



## **2016 Vegetation Monitoring Report**

ERA Project #100301

### **Prepared for:**

Downers Grove Park District

## Contents

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Project Location .....	2
Project History.....	2
2016 Management Activities .....	4
Vegetation Monitoring Methodology .....	4
Acceptance Standards .....	4
Monitoring Results and Discussion .....	6
Conclusions & Recommendations.....	10
• Floristic Quality Assessments	
• Photographs	

## Project Location

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The Lyman Woods Streambank Stabilization Project Site Area II, consists of approximately 30.59-acres located south and east of the Lyman Woods Interpretive Center, in Downers Grove, Illinois. The site consists of three stream reaches, woodland, and prairie, and is tributary to Lacey Creek.

## Project History

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Site restoration plans were approved by the Village of Downers Grove under Storm Water Permit (SWP) #06-13-SWM-0163. The goals of the restoration is to enhance natural areas including stream embankments, woodland, prairie, and riparian habitat by removing invasive and non-native vegetation and replacing with conservative herbaceous plant species. Included in the plans are provisions for the planting, maintenance, and monitoring of the site. Tree clearing and brush removal was completed during the winter months of 2006/2007. According to Conservation Land Stewardship, streambank seeding was completed during the streambank restoration work in September and October 2006. Woodland seeding was completed following a site burn in November 2006. Maintenance throughout PSA II was completed by Conservation Land Stewardship throughout the 2007 growing season.

Herbicide treatments and hand removal of invasive species by Integrated Lakes Management (ILM) began on July 31, 2008 and continued through the 2008 growing season.

A prescribed burn was performed by ILM on March 21, 2009 and April 11, 2009. Weed whipping of garlic mustard within areas that were not burned took place on May 27, 2009. Specialized high mowing of the staging area was completed on June 11, 2009, June 19, 2009 and August 11, 2009. Numerous herbicide applications took place throughout the 2009 growing season.

Hand pulling of garlic mustard took place on May 21, 2010. Brush cutting of the staging area was completed on June 8, 2010 and September 1, 2010. Numerous herbaceous herbicide applications took place throughout the 2010 growing season. Teasel was controlled on May 28, 2010, July 23, 2010 and September 13, 2010. One woody vegetation visit was substituted to make an extra herb visit. Woody vegetation was controlled on October 8, 2010 and December 7, 2010. A prescribed fall burn was attempted on November 18, 2010 however, winds weren't strong enough and the fuel loads were too wet for the burn to carry.

A prescribed burn took place on March 16, 2011 and March 19, 2011. Herbaceous herbicide applications took place on April 12, 2011, April 13, 2011, June 6, 2011, August 26, 2011, October 6, 2011 and October 21, 2011. These visits focused on treatment of Garlic Mustard, Reed Canary Grass, Teasel, Dame's Rocket, Day Lily, Thistle, Cattails, Crown Vetch, Poison Ivy, Purple Loosestrife, Honeysuckle and Ragweed. Woody vegetation was controlled on November 11, 2011, November 18, 2011 and November 28, 2011. These visits focused on removal and treatment of Buckthorn, Honeysuckle, Rose, Black Locust.

Herbaceous herbicide applications took place on April 4, 2012, April 7, 2012, July 7, 2012, September 27, 2012 and September 28, 2012. These visits focused on treatment of Garlic Mustard, Reed Canary Grass, Teasel, Dame's Rocket, Day Lily, Thistle, Cattails, Crown Vetch,

Poison Ivy, Purple Loosestrife and Honeysuckle. Mowing of the Oak Knoll and staging areas took place on April 20, 2012 and July 5, 2012 respectively. Woody vegetation was controlled on September 27, 2012, September 28, 2012, October 12, 2012 and November 12, 2011. These visits focused on removal and treatment of Buckthorn, Honeysuckle, Rose, and Black Locust. A prescribed burn took place on November 1, 2012 and December 5, 2012. A segment along the west side of Reach D was re-seeded and stabilized on November 12, 2012.

Herbaceous herbicide applications took place on May 1, 2013, May 6, 2013, July 22, 2013, and October 4, 2013. These visits focused on treating Garlic Mustard, Dame's Rocket, Mother Wort, Day Lily, Thistle, Bird's-foot Trefoil, Crown Vetch, Teasel, Cattails, Sweet-clovers, Seaside Goldenrod, Queen Anne's Lace and Common Buckthorn seedlings and resprouts. Mowing of the Oak Knoll and brush cutting throughout the unit was conducted for Garlic Mustard control on May 20, 2013. Additional brush cutting was conducted on July 22, 2013 for Thistle and Teasel control in heavy use areas where spray chemicals were not preferable. Common Buckthorn, Box Elder, Mulberry, and Green Ash saplings were brush cut then treated with herbicide on November 27, 2013, December 2, 2013 and December 3, 2013. Boxelder and Common Buckthorn was treated with basal herbicide application within Wetland G on December 18, 2013. The Prairie Kame was also treated for woody vegetation during this visit.

Herbaceous herbicide applications took place on May 9, 2014, May 10, 2014, May 13, 2014, May 15, 2014, May 16, 2014, July 1, 2014 and September 22, 2014. These visits focused on treating Garlic Mustard, Day Lily, Canada Thistle, Crown Vetch, Teasel, Cattails, Common Reed, Sweet-clovers, Japanese Knotweed, Seaside Goldenrod, Queen Anne's Lace, Black Locust and Common Buckthorn seedlings and resprouts. Brush cutting throughout the unit was conducted for Garlic Mustard, Reed Canary Grass, Queen Anne's Lace and Sweet Clover took place on May 16, 2014 and July 1, 2014. Woody applications for Common Buckthorn, Box Elder, Multiflora Rose, Black Locust and Honey Suckle occurred on July 1, 2014, October 2, 2014, October 22, 2014, and November 11, 2014. A prescribed burn was scheduled to occur throughout PSA II however conditions were not conducive for completing this in 2014 and is postponed until Spring 2015.

A prescribed burn took place on March 19, 2015 and March 30, 2015. A portion of the site was unable to be burned due to unfavorable wind conditions. This area was east of Reach D. Herbaceous herbicide applications took place on April 14, 2015, April 15, 2015, April 21, 2015, April 29, 2015, July 28, 2015, and October 19, 2015. These visits focused on treating Garlic Mustard, Day Lily, Canada Thistle, Crown Vetch, Teasel, Cattails, Common Reed, Sweet-clovers, Japanese Knotweed, Seaside Goldenrod, Queen Anne's Lace, and Dame's Rocket. Woody applications for Common Buckthorn, Multiflora Rose and Honey Suckle occurred on November 12, 2015, November 13, 2015, and November 30, 2015. A prescribed burn was scheduled to occur fall 2015 throughout the portion of PSA II that was not burned in Spring 2015, however conditions were not conducive for a burn.

## 2016 Management Activities

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Prescribed burn preparation took place on March 15, 2016, however conditions weren't conducive for a prescribed burn in 2016. Herbaceous herbicide applications took place on April 14, 2016, April 15, 2016, June 10, 2016, June 17, 2016, September 22, 2016. These visits focused on treating Garlic Mustard, Day Lily, Canada Thistle, Teasel, Cattails, Common Reed, Japanese Knotweed, Seaside Goldenrod, and Dame's Rocket. Woody applications occurred on October 14, 2016, November 8, 2016, November 9, 2016, and November 30, 2016. These visits focused on treating Common Buckthorn, Multiflora Rose and Honey Suckle.

## Vegetation Monitoring Methodology

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Vegetation monitoring requires inspections on a biannual basis for a minimum of five years. Spring monitoring is to occur in May or June while fall monitoring may be performed in August, September, or early October. A vegetation monitoring report is required annually over the five-year period. Sampling methods include meander survey monitoring. The monitoring involves a review of at least 20 percent of each vegetative community including: streambank stabilization areas; woodlands; prairie; and specific wetland sites.

## Acceptance Standards

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Acceptance standards are predetermined goals for guiding and measuring planting success and soil erosion protection. These standards are based upon the importance and the quality of the native vegetation within the planting areas. The standards are as follows:

### **Near-term Monitoring and Management Plan (October 7, 2005)**

- Within three months of seed installation (or three months after the start of the growing season following dormant seeding), at least 90 percent of the seeded area, as measured by aerial cover, shall be stabilized by vegetative cover.
- Naturalized landscapes shall not have more than 0.25 square-meter devoid of vegetation, as measured by aerial coverage
- Seeded areas shall have no rills or gullies greater than four inches wide by four inches deep, and streambanks shall not have more than four inches of cut as a result of erosion.
- Wetland restoration areas shall have minimum of 25 percent ground cover and other woodland and prairie areas shall have a minimum of 35 percent ground cover (avg. 60 percent) by species in the approved plant list and/or native species with native coefficient of conservation (C-) values (per Swink and Wilhelm 1994 or more current version), as measured during August/September.

- Naturalized landscapes shall have a minimum of 30 percent presence by species seeded or planted for the permanent matrix and/or native species with C-value (per Swink and Wilhelm 1994 or more current version), as measured during August/September. No more than 25 percent of any specific plant community shall be individually or collectively dominated by non-native or weedy species.
- None of the three-most dominant species may be non-native or weedy, including but not limited to Canada thistle (*Cirsium arvense*), common reed (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), sweetclover (*Melilotus* spp.), Kentucky bluegrass (*Poa pratensis*), purple loosestrife (*Lythrum salicaria*), barnyard grass (*Echinochloa crus-galli*), teasel (*Dipsacus* sp.) or sandbar willow (*Salix interior*) unless otherwise indicated on the approved planting plan. This criteria does not apply to the wetland restoration area on stream reach A where reed canary grass is currently a dominant species. Cattails (*Typha* spp.) do not count towards the 25 percent weed criterion provided they represent no more than 10 percent cover.

**Lyman Woods Restoration After-the-Fact Wetland Clearing (December 2006)**

Acceptance criteria approved under SWP #06-13-SWM-0163 will be applied to the Additional Brush Removal areas of Wetlands D and F identified on the Ted Gray & Associates and Planning Resources Inc. Lyman Woods Restoration Plan Phase II, Sheet L1.0, revised December 2006, as well as locations where replacement trees and shrubs are installed (as applicable).

- Within three months of seed installation (or three months after the start of the growing season following dormant seeding), at least 90 percent of the seeded area, as measured by aerial cover, shall be stabilized by vegetative cover.
- Naturalized landscapes shall not have more than 0.25 square-meter devoid of vegetation, as measured by aerial coverage.
- Seeded areas shall have no rills or gullies greater than four inches wide by four inches deep, and stream banks shall not have more than four inches of cut as a result of erosion.
- Wetland restoration areas shall have minimum of 25 percent ground cover and other woodland and prairie areas shall have a minimum of 35 percent ground cover (avg. 60 percent) by species in the approved plant list and/or native species with native coefficient of conservation (C-) values (per Swink and Wilhelm 1994 or more current version), as measured during August/September. *[Note: Removal of non-native species is not considered wetland restoration but rather it is wetland enhancement.]*
- Naturalized landscapes shall have a minimum of 30 percent presence by species seeded or planted for the permanent matrix and/or native species with C-value (per Swink and Wilhelm 1994 or more current version), as measured during August/September.
- No more than 25 percent of any specific plant community shall be individually or collectively dominated by non-native or weedy species.

- None of the three-most dominant species may be non-native or weedy, including but not limited to Canada thistle (*Cirsium arvense*), common reed (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), sweetclover (*Melilotus* spp.), Kentucky bluegrass (*Poa pratensis*), purple loosestrife (*Lythrum salicaria*), barnyard grass (*Echinochloa crus-galli*), teasel (*Dipsacus* sp.) or sandbar willow (*Salix interior*) unless otherwise indicated on the approved planting plan. This criteria does not apply to the wetland restoration area on stream reach A where reed canary grass is currently a dominant species. [Note: This criterion does not apply to Wetland D brush removal areas dominated by reed canary grass prior to Phase II initiation in order to avoid the project resulting in adverse impacts to the critical wetland.]
- Cattails (*Typha* spp.) do not count towards the 25 percent weed criterion provided they represent no more than 10 percent cover.

To demonstrate that there has been no lasting damage to the critical wetland associated with brush removal, the following two standards will be added:

- A. The native mean C-value and the native FQI value of Wetland D will be equal to or higher than 3.50 and 27.08. Values for Wetland F will be 1.35 and 4.68 or higher. (These targets reflect a 10 percent reduction below the 2005 FQA values to account for natural fluctuations that occur in biological systems, except for the Wetland D mean C-value, which is set at the minimum level to maintain critical status. A reduction of more than 10 percent can be justified as relating to specific actions or activities.)
- B. A minimum of 90 percent of the trees and shrubs installed to replace functions affected by brush removal in Wetlands D and F will be alive and in healthy condition representative of their species by the end of the fifth growing season.

## Monitoring Results and Discussion

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### **Near-term Monitoring and Management Plan (October 7, 2005)**

- Within three months of seed installation (or three months after the start of the growing season following dormant seeding), at least 90 percent of the seeded area, as measured by aerial cover, shall be stabilized by vegetative cover.

#### **At least 90% of all areas continue to be vegetated and stabilized.**

- Naturalized landscapes shall not have more than 0.25 square-meter devoid of vegetation, as measured by aerial coverage

#### **No more than 0.25 square-meters were devoid of vegetation.**

- Seeded areas shall have no rills or gullies greater than four inches wide by four inches deep, and streambanks shall not have more than four inches of cut as a result of erosion.

**No rills or gullies greater than 4 inches wide were observed. Erosion continues to be present along the west bank of Reach D associated with the vegetated geogrids was re-seeded and stabilized with biodegradable erosion control blanket in Fall 2012. The area appears to be establishing slowly as vegetation continues to be sparse. Japanese Knotweed tends to occur here and should be treated during herbaceous visits. Evidence of treatment of Japanese Knotweed in this location was not evident during the fall monitoring visit. No rills or gullies were observed in this area.**

- Wetland restoration areas shall have minimum of 25 percent ground cover and other woodland and prairie areas shall have a minimum of 35 percent ground cover (avg. 60 percent) by species in the approved plant list and/or native species with native coefficient of conservation (C-) values (per Swink and Wilhelm 1994 or more current version), as measured during August/September.

**The woodland and prairie areas have a minimum of 35% cover with an average of 75% by native species. Greater than 60% of the species in the temporary storage area off of 31<sup>st</sup> Street were species in the approved plant list and/or native species with native coefficient of conservation values.**

**The wetland restoration areas have a minimum of 25% ground cover. Greater than 60% of the species in wetland F and wetland D are species in the approved plant list and/or native species with native coefficient of conservation values.**

- Naturalized landscapes shall have a minimum of 30 percent presence by species seeded or planted for the permanent matrix and/or native species with C-value (per Swink and Wilhelm 1994 or more current version), as measured during August/September. No more than 25 percent of any specific plant community shall be individually or collectively dominated by non-native or weedy species.

**At least 30% of the species from the plant list or seed bank are present in the vegetative communities. In previous years Wetland D was not meeting this performance criterion however, Wetland D is dominated by approximately 20% non-native or weedy species in 2016 and is currently meeting this performance criterion. This area will continue to be maintained throughout the 2017 growing season under the ILM contract. The continued maintenance of the wetland D and the adjacent complex will help eliminate invasive species present in the small area of wetland D in PSA II.**

- None of the three-most dominant species may be non-native or weedy, including but not limited to Canada thistle (*Cirsium arvense*), common reed (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), sweetclover (*Melilotus* spp.), Kentucky bluegrass (*Poa pratensis*), purple loosestrife (*Lythrum salicaria*), barnyard grass (*Echinochloa crus-galli*), teasel (*Dipsacus* sp.) or sandbar willow (*Salix interior*) unless otherwise indicated on the approved planting plan. This criteria does not apply to the wetland restoration area on stream reach A where reed canary grass is currently a dominant species. Cattails (*Typha* spp.) do not count towards the 25 percent weed criterion provided they represent no more than 10 percent cover.

In previous years Wetland D was not meeting this performance criterion however, Wetland D was dominated by approximately 20% non-native or weedy species in 2016 and is currently meeting this performance criterion. Communities of Reed Canary Grass (*Phalaris arundinacea*) are still present in Wetland D but are no longer dominant. This area will continue to be maintained by ILM in 2017. The continued maintenance of the wetland D and the adjacent complex will help eliminate invasive species present in the small area of wetland D in PSA II.

#### **Lyman Woods Restoration After-the-Fact Wetland Clearing (December 2006)**

Acceptance criteria approved under SWP #06-13-SWM-0163 will be applied to the Additional Brush Removal areas of Wetlands D and F identified on the Ted Gray & Associates and Planning Resources Inc. Lyman Woods Restoration Plan Phase II, Sheet Li .0, revised December 2006, as well as locations where replacement trees and shrubs are installed (as applicable).

- Within three months of seed installation (or three months after the start of the growing season following dormant seeding), at least 90 percent of the seeded area, as measured by aerial cover, shall be stabilized by vegetative cover.

#### **At least 90% of all areas continue to be vegetated and stabilized.**

- Naturalized landscapes shall not have more than 0.25 square meters devoid of vegetation, as measured by aerial coverage.

#### **No areas greater than 0.25 square-meters were devoid of vegetation.**

- Seeded areas shall have no rills or gullies greater than four inches wide by four inches deep, and stream banks shall not have more than four inches of cut as a result of erosion.

#### **No rills or gullies greater than 4 inches wide were observed. Streambanks continue to be stable. No erosion was observed.**

- Wetland restoration areas shall have minimum of 25 percent ground cover and other woodland and prairie areas shall have a minimum of 35 percent ground cover (avg. 60 percent) by species in the approved plant list and/or native species with native coefficient of conservation (C-) values (per Swink and Wilhelm 1994 or more current version), as measured during August/September. *[Note: Removal of non-native species is not considered wetland restoration but rather it is wetland enhancement.]*

#### **Wetland restoration areas have a minimum of 25% ground cover. At least 60% of the species in wetland D are species in the approved plant list and/or native species with native coefficient of conservation values.**

- Naturalized landscapes shall have a minimum of 30 percent presence by species seeded or planted for the permanent matrix and/or native species with C-value (per Swink and Wilhelm 1994 or more current version), as measured during August/September.

**At least 30% of the species from the plant list or seed bank are present in the vegetative communities.**

- No more than 25 percent of any specific plant community shall be individually or collectively dominated by non-native or weedy species.

**In previous years Wetland D was not meeting this performance criterion; however, Wetland D was dominated by approximately 20% non-native or weedy species in 2016 and is currently meeting this performance criterion. This area will continue to be maintained throughout the 2017 growing season under the ILM contract. The continued maintenance of the wetland D and the adjacent complex will help eliminate invasive species present in the small area of wetland D in PSA II.**

- None of the three-most dominant species may be non-native or weedy, including but not limited to Canada thistle (*Cirsium arvense*), common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), sweetclover (*Melilotus* spp.), Kentucky bluegrass (*Poa pratensis*), purple loosestrife (*Lythrum salicaria*), barnyard grass (*Echinochloa crus-galli*), teasel (*Dipsacus* sp.) or sandbar willow (*Salix interior*) unless otherwise indicated on the approved planting plan. This criteria does not apply to the wetland restoration area on stream reach A where reed canary grass is currently a dominant species. [Note: This criterion does not apply to Wetland D brush removal areas dominated by reed canary grass prior to Phase II initiation in order to avoid the project resulting in adverse impacts to the critical wetland.]

**In previous years Wetland D was not meeting this performance criterion however, Wetland D was dominated by approximately 20% non-native or weedy species in 2016 and is currently meeting this performance criterion. Communities of Reed Canary Grass (*Phalaris arundinacea*) are still present in Wetland D but this species no longer dominant in this small segment of wetland D. This area will continue to be maintained by ILM in 2017. The continued maintenance of the wetland D and the adjacent complex will help eliminate invasive species present in the small area of wetland D in PSA II.**

- Cattails (*Typha* spp.) do not count towards the 25 percent weed criterion provided they represent no more than 10 percent cover.

**Areas of Wetland D are dominated by greater than 10% of the coverage by Cattails. However, these areas are located outside of PSA II and do not apply to the performance standards.**

To demonstrate that there has been no lasting damage to the critical wetland associated with brush removal, the following two standards will be added:

- A. The native mean C-value and the native FQI value of Wetland D will be equal to or higher than 3.50 and 27.08. Values for Wetland F will be 1.35 and 4.68 or higher. (These targets reflect a 10 percent reduction below the 2005 FQA values to account for natural fluctuations that occur in biological systems, except for the Wetland D mean C-value, which is set at the

minimum level to maintain critical status. A reduction of more than 10 percent can be justified as relating to specific actions or activities.)

**The native mean C-value and the native FQI value of Wetland D are 3.57 and 37.80 respectively. Values for Wetland F are 3.15 and 19.70 respectively. These areas are currently meeting the diversity performance standard.**

B. A minimum of 90 percent of the trees and shrubs installed to replace functions affected by brush removal in Wetlands D and F will be alive and in healthy condition representative of their species by the end of the fifth growing season.

**A minimum of 90% of the trees and shrubs installed to replace functions affected by brush removal in Wetlands D and F are alive and in healthy condition.**

## Conclusions & Recommendations

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### **Streambank/Riparian Areas:**

Stream Reach A - Vegetation at the northwestern end of Reach A is dominated by native, non-invasive species. Garlic mustard and Dame's Rocket were more abundant this year in the area surrounding Reach A. These species were successfully treated in April. In previous years reed canary grass became more dominant further southeast along Reach A. These weedy plants were present prior to the enhancement work. Although acceptance standards did not apply to the Reed Canary Grass in this area, control measures (e.g., herbicide treatment and burn management) were recommended to prevent further expansion. Through Management of non-native invasive species in this area it appears that the Reed Canary Grass is under control in this area. Management of non-native invasive species should continue along Reach A to maintain control of invasive species in this area.

Stream Reach C - Vegetation along the northern end of Reach C is dominated by native, non-invasive species. In previous years reed canary grass became more dominant further south along Reach C. As with Stream Reach A, the Reed Canary Grass may spread. ILM has been managing non-native invasive species in this area. Management of non-native invasive species should continue along Reach C to maintain control of invasive species in this area.

Stream Reach D - Native plants have established very well along the length of Stream Reach D. The area is dominated by native, non-invasive species. Erosion continues to be present along the west bank of Reach D associated with the vegetated geogrids. This area was re-seeded and stabilized with biodegradable erosion control blanket in Fall 2012. The area appears to be establishing slowly as vegetation continues to be sparse. Japanese Knotweed tends to occur here and should be treated during herbaceous visits. Evidence of treatment of Japanese Knotweed in this location was not evident during the fall monitoring visit. No rills or gullies were observed in this area. Cattails, Alder, Buckthorn, Japanese Knotweed, Common Reed, Purple Loosetrife, and Honeysuckle were observed along Reach D. Buckthorn was the most dominant along the southern end of Reach D along the eastern bank. Japanese Knotweed (*Fallopia*

*japonica*) and Seaside Goldenrod (*Solidago sempervirens*) were noted at the northern end of Reach D. ILM has been treating these species during its herbaceous visits.

### **Woodland Vegetation**

Woodlands - Native plants are apparent throughout and continue to be more numerous. No additional native seeding is recommended. Herbicide treatments of honeysuckle (*Lonicera* spp.), buckthorn (*Rhamnus cathartica*) and garlic mustard (*Alliaria petiolata*) are evident in most areas of the preserve. However, a moderate amount of garlic mustard and Dame's Rocket were observed throughout the woodland. ILM treated these species with herbicide in April.

Numerous buckthorn, honeysuckle and multiflora rose seedlings and re-sprouts were observed. Re-sprouts were cut and stump treated with herbicide throughout the 2016 growing season. The continued effectiveness of the treatments should be evaluated by the contractor during the 2017 growing season and re-application of herbicide should be completed as necessary.

Vegetation within the staging/prairie area is dominated by native non-invasive species. Several patches of Teasel were observed in this area. Herbicide treatments should continue here to ensure native, non-invasive species continue to be dominant.

### **Wetland Areas**

Wetland F - Wetland F is dominated by native, non-invasive species. Small populations of poison ivy (*Toxicodendron radicans*), Garlic Mustard (*Alliaria petiolata*) and other non-native species should continue to be controlled.

Critical Wetland D - Although thriving in 2008 the state-protected plant species, *Scirpus hattorianus*, which is located within a few feet north of the new bridge was negatively affected by the large storm events of September 2008 and spring 2009. The *Scirpus* was located adjacent to a small drainage pattern in wetland D, the large storm events appear to have washed this area out. As such, it was not observed in 2009, 2010, 2011, 2012, 2013, 2014, 2015 or this year. Further surveys for the species should occur in 2017. Weed whipping and hand cutting should continue to take place surrounding the location of the *Scirpus* throughout the 2017 growing season.

Opportunistic weeds, including Reed Canary Grass, Common Reed (*Phragmites australis*) and Cattails (*Typha* sp.) continue to be under better control in Wetland D this year. Continued control of these species and other opportunistic plants (if any) is necessary. Spot herbicide treatments with a wick-type applicator and weed whipping are recommended. The dominance of invasive herbaceous vegetation throughout portions of Wetland D that are not within the project area will likely continue to have a negative impact on this area. Restoration of the adjacent wetland complex will help control the spread of invasive species within Wetland D.

### **Prairie Kame:**

Numerous Honeysuckle, Buckthorn and Multiflora Rose re-sprouts were observed along the western side of the Prairie Kame. Re-sprouts of non-native invasive shrubs should be cut and

treated with herbicide. No spraying is allowed in this area because of highly sensitive plant species. Restoration efforts should continue to follow project documents while avoiding foot traffic or other disturbance to sensitive sites. Numerous Teasel plants as well as spotted knapweed were observed in prairie west of the path adjacent to the prairie kame that is outside the limits of PSA II. These plants should be removed and treated with herbicide. This may be done by volunteer crews as it is outside the limits of ILM's contract.

**General:**

Site management should continue as planned and include herbicide treatments throughout the 2017 growing season. The focus should continue to be on Reed Canary Grass, Common Reed, Teasel, Daylilies, Garlic Mustard, European Buckthorn, Canada Thistle, Japanese Knotweed, Spotted Knapweed, Seaside Goldenrod, non-native Alder, Black Locust, Multiflora Rose, and Honeysuckle shrubs. Recommendations contained within this report should be coordinated with the landscape contractor to ensure practices do not interfere with on-going restoration efforts.