



Mead & Hunt, Inc.  
M & H Architecture, Inc.  
6501 Watts Road  
Madison, Wisconsin 53719  
608-273-6380  
meadhunt.com

January 20, 2014

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Subject: New License Article 401 (Condition 8 of the 401 Water Quality Certification)  
Invasive Species Monitoring and Control Report  
June 6, 2012, Order Modifying and Approving Invasive Species Monitoring and Control Plan  
Badger-Rapide Croche Hydroelectric Project; FERC Project No. 2677-026  
Lower Fox River; Outagamie County, Wisconsin

Dear Secretary Bose:

On June 6, 2012, the Federal Energy Regulatory Commission (FERC) issued an "Order Modifying and Approving Invasive Species Monitoring and Control Plan." Paragraph (B) of the Director's orders outlines the monitoring and reporting requirements related to invasive species.

Mead & Hunt, Inc. (Mead & Hunt), on behalf of Kaukauna Utilities (KU), is hereby submitting (via electronic copy) a copy of the *Invasive Species Monitoring and Control Report* for 2013. Copies have also been provided to the U.S. Fish & Wildlife Service and the Wisconsin Department of Natural Resources.

Attachment A presents a copy of the FERC's June 6, 2012, Order. Attachment B contains the report outlining the results of the 2013 invasive species monitoring efforts, while Attachment C presents the results of the consultation efforts related to the monitoring efforts and subsequent report.

Thank you for your time and consideration in this matter. If you have any questions, please contact me at (608) 273-6380 or [arie.dewaal@meadhunt.com](mailto:arie.dewaal@meadhunt.com).

Respectfully submitted,

MEAD & HUNT, Inc.

Arie DeWaal  
Senior Project Manager

Attachments

cc: Mr. Nick Utrup, U.S. Fish & Wildlife Service  
Ms. Cheryl Laatsch, Wisconsin Department of Natural Resources  
Mr. Mike Pedersen, Kaukauna Utilities  
Mr. Perry Rosa, Mead & Hunt, Inc.

## **Attachment A**

139 FERC ¶ 62,184  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

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City of Kaukauna, Wisconsin

Project No. 2677-026

ORDER MODIFYING AND APPROVING INVASIVE SPECIES  
MONITORING AND CONTROL PLAN

(Issued June 6, 2012)

1. On March 30 2012, the City of Kaukauna, Wisconsin (licensee) filed its invasive species monitoring and control plan for the Badger-Rapide Croche Hydroelectric Project No. 2677, pursuant to license article 401 and the Wisconsin Department of Natural Resources section 401 Water Quality Certification Condition (WQC) No. 8.<sup>1</sup> The project is located on the Fox River in Outagamie County, Wisconsin, and includes two developments - the Badger and Rapide Croche developments. The Badger Development is located in the City of Kaukauna at the U.S. Army Corps of Engineers' (Corps) Kaukauna dam. The Rapide Croche Development is located in the Town of Buchanan at the Corps' Rapide Croche dam.

LICENSE REQUIREMENTS

2. Article 401 requires the licensee to file plans, for Federal Energy Regulatory Commission (Commission) approval, pursuant to various conditions in the Wisconsin WQC. WQC Condition No. 8 requires the licensee to develop an invasive species monitoring and control plan (Plan) subject to the approval of the Commission and the Wisconsin Department of Natural Resources (WDNR) within one year of license issuance. The Plan should include measures to monitor and control Japanese knotweed, garlic mustard, buckthorn, Eurasian water milfoil, purple loosestrife, phalaris, phragmites, and dreissenid mussels.

3. In addition, the licensee must monitor for any "prohibited" species as required by NR 40, Wisconsin Administrative Code. "Prohibited invasive species" or "prohibited species" means an invasive species that the department at the time of listing under s. NR 40.04 (2), has determined is likely to survive and spread if introduced into the state, potentially causing economic or environmental harm or harm to human health, but which is not found in the state or in that region of the state where the species is listed as

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<sup>1</sup> Order Issuing New License issued May 18, 2011 (135 FERC ¶ 62,149).

prohibited in s. NR 40.04 (2), with the exception of isolated individuals, small populations, or small pioneer stands of terrestrial species, or in the case of aquatic species, that are isolated to a specific watershed in the state or the Great Lakes, and for which statewide or regional eradication or containment may be feasible.

#### LICENSEE'S PLAN

4. The licensee's Plan provides a detailed description and life-history, with colored photographs, of the listed WQC Condition No. 8 invasive species for monitoring: Japanese knotweed (*Fallopia japonica*); garlic mustard (*Alliaria petiolata*); buckthorn (*Rhamnus cathartica*); Eurasian water milfoil (*Myriophyllum spicatum*); purple loosestrife (*Lythrum salicaria*); phalaris (*Phalaris arundinacea* or reed canary grass); phragmites (*Phragmites australis* or common reed); and dreissenid mussels (*Dreissenidae*); a family of bi-valve mollusks that includes the visually-similar quagga mussel (*Dreissena bugensis*), zebra mussel (*Dreissena polymorpha*), and false darkmussel (*Mytilopsis leucophaeata*). In addition, the licensee's Plan provides for the monitoring for any "prohibited" species as required under NR 40, Wisconsin Administrative Code.

5. The licensee's Plan provides maps of the project areas to be monitored for invasive species. The seasonal monitoring timeframe for each identified invasive species is presented in the Plan. All monitoring is to be conducted by qualified ecologists familiar with the life history and visual characteristics of the invasive species. Monitoring will be conducted every year from 2013 through 2015, and every other following year, in accordance with the seasonal timeframe presented. All monitoring will use aerial orthophotographs to support the mapping of invasive plant populations in the field. Data concerning the locations of all identified invasive species will be collected using a Global Positioning System (GPS) unit.

6. Mussels will also be monitored for during April - September monthly rakings of the Badger and Rapide Croche development trashracks. The trashracks at both developments are cleaned using a long special-purpose rake, offering an opportunity to monitor for the invasive mussels. Eurasian water milfoil will be monitored every fourth year in accordance with field procedures, sampling tools, and data analysis, and reporting protocols of the WDNR. A cumulative occurrence map will be produced each year of monitoring that includes the locations of all detected invasive species that year.

7. The licensee's Plan provides for measures to increase public awareness and education of invasive species in the project area. The licensee will post a WDNR invasive species sign at the new Rapide Croche impoundment boat landing, in addition to the existing WDNR invasive species sign at the City boat landing (Riverside Marina) upstream of Badger Dam. The licensee will also post signs for Viral Hemorrhagic Septicemia (VHS) at the two boat landings, using current WDNR signage graphics to alert anglers and boaters of this deadly infectious fish disease. The licensee will provide

invasive species brochures and publications at its customer service office. The licensee's Plan outlines coordination with the Outagamie County Highway Department and its highway maintenance staff concerning the presence of any of the listed invasive species on highway lands.

8. The licensee's Plan provides for the control of the spread of invasive species through Adaptive Management practices in consultation with WDNR or the local invasive species coordinator of the University of Wisconsin - Extension or Outagamie County. The Plan outlines the procedures for the Adaptive Management strategy that will be followed during each monitoring year. The Plan provides an extensive summary of measures, compiled from the best management practices for the control of each invasive species.

9. The licensee's Plan provides for the submittal of a monitoring report to the WDNR Coordinator by December 20 of each monitoring year. The report is to include narrative accounts of any detected presence of the listed invasive species, supplemented by an orthophotograph-based map showing the relevant locations. The map will also show the locations of the aquatic Eurasian water milfoil monitoring, as well as labels for roads and other features to assist in orientation and use. Population limits or locations of invasive species are to be based on Geographic Information System (GIS) coordinates. The monitoring reports will also include counts of the number brochures and publications handed-out to the public.

#### AGENCY CONSULTATION

10. The licensee provided the draft invasive species monitoring and control plan to the WDNR and the U.S. Fish and Wildlife Service on January 12, 2012, for review and comment. All comments and recommendations were addressed in email correspondences and during a teleconference held on February 29, 2012.

#### DISCUSSION

11. The licensee's Plan proposes to submit a monitoring report to the WDNR Coordinator by December 20 of each monitoring year. A copy of the monitoring report should also be submitted to the U.S. Fish and Wildlife Service for their review and comment. In order to keep the Commission apprised of the progress of the licensee's invasive species monitoring and control plan program, the licensee shall file a report with the Commission, for each year in which monitoring occurs. The licensee should allow the resource agencies a minimum of 30 days to provide review and comment on the monitoring report before filing the report with the Commission. The monitoring report, along with any comments and recommendations by the resource agencies, shall be filed with the Commission by January 31, of the year following monitoring.

12. The licensee's invasive species monitoring and control plan, filed March 30, 2012, fulfills the requirements of license article 401 and WDNR WQC Condition No. 8, and, as modified, should be approved.

The Director orders:

(A) The City of Kaukauna, Wisconsin's (licensee) invasive species monitoring and control plan, filed March 30, 2012, pursuant to license article 401 and Wisconsin Department of Natural Resources' Water Quality Certification Condition No. 8, as modified by paragraph (B), is approved.

(B) The licensee shall conduct its initial monitoring survey for invasive species in 2013, with subsequent annual surveys to be conducted in 2014 and 2015, and every other following year. The licensee shall file the initial annual monitoring report with the Wisconsin Department of Natural Resources and the U.S. Fish and Wildlife Service by December 20, 2013, with subsequent annual monitoring reports in 2014 and 2015. The licensee shall allow the resource agencies a minimum of 30 days to provide comments and/or recommendations on the reports. Each annual monitoring report should be filed with the Commission including any comments and/or recommendations from the resource agencies and the licensee's response to the agency comments by January 31, 2014, with subsequent annual monitoring reports in 2015 and 2016. If the licensee does not adopt a recommendation, the report shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to require modifications to the monitoring and control plan based on the licensee's monitoring reports or new information, as it becomes available.

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2006), and by the Commission's regulations at 18 C.F.R. § 385.713 (2011). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Thomas J. LoVullo  
Chief, Aquatic Resources Branch  
Division of Hydropower  
Administration and Compliance

## **Attachment B**

# **Invasive Species Monitoring and Control Report**

## **Badger-Rapide Croche Hydroelectric Project**

**FERC Project No. 2677**

**Lower Fox River  
Outagamie County, Wisconsin**

Prepared for



**Kaukauna, Wisconsin**

Prepared by



[www.meadhunt.com](http://www.meadhunt.com)

October 2013

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- A Field Monitoring Maps
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1 Badger-Rapide Croche Invasive Species Annual Monitoring Schedule .....	1
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## 1. Introduction

On May 18, 2011 the FERC issued a new license to Kaukauna Utilities (KU) for the Badger-Rapide Croche Hydroelectric Project (FERC Project No. 2677). This license required the filing of certain plans for FERC approval in consultation with the U.S. Fish and Wildlife Service (FWS) and the Wisconsin Department of Natural Resources (WDNR) under the FERC License Article 401. These plans covered a number of Section 401 Water Quality Certification conditions imposed by the WDNR, of which Condition 8 specified that KU develop an invasive species monitoring and control plan.

This plan was prepared in March 2012 in consultation with the agencies and approved by the FERC on June 6, 2012. The plan included field monitoring formats for certain invasive species and this report is the first completed in compliance with License Article 401. It presents the results of 2013 field work and other compliance measures taken by KU.

## 2. Monitoring Requirements

Invasive species monitoring requirements are summarized in Table 1.

**Table 1. Badger-Rapide Croche Invasive Species Annual Monitoring Schedule**

Species	Monitoring Timeframe	Method*
a. Japanese knotweed ( <i>Fallopia japonica</i> )	July	P
b. Garlic mustard ( <i>Alliaria petiolata</i> )	May	P
c. Buckthorn ( <i>Rhamnus cathartica</i> )	May	P
d. Purple loosestrife ( <i>Lythrum salicaria</i> )	July	B
e. Reed canary grass ( <i>Phalaris arundinacea</i> )	May	B,P
f. Common reed ( <i>Phragmites australis</i> )	May-June	B
g. Dreissenid mussels (3 spp.)	May-July	O

\* B = boat; P = pedestrian; O = other

The other method referred to in Table 1 is raking of the trash racks on hydroelectric plant intakes by KU personnel.

In accordance with the FERC order approving the invasive species monitoring plan, Eurasian Water Milfoil will be monitored every fourth year, beginning in 2017, using field procedures, tools, data analysis and protocols of the WDNR.

## 3. 2013 Field Monitoring

### A. Monitoring Area

The monitoring area for invasive species includes river, shoreline and lands within the project boundary of the Badger-Rapide Croche Project (see Appendix A). The total reach of river covered by this monitoring work is about 6 miles; an intervening reach of about 1.5 miles between the Badger plant discharge and the upstream limit of the Rapide Croche impoundment is within the project boundary of the KU City Hydroelectric Project, which is not subject to this monitoring effort.

Generally, areas monitored for invasive species include:

- The Kaukauna Dam impoundment (including power intake trash racks)
- The Fox River bypass reach and power canal for the Badger plant
- The discharge area downstream of Badger
- Power transmission line right-of-way from Badger to Rapide Croche plants
- The Rapide Croche impoundment (including power intake trash racks)
- Rapide Croche Park, covering about 5 acres on the south bank of the Fox River
- The 2-acre area for the new Rapide Croche boat landing

At the Project, the Fox River lies within a moderately deep valley of limited floodplain area. Except within the urbanized and industrial area of central Kaukauna, forest covers the valley slopes, with grades of 15 to 30 percent or more. Dominant trees include northern red oak, white oak, red maple, hickory, basswood and ironwood, with silver maple, cottonwood, ash, box elder and black willow more common along the river's edge. This edge habitat is often crowded with dense brush that includes chokecherry, red osier dogwood, American black currant, Eurasian honeysuckle and buckthorn.

In 2012 the Badger power canal was de-watered for the construction of the new Badger plant, which activity also involved replacement of power canal masonry as well as grading and other construction disturbance in adjacent project areas. Therefore, these areas were not subject to invasive species surveys this year.

## **B. Results**

Invasive plant monitoring was performed on June 4 through 6 and July 9, 2013. Project areas accessible on foot around the Badger plant, the new Rapide Croche boat landing and Rapide Croche Park were toured, while impoundment shorelines were accessed via canoe. The transmission line right-of-way was toured by vehicle.

Reference maps using 1"=300' (1:3600) scaled orthophotos were used for way-finding and notation, while invasive plant locations were surveyed using a Geo Trimble XH hand-held GPS unit. Satellite reception during field work was generally good, and we were able to post-process the data files to an accuracy of within 25 feet.

Of the invasive plants in Table 1, garlic mustard, buckthorn, reed canary grass and purple loosestrife were documented within the monitoring limits. No Japanese knotweed or common reed was found. The most prevalent species was buckthorn, which occurred along northern and southern river banks throughout the project. Spot occurrences of one to several mature shrubs were common, interspersed with naturalized Eurasian honeysuckle (*Lonicera x bella*) and red osier dogwood. These two species of brush appeared to be competitively excluding buckthorn by overgrowing it in many locations. In other riverbank areas, however, continuous, narrow populations of mature buckthorn were noted along the shoreline and are mapped as lines in Appendix A.

Purple loosestrife was comparatively uncommon, probably due to low light levels along the steep, brushy river banks. It was usually found as scattered plants in level, open areas of herbaceous vegetation that included emergent wetlands or mown or rip-rapped areas adjacent to residences. Most plants found appeared to be mature specimens more than a year old. A few young plants were noted growing from the crevices of logs or driftwood lodged against the shoreline.

Reed canary grass was found as either isolated tufts in rip-rap and canopy gaps beneath shoreline shrubbery, or as continuous populations occupying wet, exposed shorelines. Populations were also found within the transmission line right-of-way, although it should be noted that these areas are subjected to regular mowing. Overall, the occurrence of reed canary grass was substantially lower than in many riparian areas of southern Wisconsin, probably due to shading and the relatively limited amount of wet habitat provided by the steep banks of the Fox River.

Garlic mustard was infrequent along the shoreline, but an infestation with varying degrees of cover was mapped at Rapide Croche Park (Appendix A). A total of about 2.5 acres had cover varying from 10 percent to 100 percent. The area of 100 percent cover was on a moist terrace about 100 feet wide and 500 feet long close to the river, at the base of a steep wooded slope. Ten spot infestations were mapped at the bases of large oak trees. This type of invasion is from arboreal mammals (probably raccoons) who disperse the seeds from between their toes when they climb the tree for a day roost. It is one of the most common deep woodland invasion vectors for this weed. The garlic mustard infestation at the park will be controlled beginning in 2014(see Section 4).

Monitoring for Dreissenid mussels was done by KU personnel only at the Rapide Croche plant, since the new Badger plant was under construction. Monitoring was done by trash rack cleaning, with few occurrences noted. Zebra mussels have been noted at the project before and are common in the river. According to KU personnel, mussels usually pass through the hydroelectric units and don't accumulate on the trash racks because of intake velocity. They are usually limited to the corners of the racks, where velocity is low enough for the veligers (mussel larvae) to attach. Similarly, mussels don't effect operations because of the high water velocities within the intakes and units. KU dewater their units every other year for maintenance and mussels have never been found in these locations.

#### **4. Invasive Species Control**

On behalf of KU, Mead & Hunt coordinated with staff of the UW Extension in Brown County in an effort to identify qualified invasive plant control consultants in the Fox Valley region. Specialized consultants are essential to many invasive species control programs because of they combine knowledge of the natural history of the target species with the necessary licensing and skills in the use of the pesticides often required. All firms and individuals identified were interviewed via telephone to gauge their experience, qualifications, interest and availability to work in the Kaukauna area. The firms are listed in Appendix C. Based on the results of this year's monitoring, Mead & Hunt recommended to KU that efforts be made to control the garlic mustard infestation at Rapide Croche Park. The park contains a relatively high quality southern mesic hardwood forest of oak, hickory, maple and basswood with native understory herbs that include false Solomon's seal, May apple, jack-in-the-pulpit, Virginia waterleaf, trout lily, geranium, rue anemone, hepatica, trillium, bloodroot, graceful sedge and rosy sedge. KU has contacted Prairie Nursery

and will be meeting with a representative of that firm this fall to initiate planning for control efforts to commence in the spring of 2014.

## **5. Public Awareness and Education**

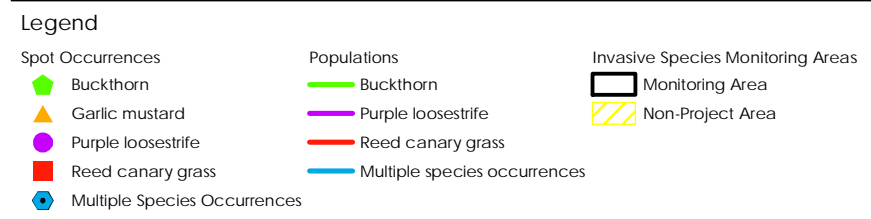
As part of this monitoring program, KU has taken measures to increase public awareness, including posting of WDNR invasive species and viral hemorrhagic septicemia (VHS) signs at the City boat landing. The WDNR advisory signs will also be posted at the new Rapide Croche boat landing upon its completion in 2014.

KU has also provided a range of informative pamphlets and information sheets to the public at its main office on Island Street in Kaukauna. The following publications have been made available:

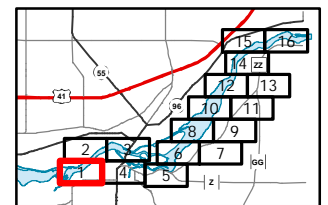
- a. *Stop Aquatic Hitchhikers*, UW Cooperative Extension CBCW brochure WT-801
- b. *Zebra Mussels Boaters Guide*, UW Cooperative Extension CBCW brochure WT-383
- c. *Regulated Aquatic Invasive Plants in WI*, UW Cooperative Extension Fact Sheet WT-960
- d. *Purple Loosestrife*, UW Cooperative Extension CBCW brochure WI-799
- e. *Japanese Knotweed*, UW Cooperative Extension CBCW brochure ER-657
- f. *The Facts on Eurasian Water Milfoil*, UW Cooperative Extension PUB-WT-781 2004
- g. *Common and Glossy Buckthorn*, DNR PUB FR-216 2007
- h. *Invasive Exotic Shrub Honeysuckles*, DNR PUB FR-448 2009
- g. NR 40 Regulated Exotic Plant List from:  
<http://dnr.wi.gov/topic/Invasives/documents/NR40plantlist.pdf>
- h. *Garlic Mustard (Alliaria petiolata)*, DNR PUB-FR-350-2006

According to KU staff who periodically re-supply the pamphlet area, 36 of the publications have been taken by customers as of October 3, 2013. This included 13 purple loosestrife brochures, 9 of the aquatic hitchhiker publication, 8 of the Japanese knotweed brochure and 6 of the zebra mussel brochure.

## **Appendix A. Field Monitoring Maps**



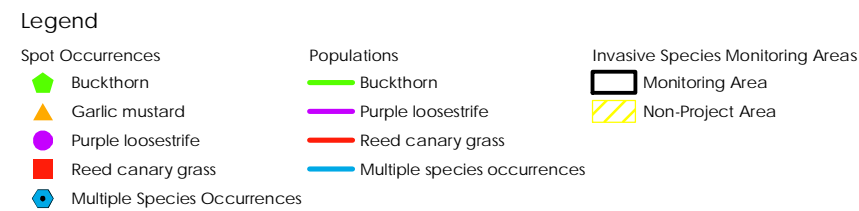
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Field work conducted June 4 - 6 and July 9, 2013.



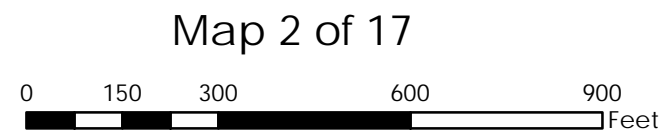
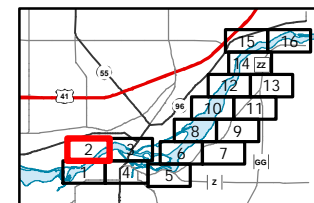
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# Invasive Species Monitoring

Badger/Rapide-Croche Dams  
Monitoring Locations

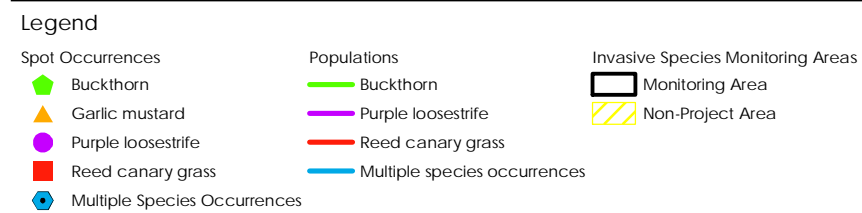


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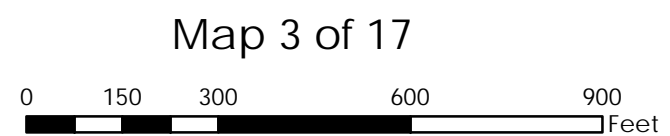
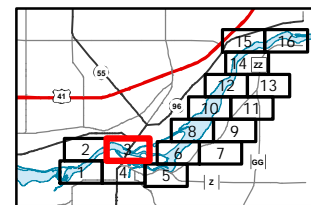


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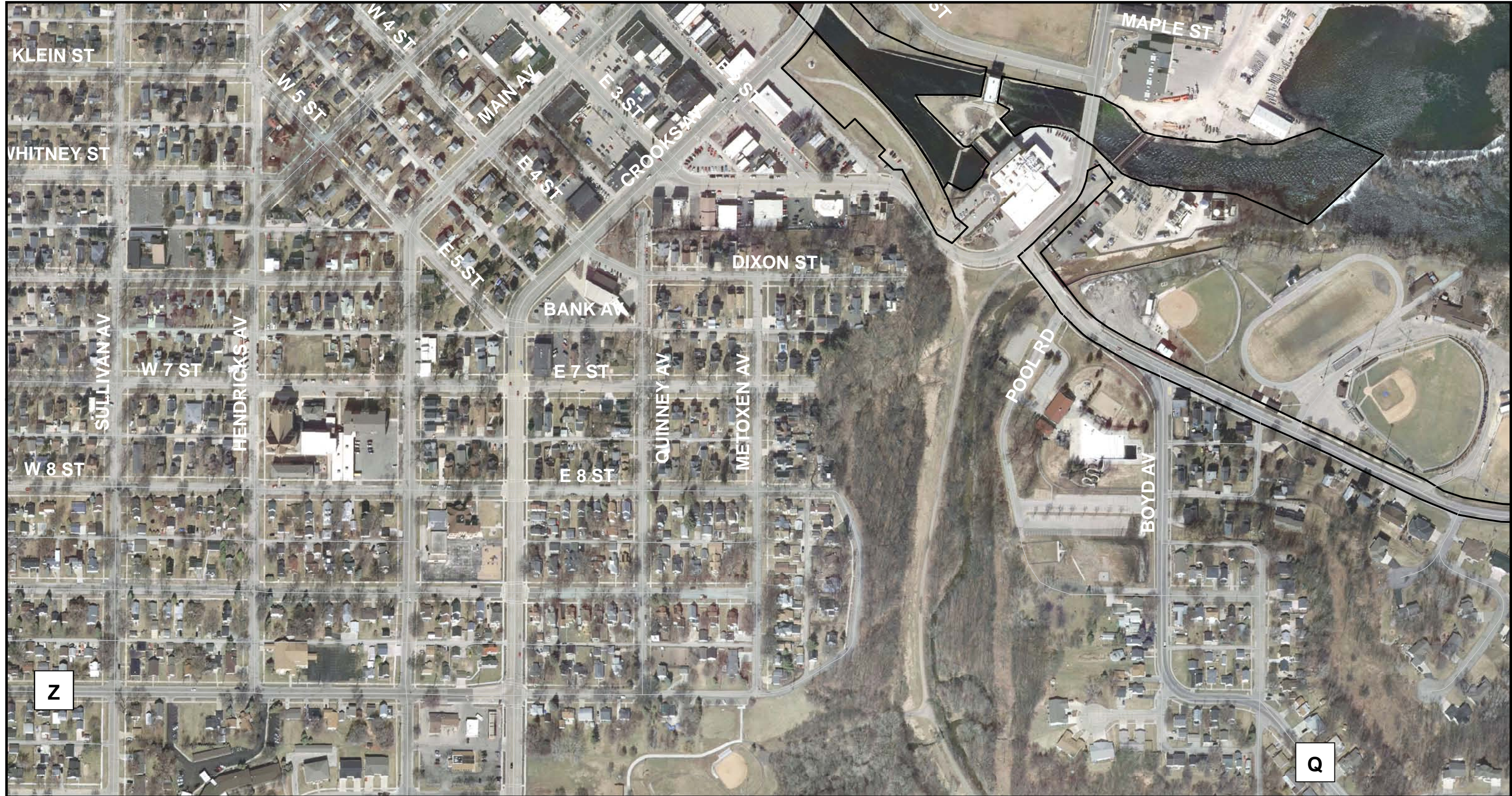




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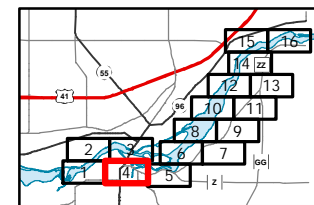


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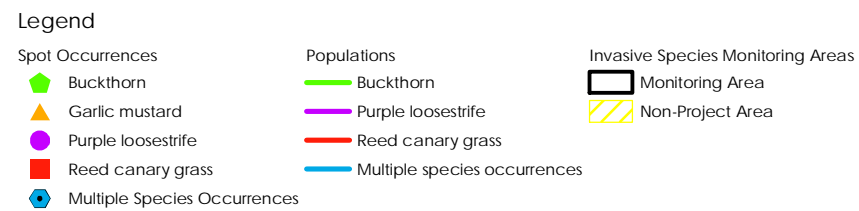


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|------------------------------|------------------------------|--|
| <b>Spot Occurrences</b>      | <b>Populations</b>           | <b>Invasive Species Monitoring Areas</b> |
| Buckthorn                    | Buckthorn                    | Monitoring Area                          |
| Garlic mustard               | Purple loosestrife           | Non-Project Area                         |
| Purple loosestrife           | Reed canary grass            |  |
| Reed canary grass            | Multiple species occurrences |  |
| Multiple Species Occurrences |                              |  |

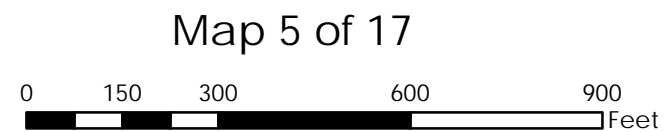
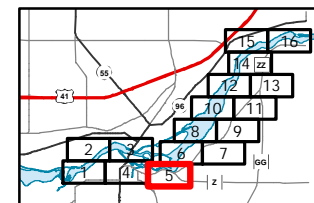
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*Map Notes:*  
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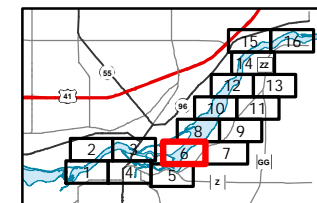


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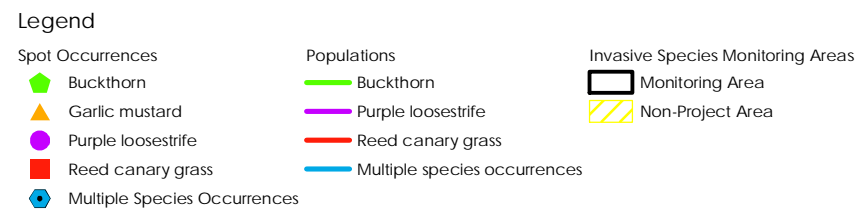


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|------------------------------|------------------------------|--|
| <b>Spot Occurrences</b>      | <b>Populations</b>           | <b>Invasive Species Monitoring Areas</b> |
| Buckthorn                    | Buckthorn                    | Monitoring Area                          |
| Garlic mustard               | Purple loosestrife           | Non-Project Area                         |
| Purple loosestrife           | Reed canary grass            |  |
| Reed canary grass            | Multiple species occurrences |  |
| Multiple Species Occurrences |                              |  |

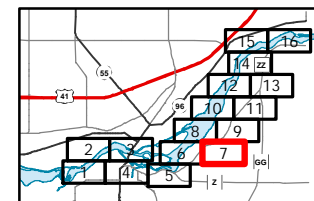
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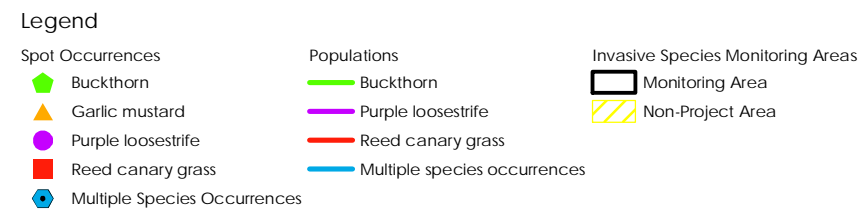


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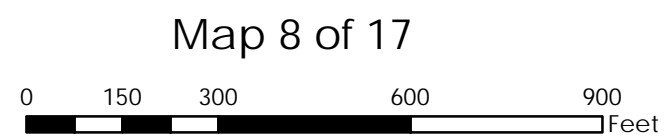
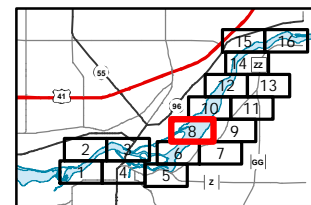


*Map Notes:*  
Image base from the Wisconsin Regional Orthophotography Consortium (WROC), 2010.  
Field work conducted June 4 - 6 and July 9, 2013.

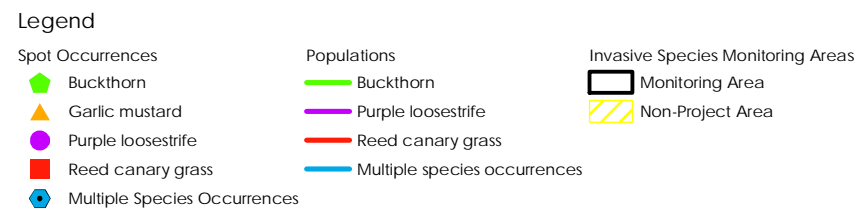




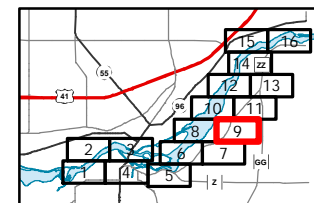
*Map Notes:*  
 Image base from the Wisconsin Regional Orthophotography Consortium (WROC), 2010.  
 Field work conducted June 4 - 6 and July 9, 2013.



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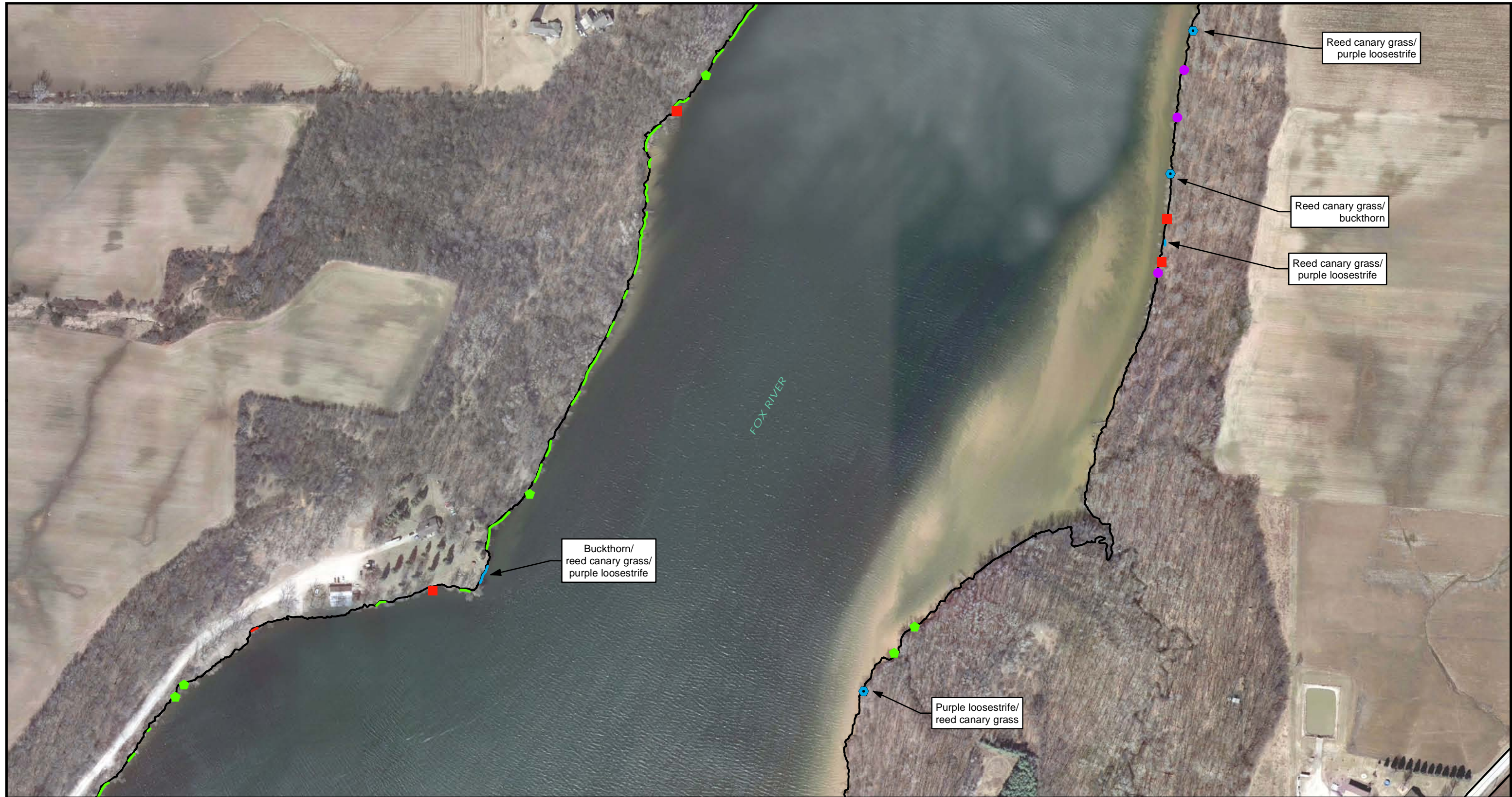
*Map Notes:*  
Image base from the Wisconsin Regional Orthophotography Consortium (WROC), 2010.  
Field work conducted June 4 - 6 and July 9, 2013.



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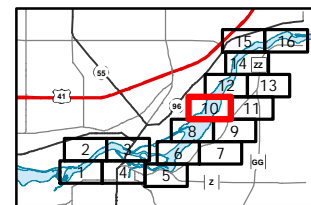
# Invasive Species Monitoring

## Badger/Rapide-Croche Dams Monitoring Locations



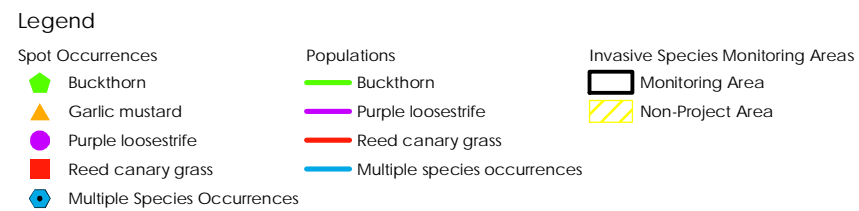
- Legend**
- |  |  |   |
|--|--|---|
| <b>Spot Occurrences</b>  | <b>Populations</b>   | <b>Invasive Species Monitoring Areas</b>  |
| <ul style="list-style-type: none"> <li><span style="color: green;">◆</span> Buckthorn</li> <li><span style="color: orange;">▲</span> Garlic mustard</li> <li><span style="color: purple;">◆</span> Purple loosestrife</li> <li><span style="color: red;">■</span> Reed canary grass</li> <li><span style="color: blue;">◆</span> Multiple Species Occurrences</li> </ul> | <ul style="list-style-type: none"> <li><span style="color: green;">—</span> Buckthorn</li> <li><span style="color: purple;">—</span> Purple loosestrife</li> <li><span style="color: red;">—</span> Reed canary grass</li> <li><span style="color: blue;">—</span> Multiple species occurrences</li> </ul> | <ul style="list-style-type: none"> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Monitoring Area</li> <li><span style="border: 1px dashed yellow; display: inline-block; width: 15px; height: 10px;"></span> Non-Project Area</li> </ul> |

*Map Notes:*  
 Image base from the Wisconsin Regional Orthophotography Consortium (WROC), 2010.  
 Field work conducted June 4 - 6 and July 9, 2013.

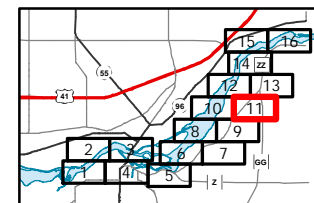


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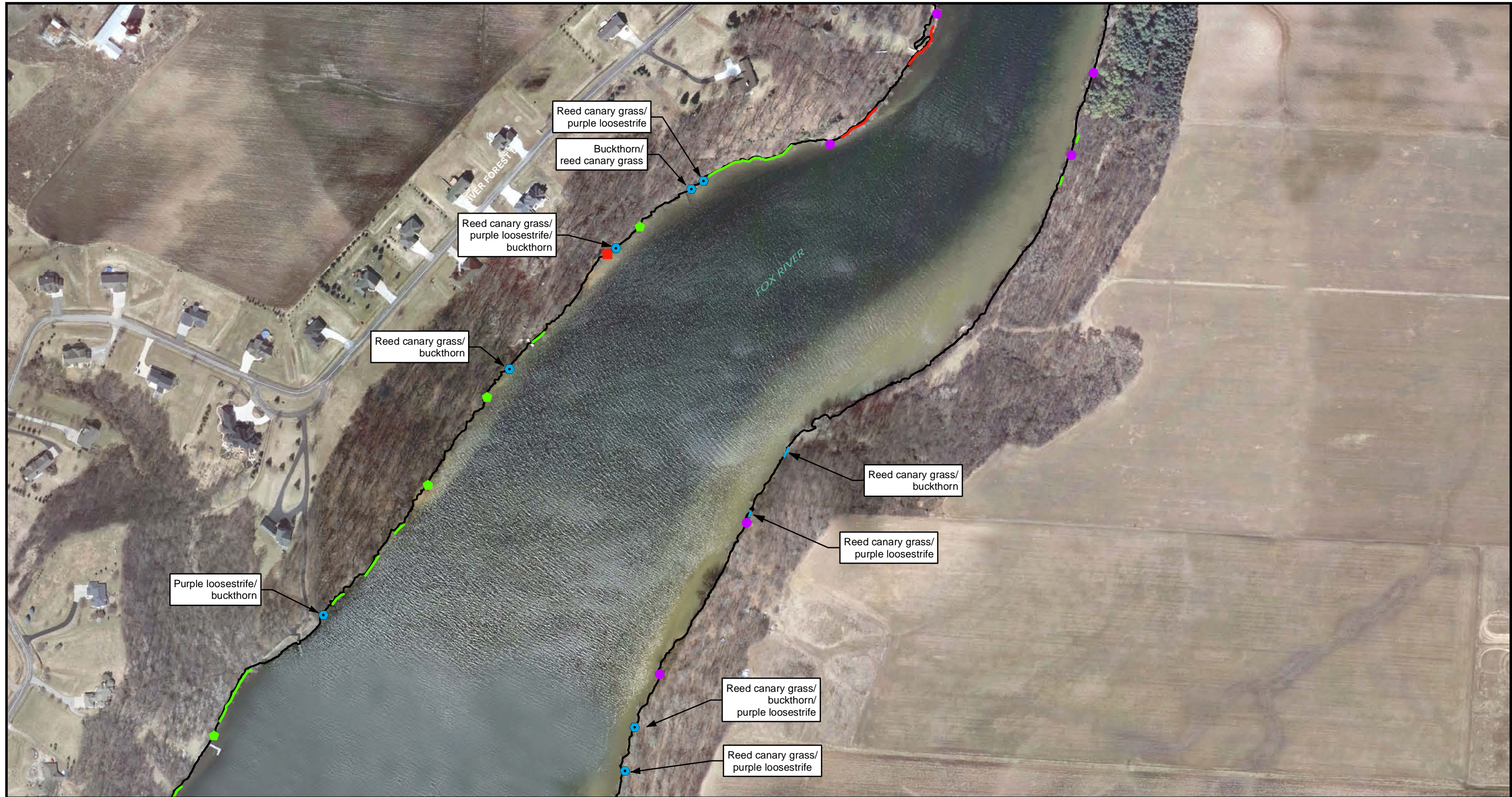


*Map Notes:*  
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Field work conducted June 4 - 6 and July 9, 2013.



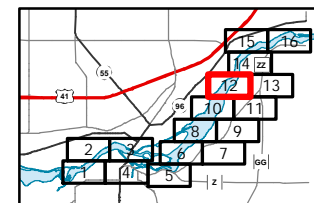
# Invasive Species Monitoring

Badger/Rapide-Croche Dams  
Monitoring Locations

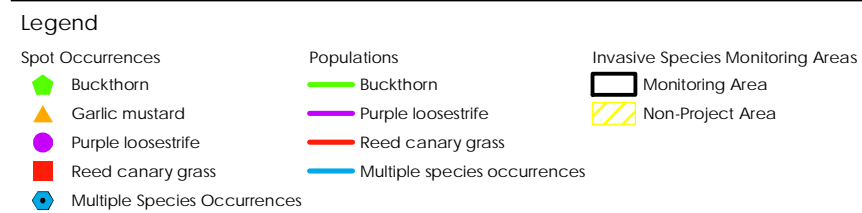


- Legend**
- |   |   |  |
|---|---|--|
| <b>Spot Occurrences</b>                   | <b>Populations</b>                      | <b>Invasive Species Monitoring Areas</b> |
| Green diamond: Buckthorn                  | Green line: Buckthorn                   | Black outline: Monitoring Area           |
| Orange triangle: Garlic mustard           | Purple line: Purple loosestrife         | Yellow hatched: Non-Project Area         |
| Purple circle: Purple loosestrife         | Red line: Reed canary grass             |  |
| Red square: Reed canary grass             | Blue line: Multiple species occurrences |  |
| Blue circle: Multiple Species Occurrences |   |  |

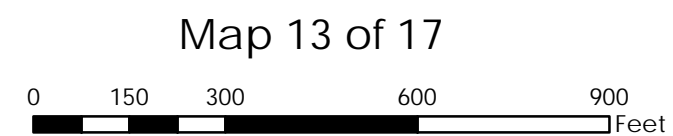
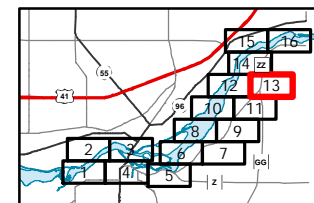
**Map Notes:**  
Image base from the Wisconsin Regional Orthophotography Consortium (WROC), 2010.  
Field work conducted June 4 - 6 and July 9, 2013.



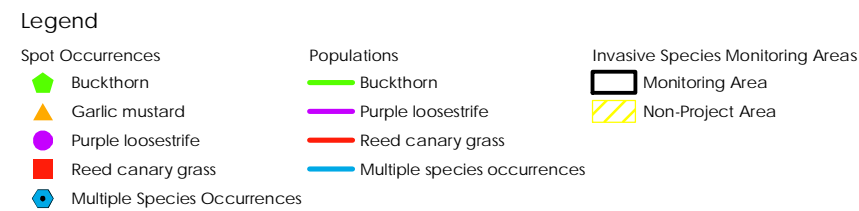
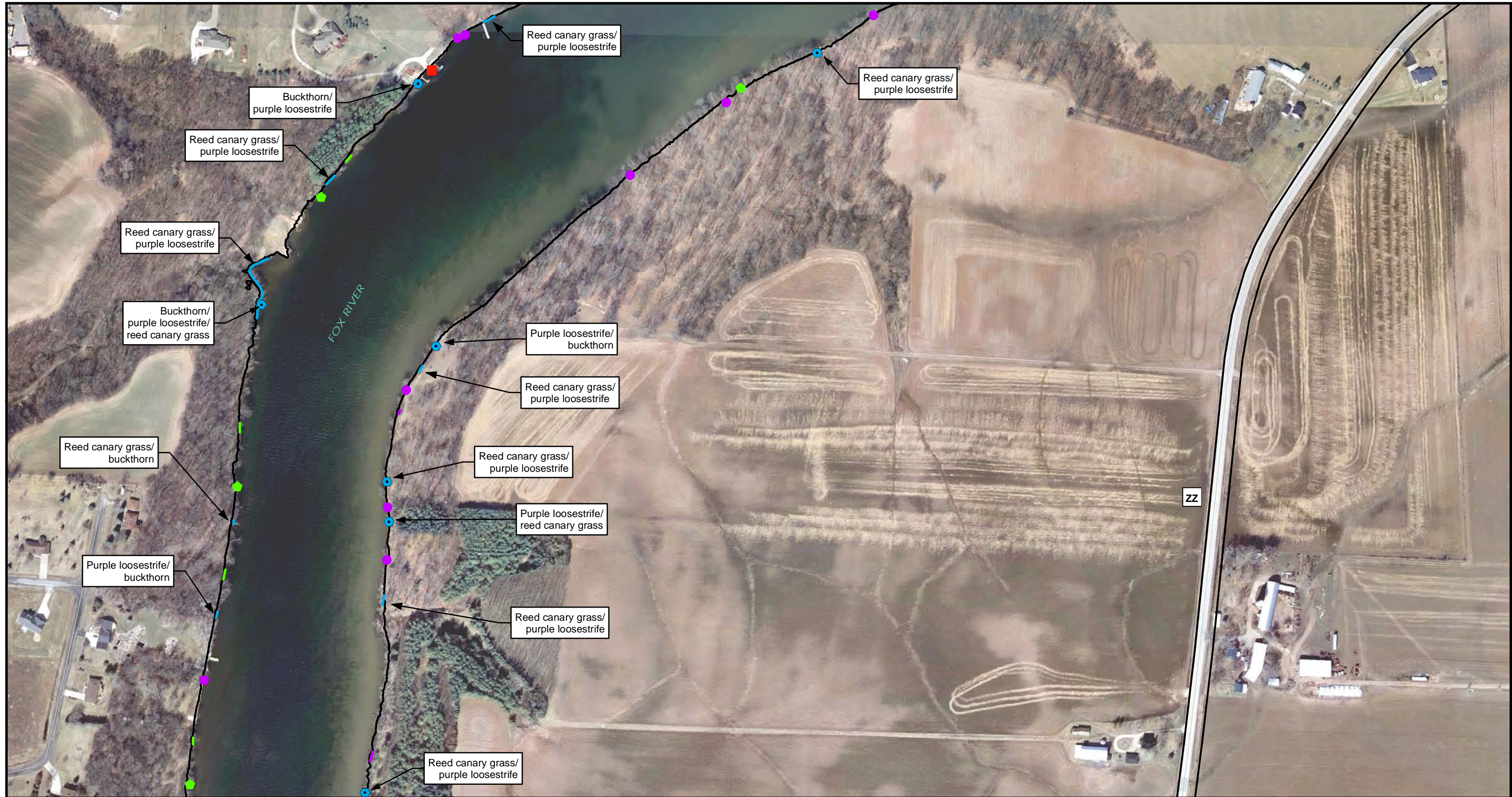
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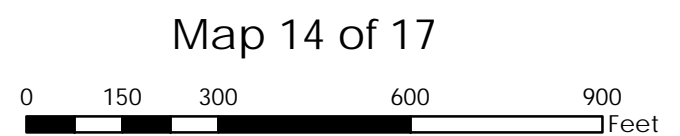
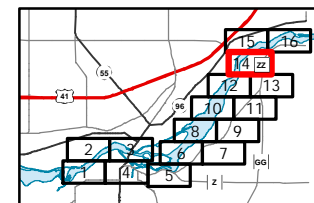
*Map Notes:*  
 Image base from the Wisconsin Regional Orthophotography Consortium (WROC), 2010.  
 Field work conducted June 4 - 6 and July 9, 2013.



Path: X:\117014-00\130031\_01\TECH\GIS\Maps\Kaukauna\_RapideCroche\_InvasiveSpecies.mxd



*Map Notes:*  
 Image base from the Wisconsin Regional Orthophotography Consortium (WROC), 2010.  
 Field work conducted June 4 - 6 and July 9, 2013.



Path: X:\117014-00\130031\_01\TECH\GIS\Maps\Kaukauna\_RapideCroche\_InvasiveSpecies.mxd

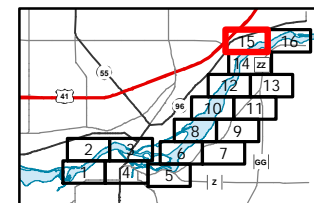
# Invasive Species Monitoring

Badger/Rapide-Croche Dams  
Monitoring Locations



Legend	
<b>Spot Occurrences</b>	<b>Populations</b>
<span style="color: green;">◆</span> Buckthorn	<span style="color: green;">—</span> Buckthorn
<span style="color: orange;">▲</span> Garlic mustard	<span style="color: purple;">—</span> Purple loosestrife
<span style="color: purple;">●</span> Purple loosestrife	<span style="color: red;">—</span> Reed canary grass
<span style="color: red;">■</span> Reed canary grass	<span style="color: blue;">—</span> Multiple species occurrences
<span style="color: blue;">●</span> Multiple Species Occurrences	
	<b>Invasive Species Monitoring Areas</b>
	<span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Monitoring Area
	<span style="border: 1px dashed yellow; display: inline-block; width: 15px; height: 10px;"></span> Non-Project Area

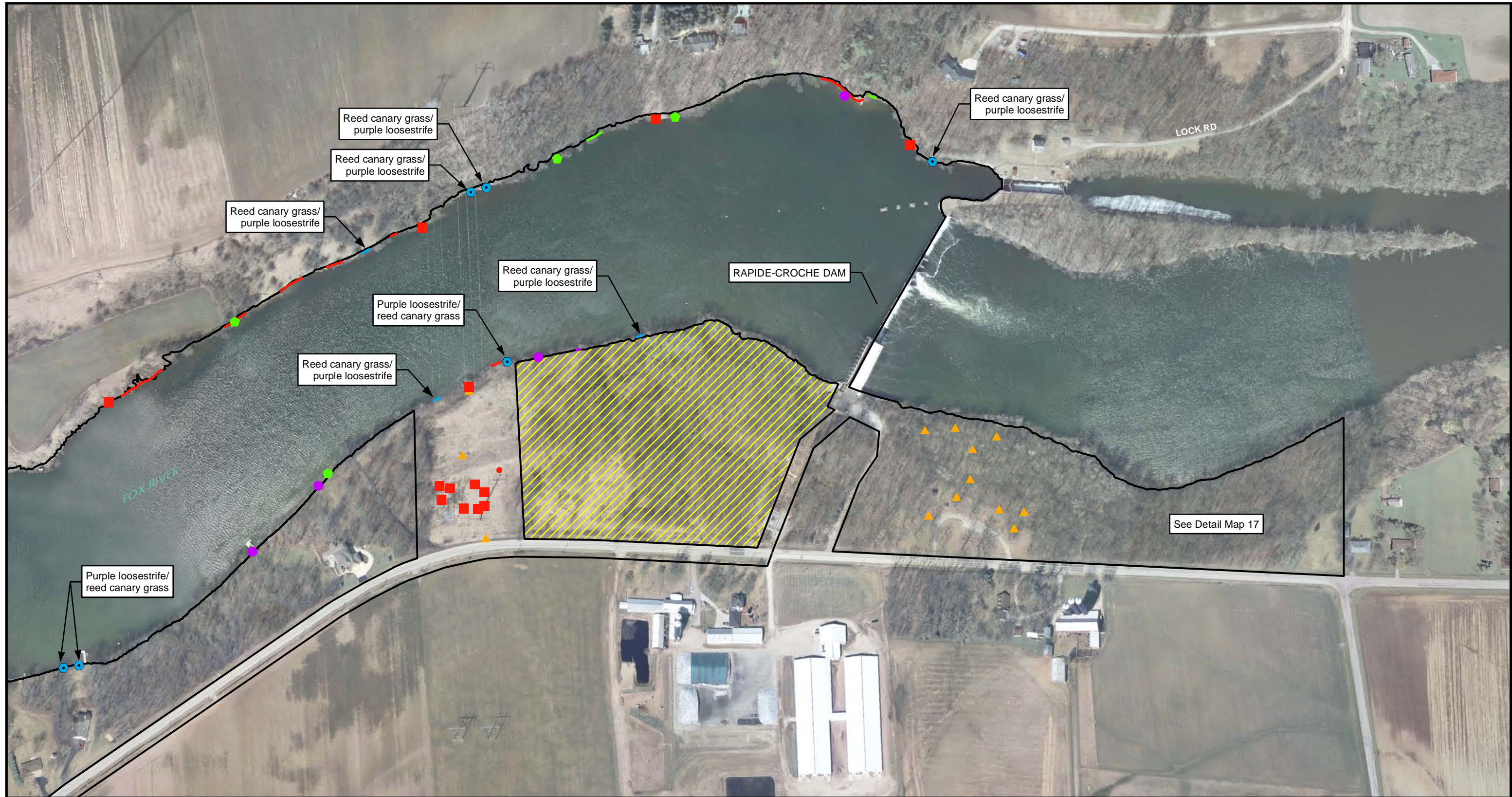
*Map Notes:*  
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Field work conducted June 4 - 6 and July 9, 2013.



Map 15 of 17

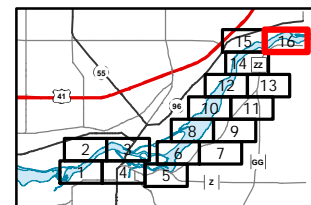


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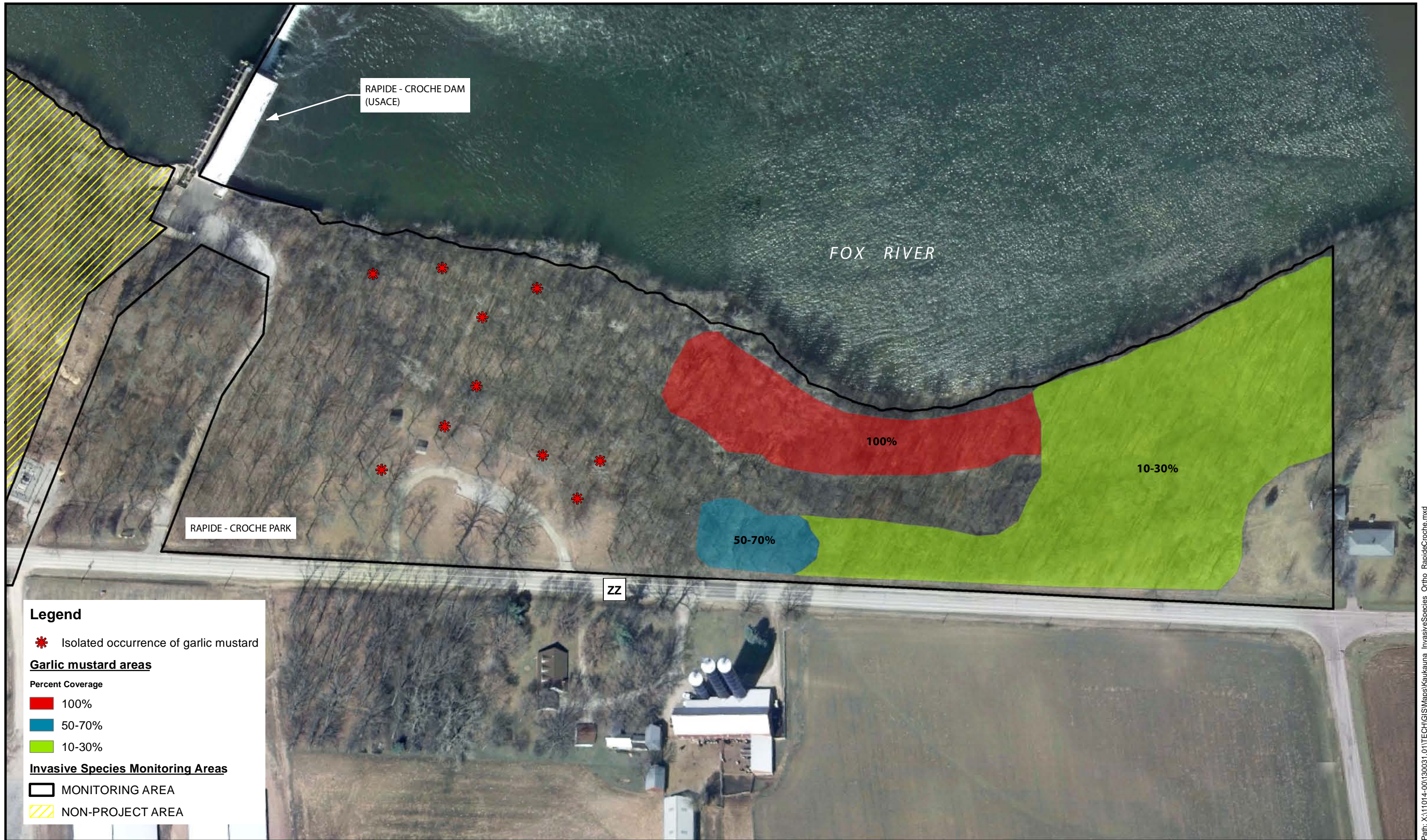


- Legend**
- |  |  |  |
|--|--|--|
| <b>Spot Occurrences</b>  | <b>Populations</b>   | <b>Invasive Species Monitoring Areas</b>   |
| <span style="color: green;">■</span> Buckthorn                   | <span style="color: green;">—</span> Buckthorn                   | <span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Monitoring Area   |
| <span style="color: orange;">▲</span> Garlic mustard             | <span style="color: purple;">—</span> Purple loosestrife         | <span style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, yellow 2px, yellow 4px); display: inline-block; width: 15px; height: 10px;"></span> Non-Project Area |
| <span style="color: purple;">●</span> Purple loosestrife         | <span style="color: red;">—</span> Reed canary grass             |  |
| <span style="color: red;">■</span> Reed canary grass             | <span style="color: blue;">—</span> Multiple species occurrences |  |
| <span style="color: blue;">●</span> Multiple Species Occurrences |  |  |

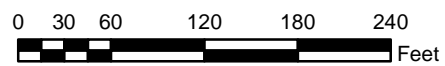
*Map Notes:*  
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 Field work conducted June 4 - 6 and July 9, 2013.



Path: X:\117014-00\130031\_01\TECH\GIS\Maps\Kaukauna\_RapideCroche\_InvasiveSpecies.mxd



**Invasive Species Area of Interest**  
 Rapide - Croche Park



**Appendix B.    Transmission of BMP Manual**



## Perry Rossa

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**From:** Perry Rossa  
**Sent:** Wednesday, April 10, 2013 12:56 PM  
**To:** 'Al.Geurts@outagamie.org'  
**Cc:** 'Paul.Sponholz@outagamie.org'; 'Dan.Nejedlo@outagamie.org'; 'Randy.Roloff@outagamie.org'; 'Shari.Wojciehowski@outagamie.org'; Arie DeWaal; Mike Pedersen (MPedersen@ku-wi.org) (MPedersen@ku-wi.org)  
**Subject:** Invasive Plant Species Manual of Control Methods in Transportation Right-of-ways  
**Attachments:** ROW-Manual BMPs for Invasive Plant Species.pdf

Good Afternoon, Mr. Geurts,

On behalf of Kaukauna Utilities, we are coordinating with you to transmit the attached Transportation Right-of-Way manual concerning control methods for invasive plant species. This is for Kaukauna Utilities' compliance with the Federal operations license for the Badger and Rapide Croche hydroelectric facilities on the Fox River, which transmit electricity via a utility within your Highway ZZ right-of-way on the south bank of the Fox River.

No action is required on your part, other than receipt and consideration of the attached manual's Best Management Practices. The resource agencies we coordinated with during the licensing procedures considered it of value that you have access to this document. On the advice of your assistant Shari, I have copied your Field Operations Manager, Mr. Sponholz, and Patrol Superintendents, Messrs. Nejedlo and Roloff. Shari told me that the Highway ZZ right-of-way is within Mr. Roloff's area.

We will be monitoring the project area of the Badger and Rapide Croche projects for invasive plant species, including the Highway ZZ right of way, beginning this May. Should control of any invasive plant species be deemed necessary by the agencies within your right-of-way, we will contact your prior to this undertaking.

Thank you for your consideration. Please contact me if you have any questions.

### **Perry Rossa | Project Scientist**

Mead & Hunt, Inc | M & H Architecture, Inc | 6501 Watts Road | Madison, WI 53719

Main: 608-273-6380 | Mobile: 608-577-2358 |

[perry.rossa@meadhunt.com](mailto:perry.rossa@meadhunt.com) | [www.meadhunt.com](http://www.meadhunt.com)

**Appendix C. Qualified Invasive Species Control Consultants**

## Kaukauna Utilities

### Reference list of qualified invasive plant control contractors

#### Prairie Nursery

Contact: Neil Diboll

W7262 Dover Ct.

Westfield, WI 53964

1-800-476-9453

[http://www.prairienursery.com/store/contact\\_us.html](http://www.prairienursery.com/store/contact_us.html)

#### Endeavor Environmental Services

Contact: Joe Ramcheck

2280 Salscheider Ct.

Green Bay, WI 54313

(920) 437-2997

#### Midwest Prairies, LLC

Contact: Ron Martin

10651 N Charley Bluff Rd

Milton, WI 53563

(608) 868-3169

<http://www.midwestprairies.com>

#### Dare Ecosystem Management

Contact: Jason Dare

N3935 Liberty St.

Sullivan, WI 53178

(262) 582-3051

<http://www.dareecosystemmanagement.com/contact.html>

#### Integrated Restorations, LLC

Contact: Craig Annen

228 S Park St.

Belleville, WI 53508

(608) 424-6997

## **Attachment C**

The following pages present the results of the consultation efforts with the U.S. Fish & Wildlife Service (USFWS) and the Wisconsin Department of Natural Resources (WDNR). The USFWS indicated that they would not be providing comments on the Invasive Species Monitoring Report (Report).

The WDNR indicated that the Report was a good example of integration into the WDNR's SWIMS database for data collection and tracking and recommended training for KU staff or its consultant on using the SWIMS data entry forms and the use of the SWIMS database as a means to track future monitoring activities. Staff from Mead & Hunt (KU's consultant) participated in the WDNR's SWIMS training on January 16, 2014. The SWIMS program will be incorporated into future invasive species monitoring and control programs beginning in 2014.

## Arie DeWaal

---

**From:** Perry Rossa  
**Sent:** Monday, November 04, 2013 9:04 AM  
**To:** Laatsch, Cheryl - DNR (Cheryl.Laatsch@Wisconsin.gov); Nick\_Utrup@fws.gov  
**Cc:** Mike Pedersen (MPedersen@ku-wi.org) (MPedersen@ku-wi.org); Arie DeWaal  
**Subject:** Badger-Rapide Croche Invasive Species Monitoring Report, FERC Project no. 2677 (Fox River)  
**Attachments:** 131030A.pdf

Good Morning,

Attached for your review is the 2013 invasive species monitoring report for the above-referenced project. Please provide any comments within 30 days, so that we may transmit to the FERC in accordance with the license.

Thanks for your attention to our project. Please feel free to call me at either number below if you have questions.

**Perry Rossa | PWS, PH**

Mead & Hunt, Inc | M & H Architecture, Inc | 6501 Watts Road | Madison, WI 53719  
Main: 608-273-6380 | Mobile: 608-577-2358 |  
[perry.rossa@meadhunt.com](mailto:perry.rossa@meadhunt.com) | [www.meadhunt.com](http://www.meadhunt.com)

## Arie DeWaal

---

**From:** Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>  
**Sent:** Wednesday, November 13, 2013 9:17 AM  
**To:** Perry Rossa  
**Subject:** Badger AIS reports, DNR comments

Hi Perry – Please let me know if you would like to discuss our comments. Thanks

KU Bader-Rapid Croche project 2677 dated 10-2013-

This report identified populations of species that will be targeted for agency management in 2014. This report is also a good example of integration into the SWIMS database for data collection and tracking. We would like to see KU facility trained on using the SWIMS data entry forms for AIS and use the SWIMS database as a means to track future monitoring of the populations in the extent of their project areas. We would like to see each population GPS's and tracked yearly with indications of management actions taken in future year's reports and this information also transferred into the SWIMS database. It would also be great if KU could provide information on observations of any other non-native invasive species and use already established DNR forms to track all other species observations.

Cheryl Laatsch  
Statewide FERC Coordinator  
Wisconsin Dept of Natural Resources  
N7725 Hwy 28  
Horicon WI 53032  
(T) 920-387-7869 (Fax) 920-387-7888  
Cheryl.laatsch@wisconsin.gov

## Arie DeWaal

---

**From:** Perry Rossa  
**Sent:** Monday, December 02, 2013 8:58 AM  
**To:** Brauna Hartzell; Erica King  
**Cc:** Arie DeWaal  
**Subject:** FW: swims database training  
**Attachments:** swims database training.ics

Hi Brauna, Erica,

I contacted Cheryl Laatsch today to ask about her request to follow SWIMS-congruent procedures for next year's invasives survey at Kaukauna (Badger/Rapide Croche). She has arranged a webinar (attached schedule) with Jen Filbert (DNR Central Office). Their intent is to give us a method that will enable us to collect data to go into their statewide database. Cheryl said that we could probably collect the data with a smartphone, vs. a GPS, as they are more concerned with building the database than ultra-accurate field mapping.

**Perry Rossa | PWS, PH**

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[perry.rossa@meadhunt.com](mailto:perry.rossa@meadhunt.com) | [www.meadhunt.com](http://www.meadhunt.com)



**Arie DeWaal**

---

**Subject:** swims database training  
**Location:** Live Meeting  
  
**Start:** Thu 1/16/2014 2:00 PM  
**End:** Thu 1/16/2014 4:00 PM  
  
**Recurrence:** (none)  
  
**Meeting Status:** Not yet responded  
  
**Organizer:** Laatsch, Cheryl - DNR

Jen and Cheryl will help get Perry set up and trained.

--+-----+-----+-----+-----+-----+-----+-----+-----+

Cheryl Laatsch has invited you to attend an online meeting using Microsoft® Office Live Meeting service.  
[Join the meeting](#)

**AUDIO INFORMATION**

**Computer Audio**

To use computer audio, you need speakers and a microphone, or a headset.

**FIRST-TIME USERS**

To save time before the meeting, [check your system](#) to make sure it is ready to use Office Live Meeting.

**TROUBLESHOOTING**

Unable to join the meeting? Follow these steps:

1. Copy this address and paste into your web browser:  
[https://www.livemeeting.com/cc/widnr\\_secondary//join](https://www.livemeeting.com/cc/widnr_secondary//join)
2. Copy and paste the required information:  
Meeting ID: 38M6J7  
Entry Code: R[{-KJk3P  
Location: [https://www.livemeeting.com/cc/widnr\\_secondary/](https://www.livemeeting.com/cc/widnr_secondary/)

If you still cannot enter the meeting, [contact support](#).

**NOTICE**

Office Live Meeting can be used to record meetings. By participating in this meeting, you agree that your communications may be monitored or recorded at any time during the meeting.

## Arie DeWaal

---

**From:** Perry Rossa  
**Sent:** Tuesday, December 17, 2013 10:03 AM  
**To:** Utrup, Nick  
**Cc:** Arie DeWaal  
**Subject:** RE: Badger - Rapide Croche Hydroelectric Project, FERC 2677, Fox River, WI: Invasive Species Monitoring Report

Thanks, Nick.

### **Perry Rossa | PWS, PH**

Mead & Hunt, Inc | M & H Architecture, Inc | 10700 West Research Drive, Suite 155 | Wauwatosa, WI 53226  
Main: 414-935-4250 | Mobile: 608-577-2358 |  
[perry.rossa@meadhunt.com](mailto:perry.rossa@meadhunt.com) | [www.meadhunt.com](http://www.meadhunt.com)

**From:** Utrup, Nick [mailto:nick\_utrup@fws.gov]  
**Sent:** Monday, December 16, 2013 7:59 AM  
**To:** Perry Rossa  
**Subject:** Re: Badger - Rapide Croche Hydroelectric Project, FERC 2677, Fox River, WI: Invasive Species Monitoring Report

Hi Perry,

The USFWS will not be providing any comments on the Invasive Species Monitoring Report. Thank you for allowing us the opportunity to provide comments.

Nick

Nicholas J. Utrup  
U.S. Fish and Wildlife Service  
Wisconsin/Minnesota Ecological Services Field Office  
4101 American Boulevard East  
Bloomington, MN 55425

Office: 612-725-3548 Ext. 2204  
Cell: 920-530-9937  
FAX: 612-725-3609  
Email: [Nick\\_Utrup@fws.gov](mailto:Nick_Utrup@fws.gov)

On Mon, Dec 2, 2013 at 9:50 AM, Perry Rossa <[perry.rossa@meadhunt.com](mailto:perry.rossa@meadhunt.com)> wrote:

Hello Nick,

A few weeks ago we transmitted a copy of the above report to you for comment and I'm just getting in touch to see if you've have time to review and have any comments or questions. The report is due to the FERC on December 20. Please feel free to call, or otherwise reply by e-mail.

Thanks, and best wishes for the holidays!

**Perry Rossa |PWS, PH**

Mead & Hunt, Inc | M & H Architecture, Inc | 6501 Watts Road | Madison, WI 53719

Main: 608-273-6380 | Mobile: 608-577-2358 |

[perry.rossa@meadhunt.com](mailto:perry.rossa@meadhunt.com) | [www.meadhunt.com](http://www.meadhunt.com)

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