

CITY OF WINDSOR

# TALLGRASS PLANT COMMUNITY ASSESSMENT OJIBWAY PRAIRIE COMPLEX

SEPTEMBER 29, 2023



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CITY OF WINDSOR

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# 1 INTRODUCTION

## 1.1 BACKGROUND

WSP Environment and Infrastructure Canada Limited (WSP) was retained by the City of Windsor (the City) to undertake an updated botanical study in tallgrass plant communities that were originally assessed by Paul Pratt and others in the mid 1970s and published in *A Preliminary Life Science Inventory of the Ojibway Prairie Complex and Surrounding Area* (Pratt, 1979). The purpose of the life sciences inventory and report was to provide a detailed description of the natural resources in the area and to serve as a basis for future natural heritage protection and planning. At the time, the Ojibway Prairie Complex included only Ojibway Park, owned by the City, and the Ojibway Prairie Provincial Nature Reserve, owned by the Ministry of Natural Resources. Tallgrass Prairie Heritage Park, although not part of the Ojibway Prairie Complex, was included in the “core study area” and the inventory results incorporated into the report. Portions of other natural areas including Black Oak Heritage Park and Spring Garden Natural Area were also visited, but only qualitatively described.

The first evaluation of tallgrass communities in the Ojibway Prairie Complex was conducted in October 1975, with follow-up evaluations in summer 1976. The major vegetation communities in the Ojibway Prairie Provincial Nature Reserve were tallgrass prairie; Swamp Pin Oak (*Quercus palustris*) and Black Oak (*Quercus velutina*) savannah; and oak forest inter-mixed with forb-dominated prairies, old fields and recently abandoned agricultural fields. In Ojibway Park, Swamp Pin Oak forest and oak savannah were the dominant vegetation communities, with Black Oak and Pignut Hickory (*Carya ovalis*, S3) forest comprising drier portions of the site. Vegetation communities were mapped and within the different communities, representative homogenous stands of vegetation were identified. Botanical inventories were undertaken in these stands and summarized to create a detailed description of the plant community including composition, dominant species, and successional characteristics. In 2022, approximately 46 years later, WSP revisited selected stands evaluated by Pratt (1979) to collect updated information on the plant community and floristic quality.

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## 1.2 PURPOSE AND OBJECTIVE

Significant changes have occurred to the boundaries of the Ojibway Prairie Complex since the 1970's. The City acquired significant tracts of undeveloped land which were added to the complex and protected under natural heritage designations. Black Oak Heritage Park, Ojibway Park, Tallgrass Prairie Heritage Park, Ojibway Prairie Provincial Nature Reserve, Spring Garden Natural Area, and the Oakwood Natural Area form the current Ojibway Prairie Complex, comprising over 360 hectares (ha) of remnant tallgrass prairie, savannah, woodland, forest and wetland ecosystems. Vegetation management has occurred over the decades to halt succession and help maintain the rare tallgrass communities; however, the

original prairie stands assessed by Pratt (1979) have not been re-evaluated. WSP understands the City is interested in creating an updated baseline condition of the remnant tallgrass communities to help better inform their long-range planning and ongoing management decisions, especially in the context of the proposed National Urban Park in Windsor. As such, WSP consulted with City of Windsor naturalists (Karen Cedar and Paul Pratt) to select a subset of tallgrass remnants to be included in this study. A total of 25 vegetation monitoring plots were established in the same stands first evaluated by Paul Pratt in 1975 and 1976, or in nearby, representative stands. Subsequent botanical surveys in the Ojibway Prairie Provincial Nature Reserve by Pratt in 1984-1985, 1990-1992 and 2008 were conducted in seven permanent monitoring plots that were revisited in these years. These plots also overlapped with tallgrass stands originally evaluated in 1975-1976. WSP was able to locate and assess two of the seven plots for this study. WSP conducted the first round of botanical surveys in fall 2022, recording data on plant community structure, species diversity and floristic quality.

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## 2 METHODS

### 2.1 STUDY AREAS

Vegetation monitoring plots were established in five natural areas in the Ojibway Prairie Complex: Ojibway Prairie Provincial Nature Reserve, Ojibway Park, Tallgrass Prairie Heritage Park, Black Oak Heritage Park and Spring Garden Natural Area.

In the Ojibway Prairie Provincial Nature Reserve, plots were located in the remnant tallgrass stands where the original study by Pratt (1979) was conducted. If corner stakes from Pratt's subsequent monitoring studies (1984-1985, 1990-1992 and 2008) were found, the plot was re-established in that exact location. If the corner stakes could not be found, then the plot was placed within the same stand, or in a nearby stand location that continued to represent the tallgrass ecosite (i.e., prairie, savannah or woodland). A total of 10 plots were evaluated in the Ojibway Prairie Provincial Nature Reserve, six were placed in tallgrass prairie, three in tallgrass savannah, and one in tallgrass woodland.

In Ojibway Park, two monitoring plots were established, one in tallgrass prairie and one in tallgrass woodland. These plot locations were not within the original prairie stands evaluated by Pratt (1979), as those areas have now succeeded to forest and swamp. However, the historical stand information has been summarized in the results section below to provide background on the plant community characteristics from that time period.

In Tallgrass Prairie Heritage Park, three monitoring plots were established, two within remnant tallgrass prairie and one in tallgrass woodland. Similar to Ojibway Park, these plot locations were not within the original prairie stand evaluated by Pratt (1979), which is now a forest community. However, the historical stand information has been summarized in the results section below to provide background on the plant community characteristics from that time period.

Lastly, Black Oak Heritage Park and Spring Garden Natural Area were only qualitatively evaluated by Pratt (1979). As such, all the plot locations established in 2022 in these natural areas represent new assessments of the tallgrass communities. Three monitoring plots were established in Black Oak Heritage Park, two in tallgrass prairie and one in an opening in oak-hickory deciduous forest. Seven monitoring plots were established in Spring Garden Natural Area, all the plots were located in tallgrass prairie, or a combination of tallgrass prairie and meadow marsh, or tallgrass prairie and successional thicket.

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### 2.2 VEGETATION SURVEYS

Each monitoring plot was approximately 30 meters (m) by 10 m, for a total area of 300 m<sup>2</sup>. The plant community was evaluated in this area using a grid-based method and a 1 m<sup>2</sup> sampling quadrat. A random selection of 20 x 1 m<sup>2</sup> grid squares were assessed for plant species richness and percent cover. The frequency of occurrence for each species in the monitoring plot was generated by dividing the number of quadrats containing the species

by the total number of quadrats. Dominant species were determined by considering both cover and frequency of occurrence. Field surveys were conducted in October 2022. Plants were identified to the highest taxonomic level possible (i.e., species or subspecies) given the state of plant maturity at the time of the surveys. In some instances, the plant material available only permitted identification to genus. The timing of these surveys did preclude the flowering and identification of spring forbs and perhaps some summer species as well, which does affect the results of these surveys. However, the data represent the start of building a plant community database for these rare remnant stands and will help inform future management decisions. All species lists are provided in Appendix A.

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## 2.3 FLORISTIC QUALITY ASSESSMENT

For each monitoring plot, a Floristic Quality Assessment (FQA; Oldham et al., 1995) was completed. Each plant species present in the plot was identified as native or exotic/non-native and assigned a Coefficient of Conservatism (CC), which ranged from 0 to 10 (Oldham et al., 1995). Species that have little or no fidelity to natural ecosystems and occur widely in a variety of altered and unaltered landscapes have a lower CC value (e.g., 0-1). In contrast, species that show a very high association with unaltered natural ecosystems and do not occur in altered landscapes have a high CC value (e.g., 9-10). A majority of the total native flora has a CC of 4 or greater.

The CC values for each species were used to calculate a Mean CC and an overall Floristic Quality Index (FQI) for each monitoring station. The Mean CC is the average conservatism value of all species in the plot, which is then multiplied by the square root of the total number of plant species (n) in the plot to yield the FQI. The square root of (n) is used as a multiplier to transform the Mean CC and allow for better comparison of the FQI between large sites with a high number of species and small sites with fewer species. Therefore, it is worth noting that sites (or plots) with the same or similar Mean CC may have different FQI values and sites (or plots) with the same or similar FQI values may have different Mean CC because of species richness.

For the application of determining remnant and/or natural area quality in the monitoring sites, Mean CC or FQI values can be used. If a Mean CC value is 3.5 or higher, or the FQI value is 35 or more, this suggests the site has sufficient floristic quality to be a remnant of at least marginal natural area quality. If the Mean CC value is 4.5 or higher, or the FQI value is 50 or more, then it is almost certain that the site has remnant natural area potential (Wilhelm and Masters, 1995) and is a significant component of Ontario's native biodiversity and natural landscapes. For other sites with Mean CC values below 3.5 and FQI values between 20 and 35, they may still be considered moderate to high quality, especially for the purposes of restoration (Herman et al., 2001).

In this study, Mean CC values were used for describing floristic quality rather than FQI values. Research has shown that FQI values are strongly influenced by species richness, especially when species richness is low, which may be related to a number of factors such as the size and physical characteristics of the site or sample area, sample intensity, species detection, etc. Mean CC values appear to be more immune to the influence of these factors (Spyreas,

2019). Given the timing of field surveys (October) and sampling design of this study, Mean CC values were determined to be the better indicator of floristic quality at this time.

Results of the FQA are provided for each monitoring plot in their respective subsections below. For the analysis, WSP used a modified FQA excel program developed by Dan Lebedyk at the Essex Region Conservation Authority (ERCA) called SOFIA (Southern Ontario Floral Inventory Analysis). The output from this program provides data on the number of native species and exotic species, plant physiognomy, rarity, wetland status, and tallgrass indicator status (Lebedyk, 2021).

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## 3 RESULTS AND DISCUSSION

### 3.1 OJIBWAY PRAIRIE PROVINCIAL NATURE RESERVE

The Ojibway Prairie Provincial Nature Reserve (OPPNR) was first studied intensively by Pratt and others in the *Preliminary Life Sciences Inventory of the Ojibway Prairie Complex and Surrounding Area* (Pratt, 1979). Prior to this, the land in and around the OPPNR was primarily undisturbed or agricultural fields and farmsteads. Agricultural activity stemmed from farms along Malden Road and in large fields along Matchett Road. Still, open tallgrass prairie, savannah and woodland were present adjacent to these agricultural fields. The OPPNR was characterized and mapped as a mosaic of recently abandoned fields, old fields, forb prairie, tallgrass prairie, oak savannah, thicket and Swamp Pin Oak forest.

WSP revisited these areas approximately 50 years later to evaluate current day species richness and diversity. Monitoring plots were placed in representative stands of these different plant communities (Figure 3-1). Monitoring plot results have been organized according to their original plant community characterization described by Pratt (1979).

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#### 3.1.1 RECENTLY ABANDONED AGRICULTURAL FIELDS

Historical aerial images indicate that a relatively large portion of the OPPNR was farmed until about 1974 with smaller areas remaining in agriculture until about 1977. Once abandoned, these fields became quickly dominated by a wide variety of exotic and native weedy species. At the time of their evaluation by Pratt, recently abandoned fields were identified as lands that were used as cropland within the previous five years. WSP established three monitoring plots in historical stands #19, #22 and #30 (Pratt, 1979). Today, these stands have been undisturbed for approximately 50 years and are now characterized as fresh-moist tallgrass prairie plant communities (Table 3-1). The paragraphs below include a summary of the plant community in the respective stands in 1976 and 2022.

Monitoring Plot A is centrally located adjacent to Matchett Road. When first evaluated in 1976, the stand (#19) was dominated by Common Ragweed (*Ambrosia artemisiifolia*), Rough Cocklebur (*Xanthium strumarium*), Canada Horseweed (*Erigeron canadensis*), Redtop (*Agrostis gigantea*), and a variety of common sedges and rushes. Common native forbs included Canada Goldenrod (*Solidago canadensis*), Large St-John's-wort (*Hypericum majus*) and Philadelphia fleabane (*Erigeron philadelphicus*). Currently, this tallgrass prairie stand is comprised of forbs (18), graminoids (7) and woody shrubs and vines (4). The dominant species is Big Bluestem (*Andropogon gerardii*), followed by Tall Goldenrod (*Solidago altissima*), Northern Dewberry (*Rubus flagellaris*) and Virginia Mountain-mint (*Pycnanthemum virginianum*). There were a variety of other frequently observed forbs including Wild Bergamot (*Monarda fistulosa*), Wild Carrot (*Daucus carota*), Rough-stemmed Goldenrod (*Solidago rugosa*), Canada Tick-trefoil (*Desmodium canadense*), Grass-leaved Goldenrod (*Euthamia graminifolia*) and White Heath Aster (*Symphyotrichum ericoides*). Although not dominant, warm season grasses like Old Switch Panicgrass (*Panicum virgatum*) and Yellow

Indiangrass (*Sorghastrum nutans*) were also present. There were two provincially rare species, Tall Tickseed (*Coreopsis tripteris*; S1S2) and Grass-leaved Rush (*Juncus marginatus*; S3), and 14 tallgrass indicators, comprising 56% of the species richness. The FQA results indicate that this tallgrass prairie stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. The Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Monitoring Plot B is located south of Plot A and is also adjacent to Matchett Road. When first evaluated in 1976, the stand (#22) was also dominated by exotic and common native species such as Redtop, Philadelphia Fleabane, Common Ragweed (*Ambrosia artemisiifolia*), Dudley's Rush (*Juncus dudleyi*) and Canada Goldenrod. Today, this tallgrass prairie stand is comprised primarily of forbs (20), followed by grasses (4) and woody species (3). Despite the high diversity of forbs, the area was dominated by warm season grasses such as Big Bluestem, Little Bluestem (*Schizachyrium scoparium*) and Yellow Indiangrass. Frequently encountered forbs included Tall Goldenrod, White Heath Aster, Wild Bergamot, Tall Tickseed (S1S2), and Hoary Puccoon (*Lithospermum canescens*; S3). There were five provincially rare species including two notable forbs that are also quite rare in the Ojibway Prairie Complex, Prairie Rosinweed (*Silphium terebinthinaceum*; S1) and Compass Plant (*Silphium laciniatum*; S1). In addition, 19 species were considered tallgrass indicators, comprising 73% of the species richness. Consistent with these results, the FQA indicates that this tallgrass prairie stand has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. Lastly, the Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Lastly, Plot C is located in the southwest portion of the OPPNR adjacent to Sprucewood Avenue. When first evaluated in 1976, the stand (#30) was dominated by cool-season grasses such as Quackgrass (*Elymus repens*), Redtop and Canada Bluegrass (*Poa canadensis*). The forbs were primary exotic and similar to other recently abandoned agricultural fields. Today the stand is comprised primarily of forbs and ferns (20), followed by graminoids (7) and woody plant species (5). The dominant species include Yellow Indiangrass, Big Bluestem, Tall Goldenrod, Virginia Mountain-mint, Northern Dewberry and Rough-leaved Dogwood (*Cornus drummondii*). Other frequently observed species were Redtop, Riverbank Grape (*Vitis riparia*), Wild Bergamot, Muhly grass (*Muhlenbergia* sp.), Canada Tick-trefoil and Horsetail (*Equisetum* sp.). There were four provincially rare species including one SAR, Dense Blazing-star (*Liatris spicata*; Threatened (THR)). There were also 15 tallgrass indicator species, comprising 52% of the species richness. The FQA results also indicate that this tallgrass prairie stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. Lastly, the Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Figure Redacted



Table 3-1: Plant Community Characteristics in OPPNR Monitoring Plots - Recently Abandoned Agricultural Fields

| Location        |                 | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Indicator Species |                             | Coefficient of Wetness (CW) |                     |
|-----------------|-----------------|------------------|--------|------------|---------------|----------------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022) | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                      | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| A               | TPO2-1          | 21               | 4      | 2          | 27            | 4.43                             | 3.72                | 14                          | 56                          | 1.19                        | 1.32                |
| B               | TPO2-1          | 24               | 2      | 1          | 27            | 5.79                             | 5.35                | 19                          | 73                          | 1.29                        | 1.27                |
| C               | TPO2-1          | 24               | 5      | 3          | 32            | 4.96                             | 4.10                | 15                          | 52                          | 1.42                        | 1.55                |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

Compared to the plant community in 1976, it appears the plant community in 2022 consists of a greater overall proportion of native species, especially conservative forb species and warm season grasses. A comparison of the most common, widespread species across the recently abandoned agricultural fields in 1976 (5 stands sampled) with the same or similar areas in 2022 (3 stands sampled) illustrates the improvement in the plant community over time (Table 3-2). There are several reasons for this, including protection from anthropogenic disturbance, occasional prescribed burns, supplemental seeding with native species, and regeneration of species from adjacent natural remnants. In the future, the frequent occurrence of woody species should be monitored and controlled to prevent succession of the prairie into thicket.

Table 3-2: Widespread Species Recorded in Recently Abandoned Agricultural Fields in 1976 and 2022

| 1976                    |                           |                            | 2022               |                           |                            |
|-------------------------|---------------------------|----------------------------|--------------------|---------------------------|----------------------------|
| Common Name             | Presence <sup>1</sup> (%) | Frequency <sup>2</sup> (%) | Common Name        | Presence <sup>1</sup> (%) | Frequency <sup>2</sup> (%) |
| Redtop                  | 100                       | 66                         | Tall Goldenrod     | 100                       | 85                         |
| Philadelphia Fleabane   | 100                       | 64                         | Northern Dewberry  | 100                       | 83                         |
| Common Evening Primrose | 100                       | 42                         | Big Bluestem       | 100                       | 70                         |
| Canada Bluegrass        | 100                       | 32                         | Yellow Indiangrass | 100                       | 60                         |

| 1976                  |                              |                               | 2022                   |                              |                               |
|-----------------------|------------------------------|-------------------------------|------------------------|------------------------------|-------------------------------|
| Common Name           | Presence <sup>1</sup><br>(%) | Frequency <sup>2</sup><br>(%) | Common Name            | Presence <sup>1</sup><br>(%) | Frequency <sup>2</sup><br>(%) |
| Wild Carrot           | 100                          | 28                            | Virginia Mountain-mint | 100                          | 52                            |
| Sulphur Cinquefoil    | 100                          | 20                            | Wild Bergamot          | 100                          | 50                            |
| Common Ragweed        | 80                           | 66                            | Grey Dogwood           | 100                          | 33                            |
| Old Switch Panicgrass | 80                           | 50                            | Wild Carrot            | 100                          | 33                            |
| Canada Goldenrod      | 80                           | 48                            | White Heath Aster      | 100                          | 32                            |
| Dudley's Rush         | 80                           | 44                            | Redtop                 | 100                          | 32                            |
| Hedge False Bindweed  | 80                           | 24                            | Tall Tickseed          | 100                          | 18                            |
| Large St. John's-wort | 60                           | 32                            | Canada Tick-trefoil    | 100                          | 15                            |
| Quackgrass            | 60                           | 28                            | Swamp Agrimony         | 100                          | 8                             |
| Black-eyed Susan      | 60                           | 24                            | Black-eyed Susan       | 100                          | 7                             |
| Old-field Cinquefoil  | 60                           | 24                            | Foxglove Beardtongue   | 100                          | 7                             |

Notes: <sup>1</sup> - The percentage of stands/sampling locations where the species was recorded; <sup>2</sup> - The frequency of species occurrence across all sampling quadrats.

### 3.1.2 FORB PRAIRIES

At the time of sampling in 1976, the existing forb prairies in the OPPNR were described as lands dominated by native wildflowers, with at least two dominant species considered to be prairie indicators (Pratt, 1979). These forb prairie sites were likely disturbed at some point in time but were considered relatively untouched for at least thirty (30) years prior to their sampling. Today, these sites would be considered undisturbed for over 75 years. WSP established three monitoring plots in historical forb prairie stands #1, #15 and #26 (Pratt, 1979), and one additional plot in a forb prairie long Malden Road. Today, these stands are characterized as fresh-moist tallgrass prairie and dry Black Oak tallgrass savannah ecosystems (Table 3-3). The paragraphs below include a summary of the plant community in the respective stands in 1976 and 2022.

Monitoring Plot D is centrally located within the OPPNR. When this stand (#26) was first evaluated in 1976, it was characterized as a dry-mesic forb prairie dominated by blackberry (*Rubus* sp.), Grey-stemmed Goldenrod (*Solidago nemoralis*), Flowering Spurge (*Euphorbia corollata*), White Heath Aster and Early Goldenrod (*Solidago juncea*). There were also frequently noted grass species such as Old Switch Panicgrass, Canada Bluegrass, Kentucky Bluegrass (*Poa pratensis*), and Redtop. In 2022, this stand was characterized as a fresh-moist tallgrass prairie. Species richness is comprised mostly of herbaceous forbs, ferns and vines

(20), followed by graminoids (10) and woody plants (11). The dominant species were Yellow Indiangrass, Bluejoint Reedgrass (*Calamagrostis canadensis*), Slender Fragrant Goldenrod (*Euthamia caroliniana*, S1), Sensitive Fern (*Onoclea sensibilis*), Dense Blazing-star (THR), Virginia Mountain-mint and Swamp Agrimony (*Agromonia parviflora*). Frequently observed woody species included Grey Dogwood (*Cornus racemosa*) and Northern Dewberry. There were five provincially rare species present including two SAR, Dense Blazing-star (THR) and Riddell's Goldenrod (*Solidago riddellii*, SC). There were also 18 tallgrass indicator species, comprising 50% of the species richness. The FQA results indicate that this stand has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly wet tendencies.

Monitoring Plot E is located just south of Titcombe Trail and east of Titcombe Drain, within the hydro power-line corridor. The power-line corridor was constructed in 1974 and was quickly recolonized by native plants. By 1976, the stand (#1) was characterized as a mesic forb prairie. In low-lying areas, Broad-leaved Cattail (*Typha latifolia*), Narrow-leaved Cattail (*Typha angustifolia*), Torrey's Rush (*Juncus torreyi*), Toad Rush (*Juncus bufonius*) and Large St. John's-wort (*Hypericum majus*) were common. Otherwise, the dominant species included Tall Tickseed (S1S2), White Heath Aster, Canada Bluegrass, Canada Goldenrod and Early Goldenrod. Today, this tallgrass prairie is comprised mostly of herbaceous forbs, ferns, and vines (18), followed by woody plants (9) and graminoids (8). The dominant species is Big Bluestem, with lesser cover of Tall Goldenrod, Grass-leaved Goldenrod, Rough-stemmed Goldenrod, Virginia Mountain-mint, Bracken Fern (*Pteridium aquilinum*) and a sedge (*Carex* sp.). Other frequently encountered species included Northern Dewberry, Old Switch Panicgrass and Yellow Indiangrass. There were two provincially rare species present, including one SAR, Dense Blazing-star (THR). There were also 15 tallgrass indicator species, comprising 43% of the species richness. The FQA results indicate that this stand has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. Lastly, the Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Monitoring Plot F is located just south of Titcombe Trail and west of Titcombe Drain. Plot F appears to be closest to historical stand #15, which was characterized as a dry-mesic forb prairie in 1976. The dominant species in this area were Whip Nutrush (*Scleria triglomerata*, S1), Hoary Puccoon (S3) and Kentucky Bluegrass. Other frequently encountered species included Dense Blazing-star (THR), Tall Tickseed (S1S2), White Heath Aster, Redtop, and Round-fruited Panicgrass (*Dichanthelium sphaerocarpon*, S3). In 2022, historical stand #15 is now characterized as a fresh-moist tallgrass prairie and Plot F is in a mesic inclusion in the neighboring dry Black Oak tallgrass savannah. Species richness in Monitoring Plot F is mostly forbs, ferns and vines (24), followed by woody plants (11) and graminoids (4). The dominant species were Big Bluestem, Bluejoint Reedgrass and Tall Goldenrod. Other frequently encountered species included Virginia Mountain-mint, Yellow Indiangrass, Spotted Joe Pyeweed (*Euthrochium maculatum*) and dogwood (*Cornus* sp.). There were four provincially rare species present including one SAR, Dense Blazing-star (THR). There were also 17 tallgrass indicator species, comprising 50% of the species richness. The FQA results indicate that this

stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. The Mean CW of plant species indicates that the vegetation community exhibits slightly mesic tendencies.

Monitoring Plot G is in the northeast portion of the OPPNR, in an area that was outside the property boundary in the 1970's. Historically this area along Malden Road included greenspace and a baseball diamond, but it was most likely a forb prairie before that. Today this section of the OPPNR is characterized as a fresh-moist tallgrass prairie comprised mostly of forbs (30), graminoids (13), and a few trees and shrubs (3). The dominant species were Big Bluestem, Swamp Agrimony, Redtop, Yellow Indiangrass and Dense Blazing Star (THR). Other frequently encountered species are typical of more recently disturbed habitat, including Wild Carrot, Smooth Scouring-rush (*Equisetum laevigatum*), Black Medic (*Medicago lupulina*) and Canada Thistle (*Cirsium arvense*). Nonetheless, there were still five provincially rare species recorded including two SAR, Willow-leaved Aster (*Symphyotrichum praealtum*; THR) and Dense Blazing-star (THR). In addition, there were 19 tallgrass indicators, comprising 42% of the species richness. Further, the FQA results indicate that this tallgrass prairie stand has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Table 3-3: Plant Community Characteristics in OPPNR Monitoring Plots – Forb Prairies

| Location        |                 | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Indicator Species |                             | Coefficient of Wetness (CW) |                     |
|-----------------|-----------------|------------------|--------|------------|---------------|----------------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022) | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                      | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| D               | TPO2-1          | 33               | 3      | 5          | 41            | 4.76                             | 4.36                | 18                          | 50                          | -0.82                       | -0.62               |
| E               | TPO2-1          | 31               | 2      | 2          | 35            | 4.81                             | 4.52                | 15                          | 43                          | 0.65                        | 0.79                |
| F               | TPS1-1          | 30               | 4      | 5          | 39            | 4.97                             | 4.38                | 17                          | 50                          | 0.20                        | 0.53                |
| G               | TPO2-1          | 31               | 13     | 2          | 46            | 4.39                             | 3.09                | 19                          | 42                          | 1.35                        | 1.80                |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

According to Pratt (1979) the forb prairie stands in 1976 were incredibly diverse with a wide array of showy wildflowers. The original stands evaluated in 1976 averaged approximately 75 species, which is much higher than that recorded in 2022 (40 species). The late timing of field surveys likely contributed to this difference. If additional surveys are conducted in spring-summer, species diversity would be expected to improve.

A comparison of the most widespread species across the dry-mesic forb prairies in 1976 (5 stands sampled) with the same or similar areas in 2022 (4 stands sampled) does however illustrate a potential change in the plant physiognomy of these areas (Table 3-4). In 1976, forb species overwhelmingly dominated the stands whereas in 2022, native grasses were more frequently encountered, as were several woody species, including native dogwoods and willow.

Table 3-4: Widespread Species Recorded in Dry-Mesic Forb Prairies in 1976 and 2022

| 1976                    |                              |                               | 2022                     |                              |                               |
|-------------------------|------------------------------|-------------------------------|--------------------------|------------------------------|-------------------------------|
| Common Name             | Presence <sup>1</sup><br>(%) | Frequency <sup>2</sup><br>(%) | Common Name              | Presence <sup>1</sup><br>(%) | Frequency <sup>2</sup><br>(%) |
| White Heath Aster       | 100                          | 94                            | Tall Goldenrod           | 100                          | 53                            |
| Canada Bluegrass        | 100                          | 80                            | Virginia Mountain-mint   | 100                          | 53                            |
| Smooth Aster            | 100                          | 80                            | Dense Blazing-star       | 100                          | 41                            |
| Flowering Spurge        | 100                          | 70                            | Swamp Agrimony           | 100                          | 40                            |
| Smooth Scouring-rush    | 100                          | 69                            | Yellow Indiangrass       | 100                          | 40                            |
| Tall Tickseed           | 100                          | 64                            | Grey Dogwood             | 100                          | 19                            |
| Old-field Cinquefoil    | 100                          | 62                            | Tall Tickseed            | 100                          | 14                            |
| Redtop                  | 100                          | 61                            | Smooth Aster             | 100                          | 11                            |
| Wild Bergamot           | 100                          | 58                            | White Heath Aster        | 100                          | 11                            |
| Rubus sp.               | 100                          | 55                            | Big Bluestem             | 80                           | 73                            |
| Gray-stem med Goldenrod | 100                          | 51                            | Bluejoint Reedgrass      | 80                           | 38                            |
| Dense Blazing-star      | 100                          | 51                            | Northern Dewberry        | 80                           | 35                            |
| Black-eyed Susan        | 100                          | 49                            | Rough-stem med Goldenrod | 80                           | 28                            |
| Field Pussetoes         | 100                          | 49                            | Grass-leaved Goldenrod   | 80                           | 22                            |
| Canada Goldenrod        | 100                          | 48                            | Prairie Willow           | 80                           | 20                            |
| Sky Blue Aster          | 100                          | 44                            | Canada Tick-trefoil      | 80                           | 10                            |
| Canada Tick-trefoil     | 100                          | 43                            | Silky Dogwood            | 80                           | 10                            |

Notes: <sup>1</sup> - The percentage of stands/sampling locations where the species was recorded; <sup>2</sup> - The frequency of species occurrence across all sampling quadrats.

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### 3.1.3 TALLGRASS PRAIRIE

At the time of sampling in 1976, it was acknowledged that most of the tallgrass prairie in and around the OPPNR had already been lost to agriculture. None of the drier phases could be found, leaving only wet to wet-mesic prairies available to evaluate. The wet prairie and wet-mesic prairie stands were structurally similar, characterized by scattered, even aged Swamp Pin Oaks and pockets of native thicket-forming shrubs and small trees such as Grey Dogwood, American Hazelnut (*Corylus americana*) and Red Ash (*Fraxinus pennsylvanica*). The groundcover layer was dominated by Prairie Cordgrass (*Sporobolus michauxianus*) and Big Bluestem, with Old Switch Panicgrass and Bluejoint Reedgrass often noted. The common forbs included a variety of goldenrods and asters. Low-lying pockets supported more ferns and sedges.

WSP established two monitoring plots near historical wet/wet-mesic prairie stands #9 and #11 (Pratt, 1979). In 2022, these stands were characterized as dry Black Oak tallgrass savannah and fresh-moist tallgrass savannah ecosystems (Table 3-5). Although a monitoring plot was placed in dry Black Oak tallgrass savannah, the micro-topography of the area is a series of dry, sandy ridges surrounded by moist depressions. The monitoring plot was established in a low-lying area to better represent a wet-mesic tallgrass community. The paragraphs below include a summary of the plant community in the respective stands in 1975 and 2022.

Monitoring Plot H is located in the northeast portion of the OPPNR, in an opening in fresh-moist tallgrass savannah. When this stand (#9) was first evaluated in 1975, it was dominated by Prairie Cordgrass, Big Bluestem, Steeplebush (*Spiraea tomentosa*), Sensitive Fern, Bluejoint Reedgrass, and Virginia Mountain-mint. In 2022 species richness is comprised mostly of forbs, ferns and herbaceous vines (20), followed by woody plants (10) and graminoids (8). The dominant species is Big Bluestem, with lesser cover of Tall Goldenrod, Bluejoint Reedgrass, Bracken Fern, Northern Dewberry, Flat-top White Aster (*Doellingeria umbellata*) and Silky Dogwood (*Cornus obliqua*). There were three provincially rare species and a total of 12 tallgrass indicators, comprising 34% of the species richness. The FQA results indicate that this stand has a high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly wet tendencies.

Monitoring Plot I is located just south of Titcombe Trail in the northwest portion of the OPPNR. The monitoring plot is in a low-lying area surrounded by dry Black Oak tallgrass savannah. The closest historical prairie stand to this area is #11, evaluated in 1971. The most frequently noted grass species were Prairie Cordgrass, Canada Bluegrass and Bluejoint Reedgrass, while the most frequent forbs were Canada Tick-trefoil, Swamp Thistle (*Cirsium muticum*), Culver's Root (*Veronicastrum virginicum*; S2) and Wild Strawberry (*Fragaria virginiana*). In 2022 species richness is comprised mostly of forbs, ferns and herbaceous vines (25), followed by graminoids (7) and woody plants (6). The dominant species included Tall Goldenrod, Bluejoint Reedgrass, Big Bluestem, Prairie Cordgrass, Sensitive Fern and American Hazelnut. Other frequently noted species included Northern Dewberry, Grey Dogwood, Flat-top White Aster, Missouri Ironweed (*Vernonia missourica*; S3?) and Marsh Fern (*Thelypteris palustris*). There were seven provincially rare species recorded, including

two SAR, Dense Blazing-star (THR) and Willow-leaved Aster (THR). In addition, there were 17 tallgrass indicators present, comprising 49% of the species richness. The FQA results also indicate that this stand has high floristic quality and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly wet tendencies.

Table 3-5: Plant Community Characteristics in OPPNR Monitoring Plots – Tallgrass Prairie/Savannah

| Location        |                 | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Indicator Species |                             | Coefficient of Wetness (CW) |                     |
|-----------------|-----------------|------------------|--------|------------|---------------|----------------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022) | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                      | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| H               | TPS2            | 31               | 4      | 3          | 38            | 4.58                             | 4.06                | 12                          | 34                          | -0.32                       | -0.06               |
| I               | TPS1-1          | 32               | 3      | 3          | 38            | 4.78                             | 4.37                | 17                          | 49                          | -0.56                       | -0.43               |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

A preliminary comparison of the most widespread species across wet-mesic tallgrass prairies in 1971 and 1975 (2 stands sampled) with the same or similar areas in 2022 (2 stands sampled) is provided in Table 3-6 below. Similar to the diversity in forb prairies, the species richness recorded in the 1971/1975 tallgrass prairie stands was much higher than that recorded in 2022, primarily due to the late timing of field surveys. The original wet-mesic tallgrass prairie stands evaluated in 1971/1975 averaged 82 species compared to 38 species in 2022. If additional surveys are conducted in spring-summer, species diversity is expected to improve. Nonetheless, the current data indicates the continued persistence of important tallgrass indicators such as Big Bluestem, Bluejoint Reedgrass and Prairie Cordgrass, as well as the frequent occurrence of native woody shrubs.

Table 3-6: Widespread Species Recorded in Wet-Mesic Tallgrass Prairies in 1971/1975 and 2022

| 1971/1975              |                           |                            | 2022              |                           |                            |
|------------------------|---------------------------|----------------------------|-------------------|---------------------------|----------------------------|
| Common Name            | Presence <sup>1</sup> (%) | Frequency <sup>2</sup> (%) | Common Name       | Presence <sup>1</sup> (%) | Frequency <sup>2</sup> (%) |
| Virginia Mountain-mint | 100                       | 85                         | Big Bluestem      | 100                       | 78                         |
| Big Bluestem           | 100                       | 73                         | Tall Goldenrod    | 100                       | 78                         |
| Prairie Cordgrass      | 100                       | 55                         | Northern Dewberry | 100                       | 70                         |

| 1971/1975             |                              |                               | 2022                   |                              |                               |
|-----------------------|------------------------------|-------------------------------|------------------------|------------------------------|-------------------------------|
| Common Name           | Presence <sup>1</sup><br>(%) | Frequency <sup>2</sup><br>(%) | Common Name            | Presence <sup>1</sup><br>(%) | Frequency <sup>2</sup><br>(%) |
| Carex sp.             | 100                          | 55                            | Bluejoint Reedgrass    | 100                          | 60                            |
| Bluejoint Reedgrass   | 100                          | 45                            | Grey Dogwood           | 100                          | 40                            |
| White Heath Aster     | 100                          | 43                            | Flat-top White Aster   | 100                          | 38                            |
| Trailing Wild Bean    | 100                          | 38                            | Sensitive Fern         | 100                          | 33                            |
| Marsh Fern            | 100                          | 35                            | Virginia Mountain-mint | 100                          | 30                            |
| Old Switch Panicgrass | 100                          | 33                            | Grass-leaved Goldenrod | 100                          | 30                            |
| Muhlenbergia sp.      | 100                          | 33                            | Marsh Fern             | 100                          | 23                            |
| Silky Dogwood         | 100                          | 33                            | American Hog-peanut    | 100                          | 13                            |
| Canada Bluegrass      | 100                          | 30                            | Canada Tick-trefoil    | 100                          | 13                            |
| Smooth Scouring-rush  | 100                          | 28                            | Swamp Agrimony         | 100                          | 13                            |
| Canada Goldenrod      | 100                          | 25                            | Tall Tickseed          | 100                          | 13                            |
| Common Self-heal      | 100                          | 23                            | Redtop                 | 100                          | 5                             |
| Black-eyed Susan      | 100                          | 20                            | Bracken Fern           | 50                           | 55                            |
| Redtop                | 100                          | 20                            | Silky Dogwood          | 50                           | 45                            |
| Wild Strawberry       | 100                          | 20                            | Prairie Cordgrass      | 50                           | 40                            |

Notes: <sup>1</sup> - The percentage of stands/sampling locations where the species was recorded; <sup>2</sup> - The frequency of species occurrence across all sampling quadrats.

### 3.1.4 OAK SAVANNAH

Historically, oak savannah was present in the northwest portion of the OPPNR, along a series of low, sandy ridges. The slightly elevated ridges supported a drier savannah plant community than was found in the surrounding moist tallgrass prairie areas. In 1973, P. Maycock and D. Gregory evaluated the oak savannah and characterized it as having a canopy of mature Swamp Pin Oak and Black Oak, followed by White Oak (*Quercus alba*) and Bur Oak (*Quercus macrocarpa*), and scattered Eastern Cottonwood (*Populus deltoides*), Pignut Hickory, Silver Maple (*Acer saccharinum*) and Swamp White Oak (*Quercus bicolor*). The understory contained native shrubs such as Grey Dogwood, American Hazelnut and Smooth Sumac (*Rhus glabra*) and a variety of goldenrods and ferns, Bluejoint Reedgrass, Wild Strawberry, Spotted Geranium (*Geranium maculatum*), and Pennsylvania Sedge (*Carex pensylvanica*) (Pratt, 1979).

WSP established one monitoring plot in the historical oak savannah, which has now been characterized as a fresh-moist tallgrass woodland due to decades of natural succession (Table 3-7). Monitoring Plot J is an open inclusion comprised mostly of forbs and ferns (17), followed by woody plants (6) and graminoids (4). The dominant species recorded were Bluejoint Reedgrass, Pennsylvania Sedge, Rough-stemmed Goldenrod, Virginia Mountain-mint and Sensitive Fern. Woody species were present, but not significant in terms of frequency or cover. These species included American Hazelnut, Grey Dogwood, Black Oak and Swamp Pin Oak. Other notable species in the understory included Big Bluestem, Prairie Cordgrass, Royal Fern (*Osmunda regalis*), Bracken Fern and Woodland Sunflower (*Helianthus divaricatus*). There were two provincially rare species present, including one SAR, Dense Blazing-star (THR). There were also 11 tallgrass indicators, comprising 44% of the species richness. The FQA results indicate that this stand has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. Certainly, the many similarities between the species recorded in 1973 and 2022 indicates that this area has remained relatively undisturbed by anthropogenic factors and is still representative of a historic tallgrass ecosystem.

Table 3-7: Plant Community Characteristics in OPPNR Monitoring Plots – Oak Savannah

| Location        |                 | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Indicator Species |                             | Coefficient of Wetness (CW) |                     |
|-----------------|-----------------|------------------|--------|------------|---------------|----------------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022) | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                      | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| J               | TPW2-1          | 25               | 0      | 2          | 27            | 5.16                             | 5.16                | 11                          | 44                          | 0.72                        | 0.72                |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

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## 3.2 OJIBWAY PARK

Ojibway Park was the first natural area to be acquired and protected by the City of Windsor in 1957. A review of historical aerial images illustrates the pressure of early agricultural use surrounding the park; however, there was very little to no anthropogenic disturbance inside the park. A mosaic of tallgrass savannah, woodland and oak-maple-hickory deciduous forest were present at that time. In 1975, the original Nature Centre and other recreational features were constructed on the property. Ojibway Park was mapped primarily as Swamp Pin Oak forest, with smaller areas of oak savannah, thicket and pockets of tallgrass prairie (Pratt, 1979). The Swamp Pin Oak forest stand was dominated by Swamp Pin Oak, Red Maple (*Acer rubrum*), Black Oak, Black Cherry (*Prunus serotina*), and Silver Maple. Other species included Eastern Cottonwood (*Populus deltoides*), Sycamore (*Platanus occidentalis*), White Oak, White Elm (*Ulmus americana*) and Sassafras (*Sassafras albidum*). The most frequently encountered groundcover species were Riverbank Grape, Canada Goldenrod, Large False Solomon's Seal (*Maianthemum racemosum*), Bluejoint Reedgrass and Swamp Agrimony. The tallgrass prairies in Ojibway Park were considered undisturbed and dominated by Bluejoint Reedgrass, Prairie Cordgrass, Canada Bluegrass, Canada Goldenrod, Rough-stemmed Goldenrod, Virginia Mountain-mint, Wild Strawberry, and Wild Bergamot.

Two monitoring plots were established in Ojibway Park in 2022, one in dry tallgrass prairie (Plot K) and one in fresh-moist Swamp Pin Oak tallgrass woodland (Plot L) (Figure 3-2).

Plot K is located in a small dry tallgrass prairie in the southwest portion of Ojibway Park. Historically, this area was used as a sand quarry and was owned by the Windsor Raceway until 1991 when the City acquired the land, fenced it, and incorporated it into Ojibway Park. With recovery of the native vegetation, many rare plants and plant SAR have been recorded in this area over the years. In 2022, species diversity was comprised primarily of forbs (36), followed by woody species (15) and grasses (11). The dominant species were Little Bluestem, Purple Crown-vetch (*Securigera varia*), Allegheny Blackberry, Canada Tick-trefoil, Rough-stemmed Goldenrod and Yellow Wild Indigo (*Baptisia tinctoria*; S1S2). Other frequently observed species include White Heath Aster, Slender-stemmed Panicgrass (*Dichanthelium implicatum*), Tall Tickseed, Tall Goldenrod, Black Oak and Northern Dewberry. There were 12 provincially rare species including two SAR, Dense Blazing-star (THR) and Slender Bush-clover (*Lespedeza virginica*; END). It is also important to note the presence of rare Sundial Lupine (*Lupinus perennis*; S2/S3) in this general area, as the species has disappeared from a number of historic tallgrass woodland and prairie remnants in the province.

There were 29 tallgrass indicators present, comprising 54% of the species richness. The FQA results indicate that this prairie has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. Lastly, the Mean CW of plant species indicates that the vegetation community has a predominance of upland species.

Plot L is located north of the Nature Centre under a canopy of Swamp Pin Oaks. The understory diversity is comprised of herbs (24) and woody species (9), with very few grasses (2). The dominant species include Bluejoint Reedgrass, Sensitive Fern, Royal Fern, Rough-stemmed Goldenrod, Northern Dewberry and Spreading Dogbane (*Apocynum*

*androsaemifolium*). Other frequently noted species were Silky Dogwood, Allegheny Blackberry (*Rubus alleghienensis*), Calico Aster (*Symphyotrichum lateriflorum*), Missouri Ironweed (*Vernonia missurica*; S3?), Virginia Wildrye (*Elymus virginicus*) and Wild Geranium. Regenerating Swamp Pin Oak was also present. There were four provincially rare species and seven tallgrass indicators, comprising 23% of the species richness. The FQA results indicate that this stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. Further, the Mean CW of plant species indicates that the vegetation community exhibits neutral wetland tendencies (i.e., species are equally likely to occur in wetlands/non-wetlands).

Table 3-8: Plant Community Characteristics in Ojibway Park Monitoring Plots

| Location        |                 | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Prairie Indicators |                             | Coefficient of Wetness (CW) |                     |
|-----------------|-----------------|------------------|--------|------------|---------------|----------------------------------|---------------------|------------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022) | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                       | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| K               | TPO1-1          | 45               | 9      | 8          | 62            | 5.29                             | 4.41                | 29                           | 54                          | 2.78                        | 3.00                |
| L               | TPW2-2          | 30               | 1      | 4          | 35            | 4.40                             | 4.26                | 7                            | 23                          | 0.07                        | 0.16                |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

Figure Redacted



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### 3.3 TALLGRASS PRAIRIE HERITAGE PARK

Tallgrass Prairie Heritage Park was officially created in 1990 through a cooperative natural heritage protection project led by Carolinian Canada. A review of historical aerial images shows agricultural uses at the northern and eastern boundaries of the park, while large areas in the central and southern portions remained largely undisturbed. By the late 1970s, residential growth had occurred at the park edges and trails and utility corridors were created through the park. In undisturbed areas, natural succession resulted in greater tree and shrub cover. At this time, the City had already acquired Ojibway Park to the west and the province had just legislated the OPPNR to the south. Vegetation community mapping by Pratt (1979) indicated the presence of tallgrass prairie, forb prairie, oak savannah, Swamp Pin Oak/Black Oak forest, and thickets. Only one stand in wet tallgrass prairie was evaluated in 1975 and it was dominated by native graminoids including Prairie Cordgrass, Big Bluestem, Bluejoint Reedgrass, Old Switch Panicgrass and sedges.

In 2022, WSP established three new monitoring plots in Tallgrass Prairie Heritage Park, two in fresh-moist tallgrass prairie (Plot M and Plot O) and one in dry Black Oak/White Oak tallgrass woodland (Plot N) (Figure 3-3). Historically, these plot locations were mapped by Pratt (1979) as forb prairie (Plot M), oak savannah (Plot N) and thicket (Plot O).

Monitoring Plot M is just north of Titcombe Trail and within the overhead utility corridor that runs northwest to southeast through the park. Species richness is comprised of forbs, ferns and herbaceous vines (27), graminoids (8), and woody trees and shrubs (7). The dominant species were all warm-season grasses, such as Big Bluestem, Yellow Indiangrass, Little Bluestem and Old Switch Panicgrass. Frequently noted forb species included Wild Carrot, Virginia Mountain-mint, Tall Tickseed (S1S2), Wild Bergamot and Tall Goldenrod. The occasional American Hazelnut and Multiflora Rose (*Rosa multiflora*) were also recorded. There were five provincially rare species including two species at risk (SAR), Dense Blazing-star (THR) and Riddell's Goldenrod (SC). There were also 18 tallgrass indicators, comprising 50% of the species richness. The FQA results indicate that this prairie stand has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly drier tendencies.

Plot N is located in the south-central portion of Tallgrass Prairie Heritage Park under the canopy of mature Black Oak and White Oak trees. Historically the canopy appears more open than it is today. Species richness is comprised mostly of herbs (20), then graminoids (9) and woody shrubs (6). The dominant species in the understory include Flat-top White Aster and Pennsylvania Sedge, followed by Wild Bergamot and Northern Dewberry. Big Bluestem and Bluejoint Reedgrass were also present in localized areas. There was one provincially rare species recorded, Tall Tickseed (S1S2), and 12 tallgrass indicators, comprising 38% of the species richness. Although not observed at the time of surveys, it is important to note that this habitat is also known to support a significant population of provincially Threatened Purple Twayblade (*Liparis liliifolia*). The FQA results indicate that this stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. The Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Plot O is located in a small tallgrass prairie opening surrounded by deciduous forest and swamp in the northeast portion of the park. Species richness is comprised of herbs (19), woody trees and shrubs (11), and graminoids (9). The dominant species were warm-season grasses, including Big Bluestem, Yellow Indiangrass, and Old Switch Panicgrass. Frequently noted forb species include Swamp Agrimony, Slender Fragrant Goldenrod (S1), and Tall Tickseed (S1S2). Horsetail (*Equisetum* sp.), Sensitive Fern and Dudley's Rush were also common and although there were many woody species recorded, they did not produce a significant cover (<10%).

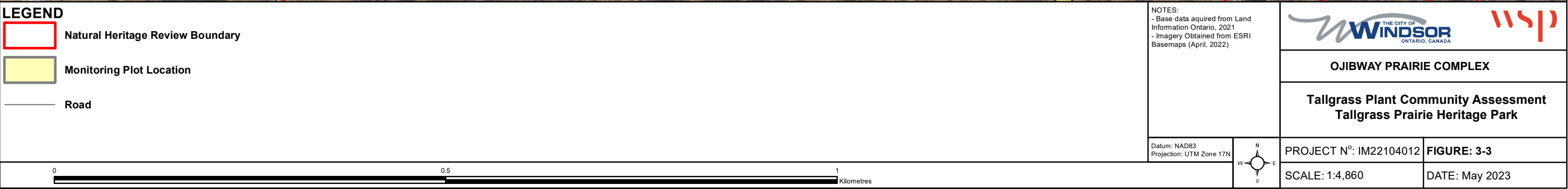
There were four provincially rare species including two SAR, Dense Blazing-star (THR) and Riddell's Goldenrod (SC). It is also important to note that although not observed in the plot, records of provincially Endangered Eastern Prairie Fringed Orchid (*Platanthera leucophaea*) have also been recorded in this tallgrass prairie habitat. There were also 17 tallgrass indicators, comprising 50% of the species richness. The FQA results indicate that this prairie stand has high floristic quality and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly wet to wet (due to seasonal flooding) tendencies.

Table 3-9: Plant Community Characteristic in Tallgrass Prairie Heritage Park Monitoring Plots

| Location        |                 | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Indicator Species |                             | Coefficient of Wetness (CW) |                     |
|-----------------|-----------------|------------------|--------|------------|---------------|----------------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022) | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                      | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| M               | TPO2-1          | 32               | 4      | 6          | 42            | 5.38                             | 4.78                | 18                          | 50                          | 0.94                        | 1.06                |
| N               | TPW1-1          | 27               | 5      | 3          | 35            | 4.56                             | 3.84                | 12                          | 38                          | 0.74                        | 0.97                |
| O               | TPO2-1          | 31               | 3      | 5          | 39            | 4.65                             | 4.24                | 17                          | 50                          | -0.55                       | -0.24               |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

Figure Redacted



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### 3.4 BLACK OAK HERITAGE PARK

In the early 1970's, the oak woodland community in Black Oak Heritage Park was generally described as a lightly disturbed forest complex containing both dry and wet vegetation associations (Pratt, 1979). There were areas and openings in the forest canopy that were characterized by the presence of tallgrass species such as Switch Panicgrass, White Heath Aster, Virginia Mountain-mint, Smooth Aster, and Wild Bergamot. Rare species that included Purple Twayblade (*Liparis liliifolia*; THR), Hairy Mountain-mint (*Pycnanthemum verticillatum* var. *pilosum*; S1) and Arrowfeather Threeawn Grass (*Aristida purpurascens*; S1) were also noted.

Two monitoring plots were established in fresh-moist tallgrass prairie in 2022 (Figure 3-4). Both plots had recently received a prescribed burn in the spring.

Monitoring Plot P is located just south of Broadway Street and approximately 200 m west of Dainty Foods. The area was historically a tallgrass prairie (circa 1948) that was later subject to agriculture and then recreational (baseball diamond) uses until the early 1990's when the area was allowed to naturalize. Today the prairie is a mix of forbs and ferns (10), graminoids (7) and woody shrubs and vines (4). The dominant species are primarily native warm season grasses including Little Bluestem, Old Switch Panicgrass, and Broomsedge Bluestem (*Andropogon virginicus*). Redtop was also frequently encountered. The dominant forbs include Tall Boneset (*Eupatorium altissimum*), Plantain species (*Plantago* sp.) and Common Yarrow (*Achillea millefolium*). Other notable species include Whorled Milkweed (*Asclepias verticillata*) and Round-headed Bush Clover (*Lespedeza capitata*). Common milkweed (*Asclepias syriaca*) is also quite dominant, but in scattered patches throughout the area and not present within the monitoring plot.

There were six tallgrass indicators present, comprising 38% of the species richness. No plant SAR or provincially rare species were present in the monitoring plot; however, other inventories of the entire tallgrass prairie indicate the presence of seven provincially significant plant species (Sage Earth, 2019).

The FQA results indicate that only the native plant community in this prairie stand has sufficient floristic quality (i.e., conservatism) to be considered a remnant. With the addition of exotic species (approximately 30% of species richness), the Mean CC is greatly reduced. Lastly, the Mean CW of plant species indicates that the vegetation community exhibits a predominance of upland species.

Plot Q is located centrally in the park in a historic oak savannah that was subsequently cleared for agricultural uses until the early 1990's. Today the prairie is a mix of forbs and herbaceous vines (18), graminoids (6), and woody species (7). The dominant species include Tall Goldenrod, Big Bluestem, Canada Tick-trefoil, Virginia Mountain-mint, and Grass-leaved Goldenrod. Other frequently noted species include New England Aster (*Symphyotrichum novae-angliae*), Dudley's Rush, Tall Boneset, Culver's Root, Torrey's Rush and Wild Bergamot. Lesser amounts of Yellow Indiangrass and Muhly (*Muhlenbergia* sp.) were also present. There were four provincially rare species including one SAR, Dense Blazing Star (THR), and 12 tallgrass indicators, comprising 48% of the species richness. The FQA results indicate that this

prairie has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

One sampling plot, Plot R, was established in an opening in the dry-fresh oak-hickory deciduous forest south of the tallgrass prairie Plot Q. Historically the area was characterized as an oak woodland. Periodic prescribed burning has occurred in this area. Plot R is in the understory of the canopy opening comprised mostly of Pignut Hickory, Black Cherry, and Black Oak. Understory diversity is comprised of herbs (19) and woody species (10), with very few grasses (3). The dominant species include a sedge (*Carex* sp.), Canada Goldenrod, Bluejoint Reedgrass, Allegheny Blackberry, anemone (*Anemone* sp.), and Grey Dogwood. Other frequently noted species include Royal Fern, bedstraw (*Galium* sp.), Bristly Greenbriar (*Smilax tamnoides*), American Hog-peanut (*Amphicarpaea bracteata*), Woodland Strawberry (*Fragaria vesca*), and Woodland Sunflower (*Helianthis divaricatus*). Regenerating oak, hickory and Black Cherry were also present.

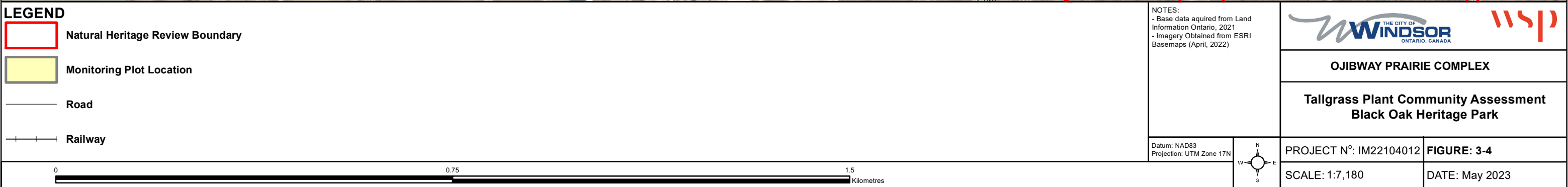
There were three provincially rare species and 12 tallgrass indicators, comprising 50% of the species richness. The FQA results indicate that this stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. Lastly, the Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Table 3-10: Plant Community Characteristics in Black Oak Heritage Park Monitoring Plots

| Location        |                  | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Indicator Species |                             | Coefficient of Wetness (CW) |                     |
|-----------------|------------------|------------------|--------|------------|---------------|----------------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022)  | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                      | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| P               | TPO2-1           | 11               | 5      | 4          | 20            | 3.91                             | 2.69                | 6                           | 38                          | 2.27                        | 2.13                |
| Q               | TPO2-1           | 22               | 3      | 6          | 31            | 5.14                             | 4.52                | 12                          | 48                          | 0.18                        | 0.36                |
| R               | FOD2-2 (opening) | 28               | 0      | 4          | 32            | 4.39                             | 4.39                | 12                          | 50                          | 1.29                        | 1.29                |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

Figure Redacted



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### 3.5 SPRING GARDEN NATURAL AREA

The Spring Garden Natural Area (SGNA) is the largest natural area in the Ojibway Prairie Complex. The City began acquiring properties that comprise the SGNA in 1999 after Council approved a change from residential to natural heritage designation in Windsor's Official Plan. Historically the land within and surrounding the SGNA was dominated by agricultural use, but there were large swaths of tallgrass prairie, meadow marsh, tallgrass woodland, and oak-dominated swamp communities left undisturbed (LGL Limited, 2012). Residential and commercial development began in earnest in the 1970s, but it largely remained along the major roadways at the periphery of the natural area and not in the interior habitat. The only major disturbance to interior habitat resulted from the creation of a four-hectare shallow pond and channelization of Turkey Creek through the centre of the natural area circa 1972. When portions of the SGNA were evaluated as part of long-range conservation planning in the early 1980s, the site was still described as having open grassland and meadow with excellent representation of tallgrass prairie species. There were also native thickets, upland oak woodland and oak forest habitat (Pratt, 1979; Oldham, 1983).

WSP established seven monitoring plots across the SGNA in 2022 (Figure 3-5). All the plots were located in fresh-moist tallgrass prairie habitat, or a combination of prairie and meadow marsh, or prairie and successional thicket. Plots S and T are in the northern portion of the SGNA, south of Spring Garden Road. The prairie in this area was visited by Pratt (1979) in July 1976. At the time, it was characterised as an extensive forb prairie dominated by Virginia Mountain-mint, Golden Groundsel (*Packera aurea*), Canada Tick-trefoil, Sky Blue Aster (*Symphyotrichum oolentangiense*), Smooth Aster, Field Thistle (S3) and Stiff Goldenrod (S3). The grasses included Canada Bluegrass, Redtop, Rough Dropseed (*Sporobolus compositus*), Slender-stemmed Panicgrass and Old Switch Panicgrass.

Currently, Monitoring Plot S is comprised of mostly of herbs (25), followed by graminoids (9) and woody shrubs and vines (6). The dominant species include Big Bluestem, Redtop, Swamp Agrimony, Canada Goldenrod, Virginia Mountain-mint, Wild Bergamot and Gray-headed Prairie Coneflower (S3). Other native grasses and forbs that were frequently observed include Canada Wildrye, Old Switch Panicgrass, Tall Tickseed (S1S2), Common Yarrow, Slender Fragrant Goldenrod (S1) and Grass-leaved Goldenrod. There were six provincially rare plant species present including two SAR, Dense Blazing-star (THR) and Riddell's Goldenrod (Special Concern (SC)). There was also a total of 17 tallgrass indicators recorded, comprising 43% of the species richness. The FQA results indicate that this tallgrass prairie stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. Lastly, the Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Monitoring Plot T, located just south of Plot S, is also comprised mostly of herbs (23), followed by graminoids (9) and woody plants (6). This stand is dominated primarily by Big Bluestem, but other frequently recorded species include Sensitive Fern, Old Switch Panicgrass, Northern Dewberry, Canada Goldenrod, Virginia Mountain-mint, Flat-top White Aster, and Wild Bergamot. There were six provincially rare species present including two SAR, Dense Blazing-star (THR) and Riddell's Goldenrod (SC). The presence of Rough Blazing-star (S2) is

also notable as there are very few occurrences in the Ojibway Prairie Complex. There was a total of 18 tallgrass indicators recorded, comprising 60% of the species richness. The FQA results indicate that this prairie has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly dry tendencies.

Monitoring Plots U and V are located south of Elgin St. in the central portion of the SGNA. Both plots are in mesic environments and contain a variety of wetland and upland plant species. Monitoring Plot U is comprised mostly of herbs (23), followed by graminoids (9) and woody plants (5). The stand is dominated by Bluejoint Reedgrass, Spotted Joe Pye Weed (*Eutrochium maculatum*), Tall Goldenrod, Big Bluestem and Royal Fern. Other frequently recorded species included Prairie Cordgrass, Wild Bergamot, Virginia Mountain-mint, Northern Dewberry, Culver's Root (S2) and Field Thistle (S3). There was a total of four provincially rare species and 13 tallgrass indicators present. The tallgrass indicators comprised 35% of the species richness. The FQA results indicate that this tallgrass prairie/meadow marsh has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. The Mean CW of plant species indicates that the vegetation community exhibits slightly wet tendencies.

Similar to Monitoring Plot U, Plot V is comprised mostly of herbs (25), followed by grasses (8) and woody plants (5). Bluejoint Reedgrass, Spotted Joe Pye Weed, Swamp Agrimony, Old Switch Panicgrass and Prairie Cordgrass were the dominant species in the stand. In addition, there were several frequently recorded species including Little Bluestem, Virginia Mountain-mint, Wild Bergamot, Northern Dewberry, and Sensitive Fern. There were five provincially rare species present including three SAR, White Colicroot (Endangered (END)), Dense Blazing-star (THR) and Riddell's Goldenrod (SC). There was a total of 18 tallgrass indicators recorded, comprising 47% of the species richness. The FQA results indicate that this tallgrass prairie/meadow marsh has high floristic quality (i.e., conservatism) and is a relatively intact natural area remnant. The Mean CW of plant species indicates that the vegetation community exhibits slightly wet tendencies.

Lastly, Monitoring Plots W, X and Y are located southeast of Turkey Creek in tallgrass prairie, however portions of the prairie are undergoing succession to shrub thicket. The prairie stands are adjacent to larger Dogwood thickets and a variety of deciduous swamp habitats (e.g., Silver Maple, Poplar and Swamp Pin Oak swamps). Woody species from these adjacent areas are beginning to encroach into the tallgrass prairie. Monitoring Plots W and X are located above the top of bank of Turkey Creek and Monitoring Plot Y is in a prior residential area where homes were demolished to create snake SAR habitat features and undertake tallgrass prairie restoration.

Monitoring Plot W is comprised of forbs and ferns (16), grasses (5) and woody plant species (6). The dominant species include Prairie Rosinweed (S1), Canada Goldenrod, Redtop, Reed Canarygrass (*Phalaris arundinacea*) and Rough-leaved Dogwood. Other frequently recorded species included Swamp Agrimony, Virginia Mountain-mint, Orchard Grass (*Dactylis glomerata*), Grass-leaved Goldenrod, Horsetail (*Equisetum* sp.) and an Aster species (*Symphyotrichum* sp.) were also frequently noted. There were two provincially rare species,

and six tallgrass indicators present, comprising 22% of the species richness. The FQA results indicate that the native plant community in this stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. However, with the addition of exotic species (50% of species richness), the Mean CC is greatly reduced. The most significant characteristic of this stand is the large population of Prairie Rosinweed, a provincially rare plant (S1), which is estimated to include hundreds of individuals.

Monitoring Plot X is comprised of forbs (13), graminoids (7) and woody trees and shrubs (7). The dominant species in this stand is an unknown grass species in the Poaceae family, followed by a variety of forbs including Grass-leaved Goldenrod, Rough-Stemmed Goldenrod, Tall Tickseed (S1S2), Wild Bergamot and Missouri Ironweed (S3?). There were also frequently noted invasive species, such as Redtop and Orchard Grass. Three provincially rare species including one SAR, Dense Blazing-star (THR), were recorded. There were also nine tallgrass indicators present, comprising 36% of the species richness. The FQA results indicate that the native plant community in this stand has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. However, with the addition of exotic species (50% of species richness), the Mean CC is greatly reduced.

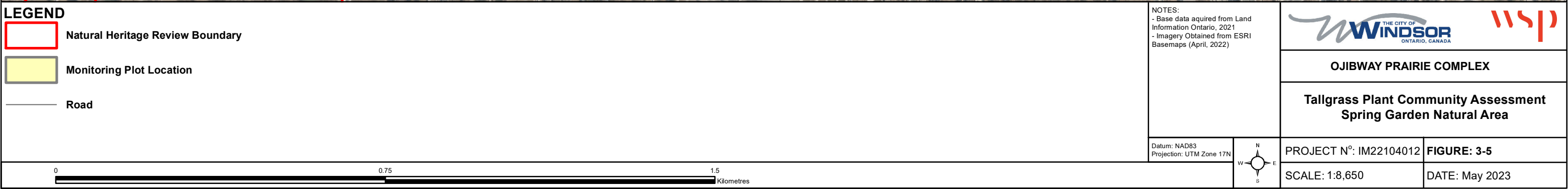
Lastly, Monitoring Plot Y is comprised of herbs (13), graminoids (8) and only two (2) woody plants. The dominant species included a variety of warm season grasses such as Yellow Indiangrass, Big Bluestem, Little Bluestem and Old Switch Panicgrass. The dominant forbs were frequently observed species including Rough-stemmed Goldenrod, Wild Bergamot, Grass-leaved Goldenrod and Canada Goldenrod. Other frequently occurring species included Dudley's Rush and Horsetail (*Equisetum* sp.). There was one provincially rare species, Tall Tickseed (S1S2), and 10 tallgrass indicators present, comprising 44% of the species richness. The FQA results indicate that this tallgrass prairie has sufficient floristic quality (i.e., conservatism) to be of remnant natural quality. Of note however, is that this prairie stand was restored as part of SAR compensation for construction of the Parkway project. Homes were demolished in this area and their foundations converted to snake SAR hibernacula. The surface soil was graded and seeded with a native tallgrass prairie seed mix, from which the warm season grasses that now dominate the site originated.

Table 3-11: Plant Community Characteristics in Spring Garden Natural Area Monitoring Plots

| Location        |                   | Species Richness |        |            |               | Coefficient of Conservatism (CC) |                     | Tallgrass Indicator Species |                             | Coefficient of Wetness (CW) |                     |
|-----------------|-------------------|------------------|--------|------------|---------------|----------------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Monitoring Plot | ELC Code (2022)   | Native           | Exotic | Genus Only | Total Species | Native Mean CC                   | All Species Mean CC | Number                      | Proportion <sup>1</sup> (%) | Native Mean CW              | All Species Mean CW |
| S               | TPO2-1            | 26               | 8      | 6          | 40            | 4.81                             | 3.68                | 17                          | 43                          | 1.46                        | 1.68                |
| T               | TPO1-1/<br>TPO2-1 | 28               | 6      | 4          | 38            | 5.46                             | 4.50                | 18                          | 60                          | 1.04                        | 1.21                |
| U               | MAM2-1<br>/TPO2-1 | 27               | 3      | 7          | 37            | 4.48                             | 4.03                | 13                          | 35                          | -0.56                       | -0.40               |
| V               | MAM2-1<br>/TPO2-1 | 29               | 6      | 3          | 38            | 5.34                             | 4.43                | 18                          | 47                          | -0.45                       | 0.09                |
| W               | TPO2-1<br>/CUT1-4 | 14               | 11     | 2          | 27            | 3.71                             | 2.08                | 6                           | 22                          | -0.50                       | 0.96                |
| X               | TPO2-1<br>/CUT1   | 14               | 7      | 4          | 25            | 4.43                             | 2.95                | 9                           | 36                          | 0.86                        | 1.48                |
| Y               | TPO2-1<br>/CUT1   | 16               | 3      | 4          | 23            | 4.38                             | 3.68                | 10                          | 44                          | 1.06                        | 1.05                |

Notes: <sup>1</sup> - The proportion of tallgrass indicator species is based on known species richness, exclusive of species identified to genus only.

Figure Redacted



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## 4 CONCLUSIONS AND RECOMMENDATIONS

The results of this tallgrass plant community assessment represent updated existing conditions in remnant tallgrass communities across five City of Windsor natural areas: OPPNR, Ojibway Park, Tallgrass Prairie Heritage Park, Black Oak Heritage Park and SGNA. Each of the natural areas contain tallgrass communities that can be characterized as having remnant quality based on their species conservatism values, and some of these remnants can be considered intact. Every area evaluated contained at least one or more provincially rare species, and numerous tallgrass indicator species. In addition, >60% (16 out of 25) of the monitoring plots contained one or more plant SAR.

Each of the remnant tallgrass communities have important natural quality characteristics worth protecting and managing. Woody plant succession and invasive species are the two main threats to these communities. Vegetation management such as brush removal and routine prescribed burns will be necessary to mitigate these threats and maintain the natural heritage value of these communities.

At this time, WSP recommends that additional floristic surveys be conducted in the monitoring plots, preferably as soon as possible, to create a more robust species list for each stand and to update the FQA. Further comparisons of the tallgrass plant communities using Paul Pratt's data collected in 1984-1985, 1990-1992 and 2008 could also be undertaken to assess how the prairie remnants and restorations changed in interim years. Additional surveys in various oak savannah stands could be conducted as these areas represent some of the last remaining intact remnants in Canada.

In future years, the monitoring plots may be revisited on a routine or periodic basis to evaluate the effectiveness of site-specific management activities, or to assess the need for future vegetation management, habitat protection measures, and/or ecosystem restoration.

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# Appendix A

## Plant Species Lists

Appendix A-1 Ojibway Prairie Provincial Nature Reserve

Appendix A-2 Ojibway Park

Appendix A-3 Tallgrass Prairie Heritage Park

Appendix A-4 Black Oak Heritage Park

Appendix A-5 Spring Garden Natural Area

# Appendix A-1

## Ojibway Prairie Provincial Nature Reserve

Table A1-1: Plant Species Diversity in Monitoring Plot A  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                 | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>     | Swamp Agrimony          | S4                  |                         | 10            | 0.50            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                  | SE5                 |                         | 10            | 0.30            |                     |
| <i>Andropogon gerardii</i>      | Big Bluestem            | S4                  |                         | 95            | 37.25           | Y                   |
| <i>Carex sp.</i>                |                         |                     |                         | 5             | 0.50            |                     |
| <i>Coreopsis tripteris</i>      | Tall Tickseed           | S1S2                |                         | 5             | 0.25            | Y                   |
| <i>Cornus racemosa</i>          | Grey Dogwood            | S5                  |                         | 60            | 2.00            |                     |
| <i>Daucus carota</i>            | Wild Carrot             | SE5                 |                         | 45            | 1.25            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil     | S4                  |                         | 25            | 1.75            | Y                   |
| <i>Elaeagnus umbellata</i>      | Autumn Olive            | SE3                 |                         | 5             | 3.50            |                     |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod  | S5                  |                         | 20            | 2.00            |                     |
| <i>Juncus marginatus</i>        | Grass-leaved Rush       | S3                  |                         | 5             | 0.05            | Y                   |
| <i>Juncus sp.</i>               |                         |                     |                         | 5             | 0.25            |                     |
| <i>Medicago lupulina</i>        | Black Medick            | SE5                 |                         | 5             | 0.05            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot           | S5                  |                         | 60            | 4.00            | Y                   |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass   | S4                  |                         | 15            | 1.25            | Y                   |
| <i>Penstemon digitalis</i>      | Foxglove Beardtongue    | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint  | S4                  |                         | 75            | 6.15            | Y                   |
| <i>Rubus flagellaris</i>        | Northern Dewberry       | S4                  |                         | 95            | 14.00           |                     |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan        | S5                  |                         | 5             | 0.05            | Y                   |
| <i>Solidago altissima</i>       | Tall Goldenrod          | S5                  |                         | 85            | 23.00           |                     |
| <i>Solidago canadensis</i>      | Canada Goldenrod        | S5                  |                         | 10            | 2.50            |                     |
| <i>Solidago nemoralis</i>       | Grey-stemmed Goldenrod  | S5                  |                         | 10            | 0.30            | Y                   |
| <i>Solidago rugosa</i>          | Rough-stemmed Goldenrod | S5                  |                         | 35            | 3.25            |                     |
| <i>Sorghastrum nutans</i>       | Yellow Indiangrass      | S4                  |                         | 30            | 0.95            | Y                   |
| <i>Symphyotrichum ericoides</i> | White Heath Aster       | S5                  |                         | 20            | 1.00            | Y                   |

| Scientific Name             | Common Name     | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-----------------------------|-----------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Symphyotrichum laeve</i> | Smooth Aster    | S5                  |                         | 5             | 0.05            | Y                   |
| <i>Vitis riparia</i>        | Riverbank Grape | S5                  |                         | 15            | 1.00            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-2: Plant Species Diversity in Monitoring Plot B  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                  | Common Name                    | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------|--------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>      | Swamp Agrimony                 | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Agrostis gigantea</i>         | Redtop                         | SE5                 |                         | 15            | 0.35            |                     |
| <i>Ambrosia trifida</i>          | Great Ragweed                  | S5                  |                         | 5             | 0.25            |                     |
| <i>Andropogon gerardii</i>       | Big Bluestem                   | S4                  |                         | 90            | 33.75           | Y                   |
| <i>Coreopsis tripteris</i>       | Tall Tickseed                  | S1S2                |                         | 45            | 3.25            | Y                   |
| <i>Cornus racemosa</i>           | Grey Dogwood                   | S5                  |                         | 25            | 1.75            |                     |
| <i>Daucus carota</i>             | Wild Carrot                    | SE5                 |                         | 25            | 1.05            |                     |
| <i>Desmodium canadense</i>       | Canada Tick-trefoil            | S4                  |                         | 10            | 0.75            | Y                   |
| <i>Euthamia caroliniana</i>      | Slender Fragrant Goldenrod     | S1                  |                         | 15            | 1.50            | Y                   |
| <i>Liatris spicata</i>           | Dense Blazing-star             | S2                  | THR                     | 5             | 0.50            | Y                   |
| <i>Lithospermum canescens</i>    | Hoary Puccoon                  | S3                  |                         | 30            | 1.50            | Y                   |
| <i>Monarda fistulosa</i>         | Wild Bergamot                  | S5                  |                         | 45            | 7.55            | Y                   |
| <i>Penstemon digitalis</i>       | Foxglove Beardtongue           | S4                  |                         | 5             | 0.05            | Y                   |
| <i>Platanus occidentalis</i>     | Sycamore                       | S4                  |                         | 5             | 0.05            |                     |
| <i>Pycnanthemum virginianum</i>  | Virginia Mountain-mint         | S4                  |                         | 15            | 0.35            | Y                   |
| <i>Ratibida pinnata</i>          | Grey-headed Prairie Coneflower | S3                  |                         | 5             | 0.25            | Y                   |
| <i>Rubus flagellaris</i>         | Northern Dewberry              | S4                  |                         | 75            | 8.00            |                     |
| <i>Rudbeckia hirta</i>           | Black-eyed Susan               | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Rumex sp.</i>                 |                                |                     |                         | 20            | 1.75            |                     |
| <i>Schizachyrium scoparium</i>   | Little Bluestem                | S4                  |                         | 75            | 23.25           | Y                   |
| <i>Silphium laciniatum</i>       | Compass Plant                  | S1                  |                         | 15            | 1.50            | Y                   |
| <i>Silphium terebinthinaceum</i> | Prairie Rosinweed              | S1                  |                         | 10            | 0.75            | Y                   |
| <i>Solidago altissima</i>        | Tall Goldenrod                 | S5                  |                         | 90            | 7.50            |                     |
| <i>Sorghastrum nutans</i>        | Yellow Indiangrass             | S4                  |                         | 65            | 4.65            | Y                   |

| Scientific Name                      | Common Name       | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|--------------------------------------|-------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Symphyotrichum ericoides</i>      | White Heath Aster | S5                  |                         | 65            | 2.70            | Y                   |
| <i>Symphyotrichum novae-angliae</i>  | New England Aster | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Symphyotrichum oolentangiense</i> | Sky Blue Aster    | S4                  |                         | 10            | 0.50            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-3: Plant Species Diversity in Monitoring Plot C  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                      | Common Name                    | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|--------------------------------------|--------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Acer x freemanii</i>              | Freeman's Maple                | SNA                 |                         | 5             | 0.05            |                     |
| <i>Agrimonia parviflora</i>          | Swamp Agrimony                 | S4                  |                         | 10            | 1.05            | Y                   |
| <i>Agrostis gigantea</i>             | Redtop                         | SE5                 |                         | 70            | 4.70            |                     |
| <i>Andropogon gerardii</i>           | Big Bluestem                   | S4                  |                         | 25            | 10.25           | Y                   |
| <i>Asclepias tuberosa</i>            | Butterfly Milkweed             | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Cirsium discolor</i>              | Field Thistle                  | S3                  |                         | 10            | 1.25            |                     |
| <i>Coreopsis tripteris</i>           | Tall Tickseed                  | S1S2                |                         | 5             | 0.25            | Y                   |
| <i>Cornus drummondii</i>             | Rough-leaved Dogwood           | S4                  |                         | 15            | 0.15            |                     |
| <i>Cornus racemosa</i>               | Grey Dogwood                   | S5                  |                         | 45            | 5.85            |                     |
| <i>Daucus carota</i>                 | Wild Carrot                    | SE5                 |                         | 30            | 0.50            |                     |
| <i>Desmodium canadense</i>           | Canada Tick-trefoil            | S4                  |                         | 10            | 2.00            | Y                   |
| <i>Equisetum sp.</i>                 |                                |                     |                         | 45            | 1.30            |                     |
| <i>Euthamia graminifolia</i>         | Grass-leaved Goldenrod         | S5                  |                         | 15            | 0.75            |                     |
| <i>Liatris spicata</i>               | Dense Blazing-star             | S2                  | THR                     | 10            | 0.50            | Y                   |
| <i>Lotus corniculatus</i>            | Garden Bird's-foot Trefoil     | SE5                 |                         | 5             | 0.05            |                     |
| <i>Medicago lupulina</i>             | Black Medick                   | SE5                 |                         | 15            | 0.55            |                     |
| <i>Melilotus sp.</i>                 |                                |                     |                         | 5             | 0.05            |                     |
| <i>Monarda fistulosa</i>             | Wild Bergamot                  | S5                  |                         | 45            | 4.00            | Y                   |
| <i>Muhlenbergia sp.</i>              |                                |                     |                         | 15            | 3.75            |                     |
| <i>Panicum virgatum</i>              | Old Switch Panicgrass          | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Penstemon digitalis</i>           | Foxglove Beardtongue           | S4                  |                         | 10            | 0.50            | Y                   |
| <i>Phragmites australis</i>          | European Reed                  | S4?                 |                         | 5             | 0.25            |                     |
| <i>Poa compressa</i>                 | Canada Bluegrass               | SE5                 |                         | 5             | 0.05            |                     |
| <i>Pseudognaphalium obtusifolium</i> | Fragrant Cudweed               | S5                  |                         | 5             | 0.05            |                     |
| <i>Pycnanthemum virginianum</i>      | Virginia Mountain-mint         | S4                  |                         | 65            | 5.25            | Y                   |
| <i>Ratibida pinnata</i>              | Grey-headed Prairie Coneflower | S3                  |                         | 10            | 0.50            | Y                   |

| Scientific Name                 | Common Name        | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|--------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Rubus flagellaris</i>        | Northern Dewberry  | S4                  |                         | 80            | 10.55           |                     |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan   | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Solidago altissima</i>       | Tall Goldenrod     | S5                  |                         | 80            | 21.50           |                     |
| <i>Sorghastrum nutans</i>       | Yellow Indiangrass | S4                  |                         | 85            | 24.85           | Y                   |
| <i>Symphyotrichum ericoides</i> | White Heath Aster  | S5                  |                         | 10            | 0.30            | Y                   |
| <i>Vitis riparia</i>            | Riverbank Grape    | S5                  |                         | 50            | 4.25            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-4: Plant Species Diversity in Monitoring Plot D  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                 | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Acer rubrum</i>              | Red Maple                  | S5                  |                         | 5             | 0.05            |                     |
| <i>Agrimonia parviflora</i>     | Swamp Agrimony             | S4                  |                         | 75            | 6.25            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                     | SE5                 |                         | 10            | 0.10            |                     |
| <i>Amphicarpaea bracteata</i>   | American Hog-peanut        | S5                  |                         | 5             | 0.05            | Y                   |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass        | S5                  |                         | 45            | 11.25           | Y                   |
| <i>Coreopsis tripteris</i>      | Tall Tickseed              | S1S2                |                         | 20            | 1.25            | Y                   |
| <i>Cornus obliqua</i>           | Silky Dogwood              | S5                  |                         | 5             | 0.50            |                     |
| <i>Cornus racemosa</i>          | Grey Dogwood               | S5                  |                         | 40            | 4.55            |                     |
| <i>Cornus sp.</i>               |                            |                     |                         | 5             | 0.05            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil        | S4                  |                         | 20            | 1.00            | Y                   |
| <i>Euthamia caroliniana</i>     | Slender Fragrant Goldenrod | S1                  |                         | 55            | 9.75            | Y                   |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod     | S5                  |                         | 20            | 4.25            |                     |
| <i>Fragaria virginiana</i>      | Wild Strawberry            | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Juncus dudleyi</i>           | Dudley's Rush              | S5                  |                         | 20            | 0.85            |                     |
| <i>Juncus marginatus</i>        | Grass-leaved Rush          | S3                  |                         | 25            | 3.50            | Y                   |
| <i>Juncus torreyi</i>           | Torrey's Rush              | S5                  |                         | 5             | 0.25            |                     |
| <i>Juncus sp.</i>               |                            |                     |                         | 10            | 0.75            |                     |
| <i>Liatris spicata</i>          | Dense Blazing-star         | S2                  | THR                     | 55            | 8.00            | Y                   |
| <i>Onoclea sensibilis</i>       | Sensitive Fern             | S5                  |                         | 25            | 8.50            |                     |
| <i>Osmunda regalis</i>          | Royal Fern                 | S5                  |                         | 15            | 1.50            |                     |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass      | S4                  |                         | 10            | 1.25            | Y                   |
| <i>Poa compressa</i>            | Canada Bluegrass           | SE5                 |                         | 15            | 1.50            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint     | S4                  |                         | 75            | 7.25            | Y                   |
| <i>Quercus palustris</i>        | Swamp Pin Oak              | S4                  |                         | 10            | 0.30            | Y                   |
| <i>Rosa multiflora</i>          | Multiflora Rose            | SE5                 |                         | 5             | 0.25            |                     |
| <i>Rubus flagellaris</i>        | Northern Dewberry          | S4                  |                         | 40            | 3.50            |                     |
| <i>Rubus sp.</i>                |                            |                     |                         | 5             | 0.05            |                     |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan           | S5                  |                         | 5             | 0.05            | Y                   |
| <i>Salix humilis</i>            | Prairie Willow             | S5                  |                         | 10            | 0.50            |                     |

| Scientific Name                     | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-------------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Salix sp.</i>                    |                          |                     |                         | 5             | 0.50            |                     |
| <i>Scirpus atrovirens</i>           | Dark-green Bulrush       | S5                  |                         | 15            | 2.00            |                     |
| <i>Solidago altissima</i>           | Tall Goldenrod           | S5                  |                         | 35            | 4.30            |                     |
| <i>Solidago riddellii</i>           | Riddell's Goldenrod      | S3                  | SC                      | 15            | 1.50            | Y                   |
| <i>Solidago rugosa</i>              | Rough-stem med Goldenrod | S5                  |                         | 25            | 2.25            |                     |
| <i>Sorghastrum nutans</i>           | Yellow Indiangrass       | S4                  |                         | 35            | 13.00           | Y                   |
| <i>Symphyotrichum ericoides</i>     | White Heath Aster        | S5                  |                         | 15            | 0.75            | Y                   |
| <i>Symphyotrichum laeve</i>         | Smooth Aster             | S5                  |                         | 25            | 1.25            | Y                   |
| <i>Symphyotrichum novae-angliae</i> | New England Aster        | S5                  |                         | 5             | 0.50            | Y                   |
| <i>Thelypteris palustris</i>        | Marsh Fern               | S5                  |                         | 5             | 1.00            |                     |
| <i>Viola sp.</i>                    |                          |                     |                         | 10            | 0.10            |                     |
| <i>Vitis riparia</i>                | Riverbank Grape          | S5                  |                         | 5             | 0.25            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-5: Plant Species Diversity in Monitoring Plot E  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                    | Common Name            | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|------------------------------------|------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>        | Swamp Agrimony         | S4                  |                         | 10            | 2.00            | Y                   |
| <i>Andropogon gerardii</i>         | Big Bluestem           | S4                  |                         | 100           | 68.25           | Y                   |
| <i>Apios americana</i>             | American Groundnut     | S5                  |                         | 40            | 0.80            | Y                   |
| <i>Asparagus officinalis</i>       | Garden Asparagus       | SE5                 |                         | 15            | 0.75            |                     |
| <i>Calamagrostis canadensis</i>    | Bluejoint Reedgrass    | S5                  |                         | 5             | 1.00            | Y                   |
| <i>Carex granularis</i>            | Limestone Meadow Sedge | S5                  |                         | 5             | 0.50            |                     |
| <i>Carex sp.</i>                   |                        |                     |                         | 40            | 3.00            |                     |
| <i>Cirsium arvense</i>             | Canada Thistle         | SE5                 |                         | 5             | 0.05            |                     |
| <i>Coreopsis tripteris</i>         | Tall Tickseed          | S1S2                |                         | 15            | 1.00            | Y                   |
| <i>Cornus obliqua</i>              | Silky Dogwood          | S5                  |                         | 5             | 0.05            |                     |
| <i>Cornus racemosa</i>             | Grey Dogwood           | S5                  |                         | 10            | 0.30            |                     |
| <i>Desmodium canadense</i>         | Canada Tick-trefoil    | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Doellingeria umbellata</i>      | Flat-top White Aster   | S5                  |                         | 5             | 0.50            |                     |
| <i>Euthamia graminifolia</i>       | Grass-leaved Goldenrod | S5                  |                         | 20            | 5.00            |                     |
| <i>Fraxinus sp.</i>                |                        |                     |                         | 10            | 0.10            |                     |
| <i>Liatris spicata</i>             | Dense Blazing-star     | S2                  | THR                     | 20            | 2.50            | Y                   |
| <i>Monarda fistulosa</i>           | Wild Bergamot          | S5                  |                         | 5             | 0.50            | Y                   |
| <i>Osmunda regalis</i>             | Royal Fern             | S5                  |                         | 10            | 0.75            |                     |
| <i>Panicum virgatum</i>            | Old Switch Panicgrass  | S4                  |                         | 50            | 2.50            | Y                   |
| <i>Parthenocissus quinquefolia</i> | Virginia Creeper       | S4?                 |                         | 5             | 0.05            |                     |
| <i>Poa pratensis</i>               | Kentucky Bluegrass     | S5                  |                         | 10            | 1.25            |                     |
| <i>Populus deltoides</i>           | Eastern Cottonwood     | S5                  |                         | 5             | 0.05            |                     |
| <i>Pteridium aquilinum</i>         | Bracken Fern           | S5                  |                         | 25            | 3.05            |                     |
| <i>Pycnanthemum virginianum</i>    | Virginia Mountain-mint | S4                  |                         | 60            | 3.35            | Y                   |
| <i>Quercus velutina</i>            | Black Oak              | S4                  |                         | 25            | 0.25            | Y                   |

| Scientific Name                               | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-----------------------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Rubus flagellaris</i>                      | Northern Dewberry       | S4                  |                         | 50            | 2.60            |                     |
| <i>Salix humilis</i>                          | Prairie Willow          | S5                  |                         | 30            | 1.55            |                     |
| <i>Schizachyrium scoparium</i>                | Little Bluestem         | S4                  |                         | 20            | 2.00            | Y                   |
| <i>Solidago altissima</i>                     | Tall Goldenrod          | S5                  |                         | 70            | 5.80            |                     |
| <i>Solidago juncea</i>                        | Early Goldenrod         | S5                  |                         | 5             | 0.25            |                     |
| <i>Solidago rugosa</i>                        | Rough-stemmed Goldenrod | S5                  |                         | 35            | 3.80            |                     |
| <i>Sorghastrum nutans</i>                     | Yellow Indiangrass      | S4                  |                         | 45            | 1.05            | Y                   |
| <i>Symphyotrichum ericoides</i>               | White Heath Aster       | S5                  |                         | 10            | 0.30            | Y                   |
| <i>Symphyotrichum laeve</i> var. <i>laeve</i> | Smooth Aster            | S5                  |                         | 5             | 0.05            | Y                   |
| <i>Vitis riparia</i>                          | Riverbank Grape         | S5                  |                         | 5             | 0.25            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-6: Plant Species Diversity in Monitoring Plot F  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                 | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>     | Swamp Agrimony             | S4                  |                         | 25            | 1.80            | Y                   |
| <i>Andropogon gerardii</i>      | Big Bluestem               | S4                  |                         | 65            | 23.50           | Y                   |
| <i>Apios americana</i>          | American Groundnut         | S5                  |                         | 20            | 0.60            | Y                   |
| <i>Asparagus officinalis</i>    | Garden Asparagus           | SE5                 |                         | 5             | 0.50            |                     |
| <i>Baptisia tinctoria</i>       | Yellow Wild Indigo         | S1S2                |                         | 5             | 0.25            | Y                   |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass        | S5                  |                         | 65            | 15.75           | Y                   |
| <i>Carex sp.</i>                |                            |                     |                         | 5             | 0.05            |                     |
| <i>Coreopsis tripteris</i>      | Tall Tickseed              | S1S2                |                         | 15            | 1.25            | Y                   |
| <i>Cornus obliqua</i>           | Silky Dogwood              | S5                  |                         | 20            | 0.80            |                     |
| <i>Cornus racemosa</i>          | Grey Dogwood               | S5                  |                         | 10            | 0.10            |                     |
| <i>Cornus sp.</i>               |                            |                     |                         | 45            | 1.50            |                     |
| <i>Corylus americana</i>        | American Hazelnut          | S5                  |                         | 15            | 0.75            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil        | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Doellingeria umbellata</i>   | Flat-top White Aster       | S5                  |                         | 10            | 0.75            |                     |
| <i>Euthamia caroliniana</i>     | Slender Fragrant Goldenrod | S1                  |                         | 20            | 3.25            | Y                   |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod     | S5                  |                         | 25            | 2.25            |                     |
| <i>Eutrochium maculatum</i>     | Spotted Joe Pye Weed       | S5                  |                         | 45            | 5.65            |                     |
| <i>Fallopia convolvulus</i>     | Eurasian Black Bindweed    | SE5                 |                         | 10            | 0.50            |                     |
| <i>Fragaria virginiana</i>      | Wild Strawberry            | S5                  |                         | 10            | 0.10            | Y                   |
| <i>Liatris spicata</i>          | Dense Blazing-star         | S2                  | THR                     | 35            | 2.50            | Y                   |
| <i>Lycopus americanus</i>       | American Water-horehound   | S5                  |                         | 20            | 1.05            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot              | S5                  |                         | 10            | 2.00            | Y                   |
| <i>Onoclea sensibilis</i>       | Sensitive Fern             | S5                  |                         | 10            | 2.50            |                     |
| <i>Pteridium aquilinum</i>      | Bracken Fern               | S5                  |                         | 25            | 2.00            |                     |

| Scientific Name                     | Common Name            | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-------------------------------------|------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Pycnanthemum virginianum</i>     | Virginia Mountain-mint | S4                  |                         | 70            | 6.05            | Y                   |
| <i>Quercus velutina</i>             | Black Oak              | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Rosa multiflora</i>              | Multiflora Rose        | SE5                 |                         | 5             | 0.25            |                     |
| <i>Rubus flagellaris</i>            | Northern Dewberry      | S4                  |                         | 15            | 1.00            |                     |
| <i>Rubus sp.</i>                    |                        |                     |                         | 40            | 1.40            |                     |
| <i>Salix humilis</i>                | Prairie Willow         | S5                  |                         | 20            | 2.55            |                     |
| <i>Solidago altissima</i>           | Tall Goldenrod         | S5                  |                         | 95            | 21.05           |                     |
| <i>Sorghastrum nutans</i>           | Yellow Indiangrass     | S4                  |                         | 50            | 4.15            | Y                   |
| <i>Symphyotrichum ericoides</i>     | White Heath Aster      | S5                  |                         | 5             | 0.50            | Y                   |
| <i>Symphyotrichum laeve</i>         | Smooth Aster           | S5                  |                         | 10            | 0.75            | Y                   |
| <i>Symphyotrichum novae-angliae</i> | New England Aster      | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Symphyotrichum sp.</i>           |                        |                     |                         | 5             | 0.25            |                     |
| <i>Thalictrum sp.</i>               |                        |                     |                         | 10            | 0.30            |                     |
| <i>Ulmus pumila</i>                 | Siberian Elm           | SE3                 |                         | 5             | 1.50            |                     |
| <i>Vitis riparia</i>                | Riverbank Grape        | S5                  |                         | 5             | 0.25            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-7: Plant Species Diversity in Monitoring Plot G  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name               | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Acer rubrum</i>            | Red Maple                | S5                  |                         | 5             | 0.05            |                     |
| <i>Agrimonia parviflora</i>   | Swamp Agrimony           | S4                  |                         | 50            | 11.80           | Y                   |
| <i>Agrostis gigantea</i>      | Redtop                   | SE5                 |                         | 35            | 11.75           |                     |
| <i>Andropogon gerardii</i>    | Big Bluestem             | S4                  |                         | 55            | 16.50           | Y                   |
| <i>Andropogon virginicus</i>  | Broomsedge Bluestem      | S4                  |                         | 15            | 2.05            | Y                   |
| <i>Antennaria neglecta</i>    | Field Pussytoes          | S5                  |                         | 15            | 4.25            |                     |
| <i>Asclepias syriaca</i>      | Common Milkweed          | S5                  |                         | 10            | 1.75            |                     |
| <i>Bromus inermis</i>         | Smooth Brome             | SE5                 |                         | 15            | 5.00            |                     |
| <i>Carex granularis</i>       | Limestone Meadow Sedge   | S5                  |                         | 40            | 2.55            |                     |
| <i>Cirsium arvense</i>        | Canada Thistle           | SE5                 |                         | 20            | 4.00            |                     |
| <i>Cirsium discolor</i>       | Field Thistle            | S3                  |                         | 10            | 0.30            | Y                   |
| <i>Coreopsis tripteris</i>    | Tall Tickseed            | S1S2                |                         | 5             | 0.25            | Y                   |
| <i>Cornus racemosa</i>        | Grey Dogwood             | S5                  |                         | 15            | 0.35            |                     |
| <i>Dactylis glomerata</i>     | Orchard Grass            | SE5                 |                         | 15            | 1.25            |                     |
| <i>Danthonia spicata</i>      | Poverty Oatgrass         | S5                  |                         | 15            | 0.75            |                     |
| <i>Daucus carota</i>          | Wild Carrot              | SE5                 |                         | 70            | 6.65            |                     |
| <i>Doellingeria umbellata</i> | Flat-top White Aster     | S5                  |                         | 5             | 0.05            |                     |
| <i>Elymus repens</i>          | Quackgrass               | SE5                 |                         | 20            | 1.25            |                     |
| <i>Equisetum laevigatum</i>   | Smooth Scouring-rush     | S4                  |                         | 55            | 2.65            | Y                   |
| <i>Equisetum sp.</i>          |                          |                     |                         | 5             | 0.05            |                     |
| <i>Erigeron annuus</i>        | Annual Fleabane          | S5                  |                         | 5             | 0.05            |                     |
| <i>Fragaria virginiana</i>    | Wild Strawberry          | S5                  |                         | 10            | 0.30            | Y                   |
| <i>Lespedeza capitata</i>     | Round-headed Bush-clover | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Liatris spicata</i>        | Dense Blazing-star       | S2                  | THR                     | 55            | 7.05            | Y                   |
| <i>Lolium arundinaceum</i>    | Tall Ryegrass            | SE5                 |                         | 10            | 2.50            |                     |
| <i>Medicago lupulina</i>      | Black Medick             | SE5                 |                         | 40            | 2.60            |                     |

| Scientific Name                               | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-----------------------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Phleum pratense</i>                        | Common Timothy           | SE5                 |                         | 5             | 0.25            |                     |
| <i>Plantago lanceolata</i>                    | English Plantain         | SE5                 |                         | 35            | 1.20            |                     |
| <i>Poa compressa</i>                          | Canada Bluegrass         | SE5                 |                         | 15            | 0.80            |                     |
| <i>Poa pratensis</i>                          | Kentucky Bluegrass       | S5                  |                         | 10            | 0.50            |                     |
| <i>Pycnanthemum virginianum</i>               | Virginia Mountain-mint   | S4                  |                         | 5             | 0.05            | Y                   |
| <i>Rosa multiflora</i>                        | Multiflora Rose          | SE5                 |                         | 10            | 0.30            |                     |
| <i>Rudbeckia hirta</i>                        | Black-eyed Susan         | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Sisyrinchium albidum</i>                   | White Blue-eyed-grass    | S1                  |                         | 10            | 0.50            | Y                   |
| <i>Solidago altissima</i>                     | Tall Goldenrod           | S5                  |                         | 10            | 0.50            |                     |
| <i>Solidago nemoralis</i>                     | Grey-stem med Goldenrod  | S5                  |                         | 5             | 0.05            | Y                   |
| <i>Solidago rugosa</i>                        | Rough-stem med Goldenrod | S5                  |                         | 25            | 2.50            |                     |
| <i>Sorghastrum nutans</i>                     | Yellow Indiangrass       | S4                  |                         | 30            | 8.50            | Y                   |
| <i>Symphyotrichum ericoides</i>               | White Heath Aster        | S5                  |                         | 15            | 0.55            | Y                   |
| <i>Symphyotrichum laeve</i> var. <i>laeve</i> | Smooth Aster             | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Symphyotrichum lanceolatum</i>             | Panicled Aster           | S5                  |                         | 15            | 0.35            |                     |
| <i>Symphyotrichum novae-angliae</i>           | New England Aster        | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Symphyotrichum pilosum</i>                 | Old Field Aster          | S5                  |                         | 10            | 0.10            | Y                   |
| <i>Symphyotrichum praealtum</i>               | Willow-leaved Aster      | S2                  | THR                     | 10            | 0.30            | Y                   |
| <i>Trifolium pratense</i>                     | Red Clover               | SE5                 |                         | 30            | 2.75            |                     |
| <i>Trifolium sp.</i>                          |                          |                     |                         | 25            | 2.25            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-8: Plant Species Diversity in Monitoring Plot H  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                 | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Acer rubrum</i>              | Red Maple                  | S5                  |                         | 5             | 0.05            |                     |
| <i>Agrimonia parviflora</i>     | Swamp Agrimony             | S4                  |                         | 10            | 2.00            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                     | SE5                 |                         | 5             | 0.25            |                     |
| <i>Amphicarpaea bracteata</i>   | American Hog-peanut        | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Andropogon gerardii</i>      | Big Bluestem               | S4                  |                         | 95            | 68.50           | Y                   |
| <i>Apios americana</i>          | American Groundnut         | S5                  |                         | 30            | 2.50            | Y                   |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass        | S5                  |                         | 45            | 10.05           | Y                   |
| <i>Carex tenera</i>             | Tender Sedge               | S5                  |                         | 5             | 0.25            |                     |
| <i>Convolvulus arvensis</i>     | Field Bindweed             | SE5                 |                         | 5             | 0.25            |                     |
| <i>Coreopsis tripteris</i>      | Tall Tickseed              | S1S2                |                         | 15            | 0.75            | Y                   |
| <i>Cornus drummondii</i>        | Rough-leaved Dogwood       | S4                  |                         | 45            | 4.00            |                     |
| <i>Cornus obliqua</i>           | Silky Dogwood              | S5                  |                         | 25            | 3.00            |                     |
| <i>Cornus racemosa</i>          | Grey Dogwood               | S5                  |                         | 5             | 0.50            |                     |
| <i>Crataegus sp.</i>            |                            |                     |                         | 5             | 0.10            |                     |
| <i>Cuscuta sp.</i>              |                            |                     |                         | 5             | 0.25            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil        | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Doellingeria umbellata</i>   | Flat-top White Aster       | S5                  |                         | 35            | 5.00            |                     |
| <i>Equisetum laevigatum</i>     | Smooth Scouring-rush       | S4                  |                         | 10            | 0.10            | Y                   |
| <i>Euthamia caroliniana</i>     | Slender Fragrant Goldenrod | S1                  |                         | 5             | 1.50            | Y                   |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod     | S5                  |                         | 35            | 3.00            |                     |
| <i>Muhlenbergia mexicana</i>    | Mexican Muhly              | S5                  |                         | 10            | 0.50            |                     |
| <i>Onoclea sensibilis</i>       | Sensitive Fern             | S5                  |                         | 20            | 2.50            |                     |
| <i>Osmunda regalis</i>          | Royal Fern                 | S5                  |                         | 5             | 0.50            |                     |
| <i>Poa compressa</i>            | Canada Bluegrass           | SE5                 |                         | 5             | 0.50            |                     |
| <i>Pteridium aquilinum</i>      | Bracken Fern               | S5                  |                         | 55            | 9.25            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint     | S4                  |                         | 35            | 3.50            | Y                   |

| Scientific Name                    | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|------------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Rubus allegheniensis</i>        | Allegheny Blackberry    | S5                  |                         | 5             | 0.25            |                     |
| <i>Rubus flagellaris</i>           | Northern Dewberry       | S4                  |                         | 85            | 8.00            |                     |
| <i>Rubus occidentalis</i>          | Black Raspberry         | S5                  |                         | 5             | 0.50            |                     |
| <i>Scleria triglomerata</i>        | Whip Nutrush            | S1                  |                         | 5             | 0.50            | Y                   |
| <i>Solidago altissima</i>          | Tall Goldenrod          | S5                  |                         | 70            | 10.00           |                     |
| <i>Solidago juncea</i>             | Early Goldenrod         | S5                  |                         | 15            | 0.75            |                     |
| <i>Solidago rugosa</i>             | Rough-stemmed Goldenrod | S5                  |                         | 15            | 1.50            |                     |
| <i>Sorghastrum nutans</i>          | Yellow Indiangrass      | S4                  |                         | 10            | 0.75            | Y                   |
| <i>Symphyotrichum lateriflorum</i> | Calico Aster            | S5                  |                         | 5             | 0.25            |                     |
| <i>Thelypteris palustris</i>       | Marsh Fern              | S5                  |                         | 15            | 2.00            |                     |
| <i>Ulmus pumila</i>                | Siberian Elm            | SE3                 |                         | 5             | 0.25            |                     |
| <i>Vicia sp.</i>                   |                         |                     |                         | 10            | 0.30            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-9: Plant Species Diversity in Monitoring Plot I  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                 | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>     | Swamp Agrimony           | S4                  |                         | 15            | 1.00            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                   | SE5                 |                         | 5             | 0.05            |                     |
| <i>Amphicarpaea bracteata</i>   | American Hog-peanut      | S5                  |                         | 20            | 0.60            | Y                   |
| <i>Andropogon gerardii</i>      | Big Bluestem             | S4                  |                         | 60            | 13.00           | Y                   |
| <i>Asclepias syriaca</i>        | Common Milkweed          | S5                  |                         | 5             | 0.25            |                     |
| <i>Asparagus officinalis</i>    | Garden Asparagus         | SE5                 |                         | 5             | 0.50            |                     |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass      | S5                  |                         | 75            | 13.25           | Y                   |
| <i>Cirsium discolor</i>         | Field Thistle            | S3                  |                         | 5             | 0.25            |                     |
| <i>Coreopsis tripteris</i>      | Tall Tickseed            | S1S2                |                         | 10            | 1.50            | Y                   |
| <i>Cornus racemosa</i>          | Grey Dogwood             | S5                  |                         | 55            | 2.30            |                     |
| <i>Cornus sp.</i>               |                          |                     |                         | 5             | 0.05            |                     |
| <i>Corylus americana</i>        | American Hazelnut        | S5                  |                         | 20            | 7.60            |                     |
| <i>Dactylis glomerata</i>       | Orchard Grass            | SE5                 |                         | 5             | 0.05            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil      | S4                  |                         | 20            | 1.50            | Y                   |
| <i>Doellingeria umbellata</i>   | Flat-top White Aster     | S5                  |                         | 40            | 3.00            |                     |
| <i>Equisetum arvense</i>        | Field Horsetail          | S5                  |                         | 5             | 0.05            |                     |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod   | S5                  |                         | 25            | 3.75            |                     |
| <i>Eutrochium maculatum</i>     | Spotted Joe Pye Weed     | S5                  |                         | 5             | 2.50            |                     |
| <i>Helianthus giganteus</i>     | Giant Sunflower          | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Juncus dudleyi</i>           | Dudley's Rush            | S5                  |                         | 15            | 0.75            |                     |
| <i>Liatris spicata</i>          | Dense Blazing-star       | S2                  | THR                     | 15            | 1.00            | Y                   |
| <i>Lycopus americanus</i>       | American Water-horehound | S5                  |                         | 5             | 0.25            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot            | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Onoclea sensibilis</i>       | Sensitive Fern           | S5                  |                         | 45            | 9.75            |                     |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass    | S4                  |                         | 10            | 0.50            | Y                   |

| Scientific Name                 | Common Name            | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint | S4                  |                         | 25            | 1.75            | Y                   |
| <i>Quercus bicolor</i>          | Swamp White Oak        | S4                  |                         | 5             | 0.05            |                     |
| <i>Rubus flagellaris</i>        | Northern Dewberry      | S4                  |                         | 55            | 3.75            |                     |
| <i>Solidago altissima</i>       | Tall Goldenrod         | S5                  |                         | 85            | 20.30           |                     |
| <i>Sporobolus michauxianus</i>  | Prairie Cordgrass      | S4                  |                         | 40            | 11.25           | Y                   |
| <i>Symphyotrichum praealtum</i> | Willow-leaved Aster    | S2                  | THR                     | 25            | 2.05            | Y                   |
| <i>Symphyotrichum sp.</i>       |                        |                     |                         | 10            | 0.75            |                     |
| <i>Thalictrum sp.</i>           |                        |                     |                         | 20            | 0.40            |                     |
| <i>Thelypteris palustris</i>    | Marsh Fern             | S5                  |                         | 30            | 3.50            |                     |
| <i>Vernonia gigantea</i>        | Giant Ironweed         | S1?                 |                         | 5             | 0.50            | Y                   |
| <i>Vernonia missurica</i>       | Missouri Ironweed      | S3?                 |                         | 35            | 3.00            | Y                   |
| <i>Veronicastrum virginicum</i> | Culver's Root          | S2                  |                         | 5             | 0.25            | Y                   |
| <i>Vitis riparia</i>            | Riverbank Grape        | S5                  |                         | 10            | 0.75            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A1-10: Plant Species Diversity in Monitoring Plot J  
Ojibway Prairie Provincial Nature Reserve

| Scientific Name                  | Common Name            | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------|------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>      | Swamp Agrimony         | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Andropogon gerardii</i>       | Big Bluestem           | S4                  |                         | 20            | 6.25            | Y                   |
| <i>Anemone sp.</i>               |                        |                     |                         | 5             | 0.25            |                     |
| <i>Apocynum androsaemifolium</i> | Spreading Dogbane      | S5                  |                         | 5             | 1.00            |                     |
| <i>Calamagrostis canadensis</i>  | Bluejoint Reedgrass    | S5                  |                         | 80            | 27.00           | Y                   |
| <i>Carex pensylvanica</i>        | Pennsylvania Sedge     | S5                  |                         | 40            | 25.00           |                     |
| <i>Coreopsis tripteris</i>       | Tall Tickseed          | S1S2                |                         | 15            | 1.75            | Y                   |
| <i>Cornus racemosa</i>           | Grey Dogwood           | S5                  |                         | 5             | 0.50            |                     |
| <i>Corylus americana</i>         | American Hazelnut      | S5                  |                         | 10            | 0.75            |                     |
| <i>Doellingeria umbellata</i>    | Flat-top White Aster   | S5                  |                         | 20            | 1.50            |                     |
| <i>Euthamia graminifolia</i>     | Grass-leaved Goldenrod | S5                  |                         | 15            | 2.50            |                     |
| <i>Geranium maculatum</i>        | Spotted Geranium       | S5                  |                         | 10            | 0.75            |                     |
| <i>Helianthus divaricatus</i>    | Woodland Sunflower     | S5                  |                         | 5             | 0.50            | Y                   |
| <i>Liatris spicata</i>           | Dense Blazing-star     | S2                  | THR                     | 5             | 0.50            | Y                   |
| <i>Monarda fistulosa</i>         | Wild Bergamot          | S5                  |                         | 25            | 2.00            | Y                   |
| <i>Onoclea sensibilis</i>        | Sensitive Fern         | S5                  |                         | 35            | 8.00            |                     |
| <i>Osmunda regalis</i>           | Royal Fern             | S5                  |                         | 15            | 2.00            |                     |
| <i>Polypodiaceae sp.</i>         |                        |                     |                         | 5             | 0.50            |                     |
| <i>Pteridium aquilinum</i>       | Bracken Fern           | S5                  |                         | 5             | 1.50            |                     |
| <i>Pycnanthemum virginianum</i>  | Virginia Mountain-mint | S4                  |                         | 35            | 8.25            | Y                   |
| <i>Quercus palustris</i>         | Swamp Pin Oak          | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Quercus velutina</i>          | Black Oak              | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Rubus allegheniensis</i>      | Allegheny Blackberry   | S5                  |                         | 15            | 1.25            |                     |
| <i>Rubus flagellaris</i>         | Northern Dewberry      | S4                  |                         | 5             | 0.25            |                     |
| <i>Solidago canadensis</i>       | Canada Goldenrod       | S5                  |                         | 40            | 2.75            |                     |

| Scientific Name                | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|--------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Solidago rugosa</i>         | Rough-stemmed Goldenrod | S5                  |                         | 60            | 15.50           |                     |
| <i>Sporobolus michauxianus</i> | Prairie Cordgrass       | S4                  |                         | 15            | 1.50            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

# Appendix A-2

## Ojibway Park

Table A2-1: Plant Species Diversity in Monitoring Plot K  
Ojibway Park

| Scientific Name                    | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|------------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Achillea millefolium</i>        | Common Yarrow              | SE5?                |                         | 65            | 4.35            | Y                   |
| <i>Andropogon gerardii</i>         | Big Bluestem               | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Andropogon virginicus</i>       | Broomsedge Bluestem        | S4                  |                         | 10            | 1.25            | Y                   |
| <i>Anemone sp.</i>                 |                            |                     |                         | 10            | 0.50            |                     |
| <i>Aristida purpurascens</i>       | Arrowfeather Threawn Grass | S1                  |                         | 10            | 0.50            | Y                   |
| <i>Baptisia tinctoria</i>          | Yellow Wild Indigo         | S1S2                |                         | 25            | 2.30            | Y                   |
| <i>Carex sp. A</i>                 |                            |                     |                         | 25            | 3.00            |                     |
| <i>Carex sp. B</i>                 |                            |                     |                         | 5             | 0.25            |                     |
| <i>Carya glabra</i>                | Pignut Hickory             | S3                  |                         | 20            | 5.00            | Y                   |
| <i>Celastrus orbiculatus</i>       | Oriental Bittersweet       | SE2                 |                         | 15            | 3.00            |                     |
| <i>Centaurea sp.</i>               |                            |                     |                         | 10            | 0.30            |                     |
| <i>Cirsium discolor</i>            | Field Thistle              | S3                  |                         | 10            | 0.30            | Y                   |
| <i>Coreopsis tripteris</i>         | Tall Tickseed              | S1S2                |                         | 10            | 0.30            | Y                   |
| <i>Cornus drummondii</i>           | Rough-leaved Dogwood       | S4                  |                         | 15            | 1.25            |                     |
| <i>Cornus racemosa</i>             | Grey Dogwood               | S5                  |                         | 40            | 3.50            |                     |
| <i>Daucus carota</i>               | Wild Carrot                | SE5                 |                         | 5             | 0.05            |                     |
| <i>Desmodium canadense</i>         | Canada Tick-trefoil        | S4                  |                         | 30            | 1.35            | Y                   |
| <i>Dichanthelium implicatum</i>    | Slender-stemmed Panicgrass | S5                  |                         | 5             | 0.50            |                     |
| <i>Dichanthelium oligosanthes</i>  | Few-flowered Panicgrass    | S4                  |                         | 45            | 7.75            | Y                   |
| <i>Dichanthelium sphaerocarpon</i> | Round-fruited Panicgrass   | S3                  |                         | 45            | 1.45            | Y                   |
| <i>Elaeagnus umbellata</i>         | Autumn Olive               | SE3                 |                         | 5             | 0.25            |                     |
| <i>Erigeron sp.</i>                |                            |                     |                         | 5             | 0.10            |                     |
| <i>Euthamia graminifolia</i>       | Grass-leaved Goldenrod     | S5                  |                         | 10            | 0.50            |                     |
| <i>Fragaria virginiana</i>         | Wild Strawberry            | S5                  |                         | 5             | 3.00            | Y                   |
| <i>Galium circaezans</i>           | Licorice Bedstraw          | S5                  |                         | 5             | 0.10            |                     |
| <i>Geum sp.</i>                    |                            |                     |                         | 25            | 1.75            |                     |

| Scientific Name                | Common Name                  | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|--------------------------------|------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Hypericum perforatum</i>    | Common St. John's-wort       | SE5                 |                         | 5             | 0.25            | Y                   |
| <i>Krigia biflora</i>          | Two-flowered Dwarf-dandelion | S2                  |                         | 5             | 0.25            | Y                   |
| <i>Lespedeza capitata</i>      | Round-headed Bush-clover     | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Lespedeza virginica</i>     | Slender Bush-clover          | S1                  | END                     | 5             | 0.05            | Y                   |
| <i>Liatris aspera</i>          | Rough Blazing-star           | S2                  |                         | 15            | 0.55            | Y                   |
| <i>Liatris spicata</i>         | Dense Blazing-star           | S2                  | THR                     | 25            | 1.75            | Y                   |
| <i>Lupinus perennis</i>        | Sundial Lupine               | S2S3                |                         | 10            | 1.00            | Y                   |
| <i>Monarda fistulosa</i>       | Wild Bergamot                | S5                  |                         | 20            | 2.00            | Y                   |
| <i>Oxalis stricta</i>          | Upright Yellow Wood-sorrel   | S5                  |                         | 5             | 0.25            |                     |
| <i>Poa compressa</i>           | Canada Bluegrass             | SE5                 |                         | 25            | 2.00            |                     |
| <i>Potentilla simplex</i>      | Old-field Cinquefoil         | S5                  |                         | 15            | 0.40            |                     |
| <i>Prunus serotina</i>         | Black Cherry                 | S5                  |                         | 5             | 0.25            |                     |
| <i>Quercus rubra</i>           | Northern Red Oak             | S5                  |                         | 5             | 0.05            |                     |
| <i>Quercus velutina</i>        | Black Oak                    | S4                  |                         | 30            | 1.30            | Y                   |
| <i>Rosa multiflora</i>         | Multiflora Rose              | SE5                 |                         | 5             | 0.05            |                     |
| <i>Rubus allegheniensis</i>    | Allegheny Blackberry         | S5                  |                         | 5             | 1.00            |                     |
| <i>Rubus flagellaris</i>       | Northern Dewberry            | S4                  |                         | 30            | 3.75            |                     |
| <i>Rubus occidentalis</i>      | Black Raspberry              | S5                  |                         | 5             | 0.25            |                     |
| <i>Rudbeckia hirta</i>         | Black-eyed Susan             | S5                  |                         | 65            | 10.00           | Y                   |
| <i>Salix sp.</i>               |                              |                     |                         | 30            | 3.00            |                     |
| <i>Sanicula sp.</i>            |                              |                     |                         | 15            | 4.00            |                     |
| <i>Schizachyrium scoparium</i> | Little Bluestem              | S4                  |                         | 20            | 1.75            | Y                   |
| <i>Securigera varia</i>        | Purple Crown-vetch           | SE5                 |                         | 5             | 0.25            |                     |
| <i>Solidago altissima</i>      | Tall Goldenrod               | S5                  |                         | 10            | 0.50            |                     |
| <i>Solidago canadensis</i>     | Canada Goldenrod             | S5                  |                         | 50            | 20.50           |                     |
| <i>Solidago juncea</i>         | Early Goldenrod              | S5                  |                         | 50            | 11.50           |                     |
| <i>Solidago nemoralis</i>      | Grey-stem med Goldenrod      | S5                  |                         | 35            | 3.25            | Y                   |

| Scientific Name                               | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-----------------------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Solidago rugosa</i>                        | Rough-stem med Goldenrod | S5                  |                         | 5             | 0.50            |                     |
| <i>Sorghastrum nutans</i>                     | Yellow Indiangrass       | S4                  |                         | 25            | 2.00            | Y                   |
| <i>Symphyotrichum ericoides</i>               | White Heath Aster        | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Symphyotrichum laeve</i> var. <i>laeve</i> | Smooth Aster             | S5                  |                         | 10            | 5.50            | Y                   |
| <i>Symphyotrichum pilosum</i>                 | Old Field Aster          | S5                  |                         | 10            | 0.75            | Y                   |
| <i>Toxicodendron radicans</i>                 | Poison Ivy               | S5                  |                         | 50            | 3.25            |                     |
| <i>Tradescantia ohimensis</i>                 | Ohio Spiderwort          | S2                  |                         | 25            | 1.25            | Y                   |
| <i>Verbascum thapsus</i>                      | Common Mullein           | SE5                 |                         | 5             | 0.25            |                     |
| <i>Vitis riparia</i>                          | Riverbank Grape          | S5                  |                         | 10            | 0.30            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A2-2: Plant Species Diversity in Monitoring Plot L  
Ojibway Park

| Scientific Name                  | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Ageratina sp.</i>             |                            |                     |                         | 5             | 0.25            |                     |
| <i>Agrimonia parviflora</i>      | Swamp Agrimony             | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Apocynum androsaemifolium</i> | Spreading Dogbane          | S5                  |                         | 15            | 0.55            |                     |
| <i>Anemone sp.</i>               |                            |                     |                         | 40            | 6.05            |                     |
| <i>Calamagrostis canadensis</i>  | Bluejoint Reedgrass        | S5                  |                         | 100           | 65.00           | Y                   |
| <i>Celtis occidentalis</i>       | Common Hackberry           | S4                  |                         | 5             | 0.05            |                     |
| <i>Cirsium discolor</i>          | Field Thistle              | S3                  |                         | 5             | 0.25            |                     |
| <i>Cornus obliqua</i>            | Silky Dogwood              | S5                  |                         | 5             | 0.25            |                     |
| <i>Doellingeria umbellata</i>    | Flat-top White Aster       | S5                  |                         | 40            | 2.05            |                     |
| <i>Elymus virginicus</i>         | Virginia Wildrye           | S5                  |                         | 15            | 1.50            |                     |
| <i>Euthamia graminifolia</i>     | Grass-leaved Goldenrod     | S5                  |                         | 25            | 1.25            |                     |
| <i>Galium asprellum</i>          | Rough Bedstraw             | S5                  |                         | 10            | 0.75            |                     |
| <i>Galium pilosum</i>            | Hairy Bedstraw             | S3                  |                         | 5             | 0.05            | Y                   |
| <i>Geranium maculatum</i>        | Spotted Geranium           | S5                  |                         | 5             | 0.05            |                     |
| <i>Geum canadense</i>            | Canada Avens               | S5                  |                         | 20            | 1.00            |                     |
| <i>Geum sp.</i>                  |                            |                     |                         | 5             | 0.25            |                     |
| <i>Onoclea sensibilis</i>        | Sensitive Fern             | S5                  |                         | 15            | 0.55            |                     |
| <i>Osmunda regalis</i>           | Royal Fern                 | S5                  |                         | 70            | 12.75           |                     |
| <i>Oxalis stricta</i>            | Upright Yellow Wood-sorrel | S5                  |                         | 25            | 10.00           |                     |
| <i>Potentilla simplex</i>        | Old-field Cinquefoil       | S5                  |                         | 5             | 0.25            |                     |
| <i>Quercus palustris</i>         | Swamp Pin Oak              | S4                  |                         | 15            | 0.55            | Y                   |
| <i>Rosa multiflora</i>           | Multiflora Rose            | SE5                 |                         | 25            | 0.85            |                     |
| <i>Rubus allegheniensis</i>      | Allegheny Blackberry       | S5                  |                         | 10            | 0.10            |                     |
| <i>Rubus flagellaris</i>         | Northern Dewberry          | S4                  |                         | 30            | 2.25            |                     |
| <i>Smilax tamnoides</i>          | Bristly Greenbriar         | S5                  |                         | 80            | 8.00            |                     |
| <i>Solidago altissima</i>        | Tall Goldenrod             | S5                  |                         | 5             | 0.25            |                     |
| <i>Solidago canadensis</i>       | Canada Goldenrod           | S5                  |                         | 15            | 1.25            |                     |

| Scientific Name                    | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|------------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Solidago rugosa</i>             | Rough-stemmed Goldenrod | S5                  |                         | 15            | 0.55            |                     |
| <i>Symphyotrichum lateriflorum</i> | Calico Aster            | S5                  |                         | 45            | 8.50            |                     |
| <i>Symphyotrichum sp.</i>          |                         |                     |                         | 30            | 2.25            |                     |
| <i>Thalictrum pubescens</i>        | Tall Meadow-rue         | S5                  |                         | 45            | 2.85            |                     |
| <i>Toxicodendron radicans</i>      | Poison Ivy              | S5                  |                         | 10            | 0.50            |                     |
| <i>Vernonia missurica</i>          | Missouri Ironweed       | S3?                 |                         | 20            | 1.00            | Y                   |
| <i>Veronicastrum virginicum</i>    | Culver's Root           | S2                  |                         | 25            | 2.50            | Y                   |
| <i>Vitis riparia</i>               | Riverbank Grape         | S5                  |                         | 5             | 0.05            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

# Appendix A-3

## Tallgrass Prairie Heritage Park

Table A3-1: Plant Species Diversity in Monitoring Plot M  
Tallgrass Prairie Heritage Park

| Scientific Name                  | Common Name                   | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------|-------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agalinis tenuifolia</i>       | Slender-leaved False Foxglove | S4S5                |                         | 8             | 0.42            |                     |
| <i>Agrostis gigantea</i>         | Redtop                        | SE5                 |                         | 50            | 2.25            |                     |
| <i>Andropogon gerardii</i>       | Big Bluestem                  | S4                  |                         | 58            | 21.25           | Y                   |
| <i>Apocynum androsaemifolium</i> | Spreading Dogbane             | S5                  |                         | 8             | 0.08            |                     |
| <i>Cirsium discolor</i>          | Field Thistle                 | S3                  |                         | 17            | 0.83            |                     |
| <i>Coreopsis tripteris</i>       | Tall Tickseed                 | S1S2                |                         | 58            | 3.58            | Y                   |
| <i>Cornus racemosa</i>           | Grey Dogwood                  | S5                  |                         | 33            | 0.33            |                     |
| <i>Cornus sp.</i>                |                               |                     |                         | 8             | 0.08            |                     |
| <i>Corylus americana</i>         | American Hazelnut             | S5                  |                         | 25            | 5.83            |                     |
| <i>Daucus carota</i>             | Wild Carrot                   | SE5                 |                         | 58            | 5.00            |                     |
| <i>Doellingeria umbellata</i>    | Flat-top White Aster          | S5                  |                         | 8             | 0.83            |                     |
| <i>Euthamia graminifolia</i>     | Grass-leaved Goldenrod        | S5                  |                         | 17            | 1.25            |                     |
| <i>Helenium autumnale</i>        | Common Sneezeweed             | S4                  |                         | 8             | 0.42            | Y                   |
| <i>Helianthus divaricatus</i>    | Woodland Sunflower            | S5                  |                         | 17            | 1.67            | Y                   |
| <i>Helianthus sp.</i>            |                               |                     |                         | 8             | 0.42            |                     |
| <i>Juncus dudleyi</i>            | Dudley's Rush                 | S5                  |                         | 8             | 0.08            |                     |
| <i>Juncus sp.</i>                |                               |                     |                         | 8             | 0.08            |                     |
| <i>Lespedeza capitata</i>        | Round-headed Bush-clover      | S4                  |                         | 8             | 0.42            | Y                   |
| <i>Liatris spicata</i>           | Dense Blazing-star            | S2                  | THR                     | 17            | 0.83            | Y                   |
| <i>Monarda fistulosa</i>         | Wild Bergamot                 | S5                  |                         | 50            | 3.92            | Y                   |
| <i>Onoclea sensibilis</i>        | Sensitive Fern                | S5                  |                         | 8             | 0.42            |                     |
| <i>Panicum virgatum</i>          | Old Switch Panicgrass         | S4                  |                         | 58            | 5.92            | Y                   |
| <i>Phragmites australis</i>      | European Reed                 | S4?                 |                         | 17            | 2.50            |                     |
| <i>Plantago sp.</i>              |                               |                     |                         | 8             | 0.83            |                     |
| <i>Pteridium aquilinum</i>       | Bracken Fern                  | S5                  |                         | 8             | 0.83            |                     |
| <i>Pycnanthemum virginianum</i>  | Virginia Mountain-mint        | S4                  |                         | 58            | 3.92            | Y                   |

| Scientific Name                        | Common Name                    | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------------|--------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Ratibida pinnata</i>                | Grey-headed Prairie Coneflower | S3                  |                         | 8             | 0.83            | Y                   |
| <i>Rosa multiflora</i>                 | Multiflora Rose                | SE5                 |                         | 58            | 2.00            |                     |
| <i>Rubus flagellaris</i>               | Northern Dewberry              | S4                  |                         | 33            | 3.75            |                     |
| <i>Rudbeckia hirta</i>                 | Black-eyed Susan               | S5                  |                         | 42            | 2.17            | Y                   |
| <i>Salix humilis</i>                   | Prairie Willow                 | S5                  |                         | 8             | 0.83            |                     |
| <i>Schizachyrium scoparium</i>         | Little Bluestem                | S4                  |                         | 42            | 8.33            | Y                   |
| <i>Solidago altissima</i>              | Tall Goldenrod                 | S5                  |                         | 42            | 4.17            |                     |
| <i>Solidago riddellii</i>              | Riddell's Goldenrod            | S3                  | SC                      | 8             | 0.42            | Y                   |
| <i>Solidago sp.</i>                    |                                |                     |                         | 8             | 0.83            |                     |
| <i>Sorghastrum nutans</i>              | Yellow Indiangrass             | S4                  |                         | 58            | 10.83           | Y                   |
| <i>Symphyotrichum ericoides</i>        | White Heath Aster              | S5                  |                         | 8             | 0.42            | Y                   |
| <i>Symphyotrichum laeve var. laeve</i> | Smooth Aster                   | S5                  |                         | 42            | 2.50            | Y                   |
| <i>Symphyotrichum sp.</i>              |                                |                     |                         | 17            | 1.25            |                     |
| <i>Trifolium pratense</i>              | Red Clover                     | SE5                 |                         | 8             | 0.08            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A3-2: Plant Species Diversity in Monitoring Plot N  
Tallgrass Prairie Heritage Park

| Scientific Name                 | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>     | Swamp Agrimony          | S4                  |                         | 10            | 1.75            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                  | SE5                 |                         | 5             | 0.25            |                     |
| <i>Amphicarpaea bracteata</i>   | American Hog-peanut     | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Andropogon gerardii</i>      | Big Bluestem            | S4                  |                         | 35            | 7.25            | Y                   |
| <i>Anemone sp.</i>              |                         |                     |                         | 15            | 0.75            |                     |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass     | S5                  |                         | 25            | 7.00            | Y                   |
| <i>Carex pensylvanica</i>       | Pennsylvania Sedge      | S5                  |                         | 85            | 29.75           |                     |
| <i>Coreopsis tripteris</i>      | Tall Tickseed           | S1S2                |                         | 20            | 1.75            | Y                   |
| <i>Cornus obliqua</i>           | Silky Dogwood           | S5                  |                         | 15            | 1.25            |                     |
| <i>Cornus racemosa</i>          | Grey Dogwood            | S5                  |                         | 10            | 1.50            |                     |
| <i>Corylus americana</i>        | American Hazelnut       | S5                  |                         | 20            | 2.75            |                     |
| <i>Dactylis glomerata</i>       | Orchard Grass           | SE5                 |                         | 5             | 0.25            |                     |
| <i>Daucus carota</i>            | Wild Carrot             | SE5                 |                         | 5             | 0.50            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil     | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Doellingeria umbellata</i>   | Flat-top White Aster    | S5                  |                         | 55            | 34.00           |                     |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod  | S5                  |                         | 5             | 1.50            |                     |
| <i>Galium triflorum</i>         | Three-flowered Bedstraw | S5                  |                         | 5             | 0.25            |                     |
| <i>Helianthus divaricatus</i>   | Woodland Sunflower      | S5                  |                         | 20            | 2.25            | Y                   |
| <i>Lathyrus sp.</i>             |                         |                     |                         | 5             | 0.25            |                     |
| <i>Medicago lupulina</i>        | Black Medick            | SE5                 |                         | 5             | 0.05            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot           | S5                  |                         | 25            | 6.50            | Y                   |
| <i>Onoclea sensibilis</i>       | Sensitive Fern          | S5                  |                         | 10            | 2.50            |                     |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass   | S4                  |                         | 5             | 2.00            | Y                   |
| <i>Poa compressa</i>            | Canada Bluegrass        | SE5                 |                         | 5             | 0.05            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint  | S4                  |                         | 10            | 2.00            | Y                   |
| <i>Rubus flagellaris</i>        | Northern Dewberry       | S4                  |                         | 45            | 5.00            |                     |

| Scientific Name                   | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-----------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Rubus occidentalis</i>         | Black Raspberry         | S5                  |                         | 5             | 1.50            |                     |
| <i>Solidago canadensis</i>        | Canada Goldenrod        | S5                  |                         | 5             | 0.50            |                     |
| <i>Solidago juncea</i>            | Early Goldenrod         | S5                  |                         | 5             | 0.50            |                     |
| <i>Solidago rugosa</i>            | Rough-stemmed Goldenrod | S5                  |                         | 25            | 2.75            |                     |
| <i>Sorghastrum nutans</i>         | Yellow Indiangrass      | S4                  |                         | 10            | 4.50            | Y                   |
| <i>Sporobolus michauxianus</i>    | Prairie Cordgrass       | S4                  |                         | 15            | 2.50            | Y                   |
| <i>Symphyotrichum lanceolatum</i> | Panicled Aster          | S5                  |                         | 5             | 0.50            |                     |
| <i>Thalictrum sp.</i>             |                         |                     |                         | 10            | 0.30            |                     |
| <i>Zanthoxylum americanum</i>     | Common Prickly-ash      | S5                  |                         | 5             | 0.25            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A3-3: Plant Species Diversity in Monitoring Plot O  
Tallgrass Prairie Heritage Park

| Scientific Name                 | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Acer rubrum</i>              | Red Maple                  | S5                  |                         | 10            | 0.50            |                     |
| <i>Agrimonia parviflora</i>     | Swamp Agrimony             | S4                  |                         | 55            | 6.00            | Y                   |
| <i>Amphicarpaea bracteata</i>   | American Hog-peanut        | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Andropogon gerardii</i>      | Big Bluestem               | S4                  |                         | 30            | 11.25           | Y                   |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass        | S5                  |                         | 15            | 2.25            | Y                   |
| <i>Carex sp.</i>                |                            |                     |                         | 5             | 0.50            |                     |
| <i>Coreopsis tripteris</i>      | Tall Tickseed              | S1S2                |                         | 30            | 3.00            | Y                   |
| <i>Cornus obliqua</i>           | Silky Dogwood              | S5                  |                         | 25            | 3.00            |                     |
| <i>Cornus racemosa</i>          | Grey Dogwood               | S5                  |                         | 5             | 0.05            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil        | S4                  |                         | 15            | 0.75            | Y                   |
| <i>Elaeagnus umbellata</i>      | Autumn Olive               | SE3                 |                         | 5             | 0.25            |                     |
| <i>Equisetum sp.</i>            |                            |                     |                         | 80            | 5.75            |                     |
| <i>Euthamia caroliniana</i>     | Slender Fragrant Goldenrod | S1                  |                         | 45            | 7.75            | Y                   |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod     | S5                  |                         | 15            | 2.50            |                     |
| <i>Helenium autumnale</i>       | Common Sneezeweed          | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Juncus dudleyi</i>           | Dudley's Rush              | S5                  |                         | 35            | 4.05            |                     |
| <i>Juncus torreyi</i>           | Torrey's Rush              | S5                  |                         | 5             | 0.25            |                     |
| <i>Liatris spicata</i>          | Dense Blazing-star         | S2                  | THR                     | 15            | 1.25            | Y                   |
| <i>Onoclea sensibilis</i>       | Sensitive Fern             | S5                  |                         | 40            | 5.00            |                     |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass      | S4                  |                         | 60            | 18.25           | Y                   |
| <i>Phragmites australis</i>     | European Reed              | S4?                 |                         | 5             | 0.50            |                     |
| <i>Populus deltoides</i>        | Eastern Cottonwood         | S5                  |                         | 5             | 0.25            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint     | S4                  |                         | 45            | 5.00            | Y                   |
| <i>Quercus palustris</i>        | Swamp Pin Oak              | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Rosa multiflora</i>          | Multiflora Rose            | SE5                 |                         | 5             | 1.00            |                     |
| <i>Rubus flagellaris</i>        | Northern Dewberry          | S4                  |                         | 5             | 0.25            |                     |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan           | S5                  |                         | 5             | 0.25            | Y                   |

| Scientific Name                 | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Salix sp.</i>                |                         |                     |                         | 5             | 0.25            |                     |
| <i>Schizachyrium scoparium</i>  | Little Bluestem         | S4                  |                         | 20            | 4.25            | Y                   |
| <i>Solidago altissima</i>       | Tall Goldenrod          | S5                  |                         | 5             | 1.50            |                     |
| <i>Solidago canadensis</i>      | Canada Goldenrod        | S5                  |                         | 5             | 0.25            |                     |
| <i>Solidago riddellii</i>       | Riddell's Goldenrod     | S3                  | SC                      | 25            | 2.25            | Y                   |
| <i>Solidago rugosa</i>          | Rough-stemmed Goldenrod | S5                  |                         | 5             | 0.25            |                     |
| <i>Solidago sp.</i>             |                         |                     |                         | 5             | 0.50            |                     |
| <i>Sorghastrum nutans</i>       | Yellow Indiangrass      | S4                  |                         | 65            | 18.00           | Y                   |
| <i>Symphyotrichum ericoides</i> | White Heath Aster       | S5                  |                         | 10            | 0.75            | Y                   |
| <i>Symphyotrichum sp.</i>       |                         |                     |                         | 5             | 0.25            |                     |
| <i>Ulmus americana</i>          | White Elm               | S5                  |                         | 30            | 1.55            |                     |
| <i>Ulmus pumila</i>             | Siberian Elm            | SE3                 |                         | 5             | 0.25            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

# Appendix A-4

## Black Oak Heritage Park

Table A4-1: Plant Species Diversity in Monitoring Plot P  
Black Oak Heritage Park

| Scientific Name                | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|--------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Achillea millefolium</i>    | Common Yarrow            | SE5?                |                         | 40            | 3.75            | Y                   |
| <i>Agrostis gigantea</i>       | Redtop                   | SE5                 |                         | 70            | 9.25            |                     |
| <i>Andropogon virginicus</i>   | Broomsedge Bluestem      | S4                  |                         | 60            | 15.75           | Y                   |
| <i>Asclepias verticillata</i>  | Whorled Milkweed         | S4                  |                         | 10            | 2.00            | Y                   |
| <i>Carex sp.</i>               |                          |                     |                         | 5             | 0.25            |                     |
| <i>Cornus racemosa</i>         | Grey Dogwood             | S5                  |                         | 5             | 0.25            |                     |
| <i>Elaeagnus umbellata</i>     | Autumn Olive             | SE3                 |                         | 5             | 0.25            |                     |
| <i>Equisetum sp.</i>           |                          |                     |                         | 35            | 2.00            |                     |
| <i>Eupatorium altissimum</i>   | Tall Boneset             | S4                  |                         | 25            | 11.00           |                     |
| <i>Euthamia graminifolia</i>   | Grass-leaved Goldenrod   | S5                  |                         | 5             | 1.50            |                     |
| <i>Lespedeza capitata</i>      | Round-headed Bush-clover | S4                  |                         | 10            | 0.50            | Y                   |
| <i>Panicum virgatum</i>        | Old Switch Panicgrass    | S4                  |                         | 85            | 25.25           | Y                   |
| <i>Plantago lanceolata</i>     | English Plantain         | SE5                 |                         | 5             | 0.25            |                     |
| <i>Plantago sp.</i>            |                          |                     |                         | 70            | 6.00            |                     |
| <i>Rubus flagellaris</i>       | Northern Dewberry        | S4                  |                         | 10            | 2.50            |                     |
| <i>Schizachyrium scoparium</i> | Little Bluestem          | S4                  |                         | 45            | 31.00           | Y                   |
| <i>Setaria faberi</i>          | Giant Foxtail            | SE4                 |                         | 5             | 0.25            |                     |
| <i>Solidago canadensis</i>     | Canada Goldenrod         | S5                  |                         | 5             | 0.25            |                     |
| <i>Solidago sp.</i>            |                          |                     |                         | 5             | 0.25            |                     |
| <i>Vitis riparia</i>           | Riverbank Grape          | S5                  |                         | 15            | 1.25            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A4-2: Plant Species Diversity in Monitoring Plot Q  
Black Oak Heritage Park

| Scientific Name                 | Common Name                    | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|--------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrostis gigantea</i>        | Redtop                         | SE5                 |                         | 5             | 0.25            |                     |
| <i>Andropogon gerardii</i>      | Big Bluestem                   | S4                  |                         | 30            | 16.00           | Y                   |
| <i>Anemone sp.</i>              |                                |                     |                         | 5             | 0.25            |                     |
| <i>Celastrus orbiculatus</i>    | Oriental Bittersweet           | SE2                 |                         | 5             | 0.25            |                     |
| <i>Cornus obliqua</i>           | Silky Dogwood                  | S5                  |                         | 5             | 1.00            |                     |
| <i>Cornus racemosa</i>          | Grey Dogwood                   | S5                  |                         | 5             | 0.25            |                     |
| <i>Cornus sp.</i>               |                                |                     |                         | 10            | 0.30            |                     |
| <i>Cuscuta sp.</i>              |                                |                     |                         | 5             | 0.25            |                     |
| <i>Desmodium canadense</i>      | Canada Tick-trefoil            | S4                  |                         | 70            | 16.00           | Y                   |
| <i>Doellingeria umbellata</i>   | Flat-top White Aster           | S5                  |                         | 5             | 3.00            |                     |
| <i>Eupatorium altissimum</i>    | Tall Boneset                   | S4                  |                         | 10            | 3.25            |                     |
| <i>Euthamia caroliniana</i>     | Slender Fragrant Goldenrod     | S1                  |                         | 5             | 0.50            | Y                   |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod         | S5                  |                         | 30            | 9.00            |                     |
| <i>Galium sp.</i>               |                                |                     |                         | 50            | 3.50            |                     |
| <i>Geranium maculatum</i>       | Spotted Geranium               | S5                  |                         | 5             | 0.25            |                     |
| <i>Juncus dudleyi</i>           | Dudley's Rush                  | S5                  |                         | 30            | 5.25            |                     |
| <i>Juncus torreyi</i>           | Torrey's Rush                  | S5                  |                         | 15            | 1.00            |                     |
| <i>Liatris spicata</i>          | Dense Blazing-star             | S2                  | THR                     | 5             | 0.25            | Y                   |
| <i>Monarda fistulosa</i>        | Wild Bergamot                  | S5                  |                         | 15            | 1.00            | Y                   |
| <i>Muhlenbergia sp.</i>         |                                |                     |                         | 20            | 2.00            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint         | S4                  |                         | 65            | 14.00           | Y                   |
| <i>Ratibida pinnata</i>         | Grey-headed Prairie Coneflower | S3                  |                         | 5             | 0.25            | Y                   |
| <i>Robinia pseudoacacia</i>     | Black Locust                   | SE5                 |                         | 10            | 1.75            |                     |
| <i>Salix sp.</i>                |                                |                     |                         | 5             | 1.00            |                     |
| <i>Solidago altissima</i>       | Tall Goldenrod                 | S5                  |                         | 80            | 16.75           |                     |
| <i>Sorghastrum nutans</i>       | Yellow Indiangrass             | S4                  |                         | 15            | 2.75            | Y                   |
| <i>Strophostyles helvola</i>    | Trailing Wild Bean             | S4                  |                         | 5             | 0.25            | Y                   |

| Scientific Name                     | Common Name       | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|-------------------------------------|-------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Symphyotrichum ericoides</i>     | White Heath Aster | S5                  |                         | 5             | 0.50            | Y                   |
| <i>Symphyotrichum novae-angliae</i> | New England Aster | S5                  |                         | 60            | 5.25            | Y                   |
| <i>Ulmus americana</i>              | White Elm         | S5                  |                         | 15            | 0.75            |                     |
| <i>Veronicastrum virginicum</i>     | Culver's Root     | S2                  |                         | 25            | 2.50            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A4-3: Plant Species Diversity in Monitoring Plot R  
Black Oak Heritage Park

| Scientific Name                 | Common Name            | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>     | Swamp Agrimony         | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Amphicarpaea bracteata</i>   | American Hog-peanut    | S5                  |                         | 20            | 0.85            | Y                   |
| <i>Anemone sp.</i>              |                        |                     |                         | 80            | 4.10            |                     |
| <i>Aquilegia canadensis</i>     | Red Columbine          | S5                  |                         | 5             | 0.05            |                     |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass    | S5                  |                         | 35            | 7.25            | Y                   |
| <i>Carex sp.</i>                |                        |                     |                         | 95            | 21.40           |                     |
| <i>Carya glabra</i>             | Pignut Hickory         | S3                  |                         | 20            | 2.00            | Y                   |
| <i>Coreopsis tripteris</i>      | Tall Tickseed          | S1S2                |                         | 5             | 0.25            | Y                   |
| <i>Cornus drummondii</i>        | Rough-leaved Dogwood   | S4                  |                         | 5             | 0.15            |                     |
| <i>Cornus racemosa</i>          | Grey Dogwood           | S5                  |                         | 40            | 3.40            |                     |
| <i>Doellingeria umbellata</i>   | Flat-top White Aster   | S5                  |                         | 15            | 0.90            |                     |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod | S5                  |                         | 5             | 0.50            |                     |
| <i>Fragaria vesca</i>           | Woodland Strawberry    | S5                  |                         | 20            | 0.60            |                     |
| <i>Galium sp.</i>               |                        |                     |                         | 50            | 2.85            |                     |
| <i>Geranium maculatum</i>       | Spotted Geranium       | S5                  |                         | 10            | 0.60            |                     |
| <i>Helianthus divaricatus</i>   | Woodland Sunflower     | S5                  |                         | 20            | 0.55            | Y                   |
| <i>Lonicera sp.</i>             |                        |                     |                         | 5             | 0.40            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot          | S5                  |                         | 5             | 0.10            | Y                   |
| <i>Osmunda regalis</i>          | Royal Fern             | S5                  |                         | 30            | 3.00            |                     |
| <i>Phragmites australis</i>     | European Reed          | S4?                 |                         | 5             | 0.25            |                     |
| <i>Prunus serotina</i>          | Black Cherry           | S5                  |                         | 25            | 0.85            |                     |
| <i>Quercus velutina</i>         | Black Oak              | S4                  |                         | 15            | 0.60            | Y                   |
| <i>Rubus allegheniensis</i>     | Allegheny Blackberry   | S5                  |                         | 85            | 6.40            |                     |
| <i>Smilax tamnoides</i>         | Bristly Greenbriar     | S5                  |                         | 20            | 0.90            |                     |
| <i>Solidago altissima</i>       | Tall Goldenrod         | S5                  |                         | 15            | 1.75            |                     |
| <i>Solidago canadensis</i>      | Canada Goldenrod       | S5                  |                         | 90            | 13.45           |                     |
| <i>Solidago nemoralis</i>       | Grey-stemmed Goldenrod | S5                  |                         | 5             | 0.50            | Y                   |

| Scientific Name                  | Common Name        | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------|--------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Symphyotrichum laeve</i>      | Smooth Aster       | S5                  |                         | 5             | 0.10            | Y                   |
| <i>Symphyotrichum urophyllum</i> | Arrow-leaved Aster | S4                  |                         | 5             | 0.10            | Y                   |
| <i>Tilia americana</i>           | Basswood           | S5                  |                         | 5             | 0.15            |                     |
| <i>Vernonia missurica</i>        | Missouri Ironweed  | S3?                 |                         | 10            | 0.15            | Y                   |
| <i>Vitis riparia</i>             | Riverbank Grape    | S5                  |                         | 5             | 0.75            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

# Appendix A-5

## Spring Garden Natural Area

Table A5-1: Plant Species Diversity in Monitoring Plot S  
Spring Garden Natural Area

| Scientific Name                 | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Achillea millefolium</i>     | Common Yarrow              | SE5?                |                         | 35            | 2.00            | Y                   |
| <i>Agrimonia parviflora</i>     | Swamp Agrimony             | S4                  |                         | 75            | 9.50            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                     | SE5                 |                         | 50            | 11.25           |                     |
| <i>Andropogon gerardii</i>      | Big Bluestem               | S4                  |                         | 45            | 20.00           | Y                   |
| <i>Anemone sp.</i>              |                            |                     |                         | 10            | 0.50            |                     |
| <i>Carex sp.</i>                |                            |                     |                         | 15            | 1.25            |                     |
| <i>Cirsium discolor</i>         | Field Thistle              | S3                  |                         | 5             | 0.50            | Y                   |
| <i>Coreopsis tripteris</i>      | Tall Tickseed              | S1S2                |                         | 50            | 3.75            | Y                   |
| <i>Cornus racemosa</i>          | Grey Dogwood               | S5                  |                         | 20            | 0.60            |                     |
| <i>Dactylis glomerata</i>       | Orchard Grass              | SE5                 |                         | 15            | 0.55            |                     |
| <i>Daucus carota</i>            | Wild Carrot                | SE5                 |                         | 15            | 0.75            |                     |
| <i>Elaeagnus umbellata</i>      | Autumn Olive               | SE3                 |                         | 25            | 5.00            |                     |
| <i>Elymus canadensis</i>        | Canada Wildrye             | S5                  |                         | 30            | 5.00            | Y                   |
| <i>Equisetum sp.</i>            |                            |                     |                         | 20            | 1.05            |                     |
| <i>Euthamia caroliniana</i>     | Slender Fragrant Goldenrod | S1                  |                         | 25            | 4.00            | Y                   |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod     | S5                  |                         | 25            | 3.75            |                     |
| <i>Gentian sp.</i>              |                            |                     |                         | 5             | 0.25            |                     |
| <i>Liatris spicata</i>          | Dense Blazing-star         | S2                  | THR                     | 20            | 1.75            | Y                   |
| <i>Monarda fistulosa</i>        | Wild Bergamot              | S5                  |                         | 55            | 4.00            | Y                   |
| <i>Muhlenbergia sp.</i>         |                            |                     |                         | 20            | 1.25            |                     |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass      | S4                  |                         | 20            | 2.75            | Y                   |
| <i>Pastinaca sativa</i>         | Wild Parsnip               | SE5                 |                         | 5             | 0.50            |                     |
| <i>Penstemon digitalis</i>      | Foxglove Beardtongue       | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Poa compressa</i>            | Canada Bluegrass           | SE5                 |                         | 25            | 1.30            |                     |
| <i>Poa pratensis</i>            | Kentucky Bluegrass         | S5                  |                         | 10            | 0.50            |                     |
| <i>Prunella vulgaris</i>        | Common Self-heal           | S5                  |                         | 5             | 0.25            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint     | S4                  |                         | 55            | 6.25            | Y                   |

| Scientific Name                 | Common Name                    | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|--------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Ratibida pinnata</i>         | Grey-headed Prairie Coneflower | S3                  |                         | 45            | 4.00            | Y                   |
| <i>Rhamnus cathartica</i>       | European Buckthorn             | SE5                 |                         | 5             | 0.25            |                     |
| <i>Rubus flagellaris</i>        | Northern Dewberry              | S4                  |                         | 20            | 2.50            |                     |
| <i>Rubus occidentalis</i>       | Black Raspberry                | S5                  |                         | 5             | 0.25            |                     |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan               | S5                  |                         | 25            | 1.25            | Y                   |
| <i>Solidago altissima</i>       | Tall Goldenrod                 | S5                  |                         | 10            | 1.50            |                     |
| <i>Solidago canadensis</i>      | Canada Goldenrod               | S5                  |                         | 50            | 8.75            |                     |
| <i>Solidago juncea</i>          | Early Goldenrod                | S5                  |                         | 20            | 1.50            |                     |
| <i>Solidago riddellii</i>       | Riddell's Goldenrod            | S3                  | SC                      | 10            | 1.50            | Y                   |
| <i>Symphyotrichum ericoides</i> | White Heath Aster              | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Symphyotrichum laeve</i>     | Smooth Aster                   | S5                  |                         | 10            | 0.75            | Y                   |
| <i>Symphyotrichum sp.</i>       |                                |                     |                         | 10            | 0.75            |                     |
| <i>Vitis riparia</i>            | Riverbank Grape                | S5                  |                         | 5             | 0.25            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A5-2: Plant Species Diversity in Monitoring Plot T  
Spring Garden Natural Area

| Scientific Name                 | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Achillea millefolium</i>     | Common Yarrow            | SE5?                |                         | 40            | 2.25            | Y                   |
| <i>Agrimonia parviflora</i>     | Swamp Agrimony           | S4                  |                         | 20            | 1.00            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                   | SE5                 |                         | 15            | 3.00            |                     |
| <i>Andropogon gerardii</i>      | Big Bluestem             | S4                  |                         | 70            | 39.25           | Y                   |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass      | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Carex sp.</i>                |                          |                     |                         | 5             | 0.50            |                     |
| <i>Cirsium discolor</i>         | Field Thistle            | S3                  |                         | 10            | 0.75            | Y                   |
| <i>Coreopsis tripteris</i>      | Tall Tickseed            | S1S2                |                         | 15            | 1.00            | Y                   |
| <i>Cornus racemosa</i>          | Grey Dogwood             | S5                  |                         | 20            | 1.00            |                     |
| <i>Dactylis glomerata</i>       | Orchard Grass            | SE5                 |                         | 5             | 2.00            |                     |
| <i>Doellingeria umbellata</i>   | Flat-top White Aster     | S5                  |                         | 15            | 3.50            |                     |
| <i>Elaeagnus umbellata</i>      | Autumn Olive             | SE3                 |                         | 25            | 2.00            |                     |
| <i>Equisetum sp.</i>            |                          |                     |                         | 35            | 2.00            |                     |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod   | S5                  |                         | 5             | 0.25            |                     |
| <i>Gentiana andrewsii</i>       | Andrews' Bottle Gentian  | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Geranium maculatum</i>       | Spotted Geranium         | S5                  |                         | 5             | 0.25            |                     |
| <i>Lespedeza capitata</i>       | Round-headed Bush-clover | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Liatris aspera</i>           | Rough Blazing-star       | S2                  |                         | 20            | 2.50            | Y                   |
| <i>Liatris spicata</i>          | Dense Blazing-star       | S2                  | THR                     | 5             | 1.00            | Y                   |
| <i>Lonicera japonica</i>        | Japanese Honeysuckle     | SE2                 |                         | 10            | 5.50            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot            | S5                  |                         | 40            | 3.50            | Y                   |
| <i>Onoclea sensibilis</i>       | Sensitive Fern           | S5                  |                         | 25            | 7.00            |                     |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass    | S4                  |                         | 20            | 4.50            | Y                   |
| <i>Poa compressa</i>            | Canada Bluegrass         | SE5                 |                         | 5             | 0.50            |                     |
| <i>Poa pratensis</i>            | Kentucky Bluegrass       | S5                  |                         | 5             | 0.25            |                     |

| Scientific Name                 | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint   | S4                  |                         | 25            | 3.00            | Y                   |
| <i>Quercus velutina</i>         | Black Oak                | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Rubus flagellaris</i>        | Northern Dewberry        | S4                  |                         | 55            | 3.80            |                     |
| <i>Rubus occidentalis</i>       | Black Raspberry          | S5                  |                         | 5             | 0.25            |                     |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan         | S5                  |                         | 5             | 0.50            | Y                   |
| <i>Solidago canadensis</i>      | Canada Goldenrod         | S5                  |                         | 40            | 3.75            |                     |
| <i>Solidago juncea</i>          | Early Goldenrod          | S5                  |                         | 5             | 0.25            |                     |
| <i>Solidago riddellii</i>       | Riddell's Goldenrod      | S3                  | SC                      | 5             | 0.25            | Y                   |
| <i>Solidago rugosa</i>          | Rough-stem med Goldenrod | S5                  |                         | 15            | 2.50            |                     |
| <i>Solidago sp.</i>             |                          |                     |                         | 5             | 1.00            |                     |
| <i>Sorghastrum nutans</i>       | Yellow Indiangrass       | S4                  |                         | 25            | 1.75            | Y                   |
| <i>Symphyotrichum sp.</i>       |                          |                     |                         | 40            | 2.25            |                     |
| <i>Veronicastrum virginicum</i> | Culver's Root            | S2                  |                         | 5             | 0.50            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk).

Table A5-3: Plant Species Diversity in Monitoring Plot U  
Spring Garden Natural Area

| Scientific Name                 | Common Name                  | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|------------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>     | Swamp Agrimony               | S4                  |                         | 10            | 0.75            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                       | SE5                 |                         | 5             | 0.25            |                     |
| <i>Amphicarpaea bracteata</i>   | American Hog-peanut          | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Andropogon gerardii</i>      | Big Bluestem                 | S4                  |                         | 25            | 9.00            | Y                   |
| <i>Anemone sp.</i>              |                              |                     |                         | 5             | 0.25            |                     |
| <i>Asparagus officinalis</i>    | Garden Asparagus             | SE5                 |                         | 10            | 0.75            |                     |
| <i>Calamagrostis canadensis</i> | Bluejoint Reedgrass          | S5                  |                         | 95            | 32.50           | Y                   |
| <i>Carex sp.</i>                |                              |                     |                         | 5             | 0.25            |                     |
| <i>Cirsium arvense</i>          | Canada Thistle               | SE5                 |                         | 20            | 1.00            |                     |
| <i>Cirsium discolor</i>         | Field Thistle                | S3                  |                         | 15            | 1.25            | Y                   |
| <i>Coreopsis tripteris</i>      | Tall Tickseed                | S1S2                |                         | 5             | 1.00            | Y                   |
| <i>Cornus obliqua</i>           | Silky Dogwood                | S5                  |                         | 10            | 0.50            |                     |
| <i>Eutrochium maculatum</i>     | Spotted Joe Pye Weed         | S5                  |                         | 50            | 11.25           |                     |
| <i>Fragaria virginiana</i>      | Wild Strawberry              | S5                  |                         | 5             | 0.05            | Y                   |
| <i>Helianthus divaricatus</i>   | Woodland Sunflower           | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Helianthus sp.</i>           |                              |                     |                         | 5             | 0.25            |                     |
| <i>Juncus dudleyi</i>           | Dudley's Rush                | S5                  |                         | 10            | 0.50            |                     |
| <i>Juncus torreyi</i>           | Torrey's Rush                | S5                  |                         | 10            | 0.50            |                     |
| <i>Juncus sp.</i>               |                              |                     |                         | 5             | 0.25            |                     |
| <i>Mimulus ringens</i>          | Square-stem med Monkeyflower | S5                  |                         | 5             | 0.25            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot                | S5                  |                         | 30            | 5.00            | Y                   |
| <i>Oenothera sp.</i>            |                              |                     |                         | 5             | 0.25            |                     |
| <i>Onoclea sensibilis</i>       | Sensitive Fern               | S5                  |                         | 10            | 1.00            |                     |
| <i>Osmunda regalis</i>          | Royal Fern                   | S5                  |                         | 50            | 7.25            |                     |
| <i>Phragmites australis</i>     | European Reed                | S4?                 |                         | 20            | 4.25            |                     |
| <i>Populus deltoides</i>        | Eastern Cottonwood           | S5                  |                         | 5             | 0.25            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint       | S4                  |                         | 30            | 4.75            | Y                   |
| <i>Rubus flagellaris</i>        | Northern Dewberry            | S4                  |                         | 20            | 1.75            |                     |

| Scientific Name                 | Common Name       | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|-------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Rubus occidentalis</i>       | Black Raspberry   | S5                  |                         | 5             | 0.50            |                     |
| <i>Solidago altissima</i>       | Tall Goldenrod    | S5                  |                         | 40            | 9.25            |                     |
| <i>Sporobolus michauxianus</i>  | Prairie Cordgrass | S4                  |                         | 25            | 5.50            | Y                   |
| <i>Symphyotrichum sp.</i>       |                   |                     |                         | 15            | 1.00            |                     |
| <i>Thalictrum sp.</i>           |                   |                     |                         | 5             | 0.25            |                     |
| <i>Thelypteris palustris</i>    | Marsh Fern        | S5                  |                         | 15            | 1.00            |                     |
| <i>Vernonia missurica</i>       | Missouri Ironweed | S3?                 |                         | 5             | 0.25            | Y                   |
| <i>Veronicastrum virginicum</i> | Culver's Root     | S2                  |                         | 15            | 1.50            | Y                   |
| <i>Vitis riparia</i>            | Riverbank Grape   | S5                  |                         | 5             | 0.25            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern).

Table A5-4: Plant Species Diversity in Monitoring Plot V  
Spring Garden Natural Area

| Scientific Name                  | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Achillea millefolium</i>      | Common Yarrow            | SE5?                |                         | 5             | 0.25            | Y                   |
| <i>Agrimonia parviflora</i>      | Swamp Agrimony           | S4                  |                         | 45            | 6.25            | Y                   |
| <i>Agrostis gigantea</i>         | Redtop                   | SE5                 |                         | 10            | 0.75            |                     |
| <i>Aletris farinosa</i>          | White Colicroot          | S2                  | END                     | 5             | 0.25            | Y                   |
| <i>Amphicarpaea bracteata</i>    | American Hog-peanut      | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Andropogon gerardii</i>       | Big Bluestem             | S4                  |                         | 10            | 1.25            | Y                   |
| <i>Calamagrostis canadensis</i>  | Bluejoint Reedgrass      | S5                  |                         | 90            | 34.50           | Y                   |
| <i>Cephalanthus occidentalis</i> | Eastern Buttonbush       | S5                  |                         | 5             | 0.50            |                     |
| <i>Coreopsis tripteris</i>       | Tall Tickseed            | S1S2                |                         | 5             | 0.50            | Y                   |
| <i>Cornus obliqua</i>            | Silky Dogwood            | S5                  |                         | 10            | 0.75            |                     |
| <i>Daucus carota</i>             | Wild Carrot              | SE5                 |                         | 10            | 0.50            |                     |
| <i>Elaeagnus umbellata</i>       | Autumn Olive             | SE3                 |                         | 5             | 1.00            |                     |
| <i>Equisetum sp.</i>             |                          |                     |                         | 5             | 0.25            |                     |
| <i>Euthamia graminifolia</i>     | Grass-leaved Goldenrod   | S5                  |                         | 10            | 1.25            |                     |
| <i>Eutrochium maculatum</i>      | Spotted Joe Pye Weed     | S5                  |                         | 40            | 9.50            |                     |
| <i>Leersia oryzoides</i>         | Rice Cutgrass            | S5                  |                         | 5             | 0.50            |                     |
| <i>Lespedeza capitata</i>        | Round-headed Bush-clover | S4                  |                         | 10            | 1.00            | Y                   |
| <i>Liatris spicata</i>           | Dense Blazing-star       | S2                  | THR                     | 10            | 0.50            | Y                   |
| <i>Monarda fistulosa</i>         | Wild Bergamot            | S5                  |                         | 25            | 2.50            | Y                   |
| <i>Onoclea sensibilis</i>        | Sensitive Fern           | S5                  |                         | 15            | 2.50            |                     |
| <i>Osmunda regalis</i>           | Royal Fern               | S5                  |                         | 5             | 1.00            |                     |
| <i>Panicum virgatum</i>          | Old Switch Panicgrass    | S4                  |                         | 20            | 7.00            | Y                   |
| <i>Pastinaca sativa</i>          | Wild Parsnip             | SE5                 |                         | 15            | 1.00            |                     |
| <i>Poa compressa</i>             | Canada Bluegrass         | SE5                 |                         | 20            | 1.25            |                     |
| <i>Pycnanthemum virginianum</i>  | Virginia Mountain-mint   | S4                  |                         | 40            | 4.50            | Y                   |
| <i>Quercus velutina</i>          | Black Oak                | S4                  |                         | 0             | 0.00            | Y                   |
| <i>Rubus flagellaris</i>         | Northern Dewberry        | S4                  |                         | 40            | 3.25            |                     |

| Scientific Name                | Common Name              | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|--------------------------------|--------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Schizachyrium scoparium</i> | Little Bluestem          | S4                  |                         | 30            | 4.00            | Y                   |
| <i>Solidago canadensis</i>     | Canada Goldenrod         | S5                  |                         | 15            | 1.25            |                     |
| <i>Solidago juncea</i>         | Early Goldenrod          | S5                  |                         | 5             | 0.25            |                     |
| <i>Solidago nemoralis</i>      | Grey-stem med Goldenrod  | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Solidago riddellii</i>      | Riddell's Goldenrod      | S3                  | SC                      | 5             | 0.50            | Y                   |
| <i>Solidago rugosa</i>         | Rough-stem med Goldenrod | S5                  |                         | 5             | 0.50            |                     |
| <i>Sporobolus michauxianus</i> | Prairie Cordgrass        | S4                  |                         | 20            | 6.75            | Y                   |
| <i>Symphyotrichum sp.</i>      |                          |                     |                         | 30            | 1.75            |                     |
| <i>Thalictrum sp.</i>          |                          |                     |                         | 10            | 0.50            |                     |
| <i>Thelypteris palustris</i>   | Marsh Fern               | S5                  |                         | 5             | 0.50            |                     |
| <i>Vernonia missurica</i>      | Missouri Ironweed        | S3?                 |                         | 5             | 0.50            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern).

Table A5-5: Plant Species Diversity in Monitoring Plot W  
Spring Garden Natural Area

| Scientific Name                  | Common Name                | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|----------------------------------|----------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Acer negundo</i>              | Manitoba Maple             | S5                  |                         | 20            | 1.75            |                     |
| <i>Achillea millefolium</i>      | Common Yarrow              | SE5?                |                         | 5             | 0.25            | Y                   |
| <i>Agrimonia parviflora</i>      | Swamp Agrimony             | S4                  |                         | 60            | 5.00            | Y                   |
| <i>Agrostis gigantea</i>         | Redtop                     | SE5                 |                         | 65            | 12.50           |                     |
| <i>Asparagus officinalis</i>     | Garden Asparagus           | SE5                 |                         | 10            | 4.00            |                     |
| <i>Cirsium arvense</i>           | Canada Thistle             | SE5                 |                         | 5             | 0.25            |                     |
| <i>Cornus drummondii</i>         | Rough-leaved Dogwood       | S4                  |                         | 45            | 6.25            |                     |
| <i>Dactylis glomerata</i>        | Orchard Grass              | SE5                 |                         | 25            | 4.25            |                     |
| <i>Daucus carota</i>             | Wild Carrot                | SE5                 |                         | 5             | 0.05            |                     |
| <i>Elaeagnus umbellata</i>       | Autumn Olive               | SE3                 |                         | 5             | 0.25            |                     |
| <i>Equisetum sp.</i>             |                            |                     |                         | 45            | 2.50            |                     |
| <i>Euthamia caroliniana</i>      | Slender Fragrant Goldenrod | S1                  |                         | 5             | 1.00            | Y                   |
| <i>Euthamia graminifolia</i>     | Grass-leaved Goldenrod     | S5                  |                         | 25            | 4.25            |                     |
| <i>Fragaria virginiana</i>       | Wild Strawberry            | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Pastinaca sativa</i>          | Wild Parsnip               | SE5                 |                         | 20            | 1.75            |                     |
| <i>Phalaris arundinacea</i>      | Reed Canarygrass           | S5                  |                         | 25            | 11.25           |                     |
| <i>Phleum pratense</i>           | Common Timothy             | SE5                 |                         | 5             | 1.50            |                     |
| <i>Phragmites australis</i>      | European Reed              | S4?                 |                         | 15            | 1.75            |                     |
| <i>Pycnanthemum virginianum</i>  | Virginia Mountain-mint     | S4                  |                         | 35            | 5.25            | Y                   |
| <i>Rosa multiflora</i>           | Multiflora Rose            | SE5                 |                         | 5             | 0.50            |                     |
| <i>Sassafras albidum</i>         | Sassafras                  | S4                  |                         | 5             | 0.05            |                     |
| <i>Silphium terebinthinaceum</i> | Prairie Rosinweed          | S1                  |                         | 75            | 25.00           | Y                   |
| <i>Solidago canadensis</i>       | Canada Goldenrod           | S5                  |                         | 65            | 13.00           |                     |
| <i>Solidago rugosa</i>           | Rough-stemmed Goldenrod    | S5                  |                         | 5             | 0.25            |                     |

| Scientific Name           | Common Name | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------|-------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Symphyotrichum sp.</i> |             |                     |                         | 35            | 2.25            |                     |
| <i>Trifolium pratense</i> | Red Clover  | SE5                 |                         | 5             | 0.25            |                     |
| <i>Ulmus americana</i>    | White Elm   | S5                  |                         | 20            | 1.00            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern).

Table A5-6: Plant Species Diversity in Monitoring Plot X  
Spring Garden Natural Area

| Scientific Name                 | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Achillea millefolium</i>     | Common Yarrow           | SE5?                |                         | 20            | 1.00            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                  | SE5                 |                         | 30            | 4.25            |                     |
| <i>Bromus inermis</i>           | Smooth Brome            | SE5                 |                         | 15            | 1.00            |                     |
| <i>Coreopsis tripteris</i>      | Tall Tickseed           | S1S2                |                         | 40            | 6.00            | Y                   |
| <i>Cornus drummondii</i>        | Rough-leaved Dogwood    | S4                  |                         | 20            | 1.50            |                     |
| <i>Dactylis glomerata</i>       | Orchard Grass           | SE5                 |                         | 25            | 5.00            |                     |
| <i>Elaeagnus umbellata</i>      | Autumn Olive            | SE3                 |                         | 10            | 0.75            |                     |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod  | S5                  |                         | 40            | 9.50            |                     |
| <i>Fraxinus sp.</i>             |                         |                     |                         | 5             | 0.25            |                     |
| <i>Juncus dudleyi</i>           | Dudley's Rush           | S5                  |                         | 5             | 0.50            |                     |
| <i>Liatris spicata</i>          | Dense Blazing-star      | S2                  | THR                     | 15            | 1.00            | Y                   |
| <i>Monarda fistulosa</i>        | Wild Bergamot           | S5                  |                         | 20            | 1.25            | Y                   |
| <i>Muhlenbergia sp.</i>         |                         |                     |                         | 10            | 0.75            |                     |
| <i>Poa compressa</i>            | Canada Bluegrass        | SE5                 |                         | 15            | 1.25            |                     |
| <i>Poaceae sp.</i>              |                         |                     |                         | 75            | 55.00           |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint  | S4                  |                         | 75            | 15.00           | Y                   |
| <i>Rubus flagellaris</i>        | Northern Dewberry       | S4                  |                         | 55            | 7.75            |                     |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan        | S5                  |                         | 10            | 0.50            | Y                   |
| <i>Securigera varia</i>         | Purple Crown-vetch      | SE5                 |                         | 25            | 1.25            |                     |
| <i>Solidago canadensis</i>      | Canada Goldenrod        | S5                  |                         | 10            | 0.75            |                     |
| <i>Solidago rugosa</i>          | Rough-stemmed Goldenrod | S5                  |                         | 30            | 9.50            |                     |
| <i>Sorghastrum nutans</i>       | Yellow Indiangrass      | S4                  |                         | 5             | 0.25            | Y                   |
| <i>Symphyotrichum ericoides</i> | White Heath Aster       | S5                  |                         | 10            | 0.50            | Y                   |

| Scientific Name           | Common Name       | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------|-------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Symphyotrichum sp.</i> |                   |                     |                         | 15            | 0.75            |                     |
| <i>Vernonia missurica</i> | Missouri Ironweed | S3?                 |                         | 15            | 2.50            | Y                   |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern).

Table A5-7: Plant Species Diversity in Monitoring Plot Y  
Spring Garden Natural Area

| Scientific Name                 | Common Name             | S-Rank <sup>1</sup> | ESA Status <sup>2</sup> | Frequency (%) | Average % Cover | Tallgrass Indicator |
|---------------------------------|-------------------------|---------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Agrimonia parviflora</i>     | Swamp Agrimony          | S4                  |                         | 5             | 0.50            | Y                   |
| <i>Agrostis gigantea</i>        | Redtop                  | SE5                 |                         | 5             | 0.25            |                     |
| <i>Andropogon gerardii</i>      | Big Bluestem            | S4                  |                         | 45            | 21.75           | Y                   |
| <i>Coreopsis tripteris</i>      | Tall Tickseed           | S1S2                |                         | 5             | 0.25            | Y                   |
| <i>Cuscuta sp.</i>              |                         |                     |                         | 5             | 0.25            |                     |
| <i>Dactylis glomerata</i>       | Orchard Grass           | SE5                 |                         | 5             | 1.50            |                     |
| <i>Elaeagnus umbellata</i>      | Autumn Olive            | SE3                 |                         | 10            | 0.50            |                     |
| <i>Equisetum sp.</i>            |                         |                     |                         | 30            | 1.75            |                     |
| <i>Euthamia graminifolia</i>    | Grass-leaved Goldenrod  | S5                  |                         | 25            | 2.75            |                     |
| <i>Juncus dudleyi</i>           | Dudley's Rush           | S5                  |                         | 40            | 2.25            |                     |
| <i>Monarda fistulosa</i>        | Wild Bergamot           | S5                  |                         | 50            | 5.50            | Y                   |
| <i>Panicum virgatum</i>         | Old Switch Panicgrass   | S4                  |                         | 20            | 5.75            | Y                   |
| <i>Poaceae sp.</i>              |                         |                     |                         | 10            | 2.50            |                     |
| <i>Populus deltoides</i>        | Eastern Cottonwood      | S5                  |                         | 5             | 0.25            |                     |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint  | S4                  |                         | 10            | 1.00            | Y                   |
| <i>Rudbeckia hirta</i>          | Black-eyed Susan        | S5                  |                         | 15            | 1.00            | Y                   |
| <i>Schizachyrium scoparium</i>  | Little Bluestem         | S4                  |                         | 20            | 6.75            | Y                   |
| <i>Solidago altissima</i>       | Tall Goldenrod          | S5                  |                         | 5             | 2.00            |                     |
| <i>Solidago canadensis</i>      | Canada Goldenrod        | S5                  |                         | 15            | 2.50            |                     |
| <i>Solidago rugosa</i>          | Rough-stemmed Goldenrod | S5                  |                         | 55            | 6.50            |                     |
| <i>Sorghastrum nutans</i>       | Yellow Indiangrass      | S4                  |                         | 90            | 36.25           | Y                   |
| <i>Symphotrichum ericoides</i>  | White Heath Aster       | S5                  |                         | 5             | 0.25            | Y                   |
| <i>Symphotrichum sp.</i>        |                         |                     |                         | 15            | 1.00            |                     |

Notes: <sup>1</sup> S-Rank (Provincial): S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); SNA (species not suitable target for conservation activities); SX (Extirpated). <sup>2</sup> Endangered Species Act (ESA) Status: END (Endangered); THR (Threatened); SC (Special Concern).