The Flora of Cranberry Slough Nature Preserve

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ABSTRACT

Cranberry Slough Nature Preserve (CSNP) is large (372 acre) Nature Preserve in Palos Township completely surrounded by additional Forest Preserve District of Cook County land. At the time of the Public Land Survey (1820) the natural communities were thinly stocked oak woodlands and wetlands. These communities were altered during by human ownership (especially obvious in the line between the sections 9 & 10 where all of the "prairie" is in section 10). Current natural communities include oak woodland, wet meadow, marsh and bog, and areas impacted by human economic activities including successional timber, thicket, and native field. CSNP is divided into 12 management units (labeled B thru M) using roads/trails and water. During the period from 1 July 2001 to 30 June 2002 a total of 356 plant species were detected within the preserve boundary on 26 trips totaling 4360 minutes. The number of species detected in a unit ranged from 35 (in F) to 186 (in B & I). Exotic species constituted 18% (65 species) of the flora, which included 291 native species. The species detected in 2001-2002 did not include 75 species detected between 1985 and 2000. Fifty seven of the species lost were native perennial forbs. The abundant white-tailed deer most likely contributed importantly to the recent plant species losses. A single IL endangered species was detected, *Poa languida*, the weak bluegrass. Small populations of this endangered grass exist in two units.

Overview of Cranberry Slough

Cranberry Slough Nature Preserve (CSNP) was dedicated in 1965 as the 5th Illinois Nature Preserve. It is owned by the Forest Preserve District of Cook County (FPDCC) and is within patch of over 10,000 acres of FPDCC land. With an area of 372 acres it is the 18th largest nature preserve (based on 1995 Directory). Located within the Northeastern Morainal Division of Illinois, it specifically is near the crest of the Valparaiso moraine on Mount Forest Island, an "island" of the moraine isolated by the Des Plaines River valley and the Sag valley, outlets cut when the Great Lakes flowed to the Mississippi River. The northeast corner of Illinois receives about 36" (91 cm) of precipitation annually.

Topography

Elevations at CSNP range from 715' to 650', at least 74' above the Des Plaines river. The highest elevations on Mount Foreset Island are just over 725 feet. Two large (>5 acres) wetlands, Buttonbush Slough and Cranberry Slough (CS), are present. About 20% of the land is in 5 "islands" over 700' elevation. The general tilt is to the south, but Crooked Creek (CC) enters the west boundary and exits the east boundary. CC flows west south of CSNP. The topography is rolling rather than dissected. Most ridge crests are no more than 25' higher than the nearby wetland and slopes >10% are not common. CSNP is entirely within the watershed of Crooked Creek, an intermittent stream flowing into the Sag valley whose watershed is mostly within FPDCC holdings.

Origins of the Name

One of the mysteries of Cranberry Slough (CS) is how it got its name. As a remnant bog it seems likely that CS was named for *Vaccinium macrocarpon*, but that species has never been seen at CS by myself. Roland Eisenbeis, former Superintendent of Conservation, FPDCC, told me that CS was named for the Cranberry Viburnum, *Viburnum trilobum*, but all potential members of that species at this site have keyed out to be *Viburnum opulus* using Swink & Wilhelm (1994).

Presettlement Vegetation

In 1820 the Public Land Survey of sections 9 and 10 described all lines as "timber" or "swamp", i.e. none are "prairie". Each of the 13 corners was "witnessed" by at least one tree. Corner and line trees included "W. Oak" 19 times, "B. Oak" 7 times and "Hickory" once. The distances from the posts to the trees range from 4 to 220 feet. Seven of the 13 corners had the second closest tree at a distance of 66 feet or more and clearly had a density of trees that would currently be called savanna or prairie. The other 6 corners had density estimates that would place them in the woodland or forest density class (Brown 1994). Verbal descriptions noted that the soil was second rate and the topography was rolling or broken. Both Cranberry Slough and Buttonbush Slough were called "swamps" by the surveyor.

Legal boundaries and associated subdivision

CSNP includes the east ½ of section 9 (minus the NW¼ of the NE¼) and the part of section 10 (T37NR12E 3rd PM) that is west of US45, LaGrange Rd. All land the is now in the FPDCC was once in private ownership, and the extent of alteration of the natural vegetation varied

considerably. The "squares" associated with ownership have resulted in very different vegetation in adjacent ¼ sections or ¼¼ sections.

Management unit boundaries

While some legal boundaries are easy to detect others are not. The twelve management units of CSNP, labeled B thru M, were defined using detectable well defined features, namely waterways, trails and paths, wetland edges and ravines. Crooked Creek divides CSNP into about equal NE and SW sections. The NE portion includes units B, C, D, E, F and part of K. The SW part includes H, I, J, part of K, L and M. A multipurpose trail runs south from 95th St, loops around Cranberry Slough, and heads west across the west boundary. Units B, F, G, H, I & J are north & west of this trail and units C, D, E, K, L & M are east & south of the trail. The twelve management units are shown in Figure 1 and the relationships between the units and the ¼¼ sections are shown in Table 1.

Relationships between legal boundaries and management units

Table 1. Relationship of property boundaries and management units.

			Management Unit											
			B	C	D	E	F	G	H	I	J	K	L	M
Section	¼ section	¼¼ section												
9	NE	NE	X	X		X		X						
9	NE	SE	X				X	X	X					
9	NE	SW	X						X	X				
9	SE	NE						X	X		X	X		
9	SE	SE									X	X	X	X
9	SE	SW							X		X			X
9	SE	NW							X		X			
10	NW	SW				X	X	X						
10	NW	NW			X	X								
10	SW	NW+				X						X	X	

An X indicates that the ¼¼section and the management unit overlap.

The private ownership phase

Section 9/10 boundary and the boundary between the NE and SE quarters of section 9 provide clear evidence of the impact of private ownership. On the west (sections 9 side) there are oak woodlands with basal areas of about 30 m^2/ha with "prairie" species restricted to wetland edges. On the east side (section 10) there are a wide variety of "prairie" species in thicket openings. The only logical explanation is that originally both sides were oak savanna (oak trees in a prairie species matrix). The section 9 owner allowed trees to grow and they became more abundant and shaded out the prairie species. The section 10 owner cut the trees to create a native pasture. The pasture was invaded by shrubs (native and exotic) and a few trees. This seems to be the most appropriate explanation of the difference between the sides of this artificial line. In NE quarter of section 9 seems minimally disturbed. The north ½ of the SE quarter is currently thicket or succession timber.

On the 1928 USGS topographic map there were 4 houses within the CSNP boundary. There is evidence of two ditches having been dug to drain Cranberry Slough proper. The ditch currently never carrying flow was clearly dug first and presumably marks the location of the original CS overflow point. The ditch currently draining CS has lowered the maximum water level by about 80 cm. Some deditching has been done by beaver and stewardship volunteers. There is a picture of the FPDCC dynamiting CS. Pete Dring, former FPDCC employee, reported that this was done to make CS deeper. Wetlands in units H and E have been impacted by drainage ditches. Wetlands in units H/J and E have had water levels raised by check dams. The beaver that were active in the late 70s and earlier 80s have not been seen since 1986.

The Communities of Cranberry Slough

Communities are assemblages of plants and animals with enough distinctness to merit a name. Within a location small enough not to have climate differences, natural differences in plant assemblages are determined primarily topography and soil structure for these are the factors that effect the availability of water. Today in most of the world assemblages have been significantly impacted by human economic activities. Most, perhaps all, areas at CSNP have been substantially altered by human decisions, but is some places the natural vegetation was almost completely destroyed. Three "community" types merit distinction in those heavily impacted areas, **successional timber**, **thicket**, and **native field**. Among the communities that are substantially natural I recognize only one wooded terrestrial community, **oak woodland**, but distinguish 3 wetland communities; **wet meadow**, **marsh** and **bog** at Cranberry Slough Nature Preserve. Ephemeral wetlands smaller than 0.5 ha are included within the terrestrial communities that surround them.

Oak woods

The oak woodland at CSNP is almost exclusively dominated by the genus *Quercus*. The five most frequent species are all members of that genus and total 93% of the canopy trees. The white oak is the most frequent canopy tree, but black oak is almost as frequent. Red, bur and swamp white oak are next most frequent (Table 3). Shagbark hickory and white ash minor components and rarely the common understory species, *Prunus serotina*, grows to canopy size. The herbaceous layer in the oak woods is dominated by *Carex pensylvanica* and diverse grasses. *Panicum latifolium* is common. In the spring, *Dentaria laciniata* and *Claytonia virginica* are the only species abundant enough to give color to the woods. Many spring flowers that are common in other woodlands are rare or absent at CSNP, namely Erythronium albidum, Geranium maculatum, Hydrophyllum and Trillium. After the grasses, *Leersia virginica* and *Cinna arundinacea,* the summer herbaceous layer includes many annuals, especially *Hedeoma pulegioides, Pilea pumila, Polygonum hydropiper* and *POLYGONUM PERSICARA*. The only time after spring the herbaceous layer displays a mass of color is when the *Eupatorium rugosum* bloom in September. The shrub layer (and trees less than 3 cm diameter) are essentially non-existent now. Though oak seedlings less than 15 cm high may be frequently seen I can not recall seeing a single oak between 50 and 200 cm tall in 2001-02. Not only oaks are effected. There is no woody individual recruitment except for heavily defended species such as Japanese barberry, Mulitflora rose and Hawthorns. Ephemeral ponds big enough for calling frogs (but less than 5

acres) have an average abundance of one per 22 acres and are associated with a distinct flora within the oak woodland community.

Wetlands

Three wetland communities may be distinguished at CSNP. At CSNP **wet meadows** are associated with flowing water, either Crooked Creek or the Buttonbush Slough outlet. Both streams are ephemeral and the wet meadows are normally dry. Currently wet meadows are dominated by species in the genus *Carex* and *Solidago*. Many of these areas were under water held behind beaver dams in the late 1970s. The other two wetland communities, **marsh** and **bog**, are inundated throughout most of the year. At CSNP each community applies to a single specific site, Buttonbush Slough (unit D) and Cranberry Slough (unit F), respectively. Buttonbush Slough is not currently dominated by buttonbush, but rather is dominated every year by *Typha* and *Scirpus fluviatilis* and occasionally by annuals in the genera *Echinochloa* and/or *Cyperus*. Buttonbush is now found only occasionally along the margins of Buttonbush Slough. Areas dominated by *Sphagnum*, are appropriately called bogs, and Sphagnum is common in the center of Cranberry Slough. The center of Cranberry Slough is dominated by *Carex utrichulata*, *Calamagrostis canadensis* and *Scirpus cyperinus*. The only forbs that could be called more abundant than "rare" are *Hypericum virginicum fraseri* and *Sagittaria latifolia*.

Heavily impacted "communities"

I distinguish three communities according to the extent of impacted by human activity. The most severely impacted is the **thicket**. In areas called thicket there are very few potential canopy trees. Rather these areas are dominated by subcanopy species such as members of the genera *Crataegus*, *Lonicera*, *Malus*, *Prunus*, *RHAMNUS* or *Viburnum*. Native elements in the understory are usually weedy. Typically grasses are absent or very rare though *Leersia virginica* and *Cinna arundinacea* are present in some places. Some of the thicket category in Table 2 are apparently natural assemblages on the margins between oak woods and wet meadows. Most of the **thicket** community resulted from cutting the oaks to establish pasture or apple orchard.

Successional timber is an assemblage without a natural canopy of oaks, but currently with a sufficient density of potential canopy species that one can envisage natural canopy heights in less than 50 years. At CSNP many of these areas have mostly *Fraxinus* individuals. Generally, in successional timber areas with oaks, black oaks are much more frequent than white oaks. No quantitative cutoff separating thicket and successional timber has been constructed. Presumably thickets would eventually become successional timber, but the lack of recruitment of any woody vegetation, including cottonwood, elm, sumac or viburnum should weaken the belief in that assumption.

Field at CSNP almost always means native field rather than old field. At CSNP fields are dominated by prairie grasses but with significant amounts of *AGROSTIS ALBA* and *POA PRATENSIS*. At CSNP fields occur exclusively in section 10. Presumably they arose from cutting the oaks from an oak savanna and lightly grazing the resulting "prairie".

Data Sources: In 1993 a 100m grid system was established in the section 9 portion of CSNP. The complete grid had 153 points (9 x 17) but the east column was in section 10 and the south row was in section 16. The NW¼of the NE¼ of section 9 is not in the nature preserve so there were 112 grid intersections in the nature preserve. At each intersection the community type of each of 4 quadrants (NE, SE, SW & NW) was noted. The community types were strongly effected by property boundaries as shown in the accompanying table.

Table 2. Community Types by Quarter Quarter Section

Section	¼ sect	¼¼ sect	Most Common Communities in ¼¼ section	Community Oak woods	Succesional Timber	Thicket	Wet Meadow	Marsh & Bog	Trail	SUM
9	NE	NE	Oakwoods, Buttonbush Slough	32	0	12	4	12	4	64
9	NE	SE	Oakwoods, Cranberry Slough	32	0	4	12	16	0	64
9	NE	SW	Oakwoods, wet meadow	42	4	4	9	5	0	64
9	SE	NE	Successional Timber	4	56	0	4	0	0	64
9	SE	SE	Oakwoods	20	24	20	0	0	0	64
9	SE	SW	Oakwoods	44	4	12	0	4	0	64
9	SE	NW	Successional Timber, thicket	4	44	12	4	0	0	64
10	NW	SW	Thicket, successional timber							
10	NW	NW	Buttonbush Slough, field, thicket							
10	SW	NW	Thicket, successional timber							
			Number of Quadrants	178	132	64	33	37	4	448
			Percent	40	30	14	7	8	1	100

Trees in terrestrial communities

As shown in Table 2 about half of the upland sites were oak woods (40% versus 44% successional or thicket). The data on the trees comes from the 1993 survey of the interns, a 1995 follow up and studies of other sites selected in a less unbiased fashion (e.g as part of a dead wood study). Cranberry Slough (and Mount Forest Island in general) are woodlands completely dominated by oaks. Table 3 describes the large trees (> 25 cm dbh) and small trees (< 25 cm > 10 cm dbh) found at CSNP ordered by the frequency of large trees in oak woods and then the frequency of small trees in oak woods and finally by large trees at all sites. As one sees the top five species in oak woodlands were oaks. The shagbark hickory was 2% of the large trees in oak woods and among large trees all other species totaled only 5% of the trees. Even including successtional timber and thicket the genus *Quercus* represented 71% of the large trees and 16% of the small trees. There are less than 20 individual Sugar maples at CSNP and the lack of sugar maple is true for all of Mt. Forest island. South of the Sag valley and in Tinley sugar maples become more abundant. A total of 26 tree species were detected in these systematic samples. Only four of the 26 species were exotics. In 1993 *Rhamnus frangula* was the most frequently encountered exotic tree. In the 2001-02 survey it was detected in only 5 of the 12 units and currently its abundance would be described as rare. *ROBINIA PSEUDOACACIA* has been planted in section 10 and parts of section 9 not included within the nature preserve.

Table 3. Trees of Cranberry Slough Nature Preserve*

Species	Canopy Trees (>25 cm dbh) ALL sites N = 611	Oak Woods N = 224	Small trees (10-25 cm dbh) ALL sites N = 631	Oak Woods N = 244
Quercus alba	18.5%	33%	1.7%	2%
Quercus velutina	28.8%	28%	7.3%	4%
Quercus rubra	15.2%	20%	4.1%	6%
Quercus macrocarpa	5.6%	8%	1.4%	
Quercus bicolor	2.5%	4%	1.0%	2%
Fraxinus americana	12.6%	2%	7.9%	11%
Carya ovata	0.8%	2%	2.9%	3%
Prunus serotina	5.7%	1%	26.1%	39%
Ulmus americana	2.3%	1%	4.1%	4%
Juglans nigra	1.6%	1%	0.5%	0%
Crataegus mollis	0.2%		13.5%	10%
RHAMNUS FRANGULA			6.7%	5%
Crataegus coccinea			7.9%	4%
Crataegus punctata			6.7%	4%
Fraxinus pennsylvanica subintegrima	1.8%		1.6%	2%
Ulmus rubra	1.0%		0.8%	1%
RHAMNUS CATHARTICA			4.1%	1%
Tilia americana			0.5%	1%
Populus deltoides	2.0%		0.2%	
Carya cordiformis	0.5%		0.2%	
Populus grandidentata	0.3%			
Salix nigra	0.3%			
MALUS PUMILA	0.2%		0.5%	
Acer negundo	0.2%		0.2%	
Malus coronaria			0.2%	
MORUS ALBA			0.2%	

* All sample locations in section 9.

The flora of Cranberry Slough

A total of 356 plant species were detected at Cranberry Slough Nature Preserve between 1 July 2001 and 30 June 2002. Sixty five species were exotics to the Chicago region according to Swink and Wilhelm (1994). They are in all capital letters in Appendix 1. Two hundred and ninety one species native to the Chicago region were detected. Some of these species, such as *Acer rubrum* and *A. saccharinum*, are almost certainly not autochthonous to the site but, rather, were introduced by the FPDCC. Three species, *Brachyelytrum erectum*, *Bromus kalmii*, *Physostegia virginiana arenaria*, were probably introduced from other Palos sites by the volunteer steward.

All of the physiognomic categories of Wilhelm and Masters (1995) are represented at Cranberry Slough. Perennial forbs are the most abundant category followed by perennial grasses, perennial sedges, annual forbs and trees. The numbers separated according to whether they are exotic or native are given in Table 4.

Table 4. The numbers of species by physiognomy.

	Annual Forb	Annual Grass	Annual Sedge	Biennial Forb	Cryptogam	Herbaceous Vine
Exotic	6	3	0	10	0	1
Native	33	2	2	7	4	3
Total	39	5	2	17	4	4

	Perennial Forb	Perennial Grass	Perennial Sedge	Shrub	Tree	Woody Vine	Total
Exotic	18	9	0	10	6	2	65
Native	117	38	39	11	32	3	291
Total	135	47	39	21	38	5	356

The flora of each management unit

The number of species detected in units B & G was 186. In unit E 179 species were detected, while unit C had 164 and units H, K and M had 161 species. Units J, L and I had 127, 118 and 107 species respectively. Unit D, Buttonbush Slough plus a former home site at the corner of 95th St. and US45, had 77 species and unit F, Cranberry Slough itself, had only 35 species (but nine of those species were found in no other unit.) A list of all the species detected between 1 July 2001 and 30 June 2002 and the management unit(s) they were detected in can be found in Appendix 1.

Significant flora by community

The population approach to conservation attempts to identify areas at which each native species is likely to persist. A prelude to this approach is too identify significant populations at each site. The population is labeled significant based on both rarity and population size. Each significant population must have a number of individuals that can be considered genetically viable. Each of the populations below identified as significant has at least 100 individuals at CSNP. The other element of significance is the rarity, both on local and larger scales. Each of the species below is more abundant at CSNP than in other high quality sites in northeastern Illinois. The species are listed by the community in which they occur.

Oak Woods *Anemonella thalictroides, Arenaria lateriflora, Bromus pubescens, Carex suberecta, Carex swanii, Dentaria laciniata, Festuca obtusa, Hedeoma pulegioides, Leersia virginica, Melica nitens, Muhlenbergia sobolifera, Muhlenbergia sylvatica, Muhlenbergia tenuiflora, Panicum latifolium, Poa languida*

Wet Meadow *Alopecurus aequalis, Cacalia plantaginea, Poa palustris,*

Bog *Carex utrichulata, Galium trifidum, Hypericum virginicum fraseri, Utricularia geminiscapa*

Native field *Liatris spicata, Penstemon digitalis,*

Floral dynamics

The way that floral lists are normally kept, namely accumulation of species but no removal of species, does not encourage an appreciation of floral dynamics. I have been visiting Cranberry Slough Nature Preserve regularly since 1983. Since 1986 I have kept a diary of what I saw on those visits and since 1994 the diary has been electronic. Between 1 January 1994 and 30 June 2001 I was at CSNP 464 times and on each visit I made a list of the blooming plants. Of course, I also accumulated knowledge of the spatial location of the species. Thus this inventory undoubtedly identified more species than I would have if I were new to the site, because I returned to specific locations I remembered seeing particular species. Despite that knowledge, there were 75 species that I had written record of seeing at CSNP since 1986 that were not detected in 2001-02. Additionally, Rich Hyerczyk gave me a list that he obtained from Floyd Swink. Swink's list was dated 1959 and labeled White Oak Woods on the east side of US45. If that information is accurate it would be FPDCC land immediately east of CSNP. The species on Swink's 1959 list and on my pre-2001 lists but not on the current list are given in Appendix 1. There are 99 entries, 24 species lost between 1959 and 1986 and 75 seen sometime between 1986 and 2001, but not in the current year. Some of those species are undoubtedly still present even though they were not seen in study. Specifically, *DIANTHUS ARMERIA* and *Gratiola neglecta*, have already been seen since 30 June 2002. Others are species that were uncommon or rare but regularly seen as recently as ten year ago, could not be found at all in the study year. Such species include *Actaea pachypoda, Asclepias tuberosa, Aster ericoides, Baptisia leucantha, Corylus americana, Gentiana andrewsii, Krigia biflora, Liatris scariosa nieuwlandii, Parthenium integrifolium, Pedicularis canadensis, Phlox pilosa, Phryma leptostachya, Rhus glabra, Rudbeckia subtomentosa, Scrophularia marilandica, Solidago rigida, Spiranthes cernua, Veronicastrum virginicum* and *Vicia americana.*

One species that was common on the edges of the two big sloughs, *Rosa setigera*, in the 80s was seen only once in the study. Some species that showed up on the species list have never been observed to bloom at CSNP by me, namely *Allium tricoccum burdickii, Geranium maculatum, Prenanthes alba, Sium suave, Smilacina racemosa* and *Smilax ecirrhata.* Individuals of these species always seem to be small and presumably they are eaten before they get big enough to flower.

The discussion of flora dynamics up to now has focused on the species whose abundance has declined. Most of those species are native woody species and or forbs. What species have filled the void left by these declines? In the oak woods grasses have generally increased. The following woodland grasses are abundant enough in oak woods to be called common; *Agrostis perennans, Bromus pubescens, Cinna arundinacea, DACTYLIS GLOMERATA, Danthonia spicata, Elymus villosus, Festuca obtusa, Glyceria striata, Hystrix patula, Leersia virginica, Muhlenbergia sylvatica, Panicum latifolium, PHALARIS ARUNDINACEA, POA PRATENSIS* and *Sphenopholis intermedia.* The other groups of species that are increasing are thorny shrubs. The species showing the greatest increase, in my opinion, is *BERBERIS THUNBERGII.* Many of the successional timber and thicket communities are very difficult to traverse because of the high density of the Japanese Barberry. Barberry can be effectively controlled by burning but unfortunately the FPDCC is not burning on a scale that leads to effective control.

Appendix 1. Alphabetical list of CSNP plant species.

Species name	Management Unit B	C	D	E	F	G	H	I	J	K	L	M	FREQ	Physiognomy	
Acalypha rhomboidea						X							1	A FORB	N
Acer negundo	X	X	X	X		X		X		X			7	TREE	N
Acer rubrum				X									1	TREE	N
Acer saccharinum				X		X							2	TREE	N
Acer saccharum								X			X		2	TREE	N
ACHILLEA MILLIFOLIUM	X	X		X		X	X			X	X		7	P FORB	E
Actinomeris alternifolia	X					X	X		X	X	X	X	7	P FORB	N
Agalinis tenuifolia		X					X						2	A FORB	N
AGROPYRON REPENS			X										1	P GRASS	E
Agropyron trachycaulum unilaterale	X	X		X			X						4	P GRASS	N
AGROSTIS ALBA		X	X	X			X			X	X	X	7	P GRASS	E
Agrostis perennans	X			X			X		X	X	X	X	7	P GRASS	N
Alisma triviale						X	X		X			X	4	P FORB	N
ALLIARIA PETIOLATA	X	X	X	X		X	X	X	X	X	X	X	11	B FORB	E
Allium canadense	X	X		X		X	X	X	X	X	X	X	10	P FORB	N
Allium cernuum	X							X					2	P FORB	N
Allium tricoccum burdickii	X												1	P FORB	N
Alopecurus aequalis							X						1	P GRASS	N
Ambrosia artemisiifolia elatior	X	X		X			X			X	X	X	7	A FORB	N
Amphicarpaea bracteata	X	X		X		X	X	X	X	X	X	X	10	H VINE	N
Andropogon gerardii	X	X		X		X	X				X	X	7	P GRASS	N
Andropogon scoparius				X		X							2	P GRASS	N
Anemonella thalictroides	X			X		X	X	X	X			X	7	P FORB	N
Antennaria neglecta				X		X							2	P FORB	N
Arabis laevigata									X	X			2	B FORB	N
ARCTIUM MINUS	X			X		X	X		X				5	B FORB	E
Arenaria lateriflora	X	X		X		X	X	X	X	X			8	P FORB	N
Arisaema dracontium		X				X				X	X		4	P FORB	N
Arisaema triphyllum	X	X					X		X	X	X	X	7	P FORB	N
Aristida oligantha						X							1	A GRASS	N
Asclepias incarnata			X										1	P FORB	N
Asclepias syriaca	X	X					X	X					4	P FORB	N
Asclepias verticillata				X									1	P FORB	N
Aster lateriflorus									X	X		X	3	P FORB	N
Aster simplex		X											1	P FORB	N
Athyrium filix-femina michauxii	X	X		X		X	X	X	X	X		X	9	CRYPOGAM	N
BARBAREA VULGARIS	X	X	X	X		X	X	X	X	X	X	X	11	B FORB	E
BERBERIS THUNBERGII	X	X	X	X		X	X	X	X	X	X	X	11	SHRUB	E
Bidens aristosa	X	X		X					X	X		X	6	A FORB	N
Bidens cernua				X	X							X	3	A FORB	N
Bidens frondosa	X	X		X			X	X	X			X	7	A FORB	N
Blephilia hirsuta	X					X	X		X	X		X	6	P FORB	N
Boehmeria cylindrica	X	X	X	X	X	X	X	X	X	X	X	X	12	P FORB	N
Botrychium dissectum						X		X		X			3	CRYPOGAM	N
Brachyelytrum erectum						X							1	P GRASS	N
BRASSICA NIGRA				X									1	A FORB	E
BROMUS COMMUTATUS		X	X			X	X			X			5	A GRASS	E

Bromus kalmii	X			X		X							3	P GRASS	N
Bromus latiglumis								X		X		X	3	P GRASS	N
Bromus pubescens	X	X		X		X	X	X	X	X		X	9	P GRASS	N
Cacalia plantaginea	X	X				X	X	X					5	P FORB	N
Calamagrostis canadensis	X	X	X	X	X	X	X	X		X	X	X	11	P GRASS	N
Camassia scilloides	X					X							2	P FORB	N
Campanula americana	X	X				X				X		X	5	A FORB	N
Cardamine bulbosa	X	X							X	X			4	P FORB	N
Cardamine parviflora arenicola	X												1	A FORB	N
Cardamine pensylvanica									X			X	2	B FORB	N
CARDUUS NUTANS				X		X	X						3	B FORB	E
Carex aggregata	X	X					X					X	4	P SEDGE	N
Carex annectens xanthocarpa	X	X	X	X		X	X	X	X	X		X	10	P SEDGE	N
Carex aquatilis		X											1	P SEDGE	N
Carex blanda		X	X	X			X	X	X	X	X	X	9	P SEDGE	N
Carex buxbaumii				X		X		X					3	P SEDGE	N
Carex cephaloidea	X						X		X				3	P SEDGE	N
Carex cephalophora	X			X		X	X	X	X	X	X	X	9	P SEDGE	N
Carex comosa							X						1	P SEDGE	N
Carex conjuncta								X					1	P SEDGE	N
Carex emoryi		X											1	P SEDGE	N
Carex grisea										X	X	X	3	P SEDGE	N
Carex haydenii							X	X					2	P SEDGE	N
Carex hirtifolia						X							1	P SEDGE	N
Carex lacustris					X			X					2	P SEDGE	N
Carex lupulina							X						1	P SEDGE	N
Carex normalis	X					X			X			X	4	P SEDGE	N
Carex pellita	X	X											2	P SEDGE	N
Carex pensylvanica	X	X		X		X	X	X	X	X	X	X	10	P SEDGE	N
Carex radiata							X			X	X		3	P SEDGE	N
Carex rosea	X	X				X	X	X		X	X	X	8	P SEDGE	N
Carex scoparia	X			X	X	X						X	5	P SEDGE	N
Carex shortiana									X				1	P SEDGE	N
Carex squarrosa							X	X			X		3	P SEDGE	N
Carex stipata		X			X	X		X	X			X	6	P SEDGE	N
Carex stricta	X	X		X			X						4	P SEDGE	N
Carex suberecta				X			X				X	X	4	P SEDGE	N
Carex swanii						X				X	X		3	P SEDGE	N
Carex tenera									X		X		2	P SEDGE	N
Carex tribuloides	X					X							2	P SEDGE	N
Carex utrichulata					X	X							2	P SEDGE	N
Carex vulpinoidea		X		X		X		X	X	X		X	7	P SEDGE	N
Carya cordiformis						X				X	X		3	TREE	N
Carya ovata	X	X		X		X	X	X	X	X	X	X	10	TREE	N
CATALPA SPECIOSA						X							1	TREE	E
CELASTRUS ORBICULATUS											X		1	W VINE	E
Celtis occidentalis												X	1	TREE	N
Cephalanthus occidentalis		X	X	X	X	X	X	X	X	X		X	10	SHRUB	N
CERASTIUM VULGATUM	X	X	X	X		X	X	X		X	X	X	10	P FORB	E
Cercis canadensis						X							1	TREE	N
Chenopodium standleyanum	X												1	A FORB	N
CHRYSANTHEMUM LEUCANTHAMUM	X	X		X		X	X		X	X	X	X	9	P FORB	E

CICHORIUM INTYBUS				X								1	P FORB	E
Cicuta maculata	X					X						2	P FORB	N
Cinna arundinacea	X	X		X		X	X	X	X	X	X	10	P GRASS	N
Circaea lutetiana canadensis	X			X		X	X	X				5	P FORB	N
CIRSIUM ARVENSE	X	X	X	X		X	X	X	X	X	X	11	P FORB	E
Cirsium discolor	X			X			X					3	B FORB	N
Cirsium muticum	X	X									X	3	B FORB	N
CIRSIUM VULGARE	X	X	X	X		X	X	X	X	X	X	11	B FORB	E
Claytonia virginica	X	X		X		X	X	X	X	X	X	10	P FORB	N
Convolvulus sepium	X		X			X						3	H VINE	N
Coreopsis tripteris				X		X						2	P FORB	N
Cornus racemosa	X	X					X			X		4	SHRUB	N
Crataegus calpodendron											X	1	TREE	N
Crataegus coccinea	X	X	X	X		X		X	X	X	X	10	TREE	N
Crataegus crus-galli	X	X						X			X	4	TREE	N
Crataegus mollis	X	X	X	X		X	X	X	X	X	X	11	TREE	N
Crataegus punctata		X		X		X	X		X	X	X	8	TREE	N
Cuscuta glomerata										X		1	A FORB	N
Cuscuta gronovii	X	X							X			3	A FORB	N
CYNANCHUM NIGRUM											X	1	H VINE	E
Cyperus ferruginescens										X	X	2	A SEDGE	N
DACTYLIS GLOMERATA	X	X		X		X	X	X	X	X	X	10	P GRASS	E
Danthonia spicata	X	X		X		X	X	X	X	X	X	10	P GRASS	N
DAUCUS CAROTA	X	X	X	X		X				X	X	8	B FORB	E
Dentaria laciniata	X	X		X		X	X	X	X	X	X	10	P FORB	N
Dicentra cucullaria				X		X						2	P FORB	N
Dioscorea villosa	X							X				2	H VINE	N
DIPSACUS SYLVESTRIS		X	X	X							X	4	B FORB	E
Dulichium arundinaceum					X							1	P SEDGE	N
Echinochloa crusgalli		X		X			X				X	4	A GRASS	N
Eleocharis erythropoda	X			X		X	X					4	P SEDGE	N
Eleocharis obtusa		X			X							2	A SEDGE	N
Eleocharis smallii				X			X				X	3	P SEDGE	N
Elymus canadensis				X		X						2	P GRASS	N
Elymus riparius	X						X			X		X	4	P GRASS	N
Elymus villosus		X		X		X	X	X		X	X	X	8	P GRASS	N
Elymus virginicus		X				X	X		X	X		X	6	P GRASS	N
EPIPACTIS HELLEBORINE												X	1	P FORB	E
Equisetum arvense												X	1	CRYPOGAM	N
Erechtites hieracifolia	X	X	X		X	X				X	X	X	8	A FORB	N
Erigeron annuus	X		X	X			X						4	A FORB	N
Erigeron philadelphicus			X							X		X	3	P FORB	N
Erigeron strigosus	X	X	X	X		X	X			X		X	8	B FORB	N
Eryngium yuccifolium	X	X		X		X	X					X	6	P FORB	N
Erythronium albidum	X			X					X			X	4	P FORB	N
EUONYMUS ALATUS				X								X	2	SHRUB	E
EUONYMUS EUROPEAUS						X		X					2	SHRUB	E
Eupatorium altissimum	X			X			X						3	P FORB	N
Eupatorium perfoliatum							X						1	P FORB	N
Eupatorium rugosum	X	X	X	X		X	X	X	X	X	X	X	11	P FORB	N
Eupatorium serotinum	X			X		X	X		X	X	X	X	8	P FORB	N
Euphorbia corollata				X									1	P FORB	N

FESTUCA ELATIOR	X	X	X	X		X		X	X	X	X	X	10	P GRASS	E
Festuca obtusa	X	X		X		X	X	X	X	X	X	X	10	P GRASS	N
Fragaria virginiana						X							1	P FORB	N
Fraxinus americana	X	X				X		X	X	X	X		7	TREE	N
Fraxinus pennsylvanica subintegerrima			X	X		X	X	X	X	X		X	9	TREE	N
Galium aparine	X	X	X	X		X	X	X	X	X		X	10	A FORB	N
Galium concinnum	X	X		X		X	X	X	X	X	X	X	10	P FORB	N
Galium tinctorium	X												1	P FORB	N
Galium trifidum					X								1	P FORB	N
Galium triflorum		X		X		X	X	X	X	X	X	X	9	P FORB	N
Geranium maculatum	X	X				X		X	X		X		6	P FORB	N
Geum canadense	X		X							X	X	X	5	P FORB	N
GLECHOMA HEDERACEA	X	X	X	X		X	X	X	X	X			9	P FORB	E
Glyceria septentrionalis												X	1	P GRASS	N
Glyceria striata	X	X		X		X	X	X	X	X	X	X	10	P GRASS	N
Hackelia virginiana	X	X		X		X	X	X	X	X	X	X	10	B FORB	N
Hedeoma pulegioides	X					X				X	X	X	5	A FORB	N
Helenium autumnale	X	X				X			X	X		X	6	P FORB	N
Helianthus grosseserratus	X			X									2	P FORB	N
Helianthus hirsutus	X												1	P FORB	N
Heracleum maximum	X	X						X					3	P FORB	N
Hibiscus palustris		X											1	P FORB	N
HIERACIUM CAESPITOSUM						X			X	X			3	P FORB	E
HORDEUM JUBATUM		X		X									2	P GRASS	E
Hypericum majus	X												1	A FORB	N
HYPERICUM PERFORATUM				X									1	P FORB	E
Hypericum virginicum fraseri					X								1	P FORB	N
Hypoxis hirsuta						X							1	P FORB	N
Hystrix patula	X	X		X		X	X	X	X	X	X	X	10	P GRASS	N
Impatiens capensis		X	X	X			X	X					5	A FORB	N
Iris virginica shrevei	X	X	X	X	X	X	X	X	X	X			10	P FORB	N
Juglans nigra				X		X			X	X		X	5	TREE	N
Juncus dudleyi	X	X	X	X		X	X		X	X		X	9	P FORB	N
Juncus effusus	X	X	X	X	X		X			X		X	8	P FORB	N
Juncus tenuis						X							1	P FORB	N
Leersia oryzoides	X		X	X		X	X		X			X	7	P GRASS	N
Leersia virginica	X	X	X	X		X	X	X	X	X	X	X	11	P GRASS	N
Lemna minor			X	X	X				X			X	5	A FORB	N
LEONURUS CARDIACA		X	X	X		X	X			X	X	X	8	P FORB	E
Lepidium virginicum	X								X	X			3	A FORB	N
Liatris spicata	X	X		X		X	X			X			6	P FORB	N
Lilium michiganense	X							X					2	P FORB	N
LINARIA VULGARIS				X									1	P FORB	E
Lobelia cardinalis	X	X							X	X			4	P FORB	N
Lobelia siphilitica									X	X			2	P FORB	N
Lobelia spicata	X					X	X						3	P FORB	N
LONICERA TATARICA	X	X		X		X	X	X	X	X	X	X	10	SHRUB	E
Ludwigia polycarpa							X						1	P FORB	N
Luzula multiflora						X							1	P FORB	N
Lycopus americanus	X		X	X	X	X	X	X	X			X	9	P FORB	N
Lycopus uniflorus					X								1	P FORB	N
Lysimachia thyrsiflora					X								1	P FORB	N

Lythrum alatum							X						1	P FORB	N
Malus ioensis	X	X		X		X	X			X	X		7	TREE	N
MALUS PUMILLA	X	X		X		X			X	X	X		7	TREE	E
MEDICAGO LUPULINA				X						X			2	A FORB	E
Melica nitens						X							1	P GRASS	N
Mentha arvensis villosa	X						X						2	P FORB	N
Mimulus ringens												X	1	P FORB	N
Monarda fistulosa	X	X		X		X	X			X		X	7	P FORB	N
MORUS ALBA						X							1	TREE	E
Muhlenbergia frondosa		X					X			X	X		4	P GRASS	N
Muhlenbergia mexicana	X	X					X		X	X	X	X	7	P GRASS	N
Muhlenbergia schreberi										X	X	X	3	P GRASS	N
Muhlenbergia sobolifera	X								X				2	P GRASS	N
Muhlenbergia sylvatica	X	X		X		X	X	X	X	X		X	9	P GRASS	N
Muhlenbergia tenuiflora							X						1	P GRASS	N
NEPETA CATARIA			X										1	P FORB	E
Oenothera biennis							X						1	B FORB	N
Onoclea sensibilis	X		X	X		X		X				X	6	CRYPOGAM	N
Osmorhiza claytonii	X												1	P FORB	N
Ostrya virgniana						X			X	X	X		4	TREE	N
Oxalis europaea	X	X	X	X		X	X	X	X	X	X	X	11	P FORB	N
Oxalis stricta	X		X				X				X		4	P FORB	N
Oxalis violacea	X												1	P FORB	N
Panicum implicatum	X	X		X		X	X			X	X	X	8	P GRASS	N
Panicum latifolium	X	X		X		X	X	X	X	X	X	X	10	P GRASS	N
Panicum virgatum	X			X		X	X				X	X	6	P GRASS	N
Paronychia canadensis						X		X					2	A FORB	N
Parthenocissus quinquefolia	X	X	X	X		X	X	X	X	X	X	X	11	W VINE	N
Penstemon digitalis		X	X	X		X				X			5	P FORB	N
Penthorum sedoides								X					1	P FORB	N
PHALARIS ARUNDINACEA	X	X	X	X	X	X	X	X	X	X	X	X	12	P GRASS	E
PHLEUM PRATENSE				X						X	X		3	P GRASS	E
Phlox divaricata										X			1	P FORB	N
Physostegia virginiana arenaria				X									1	P FORB	N
Pilea pumila	X	X	X	X		X	X	X	X	X	X	X	11	A FORB	N
Plantago rugelii	X	X		X				X		X			5	A FORB	N
POA COMPRESSA	X		X			X	X		X	X	X		7	P GRASS	E
Poa languida				X		X							2	P GRASS	N
Poa palustris	X	X		X		X	X					X	6	P GRASS	N
POA PRATENSIS	X	X	X	X		X		X	X	X	X	X	10	P GRASS	E
Podophyllum peltatum	X	X	X	X		X	X	X	X	X	X	X	11	P FORB	N
Polygala sanguinea							X					X	2	A FORB	N
POLYGONUM CONVOLVULUS										X		X	2	A FORB	E
Polygonum hydropiper	X	X		X		X	X		X	X	X	X	9	A FORB	N
Polygonum hydropiperoides	X		X	X	X		X					X	6	P FORB	N
POLYGONUM PERSICARA	X	X		X		X	X		X	X	X	X	9	A FORB	E
Polygonum punctatum											X		1	A FORB	N
Polygonum sagittatum	X	X	X		X		X	X	X	X		X	9	A FORB	N
Polygonum virginianum				X		X			X	X			4	P FORB	N
Populus deltoides	X	X		X			X		X	X			6	TREE	N
Populus grandidentata								X					1	TREE	N
Populus tremuloides	X									X			2	TREE	N

Potamogeton gramineus					x								1	P FORB	N
Potentilla simplex	x	x		x		x	x	x	x	x	x	x	10	P FORB	N
Prenanthes alba	x					x				x	x	x	5	P FORB	N
Proserpinaca palustris			x		x	x							3	P FORB	N
Prunella vulgaris lanceolata	x	x		x			x					x	5	P FORB	N
Prunus americana	x	x		x		x	x	x				x	7	TREE	N
PRUNUS CERASUS	x												1	TREE	E
Prunus serotina	x	x	x	x		x	x	x	x	x	x	x	11	TREE	N
Pycnanthemum virginianum	x	x		x		x	x	x		x	x	x	9	P FORB	N
PYRUS COMMUNIS							x						1	TREE	E
Quercus alba	x	x	x	x		x	x	x	x	x	x	x	11	TREE	N
Quercus bicolor		x		x		x			x	x	x	x	7	TREE	N
Quercus macrocarpa	x	x	x	x		x	x	x	x	x	x	x	11	TREE	N
Quercus rubra	x	x		x		x	x	x	x	x	x	x	10	TREE	N
Quercus velutina	x	x	x	x		x	x	x	x	x	x	x	11	TREE	N
Ranunculus abortivus	x	x	x	x		x	x		x	x		x	9	A FORB	N
Ranunculus sceleratus												x	1	A FORB	N
Ratibida pinnata				x									1	P FORB	N
RHAMNUS CATHARTICA	x	x	x	x		x	x	x	x	x	x	x	11	SHRUB	E
RHAMNUS FRANGULA		x		x	x	x					x		5	SHRUB	E
Rhus radicans	x	x		x				x	x	x	x	x	8	W VINE	N
Ribes missouriense	x	x				x			x	x	x	x	7	SHRUB	N
ROBINIA PSEUDOACACIA				x		x					x		3	TREE	E
Rorippa palustris fernaldiana	x	x				x	x		x				5	A FORB	N
ROSA MULTIFLORA	x	x	x	x		x	x	x	x	x	x	x	11	SHRUB	E
Rosa setigera				x									1	SHRUB	N
Rubus allegheniensis				x			x						2	SHRUB	N
Rubus occidentalis	x	x				x		x	x	x	x	x	8	SHRUB	N
Rudbeckia hirta	x			x		x	x						4	P FORB	N
Rudbeckia triloba		x											1	A FORB	N
RUMEX ACETOSELLA						x				x	x		3	P FORB	E
RUMEX CRISPUS			x	x									2	P FORB	E
Rumex verticillatus				x									1	P FORB	N
Sagittaria latifolia		x		x	x	x				x			5	P FORB	N
Salix interior		x	x										2	SHRUB	N
Salix nigra		x				x	x					x	4	TREE	N
Sambucus canadensis	x	x	x				x				x		5	SHRUB	N
Sanguinaria canadensis									x				1	P FORB	N
Sanicula gregaria	x	x	x			x			x			x	6	P FORB	N
Scirpus atrovirens	x	x		x		x	x			x		x	7	P SEDGE	N
Scirpus cyperinus	x			x	x	x	x		x			x	7	P SEDGE	N
Scirpus fluviatilis	x	x	x		x	x							5	P SEDGE	N
Scirpus pendulous	x			x		x				x	x	x	6	P SEDGE	N
Scirpus validus									x				1	P SEDGE	N
Scutellaria epilobiifolia	x	x		x	x								4	P FORB	N
Scutellaria lateriflora	x	x		x			x			x	x	x	7	P FORB	N
Scutellaria parvula leonardii						x							1	P FORB	N
Senecio pauperculus							x					x	2	P FORB	N
SETARIA GLAUCA	x	x				x				x	x		5	A GRASS	E
SETARIA VIRIDIS	x	x		x			x	x	x	x	x	x	9	A GRASS	E
Silene virginica	x					x							2	P FORB	N
Sisyrinchium albidum	x	x		x		x				x	x		6	P FORB	N

Sium suave							x		x				2	P FORB	N
Smilacina racemosa	x	x		x		x	x	x	x	x	x		9	P FORB	N
Smilax ecirrhata		x		x			x	x	x	x			6	P FORB	N
SOLANUM CAROLINENSE				x									1	P FORB	E
SOLANUM DULCAMARA			x			x							2	W VINE	E
Solidago altissima	x	x	x										3	P FORB	N
Solidago canadensis		x	x	x									3	P FORB	N
Solidago graminifolia	x	x		x									3	P FORB	N
Solidago juncea				x									1	P FORB	N
Solidago ulmifolia						x							1	P FORB	N
Sorghastrum nutans		x		x		x					x	x	5	P GRASS	N
Sparganium eurycarpum					x								1	P FORB	N
Spartina pectinata	x	x		x		x	x		x				6	P GRASS	N
Specularia perfoliata						x							1	A FORB	N
Sphenopholis intermedia	x	x	x	x		x	x	x		x		x	9	P GRASS	N
Spiraea tomentosa rosea					x								1	SHRUB	N
Spirodela polyrhiza			x		x								2	A FORB	N
Sporobolus heterolepis	x	x		x		x							4	P GRASS	N
STELLARIA MEDIA		x					x	x	x	x	x	x	7	A FORB	E
SYMPHORICARPOS ORBICULATUS	x										x		2	SHRUB	E
Taenidia integerrima				x									1	P FORB	N
TARAXACUM OFFICINALE	x	x	x	x		x	x	x	x	x	x	x	11	P FORB	E
Teucrium canadense	x	x		x			x		x	x			6	P FORB	N
Tilia americana										x	x	x	3	TREE	N
TORILIS JAPONICA								x				x	2	A FORB	E
Tradescantia ohiensis	x	x		x		x			x				5	P FORB	N
TRAGOPOGON PRATENSIS												x	1	B FORB	E
TRIFOLIUM PRATENSE										x		x	2	P FORB	E
TRIFOLIUM REPENS		x					x		x	x		x	5	P FORB	E
Trillium recurvatum	x					x						x	3	P FORB	N
Typha angustifolia		x	x	x								x	4	P FORB	N
Typha latifolia		x	x	x	x	x	x	x					7	P FORB	N
Ulmus americana	x	x	x	x		x		x	x	x	x	x	10	TREE	N
Ulmus rubra						x				x		x	3	TREE	N
Utricularia geminiscapa					x								1	P FORB	N
VERBASCUM BLATTARIA				x							x		2	B FORB	E
VERBASCUM THASPUS							x		x	x			3	B FORB	E
Verbena hastata	x	x		x		x	x					x	6	P FORB	N
Vernonia fasciculata	x			x		x	x			x			5	P FORB	N
Viburnum lentago						x				x		x	3	SHRUB	N
VIBURNUM OPULUS		x											1	SHRUB	E
Viburnum rafinesquianum										x			1	SHRUB	N
VIBURNUM RECOGNITUM						x	x	x	x	x	x	x	7	SHRUB	E
Viola pubescens	x	x				x	x		x	x	x		7	P FORB	N
Viola sagittata	x			x		x		x		x			5	P FORB	N
Viola sororia	x	x		x		x	x	x	x	x	x	x	10	P FORB	N
Viola subsinuata	x					x	x					x	4	P FORB	N
Vitis riparia	x	x	x	x		x	x	x	x	x	x	x	11	W VINE	N
Wolffia columbiana			x		x								2	A FORB	N

X means species was detected in management unit

Number of species in unit 186 164 77 179 35 186 161 107 127 161 118 161

Appendix 2. Species on previous lists that were NOT detected in 2001-02.

	Lost from 1959 to 1985
Actaea pachypoda	
Agastache nepetoides	
Agrimonia gryposepala	
Agrostis hyemalis	
Ambrosia trifida	X
Apios americana	X
Apocynum androsaemifolium	X
Aronia prunifolia	X
Asclepias purpurascens	
Asclepias tuberosa	
Aster azureus	
Aster ericoides	
Aster novae-angliae	
Baptisia leucantha	
Campanula aparinoides	
CANNABIS SATIVA	
Cassia fasciculata	
Celastrus scandens	X
Chenopodium hybridum gigantospermum	
Cirsium altissimum	
COMMELINA COMMUNIS	
CONVALLARIA MAJALIS	
Convolvulus spithamaeus	
Cornus obliqua	
Corylus americana	
Cryptotaenia canadensis	
Desmodium canadense	
DIANTHUS ARMERIA	
Dodecatheon meadia	
Echinochloa walteri	
Eragrostis capillaris	X
Eragrostis hypnoides	
Euphorbia maculata	X
Fraxinus pennsylvanica	
GALINOSOGA CILIATA	X
Gentiana andrewsii	
Geum laciniatum trichocarpum	
Gnaphalium obtusifolium	
Goodyera pubescens	
Gratiola neglecta	
Hieracium scabrum	
Krigia biflora	
Lathyrus palustris	
Lespedeza capitata	
Liatris aspera	
Liatris pycnostachya	X
Liatris scariosa nieuwlandii	
Lippia lanceolata	
Lobelia inflata	
Ludwigia alternifolia	X

Lysimachia lanceolata	X
MELILOTUS ALBA	X
MELILOTUS OFFICINALIS	
Menispermum canadense	
Osmunda regalis	X
Oxypolis rigidior	
Parthenium integrifolium	
PASTINACA SATIVA	
Pedicularis canadensis	
Phlox glaberrima interior	
Phlox pilosa	
Phryma leptostachya	
PHYSALIS PENDULA	X
Physocarpus opulifolius	
Phytolacca americana	
PLANTAGO MAJOR	X
POA TRIVIALIS	
Potentilla palustris	X
POTENTILLA RECTA	X
Prunus virginiana	
Pteridium aquilinum	X
Quercus imbricaria	
Ranunculus flabellaris	
Ranunculus septentrionalis	
Rhus glabra	
Rhus typhina	
Rudbeckia subtomentosa	
SAPONARIA OFFICINALIS	X
Scrophularia marilandica	
Silene stellata	
Silphium integrifolium deamii	X
Silphium perfoliatum	X
Silphium terebinthinaceum	
Smilacina stellata	
Solidago nemoralis	
Solidago rigida	
Spiranthes cernua	
SPOROBOLUS ASPER	
Stachys tenuifolia hispida	
Staphylea trifolia	
STELLARIA GRAMINEA	
Urtica procera	
Vaccinium macrocarpon	X
Verbena urticifolia	
Vernonia missurica	X
Veronicastrum virginicum	
Vicia americana	
Vicia caroliniana	
Zizia aurea	X

Species with an X to the right were on Swink's 1959 list but have never been seen within CSNP by myself.