	Helianthus decapetalus		5	[UPL]	Nt P-Forb	PALE SUNFLOWER
HELDIV	5	Helianthus divaricatus		5	[UPL]	Nt P-Forb	WOODLAND SUNFLOWER
HELGIG	5	Helianthus giganteus		-3	FACW	Nt P-Forb	TALL SUNFLOWER
HELGRO	2	Helianthus grosseserratus		-2	FACW-	Nt P-Forb	SAWTOOTH SUNFLOWER
HELHIR	10	Helianthus hirsutus	SC	5	[UPL]	Nt P-Forb	OBLONG SUNFLOWER
HELMAX	*	HELIANTHUS MAXIMILIANI		5	[UPL]	Ad P-Forb	MAXIMILIAN SUNFLOWER
HELMIC	10	Helianthus microcephalus	X	4	FACU-	Nt P-Forb	SMALL WOOD SUNFLOWER
HELMOL	9	Helianthus mollis	T	5	[UPL]	Nt P-Forb	DOWNY SUNFLOWER
HELOCC	8	Helianthus occidentalis		4	FACU-	Nt P-Forb	WESTERN SUNFLOWER
HELPAU	5	Helianthus pauciflorus		5	[UPL]	Nt P-Forb	STIFF SUNFLOWER
HELPET	*	HELIANTHUS PETIOLARIS		5	[UPL]	Ad A-Forb	PETIOLED SUNFLOWER
HELSTR	4	Helianthus strumosus		5	[UPL]	Nt P-Forb	PALE-LEAVED SUNFLOWER
HELTUB	6	Helianthus tuberosus		0	FAC	Nt P-Forb	JERUSALEM ARTICHOKE
HELHEL	5	Heliopsis helianthoides		5	[UPL]	Nt P-Forb	FALSE SUNFLOWER
HELNIG	*	HELLEBORUS NIGER		5	[UPL]	Ad P-Forb	MIGNONETTE
HELVIR	*	HELLEBORUS VIRIDIS		5	[UPL]	Ad P-Forb	GREEN HELLEBORE
HEMFUL	*	HEMEROCALLIS FULVA		5	[UPL]	Ad P-Forb	ORANGE DAY-LILY
HEMLIL	*	HEMEROCALLIS LILIO-ASPHODELUS		5	[UPL]	Ad P-Forb	YELLOW DAY-LILY
HEMMIC	7	Hemicarpha micrantha (Lipocarpa m.)	SC	-5	OBL	Nt A-Sedge	DWARF-BULRUSH
HEPACU	8	Hepatica acutiloba		5	[UPL]	Nt P-Forb	SHARP-LOBED HEPATICA
HEPAME	6	Hepatica americana		5	[UPL]	Nt P-Forb	ROUND-LOBED HEPATICA
	*	HERACLEUM MANTEGAZZIANUM		1	[FAC-]	Ad P-Forb	GIANT HOGWEED
HERMAX	3	Heracleum maximum		-3	[FACW]	Nt P-Forb	COW-PARSNIP
HERGLA	*	HERNIARIA GLABRA		5	[UPL]	Ad A-Forb	HERNIARY
HESMAT	*	HESPERIS MATRONALIS		5	[UPL]	Ad P-Forb	DAME'S ROCKET
HETDUB	6	Heteranthera dubia		-5	[OBL]	Nt P-Forb	WATER STAR-GRASS
HEUAME	8	Heuchera americana		4	FACU-	Nt P-Forb	ALUM ROOT
HEURIC	8	Heuchera richardsonii		1	FAC-	Nt P-Forb	PRAIRIE ALUM ROOT
HIBLAE	7	Hibiscus laevis	SC	-5	OBL	Nt P-Forb	SMOOTH ROSE MALLOW
HIBMOS	7	Hibiscus moscheutos (H. palustris)	SC	-5	OBL	Nt P-Forb	SWAMP ROSE MALLOW
HIBTRI	*	HIBISCUS TRIONUM		5	[UPL]	Ad A-Forb	FLOWER-OF-AN-HOUR
HIEAUR	*	HIERACIUM AURANTIACUM		5	[UPL]	Ad P-Forb	ORANGE HAWKWEED
HIECAE	*	HIERACIUM CAESPITOSUM (H. PRATENSE)		5	[UPL]	Ad P-Forb	KING-DEVIL
HIEFLA	*	HIERACIUM FLAGELLARE		5	[UPL]	Ad P-Forb	WHIP-LASH-HAWKWEED
HIEGRO	5	Hieracium gronovii		5	[UPL]	Nt P-Forb	HAIRY HAWKWEED
HIEKAL	3	Hieracium kalmii		5	[UPL]	Nt P-Forb	KALM'S HAWKWEED
HIELAC	*	HIERACIUM LACHENALII		5	[UPL]	Ad P-Forb	EUROPEAN HAWKWEED
HIELON	6	Hieracium longipilum		5	[UPL]	Nt P-Forb	LONG-BEARDED HAWKWEED
HIEMAC	*	HIERACIUM MACULATUM		5	[UPL]	Ad P-Forb	SPOTTED HAWKWEED
HIEMUR	*	HIERACIUM MURORUM		5	[UPL]	Ad P-Forb	HAWKWEED
HIEPAN	10	Hieracium paniculatum	SC	5	UPL	Nt P-Forb	PANICLED HAWKWEED
HIEPIA	*	HIERACIUM PILOSELLA		5	[UPL]	Ad P-Forb	MOUSE-EAR HAWKWEED
HIEPIS	*	HIERACIUM PILOSELLOIDES		5	[UPL]	Ad P-Forb	GLAUCOUS KING-DEVIL
HIESCA	3	Hieracium scabrum		5	[UPL]	Nt P-Forb	ROUGH HAWKWEED
HIEUMB	7	Hieracium umbellatum		5	[UPL]	Nt P-Forb	NORTHERN HAWKWEED
HIEVEN	6	Hieracium venosum		5	[UPL]	Nt P-Forb	RATTLESNAKE WEED
HIEODO	9	Hierochloe odorata		-3	FACW	Nt P-Grass	SWEET GRASS
HIPVUL	10	Hippuris vulgaris		-5	OBL	Nt P-Forb	MARE'S-TAIL
HOLLAN	*	HOLCUS LANATUS		4	FACU-	Ad P-Grass	VELVET GRASS
HOLUMB	*	HOLOSTEUM UMBELLATUM		5	[UPL]	Ad A-Forb	JAGGED CHICKWEED

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
HORJUB	*	HORDEUM JUBATUM		-1	FAC+	Ad P-Grass	SQUIRREL-TAIL GRASS
HORPUS	*	HORDEUM PUSILLUM		0	FAC	Ad A-Grass	LITTLE BARLEY
HORVUL	*	HORDEUM VULGARE		5	[UPL]	Ad A-Grass	BARLEY
HOUCAE	4	Houstonia caerulea	**SC**	3	FACU	Nt P-Forb	BLUETS
HOUCAN	10	Houstonia canadensis		3	[FACU]	Nt P-Forb	BLUETS
HOULON	6	Houstonia longifolia		5	[UPL]	Nt P-Forb	LONG-LEAVED BLUETS
HOUPUR	10	Houstonia purpurea		5	[UPL]	Nt P-Forb	LARGE HOUSTONIA
HUDTOM	10	Hudsonia tomentosa		5	[UPL]	Nt Shrub	BEACH-HEATH
HUMJAP	*	HUMULUS JAPONICUS		3	FACU	Ad A-Forb	JAPANESE HOP
HUMLUP	3	Humulus lupulus		3	FACU	Nt H-Vine	COMMON HOP
HUPAPP	10	Huperzia appalachiania	**SC**	4	FACU-	Nt Fern Ally	MOUNTAIN FIR MOSS
HUPLUC	5	Huperzia lucidula (Lycopodium lucidulum)		-1	[FAC+]	Nt Fern Ally	SHINING CLUBMOSS
HUPSEL	10	Huperzia selago (Lycopodium s.)	**SC**	4	[FACU-]	Nt Fern Ally	FIR CLUBMOSS
HYBCON	9	Hybanthus concolor	**SC**	2	FACU+	Nt P-Forb	GREEN VIOLET
HYDCAS	10	Hydrastis canadensis	**T**	5	[UPL]	Nt P-Forb	GOLDENSEAL
HYDMOR	*	HYDROCHARIS MORSUS-RANAE		-5	[OBL]	Ad P-Forb	EUROPEAN FROG'S-BIT
HYDAME	6	Hydrocotyle americana		-5	OBL	Nt P-Forb	WATER-PENNYWORT
HYDUMB	10	Hydrocotyle umbellata		-5	OBL	Nt P-Forb	WATER-PENNYWORT
HYDAPP	7	Hydrophyllum appendiculatum		5	[UPL]	Nt P-Forb	GREAT WATERLEAF
HYDCAE	7	Hydrophyllum canadense		-2	FACW-	Nt P-Forb	CANADA WATERLEAF
HYDVIR	4	Hydrophyllum virginianum		-2	FACW-	Nt P-Forb	VIRGINIA WATERLEAF
HYMHER	10	Hymenoxys herbacea (H. acaulis)	**E**	5	[UPL]	Nt P-Forb	LAKESIDE DAISY
HYONIG	*	HYOSCYAMUS NIGER		5	[UPL]	Ad A-Forb	HENBANE
HYPASC	8	Hypericum ascyron (H. pyramidatum)		-1	[FAC+]	Nt P-Forb	GIANT ST. JOHN'S-WORT
HYPBOR	5	Hypericum boreale		-5	OBL	Nt P-Forb	NORTHERN ST. JOHN'S-WORT
HYPCAN	6	Hypericum canadense		-3	FACW	Nt A-Forb	CANADIAN ST. JOHN'S-WORT
HYPELL	9	Hypericum ellipticum		-5	OBL	Nt P-Forb	PALE ST. JOHN'S-WORT
HYPGEN	6	Hypericum gentianoides	**SC**	3	FACU	Nt A-Forb	ORANGE GRASS
HYPKAL	10	Hypericum kalmianum		-2	FACW-	Nt Shrub	KALM'S ST. JOHN'S-WORT
HYPMAJ	4	Hypericum majus		-3	FACW	Nt P-Forb	LARGER CANADA ST. JOHN'S-WORT
HYPMUT	5	Hypericum mutilum		-3	FACW	Nt P-Forb	WEAK ST. JOHN'S-WORT
HYPPER	*	HYPERICUM PERFORATUM		5	[UPL]	Ad P-Forb	COMMON ST. JOHN'S-WORT
HYPPRO	5	Hypericum prolificum (H. spathulatum)		3	FACU	Nt Shrub	SHRUBBY ST.JOHN'S-WORT
HYPPUN	4	Hypericum punctatum		-1	FAC+	Nt P-Forb	SPOTTED ST. JOHN'S-WORT
HYPSPH	8	Hypericum sphaerocarpum	**T**	3	FACU	Nt P-Forb	ROUND-FRUITED ST. JOHN'S-WORT
HYPRAD	*	HYPOCHAERIS RADICATA		5	[UPL]	Ad P-Forb	SPOTTED CAT'S-EAR
HYPHIR	10	Hypoxis hirsuta		0	FAC	Nt P-Forb	STAR-GRASS
HYSOFF	*	HYSSOPUS OFFICINALIS		5	[UPL]	Ad P-Forb	HYSSOP
HYSPAT	5	Hystrix patula		5	[UPL]	Nt P-Grass	BOTTLEBRUSH GRASS
IBEAMA	*	IBERIS AMARA		5	[UPL]	Ad A-Forb	ROCKET CANDYTUFT
IBEUMB	*	IBERIS UMBELLATA		5	[UPL]	Ad A-Forb	GLOBE CANDYTUFT
ILEVER	5	Ilex verticillata		-4	FACW+	Nt Shrub	MICHIGAN HOLLY
IMPBAL	*	IMPATIENS BALSAMINA		5	[UPL]	Ad A-Forb	GARDEN BALSAM
IMPCAP	2	Impatiens capensis		-3	FACW	Nt A-Forb	SPOTTED TOUCH-ME-NOT
IMPGLA	*	IMPATIENS GLANDULIFERA		-3	[FACW]	Ad A-Forb	TOUCH-ME-NOT
IMPPAL	6	Impatiens pallida		-3	FACW	Nt A-Forb	PALE TOUCH-ME-NOT
INUHEL	*	INULA HELENIUM		5	[UPL]	Ad P-Forb	ELECAMPANE
IPOHED	*	IPOMOEA HEDERACEA		0	[FAC]	Ad A-Forb	IVY-LEAVED MORNING GLORY
IPOPAN	7	Ipomoea pandurata	**T**	3	FACU	Nt P-Forb	WILD SWEET POTATO
IPOPUR	*	IPOMOEA PURPUREA		4	FACU-	Ad A-Forb	COMMON MORNING GLORY

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
IPOMUL	*	IPOMOEA XMULTIFIDA		5	[UPL]	Ad A-Forb	CARDINAL CLIMBER
IPORUB	*	IPOMOPSIS RUBRA		5	[UPL]	Ad B-Forb	STANDING-CYPRESS
IRIGER	*	IRIS GERMANICA		5	[UPL]	Ad P-Forb	FLEUR-DE-LYS
IRILAC	9	Iris lacustris	T	0	FAC	Nt P-Forb	DWARF LAKE IRIS
IRIPSE	*	IRIS PSEUDACORUS		-5	OBL	Ad P-Forb	YELLOW FLAG
IRIPUM	*	IRIS PUMILA		5	[UPL]	Ad P-Forb	IRIS
IRIVER	5	Iris versicolor		-5	OBL	Nt P-Forb	WILD BLUE FLAG
IRIVIR	5	Iris virginica		-5	OBL	Nt P-Forb	SOUTHERN BLUE FLAG
ISOECH	8	Isoetes echinospora		-5	[OBL]	Nt Fern Ally	QUILLWORT
ISOENG	10	Isoetes engelmannii	E	5	[UPL]	Nt Fern Ally	ENGELMANN'S QUILLWORT
ISOLAC	8	Isoetes lacustris		-5	OBL	Nt Fern Ally	QUILLWORT
ISOBIT	8	Isopyrum biternatum		0	FAC	Nt P-Forb	FALSE RUE ANEMONE
ISOMED	9	Isotria medeoloides	E	3	FACU	Nt P-Forb	SMALL WHORLED POGONIA
ISOVER	10	Isotria verticillata	T	0	FAC	Nt P-Forb	WHORLED POGONIA
IVAANN	*	IVA ANNUA		5	[UPL]	Ad A-Forb	ROUGH MARSH-ELDER
IVAXAN	*	IVA XANTHIIFOLIA		0	[FAC]	Ad A-Forb	BIG MARSH-ELDER
JEFDIP	9	Jeffersonia diphylla	SC	5	[UPL]	Nt P-Forb	TWINLEAF
JUGCIN	5	Juglans cinerea		2	FACU+	Nt Tree	BUTTERNUT
JUGNIG	5	Juglans nigra		3	[FACU]	Nt Tree	BLACK WALNUT
JUGREG	*	JUGLANS REGIA		5	[UPL]	Ad Tree	ENGLISH WALNUT
JUNACU	8	Juncus acuminatus		-5	OBL	Nt P-Forb	SHARP-FRUITED RUSH
JUNALP	5	Juncus alpinus		-5	OBL	Nt P-Forb	RUSH
JUNART	3	Juncus articulatus		-5	OBL	Nt P-Forb	JOINTED RUSH
JUNBAL	4	Juncus balticus		-5	OBL	Nt P-Forb	RUSH
JUNBIF	8	Juncus biflorus		-3	FACW	Nt P-Forb	TWO-FLOWERED RUSH
JUNBRR	9	Juncus brachycarpus	T	-3	FACW	Nt P-Forb	SHORT-FRUITED RUSH
JUNBRP	7	Juncus brachycephalus		-5	OBL	Nt P-Forb	RUSH
JUNBRE	8	Juncus brevicaudatus		-5	OBL	Nt P-Forb	RUSH
JUNBUF	2	Juncus bufonius		-4	FACW+	Nt A-Forb	TOAD RUSH
JUNCAN	6	Juncus canadensis		-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNCOU	*	JUNCUS COMPRESSUS		-4	[FACW+]	Ad P-Forb	RUSH
JUNDUD	1	Juncus dudleyi		0	[FAC]	Nt P-Forb	DUDLEY'S RUSH
JUNEFF	3	Juncus effusus		-5	OBL	Nt P-Forb	SOFT-STEMMED RUSH
JUNENS	*	JUNCUS ENSIFOLIUS		-3	[FACW]	Ad P-Forb	DAGGER-LEAF RUSH
JUNFIL	10	Juncus filiformis		-3	FACW	Nt P-Forb	RUSH
JUNGER	*	JUNCUS GERARDII		-5	OBL	Ad P-Forb	BLACK-GRASS
JUNGRE	10	Juncus greenei		0	[FAC]	Nt P-Forb	GREENE'S RUSH
JUNINF	*	JUNCUS INFLEXUS		-3	FACW	Ad P-Forb	RUSH
JUNMAR	8	Juncus marginatus		-3	FACW	Nt P-Forb	GRASS-LEAVED RUSH
JUNMIL	10	Juncus militaris	T	-5	[OBL]	Nt P-Forb	SOLDIER RUSH
JUNNOD	5	Juncus nodosus		-5	OBL	Nt P-Forb	JOINT RUSH
JUNPEL	8	Juncus pelocarpus		-5	OBL	Nt P-Forb	BROWN-FRUITED RUSH
JUNSCI	9	Juncus scirpoides	T	-4	FACW+	Nt P-Forb	ROUND-HEADED RUSH
JUNSTY	10	Juncus stygius	T	5	[UPL]	Nt P-Forb	MOOR RUSH
JUNTEN	1	Juncus tenuis		0	FAC	Nt P-Forb	PATH RUSH
JUNTOR	4	Juncus torreyi		-3	FACW	Nt P-Forb	TORREY'S RUSH
JUNVAS	10	Juncus vaseyi	T	-3	FACW	Nt P-Forb	VASEY'S RUSH
JUNCOI	4	Juniperus communis		3	[FACU]	Nt Shrub	COMMON or GROUND JUNIPER
JUNHOR	10	Juniperus horizontalis		1	FAC-	Nt Shrub	CREEPING JUNIPER
JUNVIR	3	Juniperus virginiana		3	FACU	Nt Tree	RED-CEDAR

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
JUSAME	9	Justicia americana	T	-5	OBL	Nt P-Forb	WATER-WILLOW
KALANG	7	Kalmia angustifolia		0	FAC	Nt Shrub	SHEEP-LAUREL
KALPOL	10	Kalmia polifolia		-5	OBL	Nt Shrub	SWAMP-LAUREL
KICELA	*	KICKXIA ELATINE		0	[FAC]	Ad A-Forb	FLUELLIN
KNAARV	*	KNAUTIA ARVENSIS		5	[UPL]	Ad B-Forb	BLUEBUTTONS
KOCSCO	*	KOCHIA SCOPARIA		4	FACU-	Ad A-Forb	SUMMER-CYPRESS
KOEMAC	9	Koeleria macrantha		5	[UPL]	Nt P-Grass	JUNE GRASS
KOLAMA	*	KOLKWITZIA AMABILIS		5	[UPL]	Ad Shrub	BEAUTY BUSH
KRIBIF	5	Krigia biflora		3	FACU	Nt P-Forb	FALSE DANDELION
KRIVIR	4	Krigia virginica		5	[UPL]	Nt A-Forb	DWARF DANDELION
KUHEUP	10	Kuhnia eupatorioides	SC	5	[UPL]	Nt P-Forb	FALSE BONESET
LACBIE	2	Lactuca biennis		0	FAC	Nt B-Forb	TALL BLUE LETTUCE
LACCAN	2	Lactuca canadensis		2	FACU+	Nt B-Forb	TALL LETTUCE
LACFLO	4	Lactuca floridana	T	1	FAC-	Nt B-Forb	WOODLAND LETTUCE
LACHIR	7	Lactuca hirsuta		5	[UPL]	Nt B-Forb	HAIRY TALL LETTUCE
LACMUR	*	LACTUCA MURALIS		5	[UPL]	Ad B-Forb	WALL-LETTUCE
LACPUL	10	Lactuca pulchella	T	0	FAC	Nt P-Forb	BLUE LETTUCE
LACSAL	*	LACTUCA SALIGNA		3	[FACU]	Ad B-Forb	WILLOW LETTUCE
LACSER	*	LACTUCA SERRIOLA		0	FAC	Ad B-Forb	PRICKLY LETTUCE
LAMALB	*	LAMIUM ALBUM		5	[UPL]	Ad P-Forb	WHITE DEAD-NETTLE
LAMAMP	*	LAMIUM AMPLEXICAULE		5	[UPL]	Ad A-Forb	HENBIT
LAMMAC	*	LAMIUM MACULATUM		5	[UPL]	Ad P-Forb	DEAD-NETTLE
LAMPUR	*	LAMIUM PURPUREUM		5	[UPL]	Ad A-Forb	PURPLE DEAD-NETTLE
LAPCAN	4	Laportea canadensis		-3	FACW	Nt P-Forb	WOOD NETTLE
LAPSQU	*	LAPPULA SQUARROSA		5	[UPL]	Ad A-Forb	TWO-ROW STICKSEED
LAPCOM	*	LAPSANA COMMUNIS		5	[UPL]	Ad A-Forb	NIPPLEWORT
LARLAR	5	Larix laricina		-3	FACW	Nt Tree	TAMARACK
LATHIR	*	LATHYRUS HIRSUTUS		5	[UPL]	Ad P-Forb	WILD PEA
LATJAP	10	Lathyrus japonicus		4	FACU-	Nt P-Forb	BEACH PEA
LATLAT	*	LATHYRUS LATIFOLIUS		5	[UPL]	Ad P-Forb	EVERLASTING PEA
LATOCH	8	Lathyrus ochroleucus		5	[UPL]	Nt P-Forb	PALE VETCHLING
LATODO	*	LATHYRUS ODORATUS		5	[UPL]	Ad A-Forb	VETCHLING
LATPAL	7	Lathyrus palustris		-3	FACW	Nt P-Forb	MARSH PEA
LATPRA	*	LATHYRUS PRATENSIS		3	FACU	Ad P-Forb	YELLOW VETCHLING
LATSYL	*	LATHYRUS SYLVESTRIS		5	[UPL]	Ad P-Forb	EVERLASTING PEA
LATTUB	*	LATHYRUS TUBEROSUS		5	[UPL]	Ad P-Forb	TUBEROUS VETCHLING
LATVEN	8	Lathyrus venosus		0	FAC	Nt P-Forb	VEINY PEA
LECINT	6	Lechea intermedia		5	[UPL]	Nt P-Forb	INTERMEDIATE PINWEED
LECMIN	9	Lechea minor	SC	5	[UPL]	Nt P-Forb	SMALL PINWEED
LECPUL	9	Lechea pulchella (L. leggettii)	T	5	[UPL]	Nt P-Forb	LEGGETT'S PINWEED
LECSTR	10	Lechea stricta	SC	5	[UPL]	Nt P-Forb	BUSHY PINWEED
LECVIL	5	Lechea villosa		5	[UPL]	Nt P-Forb	HAIRY PINWEED
LEDGRO	8	Ledum groenlandicum		-5	OBL	Nt Shrub	LABRADOR-TEA
LEEORY	3	Leersia oryzoides		-5	OBL	Nt P-Grass	CUT GRASS
LEEVIR	5	Leersia virginica		-3	FACW	Nt P-Grass	WHITE GRASS
LEMMIN	5	Lemna minor		-5	OBL	Nt A-Forb	SMALL DUCKWEED
LEMTRI	6	Lemna trisulca		-5	OBL	Nt A-Forb	STAR DUCKWEED
LEMVAL	8	Lemna valdiviana	X	-5	OBL	Nt A-Forb	PALE DUCKWEED
LEOAUT	*	LEONTODON AUTUMNALIS		5	[UPL]	Ad P-Forb	FALL-DANDELION
LEOTAR	*	LEONTODON TARAXACOIDES		5	[UPL]	Ad P-Forb	LITTLE HAWKBIT

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
LEOCAR	*	LEONURUS CARDIACA		5	[UPL]	Ad P-Forb	MOTHERWORT
LEPCAM	*	LEPIDIUM CAMPESTRE		5	[UPL]	Ad B-Forb	FIELD CRESS
LEPDEN	*	LEPIDIUM DENSIFLORUM		0	FAC	Ad A-Forb	SMALL PEPPERGRASS
LEPMON	*	LEPIDIUM MONTANUM		5	[UPL]	Ad P-Forb	PEPPERGRASS
LEPPER	*	LEPIDIUM PERFOLIATUM		0	FAC	Ad A-Forb	CLASPING CRESS
LEPRUD	*	LEPIDIUM RUDERALE		5	[UPL]	Ad A-Forb	FETID PEPPERGRASS
LEPSAT	*	LEPIDIUM SATIVUM		5	[UPL]	Ad A-Forb	GARDEN CRESS
LEPVIR	0	Lepidium virginicum		4	FACU-	Nt A-Forb	COMMON PEPPERGRASS
LEPFAS	*	LEPTOCHLOA FASCICULARIS		-5	OBL	Ad A-Grass	SPRANGLETOP
LEPCOG	3	Leptoloma cognatum		5	[UPL]	Nt P-Grass	FALL WITCH GRASS
	*	LESPEDEZA BICOLOR		5	[UPL]	Ad Shrub	SHRUBBY LESPEDEZA
LESCAP	5	Lespedeza capitata		3	FACU	Nt P-Forb	ROUND-HEADED BUSH-CLOVER
LESCUN	*	LESPEDEZA CUNEATA		5	[UPL]	Ad P-Forb	SILKY BUSH-CLOVER
LESHIR	7	Lespedeza hirta		5	[UPL]	Nt P-Forb	HAIRY BUSH-CLOVER
LESINT	7	Lespedeza intermedia		5	[UPL]	Nt P-Forb	BUSH-CLOVER
LESPRO	10	Lespedeza procumbens	X	5	[UPL]	Nt P-Forb	TRAILING BUSH-CLOVER
LESSTI	*	LESPEDEZA STIPULACEA		3	FACU	Ad A-Forb	KOREAN BUSH-CLOVER
LESTHU	*	LESPEDEZA THUNBERGII		5	[UPL]	Ad Shrub	JAPANESE BUSH-CLOVER
LESVIO	5	Lespedeza violacea		5	[UPL]	Nt P-Forb	VIOLET BUSH-CLOVER
LESVIR	7	Lespedeza virginica		5	[UPL]	Nt P-Forb	SLENDER BUSH-CLOVER
LEUGRA	5	Leucophysalis grandiflora		5	[UPL]	Nt A-Forb	WHITE-FLOWERED GROUND-CHERRY
LEUMUL	8	Leucospora multifida (Conobea m.)	SC	0	[FAC]	Nt A-Forb	CONOBEA
LEVOFF	*	LEVISTICUM OFFICINALE		5	[UPL]	Ad P-Forb	LOVAGE
LIAASP	4	Liatris aspera		5	[UPL]	Nt P-Forb	ROUGH BLAZING STAR
LIACYL	5	Liatris cylindracea		5	[UPL]	Nt P-Forb	CYLINDRICAL BLAZING STAR
LIAPUN	10	Liatris punctata	X	5	[UPL]	Nt P-Forb	DOTTED BLAZING STAR
LIAPYC	*	LIATRIS PYCNOSTACHYA		1	[FAC-]	Ad P-Forb	PRAIRIE BLAZING STAR
LIASCA	5	Liatris scariosa (L. novae-angliae)		5	[UPL]	Nt P-Forb	NORTHERN BLAZING STAR
LIASPI	8	Liatris spicata		0	FAC	Nt P-Forb	MARSH BLAZING STAR
LIASQU	10	Liatris squarrosa	X	5	[UPL]	Nt P-Forb	PLAINS BLAZING STAR
LIGOBT	*	LIGUSTRUM OBTUSIFOLIUM		5	[UPL]	Ad Shrub	BORDER PRIVET
LIGOVA	*	LIGUSTRUM OVALIFOLIUM		5	[UPL]	Ad Shrub	PRIVET
LIGVUL	*	LIGUSTRUM VULGARE		1	[FAC-]	Ad Shrub	COMMON PRIVET
LILLAN	*	LILIUM LANCIFOLIUM		5	[UPL]	Ad P-Forb	TIGER LILY
LILMIC	5	Lilium michiganense		-1	[FAC+]	Nt P-Forb	MICHIGAN LILY
LILPHI	10	Lilium philadelphicum		1	FAC-	Nt P-Forb	WOOD LILY
LINCAN	8	Linaria canadensis		5	[UPL]	Nt A-Forb	BLUE TOADFLAX
LINDAL	*	LINARIA DALMATICA		5	[UPL]	Ad P-Forb	DALMATIAN TOADFLAX
LINSPA	*	LINARIA SPARTEA		5	[UPL]	Ad A-Forb	BUTTER-AND-EGGS
LINVUL	*	LINARIA VULGARIS		5	[UPL]	Ad P-Forb	BUTTER-AND-EGGS
LINBEN	7	Lindera benzoin		-2	FACW-	Nt Shrub	SPICEBUSH
LINANA	8	Lindernia anagallidea		-5	OBL	Nt A-Forb	SLENDER FALSE PIMPERNEL
LINDUB	4	Lindernia dubia		-5	OBL	Nt A-Forb	FALSE PIMPERNEL
LINBOR	6	Linnaea borealis		0	FAC	Nt P-Forb	TWINFLOWER
LINCAT	*	LINUM CATHARTICUM		3	[FACU]	Ad A-Forb	FAIR FLAX
LINMED	7	Linum medium		3	FACU	Nt P-Forb	SMALL YELLOW FLAX
LINPER	*	LINUM PERENNE		5	[UPL]	Ad P-Forb	PERENNIAL FLAX
LINSTR	10	Linum striatum		-2	FACW-	Nt P-Forb	STIFF YELLOW FLAX
LINSUL	8	Linum sulcatum	SC	5	[UPL]	Nt P-Forb	GROOVED YELLOW FLAX
LINUSI	*	LINUM USITATISSIMUM		5	[UPL]	Ad A-Forb	COMMON FLAX

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
LINVIR	9	Linum virginianum	T	-3	FACW	Nt P-Forb	SLENDER YELLOW FLAX
LIPLIL	8	Liparis liliifolia	SC	4	FACU-	Nt P-Forb	LILY-LEAVED TWAYBLADE
LIPLOE	5	Liparis loeselii		-4	FACW+	Nt P-Forb	LOESEL'S TWAYBLADE
LIRTUL	9	Liriodendron tulipifera		2	FACU+	Nt Tree	TULIP TREE
LISAUR	9	Listera auriculata	SC	-4	FACW+	Nt P-Forb	AURICLED TWAYBLADE
LISCON	10	Listera convallarioides		-3	FACW	Nt P-Forb	BROAD-LEAVED TWAYBLADE
LISCOR	10	Listera cordata		-3	FACW	Nt P-Forb	HEART-LEAVED TWAYBLADE
LITARV	*	LITHOSPERMUM ARVENSE		5	[UPL]	Ad A-Forb	CORN GROMWELL
LITCAN	10	Lithospermum canescens		5	[UPL]	Nt P-Forb	HOARY PUCCOON
LITCAR	10	Lithospermum caroliniense		5	[UPL]	Nt P-Forb	PLAINS PUCCOON
LITINC	10	Lithospermum incisum	X	5	[UPL]	Nt P-Forb	FRINGED PUCCOON
LITLAT	10	Lithospermum latifolium	SC	5	[UPL]	Nt P-Forb	BROAD-LEAVED PUCCOON
LITOFF	*	LITHOSPERMUM OFFICINALE		5	[UPL]	Ad P-Forb	EUROPEAN GROMWELL
LITUNA	10	Littorella uniflora var. americana (L. americana)	SC	-5	OBL	Nt P-Forb	AMERICAN SHORE-GRASS
LOBCAR	7	Lobelia cardinalis		-5	OBL	Nt P-Forb	CARDINAL FLOWER
LOBDOR	10	Lobelia dortmanna		-5	OBL	Nt P-Forb	WATER LOBELIA
LOBERI	*	LOBELIA ERINUS		5	[UPL]	Ad A-Forb	EDGING LOBELIA
LOBINF	0	Lobelia inflata		4	FACU-	Nt A-Forb	INDIAN TOBACCO
LOBKAL	10	Lobelia kalmii		-5	OBL	Nt P-Forb	BOG LOBELIA
LOBSIP	4	Lobelia siphilitica		-4	FACW+	Nt P-Forb	GREAT BLUE LOBELIA
LOBSPI	4	Lobelia spicata		0	FAC	Nt P-Forb	PALE SPIKED LOBELIA
LOBMAR	*	LOBULARIA MARITIMA		5	[UPL]	Ad A-Forb	SWEET ALYSSUM
LOLPER	*	LOLIUM PERENNE		3	FACU	Ad P-Grass	PERENNIAL RYE GRASS
LOLTEM	*	LOLIUM TEMULENTUM		5	[UPL]	Ad A-Grass	DARNEL
LONCAN	5	Lonicera canadensis		3	FACU	Nt Shrub	AMERICAN FLY HONEYSUCKLE
LONCAP	*	LONICERA CAPRIFOLIUM		5	[UPL]	Ad W-Vine	EUROPEAN HONEYSUCKLE
LONDIO	5	Lonicera dioica		3	FACU	Nt W-Vine	RED HONEYSUCKLE
LONHIR	6	Lonicera hirsuta		0	FAC	Nt Shrub	HAIRY HONEYSUCKLE
LONINV	10	Lonicera involucrata	T	3	FACU	Nt Shrub	BLACK TWINBERRY
LONJAP	*	LONICERA JAPONICA		3	FACU	Ad P-Forb	JAPANESE HONEYSUCKLE
LONMAA	*	LONICERA MAACKII		5	[UPL]	Ad Shrub	AMUR HONEYSUCKLE
LONMOR	*	LONICERA MORROWII		5	[UPL]	Ad Shrub	MORROW HONEYSUCKLE
LONOBL	8	Lonicera oblongifolia		-5	OBL	Nt Shrub	SWAMP FLY HONEYSUCKLE
LONSEM	*	LONICERA SEMPERVIRENS		5	UPL	Ad W-Vine	TRUMPET HONEYSUCKLE
LONTAT	*	LONICERA TATARICA		3	FACU	Ad Shrub	SMOOTH TARTARIAN HONEYSUCKLE
LONVIL	8	Lonicera villosa		-3	[FACW]	Nt Shrub	FLY HONEYSUCKLE
LONBEL	*	LONICERA XBELLA		3	[FACU]	Ad Shrub	HYBRID HONEYSUCKLE
LONXYL	*	LONICERA XYLOSTEUM		5	[UPL]	Ad Shrub	EUROPEAN FLY HONEYSUCKLE
LOTCOR	*	LOTUS CORNICULATA		1	FAC-	Ad P-Forb	BIRDFOOT TREFOIL
LUDALT	8	Ludwigia alternifolia	SC	-5	OBL	Nt P-Forb	SEEDBOX
LUDPAL	4	Ludwigia palustris		-5	OBL	Nt P-Forb	WATER-PURSLANE
LUDPOL	6	Ludwigia polycarpa		-5	OBL	Nt P-Forb	FALSE LOOSESTRIFE
LUDSPH	10	Ludwigia sphaerocarpa	T	-5	OBL	Nt P-Forb	ROUND-FRUITED LOOSESTRIFE
LUNANN	*	LUNARIA ANNUA		5	[UPL]	Ad A-Forb	MONEY-PLANT
LUPPER	7	Lupinus perennis		5	[UPL]	Nt P-Forb	WILD LUPINE
LUPPOC	*	LUPINUS POLYCARPUS		5	[UPL]	Ad A-Forb	LUPINE
LUPPOP	*	LUPINUS POLYPHYLLUS		5	[UPL]	Ad P-Forb	GARDEN LUPINE
LUZACU	5	Luzula acuminata		1	FAC-	Nt P-Forb	HAIRY WOOD RUSH
LUZMUL	5	Luzula multiflora		3	FACU	Nt P-Forb	COMMON WOOD RUSH

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LUZPAR	10	Luzula parviflora	T	0	FAC	Nt P-Forb	SMALL-FLOWERED WOOD RUSH
LYCCHA	*	LYCHNIS CHALCEDONICA		5	[UPL]	Ad P-Forb	MALTESE CROSS; SCARLET LYCHNIS
LYCCOR	*	LYCHNIS CORONARIA		5	[UPL]	Ad P-Forb	MULLEIN PINK
LYCBAR	*	LYCIUM BARBARUM		5	[UPL]	Ad Shrub	MATRIMONY-VINE
LYCCHI	*	LYCIUM CHINENSE		5	[UPL]	Ad Shrub	MATRIMONY-VINE
LYCESC	*	LYCOPERSICUM ESCULENTUM		5	[UPL]	Ad A-Forb	TOMATO
LYCINU	7	Lycopodiella inundata (Lycopodium i.)		-5	[OBL]	Nt Fern Ally	BOG CLUBMOSS
LYCMAR	7	Lycopodiella margueriteae (L. appressum, Lycopodium m.)	T	-3	[FACW]	Nt Fern Ally	NORTHERN PROSTRATE CLUBMOSS
LYCSUB	8	Lycopodiella subappressa (L. appressum, Lycopodium s.)	SC	-3	[FACW]	Nt Fern Ally	NORTHERN CLUBMOSS
LYCANN	5	Lycopodium annotinum		0	FAC	Nt Fern Ally	STIFF CLUBMOSS
LYCCLA	4	Lycopodium clavatum		0	FAC	Nt Fern Ally	RUNNING GROUND-PINE
LYCDEN	5	Lycopodium dendroideum		0	FAC	Nt Fern Ally	TREE CLUBMOSS
LYCLAG	5	Lycopodium lagopus		5	[UPL]	Nt Fern Ally	RUNNING GROUND-PINE
LYCOBS	5	Lycopodium obscurum		3	FACU	Nt Fern Ally	GROUND-PINE
LYCHAB	5	Lycopodium Xhabereri		5	[UPL]	Nt Fern Ally	HYBRID GROUND-CEDAR
LYCAME	2	Lycopus americanus		-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYCASP	*	LYCOPUS ASPER		-5	OBL	Ad P-Forb	ROUGH WATER HOREHOUND
LYCEUR	*	LYCOPUS EUROPAEUS		-5	[OBL]	Ad P-Forb	EUROPEAN WATER HOREHOUND
LYCRUB	8	Lycopus rubellus		-5	OBL	Nt P-Forb	STALKED WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus		-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYCVIR	8	Lycopus virginicus	T	-5	OBL	Nt P-Forb	BUGLE WEED
LYGPAL	8	Lygodium palmatum	E	3	[FACU]	Nt P-Forb	CLIMBING FERN
LYSCIL	4	Lysimachia ciliata		-3	FACW	Nt P-Forb	FRINGED LOOSESTRIFE
LYSCLE	*	LYSIMACHIA CLETHROIDES		5	[UPL]	Ad P-Forb	LOOSESTRIFE
LYSHYB	10	Lysimachia hybrida	SC	-5	[OBL]	Nt P-Forb	LANCE-LEAVED LOOSESTRIFE
LYSLAN	9	Lysimachia lanceolata		0	FAC	Nt P-Forb	LANCE-LEAVED LOOSESTRIFE
LYSNUM	*	LYSIMACHIA NUMMULARIA		-4	FACW+	Ad P-Forb	MONEYWORT
LYSPUN	*	LYSIMACHIA PUNCTATA		5	[UPL]	Ad P-Forb	GARDEN LOOSESTRIFE
LYSQUR	10	Lysimachia quadriflora		-5	OBL	Nt P-Forb	WHORLED LOOSESTRIFE
LYSQUL	8	Lysimachia quadrifolia		-5	OBL	Nt P-Forb	FOUR-LEAVED LOOSESTRIFE
LYSTER	6	Lysimachia terrestris		-5	OBL	Nt P-Forb	SWAMP CANDLES
LYSTHY	6	Lysimachia thyrsiflora		-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
LYSVUL	*	LYSIMACHIA VULGARIS		-2	[FACW-]	Ad A-Forb	GARDEN LOOSESTRIFE
LYTALA	9	Lythrum alatum		-5	OBL	Nt P-Forb	WINGED LOOSESTRIFE
LYTHYS	*	LYTHRUM HYSSOPIFOLIA		-5	OBL	Ad A-Forb	HYSSOP LOOSESTRIFE
LYTSAL	*	LYTHRUM SALICARIA		-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MACCOR	*	MACLEAYA CORDATA		5	[UPL]	Ad A-Forb	PLUME POPPY
MACPOM	*	MACLURA POMIFERA		3	FACU	Ad Tree	OSAGE ORANGE
MADGLO	*	MADIA GLOMERATA		5	[UPL]	Ad A-Forb	MOUNTAIN TARWEED
MAHAQU	*	MAHONIA AQUIFOLIUM		5	[UPL]	Ad Shrub	OREGON-GRAPE
MAICAC	4	Maianthemum canadense		0	FAC	Nt P-Forb	CANADA MAYFLOWER
MAICAI	4	Maianthemum canadense var. interius		0	FAC	Nt P-Forb	CANADA MAYFLOWER
MALMON	10	Malaxis monophylla		-3	FACW	Nt P-Forb	WHITE ADDER'S MOUTH
MALUNI	8	Malaxis unifolia		0	FAC	Nt P-Forb	GREEN ADDER'S MOUTH
MALBAC	*	MALUS BACCATA		5	[UPL]	Ad Tree	SIBERIAN CRAB
MALCOR	4	Malus coronaria		5	[UPL]	Nt Tree	AMERICAN CRAB
MALIOE	4	Malus ioensis		5	[UPL]	Nt Tree	PRAIRIE CRAB
MALPUM	*	MALUS PUMILA		5	[UPL]	Ad Tree	APPLE

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
MALALC	*	MALVA ALCEA		5	[UPL]	Ad P-Forb	VERVAIN MALLOW
MALCRI	*	MALVA CRISPA		5	[UPL]	Ad A-Forb	CURLED MALLOW
MALMOS	*	MALVA MOSCHATA		5	[UPL]	Ad P-Forb	MUSK MALLOW
MALNEG	*	MALVA NEGLECTA		5	[UPL]	Ad B-Forb	CHEESES
MALROT	*	MALVA ROTUNDIFOLIA		5	[UPL]	Ad B-Forb	ROUND-LEAVED MALLOW
MALSYL	*	MALVA SYLVESTRIS		5	[UPL]	Ad B-Forb	HIGH MALLOW
MARVUL	*	MARRUBIUM VULGARE		0	FAC	Ad P-Forb	HOREHOUND
MARQUA	*	MARSILEA QUADRIFOLIA		-5	OBL	Ad Fern	EUROPEAN WATER-CLOVER
MATDIS	*	MATRICARIA DISCOIDEA		3	[FACU]	Ad A-Forb	PINEAPPLE-WEED
MATPER	*	MATRICARIA PERFORATA		5	[UPL]	Ad A-Forb	SCENTLESS CHAMOMILE
MATREC	*	MATRICARIA RECUTITA		5	[UPL]	Ad A-Forb	FALSE CHAMOMILE
MATSTR	3	Matteuccia struthiopteris		-3	FACW	Nt Fern	OSTRICH FERN
MAZREP	*	MAZUS REPTANS		5	[UPL]	Ad P-Forb	MAZUS
MEDVIR	10	Medeola virginiana		5	[UPL]	Nt P-Forb	INDIAN CUCUMBER ROOT
MEDLUP	*	MEDICAGO LUPULINA		1	FAC-	Ad A-Forb	BLACK MEDICK
MEDPOL	*	MEDICAGO POLYMORPHA		5	[UPL]	Ad A-Forb	SMOOTH BUR-CLOVER
MEDSAT	*	MEDICAGO SATIVA		5	[UPL]	Ad P-Forb	ALFALFA
MEGBEC	10	Megalodonta beckii (Bidens b.)		-5	OBL	Nt P-Forb	WATER-MARIGOLD
MELLIN	6	Melampyrum lineare		1	FAC-	Nt A-Forb	COW-WHEAT
MELSMI	7	Melica smithii		5	[UPL]	Nt P-Grass	MELIC GRASS
MELALB	*	MELILOTUS ALBA		3	FACU	Ad B-Forb	WHITE SWEET-CLOVER
MELALT	*	MELILOTUS ALTISSIMA		5	[UPL]	Ad B-Forb	TALL SWEET-CLOVER
MELLOF	*	MELILOTUS OFFICINALIS		3	FACU	Ad B-Forb	YELLOW SWEET-CLOVER
MELSOF	*	MELISSA OFFICINALIS		5	[UPL]	Ad P-Forb	BALM
MENCAN	5	Menispermum canadense		0	FAC	Nt W-Vine	MOONSEED
MENARV	3	Mentha arvensis		-3	FACW	Nt P-Forb	WILD MINT
MENPIP	*	MENTHA PIPERITA		-5	[OBL]	Ad P-Forb	PEPPERMINT
MENSPI	*	MENTHA SPICATA		-4	FACW+	Ad P-Forb	SPEARMINT
MENSUA	*	MENTHA SUAVEOLENS		-3	[FACW]	Ad P-Forb	APPLE MINT
MENVIL	*	MENTHA XVILLOSA		-3	[FACW]	Ad P-Forb	MINT
MENTRI	8	Menyanthes trifoliata		-5	OBL	Nt P-Forb	BUCKBEAN
MERPAN	8	Mertensia paniculata		0	FAC	Nt P-Forb	NORTHERN BLUEBELL
MERVIR	10	Mertensia virginica	T	-3	FACW	Nt P-Forb	VIRGINIA BLUEBELLS
MIKSCA	6	Mikania scandens	X	-4	FACW+	Nt P-Forb	CLIMBING HEMPWEED
MILEFF	8	Milium effusum		4	[FACU-]	Nt P-Grass	WOOD MILLET
MIMALA	9	Mimulus alatus	X	-5	OBL	Nt P-Forb	WINGED MONKEY-FLOWER
MIMGLJ	10	Mimulus glabratus var. jamesii (M. g. fremontii)		-5	OBL	Nt P-Forb	JAMES' MONKEY-FLOWER
MIMGLM	10	Mimulus glabratus var. michiganensis	E	-5	OBL	Nt P-Forb	MICHIGAN MONKEY-FLOWER
MIMGUT	8	Mimulus guttatus	SC	-5	[OBL]	Nt P-Forb	WESTERN MONKEY-FLOWER
MIMMOS	10	Mimulus moschatus		-5	OBL	Nt P-Forb	MUSKY MONKEY-FLOWER
MIMRIN	5	Mimulus ringens		-5	OBL	Nt P-Forb	MONKEY-FLOWER
MIRALB	*	MIRABILIS ALBIDA		5	[UPL]	Ad P-Forb	PALE UMBRELLAWORT
MIRHIR	*	MIRABILIS HIRSUTA		5	[UPL]	Ad P-Forb	HAIRY UMBRELLAWORT
MIRLIN	*	MIRABILIS LINEARIS		5	[UPL]	Ad P-Forb	NARROW-LEAVED UMBRELLAWORT
MIRNYC	*	MIRABILIS NYCTAGINEA		5	[UPL]	Ad P-Forb	WILD FOUR O'CLOCK
MISSAC	*	MISCANTHUS SACCHARIFLORUS		5	[UPL]	Ad P-Grass	EULALIA
MISSIZ	*	MISCANTHUS SINENSIS var. ZEBRINUS		5	[UPL]	Ad P-Grass	EULALIA
MITREP	5	Mitchella repens		2	[FACU+]	Nt P-Forb	PARTRIDGE BERRY
MITDIP	8	Mitella diphylla		2	FACU+	Nt P-Forb	BISHOP'S CAP

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
MITNUD	8	Mitella nuda		-3	FACW	Nt P-Forb	NAKED MITERWORT
MOLVER	*	MOLLUGO VERTICILLATA		0	FAC	Ad A-Forb	CARPET-WEED
MONDID	9	Monarda didyma	X	3	[FACU]	Nt P-Forb	OSWEGO-TEA
MONFIS	2	Monarda fistulosa		3	FACU	Nt P-Forb	WILD BERGAMOT
MONPUN	4	Monarda punctata		5	[UPL]	Nt P-Forb	HORSEMINT
MONEUN	8	Moneses uniflora		0	[FAC]	Nt P-Forb	ONE-FLOWERED PYROLA
MONHYP	6	Monotropa hypopithys		5	[UPL]	Nt P-Forb	PINESAP
MONOUN	5	Monotropa uniflora		3	FACU	Nt P-Forb	INDIAN PIPE
MORALB	*	MORUS ALBA		0	FAC	Ad Tree	WHITE MULBERRY
MORRUB	9	Morus rubra	T	1	FAC-	Nt Tree	RED MULBERRY
MUHASP	*	MUHLENBERGIA ASPERIFOLIA		5	[UPL]	Ad P-Grass	MUHLY GRASS
MUHCUS	10	Muhlenbergia cuspidata	X	5	[UPL]	Nt P-Grass	PLAINS MUHLY
MUHFRO	3	Muhlenbergia frondosa		-3	FACW	Nt P-Grass	COMMON SATIN GRASS
MUHGLO	10	Muhlenbergia glomerata		-4	FACW+	Nt P-Grass	MARSH WILD-TIMOTHY
MUHMEX	3	Muhlenbergia mexicana		-3	FACW	Nt P-Grass	LEAFY SATIN GRASS
MUHRAC	*	MUHLENBERGIA RACEMOSA		-3	[FACW]	Ad P-Grass	UPLAND WILD-TIMOTHY
MUHRIC	10	Muhlenbergia richardsonis	T	-1	FAC+	Nt P-Grass	MAT MUHLY
MUHSCH	0	Muhlenbergia schreberi		0	FAC	Nt P-Grass	NIMBLEWILL
MUHSYL	8	Muhlenbergia sylvatica		-3	FACW	Nt P-Grass	WOODLAND SATIN GRASS
MUHTEN	8	Muhlenbergia tenuiflora		5	[UPL]	Nt P-Grass	SLENDER SATIN GRASS
MUHUNI	8	Muhlenbergia uniflora		-5	OBL	Nt P-Grass	MUHLY GRASS
MUSATL	*	MUSCARI ATLANTICUM		5	[UPL]	Ad P-Forb	GRAPE-HYACINTH
MUSBOT	*	MUSCARI BOTRYOIDES		5	[UPL]	Ad P-Forb	GRAPE-HYACINTH
MYOARV	*	MYOSOTIS ARVENSIS		0	FAC	Ad B-Forb	FIELD SCORPION-GRASS
MYODIS	*	MYOSOTIS DISCOLOR		5	[UPL]	Ad A-Forb	YELLOW & BLUE SCORPION-GRASS
MYOLAX	6	Myosotis laxa		-5	OBL	Nt P-Forb	SMALL FORGET-ME-NOT
MYOSCO	*	MYOSOTIS SCORPIOIDES		-5	OBL	Ad P-Forb	FORGET-ME-NOT
MYOSTR	*	MYOSOTIS STRICTA		5	[UPL]	Ad A-Forb	SMALL-FLOWERED FORGET-ME-NOT
MYOSYL	*	MYOSOTIS SYLVATICA		5	[UPL]	Ad P-Forb	WOODLAND FORGET-ME-NOT
MYOVER	6	Myosotis verna		1	FAC-	Nt A-Forb	WHITE FORGET-ME-NOT
MYOAQU	*	MYOSOTON AQUATICUM		-1	[FAC+]	Ad P-Forb	GIANT CHICKWEED
MYOMIN	*	MYOSURUS MINIMUS		0	[FAC]	Ad A-Forb	MOUSE TAIL
MYRGAL	6	Myrica gale		-5	OBL	Nt Shrub	SWEET GALE
	*	MYRICA PENSYLVANICA		0	[FAC]	Ad Shrub	NORTHERN BAYBERRY
MYRALT	10	Myriophyllum alterniflorum	SC	-5	OBL	Nt P-Forb	ALTERNATE-LEAVED WATER-MILFOIL
MYREXA	10	Myriophyllum exalbescens		-5	[OBL]	Nt P-Forb	SPIKED WATER-MILFOIL
MYRFAR	10	Myriophyllum farwellii	T	-5	OBL	Nt P-Forb	FARWELL'S WATER-MILFOIL
MYRHET	6	Myriophyllum heterophyllum		-5	OBL	Nt P-Forb	VARIOUS-LEAVED WATER-MILFOIL
MYRSPI	*	MYRIOPHYLLUM SPICATUM		-5	OBL	Ad P-Forb	EURASIAN WATER MILFOIL
MYRTEN	10	Myriophyllum tenellum		-5	OBL	Nt P-Forb	WATER-MILFOIL
MYRVER	6	Myriophyllum verticillatum		-5	OBL	Nt P-Forb	WATER-MILFOIL
MYRODO	*	MYRRHIS ODORATA		5	[UPL]	Ad P-Forb	MYRRH
NAJFLE	5	Najas flexilis		-5	OBL	Nt A-Forb	SLENDER NAIAD
NAJGRA	8	Najas gracillima		-5	OBL	Nt A-Forb	NAIAD
NAJGUA	7	Najas guadalupensis		-5	OBL	Nt A-Forb	SOUTHERN NAIAD
NAJMAR	*	NAJAS MARINA		-5	OBL	Ad A-Forb	SPINY NAIAD
NAJMIN	*	NAJAS MINOR		-5	OBL	Ad A-Forb	NAIAD
NARSTR	*	NARDUS STRICTA		5	[UPL]	Ad P-Grass	MAT GRASS
NASOFF	*	NASTURTIUM OFFICINALE		-5	OBL	Ad P-Grass	WATERCRESS
NELLUT	8	Nelumbo lutea	T	-5	OBL	Nt P-Forb	AMERICAN LOTUS

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
NEMMUC	7	Nemopanthus mucronatus		-5	OBL	Nt Shrub	MOUNTAIN HOLLY
NEPCAT	*	NEPETA CATARIA		1	FAC-	Ad P-Forb	CATNIP
NESPAN	*	NESLIA PANICULATA		5	[UPL]	Ad A-Forb	BALL MUSTARD
NICPHY	*	NICANDRA PHYSALODES		5	[UPL]	Ad A-Forb	APPLE OF PERU
NICRUS	*	NICOTIANA RUSTICA		5	[UPL]	Ad A-Forb	TOBACCO
NIGDAM	*	NIGELLA DAMASCENA		5	[UPL]	Ad A-Forb	LOVE-IN-A-MIST
NUPADV	8	Nuphar advena		-5	[OBL]	Nt P-Forb	YELLOW POND-LILY
NUPPUM	10	Nuphar pumila	E	-5	[OBL]	Nt P-Forb	SMALL YELLOW POND-LILY
NUPVAR	7	Nuphar variegata		-5	[OBL]	Nt P-Forb	YELLOW POND-LILY
NYMODO	6	Nymphaea odorata (N. tuberosa)		-5	OBL	Nt P-Forb	SWEET-SCENTED WATERLILY
NYMTET	10	Nymphaea tetragona	E	-5	OBL	Nt P-Forb	PYGMY POND-LILY
NYSSYL	9	Nyssa sylvatica		-4	[FACW+]	Nt Tree	BLACK GUM
OCIBAS	*	OCIMUM BASILICUM		5	[UPL]	Ad A-Forb	BASIL
ODOVUL	*	ODONTITES VULGARIS		5	[UPL]	Ad A-Forb	RED BARTSIA
OENBIE	2	Oenothera biennis		3	FACU	Nt B-Forb	COMMON EVENING-PRIMROSE
OENCLE	7	Oenothera clelandii		5	[UPL]	Nt B-Forb	EVENING-PRIMROSE
OENFRU	7	Oenothera fruticosa		2	FACU+	Nt P-Forb	SUNDROPS
OENGLA	*	OENOTHERA GLAZIOVIANA		5	[UPL]	Ad B-Forb	GARDEN EVENING-PRIMROSE
OENLAC	3	Oenothera laciniata		3	FACU	Nt A-Forb	RAGGED EVENING-PRIMROSE
OENNUT	*	OENOTHERA NUTTALLII		5	[UPL]	Ad P-Forb	WHITE EVENING-PRIMROSE
OENOAK	8	Oenothera oakesiana		5	[UPL]	Nt B-Forb	EVENING-PRIMROSE
OENPAR	2	Oenothera parviflora		3	FACU	Nt B-Forb	EVENING-PRIMROSE
OENPER	5	Oenothera perennis		0	FAC	Nt P-Forb	SMALL SUNDROPS
OENPIL	*	OENOTHERA PILOSELLA		1	FAC-	Ad P-Forb	PRAIRIE SUNDROPS
OENRHO	*	OENOTHERA RHOMBIPETALA		3	FACU	Ad B-Forb	LONG-SPIKED EVENING-PRIMROSE
OENVIL	4	Oenothera villosa		0	FAC	Nt B-Forb	EVENING-PRIMROSE
ONOSEN	2	Onoclea sensibilis		-3	FACW	Nt Fern	SENSITIVE FERN
ONOACA	*	ONOPORDUM ACANTHIUM		5	[UPL]	Ad B-Forb	SCOTCH THISTLE
ONOMOL	6	Onosmodium molle	X	4	[FACU-]	Nt P-Forb	FALSE GROMWELL
OPHPUS	6	Ophioglossum pusillum		3	[FACU]	Nt Fern	NORTHERN ADDER'S-TONGUE
OPHVUL	10	Ophioglossum vulgatum (O. pycnostichum)	T	-3	FACW	Nt Fern	SOUTHERN ADDER'S-TONGUE
OPLHOR	9	Oplopanax horridus	T	-3	FACW	Nt Shrub	DEVIL'S-CLUB
OPUFRA	10	Opuntia fragilis	E	5	[UPL]	Nt Shrub	FRAGILE PRICKLY-PEAR
OPUHUM	7	Opuntia humifusa		5	[UPL]	Nt Shrub	PRICKLY PEAR
ORIVUL	*	ORIGANUM VULGARE		5	[UPL]	Ad P-Forb	WILD MARJORAM
ORNNUT	*	ORNITHOGALUM NUTANS		5	[UPL]	Ad P-Forb	STAR-OF-BETHLEHEM
ORNUMB	*	ORNITHOGALUM UMBELLATUM		1	FAC-	Ad P-Forb	STAR-OF-BETHLEHEM
OROFAS	10	Orobanche fasciculata	T	5	[UPL]	Nt P-Forb	CLUSTERED BROOM RAPE
OROUNI	8	Orobanche uniflora		5	[UPL]	Nt P-Forb	CANCER ROOT
ORTSEC	7	Orthilia secunda (Pyrola s.)		-1	[FAC+]	Nt P-Forb	ONE-SIDED PYROLA
ORYASP	6	Oryzopsis asperifolia		5	[UPL]	Nt P-Grass	ROUGH-LEAVED RICE-GRASS
ORYCAN	9	Oryzopsis canadensis	T	5	[UPL]	Nt P-Grass	CANADIAN RICE-GRASS
ORYPUN	9	Oryzopsis pungens		5	[UPL]	Nt P-Grass	RICE-GRASS
ORYRAC	8	Oryzopsis racemosa		5	[UPL]	Nt P-Grass	RICE-GRASS
OSMCHI	5	Osmorhiza chilensis		5	[UPL]	Nt P-Forb	SWEET-CICELY
OSMCLI	4	Osmorhiza claytonii		4	FACU-	Nt P-Forb	HAIRY SWEET-CICELY
OSMDEP	9	Osmorhiza depauperata	T	5	[UPL]	Nt P-Forb	SWEET-CICELY
OSMLON	3	Osmorhiza longistylis		4	FACU-	Nt P-Forb	SMOOTH SWEET-CICELY
OSMCIN	5	Osmunda cinnamomea		-3	FACW	Nt Fern	CINNAMON FERN
OSMCLN	6	Osmunda claytoniana		-1	FAC+	Nt Fern	INTERRUPTED FERN

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
OSMREG	5	Osmunda regalis		-5	OBL	Nt Fern	ROYAL FERN
OSTVIR	5	Ostrya virginiana		4	FACU-	Nt Tree	IRONWOOD; HOP HORNBEAM
OXAACE	7	Oxalis acetosella		3	[FACU]	Nt P-Forb	NORTHERN WOOD-SORREL
OXACOR	*	OXALIS CORNICULATA		3	FACU	Ad P-Forb	CREEPING WOOD-SORREL
OXAFON	0	Oxalis fontana (O. europaea)		3	FACU	Nt P-Forb	YELLOW WOOD-SORREL
OXASTR	0	Oxalis stricta		3	[FACU]	Nt P-Forb	COMMON YELLOW WOOD-SORREL
OXAVIO	10	Oxalis violacea	T	5	[UPL]	Nt P-Forb	VIOLET WOOD-SORREL
OXYRIG	6	Oxypolis rigidior		-5	OBL	Nt P-Forb	COWBANE
PANQUI	10	Panax quinquefolius	T	5	[UPL]	Nt P-Forb	GINSENG
PANTRI	8	Panax trifolius		5	[UPL]	Nt P-Forb	DWARF GINSENG
PANAUB	8	Panicum auburne		5	[UPL]	Nt P-Grass	RED-BROWN PANIC GRASS
PANBOR	7	Panicum boreale		2	[FACU+]	Nt P-Grass	NORTHERN PANIC GRASS
PANCAL	5	Panicum calliphyllum		5	[UPL]	Nt P-Grass	PANIC GRASS
PANCAP	1	Panicum capillare		0	FAC	Nt A-Grass	WITCH GRASS
PANCLA	3	Panicum clandestinum		-3	[FACW]	Nt P-Grass	PANIC GRASS
PANCOL	7	Panicum columbianum		5	[UPL]	Nt P-Grass	PANIC GRASS
PANCOS	6	Panicum commonsianum		5	[UPL]	Nt A-Grass	PANIC GRASS
PANCOT	9	Panicum commutatum		0	[FAC]	Nt P-Grass	PANIC GRASS
PANDEP	4	Panicum depauperatum		5	[UPL]	Nt P-Grass	PANIC GRASS
PANDIF	0	Panicum dichotomiflorum		-2	FACW-	Nt A-Grass	PANIC GRASS
PANDIM	7	Panicum dichotomum		1	[FAC-]	Nt P-Grass	PANIC GRASS
PANFLE	8	Panicum flexile		-4	FACW+	Nt A-Grass	PANIC GRASS
PANGAT	4	Panicum gattingeri		0	[FAC]	Nt A-Grass	PANIC GRASS
PANIMP	3	Panicum implicatum		0	[FAC]	Nt P-Grass	PANIC GRASS
PANLAT	5	Panicum latifolium		3	[FACU]	Nt P-Grass	BROAD-LEAVED PANIC GRASS
PANLEI	10	Panicum leibergii	T	2	[FACU+]	Nt P-Grass	LEIBERG'S PANIC GRASS
PANLID	8	Panicum lindheimeri		-5	[OBL]	Nt P-Grass	PANIC GRASS
PANLIE	4	Panicum linearifolium		5	[UPL]	Nt P-Grass	SLENDER-LEAVED PANIC GRASS
PANLON	10	Panicum longifolium	T	-5	[OBL]	Nt P-Grass	LONG-LEAVED PANIC GRASS
PANMER	7	Panicum meridionale		5	[UPL]	Nt P-Grass	MAT PANIC GRASS
PANMIC	10	Panicum microcarpon	SC	5	[UPL]	Nt P-Grass	SMALL-FRUITED PANIC GRASS
PANMIL	*	PANICUM MILIACEUM		5	[UPL]	Ad A-Grass	BROOMCORN MILLET
PANOLI	5	Panicum oligosanthes		3	[FACU]	Nt P-Grass	PANIC GRASS
PANPER	10	Panicum perlongum		5	[UPL]	Nt P-Grass	PANIC GRASS
PANPHI	8	Panicum philadelphicum		3	[FACU]	Nt A-Grass	PHILADELPHIA PANIC GRASS
PANPOL	10	Panicum polyanthes	E	3	[FACU]	Nt P-Grass	PANIC GRASS
PANPRA	8	Panicum praecocius		5	[UPL]	Nt P-Grass	PANIC GRASS
PANRIG	7	Panicum rigidulum		-3	FACW	Nt P-Grass	PANIC GRASS
PANSPH	5	Panicum sphaerocarpon		3	[FACU]	Nt P-Grass	ROUND-FRUITED PANIC GRASS
PANSPR	9	Panicum spretum		-5	[OBL]	Nt P-Grass	PANIC GRASS
PANTUC	8	Panicum tuckermanii		-3	[FACW]	Nt A-Grass	TUCKERMAN PANIC GRASS
PANVER	10	Panicum verrucosum	T	-3	[FACW]	Nt A-Grass	WARTY PANIC GRASS
PANVIR	4	Panicum virgatum		-1	FAC+	Nt P-Grass	SWITCH GRASS
PANXAN	6	Panicum xanthophysum		5	[UPL]	Nt P-Grass	PANIC GRASS
PAPORI	*	PAPAVER ORIENTALE		5	[UPL]	Ad P-Forb	ORIENTAL POPPY
PAPRHO	*	PAPAVER RHOEAS		5	[UPL]	Ad A-Forb	CORN POPPY
PAPSOM	*	PAPAVER SOMNIFERUM		5	[UPL]	Ad A-Forb	OPIUM POPPY
PARDIF	*	PARIETARIA DIFFUSA		5	[UPL]	Ad P-Forb	PELLITORY
PARPEN	2	Parietaria pensylvanica		3	FACU	Nt A-Forb	PELLITORY
PARGLA	8	Parnassia glauca		-5	OBL	Nt P-Forb	GRASS-OF-PARNASSUS

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
PARPAL	10	Parnassia palustris	T	-5	OBL	Nt P-Forb	MARSH GRASS-OF-PARNASSUS
PARPAR	10	Parnassia parviflora		-5	OBL	Nt P-Forb	GRASS-OF-PARNASSUS
PARCAN	8	Paronychia canadensis		5	[UPL]	Nt A-Forb	TALL FORKED CHICKWEED
PARFAS	8	Paronychia fastigiata	SC	5	[UPL]	Nt A-Forb	LOW FORKED CHICKWEED
PARHIS	*	PARTHENIUM HISPIDUM		5	[UPL]	Ad P-Forb	OZARK PARTHENIUM
PARHYS	*	PARTHENIUM HYSTEROPHORUS		5	[UPL]	Ad A-Forb	SANTA MARIA
PARINT	*	PARTHENIUM INTEGRIFOLIUM		5	[UPL]	Ad P-Forb	WILD QUININE
PARINS	4	Parthenocissus inserta		3	[FACU]	Nt W-Vine	THICKET CREEPER
PARQUI	5	Parthenocissus quinquefolia		1	FAC-	Nt W-Vine	VIRGINIA CREEPER
PASCIL	4	Paspalum ciliatifolium		5	[UPL]	Nt P-Grass	HAIRY LENS GRASS
PASLAE	*	PASPALUM LAEVE		0	[FAC]	Ad P-Grass	SMOOTH LENS GRASS
PASSAT	*	PASTINACA SATIVA		5	[UPL]	Ad B-Forb	WILD PARSNIP
PEDCAN	10	Pedicularis canadensis		2	FACU+	Nt P-Forb	WOOD-BETONY
PEDLAN	8	Pedicularis lanceolata		-4	[FACW+]	Nt P-Forb	SWAMP-BETONY
PELATR	10	Pellaea atropurpurea	T	5	[UPL]	Nt Fern	PURPLE CLIFF-BRAKE
PELGLA	10	Pellaea glabella		5	[UPL]	Nt Fern	SMOOTH CLIFF-BRAKE
PELVIR	6	Peltandra virginica		-5	OBL	Nt P-Forb	ARROW-ARUM
PENCAL	2	Penstemon calycosus	T	3	FACU	Nt P-Forb	SMOOTH BEARD-TONGUE
PENDIG	2	Penstemon digitalis		1	FAC-	Nt P-Forb	FOXGLOVE BEARD-TONGUE
PENGRA	10	Penstemon gracilis	E	5	[UPL]	Nt P-Forb	SLENDER BEARD-TONGUE
PENHIR	5	Penstemon hirsutus		5	[UPL]	Nt P-Forb	HAIRY BEARD-TONGUE
PENPAL	5	Penstemon pallidus	SC	5	[UPL]	Nt P-Forb	PALE BEARD-TONGUE
PENSED	3	Penthorum sedoides		-5	OBL	Nt P-Forb	DITCH STONECROP
PERFRU	*	PERILLA FRUCTESCENS		5	[UPL]	Ad A-Forb	PERILLA MINT
PETHYB	*	PETASITES HYBRIDUS		-5	[OBL]	Ad P-Forb	BUTTERFLY-DOCK
PETPAL	10	Petasites palmatus		-3	FACW	Nt P-Forb	SWEET-COLTSFOOT
PETSAG	10	Petasites sagittatus	T	-5	[OBL]	Nt P-Forb	SWEET-COLTSFOOT
PETPRO	*	PETRORHAGIA PROLIFERA		5	[UPL]	Ad A-Forb	CHILDING PINK
PETSAX	*	PETRORHAGIA SAXIFRAGA		5	[UPL]	Ad P-Forb	PINK
PETCRI	*	PETROSELINUM CRISPUM		5	[UPL]	Ad B-Forb	PARSLEY
PETXAT	*	PETUNIA XATKINSIANA		5	[UPL]	Ad A-Forb	PETUNIA
PHAFRA	8	Phacelia franklinii	T	5	[UPL]	Nt A-Forb	FRANKLIN'S PHACELIA
PHAPUR	5	Phacelia purshii		5	[UPL]	Nt A-Forb	MIAMI-MIST PHACELIA
PHATAN	*	PHACELIA TANACETIFOLIA		5	[UPL]	Ad A-Forb	SCORPION-WEED
PHAARU	0	Phalaris arundinacea		-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHACAN	*	PHALARIS CANARIENSIS		3	FACU	Ad A-Grass	CANARY GRASS
PHAPOL	10	Phaseolus polystachios	SC	5	[UPL]	Nt P-Forb	WILD BEAN
PHAVUL	*	PHASEOLUS VULGARIS		5	[UPL]	Ad P-Forb	GREEN BEAN
PHICOR	*	PHILADELPHUS CORONARIUS		5	[UPL]	Ad Shrub	SWEET MOCK ORANGE
PHIPUB	*	PHILADELPHUS PUBESCENS		5	[UPL]	Ad Shrub	DOWNY MOCK ORANGE
PHIFAL	*	PHILADELPHUS XFALCONERI		5	[UPL]	Ad Shrub	MOCK ORANGE
PHLALP	10	Phleum alpinum	X	-3	FACW	Nt P-Grass	MOUNTAIN TIMOTHY
PHLPRA	*	PHLEUM PRATENSE		3	FACU	Ad P-Grass	TIMOTHY
PHLBIF	10	Phlox bifida	T	5	[UPL]	Nt P-Forb	CLEFT PHLOX
PHLDIV	5	Phlox divaricata		3	FACU	Nt P-Forb	WOODLAND PHLOX
PHLDRU	*	PHLOX DRUMMONDII		5	[UPL]	Ad A-Forb	SWEET WILLIAM PHLOX
PHLLAT	8	Phlox latifolia		4	[FACU-]	Nt P-Forb	MOUNTAIN PHLOX
PHLMAC	10	Phlox maculata	T	-4	FACW+	Nt P-Forb	SWEET WILLIAM PHLOX
PHLNIV	*	PHLOX NIVALIS		5	UPL	Ad P-Forb	TRAILING PHLOX
PHLPAN	*	PHLOX PANICULATA		3	FACU	Ad P-Forb	GARDEN PHLOX

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PHLPIL	7	Phlox pilosa		1	FAC-	Nt P-Forb	PRAIRIE PHLOX
PHLSUB	*	PHLOX SUBULATA		5	[UPL]	Ad P-Forb	ROSE PINK
PHRAUS	0	Phragmites australis		-4	FACW+	Nt P-Grass	REED
PHRLEP	4	Phryma leptostachya		5	[UPL]	Nt P-Forb	LOPSEED
PHYLAN	6	Phyla lanceolata		-5	OBL	Nt P-Forb	FOGFRUIT
PHYALK	*	PHYSALIS ALKEKENGI		5	[UPL]	Ad P-Forb	CHINESE LANTERN PLANT
PHYHET	3	Physalis heterophylla		5	[UPL]	Nt P-Forb	CLAMMY GROUND-CHERRY
PHYLON	1	Physalis longifolia		5	[UPL]	Nt P-Forb	LONG-LEAVED GROUND-CHERRY
PHYPHI	*	PHYSALIS PHILADELPHICA		5	[UPL]	Ad P-Forb	TOMATILLO
PHYPUB	*	PHYSALIS PUBESCENS		5	[UPL]	Ad P-Forb	DOWNY GROUND-CHERRY
PHYVIG	4	Physalis virginiana		5	[UPL]	Nt P-Forb	VIRGINIA GROUND-CHERRY
PHYOPU	4	Physocarpus opulifolius		-2	FACW-	Nt Shrub	NINEBARK
PHYVIA	8	Physostegia virginiana		-3	FACW	Nt P-Forb	FALSE DRAGONHEAD
PHYAME	2	Phytolacca americana		1	FAC-	Nt P-Forb	POKEWEED
PICABI	*	PICEA ABIES		5	[UPL]	Ad Tree	NORWAY SPRUCE
PICGLA	3	Picea glauca		3	FACU	Nt Tree	WHITE SPRUCE
PICMAR	6	Picea mariana		-3	FACW	Nt Tree	BLACK SPRUCE
PICHIE	*	PICRIS HIERACIOIDES		5	[UPL]	Ad B-Forb	OX-TONGUE
PILFON	5	Pilea fontana		-3	FACW	Nt A-Forb	BOG CLEARWEED
PILPUM	5	Pilea pumila		-3	FACW	Nt A-Forb	CLEARWEED
PIMANI	*	PIMPINELLA ANISUM		5	[UPL]	Ad P-Forb	ANISE
PIMSAX	*	PIMPINELLA SAXIFRAGA		0	[FAC]	Ad P-Forb	BURNET-SAXIFRAGE
PINVUL	10	Pinguicula vulgaris	SC	-5	OBL	Nt P-Forb	BUTTERWORT
PINBAN	5	Pinus banksiana		3	FACU	Nt Tree	JACK PINE
PINNIG	*	PINUS NIGRA		5	[UPL]	Ad Tree	AUSTRIAN PINE
PINRES	6	Pinus resinosa		3	FACU	Nt Tree	RED PINE
PINSTR	3	Pinus strobus		3	FACU	Nt Tree	WHITE PINE
PINSYL	*	PINUS SYLVESTRIS		5	[UPL]	Ad Tree	SCOTCH PINE
PIPUNA	8	Piperia unalascensis (Habenaria u.)	SC	5	[UPL]	Nt P-Forb	ALASKA ORCHID
PISSAT	*	PISUM SATIVUM		5	[UPL]	Ad A-Forb	GARDEN PEA
PLAHIR	*	PLAGIOBOTHRYS HIRTUS		5	[UPL]	Ad A-Forb	PLAGIOBOTHRYS
PLAARE	*	PLANTAGO ARENARIA (P. PSYLLIUM)		5	[UPL]	Ad A-Forb	LEAFY-STEMMED PLANTAIN
PLAARI	*	PLANTAGO ARISTATA		5	[UPL]	Ad A-Forb	BUCKTHORN
PLACOR	10	Plantago cordata	E	-5	OBL	Nt P-Forb	HEART-LEAVED PLANTAIN
PLALAN	*	PLANTAGO LANCEOLATA		0	FAC	Ad P-Forb	ENGLISH PLANTAIN
PLAMAJ	*	PLANTAGO MAJOR		-1	FAC+	Ad P-Forb	COMMON PLANTAIN
PLAMED	*	PLANTAGO MEDIA		5	[UPL]	Ad P-Forb	HOARY PLANTAIN
PLAPAT	*	PLANTAGO PATAGONICA (P. PURSHII)		5	[UPL]	Ad A-Forb	WOOLLY PLANTAIN
PLARUG	0	Plantago rugelii		0	FAC	Nt A-Forb	RED-STALKED PLANTAIN
PLAVIR	*	PLANTAGO VIRGINICA		4	FACU-	Ad A-Forb	DWARF PLANTAIN
PLABLE	10	Platanthera blephariglottis (Habenaria b.)		-5	OBL	Nt P-Forb	WHITE-FRINGED ORCHID
PLACIL	10	Platanthera ciliaris (Habenaria c.)	T	-3	FACW	Nt P-Forb	YELLOW-FRINGED ORCHID
PLACLA	6	Platanthera clavellata (Habenaria c.)		-4	[FACW+]	Nt P-Forb	SM. GREEN WOOD-ORCHID
PLADIL	10	Platanthera dilatata (Habenaria d.)		-3	FACW	Nt P-Forb	TALL WHITE BOG ORCHID
PLAFLA	10	Platanthera flava (Habenaria f.)		-3	FACW	Nt P-Forb	TUBERCLED ORCHID
PLAHOO	8	Platanthera hookeri (Habenaria h.)		-1	FAC+	Nt P-Forb	HOOKER'S ORCHID
PLAHYP	5	Platanthera hyperborea (Habenaria h.)		-4	FACW+	Nt P-Forb	TALL NORTHERN BOG ORCHID
PLALAC	6	Platanthera lacera (Habenaria l.)		-3	FACW	Nt P-Forb	GREEN-FRINGED ORCHID
PLALEU	10	Platanthera leucophaea (Habenaria l.)	E	-4	FACW+	Nt P-Forb	EASTERN PRAIRIE FRINGED ORCHID
PLAOBT	10	Platanthera obtusata (Habenaria o.)		-3	FACW	Nt P-Forb	BLUNT-LEAVED ORCHID

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PLAORB	10	Platanthera orbiculata (Habenaria o.)		0	FAC	Nt P-Forb	LARGE ROUND-LEAVED ORCHID
PLAPSY	7	Platanthera psycodes (Habenaria p.)		-3	FACW	Nt P-Forb	SMALL PURPLE FRINGED ORCHID
PLAOCC	7	Platanus occidentalis		-3	FACW	Nt Tree	SYCAMORE
PLUODO	*	PLUCHEA ODORATA		-3	FACW	Ad A-Forb	SALTMARSH FLEABANE
POAALP	10	Poa alpina	T	3	FACU	Nt P-Grass	ALPINE BLUEGRASS
POAALS	9	Poa alsodes		-2	FACW-	Nt P-Grass	BLUEGRASS
POAANN	*	POA ANNUA		1	FAC-	Ad A-Grass	ANNUAL BLUEGRASS
POAARI	*	POA ARIDA		-2	[FACW-]	Ad P-Grass	BLUEGRASS
POAAUT	10	Poa autumnalis		0	FAC	Nt P-Grass	BLUEGRASS
POABUL	*	POA BULBOSA		0	[FAC]	Ad P-Grass	BLUEGRASS
POACAN	10	Poa canbyi	E	5	[UPL]	Nt P-Grass	CANBY'S BLUEGRASS
POACOM	*	POA COMPRESSA		2	FACU+	Ad P-Grass	CANADA BLUEGRASS
POAGLA	10	Poa glauca		5	[UPL]	Nt P-Grass	BLUEGRASS
POALAN	6	Poa languida		5	[UPL]	Nt P-Grass	BLUEGRASS
POANEM	5	Poa nemoralis		0	FAC	Nt P-Grass	BLUEGRASS
POAPAD	10	Poa paludigena	T	-5	OBL	Nt P-Grass	BOG BLUEGRASS
POAPAS	3	Poa palustris		-4	FACW+	Nt P-Grass	FOWL MEADOW GRASS
POAPRA	*	POA PRATENSIS		1	FAC-	Ad P-Grass	KENTUCKY BLUEGRASS
POASAL	5	Poa saltuensis		5	[UPL]	Nt P-Grass	BLUEGRASS
POASYL	8	Poa sylvestris		0	FAC	Nt P-Grass	WOODLAND BLUEGRASS
POATRI	*	POA TRIVIALIS		-3	FACW	Ad P-Grass	BLUEGRASS
PODPEL	3	Podophyllum peltatum		3	FACU	Nt P-Forb	MAY APPLE
POGOPH	10	Pogonia ophioglossoides		-5	OBL	Nt P-Forb	ROSE POGONIA
POLDOD	5	Polanisia dodecandra (P. graveolens)		5	[UPL]	Nt A-Forb	CLAMMY-WEED
POLREP	10	Polemonium reptans	T	0	FAC	Nt P-Forb	JACOB'S LADDER
POLCRU	9	Polygala cruciata	SC	-4	FACW+	Nt A-Forb	CROSS-LEAVED MILKWORT
POLINC	10	Polygala incarnata	X	4	FACU-	Nt A-Forb	PINK MILKWORT
POLPAU	7	Polygala paucifolia		3	FACU	Nt P-Forb	GAY-WINGS
POLPOL	9	Polygala polygama		4	FACU-	Nt B-Forb	RACEMED MILKWORT
POLSAN	4	Polygala sanguinea		3	FACU	Nt A-Forb	FIELD MILKWORT
POLSEN	8	Polygala senega		3	FACU	Nt P-Forb	SENECA SNAKEROOT
POLVER	5	Polygala verticillata		5	[UPL]	Nt A-Forb	WHORLED MILKWORT
POLVUL	*	POLYGALA VULGARIS		5	[UPL]	Ad P-Forb	MILKWORT
POLBIB	4	Polygonatum biflorum		3	FACU	Nt P-Forb	SOLOMON-SEAL
POLBIM	10	Polygonatum biflorum var. melleum	X	3	FACU	Nt P-Forb	HONEY-FLOWERED SOLOMON-SEAL
POLPUB	5	Polygonatum pubescens		5	[UPL]	Nt P-Forb	DOWNY SOLOMON SEAL
POLART	8	Polygonella articulata		5	UPL	Nt A-Forb	JOINTWEED
POLACH	0	Polygonum achoreum		5	[UPL]	Nt A-Forb	SMARTWEED
POLAMP	6	Polygonum amphibium		-5	OBL	Nt P-Forb	WATER SMARTWEED
POLARI	7	Polygonum arifolium		-5	OBL	Nt A-Forb	TEAR-THUMB
POLAVI	*	POLYGONUM AVICULARE		1	FAC-	Ad A-Forb	KNOTWEED
POLCAR	9	Polygonum careyi	T	-4	FACW+	Nt A-Forb	CAREY'S HEARTSEASE
POLCES	*	POLYGONUM CESPITOSUM		5	[UPL]	Ad A-Forb	CREEPING SMARTWEED
POLCIL	3	Polygonum cilinode		5	[UPL]	Nt P-Forb	FRINGED FALSE BUCKWHEAT
POLCON	*	POLYGONUM CONVOLVULUS		1	FAC-	Ad A-Forb	FALSE BUCKWHEAT
POLCUS	*	POLYGONUM CUSPIDATUM		3	FACU	Ad P-Forb	JAPANESE KNOTWEED
POLDOU	5	Polygonum douglasii		3	FACU	Nt A-Forb	WESTERN SMARTWEED
POLERE	0	Polygonum erectum		3	FACU	Nt A-Forb	ERECT KNOTWEED
POLHYR	1	Polygonum hydropiper		-5	OBL	Nt A-Forb	WATER-PEPPER
POLHYS	5	Polygonum hydropiperoides		-5	OBL	Nt P-Forb	WATER-PEPPER

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POLLAP	0	Polygonum lapathifolium		-4	FACW+	Nt A-Forb	NODDING SMARTWEED
POLORI	*	POLYGONUM ORIENTALE		5	[UPL]	Ad A-Forb	KISS-ME-OVER-THE-GARDEN-GATE
POLPEN	0	Polygonum pensylvanicum		-4	FACW+	Nt A-Forb	BIGSEED SMARTWEED
POLPER	*	POLYGONUM PERSICARIA		-3	FACW	Ad A-Forb	LADY'S THUMB
POLPUN	5	Polygonum punctatum		-5	OBL	Nt A-Forb	SMARTWEED
POLRAM	7	Polygonum ramosissimum		1	FAC-	Nt A-Forb	BUSHY KNOTWEED
POLSAC	*	POLYGONUM SACHALINENSE		5	[UPL]	Ad P-Forb	GIANT KNOTWEED
POLSAG	5	Polygonum sagittatum		-5	OBL	Nt A-Forb	ARROW-LEAVED TEAR-THUMB
POLSCA	2	Polygonum scandens		0	FAC	Nt P-Forb	FALSE BUCKWHEAT
POLTEN	7	Polygonum tenue		5	[UPL]	Nt A-Forb	SLENDER KNOTWEED
POLVIM	4	Polygonum virginianum (Tovara v.)		0	FAC	Nt P-Forb	JUMPSEED
POLVIV	10	Polygonum viviparum	T	-3	FACW	Nt P-Forb	ALPINE BISTORT
POLCAN	6	Polymnia canadensis		5	[UPL]	Nt P-Forb	LEAFCUP
POLUVE	10	Polymnia uvedalia	T	5	[UPL]	Nt P-Forb	LARGE-FLOWERED LEAFCUP
POLVIG	8	Polypodium virginianum		5	[UPL]	Nt Fern	COMMON POLYPODY
POLMON	*	POLYPOGON MONSPELIENSIS		-5	OBL	Ad A-Grass	RABBITFOOT GRASS
POLACR	6	Polystichum acrostichoides		5	[UPL]	Nt Fern	CHRISTMAS FERN
POLBRA	8	Polystichum braunii		5	[UPL]	Nt Fern	BRAUN'S HOLLY-FERN
POLLON	10	Polystichum lonchitis		5	[UPL]	Nt Fern	NORTHERN HOLLY-FERN
POLNUT	10	Polytaenia nuttallii	X	5	[UPL]	Nt P-Forb	PRAIRIE PARSLEY
PONCOR	8	Pontederia cordata		-5	OBL	Nt P-Forb	PICKEREL WEED
POPALB	*	POPULUS ALBA		5	[UPL]	Ad Tree	WHITE POPLAR
POPBAL	2	Populus balsamifera		-3	FACW	Nt Tree	BALSAM POPLAR
POPDEL	1	Populus deltoides		-1	FAC+	Nt Tree	COTTONWOOD
POPGRA	4	Populus grandidentata		3	FACU	Nt Tree	BIG-TOOTHED ASPEN
POPHET	10	Populus heterophylla	E	-5	OBL	Nt Tree	SWAMP COTTONWOOD
POPNII	*	POPULUS NIGRA var. ITALICA		5	[UPL]	Ad Tree	LOMBARDY POPLAR
POPTRE	1	Populus tremuloides		0	FAC	Nt Tree	QUAKING ASPEN
PORGRA	*	PORTULACA GRANDIFLORA		5	[UPL]	Ad A-Forb	ROSE-MOSS
POROLE	0	Portulaca oleracea		1	FAC-	Nt A-Forb	PURSLANE
POTALP	10	Potamogeton alpinus		-5	OBL	Nt P-Forb	PONDWEED
POTAMP	6	Potamogeton amplifolius		-5	OBL	Nt P-Forb	LARGE-LEAVED PONDWEED
POTBER	4	Potamogeton berchtoldii		-5	[OBL]	Nt P-Forb	BERCHTOLD'S PONDWEED
POTBIC	10	Potamogeton bicupulatus (P. capillaceus)	T	-5	[OBL]	Nt P-Forb	WATERTHREAD PONDWEED
POTCON	10	Potamogeton confervoides	SC	-5	OBL	Nt P-Forb	ALGA PONDWEED
POTCRI	*	POTAMOGETON CRISPUS		-5	OBL	Ad P-Forb	PONDWEED
POTEPI	8	Potamogeton epihydrus		-5	OBL	Nt P-Forb	RIBBON-LEAVED PONDWEED
POTFIL	7	Potamogeton filiformis		-5	OBL	Nt P-Forb	NARROW-LEAVED PONDWEED
POTFOL	4	Potamogeton foliosus		-5	OBL	Nt P-Forb	LEAFY PONDWEED
POTFRI	6	Potamogeton friesii		-5	OBL	Nt P-Forb	FRIES'S PONDWEED
POTGRM	5	Potamogeton gramineus		-5	OBL	Nt P-Forb	PONDWEED
POTHIL	9	Potamogeton hillii	T	-5	OBL	Nt P-Forb	HILL'S PONDWEED
POTILL	5	Potamogeton illinoensis		-5	OBL	Nt P-Forb	ILLINOIS PONDWEED
POTNAT	5	Potamogeton natans		-5	OBL	Nt P-Forb	PONDWEED
POTNOD	6	Potamogeton nodosus		-5	OBL	Nt P-Forb	PONDWEED
POTOAK	10	Potamogeton oakesianus		-5	OBL	Nt P-Forb	PONDWEED
POTOBT	10	Potamogeton obtusifolius		-5	OBL	Nt P-Forb	PONDWEED
POTPEC	3	Potamogeton pectinatus		-5	OBL	Nt P-Forb	SAGO PONDWEED
POTPER	6	Potamogeton perfoliatus		-5	OBL	Nt P-Forb	PONDWEED
POTPRA	8	Potamogeton praelongus		-5	OBL	Nt P-Forb	WHITE-STEMMED PONDWEED

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POTPUL	10	Potamogeton pulcher	T	-5	OBL	Nt P-Forb	SPOTTED PONDWEED
POTPUS	4	Potamogeton pusillus		-5	OBL	Nt P-Forb	SMALL PONDWEED
POTRIC	5	Potamogeton richardsonii		-5	OBL	Nt P-Forb	RICHARDSON'S PONDWEED
POTROB	10	Potamogeton robbinsii		-5	OBL	Nt P-Forb	PONDWEED
POTSPI	8	Potamogeton spirillus		-5	OBL	Nt P-Forb	PONDWEED
POTSTR	6	Potamogeton strictifolius		-5	OBL	Nt P-Forb	PONDWEED
POTVAG	10	Potamogeton vaginatus		-5	OBL	Nt P-Forb	PONDWEED
POTVAS	10	Potamogeton vaseyi	T	-5	OBL	Nt P-Forb	VASEY'S PONDWEED
POTZOS	5	Potamogeton zosteriformis		-5	OBL	Nt P-Forb	FLAT-STEMMED PONDWEED
POTANS	5	Potentilla anserina		-4	FACW+	Nt P-Forb	SILVERWEED
POTARE	*	POTENTILLA ARGENTEA		3	FACU	Ad P-Forb	SILVERY CINQUEFOIL
POTARU	8	Potentilla arguta		4	FACU-	Nt P-Forb	TALL or PRAIRIE CINQUEFOIL
POTFRU	10	Potentilla fruticosa		-3	FACW	Nt Shrub	SHRUBBY CINQUEFOIL
POTGRC	*	POTENTILLA GRACILIS		5	[UPL]	Ad P-Forb	SLENDER CINQUEFOIL
POTHIP	*	POTENTILLA HIPPIANA		5	[UPL]	Ad P-Forb	CINQUEFOIL
POTINC	*	POTENTILLA INCLINATA		5	[UPL]	Ad P-Forb	CINQUEFOIL
POTNOR	0	Potentilla norvegica		0	FAC	Nt A-Forb	ROUGH CINQUEFOIL
POTPAL	7	Potentilla palustris		-5	OBL	Nt P-Forb	MARSH CINQUEFOIL
POTPAR	9	Potentilla paradoxa	T	-4	FACW+	Nt A-Forb	BUSHY CINQUEFOIL
POTPEN	9	Potentilla pensylvanica	T	5	[UPL]	Nt P-Forb	PRAIRIE CINQUEFOIL
POTREC	*	POTENTILLA RECTA		5	[UPL]	Ad P-Forb	ROUGH-FRUITED CINQUEFOIL
POTSIM	2	Potentilla simplex		4	FACU-	Nt P-Forb	OLD-FIELD CINQUEFOIL
POTTRI	10	Potentilla tridentata		5	[UPL]	Nt P-Forb	THREE-TOOTHED CINQUEFOIL
PREALB	5	Prenanthes alba		3	FACU	Nt P-Forb	WHITE LETTUCE
PREALT	5	Prenanthes altissima		3	FACU	Nt P-Forb	TALL WHITE LETTUCE
PRERAC	8	Prenanthes racemosa		-3	FACW	Nt P-Forb	GLAUCOUS WHITE LETTUCE
PRIMIS	10	Primula mistassinica		-3	FACW	Nt P-Forb	DWARF CANADIAN PRIMROSE
PRIVER	*	PRIMULA VERIS		-1	[FAC+]	Ad P-Forb	ENGLISH COWSLIP
PROLOU	*	PROBISCIDEA LOUISIANICA		5	[UPL]	Ad A-Forb	UNICORN PLANT
PROHOO	10	Prosartes hookeri (Disporum h.)	E	5	[UPL]	Nt P-Forb	FAIRY BELLS
PROMAC	10	Prosartes maculata (Disporum maculatum)	X	5	[UPL]	Nt P-Forb	NODDING MANDARIN
PROTRA	10	Prosartes trachycarpa (Disporum trachycarpum)	T	5	[UPL]	Nt P-Forb	NORTHERN FAIRY-BELLS
PROPAL	6	Proserpinaca palustris		-5	OBL	Nt P-Forb	MERMAID-WEED
PROPEC	9	Proserpinaca pectinata	E	-5	[OBL]	Nt P-Forb	MERMAID-WEED
PRUVUL	0	Prunella vulgaris		0	FAC	Nt P-Forb	LAWN PRUNELLA
PRUALD	8	Prunus alleghaniensis var. davisii	SC	5	[UPL]	Nt Shrub	ALLEGHANY PLUM
PRUAME	4	Prunus americana		5	[UPL]	Nt Tree	AMERICAN WILD PLUM
PRUAVI	*	PRUNUS AVIUM		5	[UPL]	Ad Tree	SWEET CHERRY
PRUCEF	*	PRUNUS CERASIFERA		5	[UPL]	Ad Tree	CHERRY PLUM
PRUCES	*	PRUNUS CERASUS		5	[UPL]	Ad Tree	SOUR CHERRY
PRUDOM	*	PRUNUS DOMESTICA		5	[UPL]	Ad Tree	COMMON PLUM
PRUMAH	*	PRUNUS MAHALEB		5	[UPL]	Ad Tree	PERFUMED CHERRY
PRUNIG	4	Prunus nigra		4	FACU-	Nt Tree	CANADA PLUM
PRUPEN	3	Prunus pensylvanica		4	FACU-	Nt Tree	PIN CHERRY
PRUPER	*	PRUNUS PERSICA		5	[UPL]	Ad Tree	PEACH
PRUPUM	8	Prunus pumila		5	UPL	Nt Shrub	SAND CHERRY
PRUSER	2	Prunus serotina		3	FACU	Nt Tree	WILD BLACK CHERRY
PRUSPI	*	PRUNUS SPINOSA		5	[UPL]	Ad Tree	BLACKTHORN
PRUTOM	*	PRUNUS TOMENTOSA		5	[UPL]	Ad Tree	NANKING CHERRY

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
PRUVIR	2	Prunus virginiana		1	FAC-	Nt Shrub	CHOKE CHERRY
PSINIT	10	Psilocarya nitens		-5	OBL	Nt A-Sedge	BALD-RUSH
PSISCI	10	Psilocarya scirpoides	T	-5	OBL	Nt A-Sedge	BALD-RUSH
PSOPSO	0	Psoralea psoralioides		5	[UPL]	Nt P-Forb	SAMPSON'S SNAKEROOT
PTETRI	4	Ptelea trifoliata		2	FACU+	Nt Shrub	HOP-TREE
PTEAQU	0	Pteridium aquilinum		3	FACU	Nt Fern	BRACKEN FERN
PTEAND	10	Pterospora andromedea	T	5	[UPL]	Nt P-Forb	GIANT'S BIRD'S-NEST
PUCDIS	*	PUCCINELLIA DISTANS		-5	OBL	Ad P-Grass	ALKALI GRASS
PUCFER	6	Puccinellia fernaldii		-5	OBL	Nt P-Grass	PUCCINELLIA
PUCPAL	7	Puccinellia pallida		-5	OBL	Nt P-Grass	PUCCINELLIA
	*	PUERARIA LOBATA		5	[UPL]	Ad W-Vine	KUDZU
PYCMUT	10	Pycnanthemum muticum	T	-5	[OBL]	Nt P-Forb	BROAD-LEAVED MOUNTAIN MINT
PYCPIL	10	Pycnanthemum pilosum	T	5	[UPL]	Nt P-Forb	HAIRY MOUNTAIN MINT
PYCTEN	6	Pycnanthemum tenuifolium		0	[FAC]	Nt P-Forb	SLENDER MOUNTAIN MINT
PYCVER	10	Pycnanthemum verticillatum	SC	5	UPL	Nt P-Forb	WHORLED MOUNTAIN MINT
PYCVIR	5	Pycnanthemum virginianum		-4	FACW+	Nt P-Forb	COMMON MOUNTAIN MINT
PYRASA	8	Pyrola asarifolia		-3	FACW	Nt P-Forb	PINK PYROLA
PYRCHL	8	Pyrola chlorantha		3	FACU	Nt P-Forb	SHINLEAF
PYRELL	6	Pyrola elliptica		5	[UPL]	Nt P-Forb	LARGE-LEAVED SHINLEAF
PYRMIN	10	Pyrola minor		-1	FAC+	Nt P-Forb	LESSER PYROLA
PYRROT	7	Pyrola rotundifolia		1	FAC-	Nt P-Forb	ROUND-LEAVED PYROLA
PYRCOM	*	PYRUS COMMUNIS		5	[UPL]	Ad Tree	PEAR
QUEALB	5	Quercus alba		3	FACU	Nt Tree	WHITE OAK
QUEBIC	8	Quercus bicolor		-4	FACW+	Nt Tree	SWAMP WHITE OAK
QUECOC	7	Quercus coccinea		5	[UPL]	Nt Tree	SCARLET OAK
QUEELL	4	Quercus ellipsoidalis		5	[UPL]	Nt Tree	HILL'S OAK
QUEIMB	5	Quercus imbricaria		1	FAC-	Nt Tree	SHINGLE OAK
QUEMAC	5	Quercus macrocarpa		1	FAC-	Nt Tree	BUR OAK
QUEMUE	5	Quercus muehlenbergii		5	[UPL]	Nt Tree	CHINQUAPIN OAK
QUEPAS	8	Quercus palustris		-3	FACW	Nt Tree	PIN OAK
QUEPRD	7	Quercus prinoides		4	FACU-	Nt Tree	DWARF CHINQUAPIN OAK
QUEPRS	*	QUERCUS PRINUS		4	FACU-	Ad Tree	ROCK CHESTNUT OAK
QUERUB	5	Quercus rubra		3	FACU	Nt Tree	RED OAK
QUESHU	8	Quercus shumardii	SC	-2	[FACW-]	Nt Tree	SHUMARD OAK
QUEVEL	6	Quercus velutina		5	[UPL]	Nt Tree	BLACK OAK
QUEPAA	4	Quercus Xpalaeolithica (Q. coccinea X q. velutina)		5	[UPL]	Nt Tree	HYBRID OAK
RANABO	0	Ranunculus abortivus		-2	FACW-	Nt A-Forb	SMALL-FLOWERED BUTTERCUP
RANACR	*	RANUNCULUS ACRIS		-2	FACW-	Ad P-Forb	TALL or COMMON BUTTERCUP
RANAMB	10	Ranunculus ambigens	T	-5	OBL	Nt P-Forb	SPEARWORT
RANBUL	*	RANUNCULUS BULBOSUS		-3	FACW	Ad P-Forb	BULBOUS BUTTERCUP
RANCYM	8	Ranunculus cymbalaria	T	-5	OBL	Nt P-Forb	SEASIDE CROWFOOT
RANFAS	10	Ranunculus fascicularis		3	FACU	Nt P-Forb	EARLY BUTTERCUP
RANFIC	*	RANUNCULUS FICARIA		-2	[FACW-]	Ad P-Forb	LESSER-CELANDINE
RANFLA	10	Ranunculus flabellaris		-5	OBL	Nt P-Forb	YELLOW WATER CROWFOOT
RANGME	10	Ranunculus gmelinii		-4	FACW+	Nt P-Forb	YELLOW WATER CROWFOOT
RANHIS	5	Ranunculus hispidus		0	FAC	Nt P-Forb	SWAMP BUTTERCUP
RANLAP	10	Ranunculus lapponicus	T	-5	OBL	Nt P-Forb	LAPLAND BUTTERCUP
RANLON	4	Ranunculus longirostris		-5	OBL	Nt P-Forb	WHITE WATER CROWFOOT
RANMAC	10	Ranunculus macounii	T	-5	OBL	Nt A-Forb	MACOUN'S BUTTERCUP

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RANPEN	6	Ranunculus pensylvanicus		-5	OBL	Nt A-Forb	BRISTLY CROWFOOT
RANREC	5	Ranunculus recurvatus		-3	FACW	Nt A-Forb	HOOKED CROWFOOT
RANREN	*	RANUNCULUS REPENS		-1	FAC+	Ad P-Forb	CREEPING BUTTERCUP
RANRET	8	Ranunculus reptans		-5	[OBL]	Nt P-Forb	CREEPING BUTTERCUP
RANRHO	9	Ranunculus rhomboideus	T	5	[UPL]	Nt P-Forb	PRAIRIE BUTTERCUP
RANSAR	*	RANUNCULUS SARDOUS		-4	[FACW+]	Ad A-Forb	PAPILLOSE BUTTERCUP
RANSCE	1	Ranunculus sceleratus		-5	OBL	Nt A-Forb	CURSED CROWFOOT
RAPRAP	*	RAPHANUS RAPHANISTRUM		5	[UPL]	Ad A-Forb	WILD RADISH
RAPSAT	*	RAPHANUS SATIVUS		5	[UPL]	Ad A-Forb	RADISH
RATCOL	*	RATIBIDA COLUMNIFERA		5	[UPL]	Ad P-Forb	LONG-HEADED CONEFLOWER
RATPIN	4	Ratibida pinnata		5	[UPL]	Nt P-Forb	YELLOW CONEFLOWER
RESLUT	*	RESEDA LUTEA		5	[UPL]	Ad B-Forb	MIGNONETTE
RHAALN	8	Rhamnus alnifolia		-5	OBL	Nt Shrub	ALDER-LEAVED BUCKTHORN
RHACAT	*	RHAMNUS CATHARTICA		3	FACU	Ad Tree	COMMON BUCKTHORN
RHAFRA	*	RHAMNUS FRANGULA		-1	FAC+	Ad Shrub	GLOSSY BUCKTHORN
RHAUTI	*	RHAMNUS UTILIS		5	[UPL]	Ad Shrub	BUCKTHORN
RHERHA	*	RHEUM RHAPONTICUM		5	[UPL]	Ad P-Forb	RHUBARB
RHEMAR	10	Rhexia mariana	T	-3	[FACW]	Nt P-Forb	MARYLAND MEADOW BEAUTY
RHEVIR	9	Rhexia virginica	SC	-5	OBL	Nt P-Forb	MEADOW BEAUTY
	*	RHODOTYPOS SCANDENS		5	[UPL]	Ad Shrub	JETBEAD
RHUARO	7	Rhus aromatica		5	[UPL]	Nt Shrub	FRAGRANT SUMAC
RHUCOP	3	Rhus copallina		5	[UPL]	Nt Shrub	WINGED SUMAC
RHUGLA	2	Rhus glabra		5	[UPL]	Nt Tree	SMOOTH SUMAC
RHUTYP	2	Rhus typhina		5	[UPL]	Nt Tree	STAGHORN SUMAC
RHUPUL	2	Rhus Xpulvinata		5	[UPL]	Nt Tree	HYBRID SUMAC
RHYALB	6	Rhynchospora alba		-5	OBL	Nt P-Sedge	BEAK-RUSH
RHYCAL	10	Rhynchospora capillacea		-5	OBL	Nt P-Sedge	BEAK-RUSH
RHYCAT	6	Rhynchospora capitellata		-5	OBL	Nt P-Sedge	BEAK-RUSH
RHYFUS	7	Rhynchospora fusca		-5	OBL	Nt P-Sedge	BEAK-RUSH
RHYGLO	10	Rhynchospora globularis	E	-3	FACW	Nt P-Sedge	GLOBE BEAK-RUSH
RHYMAC	9	Rhynchospora macrostachya	SC	-5	OBL	Nt P-Sedge	TALL BEAK-RUSH
RHYNIT	10	Rhyncospora nitens (Psilocarya n.)		-5	[OBL]	Nt A-Sedge	SHORT-BEAKED BALD RUSH
RIBAME	6	Ribes americanum		-3	FACW	Nt Shrub	WILD BLACK CURRANT
RIBCYN	4	Ribes cynosbati		5	[UPL]	Nt Shrub	PRICKLY or WILD GOOSEBERRY
RIBGLA	5	Ribes glandulosum		-3	FACW	Nt Shrub	SKUNK CURRANT
RIBHIR	6	Ribes hirtellum		-3	FACW	Nt Shrub	SWAMP GOOSEBERRY
RIBHUD	10	Ribes hudsonianum		-5	OBL	Nt Shrub	NORTHERN BLACK CURRANT
RIBLAC	6	Ribes lacustre		-3	FACW	Nt Shrub	SWAMP BLACK CURRANT
RIBNIG	*	RIBES NIGRUM		5	UPL	Ad Shrub	BLACK CURRANT
RIBODO	*	RIBES ODORATUM		1	FAC-	Ad Shrub	GOLDEN CURRANT
RIBOXY	9	Ribes oxyacanthoides	SC	5	[UPL]	Nt Shrub	NORTHERN GOOSEBERRY
RIBRUB	*	RIBES RUBRUM		5	[UPL]	Ad Shrub	RED CURRANT
RIBTRI	6	Ribes triste		-5	OBL	Nt Shrub	SWAMP RED CURRANT
RICCOM	*	RICINUS COMMUNIS		4	FACU-	Ad A-Forb	CASTOR-BEAN
ROBHIS	*	ROBINIA HISPIDA		5	[UPL]	Ad Shrub	BRISTLY LOCUST
ROBPSE	*	ROBINIA PSEUDOACACIA		4	FACU-	Ad Tree	BLACK LOCUST
ROBVIS	*	ROBINIA VISCOSA		5	[UPL]	Ad Tree	CLAMMY LOCUST
RORCUR	*	RORIPPA CURVIPES		-3	[FACW]	Ad A-Forb	YELLOW CRESS
RORPAL	1	Rorippa palustris		-5	OBL	Nt A-Forb	YELLOW CRESS
RORSYL	*	RORIPPA SYLVESTRIS		-5	OBL	Ad P-Forb	CREEPING YELLOW CRESS

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
ROSACI	4	Rosa acicularis		3	FACU	Nt Shrub	WILD ROSE
ROSARK	4	Rosa arkansana		5	[UPL]	Nt Shrub	PRAIRIE ROSE
ROSBLA	3	Rosa blanda		3	FACU	Nt Shrub	WILD ROSE
ROSCAN	*	ROSA CANINA		5	[UPL]	Ad Shrub	DOG ROSE
ROSCAR	4	Rosa carolina		4	FACU-	Nt Shrub	PASTURE ROSE
ROSCEN	*	ROSA CENTIFOLIA		5	[UPL]	Ad Shrub	CABBAGE ROSE
ROSCIN	*	ROSA CINNAMOMEA		5	[UPL]	Ad Shrub	CINNAMON ROSE
ROSEGL	*	ROSA EGLANTERIA		5	[UPL]	Ad Shrub	SWEET BRIER
ROSGAL	*	ROSA GALLICA		5	[UPL]	Ad Shrub	FRENCH ROSE
ROSMUL	*	ROSA MULTIFLORA		3	FACU	Ad Shrub	MULTIFLORA ROSE
ROSPAL	5	Rosa palustris		-5	OBL	Nt Shrub	SWAMP ROSE
ROSRUG	*	ROSA RUGOSA		3	FACU	Ad Shrub	JAPANESE ROSE
ROSSET	5	Rosa setigera		2	FACU+	Nt Shrub	PRAIRIE ROSE
ROSSPI	*	ROSA SPINOSISSIMA		5	[UPL]	Ad Shrub	SCOTCH ROSE
ROSVIL	*	ROSA VILLOSA		5	[UPL]	Ad Shrub	ROSE
ROSVIR	8	Rosa virginiana		0	[FAC]	Nt Shrub	VIRGINIA ROSE
ROTRAM	8	Rotala ramosior	SC	-5	OBL	Nt A-Forb	TOOTH-CUP
RUBACA	10	Rubus acaulis	E	-5	OBL	Nt Shrub	DWARF RASPBERRY
RUBALL	1	Rubus allegheniensis		2	FACU+	Nt Shrub	COMMON BLACKBERRY
RUBCAE	*	RUBUS CAESIUS		0	[FAC]	Ad Shrub	EUROPEAN DEWBERRY
RUBCAN	2	Rubus canadensis		5	[UPL]	Nt Shrub	DEWBERRY
RUBFLA	1	Rubus flagellaris		4	FACU-	Nt Shrub	NORTHERN DEWBERRY
RUBHIS	4	Rubus hispidus		-3	FACW	Nt Shrub	SWAMP DEWBERRY
RUBLAC	*	RUBUS LACINIATUS		5	[UPL]	Ad Shrub	CUT-LEAVED BLACKBERRY
RUBOCC	1	Rubus occidentalis		5	[UPL]	Nt Shrub	BLACK RASPBERRY
RUBODO	6	Rubus odoratus		5	[UPL]	Nt Shrub	FLOWERING RASPBERRY
RUBPAR	6	Rubus parviflorus		2	FACU+	Nt Shrub	THIMBLEBERRY
RUBPEN	2	Rubus pensylvanicus		1	[FAC-]	Nt Shrub	DEWBERRY
RUBPUB	4	Rubus pubescens		-4	FACW+	Nt P-Forb	DWARF RASPBERRY
RUBSET	3	Rubus setosus		-2	FACW-	Nt Shrub	BRISTLY BLACKBERRY
RUBSTR	2	Rubus strigosus (R. idaeus)		-2	FACW-	Nt Shrub	WILD RED RASPBERRY
RUDFUL	9	Rudbeckia fulgida (R. sullivantii)	SC	-5	[OBL]	Nt P-Forb	BLACK-EYED SUSAN
RUDHIR	1	Rudbeckia hirta		3	FACU	Nt P-Forb	BLACK-EYED SUSAN
RUDLAC	6	Rudbeckia laciniata		-4	FACW+	Nt P-Forb	CUT-LEAVED CONEFLOWER
RUDSUB	*	RUDBECKIA SUBTOMENTOSA		3	[FACU]	Ad P-Forb	SWEET CONEFLOWER
RUDTRI	5	Rudbeckia triloba		1	FAC-	Nt A-Forb	THREE-LOBED CONEFLOWER
RUEHUM	10	Ruellia humilis	T	4	[FACU-]	Nt P-Forb	HAIRY RUELLIA
RUESTR	10	Ruellia strepens	T	-1	FAC+	Nt P-Forb	SMOOTH RUELLIA
RUMACS	*	RUMEX ACETOSA		5	[UPL]	Ad P-Forb	GREEN SORREL
RUMACL	*	RUMEX ACETOSELLA		0	FAC	Ad P-Forb	SHEEP SORREL
RUMALT	2	Rumex altissimus		-2	FACW-	Nt P-Forb	PALE DOCK
RUMCRI	*	RUMEX CRISPUS		-1	FAC+	Ad P-Forb	CURLY DOCK
RUMLON	*	RUMEX LONGIFOLIUS		0	[FAC]	Ad B-Forb	DOCK
RUMMAR	5	Rumex maritimus		-4	FACW+	Nt A-Forb	GOLDEN DOCK
RUMOBT	*	RUMEX OBTUSIFOLIUS		-3	FACW	Ad P-Forb	BITTER DOCK
RUMOCC	8	Rumex occidentalis	E	-1	[FAC+]	Nt P-Forb	WESTERN DOCK
RUMORB	9	Rumex orbiculatus		-5	OBL	Nt P-Forb	GREAT WATER DOCK
RUMPAT	*	RUMEX PATIENTIA		5	UPL	Ad P-Forb	PATIENCE DOCK
RUMTHY	*	RUMEX THYRSIFLORUS		5	[UPL]	Ad P-Forb	DOCK
RUMTRI	1	Rumex triangulivalvis		-3	FACW	Nt P-Forb	DOCK

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
RUMVER	**7**	Rumex verticillatus		-5	OBL	Nt P-Forb	WATER DOCK
RUPMAR	**10**	Ruppia maritima	**T**	-5	OBL	Nt P-Forb	DITCH GRASS
SABANG	**9**	Sabatia angularis	**T**	-1	FAC+	Nt B-Forb	ROSE PINK
SAGNOD	**10**	Sagina nodosa	**T**	2	FACU+	Nt P-Forb	PEARLWORT
SAGPRO	*	SAGINA PROCUMBENS		-3	FACW	Ad P-Forb	PEARLWORT
SAGBRE	**10**	Sagittaria brevirostra		-5	OBL	Nt P-Forb	SHORT-BEAKED ARROWHEAD
SAGCUN	**6**	Sagittaria cuneata		-5	OBL	Nt P-Forb	ARUM-LEAVED ARROWHEAD
SAGGRA	**10**	Sagittaria graminea		-5	OBL	Nt P-Forb	GRASS-LEAVED ARROWHEAD
SAGLAT	**1**	Sagittaria latifolia		-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SAGMON	**8**	Sagittaria montevidensis (Lophotocarpus calycinus)	**T**	-5	OBL	Nt A-Forb	ARROWHEAD
SAGRIG	**6**	Sagittaria rigida		-5	OBL	Nt P-Forb	STIFF ARROWHEAD
SALEUR	*	SALICORNIA EUROPAEA		-5	OBL	Ad A-Forb	GLASSWORT
SALALB	*	SALIX ALBA		-3	FACW	Ad Tree	WHITE WILLOW
SALAMY	**3**	Salix amygdaloides		-3	FACW	Nt Tree	PEACH-LEAVED WILLOW
SALBEB	**1**	Salix bebbiana		-4	FACW+	Nt Shrub	BEBB'S WILLOW
SALCAN	**9**	Salix candida		-5	OBL	Nt Shrub	HOARY WILLOW
SALCIN	*	SALIX CINEREA		5	[UPL]	Ad Shrub	GRAY WILLOW
SALCOR	**10**	Salix cordata		-1	FAC+	Nt Shrub	SAND-DUNE WILLOW
SALDIS	**1**	Salix discolor		-3	FACW	Nt Shrub	PUSSY WILLOW
SALERI	**2**	Salix eriocephala		-3	FACW	Nt Shrub	WILLOW
SALEXI	**1**	Salix exigua (S. interior)		-5	OBL	Nt Shrub	SANDBAR WILLOW
SALFRA	*	SALIX FRAGILIS		-1	FAC+	Ad Tree	CRACK WILLOW
SALHUM	**4**	Salix humilis		3	FACU	Nt Shrub	PRAIRIE WILLOW
SALLUC	**3**	Salix lucida		-4	FACW+	Nt Shrub	SHINING WILLOW
SALMYR	**9**	Salix myricoides (S. glaucophylloides)		-3	FACW	Nt Shrub	BLUELEAF WILLOW
SALNIG	**5**	Salix nigra		-5	OBL	Nt Tree	BLACK WILLOW
SALPED	**8**	Salix pedicellaris		-5	OBL	Nt Shrub	BOG WILLOW
SALPEL	**10**	Salix pellita	**SC**	-3	FACW	Nt Shrub	SATINY WILLOW
SALPEN	*	SALIX PENTANDRA		5	[UPL]	Ad Tree	BAY-LEAVED WILLOW
SALPET	**1**	Salix petiolaris		-4	FACW+	Nt Shrub	SLENDER WILLOW
SALPLA	**10**	Salix planifolia	**T**	-5	OBL	Nt Shrub	TEA-LEAVED WILLOW
SALPUR	*	SALIX PURPUREA		-3	FACW	Ad Shrub	BASKET WILLOW
SALPYR	**8**	Salix pyrifolia		-4	FACW+	Nt Shrub	BALSAM WILLOW
SALSEC	**6**	Salix sericea		-5	OBL	Nt Shrub	SILKY WILLOW
SALSES	**8**	Salix serissima		-5	OBL	Nt Shrub	AUTUMN WILLOW
SALVIM	*	SALIX VIMINALIS		5	[UPL]	Ad Shrub	BASKET WILLOW
	*	SALSOLA COLLINA		5	[UPL]	Ad A-Forb	SLENDER RUSSIAN THISTLE
SALKAL	*	SALSOLA KALI		3	FACU	Ad A-Forb	RUSSIAN THISTLE
SALAZU	*	SALVIA AZUREA		5	[UPL]	Ad P-Forb	BLUE SAGE
SALOFF	*	SALVIA OFFICINALIS		5	[UPL]	Ad B-Forb	SAGE; SALVIA
SALPRA	*	SALVIA PRATENSIS		5	[UPL]	Ad P-Forb	SAGE; SALVIA
SALREF	*	SALVIA REFLEXA		5	UPL	Ad A-Forb	ROCKY MOUNTAIN SAGE
SALSCL	*	SALVIA SCLAREA		5	[UPL]	Ad B-Forb	CLARY
SALMIN	*	SALVINIA MINIMA		-5	[OBL]	Ad Fern	WATER SPANGLES
SAMCAN	**3**	Sambucus canadensis		-2	FACW-	Nt Shrub	ELDERBERRY
SAMRAC	**3**	Sambucus racemosa		2	FACU+	Nt Shrub	RED-BERRIED ELDER
SAMPAR	**5**	Samolus parviflorus (S. floribundus)		-5	OBL	Nt P-Forb	WATER-PIMPERNEL
SANCAA	**5**	Sanguinaria canadensis		4	FACU-	Nt P-Forb	BLOODROOT
SANCAD	**10**	Sanguisorba canadensis	**T**	-4	FACW+	Nt P-Forb	AMERICAN BURNET

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
SANMIN	*	SANGUISORBA MINOR		0	FAC	Ad P-Forb	GARDEN or SALAD BURNET
SANCAS	8	Sanicula canadensis		2	FACU+	Nt B-Forb	BLACK SNAKEROOT
SANGRE	2	Sanicula gregaria		-1	FAC+	Nt P-Forb	BLACK SNAKEROOT
SANMAR	4	Sanicula marilandica		3	[FACU]	Nt P-Forb	BLACK SNAKEROOT
SANTRI	6	Sanicula trifoliata		5	[UPL]	Nt B-Forb	BLACK SNAKEROOT
SAPOCY	*	SAPONARIA OCYMOIDES		5	[UPL]	Ad P-Forb	SAPONARIA
SAPOFF	*	SAPONARIA OFFICINALIS		3	[FACU]	Ad P-Forb	BOUNCING BET
SARPUP	10	Sarracenia purpurea		-5	OBL	Nt P-Forb	PITCHER-PLANT
SARPUH	10	Sarracenia purpurea f. heterophylla	T	-5	OBL	Nt P-Forb	YELLOW PITCHER-PLANT
SASALB	5	Sassafras albidum		3	FACU	Nt Tree	SASSAFRAS
SATHOR	*	SATUREJA HORTENSIS		5	[UPL]	Ad A-Forb	SAVORY
SAUCER	9	Saururus cernuus		-5	OBL	Nt P-Forb	LIZARD'S-TAIL
SAXPAN	10	Saxifraga paniculata	T	5	[UPL]	Nt P-Forb	LIME-ENCRUSTED SAXIFRAGE
SAXPEN	10	Saxifraga pensylvanica		-5	OBL	Nt P-Forb	SWAMP SAXIFRAGE
SAXTRI	10	Saxifraga tricuspidata	T	5	[UPL]	Nt P-Forb	PRICKLY SAXIFRAGE
SAXVIR	10	Saxifraga virginiensis		1	FAC-	Nt P-Forb	EARLY SAXIFRAGE
SCHPAL	10	Scheuchzeria palustris		-5	OBL	Nt P-Forb	ARROW-GRASS
SCHPUR	5	Schizachne purpurascens		2	FACU+	Nt P-Grass	FALSE MELIC
SCHACU	5	Schoenoplectus acutus (Scirpus a.)		-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHAME	10	Schoenoplectus americanus (Scirpus olneyi)	T	-5	[OBL]	Nt P-Sedge	OLNEY'S BULRUSH
SCHHAL	10	Schoenoplectus hallii (Scirpus h.)	T	-5	OBL	Nt A-Sedge	HALL'S BULRUSH
SCHHET	10	Schoenoplectus heterochaetus (Scirpus h.)		-5	OBL	Nt P-Sedge	BULRUSH
SCHPUN	5	Schoenoplectus pungens (Scirpus americanus)		-5	OBL	Nt P-Sedge	THREE-SQUARE
SCHPUS	8	Schoenoplectus purshianus (Scirpus p.)		-5	[OBL]	Nt A-Sedge	PURSH'S TUFTED BULRUSH
SCHSMI	8	Schoenoplectus smithii (Scirpus s.)		-5	OBL	Nt A-Sedge	BULRUSH
SCHSUB	8	Schoenoplectus subterminalis (Scirpus s.)		-5	OBL	Nt P-Sedge	BULRUSH
SCHTAB	4	Schoenoplectus tabernaemontani (Scirpus validus)		-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SCHTOR	10	Schoenoplectus torreyi (Scirpus t.)	SC	-5	OBL	Nt P-Sedge	TORREY'S BULRUSH
SCHNUT	*	SCHRANKIA NUTTALLII		5	[UPL]	Ad P-Forb	CAT-CLAW
SCISIB	*	SCILLA SIBIRICA		5	[UPL]	Ad P-Forb	SQUILL
SCIATR	3	Scirpus atrovirens		-5	OBL	Nt P-Sedge	BULRUSH
SCICYP	5	Scirpus cyperinus		-5	OBL	Nt P-Sedge	WOOL-GRASS
SCIEXP	5	Scirpus expansus		-5	OBL	Nt P-Sedge	BULRUSH
SCIHAT	3	Scirpus hattorianus		-5	OBL	Nt P-Sedge	MOSQUITO BULRUSH
SCIMIC	5	Scirpus microcarpus		-5	OBL	Nt P-Sedge	BULRUSH
SCIPEN	3	Scirpus pendulus		-5	OBL	Nt P-Sedge	BULRUSH
SCLANN	*	SCLERANTHUS ANNUUS		3	FACU	Ad A-Forb	KNAWEL
SCLPER	*	SCLERANTHUS PERENNIS		5	[UPL]	Ad P-Forb	KNAWEL
SCLPAU	10	Scleria pauciflora	E	3	FACU	Nt P-Sedge	FEW-FLOWERED NUT-RUSH
SCLRET	10	Scleria reticularis	T	-5	[OBL]	Nt A-Sedge	NETTED NUT-RUSH
SCLTRI	10	Scleria triglomerata	SC	0	FAC	Nt P-Sedge	TALL NUT-RUSH
SCLVER	10	Scleria verticillata		-5	OBL	Nt A-Sedge	NUT-RUSH
SCLDUR	*	SCLEROCHLOA DURA		5	[UPL]	Ad A-Grass	FAIRGROUND GRASS
SCRLAN	5	Scrophularia lanceolata		2	FACU+	Nt P-Forb	EARLY FIGWORT
SCRMAR	5	Scrophularia marilandica		4	FACU-	Nt P-Forb	LATE FIGWORT
SCUELL	10	Scutellaria elliptica	SC	5	[UPL]	Nt B-Forb	HAIRY SKULLCAP
SCUGAL	5	Scutellaria galericulata		-5	OBL	Nt P-Forb	COMMON SKULLCAP
SCUINC	10	Scutellaria incana	X	5	[UPL]	Nt P-Forb	DOWNY SKULLCAP

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
SCULAT	5	Scutellaria lateriflora		-5	OBL	Nt P-Forb	MAD-DOG SKULLCAP
SCUNER	10	Scutellaria nervosa	T	5	[UPL]	Nt B-Forb	VEINED SKULLCAP
SCUOVA	10	Scutellaria ovata	X	3	FACU	Nt P-Forb	HEART-LEAVED SKULLCAP
SCUPAP	9	Scutellaria parvula	T	3	FACU	Nt P-Forb	SMALL SKULLCAP
SCUPAL	9	Scutellaria parvula var. leonardii	T	3	FACU	Nt P-Forb	SMALL SKULLCAP
SECCER	*	SECALE CEREALE		5	[UPL]	Ad A-Grass	ANNUAL RYE
SEDACR	*	SEDUM ACRE		5	[UPL]	Ad P-Forb	MOSSY STONECROP
SEDALB	*	SEDUM ALBUM		5	[UPL]	Ad P-Forb	STONECROP
SEDHIS	*	SEDUM HISPANICUM		5	[UPL]	Ad A-Forb	STONECROP
SEDSAR	*	SEDUM SARMENTOSUM		5	[UPL]	Ad P-Forb	STRINGY STONECROP
SEDSEX	*	SEDUM SEXANGULARE		5	[UPL]	Ad P-Forb	STONECROP
SEDSPU	*	SEDUM SPURIUM		5	[UPL]	Ad P-Forb	STONECROP
SEDTEL	*	SEDUM TELEPHIUM		5	[UPL]	Ad P-Forb	LIVE FOREVER
SEDTER	*	SEDUM TERNATUM		5	[UPL]	Ad P-Forb	WILD STONECROP
SELECL	5	Selaginella eclipes		-4	[FACW+]	Nt Fern Ally	SELAGINELLA
SELRUP	8	Selaginella rupestris		5	[UPL]	Nt Fern Ally	SAND CLUB MOSS
SELSEL	10	Selaginella selaginoides		-4	FACW+	Nt Fern Ally	SPIKEMOSS
SENAUR	5	Senecio aureus		-3	FACW	Nt P-Forb	GOLDEN RAGWORT
SENCON	10	Senecio congestus	X	-4	FACW+	Nt A-Forb	MARSH-FLEABANE
SENGLA	0	Senecio glabellus		-4	[FACW+]	Nt A-Forb	YELLOWTOP
SENIND	10	Senecio indecorus	T	-3	FACW	Nt P-Forb	RAYLESS MOUNTAIN RAGWORT
SENJAC	*	SENECIO JACOBAEA		5	[UPL]	Ad B-Forb	TANSY RAGWORT
SENOBO	10	Senecio obovatus		4	FACU-	Nt P-Forb	ROUND-LEAVED RAGWORT
SENPAU	3	Senecio pauperculus		-1	FAC+	Nt P-Forb	BALSAM RAGWORT
SENPLA	5	Senecio plattensis		4	FACU-	Nt P-Forb	PRAIRIE RAGWORT
SENSYL	*	SENECIO SYLVATICUS		5	[UPL]	Ad A-Forb	WOODLAND RAGWORT
SENVUL	*	SENECIO VULGARIS		5	[UPL]	Ad A-Forb	COMMON GROUNDSEL
SETFAB	*	SETARIA FABERI		2	FACU+	Ad A-Grass	GIANT FOXTAIL
SETGLA	*	SETARIA GLAUCA		0	FAC	Ad A-Grass	YELLOW FOXTAIL
SETITA	*	SETARIA ITALICA		3	FACU	Ad A-Grass	HUNGARIAN MILLET
SETVER	*	SETARIA VERTICILLATA		0	FAC	Ad A-Grass	BRISTLY FOXTAIL
SETVIR	*	SETARIA VIRIDIS		5	[UPL]	Ad A-Grass	GREEN FOXTAIL
SHEARG	*	SHEPHERDIA ARGENTEA		5	[UPL]	Ad Shrub	BUFFALO-BERRY
SHECAN	7	Shepherdia canadensis		5	[UPL]	Nt Shrub	SOAPBERRY
SHEARV	*	SHERARDIA ARVENSIS		5	[UPL]	Ad A-Forb	FIELD MADDER
SICANG	2	Sicyos angulatus		-2	FACW-	Nt A-Forb	BUR CUCUMBER
SIDHER	*	SIDA HERMAPHRODITA		3	[FACU]	Ad P-Forb	SIDA
SIDSPI	*	SIDA SPINOSA		3	FACU	Ad A-Forb	PRICKLY SIDA
SILANT	2	Silene antirrhina		5	[UPL]	Nt A-Forb	SLEEPY CATCHFLY
SILARM	*	SILENE ARMERIA		5	[UPL]	Ad A-Forb	SWEET WILLIAM CATCHFLY
SILCON	*	SILENE CONICA		5	[UPL]	Ad A-Forb	SILENE
SILCSE	*	SILENE CSEREII		5	[UPL]	Ad B-Forb	GLAUCOUS CAMPION
SILDIC	*	SILENE DICHOTOMA		5	[UPL]	Ad B-Forb	FORKED CATCHFLY
SILNOC	*	SILENE NOCTIFLORA		5	[UPL]	Ad A-Forb	NIGHT-FLOWERING CATCHFLY
SILNUT	*	SILENE NUTANS		5	[UPL]	Ad P-Forb	NOTTINGHAM CATCHFLY
SILPRA	*	SILENE PRATENSIS (LYCHNIS ALBA)		5	[UPL]	Ad A-Forb	WHITE CATCHFLY
SILSTE	10	Silene stellata	T	5	[UPL]	Nt P-Forb	STARRY CAMPION
SILVIR	10	Silene virginica	T	5	[UPL]	Nt P-Forb	FIRE PINK
SILVUL	*	SILENE VULGARIS (S. CUCUBALUS)		5	[UPL]	Ad P-Forb	BLADDER CAMPION
SILINT	10	Silphium integrifolium	T	5	[UPL]	Nt P-Forb	ROSIN WEED

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
SILLAC	9	Silphium laciniatum	T	5	[UPL]	Nt P-Forb	COMPASS PLANT
SILPER	10	Silphium perfoliatum	T	-2	FACW-	Nt P-Forb	CUP PLANT
SILTER	6	Silphium terebinthinaceum		3	FACU	Nt P-Forb	PRAIRIE DOCK
SILMAR	*	SILYBUM MARIANUM		5	[UPL]	Ad B-Forb	BLESSED THISTLE
SISALT	*	SISYMBRIUM ALTISSIMUM		3	FACU	Ad A-Forb	TUMBLE MUSTARD
SISIRI	*	SISYMBRIUM IRIO		5	[UPL]	Ad A-Forb	LONDON ROCKET
SISLOE	*	SISYMBRIUM LOESELII		5	[UPL]	Ad A-Forb	TALL HEDGE MUSTARD
SISOFF	*	SISYMBRIUM OFFICINALE		5	[UPL]	Ad A-Forb	HEDGE MUSTARD
SISALB	7	Sisyrinchium albidum		3	FACU	Nt P-Forb	COMMON BLUE-EYED-GRASS
SISANG	4	Sisyrinchium angustifolium		-2	FACW-	Nt P-Forb	STOUT BLUE-EYED-GRASS
SISATL	9	Sisyrinchium atlanticum	T	-3	FACW	Nt P-Forb	EASTERN BLUE-EYED-GRASS
SISCAM	*	SISYRINCHIUM CAMPESTRE		5	[UPL]	Ad P-Forb	BLUE-EYED-GRASS
SISFAR	10	Sisyrinchium farwellii	X	-4	[FACW+]	Nt P-Forb	FARWELL'S BLUE-EYED-GRASS
SISHAS	10	Sisyrinchium hastile	X	-4	[FACW+]	Nt P-Forb	BLUE-EYED-GRASS
SISMON	4	Sisyrinchium montanum		-1	FAC+	Nt P-Forb	MOUNTAIN BLUE-EYED-GRASS
SISMUC	10	Sisyrinchium mucronatum		-2	FACW-	Nt P-Forb	SLENDER BLUE-EYED-GRASS
SISSTR	10	Sisyrinchium strictum	SC	-2	[FACW-]	Nt P-Forb	BLUE-EYED-GRASS
SIUSUA	5	Sium suave		-5	OBL	Nt P-Forb	WATER-PARSNIP
SMIRAC	5	Smilacina racemosa		3	FACU	Nt P-Forb	FALSE SPIKENARD
SMISTE	5	Smilacina stellata		1	FAC-	Nt P-Forb	STARRY FALSE SOLOMON-SEAL
SMITRI	10	Smilacina trifolia		-5	OBL	Nt P-Forb	FALSE MAYFLOWER
SMIECI	6	Smilax ecirrhata		5	[UPL]	Nt P-Forb	UPRIGHT CARRION-FLOWER
SMIHER	8	Smilax herbacea	SC	0	FAC	Nt P-Forb	CARRION-FLOWER
SMIILL	4	Smilax illinoensis		5	[UPL]	Nt P-Forb	CARRION-FLOWER
SMILAS	5	Smilax lasioneura		5	[UPL]	Nt W-Vine	CARRION-FLOWER
SMIROT	6	Smilax rotundifolia		0	FAC	Nt W-Vine	COMMON GREEN-BRIER
SMITAM	5	Smilax tamnoides (S. hispida)		0	[FAC]	Nt W-Vine	BRISTLY GREEN-BRIER
SOLCAR	*	SOLANUM CAROLINENSE		4	FACU-	Ad P-Forb	HORSE NETTLE
SOLDUL	*	SOLANUM DULCAMARA		0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLPHY	*	SOLANUM PHYSALIFOLIUM (S. SARACHOIDES)		5	[UPL]	Ad A-Forb	HAIRY NIGHTSHADE
SOLPTY	1	Solanum ptychanthum (S. nigrum)		5	[UPL]	Nt A-Forb	BLACK NIGHTSHADE
SOLROS	*	SOLANUM ROSTRATUM		5	[UPL]	Ad A-Forb	BUFFALO BUR
SOLTRI	*	SOLANUM TRIFLORUM		5	[UPL]	Ad A-Forb	THREE-FLOWERED NIGHTSHADE
SOLTUB	*	SOLANUM TUBEROSUM		5	[UPL]	Ad P-Forb	POTATO
SOLALT	1	Solidago altissima		3	FACU	Nt P-Forb	TALL GOLDENROD
SOLBIC	8	Solidago bicolor	SC	5	[UPL]	Nt P-Forb	SILVER ROD
SOLCAE	7	Solidago caesia		3	FACU	Nt P-Forb	BLUE-STEMMED GOLDENROD
SOLCAN	1	Solidago canadensis		3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLFLE	6	Solidago flexicaulis		3	FACU	Nt P-Forb	BROAD-LEAVED GOLDENROD
SOLGIG	3	Solidago gigantea		-3	FACW	Nt P-Forb	LATE GOLDENROD
SOLHIS	3	Solidago hispida		5	[UPL]	Nt P-Forb	WHITE GOLDENROD
SOLHOU	10	Solidago houghtonii	T	-5	OBL	Nt P-Forb	HOUGHTON'S GOLDENROD
SOLJUN	3	Solidago juncea		5	[UPL]	Nt P-Forb	EARLY GOLDENROD
SOLMIS	6	Solidago missouriensis	T	5	[UPL]	Nt P-Forb	MISSOURI GOLDENROD
SOLNEM	2	Solidago nemoralis		5	[UPL]	Nt P-Forb	OLD-FIELD GOLDENROD
SOLOHI	8	Solidago ohioensis		-5	OBL	Nt P-Forb	OHIO GOLDENROD
SOLPAT	6	Solidago patula		-5	OBL	Nt P-Forb	SWAMP GOLDENROD
SOLPTA	6	Solidago ptarmicoides		5	[UPL]	Nt P-Forb	UPLAND WHITE GOLDENROD
SOLRID	6	Solidago riddellii		-5	OBL	Nt P-Forb	RIDDELL'S GOLDENROD

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
SOLRIG	5	Solidago rigida		4	FACU-	Nt P-Forb	STIFF GOLDENROD
SOLRUG	3	Solidago rugosa		-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
SOLSEM	*	SOLIDAGO SEMPERVIRENS		-2	[FACW-]	Ad P-Forb	SEASIDE GOLDENROD
SOLSIM	10	Solidago simplex		3	[FACU]	Nt P-Forb	GILLMAN'S GOLDENROD
SOLSPE	5	Solidago speciosa		5	[UPL]	Nt P-Forb	SHOWY GOLDENROD
SOLULI	4	Solidago uliginosa		-5	OBL	Nt P-Forb	BOG GOLDENROD
SOLULM	5	Solidago ulmifolia		5	[UPL]	Nt P-Forb	ELM-LEAVED GOLDENROD
SONARV	*	SONCHUS ARVENSIS (S. ULIGINOSUS)		1	FAC-	Ad P-Forb	PERENNIAL SOW THISTLE
SONASP	*	SONCHUS ASPER		0	FAC	Ad A-Forb	PRICKLY SOW THISTLE
SONOLE	*	SONCHUS OLERACEUS		3	FACU	Ad A-Forb	COMMON SOW THISTLE
SONULI	*	SONCHUS ULIGINOSUS		-2	[FACW-]	Ad P-Forb	SWAMP SOW THISTLE
SORSOR	*	SORBARIA SORBIFOLIA		5	[UPL]	Ad Shrub	FALSE SPIRAEA
SORAME	4	Sorbus americana		-1	FAC+	Nt Tree	AMERICAN MOUNTAIN-ASH
SORAUC	*	SORBUS AUCUPARIA		5	[UPL]	Ad Tree	EUROPEAN MOUNTAIN-ASH
SORDEC	4	Sorbus decora		3	[FACU]	Nt Tree	MOUNTAIN-ASH
SORNUT	6	Sorghastrum nutans		2	FACU+	Nt P-Grass	INDIAN GRASS
SORBIC	*	SORGHUM BICOLOR		5	[UPL]	Ad A-Grass	SORGHUM
SORHAL	*	SORGHUM HALEPENSE		3	FACU	Ad P-Grass	JOHNSON GRASS
SPAAME	6	Sparganium americanum		-5	OBL	Nt P-Forb	AMERICAN BUR-REED
SPAAND	6	Sparganium androcladum		-5	OBL	Nt P-Forb	BUR-REED
SPAANG	10	Sparganium angustifolium		-5	[OBL]	Nt P-Forb	NARROW-LEAVED BUR-REED
SPACHL	6	Sparganium chlorocarpum		-5	OBL	Nt P-Forb	GREEN-FRUITED BUR-REED
SPAEUR	5	Sparganium eurycarpum		-5	OBL	Nt P-Forb	COMMON BUR-REED
SPAFLU	10	Sparganium fluctuans		-5	OBL	Nt P-Forb	BUR-REED
SPAMIN	8	Sparganium minimum		-5	OBL	Nt P-Forb	SMALL BUR-REED
SPAGRA	*	SPARTINA GRACILIS		-3	[FACW]	Ad P-Grass	SLENDER CORDGRASS
SPAPAT	*	SPARTINA PATENS		-3	FACW	Ad P-Grass	SALT-MEADOW CORDGRASS
SPAPEC	5	Spartina pectinata		-4	FACW+	Nt P-Grass	CORDGRASS
SPEPER	6	Specularia perfoliata (Triodanis p.)		0	[FAC]	Nt A-Forb	VENUS'S LOOKING GLASS
SPEARV	*	SPERGULA ARVENSIS		5	[UPL]	Ad A-Forb	SPURREY
SPEMAR	*	SPERGULARIA MARINA		-5	OBL	Ad A-Forb	SANT SPURREY
SPEMED	*	SPERGULARIA MEDIA		3	FACU	Ad A-Forb	SALT SPURREY
SPERUB	*	SPERGULARIA RUBRA		3	FACU	Ad A-Forb	SAND SPURREY
SPHINT	4	Sphenopholis intermedia		0	[FAC]	Nt P-Grass	SLENDER WEDGEGRASS
SPHNIT	8	Sphenopholis nitida		5	[UPL]	Nt P-Grass	SHINING WEDGEGRASS
SPHOBT	8	Sphenopholis obtusata		0	FAC	Nt P-Grass	PRAIRIE WEDGEGRASS
SPIALB	4	Spiraea alba		-4	FACW+	Nt Shrub	MEADOWSWEET
SPIJAP	*	SPIRAEA JAPONICA		5	[UPL]	Ad Shrub	JAPANESE SPIRAEA
SPISAL	*	SPIRAEA SALICIFOLIA		-5	[OBL]	Ad Shrub	SPIRAEA
SPITOM	5	Spiraea tomentosa		-3	FACW	Nt Shrub	STEEPLEBUSH
SPIVAN	*	SPIRAEA XVANHOUTTEI		5	[UPL]	Ad Shrub	BRIDAL-WREATH
SPICAS	8	Spiranthes casei		3	[FACU]	Nt P-Forb	CASE'S LADIES'-TRESSES
SPICER	4	Spiranthes cernua		-2	FACW-	Nt P-Forb	NODDING LADIES'-TRESSES
SPILAC	8	Spiranthes lacera		-1	FAC+	Nt P-Forb	SLENDER LADIES'-TRESSES
SPILUC	7	Spiranthes lucida		-4	FACW+	Nt P-Forb	SHINING LADIES'-TRESSES
SPIMAG	9	Spiranthes magnicamporum		-3	[FACW]	Nt P-Forb	PRAIRIE LADIES'-TRESSES
SPIOCH	8	Spiranthes ochroleuca	SC	3	[FACU]	Nt P-Forb	YELLOW LADIES'-TRESSES
SPIOVA	9	Spiranthes ovalis	T	2	[FACU+]	Nt P-Forb	OVAL LADIES'-TRESSES
SPIROM	10	Spiranthes romanzoffiana		-4	FACW+	Nt P-Forb	HOODED LADIES'-TRESSES
SPITUB	10	Spiranthes tuberosa		5	[UPL]	Nt P-Forb	LITTLE LADIES'-TRESSES

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
SPIPOL	6	Spirodela polyrhiza		-5	OBL	Nt A-Forb	GREAT DUCKWEED
SPOASP	*	SPOROBOLUS ASPER		5	[UPL]	Ad P-Grass	ROUGH DROPSEED
SPOCLA	9	Sporobolus clandestinus	SC	5	[UPL]	Nt P-Grass	ROUGH RUSH-GRASS
SPOCRY	3	Sporobolus cryptandrus		4	FACU-	Nt P-Grass	SAND DROPSEED
SPOHET	10	Sporobolus heterolepis	SC	4	FACU-	Nt P-Grass	PRAIRIE DROPSEED
SPOIND	*	SPOROBOLUS INDICUS		5	[UPL]	Ad P-Grass	SMUT-GRASS
SPONEG	2	Sporobolus neglectus		5	[UPL]	Nt A-Grass	SMALL RUSH GRASS
SPOVAG	2	Sporobolus vaginiflorus		5	[UPL]	Nt A-Grass	SHEATHED RUSH GRASS
STAHYS	10	Stachys hyssopifolia		-4	FACW+	Nt P-Forb	HYSSOP HEDGE NETTLE
STAPAL	5	Stachys palustris		-5	OBL	Nt P-Forb	WOUNDWORT
STATEN	5	Stachys tenuifolia		-5	OBL	Nt P-Forb	SMOOTH HEDGE NETTLE
STATRI	9	Staphylea trifolia		0	[FAC]	Nt Shrub	BLADDERNUT
STEBOR	10	Stellaria borealis		-5	[OBL]	Nt P-Forb	NORTHERN STITCHWORT
STECRA	10	Stellaria crassifolia	T	0	[FAC]	Nt P-Forb	FLESHY STITCHWORT
STEGRN	*	STELLARIA GRAMINEA		5	[UPL]	Ad P-Forb	STARWORT
STELOF	5	Stellaria longifolia		-4	FACW+	Nt P-Forb	LONG-LEAVED CHICKWEED
STELOP	10	Stellaria longipes	SC	-5	OBL	Nt P-Forb	STARWORT
STEMED	*	STELLARIA MEDIA		3	FACU	Ad A-Forb	COMMON CHICKWEED
STEPAL	*	STELLARIA PALLIDA		5	[UPL]	Ad A-Forb	LEAST CHICKWEED
STEGRM	*	STENANTHIUM GRAMINEUM		0	FAC	Ad P-Forb	FEATHERBELLS
STIAVE	10	Stipa avenacea		4	FACU-	Nt P-Grass	BLACK OATGRASS
STICOM	*	STIPA COMATA		5	[UPL]	Ad P-Grass	NEEDLE-AND-THREAD
STISPA	10	Stipa spartea		5	[UPL]	Nt P-Grass	PORCUPINE GRASS
STRAMP	8	Streptopus amplexifolius		-1	FAC+	Nt P-Forb	TWISTED-STALK
STRROS	5	Streptopus roseus		0	FAC	Nt P-Forb	ROSE TWISTED-STALK
STRHEL	8	Strophostyles helvula	SC	-1	FAC+	Nt A-Forb	WILD BEAN
STYDIP	10	Stylophorum diphyllum		5	[UPL]	Nt P-Forb	WOOD POPPY
SUACAL	*	SUAEDA CALCEOLIFORMIS		-3	[FACW]	Ad A-Forb	SEA-BLITE
SUBAQU	10	Subularia aquatica	E	-5	OBL	Nt A-Forb	AWLWORT
SUCINF	*	SUCCISELLA INFLEXA		1	FAC-	Ad P-Forb	SOUTHERN SUCCISELLA
SYMALB	5	Symphoricarpos albus		4	FACU-	Nt Shrub	SNOWBERRY
SYMOCC	4	Symphoricarpos occidentalis		5	[UPL]	Nt Shrub	WOLFBERRY
SYMORB	*	SYMPHORICARPOS ORBICULATUS		3	FACU	Ad Shrub	CORALBERRY
SYMASP	*	SYMPHYTUM ASPERUM		5	[UPL]	Ad P-Forb	ROUGH COMFREY
SYMOFF	*	SYMPHYTUM OFFICINALE		5	[UPL]	Ad P-Forb	COMMON COMFREY
SYMFOE	6	Symplocarpus foetidus		-5	OBL	Nt P-Forb	SKUNK-CABBAGE
SYRVUL	*	SYRINGA VULGARIS		5	[UPL]	Ad Shrub	COMMON LILAC
TAEINT	8	Taenidia integerrima		5	[UPL]	Nt P-Forb	YELLOW-PIMPERNEL
TAMPAR	*	TAMARIX PARVIFLORA		5	[UPL]	Ad Shrub	TAMARISK
TANHUR	10	Tanacetum huronense	T	4	[FACU-]	Nt P-Forb	LAKE HURON TANSY
TANVUL	*	TANACETUM VULGARE		5	[UPL]	Ad P-Forb	GARDEN TANSY
TARERY	*	TARAXACUM ERYTHROSPERMUM		5	[UPL]	Ad P-Forb	RED-SEEDED DANDELION
TAROFF	*	TARAXACUM OFFICINALE		3	FACU	Ad P-Forb	COMMON DANDELION
TARPAL	*	TARAXACUM PALUSTRE		3	[FACU]	Ad P-Forb	MARSH DANDELION
TAXCAN	5	Taxus canadensis		3	FACU	Nt Shrub	CANADIAN YEW
TEENUD	*	TEESDALIA NUDICAULIS		5	[UPL]	Ad A-Forb	SHEPHERD'S CRESS
TEPVIR	10	Tephrosia virginiana		5	[UPL]	Nt P-Forb	GOAT'S-RUE
TEUCAN	4	Teucrium canadense		-2	FACW-	Nt P-Forb	WOOD SAGE
THADAS	3	Thalictrum dasycarpum		-2	FACW-	Nt P-Forb	PURPLE MEADOW-RUE
THADIO	6	Thalictrum dioicum		2	FACU+	Nt P-Forb	EARLY MEADOW-RUE

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
	*	THALICTRUM PUBESCENS		0	[FAC]	Ad P-Forb	KING OF THE MEADOW
THAREV	9	Thalictrum revolutum		0	FAC	Nt P-Forb	WAXY MEADOW-RUE
THAVEC	9	Thalictrum venulosum var. confine	SC	-2	[FACW-]	Nt P-Forb	VEINY MEADOW-RUE
THABAR	10	Thaspium barbinode		5	[UPL]	Nt P-Forb	MEADOW-PARSNIP
THATRI	8	Thaspium trifoliatum		2	[FACU+]	Nt P-Forb	MEADOW-PARSNIP
THEFIL	*	THELESPERMA FILIFOLIUM		5	[UPL]	Ad P-Forb	THELESPERMA
THEMEG	*	THELESPERMA MEGAPOTAMICUM		5	[UPL]	Ad P-Forb	THELESPERMA
THEHEX	8	Thelypteris hexagonoptera		1	FAC-	Nt Fern	BROAD BEECH-FERN
THENOV	5	Thelypteris noveboracensis		-1	FAC+	Nt Fern	NEW YORK FERN
THEPAL	2	Thelypteris palustris		-4	[FACW+]	Nt Fern	MARSH FERN
THEPHE	5	Thelypteris phegopteris		5	[UPL]	Nt Fern	NORTHERN BEECH-FERN
THLARV	*	THLASPI ARVENSE		5	[UPL]	Ad A-Forb	PENNY CRESS
THUOCC	4	Thuja occidentalis		-3	FACW	Nt Tree	ARBOR VITAE
THYMAR	*	THYMUS MARSCHALLIANUS		5	[UPL]	Ad P-Forb	THYME
THYPUL	*	THYMUS PULEGIOIDES		5	[UPL]	Ad P-Forb	THYME
TIACOR	9	Tiarella cordifolia		1	FAC-	Nt P-Forb	FOAMFLOWER
TILAME	5	Tilia americana		3	FACU	Nt Tree	BASSWOOD
TIPDIS	10	Tipularia discolor	T	4	FACU-	Nt P-Forb	CRANE-FLY ORCHID
TOFGLU	10	Tofieldia glutinosa		-5	OBL	Nt P-Forb	FALSE ASPHODEL
TOFPUS	10	Tofieldia pusilla	T	-4	FACW+	Nt P-Forb	FALSE ASPHODEL
TOMAUR	10	Tomanthera auriculata	X	5	[UPL]	Nt A-Forb	EARED FALSE FOXGLOVE
TORJAP	*	TORILIS JAPONICA		5	[UPL]	Ad A-Forb	HEDGE-PARSLEY
TORNOD	*	TORILIS NODOSA		5	[UPL]	Ad A-Forb	HEDGE-PARSLEY
TOXRAR	2	Toxicodendron radicans		-1	FAC+	Nt W-Vine	POISON-IVY
TOXRAN	2	Toxicodendron radicans ssp. negundo		-1	FAC+	Nt W-Vine	POISON-IVY
TOXRYD	3	Toxicodendron rydbergii		0	FAC	Nt W-Vine	POISON-IVY
TOXVER	6	Toxicodendron vernix		-5	OBL	Nt Shrub	POISON SUMAC
TRAAMM	*	TRACHYSPERMUM AMMI		5	[UPL]	Ad A-Forb	AJOWAN
TRABRA	10	Tradescantia bracteata	X	4	FACU-	Nt P-Forb	LONG-BRACTED SPIDERWORT
TRAOHI	5	Tradescantia ohiensis		2	FACU+	Nt P-Forb	COMMON SPIDERWORT
TRAVIR	9	Tradescantia virginiana	SC	5	[UPL]	Nt P-Forb	VIRGINIA SPIDERWORT
TRADUB	*	TRAGOPOGON DUBIUS		5	[UPL]	Ad B-Forb	GOAT'S BEARD
TRAPOR	*	TRAGOPOGON PORRIFOLIUS		5	[UPL]	Ad B-Forb	VEGETABLE-OYSTER
TRAPRA	*	TRAGOPOGON PRATENSIS		5	[UPL]	Ad B-Forb	COMMON GOAT'S BEARD
TRIFRA	6	Triadenum fraseri (Hypericum f.)		-5	OBL	Nt P-Forb	MARSH ST. JOHN'S-WORT
TRIVIG	10	Triadenum virginicum (Hypericum v.)		-5	OBL	Nt P-Forb	MARSH ST. JOHN'S-WORT
TRITER	*	TRIBULUS TERRESTRIS		5	[UPL]	Ad A-Forb	CALTROP
TRIALP	10	Trichophorum alpinum (Scirpus hudsonianus)		-5	[OBL]	Nt P-Sedge	BULRUSH
TRICES	10	Trichophorum cespitosum (Scirpus cespitosus)		-5	OBL	Nt P-Sedge	BULRUSH
TRICLI	10	Trichophorum clintonii (Scirpus c.)	SC	4	FACU-	Nt P-Sedge	CLINTON'S BULRUSH
TRIBRA	8	Trichostema brachiatum	T	5	[UPL]	Nt A-Forb	FALSE PENNYROYAL
TRIDIC	8	Trichostema dichotomum	T	5	[UPL]	Nt A-Forb	BASTARD PENNYROYAL
TRIFLA	3	Tridens flavus		5	[UPL]	Nt P-Grass	PURPLETOP
TRIBOR	5	Trientalis borealis		-1	FAC+	Nt P-Forb	STARFLOWER
TRIARV	*	TRIFOLIUM ARVENSE		5	[UPL]	Ad A-Forb	RABBITFOOT CLOVER
TRIAUM	*	TRIFOLIUM AUREUM (T. AGRARIUM)		5	[UPL]	Ad A-Forb	HOP CLOVER
TRICAM	*	TRIFOLIUM CAMPESTRE		5	[UPL]	Ad A-Forb	LOW HOP CLOVER
TRIDEP	*	TRIFOLIUM DEPAUPERATUM		5	[UPL]	Ad A-Forb	CLOVER

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
TRIDUB	*	TRIFOLIUM DUBIUM		3	FACU	Ad A-Forb	LITTLE HOP CLOVER
TRIFUC	*	TRIFOLIUM FUCATUM		5	[UPL]	Ad A-Forb	CLOVER
TRIHYB	*	TRIFOLIUM HYBRIDUM		1	FAC-	Ad P-Forb	ALSIKE CLOVER
TRIINC	*	TRIFOLIUM INCARNATUM		5	[UPL]	Ad A-Forb	CRIMSON CLOVER
TRIPRA	*	TRIFOLIUM PRATENSE		2	FACU+	Ad P-Forb	RED CLOVER
TRIREP	*	TRIFOLIUM REPENS		2	FACU+	Ad P-Forb	WHITE CLOVER
TRIMAR	8	Triglochin maritimum		-5	OBL	Nt P-Forb	COMMON BOG ARROW-GRASS
TRIPAL	8	Triglochin palustre		-5	OBL	Nt P-Forb	SLENDER BOG ARROW-GRASS
TRICER	5	Trillium cernuum		0	FAC	Nt P-Forb	NODDING TRILLIUM
TRIERE	7	Trillium erectum		1	[FAC-]	Nt P-Forb	STINKING BENJAMIN
TRIFLE	7	Trillium flexipes		1	FAC-	Nt P-Forb	DROOPING TRILLIUM
TRIGRA	5	Trillium grandiflorum		5	[UPL]	Nt P-Forb	COMMON TRILLIUM
TRINIV	10	Trillium nivale	T	5	[UPL]	Nt P-Forb	SNOW TRILLIUM
TRIREC	8	Trillium recurvatum	T	4	FACU-	Nt P-Forb	RED TRILLIUM
TRISES	9	Trillium sessile	T	4	FACU-	Nt P-Forb	TOADSHADE
TRIUND	10	Trillium undulatum	E	4	FACU-	Nt P-Forb	PAINTED TRILLIUM
TRIVID	10	Trillium viride	X	5	[UPL]	Nt P-Forb	GREEN TRILLIUM
TRIAUN	5	Triosteum aurantiacum		5	[UPL]	Nt P-Forb	HORSE-GENTIAN
TRIPER	5	Triosteum perfoliatum		5	[UPL]	Nt P-Forb	HORSE-GENTIAN
TRITRI	10	Triphora trianthophora	T	4	FACU-	Nt P-Forb	NODDING POGONIA
TRIPUR	6	Triplasis purpurea	SC	5	[UPL]	Nt A-Grass	SAND GRASS
TRIDAC	*	TRIPSACUM DACTYLOIDES		-1	FAC+	Ad P-Grass	GAMA GRASS
TRIMEL	10	Trisetum melicoides		-3	FACW	Nt P-Grass	TRISETUM
TRISPI	10	Trisetum spicatum	SC	1	FAC-	Nt P-Grass	DOWNY OATGRASS
TRIAES	*	TRITICUM AESTIVUM		5	[UPL]	Ad A-Grass	WHEAT
TSUCAN	5	Tsuga canadensis		3	FACU	Nt Tree	HEMLOCK
TUSFAR	*	TUSSILAGO FARFARA		3	FACU	Ad P-Forb	COLTSFOOT
TYPANG	*	TYPHA ANGUSTIFOLIA		-5	OBL	Ad P-Forb	NARROW-LEAVED CAT-TAIL
TYPLAT	1	Typha latifolia		-5	OBL	Nt P-Forb	BROAD-LEAVED CAT-TAIL
TYPGLA	*	TYPHA XGLAUCA		-5	OBL	Ad P-Forb	HYBRID CAT-TAIL
ULMAME	1	Ulmus americana		-2	FACW-	Nt Tree	AMERICAN ELM
	*	ULMUS GLABRA		-1	[FAC+]	Ad Tree	WYCH ELM
ULMPUM	*	ULMUS PUMILA		5	[UPL]	Ad Tree	SIBERIAN ELM
ULMRUB	2	Ulmus rubra		0	FAC	Nt Tree	SLIPPERY ELM
ULMTHO	4	Ulmus thomasii		-1	FAC+	Nt Tree	ROCK ELM
URTDIO	1	Urtica dioica		-1	FAC+	Nt P-Forb	NETTLE
URTURE	*	URTICA URENS		5	[UPL]	Ad A-Forb	EUROPEAN NETTLE
UTRCOR	10	Utricularia cornuta		-5	OBL	Nt A-Forb	HORNED BLADDERWORT
UTRGEM	8	Utricularia geminiscapa		-5	[OBL]	Nt P-Forb	BOG BLADDERWORT
UTRGIB	8	Utricularia gibba		-5	OBL	Nt P-Forb	HUMPED BLADDERWORT
UTRINT	10	Utricularia intermedia		-5	OBL	Nt P-Forb	FLAT-LEAVED BLADDERWORT
UTRMIN	10	Utricularia minor		-5	OBL	Nt P-Forb	SMALL BLADDERWORT
UTRPUR	10	Utricularia purpurea		-5	OBL	Nt P-Forb	PURPLE BLADDERWORT
UTRRAD	10	Utricularia radiata (U. inflata)	E	-5	[OBL]	Nt A-Forb	FLOATING BLADDERWORT
UTRRES	10	Utricularia resupinata		-5	OBL	Nt A-Forb	SMALL PURPLE BLADDERWORT
UTRSUB	10	Utricularia subulata	T	-5	[OBL]	Nt A-Forb	ZIGZAG BLADDERWORT
UTRVUL	6	Utricularia vulgaris		-5	[OBL]	Nt P-Forb	GREAT BLADDERWORT
UVUGRA	5	Uvularia grandiflora		5	[UPL]	Nt P-Forb	BELLWORT
UVUSES	5	Uvularia sessilifolia		1	FAC-	Nt P-Forb	MERRYBELLS
VACHIS	*	VACCARIA HISPANICA		5	[UPL]	Ad A-Forb	COW HERB

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
VACANG	4	Vaccinium angustifolium		3	FACU	Nt Shrub	BLUEBERRY
VACCES	9	Vaccinium cespitosum	T	3	FACU	Nt Shrub	DWARF BILBERRY
VACCOR	6	Vaccinium corymbosum		-3	FACW	Nt Shrub	SMOOTH HIGHBUSH BLUEBERRY
VACMAC	8	Vaccinium macrocarpon		-5	OBL	Nt Shrub	LARGE CRANBERRY
VACMEM	8	Vaccinium membranaceum		5	[UPL]	Nt Shrub	BILBERRY
VACMYR	4	Vaccinium myrtilloides		-2	FACW-	Nt Shrub	CANADA BLUEBERRY
VACOVA	9	Vaccinium ovalifolium		3	FACU	Nt Shrub	TALL BILBERRY
VACOXY	8	Vaccinium oxycoccos		-5	OBL	Nt Shrub	SMALL CRANBERRY
VACPAL	7	Vaccinium pallidum		5	[UPL]	Nt Shrub	BLUEBERRY
VACULI	10	Vaccinium uliginosum	T	-3	[FACW]	Nt Shrub	BOG-BILBERRY
VACVIT	10	Vaccinium vitis-idaea	E	0	FAC	Nt Shrub	LINGONBERRY
VALCIL	10	Valeriana ciliata	T	-5	[OBL]	Nt P-Forb	COMMON VALERIAN
VALOFF	*	VALERIANA OFFICINALIS		2	[FACU+]	Ad P-Forb	GARDEN HELIOTROPE
VALULI	10	Valeriana uliginosa		-4	[FACW+]	Nt P-Forb	BOG VALERIAN
VALCHE	8	Valerianella chenopodiifolia	T	1	[FAC-]	Nt A-Forb	GOOSEFOOT CORN SALAD
VALLOC	*	VALERIANELLA LOCUSTA		5	[UPL]	Ad A-Forb	EUROPEAN CORN SALAD
VALUMB	8	Valerianella umbilicata	T	-3	[FACW]	Nt A-Forb	KANKAKEE CORN SALAD
VALAME	7	Vallisneria americana		-5	OBL	Nt P-Forb	EEL GRASS
VERBLA	*	VERBASCUM BLATTARIA		4	FACU-	Ad B-Forb	MOTH MULLEIN
VERDEN	*	VERBASCUM DENSIFLORUM		5	[UPL]	Ad B-Forb	MULLEIN
VERLYC	*	VERBASCUM LYCHNITIS		5	[UPL]	Ad B-Forb	WHITE MULLEIN
VERPHL	*	VERBASCUM PHLOMOIDES		5	[UPL]	Ad B-Forb	CLASPING-LEAVED MULLEIN
VERTHA	*	VERBASCUM THAPSUS		5	[UPL]	Ad B-Forb	COMMON MULLEIN
VERBRA	*	VERBENA BRACTEATA		3	FACU	Ad A-Forb	CREEPING VERVAIN
VERCAN	*	VERBENA CANADENSIS		5	[UPL]	Ad P-Forb	CANADIAN VERVAIN
VERHAS	4	Verbena hastata		-4	FACW+	Nt P-Forb	BLUE VERVAIN
VERSIM	6	Verbena simplex		5	[UPL]	Nt P-Forb	NARROW-LEAVED VERVAIN
VERSTR	4	Verbena stricta		5	[UPL]	Nt P-Forb	HOARY VERVAIN
VERURT	4	Verbena urticifolia		-1	FAC+	Nt P-Forb	WHITE VERVAIN
VERALT	4	Verbesina alternifolia		-3	FACW	Nt P-Forb	WINGSTEM
VERENC	*	VERBESINA ENCELIOIDES		5	[UPL]	Ad A-Forb	GOLDEN CROWNBEARD
VERGIG	3	Vernonia gigantea (V. altissima)		0	FAC	Nt P-Forb	TALL IRONWEED
VERMIS	4	Vernonia missurica		-1	FAC+	Nt P-Forb	MISSOURI IRONWEED
VERANA	4	Veronica anagallis-aquatica		-5	[OBL]	Nt B-Forb	WATER SPEEDWELL
VERARV	*	VERONICA ARVENSIS		5	[UPL]	Ad A-Forb	CORN SPEEDWELL
VERAUS	*	VERONICA AUSTRIACA		5	[UPL]	Ad P-Forb	SPEEDWELL
VERBEB	*	VERONICA BECCABUNGA		-5	OBL	Ad P-Forb	BROOKLIME
VERBEA	10	Veronica beccabunga var. americana		-5	OBL	Nt P-Forb	AMERICAN BROOKLIME
VERCHA	*	VERONICA CHAMAEDRYS		5	[UPL]	Ad A-Forb	GERMANDER SPEEDWELL
VERDIL	*	VERONICA DILLENII		5	[UPL]	Ad A-Forb	SPEEDWELL
VERFIL	*	VERONICA FILIFORMIS		5	[UPL]	Ad P-Forb	SLENDER SPEEDWELL
VERLON	*	VERONICA LONGIFOLIA		5	[UPL]	Ad P-Forb	LONG-LEAVED SPEEDWELL
VEROFF	*	VERONICA OFFICINALIS		5	[UPL]	Ad P-Forb	COMMON SPEEDWELL
VERPEG	0	Veronica peregrina		-4	FACW+	Nt A-Forb	PURSLANE SPEEDWELL or NECKWEED
VERPES	*	VERONICA PERSICA		5	[UPL]	Ad A-Forb	BIRD'S EYE
VERPOL	*	VERONICA POLITA		5	[UPL]	Ad A-Forb	SPEEDWELL
VERSCU	6	Veronica scutellata		-5	OBL	Nt P-Forb	MARSH SPEEDWELL
VERSER	0	Veronica serpyllifolia		-3	FACW	Nt P-Forb	THYME-LEAVED SPEEDWELL
VERVER	*	VERONICA VERNA		5	[UPL]	Ad A-Forb	SPRING CORN SPEEDWELL
VERVIR	8	Veronicastrum virginicum		0	FAC	Nt P-Forb	CULVER'S ROOT

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
VIBACE	6	Viburnum acerifolium		5	[UPL]	Nt Shrub	MAPLE-LEAVED ARROW-WOOD
VIBCAS	6	Viburnum cassinoides		-3	FACW	Nt Shrub	NORTHERN HAW
VIBDEN	6	Viburnum dentatum (V. recognitum)		-2	FACW-	Nt Shrub	SMOOTH ARROW-WOOD
VIBEDU	10	Viburnum edule	T	-3	FACW	Nt Shrub	SQUASHBERRY
VIBLAN	*	VIBURNUM LANTANA		5	[UPL]	Ad Shrub	WAYFARING TREE
VIBLEN	4	Viburnum lentago		-1	FAC+	Nt Shrub	NANNYBERRY
VIBOPO	*	VIBURNUM OPULUS		0	[FAC]	Ad Shrub	EUROPEAN HIGHBUSH CRANBERRY
VIBOPA	5	Viburnum opulus var. americanum		-3	[FACW]	Nt Shrub	HIGHBUSH CRANBERRY
VIBPLI	*	VIBURNUM PLICATUM		5	[UPL]	Ad Shrub	JAPANESE SNOWBALL
VIBPRU	7	Viburnum prunifolium	SC	3	FACU	Nt Shrub	BLACK HAW
VIBRAF	5	Viburnum rafinesquianum		5	[UPL]	Nt Shrub	DOWNY ARROW-WOOD
VICAME	5	Vicia americana		5	[UPL]	Nt P-Forb	AMERICAN VETCH
VICANG	*	VICIA ANGUSTIFOLIA (SATIVA NIGRA)		4	[FACU-]	Ad A-Forb	NARROW-LEAVED VETCH
VICCAR	8	Vicia caroliniana		5	[UPL]	Nt P-Forb	PALE or WOOD VETCH
VICCRA	*	VICIA CRACCA		5	[UPL]	Ad A-Forb	BIRD VETCH
VICGRA	*	VICIA GRANDIFLORA		5	[UPL]	Ad A-Forb	LARGE-FLOWERED VETCH
VICHIR	*	VICIA HIRSUTA		5	[UPL]	Ad A-Forb	HAIRY VETCH
VICSAT	*	VICIA SATIVA		4	FACU-	Ad A-Forb	COMMON VETCH
VICSEP	*	VICIA SEPIUM		5	[UPL]	Ad P-Forb	HEDGE VETCH
VICTET	*	VICIA TETRASPERMA		5	[UPL]	Ad A-Forb	SPARROW VETCH
VICVIL	*	VICIA VILLOSA		5	[UPL]	Ad A-Forb	HAIRY VETCH
VIGUNG	*	VIGNA UNGUICULATA		5	[UPL]	Ad A-Forb	COMMON COWPEA
VINMIN	*	VINCA MINOR		5	[UPL]	Ad Shrub	PERIWINKLE
VINNIG	*	VINCETOXICUM NIGRUM (CYNANCHUM N.)		5	[UPL]	Ad P-Forb	BLACK SWALLOW-WORT
VINROS	*	VINCETOXICUM ROSSICUM (CYNANCHUM MEDIUM)		5	[UPL]	Ad P-Forb	WHITE SWALLOW-WORT
VIOADU	4	Viola adunca		1	FAC-	Nt P-Forb	SAND VIOLET
VIOAFF	2	Viola affinis		-3	FACW	Nt P-Forb	LE CONTE'S VIOLET
VIOARV	*	VIOLA ARVENSIS		5	[UPL]	Ad A-Forb	FIELD PANSY
VIOBLA	5	Viola blanda		-2	FACW-	Nt P-Forb	SWEET WHITE VIOLET
VIOCAN	5	Viola canadensis		5	[UPL]	Nt P-Forb	CANADA VIOLET
VIOCON	3	Viola conspersa		-2	FACW-	Nt P-Forb	DOG VIOLET
VIOCUC	5	Viola cucullata		-5	OBL	Nt P-Forb	MARSH VIOLET
VIOEPI	10	Viola epipsila	T	-5	[OBL]	Nt P-Forb	NORTHERN MARSH VIOLET
VIOLAN	8	Viola lanceolata		-5	OBL	Nt P-Forb	LANCE-LEAVED VIOLET
VIOMAC	6	Viola macloskeyi (V. pallens)		-5	[OBL]	Nt P-Forb	SMOOTH WHITE VIOLET
VIOMIS	4	Viola missouriensis		0	[FAC]	Nt P-Forb	MISSOURI VIOLET
VIONEP	8	Viola nephrophylla		-4	FACW+	Nt P-Forb	NORTHERN BOG VIOLET
VIONOV	10	Viola novae-angliae	T	-5	OBL	Nt P-Forb	NEW ENGLAND BLUE VIOLET
VIOODO	*	VIOLA ODORATA		5	[UPL]	Ad P-Forb	ENGLISH or SWEET VIOLET
VIOPAL	5	Viola palmata		5	[UPL]	Nt P-Forb	WOOD VIOLET
VIOPET	9	Viola pedata		5	[UPL]	Nt P-Forb	BIRDFOOT VIOLET
VIOPEF	10	Viola pedatifida	T	4	FACU-	Nt P-Forb	PRAIRIE VIOLET
VIOPUB	4	Viola pubescens		4	FACU-	Nt P-Forb	YELLOW VIOLET
VIOREN	6	Viola renifolia		-3	FACW	Nt P-Forb	KIDNEY-LEAVED VIOLET
VIOROS	6	Viola rostrata		3	FACU	Nt P-Forb	LONG-SPURRED VIOLET
VIOSAG	8	Viola sagittata		-2	FACW-	Nt P-Forb	ARROW-LEAVED VIOLET
VIOSEL	7	Viola selkirkii		5	[UPL]	Nt P-Forb	GREAT-SPURRED VIOLET
VIOSOR	1	Viola sororia		1	FAC-	Nt P-Forb	COMMON BLUE VIOLET

ACRONYM	C	SCIENTIFIC NAME	ST	W	WET	PHYS	COMMON NAME
VIOSTR	5	Viola striata		-3	FACW	Nt P-Forb	CREAM VIOLET
VIOTRI	*	VIOLA TRICOLOR		5	[UPL]	Ad A-Forb	JOHNNY-JUMP-UP
VIOPRI	5	Viola Xprimulifolia		-4	[FACW+]	Nt P-Forb	PRIMROSE-LEAVED VIOLET
VITAES	6	Vitis aestivalis		3	FACU	Nt W-Vine	SUMMER GRAPE
VITLAB	7	Vitis labrusca		3	FACU	Nt W-Vine	FOX GRAPE
VITRIP	3	Vitis riparia		-2	FACW-	Nt W-Vine	RIVERBANK GRAPE
VITVUL	8	Vitis vulpina	T	-2	FACW-	Nt W-Vine	FROST GRAPE
WALFRA	6	Waldsteinia fragarioides		5	[UPL]	Nt P-Forb	BARREN-STRAWBERRY
WISFRU	9	Wisteria frutescens	T	5	[UPL]	Nt P-Forb	WISTERIA
WISSIN	*	WISTERIA SINENSIS		5	[UPL]	Ad P-Forb	CHINESE WISTERIA
WOLCOL	5	Wolffia columbiana		-5	OBL	Nt A-Forb	COMMON WATER MEAL
WOLPAP	10	Wolffia papulifera (W. brasiliensis)	T	-5	OBL	Nt P-Forb	POINTED WATER MEAL
WOLPUN	5	Wolffia punctata		-5	OBL	Nt A-Forb	DOTTED WATER MEAL
WOOALP	10	Woodsia alpina	T	5	[UPL]	Nt Fern	NORTHERN WOODSIA
WOOILV	10	Woodsia ilvensis		5	[UPL]	Nt Fern	RUSTY WOODSIA
WOOOBT	10	Woodsia obtusa	T	5	[UPL]	Nt Fern	CLIFF FERN
WOOORE	10	Woodsia oregana		5	[UPL]	Nt Fern	OREGON WOODSIA
WOOARE	10	Woodwardia areolata	X	-5	OBL	Nt Fern	NETTED CHAIN-FERN
WOOVIR	10	Woodwardia virginica		-5	OBL	Nt Fern	VIRGINIA CHAIN-FERN
XANSPI	*	XANTHIUM SPINOSUM		3	FACU	Ad A-Forb	SPINY COCKLEBUR
XANSTR	*	XANTHIUM STRUMARIUM		0	FAC	Ad A-Forb	COMMON COCKLEBUR
XYRDIF	8	Xyris difformis		-5	OBL	Nt P-Forb	YELLOW-EYED-GRASS
XYRMON	10	Xyris montana		-5	OBL	Nt P-Forb	YELLOW-EYED-GRASS
XYRTOR	10	Xyris torta		-5	OBL	Nt P-Forb	YELLOW-EYED-GRASS
YUCFIL	*	YUCCA FILAMENTOSA		5	[UPL]	Ad Shrub	YUCCA
ZANPAL	6	Zannichellia palustris		-5	OBL	Nt P-Forb	HORNED PONDWEED
ZANAME	3	Zanthoxylum americanum		5	[UPL]	Nt Shrub	PRICKLY-ASH
ZEAMAY	*	ZEA MAYS		5	[UPL]	Ad A-Grass	INDIAN CORN; MAIZE
ZIGGLA	10	Zigadenus glaucus (Z. elegans)		-3	FACW	Nt P-Forb	WHITE CAMAS
ZIZAQU	9	Zizania aquatica var. aquatica	T	-5	OBL	Nt A-Grass	WILD-RICE
ZIZPAL	8	Zizania palustris (Z. aquatica var. angustifolia)		-5	OBL	Nt A-Grass	WILD-RICE
ZIZAPT	9	Zizia aptera	T	3	FACU	Nt P-Forb	PRAIRIE GOLDEN ALEXANDER
ZIZAUR	6	Zizia aurea		-1	FAC+	Nt P-Forb	GOLDEN ALEXANDERS

APPENDIX D

ACRONYM	SCIENTIFIC NAME
ACESAI	Acer saccharinum
ACESAU	Acer saccharum
ALSCSC	ALLIUM SCHOENOPRASUM
ALSCSI	Allium schoenoprasum var. sibiricum
ANTPAL	Antennaria parlinii
ANTPAV	Antennaria parviflora
BROMOF	BROMUS MOLLIFORMIS
BROMOS	BROMUS MOLLIS
CALLPA	Calla palustris
CALTPA	Caltha palustris
CAMAPR	Campanula aparinoides
CAMAPU	Campanula aparinoides ssp. uliginosa
CXARTA	Carex arcta
CXARTT	Carex arctata
CXCEPD	Carex cephaloidea
CXCEPP	Carex cephalophora
CXCRAE	Carex crawei
CXCRAF	Carex crawfordii
CXDEBD	Carex debilis
CXDEBR	Carex debilis var. rudgei
CXGRAS	Carex gracilescens
CXGRAA	Carex gracillima
CXHIRA	CAREX HIRTA
CXHIRI	Carex hirtifolia
CXLAXC	Carex laxiculmis
CXLAXF	Carex laxiflora
CXLEPA	Carex leptalea
CXLEPO	Carex leptonervia
CXLUPS	Carex lupuliformis
CXLUPA	Carex lupulina
CXOLIC	Carex oligocarpa
CXOLIS	Carex oligosperma
CXRETF	Carex retroflexa
CXRETS	Carex retrorsa
CXTONT	Carex tonsa
CXTONR	Carex tonsa var. rugosperma
CARCAO	Carpinus caroliniana
CARCAV	CARUM CARVI
CENMAR	CENTAUREA MACROCEPHALA
CENMAU	CENTAUREA MACULOSA
CENNIA	CENTAUREA NIGRA
CENNIS	CENTAUREA NIGRESCENS
CHANUK	Chamaerhodos nuttallii var. keweenawensis
CHEGLB	Chelone glabra
CHEGLC	CHENOPODIUM GLAUCUM
CORTRF	Corallorhiza trifida
CORTRP	Coreopsis tripteris
CORCAA	Cornus canadensis
CORCAE	CORYNEPHORUS CANESCENS
CUSEPL	CUSCUTA EPILINUM
CUSEPT	CUSCUTA EPITHYMUM
CYCAPA	Cypripedium calceolus var. parviflorum
CYCAPU	Cypripedium calceolus var. pubescens
DESCAD	Desmodium canadense
DESCAS	Desmodium canescens
ERIVIG	Eriophorum virginicum
ERIVID	Eriophorum viridi-carinatum
EUPMAM	Eupatorium maculatum
EUPSEM	Eupatorium serotinum

ACRONYM	SCIENTIFIC NAME
EUPMAA	Euphorbia maculata
EUPSEA	EUPHORBIA SERPYLLIFOLIA
GALTRD	Galium trifidum
GALTRR	Galium triflorum
GALVEC	GALIUM VERRUCOSUM
GALVEM	GALIUM VERUM
HIEPIA	HIERACIUM PILOSELLA
HIEPIS	HIERACIUM PILOSELLOIDES
HYDCAS	Hydrastis canadensis
HYDCAE	Hydrophyllum canadense
JUNBRR	Juncus brachycarpus
JUNBRP	Juncus brachycephalus
JUNCOU	JUNCUS COMPRESSUS
JUNCOI	Juniperus communis
LUPPOC	LUPINUS POLYCARPUS
LUPPOP	LUPINUS POLYPHYLLUS
LYSQUR	Lysimachia quadriflora
LYSQUL	Lysimachia quadrifolia
MAICAC	Maianthemum canadense
MAICAI	Maianthemum canadense var. interius
MELLOF	MELILOTUS OFFICINALIS
MELSOF	MELISSA OFFICINALIS
MIMGLJ	Mimulus glabratus var. jamesii
MIMGLM	Mimulus glabratus var. michiganensis
MISSIZ	MISCANTHUS SINENSIS var. ZEBRINUS
MONEUN	Moneses uniflora
MONOUN	Monotropa uniflora
OSMCLI	Osmorhiza claytonii
OSMCLN	Osmunda claytoniana
PANCOS	Panicum commonsianum
PANCOT	Panicum commutatum
PANDIF	Panicum dichotomiflorum
PANDIM	Panicum dichotomum
PANLID	Panicum lindheimeri
PANLIE	Panicum linearifolium
PHYVIG	Physalis virginiana
PHYVIA	Physostegia virginiana
POAPAD	Poa paludigena
POAPAS	Poa palustris
POLBIB	Polygonatum biflorum
POLBIM	Polygonatum biflorum var. melleum
POLHYR	Polygonum hydropiper
POLHYS	Polygonum hydropiperoides
POLVIM	Polygonum virginianum
POLVIG	Polypodium virginianum
POPNII	POPULUS NIGRA var. ITALICA
POTGRM	Potamogeton gramineus
POTARE	POTENTILLA ARGENTEA
POTARU	Potentilla arguta
POTGRC	POTENTILLA GRACILIS
PRUALD	Prunus alleghaniensis var. davisii
PRUCEF	PRUNUS CERASIFERA
PRUCES	PRUNUS CERASUS
QUEPAA	Quercus Xpalaeolithica
QUEPAS	Quercus palustris
QUEPRD	Quercus prinoides
QUEPRS	QUERCUS PRINUS
RANREN	RANUNCULUS REPENS
RANRET	Ranunculus reptans
RHYCAL	Rhynchospora capillacea
RHYCAT	Rhynchospora capitellata

ACRONYM	SCIENTIFIC NAME
RUMACS	RUMEX ACETOSA
RUMACL	RUMEX ACETOSELLA
SALSEC	Salix sericea
SALSES	Salix serissima
SANCAA	Sanguinaria canadensis
SANCAD	Sanguisorba canadensis
SANCAS	Sanicula canadensis
SARPUP	Sarracenia purpurea
SARPUH	Sarracenia purpurea f. heterophylla
SCUPAP	Scutellaria parvula
SCUPAL	Scutellaria parvula var. leonardii
STEGRN	STELLARIA GRAMINEA
STELOF	Stellaria longifolia
STELOP	Stellaria longipes
STEGRM	STENANTHIUM GRAMINEUM
THAVEC	Thalictrum venulosum var. confine
TOXRAR	Toxicodendron radicans
TOXRAN	Toxicodendron radicans ssp. negundo
TRIVIG	Triadenum virginicum
TRIAUM	TRIFOLIUM AUREUM
TRIVID	Trillium viride
TRIAUN	Triosteum aurantiacum
VERBEB	VERONICA BECCABUNGA
VERBEA	Veronica beccabunga var. americana
VERPEG	Veronica peregrina
VERPES	VERONICA PERSICA
VIBOPO	VIBURNUM OPULUS
VIBOPA	Viburnum opulus var. americanum
VIOPET	Viola pedata
VIOPEF	Viola pedatifida

APPENDIX E

Andropogon scoparius -- Schizachyrium scoparius
Antennaria plantaginifolia – Antennaria parlinii
Armoracia aquatica -- Armoracia lacustris
Aronia melanocarpa -- Aronia prunifolia
Asplenium viride – Asplenium trichomanes-ramosum
Aster azureus -- Aster oolentangiensis
Aster ericoides -- Virgulus ericoides
Aster lucidulus -- Aster firmus
Aster lucidulus -- Aster puniceus
Aster novae-angliae -- Virgulus novae-angliae
Aster sericeus -- Virgulus sericeus
Baptisia leucantha -- Baptisia lactea
Berula pusilla -- Berula erecta
Bidens beckii -- Megalodonta beckii
Cacalia tuberosa -- Cacalia plantaginea
Callitriche palustris -- Callitriche verna
Cardamine diphylla -- Dentaria diphylla
Carex aenea -- Carex foenea
Carex angustior -- Carex echinata
Carex artitecta -- Carex albicans
Carex cephalantha -- Carex echinata
Carex convoluta -- Carex rosea
Carex emmonsii -- Carex albicans
Carex foenea -- Carex siccatA
Carex howei -- Carex atlantica
Carex lanuginosa -- Carex pellita
Carex rosea -- Carex convoluta
Carex stenophylla – Carex duriuscula
Carya ovalis -- Carya glabra
Cassia fasciculata -- Cassia chamaecrista
Chasmanthium latifolium -- Uniola latifolia
Clematis verticillaris -- Clematis occidentalis
Coptis groenlandica -- Coptis trifolia
Cornus racemosa -- Cornus foemina
Cynanchum medium -- Vincetoxicum rossicum
Cynanchum nigrum -- Vincetoxicum nigrum
Cyperus aristatus -- Cyperus squarrosus
Dalea alopecuroides -- Dalea leporina
Dasistoma macrophylla -- Dasystoma macrophylla
Desmodium rigidum -- Desmodium obtusum
Diarrhena americana – Diarrhena obovata
Disporum hookeri – Prosartes hookeri
Disporum maculatum – Prosartes maculata
Disporum trachycarpum – Prosartes trachycarpa
Dryopteris assimilis -- Dryopteris expansa
Dryopteris spinulosa -- Dryopteris carthusiana
Echinodorus parvulus -- Echinodorus tenellus
Eleocharis pauciflora -- Eleocharis quinqueflora
Erigeron canadensis -- Conyza canadensis
Euphrasia arctica – Euphrasia nemorosa
Euphrasia officinalis -- Euphrasia stricta
Festuca obtusa -- Festuca subverticillata
Fuirena pumila -- Fuirena squarrosa
Gaura biennis -- Gaura longiflora
Gentiana alba -- Gentiana flavida
Gentiana crinita -- Gentianopsis crinita
Gentiana procera -- Gentianopsis procera
Gentiana puberula -- Gentiana puberulenta
Gerardia gattingeri -- Agalinis gattingeri
Gerardia purpurea -- Agalinis purpurea
Gratiola aurea -- Gratiola lutea
Habenaria blephariglottis -- Platanthera blephariglottis
Habenaria ciliaris -- Platanthera ciliaris
Habenaria clavellata -- Platanthera clavellata
Habenaria dilatata -- Platanthera dilatata
Habenaria flava -- Platanthera flava
Habenaria hookeri -- Platanthera hookeri
Habenaria hyperborea -- Platanthera hyperborea
Habenaria lacera -- Platanthera lacera
Habenaria leucophaea -- Platanthera leucophaea
Habenaria obtusata -- Platanthera obtusata
Habenaria orbiculata -- Platanthera orbiculata
Habenaria psycodes -- Platanthera psycodes
Habenaria unalascensis -- Piperia unalascensis
Hibiscus palustris -- Hibiscus moscheutos
Hieracium pratense -- Hieracium caespitosum
Huperzia lucidulum -- Lycopodium lucidulum
Huperzia selago -- Lycopodium selago
Hymenoxys acaulis – Hymenoxys herbacea
Hypericum pyramidatum -- Hypericum ascyron
Hypericum spathulatum -- Hypericum prolificum
Hypericum virginicum -- Triadenum virginicum
Lechea leggettii -- Lechea pulchella
Leucospora multifida -- Conobea multifida
Liatris novae-angliae -- Liatris scariosa
Lipocarpa micrantha – Hemicarpha micrantha
Littorella americana – Littorella uniflora var. Americana
Lychnis alba – Silene pratensis
Lycopodiella appressum – Lycopodiella margueriteae
Lycopodiella appressum – Lycopodiella subappressa
Lycopodium complanatum – Diphasiastrum tristrachyum
Lycopodium digitatum – Diphasiastrum digitatum
Lycopodium inundata -- Lycopodiella inundata
Lycopodium margueritae -- Lycopodiella margueritae
Lycopodium sabinifolium – Diphasiastrum tristrachyum
Lycopodium subappressa -- Lycopodiella subappressa
Mimulus glabratus fremontii -- Mimulus glabratus jamesii
Nymphaea tuberosa -- Nymphaea odorata
Oenothera serrulatus -- Calylophus serrulatus
Ophioglossum vulgatum -- Ophioglossum pusillum
Ophioglossum vulgatum pycnostichum -- Ophioglossum pycnostichum
Orchis rotundifolia -- Amerorchis rotundifolia
Orchis spectabilis -- Galearis spectabilis
Oxalis europaea -- Oxalis fontana
Petalostemum purpurea – Dalea purpurea
Phyllitis scolopendrium -- Asplenium scolopendrium
Plantago patagonica -- Plantago purshii
Plantago psyllium -- Plantago arenaria
Polanisia graveolens -- Polanisia dodecandra
Porteranthus stipulata -- Gillenia stipulata
Porteranthus trifoliata -- Gillenia trifoliata
Potamogeton capillaceus -- Potamogeton bicupulatus
Psilocarya nitens – Rhyncospora nitens
Pyrola secunda -- Orthilia secunda
Quercus coccinea x Q. Velutina – Quercus xpalaeolithica
Rubus idaeus -- Rubus strigosus
Rudbeckia sullivantii -- Rudbeckia fulgida
Sagittaria montevidensis -- Lophotocarpus calycinus
Salix glaucophylloides -- Salix myricoides
Salix interior -- Salix exigua
Samolus parviflorus -- Samolus floribundus
Sativa nigra – Vicia angustifolia
Satureja acinos – Acinos arvensis
Satureja vulgaris – Clinopodium vulgare
Scirpus acutus – Schoenoplectus acutus
Scirpus americanus – Schoenoplectus pungens
Scirpus cespitosus – Trichophorum cespitosum
Scirpus clintonii – Trichophorum clintonii
Scirpus fluviatilis – Bolboschoenus fluviatilis

Scirpus hallii – Schoenoplectus hallii
Scirpus hudsonianus – Trichophorum alpinum
Scirpus olneyi – Schoenoplectus americanus
Scirpus paludosus – Bolboschoenus maritimus
Scirpus purshianus – Schoenoplectus purshianus
Scirpus smithii – Schoenoplectus smithii
Scirpus subterminalis – Schoenoplectus subterminalis
Scirpus torreyi – Schoenoplectus torreyi
Scirpus validus – Schoenoplectus tabernaemontani
Scirpus heterochaetus – Schoenoplectus heterochaetus
Seymeria macrophylla – Dasistoma macrophylla
Silene cucubalus -- Silene vulgaris
Smilax hispida -- Smilax tamnoides
Solanum nigrum -- Solanum ptycanthum
Solanum sarachoides -- Solanum physalifolium
Solidago graminifolia -- Euthamia graminifolia
Solidago gymnospermoides -- Euthamia gymnospermoides
Solidago remota – Euthamia remota
Sonchus uliginosus -- Sonchus arvensis
Swertia caroliniensis -- Frasera caroliniensis
Tovara virginianum -- Polygonum virginianum
Triadenum fraseri -- Hypericum fraseri
Trifolium agrarium -- Trifolium aureum
Triodanis perfoliata -- Specularia perfoliata
Utricularia inflata – Utricularia radiata
Vernonia altissima -- Vernonia gigantea
Viburnum recognitum – Viburnum dentatum
Viola pallens -- Viola macloskeyi
Wolffia brasiliensis -- Wolffia papulifera
Zigadenus elegans -- Zigadenus glaucus
Zizania aquatica angustifolia -- Zizania palustris

APPENDIX F

FLORISTIC QUALITY ASSESSMENT IN THE CHICAGO REGION AND APPLICATION COMPUTER PROGRAMS

Gerould S. Wilhelm
and
Linda A. Masters

THE MORTON ARBORETUM
LISLE, ILLINOIS 60532

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FLORISTIC QUALITY ASSESSMENT

INTRODUCTION

With the passage of the National Environmental Policy Act of 1969, we began to receive requests for evaluations and assessments concerning the natural quality or environmental integrity of a variety of open land areas, particularly regarding the likelihood that proposed impacts on such areas would be "irreversible or irretrievable." Qualitative judgments were called for in a context where "quality" as an environmental concept had only been discussed or contemplated at the most superficial levels. These early evaluations were ungratifying. How does one objectively declare an area as "high," "medium," or "low" in quality and then attempt to explain, in definitive terms, why such a declaration is neither arbitrary nor whimsical? Definitions that clarify meanings for these terms have been difficult to standardi
ze. Changes in assessment personnel also have contributed to inconsistencies in evaluations. One person's "low" may well be another's "medium," depending on differing philosophical alignment or technical experience, both factors influencing evaluations that already can be viewed as subjective. These vague assessments soon sound trite, losing both impact and credibility. The repeatability of the application of such assessments is also problematic.

A standardized tool for use in natural area assessment was discussed in *Plants of the Chicago Region* (Swink & Wilhelm 1979) and expanded upon in the Fourth Edition (Swink & Wilhelm 1994).[1] Inherent in all methods used to evaluate natural quality is a certain amount of subjectivity. This method places the subjectivity up front, in the *a priori* assignment of conservatism coefficients to each of our native plant species. The goal was to design a system, based upon plants, that assesses natural quality repeatably and dispassionately, facilitates comparisons among sets of sites, and tracks changes in site quality over time. This method assesses the aggregate conservatism of the plants inhabiting a site, irrespective of the plant community. It avoids the use of frequency, dominance, physiognomy, or productivity of an individual plant species, primarily because positive or negative values with respect to plant community quality are either irrelevant or only ambiguously related to these factors. This method permits anyone with a reasonable knowledge of field botany to arrive at an evaluation product that reflects a consistent philosophy of assessment and is derived wholly from the existing plant species. In practice, this method has encouraged local uniformity in floristic quality assessment, enabling planners, land managers, applied ecologists, and other practitioners to make standard comparisons among various open land areas, to set conservation priorities, and to monitor site management or restoration efforts.

THE ASSESSMENT PREMISE

A commonly accepted ecological tenet is that plants and animals grow in habitats to which they are adapted. A corollary is that if the habitat is changed, so also will the inhabitants change. Plant species, through millennia, have become adapted to the specific combinations of biotic and abiotic factors, processes, and floral and faunal interactions uniquely characterizing the site they inhabit. An area with a long history of biome-level stability, such as characterized most of the

[1] Swink & Wilhelm (1979) and Wilhelm & Ladd (1988) referred to this assessment system as the Natural Area Rating Index. It is now being referred to as the Floristic Quality Assessment (Swink & Wilhelm 1994) because natural areas can also be evaluated based upon natural features and biota other than vegetation.

presettlement landscape in the Midwest, will almost always support a diverse assemblage of conservative species in self-replicating, interactive arrays. This diversity and complexity facilitate system adaptability to the gradual but inexorable changes that occur in all landscapes on a scale of thousands of years. Environmental factors may change over time, but they usually are gradual and sufficiently buffered by system complexity to allow the system to adapt at a rate commensurate with the life cycles and the genetic dynamics of the populations of its component biota. The result is that each variance of topography, physiography, geographic position, and substrate is characterized by an essentially unique response and inhabitancy by plants and animals.

Impacts to native biological systems and processes associated with European settlement have occurred with a magnitude and rapidity without precedent in the history of the continent's biota. When changes to a habitat occur rapidly, it has been observed that the reduction of conservative species is proportional to the severity of these changes. Attrition of conservative plants occurs as plants suited to the changed habitats (less-conservative plants and non-native plants [weeds]), become increasingly ensconced. There is a striking difference between areas inhabited by a full component of conservative plants and animals and one inhabited prevailingly by weeds. Conservative systems contain a biodiversity involving species suited to long-term inhabitancy of an area. Weed communities, by comparison, are adapted either to regular, essentially catastrophic disturbance, or to the kinds of activities associated with cultural landscapes. These weed communities contain neither the biodiversity nor the aggregate adaptive ability to coalesce into self-sustaining, self-replicating systems. In our contemporary, fragmented landscapes, the conservative elements of our native systems, supplanted in place, have neither refugia, effective migration routes, nor the time to adapt or relocate. Rather, their populations are decimated time and time again until their local extirpation or ultimate extinction occurs. The destiny of many systems dominated by weeds is further destabilization, during which resources such as soil, nutrients, and water are often lost at rates faster than they are replaced.

Since the beginning of the Holocene, and perhaps for much of the Quaternary, an important component involved in the shaping of the landscape has been man. Human beings are not only governed by *stochastic* or random interactions within the ecosystem, but by *choice*. Fundamental interactions such as predation, competition, and foraging are now complicated by the fact that humans can *decide* to kick over one anthill, two anthills, all the anthills, or none of them--with no ecological parameter coming to bear on this decision other than a human ethic. Conservative species surviving today are present largely because their interaction with the human being has been one in which the human inhabitants chose not to kick over too many anthills. In the current cultural context, and with the contemporary technology of the late twentieth century, human beings have the power to choose life or death for most of our region's ecosystems. Gradual evolutionary processes can only continue to affect our remnant natural systems if these systems are managed under our stewardship to retain their biological richness.

Today, the Chicago region flora consists of two significant categories of plants--those native to the region and those naturalized from provinces outside the region. Of the 2,530 kinds of vascular plants known from the Chicago region, more than one-third were not here prior to European settlement. Of the nearly 900 introduced weeds known to have appeared spontaneously in the Chicago region, scarcely 150 are generally successful, yet they dominate more than 95 percent of the vegetated landscape. These weeds are highly adapted to the kinds of disturbances and landscape alterations that have characterized sedentary agricultural societies since primitive times. Clearly, a tract of land occupied prevailingly by weeds or non-conservative native species

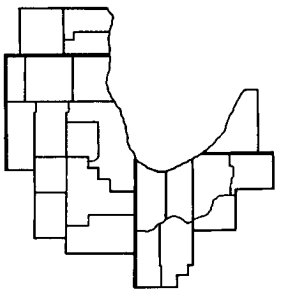
cannot be viewed as a natural area and is quite replaceable. Our interest in natural area identification and floristic quality assessment focuses on the extent and proportion to which constellations of conservative species are present.

METHODOLOGY

A vast proportion of our landscape is severely degraded and fragmented, and the remaining land has varying degrees of floristic quality or integrity. Since the degree to which conservative plants are present on a tract of land is an important factor in our definition of natural area,[2] an assessment method must be able both to index the presence of conservative plants and to discriminate amongst tracts of land with differing levels of floristic integrity.

Coefficient of Conservatism (C)

This assessment method is based upon a fundamental character of the Chicago region[3] flora itself. It has long been recognized that plants display varying degrees of tolerance to disturbance, as well as varying degrees of fidelity to specific habitat integrity. This concept of species "conservatism" is the basis for the assessment method. The floristic quality of an area is reflected in its inhabitancy by conservative plant species. The basic tool of this method is an evaluation checklist of the plants of the Chicago region. Each native species on the checklist has been given a **coefficient of conservatism** (*C*), ranging from 0-10.



Chicago Region

In general, the concept can be demonstrated by the following illustrations. Someone brings to us a specimen of *Lepidium virginicum,* and asks, on a scale of 0-10, how confident we are that the specimen was taken from a remnant natural plant community. We would have to say that we have no confidence, but that in all likelihood it was taken from a highway verge or the edge of a parking lot. Someone else brings in *Aster borealis,* and we are virtually 100% confident that it was taken from a remnant fen, and probably one that was not terribly degraded. Another brings in *Galium triflorum;* we are fairly certain that it came from some sort of remnant wooded area, but we can say little one way or the other about how degraded it is.

In the first case we can assign *Lepidium virginicum* a *C* of 0, since we had no confidence that it came from a natural community. *Aster borealis,* on the other hand, can be assigned a *C* of 10 since we have virtually 100% confidence that it came from an intact natural community. *Galium triflorum* can be given a 5 *C* value since we are certain that it came from a remnant natural community, but have little confidence that the area was not degraded. This conceptual spectrum can be expressed in a range of scaled values described as coefficients of conservatism.

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[2] The term "natural area" has been used in many ways. In some cases it even has legal implications. Our definition of natural area is land on which existing plant communities approximate the condition just prior to settlement in the early 1800's. We cannot know the presettlement vegetational composition or structure for any given site, nor can we know how it would have changed over time. All we do know is that once an extant community of conservative plants is obliterated, in today's ecological context its biotic integrity is gone forever. Implicit in this botanical approach is the ecological health of the system as a whole (Wilhelm & Ladd 1988). We are seeking to define natural area such that its floristic integrity, and all that that implies, would be irrecoverably compromised in the event of trauma or neglect.

[3] The Chicago Region consists of Kenosha, Racine, and Walworth counties in Wisconsin; Boone, Cook, DeKalb, DuPage, Grundy, Kane, Kankakee, Kendall, Lake, McHenry, and Will counties in Illinois; Jasper, Lake, LaPorte, Newton, Porter, St. Joseph, and Starke counties in Indiana; and Berrien County, Michigan.

Introduced plants, by their very nature, were uninvolved in the native landscape prior to European settlement, so coefficients of conservatism are not applied to them.

As one might imagine, the conceptual differences between a plant with a 0 value and a 1 value are slightly discernible, as are those differences between a 1 and a 2, a 2 and a 3, or a 9 and a 10. However, the conceptual differences between a 0 value and a 3 value are more distinct. Concern over whether or not a particular plant receives a 0 or a 2, rather than a 1 value, is compensated by averaging the values in their application, as will be explained below.

Because the ecological contexts of native and introduced plants are so inherently disparate in character, introduced plants are necessarily and explicitly excluded from the floristic assessment. It is difficult to gauge the significance of the occurrence of introduced species. Some weeds, such as *Agrostis alba* or *Poa pratensis*, are virtually ubiquitous in the region, so they are almost inevitably detected somewhere in a site, if only along or near a trail. Such an occurrence does not signify significant degradation in an area. It is the presence and proportion of conservative native species which underlies the definition of natural area, not the presence or absence of weeds *per se*. Certainly, if weeds are occupying the area to a deleterious extent, or their presence is a reflection of habitat alteration, their occurrence will be measured indirectly by a diminishment in conservative species. Again, it is the extent to which a tract of land supports conservative native plants that is being indexed.

A set of coefficients can be formulated for any given geographic area, no matter how large or small.[4] One must keep in mind, though, that the coefficients must be assigned by considering the relative fidelity or conservatism of each species with respect to all other species in a defined geographic area, and without regard to the abundance, distribution, and ecology of the plant outside this area. This process of determining coefficients of conservatism for a flora is the single most critical step in the development of a floristic quality assessment system. A thorough knowledge of each species' ecological role in the local vegetation is required, and *C* values must reflect only this, without regard for factors such as showiness, desirability, size, physiognomy, ease of identification, and other factors that are wholly unrelated to vegetational conservatism.

It is important to emphasize that the numerical values assigned to the native species of the Chicago Region were derived from the observed behavior of populations in this defined area. Clearly, as one travels away from the region, locally applied values may become decreasingly valid and are not recommended for use outside the Chicago region. The more remote one is from that region, the more likely it will be that the conservatism values will **not** reflect local conditions. Use of Chicago region values in remote areas can render spurious evaluations. It is highly recommended that a database be tailored to the state or region in which the system will be used.

The Mean C Value ($\overline{C}$)

Eighty-nine percent of our native plants have been given a value of 4 or higher. These conservative plants accommodate a wide array of specialized plant community contexts. Eleven percent of the native flora have a *C* value of 3 or less; these comprise the least conservative taxa, and are shared by many plant communities. Theoretically, an area high in natural quality would

[4] Coefficients of conservatism for vascular plants have been developed for several geographic areas, such as Kane County, Illinois (Wilhelm 1978), northern Ohio (Andreas 1993), and the states of Missouri (Ladd in prep.) and Michigan (Herman *et al.* in prep.).

have an array of plants adapted to a diversity of micro-habitats and internal system interactions and responses. Such an area would include plants with C values ranging from 0 to 10, comprising a matrix with a mean C ($\overline{C}$) of 5 or greater.

When an area is degraded to the point that the habitat context is changed, most of the first plants lost will be from the high end of the conservatism spectrum. The $\overline{C}$ diminishes as conservative plants of the matrix are lost and are replaced either by non-conservative species, or by weeds (or by no plants). If an area that once registered a $\overline{C}$ value of 5 now has a $\overline{C}$ of 4.5, it can be demonstrated that degradation has occurred. Such a measurement can be meaningful in an area as small as a quarter of a square meter or as large as 100 acres or more.

Figure 1 is a model that illustrates a declining $\overline{C}$ as degradation occurs. Each of the three matrices represents a plant community with an array of native species, the integers represent C values and asterisks represent introduced elements. As degradation occurs, the habitat is changed to the point that it no longer is suitable for some of the species very conservative to that site. These conservative elements disappear in accordance with the extent of habitat change. The holes in the matrix left in their absence may be filled by weeds, non-conservative natives, or by nothing. The $\overline{C}$ diminishes accordingly.

Figure 1. Model showing conditions of three remnant landscapes. Integral values of matrices equal C values; asterisks represent weeds.

Intact $\overline{C} = 5$

```
 0  0  0  0  0  0  0  0  0  0
 1  1  1  1  1  1  1  1  1  1
 2  2  2  2  2  2  2  2  2  2
 3  3  3  3  3  3  3  3  3  3
 4  4  4  4  4  4  4  4  4  4
 5  5  5  5  5  5  5  5  5  5
 6  6  6  6  6  6  6  6  6  6
 7  7  7  7  7  7  7  7  7  7
 8  8  8  8  8  8  8  8  8  8
 9  9  9  9  9  9  9  9  9  9
10 10 10 10 10 10 10 10 10 10
```

Slightly Degraded $\overline{C} = 3.5$

```
 *  *  *  *  *
 0  0  0  0  0  0  0  0  0  0
 1  1  1  1  1  1  1  1  1  1
 2  2     2  2  2  2  2  2  2
 3  3  3  3  3  3  3     3  3
 4  4  4  4  4  4  4  4  4
 5  5  5     5  5  5     5  5
 6  6  6  6  6     6     6  6
    7  7     7  7  7  7  7  7
    8  8  8  8  8  8  8     8
       9  9  9     9  9  9
10    10       10          10
```

Severely Degraded $\overline{C} = 1.3$

```
 *  *  *  *  *  *  *  *  *  *
 *  *  *
 0  0  0  0  0  0  0  0     0
 1  1  1     1  1  1  1  1  1
 2     2  2  2  2  2     2  2
 3     3     3  3  3     3  3
 4     4  4     4  4        4
 5                      5  5  5
    6     6     6        6  6
 7        7     7
          8
```

The Floristic Quality Index Value (FQI)

Arithmetically, there are cases where both large and small areas can be shown to have equivalent $\overline{C}$ values. If one is developing priorities for conservation, or attempting to evaluate the level of intrinsic biodiversity, there must be a method of discriminating among areas that have similar $\overline{C}$ values, but otherwise differ significantly. Generally, all other factors being equivalent, a larger area will support more species, but land area is not by itself the determining element. For example, a 1-acre prairie remnant, containing 75 native species with a $\overline{C}$ of 5, may be surrounded by 500 acres or more of agricultural land, shopping malls, and golf courses, none of which adds to increased conservative species diversity. On the other hand, an area containing a similar prairie remnant, but also including a 10-acre fen, a 40-acre remnant woodland, and a 10-acre sedge meadow, containing a total of 300 or more native species, may also have a $\overline{C}$ of 5, even though this land area is much smaller. If $\overline{C}$ for all plant species present is multiplied by the square root of the number of native species (n), then a floristic quality index (*FQI*) is obtained:

$$FQI = \overline{C}\sqrt{n}$$

In the first instance, the isolated prairie remnant [$\overline{C}$ = 5, n = 75] would have an *FQI* of 43, while the second complex, which includes a similar prairie, [$\overline{C}$ = 5, n = 300] would

have an index of 87. Clearly, the place with less actual land mass but with more of it occupied by remnant natural land registers a higher index.

By comparison, the isolated prairie seems to rate low in quality, but when compared to another scenario--a 1-acre pasture, degraded by overgrazing and the planting of forage crops, also containing 75 native species (growing among the weeds), will have a $\overline{C}$ closer to 2, resulting in an *FQI* of 16. If the size of the pasture is increased to 100 acres and an additional 75 native species are added, the $\overline{C}$ would remain near 2, and the *FQI* would rise only to 24. The index is not likely to rise significantly with increases in area unless the area includes remnant lands with resident conservative species and the biodiversity that such conservatism implies.

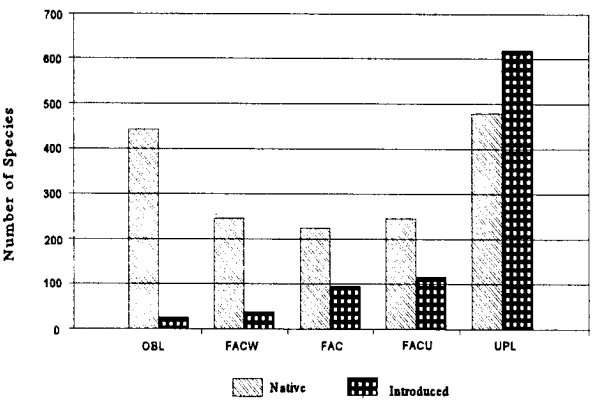
National Wetland Categories

The National Wetland Categories used in this database were designated by Reed (1988) for the United States Fish and Wildlife Service, Region 3. This region includes most of the north central part of the United States. Plants are designated as *Obligate Wetland, Facultative Wetland, Facultative, Facultative Upland,* and [obligate] *Upland*. These categories are defined as follows:

OBL	Obligate Wetland	Occurs almost always in wetlands under natural conditions (estimated >99% probability).
FACW	Facultative Wetland	Usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67%-99% probability).
FAC	Facultative	Equally likely to occur in wetlands or non-wetlands (estimated 34%-66% probability).
FACU	Facultative Upland	Occasionally occurs in wetlands, but usually occur in non-wetlands (estimated 1%-33% probability).
UPL	Upland	Occurs almost never in wetlands under natural conditions (estimated <1% probability).

The distribution of these categories for the native and introduced plants in our flora is shown in Figure 2. Note that for native species there is a symmetrical distribution across the hydric catena, while a high proportion of introduced species is adapted to upland soils.

Figure 2. National Wetland Categories



For about 20% of our flora, "+" or "-" signs have been attached to the three *Facultative* categories to express exaggerated tendencies for those species. The "+" sign denotes that the species generally has a greater estimated probability of occurring in wetlands than species having the general indicator category, but a lesser estimated probability of occurring in wetlands than those having the next highest general indicator. The "-" sign denotes that the species generally has a lesser estimated probability of occurring in wetlands than species having the general indicator status, but a greater estimated probability of occurring in wetlands than those having the next lowest general indicator.

The wetland categories were assigned to plants based upon observations on their behavior throughout this region. *Panicum spretum,* for example, is designated UPL by Reed (1988) for Region 3, but the few locations at which it grows in the Chicago region are moist to wet sandy flats or even shallow sandy ponds; locally, then, it must be acknowledged that 100% of the time it occurs in wetlands (*i.e.*, OBL). In cases like this, the category has been modified to one which best describes the plant in the Chicago region area. In cases like this the category has been enclosed in brackets [ ] to indicate that it differs from the Region 3 designation.

APPLICATION

The emphasis in this assessment procedure is not on individual species. In the application of this method, there are conceptually only eleven categories of native plants in our flora, each plant having been assigned a *C* value from 0 to 10. As an area is inventoried, a mathematical picture of the conservatism of plants present begins to emerge. During a thorough, representative accounting of the plants in a given area, the $\overline{C}$ tends to stabilize even as new plants are recorded and included with the total. The density, apparent dominance, or frequency of individual plant species are not relevant factors when considering the qualitative value of a site. Abundance and frequency are often artifacts of the season or year, and may fluctuate greatly. Some species which are "dominant" (big or obvious) in spring can be scarcely evident in fall, replaced by species which were scarcely evident earlier in the year. Regardless of size, comeliness, or ease of identification, every species at a site provides information relative to the quality of that site. The collective data from all species inhabiting a site provide a concise, real measure of the extent to which the site represents a unique and irreplaceable element of our landscape. One can have much more confidence that an area is of natural quality if informed that there are 50 different plant species with a $\overline{C}$ of 5, than if informed that there are 50 individuals of a particular plant with a *C* of 5. Similarly, the presence of 50 species with a $\overline{C}$ of 5 provides more insights into the potential quality of an area than being informed that a supposed "keystone" or "dominant" species has a cover value of 50%.

There are four commonly used applications for the floristic quality assessment system:[5] (1) identification of natural areas, (2) facilitation of comparisons among different sites, regardless of community type, (3) long-term monitoring of remnant natural area quality, and (4) monitoring of *de novo* habitat restoration. These are discussed in the following sections. In each of these applications the methodology may be used as an overall inventory where all of the known plants of a site are analyzed to determine general floristic quality, providing information regarding the natural quality potential. It can also be used in certain sampling protocols; plants present in individual quadrats established along a transect may be analyzed to determine variances in floristic quality across a site. This may be used to establish baseline data with an eye toward monitoring changes in floristic quality in site restoration or rehabilitation efforts.

Identification of Natural Areas

In order to determine the extent to which a site preserves natural plant community quality, an inventory of relevant portions of the area is required. The surveyor compiles as complete a plant inventory as possible, then calculates $\overline{C}$ and *FQI* values. Generally, if the $\overline{C}$ for the site is 3.5 or higher or has an *FQI* of 35 or more, one can be fairly confident that the site has

[5] It has been used increasingly to evaluate and monitor the quality and potential of remnant and restored lands (Andreas 1993, Herman 1993, Heumann *et al.* 1993, Ladd & Heumann 1993, and Young 1986).

sufficient floristic quality to be at least of marginal natural area quality. If the $\overline{C}$ is 4.5 or higher, or has an *FQI* of 45 or more, then it is almost certain that the remnant has natural area potential.

We have not arrived at these threshold values arbitrarily. The best efforts of *de novo* ecosystem restoration attempts rarely achieve $\overline{C}$ values higher than 3.5 or *FQI* values higher than 35. It then follows that when an area with higher values or indices is destroyed it cannot be replaced by an area of equal value and, therefore, is basically an unmitigable event. The difficulties in restoring areas of high quality lie in our inability to assemble the complex diversity of biotic and abiotic factors needed in order to support a full component of species conservative to that habitat.

An approximation of the $\overline{C}$ can be obtained with a fairly cursory inventory, and the question of whether or not the site has natural area potential can be answered quickly. For example, brief but representative inventories are conducted for hypothetical areas X, Y, and Z; the data are presented in Table 1. With a $\overline{C}$ as low as 1.7 for Area X, it can be concluded that it is highly unlikely that it is a natural area. For such an area to achieve an *FQI* of 35, more than 420 native species would have to be discovered--an impossibility given the distribution of *C* values in the universe of native species if it is assumed that the $\overline{C}$ has stabilized.

The $\overline{C}$ = 3.7 of Area Y suggests that the site has remnant natural quality, and probably deserves a more intensive survey to determine the extent to which conservative species are present in the area. Area Z yields a $\overline{C}$ of 6.0, leaving no doubt that the area is a relatively intact natural area with high floristic quality. There is no need to survey Area Z further if one wishes only to know if the area is of natural area quality. There is, however, a likelihood that rare, threatened, or endangered species are present, so additional surveys might be warranted.

Table 1. Comparison of $\overline{C}$ values for three different areas, X, Y, Z. Each native species is preceded by its *C* value. Adventive species are not included in the analysis.

Area X		Area Y		Area Z	
0	Acalypha rhomboidea	0	Acalypha rhomboidea		Achillea millefolium
	Achillea millefolium		Achillea millefolium	5	Andropogon gerardii
	Agrostis alba	5	Andropogon gerardii	5	Andropogon scoparius
0	Aster pilosus	5	Aster ericoides	9	Aster laevis
1	Cornus racemosa	0	Aster pilosus	10	Carex bicknellii
	Daucus carota	8	Baptisia leucantha	9	Hypoxis hirsutus
2	Helianthus grosseserratus		Cirsium arvense	0	Oenothera biennis
0	Lepidium virginicum	2	Helianthus grosseserratus	8	Parthenium integrifolium
0	Oenothera biennis	4	Juncus dudleyi	9	Petalostemum purpureum
	Poa pratensis	0	Oenothera biennis	3	Physalis heterophylla
5	Silphium laciniatum	5	Panicum virgatum		Poa pratensis
1	Solidago canadensis	8	Parthenium integrifolium	5	Rosa carolina
4	Solidago graminifolia		Poa pratensis	6	Salix humilis
4	Solidago rigida	5	Silphium integrifolium	5	Silphium laciniatum
3	Teucrium canadense	1	Solidago canadensis	1	Solidago canadensis
	Trifolium repens	4	Solidago rigida	5	Sorghastrum nutans
0	Veronica peregrina	5	Sorghastrum nutans	10	Sporobolus heterolepis
$\overline{C}$ = 20/12 = 1.7		$\overline{C}$ = 52/14 = 3.7		$\overline{C}$ = 90/15 = 6.0	

Comparisons Among Different Sites

What is not clear from the $\overline{C}$ is the relative importance of each area from a conservation priority standpoint. If areas Y and Z each are inhabited by about 100 native species, then *FQI* = 37 for Area Y and 60 for Area Z. Clearly Area Z would stand in comparison as the higher-quality remnant. If, on the other hand, Area Y was a very large but degraded site with many conservative species growing in diffuse and scattered populations, then the conservation priorities between the two areas could be less decisive.

If this were the case, and Area Y provided the habitat for 250 native species with a $\overline{C}$ of 3.7, then the *FQI* would be 59. Such a condition could make it a conservation priority of comparable value with Area Z, especially if the latter area was a small, isolated fragment with only 100 species. Conservation biologists, evaluating the preservation status of Area Y, may be unimpressed by a diffuse density exhibited by the native species and a too obvious inhabitance by weeds, but would be ill advised to dismiss it as unworthy of conservation attention. Such areas, with regular fire management, for example, have been known to develop into impressive, high-quality remnant systems, their historical abuses scarcely evident.

By the same token, the biological integrity evident in Area Z, however small and comparatively depauperate in native plants, is so high and evidently so complex that to foreclose a preservation priority on its behalf would be to eliminate an utterly singular remnant of the earth's living surface. Unfortunately, an ecological postulate that is too popular today is that such areas, while acknowledged as "unique," are "too small to be viable." Yet, areas such as Area Z are remnants that are so obviously complex in their biotic and abiotic interactions as to warrant their destruction not only unmitigable but unconscionable. With 100 species at a $\overline{C}$ of 6, the implications about the presence and manifest viability of conservative insects, spiders, fungi, mycorrhizae, and soil organisms are compelling. No other group of organisms has the collective genetic memory representing the distillation of thousands of generations of adaptation and selection pressures for the vicissitudes of site, process, and environment at this particular locus on the planet. In actuality, remnant areas with *FQI* approaching 60 or higher are very rare, and occupy a minute fraction of the remaining vegetated land surface of the region. The concentration of local genetic diversity in such areas will one day provide the germ material for restorationists who look toward attempting to reclaim and revitalize our depleted and battered landscapes.

Long-Term Monitoring of Natural Quality

Managers of remnant landscapes contend with the problems of rehabilitating degraded areas or maintaining relatively intact areas. The questions most commonly asked are:

> What is the overall floristic quality of the site?
>
> Is floristic quality distributed more or less evenly throughout the site, or are there areas which are more degraded than others?
>
> To what extent is management, such as controlled burning, cutting brush, weeding, or passive neglect affecting floristic quality?

An answer to the first question can be obtained by conducting intensive inventories, usually involving several surveys over one or two growing seasons. The result is a fairly complete census of the universe of species extant in the area; $\overline{C}$ and *FQI* values can be calculated to determine the level of resident floristic quality. Monitoring could consist simply of repeating

these inventories at a regular interval to verify whether or not the qualitative values are being sustained. Unless the site is very small, it may be practical to divide it into several smaller units, perhaps along plant community lines if such can be determined, each of which can be inventoried more thoroughly. If a thorough inventory reveals an area to have a $\overline{C}$ value of 4.5 and an *FQI* of 45, assuming proper stewardship, one could expect that these values would remain essentially constant over time.

An answer to the second question is a little more involved. Generally, sampling transects are established in the area of concern, each transect consisting of a series of small quadrats, usually from 0.25 m^2 to 1 meter square. An inventory of the plants in each quadrat is taken, from which the $\overline{C}$ and *FQI* are calculated.[6] If the quadrats are laid out at regular or known intervals, the floristic quality values for each quadrat can be plotted on a graph, with quadrat numbers on the X-axis and either $\overline{C}$ or *FQI* on the Y-axis. In large remnants, where degraded areas are intercalated among high quality areas, the degradation can be illustrated graphically, and related to known or supposed disturbance histories. It is often helpful to plot the values after having averaged them sequentially. For example, the value plotted for quadrat 1 is obtained by deriving the mean of quadrats 1 and 2, the value plotted for quadrat 2 is the mean of quadrats 1-3, the quadrat 3 value is the mean of 2-4, and so forth. This smoothes out the "noise" in the sampling, making it easier to see essential qualitative differences along the various segments of the transect.

In order to determine the extent to which management is having an effect, negative or positive, on the floristic quality of a site, two different analyses can be used. One analysis involves repeated floristic inventories taken at annual or periodic intervals. A second type of analysis employs the establishment of transects through representative portions of a site and repeated on a regular basis. Many unmanaged remnant areas often are dominated by a few of the more conservative resident taxa, and the early results of management--controlled burning, brush-clearing, etc., can increase the presence of other species in the system, conservative and non-conservative. For either type of analysis this is often registered by a drop of 0.1 or 0.2 in the $\overline{C}$, which may be offset by an increase in *FQI* due to an increase in the total number of native species. If, after 5 years or so of management, however, the $\overline{C}$ begins to register another decrease by 0.2 or 0.3, the manager should be alert to the fact that current stewardship of the site may be having detrimental effects. If the management is efficacious, the $\overline{C}$ either stabilizes or gradually obtains its original value, almost always with a concomitant increase in the *FQI*.

In the assessment of the data gathered in monitoring transects, quality can be looked at two different ways. First, the overall floristic quality can be determined through an analysis of all the species which appeared in the quadrats along the transect. The index and mean conservatism of the total transect flora are designated respectively as FQI_t and $\overline{C}_t$. Second, the floristic quality of individual quadrats along the transect can be determined based upon the $\overline{C}$ and *FQI* values from each quadrat. The $\overline{C}$ of each quadrat is viewed as a derived coefficient of conservatism (*C*) for that point and expressed as C_q; similarly, the floristic quality index for each quadrat is expressed as FQI_q. The quadrat values are averaged across the transect and are expressed as $\overline{C}_q$ and $\overline{FQI}_q$. These values can then be compared at regular time intervals, such as each year or every several years, depending upon the intensity of the monitoring. Analysis of variance, or

[6] Commonly, each species in a quadrat inventory is assigned either a Braun-Blanquet cover-abundance coefficient, usually 1-5, or a percent cover value, so that importance values can be calculated for each of the species present.

even a calculation of the standard deviation among the quadrat values, can be used as a metric to determine how variable the quality is across the transect; variability can also be compared over time to determine the extent to which quality is equilibrating across the site.

Another useful metric is the ratio of the $\overline{C}_q$ and $\overline{C}_t$ values obtained from transect analysis. If $\overline{C}_q$ is notably lower than $\overline{C}_t$, it indicates that conservative species are under-represented in any given unit area within the system. In this case, if $\overline{C}_t$ is 4.0 or more, there is the potential for conservative species to coalesce into a higher quality system. In some high-quality systems with a prevalence of conservative species $\overline{C}_q$ may exceed $\overline{C}_t$, indicating that non-conservative plants, though present, are not as prevalent in the system.

Experience has shown that, even with management, both $\overline{C}_q$ and $\overline{C}_t$ are very often slow to change, although the FQI_q and FQI_t can rise substantially for the first five or ten years as additional species, whose presence previously had been depressed or unnoted, are observed in the area. The $\overline{C}$ values are evidently fundamental measurements of site quality. Once a site has been degraded to register, for example, a $\overline{C}_t$ of 3.0, there is little evidence that modern management techniques can move it more than a few tenths of a point, unless there is a substantial and successful attempt to create a habitat which will retain reintroduced conservative species.

There is an often-expressed belief among some ecologists that damaged ecosystems, if merely left alone long enough, can "recover" through "natural succession." Those who make this claim seem to rely on the idea that so long as the "structure" of a system is present, the "system" is present, or perhaps base the claim on the belief that all of the original genetic components of the system are still "around," and need only to be "dispersed," back to the site. We have seen little hard evidence that this is the case in the contemporary landscape. Rather, it seems that our remnant natural areas are less like the segments of worms, and more like the nerves of human beings--once they are severely damaged they rarely grow back. If too much nervous tissue is damaged, the corporal structure degrades catastrophically; once too many conservative species have been eroded, or scraped away, or dissipated through fire suppression, or diminished by other changes in ecological processes, the natural area degrades irretrievably to a much more simplified system, very often one which cannot reproduce itself. In the final analysis, our native systems are defined substantially by their conservative biota. There is more to a woodland than trees, and to a prairie than grasses. Nature does not seem to be obedient either to the learned theories and elaborate models of the day or to the wishful thinking of well-meaning land managers.

Monitoring Habitat Restoration

The monitoring of a newly vegetated restoration area can be accomplished in the same manner as described for natural area monitoring. A baseline suite of transects or a quadrat matrix is laid out in the restoration area, then repeated on a regular basis. One of the most common types of restoration today is wetland creation attempted as a mitigation effort mandated by various resource agencies. In well designed and implemented projects, the $\overline{C}_q$ and FQI_q values rise relatively steadily and begin to stabilize after 4 or 5 years. By the end of the first complete growing season it is not uncommon to have $\overline{C}$ values of 1 or less and *FQI* values of 4 or 5. After 5 years one can expect $\overline{C}$ values between 3.0 and 3.7, with *FQI* values ranging from 25 to 35. Only rarely, and under special circumstances, have higher values been recorded.

One of the reasons it is so difficult to achieve values which are equivalent to those measured in natural wetlands is that we have been unable to develop a habitat context so well conceived and established as to recruit and sustain the growth of a diverse cohort of conservative species. A critical factor is that most contemporary wetland mitigation efforts involve a substantial percentage of surface water in their hydrologic schemes, and most of our presettlement wetlands and their component species were adapted either to minerotrophic groundwater or ombrotrophic surface water.

SUMMARY

Based upon 15 years of application of this assessment system to all types of land in the Chicago region, certain patterns have emerged. We have found that the $\overline{C}$ values in the preponderance of our open land range from 0 to 2. In light of the fact that 89% of our native flora has a C value of 4 or greater, and has a $\overline{C}$ value of 7.3, it is evident that the principal elements of our native systems are virtually uninvolved in the Chicago region landscape today.

The vast majority of land in the region registers *FQI* values less than 20 and essentially has no significance from a natural area perspective. Areas with *FQI* values higher than 35 possess sufficient conservatism and richness to be of profound importance from a regional perspective. Areas registering in the 50's and higher are extremely rare and of paramount importance; they represent less than 0.5% of the land area in the Chicago region.

Once a framework of coefficients of conservatism is established for an area, the system provides a dispassionate, cost-effective, and repeatable methodology. Anyone with a reasonable field knowledge of vascular plants, now or a hundred years from now, can apply these techniques and obtain comparable evaluations. The application of this method to the monitoring of natural areas is especially appealing. Clearly, a chronic decline in floristic quality index values over a period of years would indicate a dissipation of natural area quality and the need to modify management protocols. On the other hand, stable or steadily increasing values indicate that current management is optimizing the synecological potential of the site.

LITERATURE CITED

Andreas, B.
1993. A floristic quality assessment system for northern Ohio. Report prepared for the northern Ohio U. S. Army Corps of Engineers.

Herman, K. D.
1993. Uncharted territory--assessing the success of relocating threatened plants and reconstructing their lakeplain prairie habitat. Proceedings: US-EPA Symposium on Ecological Restoration, Chicago, Illinois.

Herman, K. D., L. A. Masters, M. R. Penskar, A. A. Reznicek, G. S. Wilhelm, and W. W. Brodowicz
in prep. Floristic quality assessment system with wetland categories and computer application programs for the state of Michigan. Michigan Department of Natural Resources, Wildlife Division, Natural Heritage Program, Lansing, Michigan.

Heumann, B., D. M. Ladd, L. Wetstein, and G. Wilhelm
1993. Preliminary ecological assessment: Boyds Creek and Chilton Creek Tracts, Shannon and Carter counties, Missouri. The Nature Conservancy, St. Louis, Missouri. The Morton Arboretum, Lisle, Illinois.

Ladd, D. M.
in prep. The Missouri floristic quality assessment system. The Nature Conservancy, St. Louis, Missouri.

Ladd, D. M. and B. Heumann
1993. Butler Hollow Glades: baseline assessment and vegetation monitoring establishment. The Nature Conservancy, St. Louis. Missouri.

Reed, P. B., Jr.
1988. National list of plant species that occur in wetlands: North Central (Region 3). U.S. Fish Wildl. Serv. Biol. Rep. 88(26.3). 99 pp.

Swink, F. A. and G. Wilhelm
1979. Plants of the Chicago region. Rev. and exp. ed. with keys. 3rd ed. Lisle: Morton Arboretum.
1994. Plants of the Chicago Region. 4th Ed. Indianapolis: Indiana Acad. Sci.

Wilhelm, G. S.
1977. Ecological assessment of open land areas in Kane County, Illinois. Geneva: Kane County Urban Development Division.
1978. Kane County natural area survey. Geneva: Kane County Urban Development Division.

Wilhelm, G. S. and D. Ladd
1988. Natural area assessment in the Chicago region. Trans. 53rd North American Wildl. & Nat. Res. Conf. 361-375.

Young, D.
1986. Wild plants and natural areas of Kane County, Illinois. Geneva: Kane County Environmental Department.

APPENDIX G

TECHNICAL COMMENTS ON THE PROPOSED REVISIONS TO THE 1989 WETLAND DELINEATION MANUAL[1]

Gerould Wilhelm

The Morton Arboretum
Lisle, Illinois, 60532

On 10 January 1989, the U.S. Environmental Protection Agency, U. S. Army Corps of Engineers, Department of Agriculture Soil Conservation Service, and Department of Interior Fish & Wildlife Service adopted an interagency document entitled "Federal Manual for Identifing and Delineating Jurisdictional Wetlands." It provided guidance for identifying and delineating wetlands for various purposes, most particularly for determining wetlands under the jurisdiction of the Clean Water Act, Section 404 regulatory program. On 14 August 1991, this same interagency consortium proposed a revision to the 1989 manual [Federal Register 56(157):40446-40480]. At that time, there was a request for public comments on the proposal, which comments were to have been submitted by 15 October 1991.

The 1989 manual was quite detailed, and with the exceptions discussed below, its use generally enabled an accurate delineation of wetland. The 1991 proposed revision continues to rely on the determination of the presence of hydric soils, hydrophytic vegetation, and evidence of hydrology as essential parameters. Page 40446 presents the following goal: *Of paramount importance . . . is to maintain and improve the scientific validity of our delineation methods.* Immediately following this stated goal six concerns having to do with the 1989 manual are listed. These concerns essentially imply that the application of the 1989 manual delineates too much wetland. The revision proposes to make the visible manifestation of hydrology requisite during the drier months of the year, a restriction which essentially limits the term "wetland" to permanent water bodies. It is my opinion that such a reliance on hydrology is not a scientifically valid approach to wetland definition. Certainly, hydrology is a *driving force* in wetland development, but when water is no longer present, proof of the length of its tenancy becomes problematic. While there were technical, scientifically-based problems with the 1989 manual, they are not addressed adequately in the proposed revision. These problems persist, with the added problem of the impracticality of having to prove hydrology during the growing season.

As in the 1989 manual, vegetational analysis still relies appropriately on the National Wetland Categories for species, as described by Reed (1988), where plants are categorized as obligate wetland inhabitants, upland inhabitants, or facultative to either side of the hydrological gradient. Some fundamental misconceptions are carried over from the 1989 manual regarding community classification, species dominance, and the inclusion of non-native species in the delineation calculations.

Another problem with the 1989 manual, made much worse by the proposed revision, is the attempt to find a single definition of a wetland that encompasses the estuaries of southern Florida and those in the prairies of Illinois. One reason the National Wetland Categories (Reed, 1988) are valid wetland indicators, when applied appropriately, is the division of the United States into physiographic regions with each species being evaluated on its autecology in each region. A similar strategy should be explored for wetland definition. Indeed, while the proposed revision accepts the valid notion that in various biomes individual species vary in their likeliness to grow in wetlands, it seems illogical to assume that a wetland definition would not be more accurate if it were more specific to each region.

Neither the 1989 manual nor the proposed revision addresses another important aspect of wetland identification: wetland mitigability. The structure and function of some wetlands are

[1] This paper is an edited and revised rendering of a letter which the author submitted to Gregory Peck, U.S.E.P.A., Washington, DC, in response to a request for public comments on the proposed revisions to the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands.

easily replicated using current expertise and technology, while others are of such complex synecological character that routine mitigations are unable to reproduce their viability. An assessment of the degree of mitigability regarding a target wetland should be made at the time of delineation in order to aid regulators in determining terms of permit approval. If such assessments were made, many permits could be handled quickly and expeditiously, while in other cases the applicant would know immediately that permit approval could be problematic.

HYDROLOGY

Evidence of the occupancy of water on a site is important, but the duration or amplitude of occupancy is difficult to determine when water is absent. One of the guidelines in the proposed revision governing the measurement of wetland hydrology states that soil saturation must persist *for 21 or more consecutive days during the growing season* or sustain *inundation for 15 or more consecutive days.* Growing season and indicators of wetland hydrology are both problematic criteria.

Growing Season. As defined in the proposed revision, the growing season is . . . *the interval between 3 weeks before the average date of the last killing frost in the spring to 3 weeks after the average killing frost in the fall.* Growing season is defined arbitrarily by a parameter based upon the average frost-free days, with a 3-week extension period at each end. In the central Great Lakes Region, the attempt to define a wetland as having a fundamental relationship to the "growing season" is untenable. If the logic of the proposed revision is followed, soil hydration outside the growing season is considered irrelevant.

Since the point of wetland delineation is to identify correctly those areas which receive standing water or chronic soil hydration, criteria should be designed which are helpful toward that end. The proposed revision attempts to establish criteria, which when adhered to, are inconsistent with accurate wetland delineation. Wetlands are characterized not by annual crop plants but by plants native to a region. Therefore, attentiveness to growth and maturation patterns of the native plants in a given region is informative with regard to growing season definitions. The growing season as it is defined by the proposed revision is about 2 months shorter than is expressed in nature.

According to the National Climatic Data Center, from 1951-1980, in the Chicago region, there was a 50% probability that a late spring freeze would occur after 3 May and that an early fall freeze would occur before 10 October. May 3rd is in the 18th week of the year, so the beginning of the growing season as defined by the proposed revision would occur 12 April, the 15th week. October 10th is in the 40th week of the year, so the end of the growing season would fall in the 43rd week. According to the criterion in the proposed revision, the Chicago region's growing season is 28 weeks in duration. This parameter does not encompass the growing season of native flowering plant species.

In the Chicago region, there are 1570 native vascular plants (Swink & Wilhelm, 1979).[2] Flowering periods of 1252 of these, including grasses and sedges, have been documented. It has been recorded over the past decades, for example, that *Actaea pachypoda* (White Baneberry) has been in anthesis during the period 30 April to 4 June. In the case of most species, these dates are the extremes of flowering and were not recorded in the same year. Presumably, in any given year, any plant species is likely to be in bloom near the midpoint of its phenological range. In the case of *A. pachypoda,* the early date falls in the 17th week of the year and the late date in the 22nd week. The midpoint in the flowering period of *A. pachypoda* is week 19.5 or 13 May.

Fifteen Chicago region species have their midpoint blooming ranges in the 5 weeks prior to the beginning of the growing season as defined by the proposed revision, the earliest blooming midpoint falling in week 10 (8-14 March). It stands to reason that spring growth begins normally at least a week earlier, week 9 (1-7 March). None of the species of the Chicago region have midpoint blooming ranges after the

[2] The Chicago region, as defined by Swink & Wilhelm (1979) includes 3 counties in southeastern Wisconsin, 11 in northeastern Illinois, 7 in northwestern Indiana, and 1 in southwestern Michigan.

43rd week, but nine have midpoint ranges after the 40th week. Since these species must then have time to mature fruit, an additional 2 or 3 weeks of nutrient movement is necessary. The practical end of the growing season then falls during week 45, 2 weeks after the end of the growing season as defined by the proposed revision.

When the 6 additional weeks of spring are added to the 2 additional weeks of fall, the documented growing season of native vascular plants in the Chicago region is 8 weeks longer than that defined for this region by the proposed revision. The actual growing season begins with the 9th week and ends during the 45th week in our region. Clearly, the 3-week criterion used in the proposed revision has no scientific basis in defining either the beginning or the end of the growing season in this region.

Also, the new manual would presume that soil inundation or saturation is not important prior to or after the growing season or that the effects do not differ materially from soils in unsaturated lands. However defined, the criterion in the proposed revision is that, in order to meet the definition of wetland, an area must be . . . *inundated for 15 or more consecutive days, or saturated from surface water or from ground water to the surface for 21 or more consecutive days during the growing season.*

In the Chicago region, as in much of the prairie biome, microbial activity is evident in anaerobic respiration that can occur any time during the year when the ground is unfrozen. Since the whole point of wetland delineation is to identify wetlands, land areas where water accumulates, arbitrary parameters such as growing season circumscription are superfluous. Even if the growing season were more rationally defined, there would be no scientific basis in ignoring the effects of anaerobic activity and nutrient movement on soil morphology during the dormant months.

Wetland Hydrology Indicators: On page 40452 of the proposed revision, four wetland hydrology indicators are listed, only one of which must be present. While this appears to be an expansive suite of options, in practice it is cumbersome and contradictory, and application can give counter-intuitive results. Numbers 1 and 2 are not real options.

Number 1: A minimum of 3 years of hydrologic records collected during years of normal rainfall and correlated with long-term hydrologic records for the specific geographical area that demonstrates the area meets the wetland hydrology criterion. Three years of hard hydrologic data almost never exist in the Chicago region, and no developer I have ever worked with would be willing to finance such a study or defer his development plans that long. In practice, it is a wholly impracticable option, though if such a data set were to exist already for a site it would be unwise to ignore it.

Number 2: Examination of aerial photography for a minimum of 5 years [which] reveals evidence of inundation and/or saturation in most years [3 of 5, 6 of 10] and correlated with long-term hydrologic records for the specific geographical areas demonstrate that the area meets the wetland hydrology criterion. In those instances where photographs show such standing water, it is impossible to tell when it got there and how long it will remain at any given topographic level. Rain gauge data on midwestern thunderstorms from Wheaton, Illinois or O'Hare Airport in Chicago are useless in determining actual rainfall patterns even in nearby areas. So correlations are impossible. Again, in practice, this is a wholly impracticable option, though if such data were to exist already for a site it would make sense to utilize it.

Number 3: One or more primary hydrologic indicators, which when considered with evidence of frequency and duration of rainfall or other hydrologic conditions, provide evidence sufficient to establish that an area is inundated for 15 or more consecutive days or saturated from surface water or from groundwater to the surface for 21 or more consecutive days during the growing season in most years, are materially present.

- *a. Surface water inundation.*
- *b. Observed free water at the surface in an unlined bore hole.*
- *c. Water can be squeezed or shaken from a soil sample taken at the soil surface.*
- *d. Oxidized stains along the channels of living roots.*

e. *Sulfidic material within 12 inches of the soil surface.*
f. *Specific plant morphological adaptation/responses to prolonged inundation or saturation: pneumatophores, prop roots, hypertrophied lenticels, a[e]renchymous tissues, and floating stems and leaves of floating-leaved plants growing in the area, and buttressed trunks or stems.*

With respect to items "a-c," I have never had the opportunity during a routine wetland determination to spend the time to defer delineation so that I could actually observe that portion of the wetland border which remained under water for 15 days or saturated for 21 even in one year, much less "most years." During a wetland delineation attempt at the West Chicago Prairie in September, 1991, on a morainic region west of Chicago, evidence of items "d-f" were searched for in well-documented, undisturbed wet prairie and sedge meadow plant communities; none could be found. There is no scientific basis for expecting these features to be present in such communities.

Number 4: If none of the indicators in items 1, 2, or 3 is [sic] present, one or more of the following secondary hydrologic indicators should be used in conjunction with corroborative information that supports a wetland hydrology determination. These secondary indicators may only be used in conjunction with other corroborative information that indicates wetland hydrology.

a. *Silt marks that indicate inundation.*
b. *Drift lines.*
c. *Surface-scoured areas.*
d. *Other common plant morphological adaptations/responses to hydrology; shallow root systems and adventitious roots.*

In undisturbed midwestern prairie wetlands and minerotrophic fens and sedge meadows, items "a-c" are not likely to be seen. Such wetlands are prevailingly ombrotrophic or minerotrophic, so evidence of surface flows laden with sediments are irrelevant factors. Occasionally evidence from item "d" can be present, but by no means routinely.

The attempts to define wetlands uniformly across physiographic provinces and to keep hydrology as a discrete criterion lead naturally to absurd conclusions. In practice, the proposed revision excludes most natural wetlands of the Prairie Biome from wetland status. The fact that this region receives 80-100 cm of precipitation per year over every square centimeter suggests that water must go somewhere. Actually, the two features which do corroborate hydrology in the Midwest, soils and vegetation, have been singularly excluded from consideration. Soils and vegetation resident on a site have a chemical and genetic imprint which transcends our ability to think up all the ways of discerning a pattern of hydrology.

VEGETATION

One of the most serious problems with the 1989 manual, and which persists in the proposed revision, is the inclusion of weed (non-native) species in the vegetational analyses. Another is an attempt to define "dominant species." The requirement to discriminate wetland plant communities does not lead to spurious results, necessarily, but it is irrelevant in determining wetland borders. The only relevant information in delineation is that which discriminates the wetland from the upland, the area which delineates the jurisdictional wetland.

The analytical protocol described by the manual, which is far too involved to recapitulate or summarize here, does not do well in defining the wetland border. Trying to identify plant communities by the method described is essentially subjective, since the plant communities are chosen in an entitative process, then described by a transect. There are well-known ordination techniques which can define plant communities, if that is the goal. Following the wetland manual, even if the plant community is chosen well, the data treatment tends to average any variation in it, and still the wetland border remains unaddressed. For all that, the method is unnecessarily complicated and can be far too time-consuming in diverse wetlands, and assessments are overly influenced by "dominant" species. A much simpler, more reliable, alternative is presented below as the various issues are explored.

Native *versus* Adventive Species: With the exception of a couple hundred rare waifs and scarcely spontaneous exotics, there are 2083 species of vascular plants which comprise the spontaneous flora of the Chicago region. Of these, 513 (25%) are known to be weeds (adventives) from Eurasia or from districts remote from the Chicago region. Adventive species have been in the area less than 1.5% as long as the natives, and their adaptation is to an altogether different ecological context. The presence of these adventive species informs us little about the wetness or dryness of a site. Since they are adapted primarily to the agricultural, well-drained arable soils of the Northern Hemisphere, the extent of their presence reveals more of a disturbance history and post-settlement land use. The remaining 1570 species are believed to be native to the region. The adaptability of these native species to wet or to dry ground can be regarded as a more profound indicator, inasmuch as each of these elements played a role in some presettlement plant community. Each one has been adapting to some facet of local hydrologic gradient throughout much of the Holocene.

If the goal is to determine site wetness based upon vegetation, then the use of native species as indicators is a strong measure. Table 1 shows the difference between the proportion of native and adventive species in each National Wetland Category. The more even distribution of native species among wetland plant categories reflects adaptation of native vegetation communities to gently variable hydrologic gradients typical of undulating topographies. The weed flora indicates a history primarily of disturbed, well-drained soils. An immense amount of experience locally has shown that when adventive species are incorporated into an analysis of wetness, results can be spurious.

Dominant Species: Problems also can arise when the focus is on dominant species. The problem is that dominant species have no fundamental significance as indicator plants. Not only are dominant species usually larger physically when compared to associated species and likely to be more obvious along the transect, they also tend to change with the season. Because calculation of dominance includes an estimate of basal area or cover, the results can also vary with the vicissitudes of annual climatic variation.

Small, or less easily identified, species are frequently excluded or their presence de-emphasized. *Solidago altissima*, a FACU species, can be shown to dominate disturbed wetland areas in the Chicago region in late summer, and when it does, the wetland area can appear as non-wetland. If, however, interstitial species such as *Amphicarpa bracteata* (FAC), *Bidens frondosa* (FACW), *Carex brevior* (FAC), *C. granularis* (FACW+), *C. lanuginosa* (OBL), *Geum canadense* (FAC), and *Polygonum coccineum* (OBL) are included as equal indicators, the area is shown to be populated predominantly by hydrophytic species; it is likely that the *Carex* species would have been dominant in spring. Similar confusions can work in reverse, where a mesophytic area might appear at some time to be dominated by a hydrophyte.

Each species, large or small, easily identified or not, has a long genetic memory of where it grows. Since all species grow in habitats to which they are suited, each species present in an area or in a sampling quadrat provides information equally about the wetness of the spot upon which it grows. When all *native* species identifiable in an area are analyzed together, reliable indices of wetness are obtainable.

Sampling Transect. The National Wetland Category defines the estimated probability of a species to occur in wetlands. The wetland categories included in the hydric to xeric range, *OBL* to *UPL* (see Table 1), can be expressed as 11 coefficients of species wetness, where:

$OBL = -5$, $FACW+ = -4$, $FACW = -3$, . . ., $FAC = 0$, . . ., $UPL = 5$

This is essentially the same scale as presented in the 1989 manual, but with values given to the +/- categories described by Reed (1988) as well. Values on the wet side of *FAC* are given negative numbers so that a transect, when graphed, displays wetland portions of the transect on the negative *y* axis (Figure 1).

When transects are laid out along the hydrologic gradient (catena), quadrats can be placed at regular intervals. An inventory of the species present in a quadrat is taken, the native species discriminated, and their coefficients of species wetness summed and divided by the number of species. When these quadrat wetness coefficients of each 3 quadrats are averaged sequentially,

vegetational representations of the catena are produced. Inclusion of metrics such as cover and density warps wetness values much in the same way calculations of dominance do; simple species presence gives the more accurate measure.

Figure 1 shows an example of a vegetation transect compared to topography. The transect traverses an undulating mesophytic prairie/wet prairie/sedge meadow complex. Note that the wetland border is slightly higher on the catena to the right where the slope is much gentler and probably less easily drained. The correlation between hydrophytic vegetation calculated in this way and hydric soils is remarkable only if one is surprised to discover that native plants do not grow randomly across the landscape, that they sort themselves with others into time-honored niches with disarming regularity.

When a series of transects is laid out in this fashion along the catena, the borders of the wetland can be associated with those areas of the *x* axis on the graph where the line intersects 0 on the *y* axis. The type of community is of little interest to the developer, stratum ranking is unnecessary, and complicated statistical calculations are superfluous. Neither is there a need to rely upon questionable formulations such as species dominance or to depend upon individual indicator species. Reliance upon such factors and the failure to exclude weeds can lead to frustrating results when attempting to correlate wetland plant communities with hydric soils.

It is probable that all of these factors lead the writers of the proposed revision to the spurious conclusion that there are . . . *certain difficulties in identifying wetlands from a purely botanical standpoint* . . . In fact, in almost all cases, a rational analysis of the vegetation can provide a very robust circumscription of wetland. Certainly, taken together with the soil characteristics, very accurate inferences can be made concerning the extent to which water has lain in the area.

Figure 2 shows the difference in wetland border determination when adventives are included in the calculations. In this case, the quadrats were at 4-meter regular intervals, so the transect shows that there was a 10-12 meter difference between the use of natives only *versus* natives with adventives. The transect was taken on a gradual slope where the soil changed from somewhat poorly drained to hydric. The point at which the native vegetation line drops below 0 is the most reliable correlative datum with the soil. A transect as described by the manual, depending perhaps on dominance assessment during a particular year or time of year, might have concluded that the site had no wetland, yet hydric soil was the prevailing substrate. There are occasions when no native species are present, and under such circumstances the mean coefficient of wetness value will be 0. Soil alone then becomes the most reliable feature; in our experience such areas usually are not wetland.

WETLAND MITIGABILITY

In connection with Section 404 of the Clean Water Act and its administration by the U.S. Army Corps of Engineers, two aspects of wetlands are emerging as important: definition and mitigability. Many wetlands in the prairie biome today consist largely of monocultures of either Reed Canary Grass or Cattails. Large tracts of moist ground and sediment-laden river bottoms have become dominated by weedy trees, under which very little else grows. The seeds of these weedy species are ubiquitous, and because they are responsive to wide tolerances in basin engineering, restoration of such wetlands often can be achieved, but their long-term diversity is very limited. Conversely, a few of our remaining wetlands are remnants of natural systems, wet prairies, sedge meadows, and fens which provide habitats for hundreds of rare native species of plants and animals. The seeds of most of these plants are not available commercially, and little is known about their propagation or autecology. Impacts on wetlands which contain significant numbers of such species are inevitable and, consequently, *irreversible and irretrievable*. It is, therefore, important to determine the extent to which impacts on individual wetlands are mitigable.

It long has been recognized that a native flora displays varying degrees of tolerance to disturbance, as well as varying degrees of fidelity to specific habitats (Braun-Blanquet 1932). Many species, regarded as "conservative" (Wilhelm & Ladd 1988), are floristic elements which, through millennia, have become supremely adapted to niches determined by a specific set of biotic and abiotic factors. These factors include local edaphics and extremes of drought, humidity,

inundation, fire, temperature, faunal interactions, *etc.* Although these factors in the aggregate have changed over time, the changes have been gradual enough and buffered sufficiently by system complexity to allow gene pools to adapt. When changes occur rapidly, as they have in the postsettlement period, both species diversity and populations of conservative species on a given tract are diminished in accordance with the severity of the changes.

Species conservatism, the degree of faithfulness a native plant displays to a specific habitat or set of environmental conditions, is the basis for the natural area assessment rationale (Wilhelm & Ladd 1988), describing a conservatism scaler spectrum of 0-10 for native species, with 0 coefficients assigned to the weediest species and 10 values assigned to very conservative species. The natural quality of an area is reflected by its richness in conservative species.

Five hundred thirty-four native species, about 34% of the native flora (322 hydrophytes) were given a coefficient of species conservatism, outside of the philosophical spectrum, of 15 or 20 for the Chicago region flora (Swink & Wilhelm 1979). Such values were given to species which the authors regarded as very rare or extirpated in the region. Typically, such species occupied plant communities which either were very rare locally to begin with or whose habitats have been very susceptible to post-settlement disturbances. A few natural wetland communities, such as bogs and fens, have high concentrations of species with values of 15 and 20.

About 11% of the native flora, including 99 hydrophytes, were given values from 0 to 3. Species in this category essentially comprise the New World analogues to the Old World "camp-following" weeds. It is believed that these are the species which exploited the compacted, disturbed, nutrient-rich soils of Indian villages, buffalo wallows, and the like. Such species played only minor roles in stable natural communities. Today, along with Eurasian weeds, they occupy more than 99% of the land in the region which is not paved over or farmed.

The remaining 55% of the native flora, 867 species (493 hydrophytes), is comprised of variously conservative species, those species were given values from 4-10, depending on their fidelity to stable native conditions. Most of the natural plant communities of the Chicago region are characterized by their inhabitance by conservative species.

Generally, the more disturbance an area has suffered since European settlement, the more likely it is to be populated prevailingly by species with values at the low end of the conservatism range. In disturbed areas, attrition of conservative elements occurs even as less conservative elements, already suited to the changes, broaden their genetic diversity and adaptation to an array of disturbed conditions. The conservative elements, supplanted in place, have neither refugia, effective migration routes, nor the time to adapt or relocate. Rather, their populations are depleted repeatedly until their ultimate extirpation.

To obtain a qualitative evaluation of a wetland site, the indices can be applied in the manner described by Swink & Wilhelm (1979) and Wilhelm & Ladd (1988).[3] According to Swink & Wilhelm, indices obtained for areas in the Chicago region are applied as follows:

> *"If the Natural Area Rating Index of a given area is 35 or 40, one can be relatively certain that there is sufficient native character to be of rather profound environmental importance in terms of a regional natural area perspective. Areas which rate in the 50's and higher are of paramount importance; such areas are extremely rare, probably occupying less than 0.02 per cent of the total land area in the Chicago region. Areas which rate less than 35 can usually be assumed to have suffered significantly from abuse or degradation."*

Many wetlands today are clearly in the latter category in that they have indices significantly lower than 35. Generally, the lower the index of a particular wetland, the more capable we are

[3] The Natural Area Index is derived by summing the coefficients of conservatism of all the species in a unit area and dividing the sum by the number of species, yield a mean coefficient of conservatism. That mean value is multiplied by the square root of the number of species to yield the index.

technically of re-establishing it or mitigating its loss with equivalent conservatism, amenities, or function.

It is yet to be demonstrated that stable natural communities, with indices in the high 30's, can be established *de novo* routinely and that such communities can be sustained at that quality level. Certainly, most open ground today, left to "succeed" on its own, is incapable of obtaining such quality. Today, the species involved in site recolonization are mostly those which have been given values of 0 to 3. Species involved in stable, diverse constellations, those given values of 4 or higher, are either absent from the region, or their populations are too disparately distributed to coalesce into any complex natural community. Such community coalescence potentials are further retarded by the fact that any succession today must take place in a universe of species that consists partly of adventive elements. Even when rich "mixes" of "pure live seed" of native species are sowed on a site, the chronic absence of fire and excessive amounts of surface runoff waters in contemporary wetland ecosystems render these plants unsuccessful in competition with non-native elements.

In the application of mitigation technologies in the Chicago region, certain ecological limitations must be kept in mind. In the modern era, there are for the most part, only about 150 native wetland species available for the spontaneous recolonization of open ground. These species have a mean value of about 2.5. This means that the highest index likely to be measured is about 30. In order to achieve higher ratings, the planting of conservative species must be prescribed. In today's restoration efforts, the planting of 60 conservative species, with a value of 4 or higher, is considered a rich planting. Present in any community is a cohort of non-conservative elements, so if the planted community can be made to consist of plants with a mean value of 4.0, a cohort of 100 species would be needed to achieve an index of 40. The highest index which has been achieved to date is 39, from 139 native species with a value of 3.34.[4]

The problem with getting conservative native plants to grow on a site is that most of our natural communities require specific hydrologies, water qualities, and soil pH levels, and they often require annual fire. Such conditions are yet beyond the technical capabilities of most engineers and plantsmen today. For most Chicago region natural wetland communities, the likelihood that each could be restored in a contemporary mitigation effort is remote.

I realize that most regions of the country have not approached their flora with this in mind. That does not mean, however, that these same relationships do not exist elsewhere or that they can be ignored simply because it is complicated and would require attention. Each region must find a rational way to codify its flora such that land custodians and resource agencies can determine the magnitude and reversibility of proposed impacts. Any manual which deals with wetland delineation in the context of the Clean Water Act must acknowledge that all wetland is not equal in its quality, function, and replaceability.

LITERATURE CITED

Braun-Blanquet, J. 1932. Plant sociology, the study of plant communities. Translated, revised, and edited by G. D. Fuller and H. S. Conard. Stechert-Hafner, New York.

Reed, P. B., Jr. 1988. National list of plant species that occur in wetlands: national summary. U.S. Fish Wildl. Serv. Biol. Rep. 88(24).

Swink, F. and G. Wilhelm. 1979. Plants of the Chicago region. The Morton Arboretum, Lisle, Illinois.

Wilhelm, G. and D. Ladd. 1988. Natural area assessment in the Chicago region. Trans. 53rd North American Wildl. & Nat. Res. Conf. 361-375.

[4] One of the wet prairie restorations at the Des Plaines River Wetland Demonstration Project in Wadsworth, Illinois.

Table 1. Definitions of National Wetland Categories, along with the percent of Chicago region native (1570) and adventive (513) species in each Category.

Native Flora	Weed Flora	Wetland Category	Symbol	Definition
27.9%	3.7%	**Obligate Wetland**	**OBL**	Almost always occurs in wetlands under natural conditions (est. greater than 99% probability).
16.3%	5.6%	**Facultative Wetland**	**FACW**	Usually occurs in wetlands, but occasionally found in non-wetlands (est. 67-99% probability).
14.1%	13.3%	**Facultative**	**FAC**	Equally likely to occur in wetlands or non-wetlands (est. 34-66% probability).
14.4%	18.7%	**Facultative Upland**	**FACU**	Occasionally occurs in wetlands, but usually occur in non-wetlands (est. 1-33% probability).
27.3%	58.7%	**Upland**	**UPL**	Almost never occurs in wetlands under natural conditions (est. less than 1%).

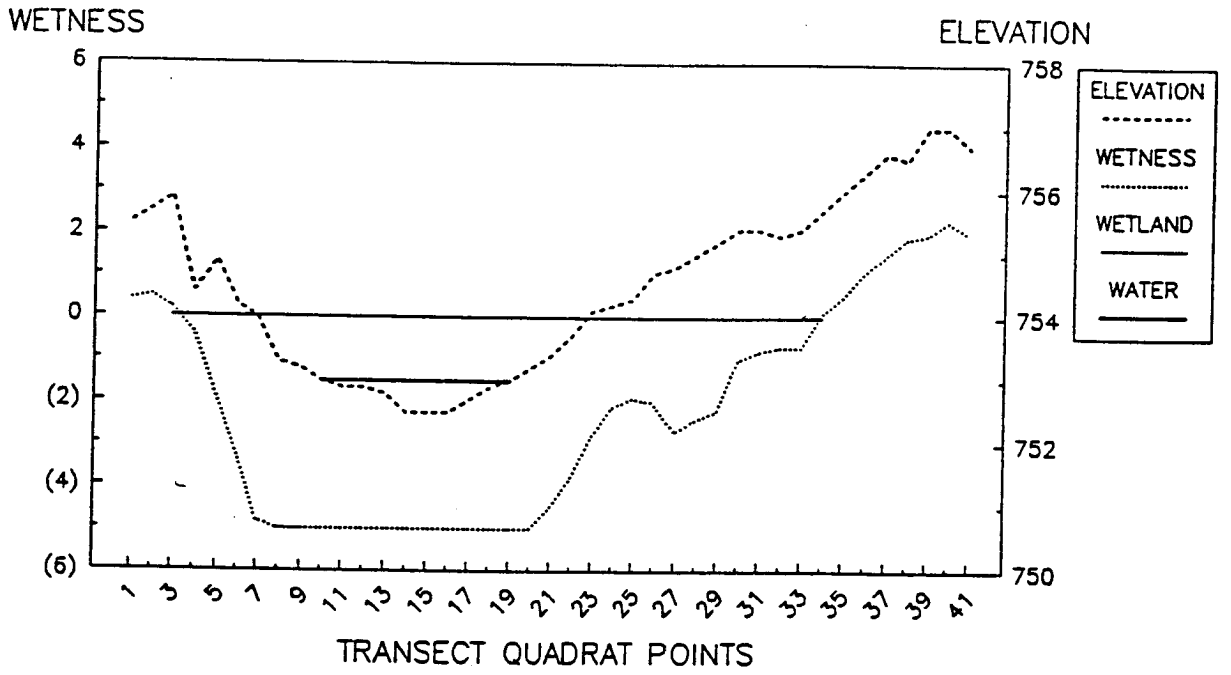


Figure 1. West Chicago Prairie. Transect consists of 41 quadrats 4 meters apart. Correlation between mean wetness coefficients (dotted line) per quadrat and topography (dashed line), shown in ft above mean sea level. The dark solid line is the normal water level. The lighter line, between quadrats 3 and 34, delineates the hydrophytic vegetation, and corresponds to the wetness axis rather than the elevation axis. (Unpublished data from Wayne Lampa, Du Page County Forest Preserve District, Du Page County, Illinois.)

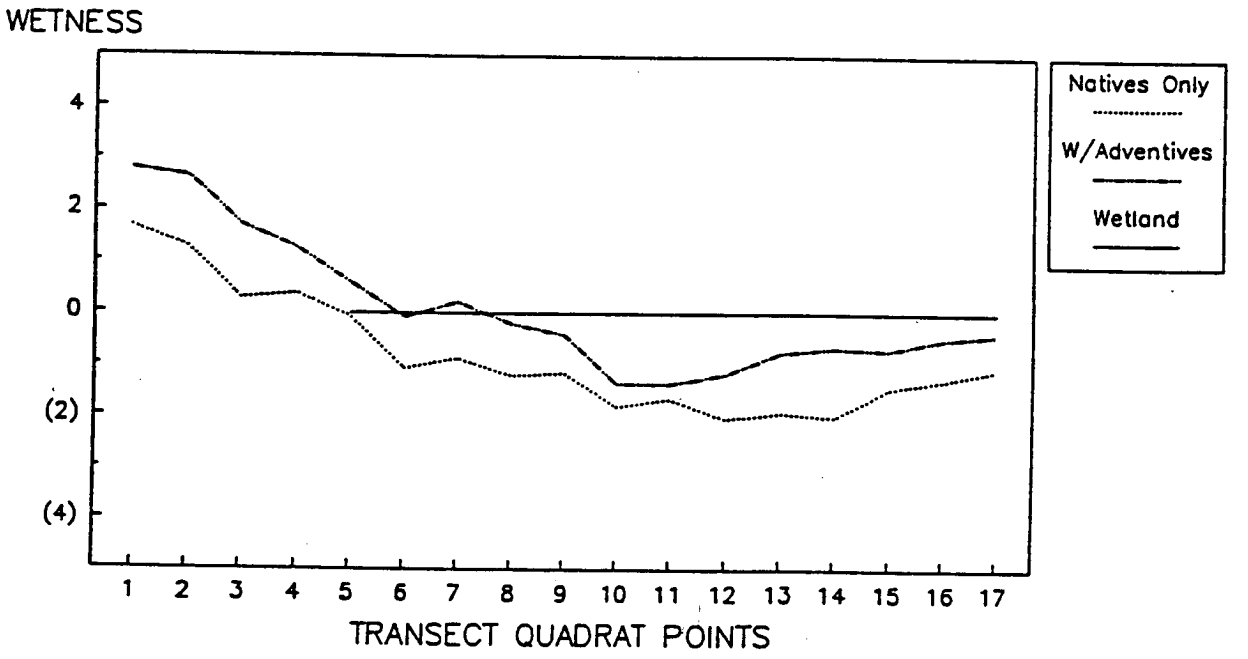


Figure 2. Disturbed wetland area in Du Page County, Illinois. Transect showing the disparity in hydrophytic vegetation assessment which can result when adventive species are included in the calculations. The dotted line shows native species only; the dotted-chained line shows the same transect, but with adventive species included. The solid line indicates the actual extent of wetland.