



Wisconsin Public Service Corporation

700 North Adams Street  
P.O. Box 19001  
Green Bay, WI 54307-9001

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

January 27, 2016

FERC Project No. 1979  
NATDAM No. WI00748

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

Dear Secretary Bose:

Alexander Hydroelectric Project  
Correction to 2014 Invasive Species Report

Pursuant to the Federal Energy Regulatory (FERC) Order Approving the Invasive Species Monitoring Plan for the Alexander Hydroelectric Project issued March 4, 2005, WPS is to submit the Purple Loosestrife, Eurasian Water Milfoil (EWM) and Zebra Mussel survey results on an annual basis throughout the term of the license.

On December 11, 2014, WPS made a submittal to FERC titled Alexander Hydroelectric Project 2014 Invasive Species Monitoring Report. In error, WPS attached the Invasive Species Monitoring Report for the Wausau Hydroelectric Project (Project No.1999).

In order to correct the error, WPS is providing the 2014 Invasive Species Report for the Alexander Hydroelectric Project. The report is included in Appendix A.

WPS apologizes for any inconvenience this may have caused and has implemented measures to reduce the probability of the error occurring in future submittals.

Should you have any questions relative to this material, please contact Jamie Nuthals at (920) 433-1460.

Sincerely,

A handwritten signature in blue ink that reads "Todd P. Jastremski".

Todd Jastremski  
Asset Manager Hydro Operations  
We Energies  
800 Industrial Park Drive  
Iron Mountain, MI 49801

JDN/rjv

Enc: Appendix A

cc: Mr. John Zyga, FERC - CRO

APPENDIX A



Wisconsin Public Service Corporation

700 North Adams Street  
P.O. Box 19001  
Green Bay, WI 54307-9001

www.wisconsinpublicservice.com

December 11, 2014

FERC Project No. 1979

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

Dear Secretary Bose:

Alexander Hydroelectric Project (P-1979)  
2014 Invasive Species Monitoring Report

As per the order approving the Invasive Species Monitoring Plan for the Alexander Hydroelectric Project (Project No. 1979) issued on March 4, 2005, Wisconsin Public Service Corporation (WPS) is submitting the purple loosestrife, Eurasian water milfoil (EWM) and zebra mussel survey results. Additionally, as per the Order Amending Purple Loosestrife Control Measures in Approved Monitoring Plan issued on July 9, 2009, WPS revised the survey methods to include general plant vigor information in its purple loosestrife survey results.

Purple Loosestrife

A survey for purple loosestrife was completed for the Alexander Project on July 31, 2014. The survey results indicated that there were a total of fifty-three (53) purple loosestrife colonies on the project. No colonies were cut or sprayed to avoid adverse impacts to existing or potential new populations of *Galerucella sp.* beetles (beetles). Each colony located during the survey was issued an individual number and mapped on the WPS GIS system. Plant vigor information was recorded for each colony. Beetle feeding was noted at twenty-eight (28) colonies. Eighteen (18) of those colonies had plant vigor classifications of less than good. For comparison, the 2013 survey noted a total of nineteen (19) colonies. Beetle feeding occurred on fourteen (14) of those colonies and nine (9) colonies had plant vigor classifications of less than good.

In 2014, WPS released beetles at the Alexander Project that were reared in potted purple loosestrife plants. The beetles were released near existing colonies. Approximately 3000 beetles were released on July 11, 2014.

The 2014 purple loosestrife figure, including colony locations, identification numbers, beetle release locations, and plant vigor survey forms can be found in Appendix A. A spreadsheet summarizing the purple loosestrife survey data collected from 2009-2014 is also located in Appendix A.

A review of the monitoring data shows that while there are beetle populations in parts of the reservoir that are reducing the size and vigor of some large loosestrife colonies, many colonies do

Ms. Kimberly D. Bose  
December 11, 2014  
Page 2 of 2

not have any beetle feeding activity. WPS proposes to continue conducting annual purple loosestrife surveys and releasing beetles as a biological control measure. WPS also proposes to increase the number of beetles released each year to a minimum of 6000. Beetles will be released in at least two different locations each year in an attempt to establish beetle populations throughout the entire reservoir.

Eurasian Water Milfoil

A survey for EWM was conducted on July 31, 2014. Samples were collected at three sampling locations within the Alexander Hydroelectric Project. The sample locations were specifically chosen near boat landings. No EWM was identified during the survey. A summary of 2014 EWM survey results has been included in Appendix B.

Zebra Mussels

Monthly inspections of substrate samplers for the presence of zebra mussels were conducted during the months of April through October. Zebra mussels were not found during any of the monthly inspections. A summary of 2014 zebra mussel survey results has been included in Appendix C.

Documentation of submittal of the results to WDNR, FWS, and UW-Manitowoc has been included in Appendix D. No comments were received from the resource agencies regarding the report.

If you have any questions regarding this report, please contact Darrin Johnson at (715) 345-7509.

Sincerely,



Gil Snyder  
Manager - Regional Generation

DMJ/rjf

Enclosed: Appendix A; Appendix B; Appendix C; Appendix D

cc:	Mr. Shawn Puzen, IBS - D2	Mr. Brad Menning, WPS - MERH
	Ms. Joan Johaneck, WPS - D2	Mr. John Zygaj, FERC - CRO
	Mr. William Bosacki, WPS - D2	Mr. Edward Brandt, WPS - CRI
	Mr. John Myers, IBS - D2	Ms. Pat Grant, FERC - CRO

## APPENDIX A

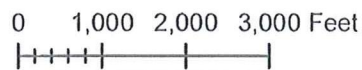
### Purple Loosestrife Survey Results and 2009-2014 Summary



Imagery: Bing Maps



# 2014 Alexander Flowage Invasive Plant Survey



Date: 10/28/2014

- ★ Beettle Release Site
- ▲ Eurasian Water Milfoil
- Purple Loosetrife**
- 0-5 Plants
- 6-50 Plants
- >50 Plants

### Purple Loosestrife Survey Form

Hydroelectric Project

Alexander

Inspection Date

7/21/14

Colony Number	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point	
		Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding				
1	M	3	3	2	8		1	fair
2	S	4	4	3	11		2	good
3	S	4	4	4	12	NO feeding	3	good
4	S	3	4	2	9		4	fair
5	S	3	4	2	9		5	fair
6	S	3	4	2	9		6	fair
7	S	3	4	2	9		7	fair
8	S	3	4	2	9		8	fair
9	S	3	4	2	9		9	fair
10	S	3	4	2	9		10	fair
11	S	3	4	2	9		11	fair

53 sites total

25 No feeding  
28 feeding

35 good vigor  
16 fair vigor  
2 poor vigor

4 medium colonies  
49 small colonies

### Purple Loosestrife Survey Form

Hydroelectric Project

Inspection Date

Alexander7-21-14

Colony Number	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point	
		Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding				
12	S	4	4	4	12	No Feeding	12	good
13	S	4	4	4	12	No Feeding	13	good
14	S	4	4	4	12	No Feeding	14	good
15	S	4	4	4	12	No Feeding	15	good
16	S	4	4	4	12	No Feeding	16	good
17	S	4	4	4	12	No Feeding	17	good
18	M	2	2	1	5		18	poor
19	S	3	3	3	9		19	fair
20	S	3	4	3	10		20	good
21	S	3	4	3	10		21	good
22	S	4	4	4	12	No Feeding	22	good



## Purple Loosestrife Survey Form

Hydroelectric Project  
Inspection DateAlexander2/3/14

Colony Number	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point	
		Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding				
23	S	4	4	4	12	no feeding	23	good
24	S	4	4	4	12	no feeding	24	good
25	S	3	4	1	8		25	fair
26	S	3	4	1	8		26	fair
27	S	3	4	2	9		27	fair
28	S	4	4	4	12	no feeding	28	good
29	S	4	4	4	12	no feed	29	good
30	S	4	4	3	11		30	good
31	S	4	4	3	11		31	good
32	M	3	3	1	7		32	fair
33	S	3	4	1	8		33	fair

### Purple Loosestrife Survey Form

Hydroelectric Project  
Inspection Date

Alexander  
7/31/14

Colony Number	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point	
		Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding				
34	S	3	4	4	11	NO feeding	34	good
35	S	3	4	4	11	NO feeding	35	good
36	S	4	4	4	12	NO feeding	36	good
37	S	4	4	4	12	NO feed	37	good
38	S	4	4	4	12	NO feed	38	good
39	S	3	4	1	8		39	fair
40	S	3	4	3	10		40	good
41	S	3	4	4	11		41	good
42	S	4	4	4	12	NO feed	42	good
43	S	4	4	4	12	NO feed	43	good
44	S	4	4	4	12	NO feed	44	good



Alexander Project 2009-2014 Summary

Year	Total Number of Colonies	Number of small colonies(0-5 plants)	Number of Medium Colonies (6-50 plants)	Number of Large Colonies (50+ plants)	Number of colonies with beetle feeding	Percentage of total colonies with beetle feeding	Beetles Released
2009	20	13	5	2	11	55%	10,000
2010	21	14	5	2	10	48%	2000
2011	20	13	6	1	14	70%	3000
2012	38	27	7	4	15	39%	2000
2013	19	11	6	2	14	74%	3000
2014	53	49	4	0	28	53%	3000

<i>6 year average</i>	28.5	21.2	5.5	1.8	15.3	56%
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## APPENDIX B

### Eurasian Water Milfoil Survey Forms

**2014 Eurasian Water Milfoil Surveys***Alexander*

Transect #	0-0.5M	0.5M-1.5M	1.5M-3M	>3M
1A	0	NA	NA	NA
1B	0	0	NA	NA
1C	0	0	NA	NA
2A	0	NA	NA	NA
2B	0	0	NA	NA
2C	0	0	NA	NA
3A	0	NA	NA	NA
3B	0	0	NA	NA
3C	0	0	0	NA

NA-Not applicable

Abundance Scale 0=Absent, 1-Present, 2 Presence &lt; 1/2, 3-Equal presence to other species

4- Dominant Species Present, 5- Total Infestation

Note: all transects are 40 feet in length and proceed away from shore in a direction perpendicular to the shoreline

## APPENDIX C

### Zebra Mussel Survey Forms

### ZEBRA MUSSEL INSPECTION RESULTS WESTERN HYDROELECTRIC PROJECTS

**HYDRO NAME**

- |                                            |                                               |                                   |                                       |
|--------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Grandfather Falls | <input type="checkbox"/> Merrill              | <input type="checkbox"/> Tomahawk | <input type="checkbox"/> Otter Rapids |
| <input type="checkbox"/> Wausau            | <input checked="" type="checkbox"/> Alexander | <input type="checkbox"/> Jersey   | <input type="checkbox"/> Hat Rapids   |

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>4-8-14</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>5-11-14</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>6-7-14</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>7-15-14</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>8-10-14</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>9-13-14</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>10-6-14</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: _____	
COMMENTS/RESULTS: _____	

INSPECTION TYPE: <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: _____	
COMMENTS/RESULTS: _____	

INSPECTION TYPE: <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: _____	
COMMENTS/RESULTS: _____	



## Appendix D

### Documentation of Consultation



Wisconsin Public Service Corporation

700 North Adams Street

P.O. Box 19001

Green Bay, WI 54307-9001

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

October 29, 2014

FERC Project No. 1979

Ms. Cheryl Laatsch  
WDNR-FERC Coordinator  
N7725 Hwy 28  
Horicon, WI 53032

Mr. Nick Utrup  
USFWS Ecological Services Field Office  
4101 American Blvd. East  
Bloomington, MN 55425

Dear Ms. Laatsch and Mr. Utrup:

**Alexander Hydroelectric Project (P-1979)**  
**2014 Invasive Species Monitoring Report**

As per the order approving the Invasive Species Monitoring Plan for the Alexander Hydroelectric Project (Project No. 1979) issued on March 4, 2005, Wisconsin Public Service Corporation (WPS) is submitting the purple loosestrife, Eurasian water milfoil (EWM) and zebra mussel survey results. Additionally, as per the Order Amending Purple Loosestrife Control Measures in Approved Monitoring Plan issued on July 9, 2009, WPS revised the survey methods to include general plant vigor information in its purple loosestrife survey results.

**Purple Loosestrife**

A survey for purple loosestrife was completed for the Alexander Project on July 31, 2014. The survey results indicated that there were a total of fifty-three (53) purple loosestrife colonies on the project. No colonies were cut or sprayed to avoid adverse impacts to existing or potential new populations of *Galerucella sp.* beetles (beetles). Each colony located during the survey was issued an individual number and mapped on the WPS GIS system. Plant vigor information was recorded for each colony. Beetle feeding was noted at twenty-eight (28) colonies. Eighteen (18) of those colonies had plant vigor classifications of less than good. For comparison, the 2013 survey noted a total of nineteen (19) colonies. Beetle feeding occurred on fourteen (14) of those colonies and nine (9) colonies had plant vigor classifications of less than good.

In 2014, WPS released beetles at the Alexander Project that were reared in potted purple loosestrife plants. The beetles were released near existing colonies. Approximately 3000 beetles were released on July 11, 2014.

The 2014 purple loosestrife figure, including colony locations, identification numbers, beetle release locations, and plant vigor survey forms can be found in Appendix A. A spreadsheet summarizing the purple loosestrife survey data collected from 2009-2014 is also located in Appendix A.

A review of the monitoring data shows that while there are beetle populations in parts of the reservoir that are reducing the size and vigor of some large loosestrife colonies, many colonies do not have any beetle feeding activity. WPS proposes to continue conducting annual purple loosestrife surveys and releasing beetles as a biological control measure. WPS also proposes to increase the number of beetles released each year to a minimum of 6000. Beetles will be released in at least two different locations each year in an attempt to establish beetle populations throughout the entire reservoir.

Eurasian Water Milfoil

A survey for EWM was conducted on July 31, 2014. Samples were collected at three sampling locations within the Alexander Hydroelectric Project. The sample locations were specifically chosen near boat landings. No EWM was identified during the survey. A summary of 2014 EWM survey results has been included in Appendix B.

Zebra Mussels

Monthly inspections of substrate samplers for the presence of zebra mussels were conducted during the months of April through October. Zebra mussels were not found during any of the monthly inspections. A summary of 2014 zebra mussel survey results has been included in Appendix C.

If you have any questions or comments regarding this report, please submit them to Darrin Johnson within 30 days at 715-345-7509.

Sincerely,



Darrin Johnson  
Environmental Consultant-Shoreline Management

Enclosed: Appendix A, Appendix B, Appendix C

## APPENDIX A

### Purple Loosestrife Survey Results and 2009-2014 Summary



Price	Oneida
Taylor	Lincoln
	Marathon

Imagery: Bing Maps

## 2014 Alexander Flowage Invasive Plant Survey

N

0 1,000 2,000 3,000 Feet

Date: 10/28/2014

- ★ Beetle Release Site
- ▲ Eurasian Water Milfoil
- Purple Loosestrife**
- 0-5 Plants
- 6-50 Plants
- >50 Plants

### Purple Loosestrife Survey Form

Hydroelectric Project

Alexander

Inspection Date

7/21/14

Colony Number	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point	
		Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1=<1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1=<25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding				
1	M	3	3	2	8		1	fair
2	S	4	4	3	11		2	good
3	S	4	4	4	12	no feeding	3	good
4	S	3	4	2	9		4	fair
5	S	3	4	2	9		5	fair
6	S	3	4	2	9		6	fair
7	S	3	4	2	9		7	fair
8	S	3	4	2	9		8	fair
9	S	3	4	2	9		9	fair
10	S	3	4	2	9		10	fair
11	S	3	4	2	9		11	fair

53 sites total

25 No feeding  
28 feeding

35 good vigor  
16 fair vigor  
2 poor vigor

4 medium colonies  
49 small colonies

### Purple Loosestrife Survey Form

Hydroelectric Project

Inspection Date

Alexander7-27-14

Colony Number	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point
		Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding			
12	S	4	4	4	12	No feeding	12 good
13	S	4	4	4	12	No feeding	13 good
14	S	4	4	4	12	No feeding	14 good
15	S	4	4	4	12	No feeding	15 good
16	S	4	4	4	12	No feeding	16 good
17	S	4	4	4	12	No feeding	17 good
18	M	2	2	1	5		18 poor
19	S	3	3	3	9		19 fair
20	S	3	4	3	10		20 good
21	S	3	4	3	10		21 good
22	S	4	4	4	12	No feeding	22 good

## Purple Loosestrife Survey Form

Hydroelectric Project

Inspection Date

Alexander7/31/14

## General Plant Vigor

Colony Number	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point	
		Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding				
23	S	4	4	4	12	no feeding	23	good
24	S	4	4	4	12	no feeding	24	good
25	S	3	4	1	8		25	fair
26	S	3	4	1	8		26	fair
27	S	3	4	2	9		27	fair
28	S	4	4	4	12	no feeding	28	good
29	S	4	4	4	12	no feed	29	good
30	S	4	4	3	11		30	good
31	S	4	4	3	11		31	good
32	M	3	3	1	7		32	fair
33	S	3	4	1	8		33	fair



## Purple Loosestrife Survey Form

Hydroelectric Project

Alexander

Inspection Date

7/31/14

## General Plant Vigor

Colony Number	Colony Size S 0-5 M 6-50 L >50	Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	General Plant Vigor		Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes	GPS Point	
			Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding 2=51-75% feeding 1=76-100% feeding				
34	S	3	4	4	11	NO feeding	34	good
35	S	3	4	4	11	NO feeding	35	good
36	S	4	4	4	12	NO feeding	36	good
37	S	4	4	4	12	NO feed	37	good
38	S	4	4	4	12	NO feed	38	good
39	S	3	4	1	8		39	fair
40	S	3	4	3	10		40	good
41	S	3	4	4	11		41	good
42	S	4	4	4	12	NO feed	42	good
43	S	4	4	4	12	NO feed	43	good
44	S	4	4	4	12	NO feed	44	good



Alexander Project 2009-2014 Summary

Year	Total Number of Colonies	Number of small colonies(0-5 plants)	Number of Medium Colonies (6-50 plants)	Number of Large Colonies (50+ plants)	Number of colonies with beetle feeding	Percentage of total colonies with beetle feeding	Beetles Released
2009	20	13	5	2	11	55%	10,000
2010	21	14	5	2	10	48%	2000
2011	20	13	6	1	14	70%	3000
2012	38	27	7	4	15	39%	2000
2013	19	11	6	2	14	74%	3000
2014	53	49	4	0	28	53%	3000

<i>6 year average</i>	28.5	21.2	5.5	1.8	15.3	56%
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## APPENDIX B

### Eurasian Water Milfoil Survey Forms

**2014 Eurasian Water Milfoil Surveys***Alexander*

Transect #	0-0.5M	0.5M-1.5M	1.5M-3M	>3M
1A	0	NA	NA	NA
1B	0	0	NA	NA
1C	0	0	NA	NA
2A	0	NA	NA	NA
2B	0	0	NA	NA
2C	0	0	NA	NA
3A	0	NA	NA	NA
3B	0	0	NA	NA
3C	0	0	0	NA

NA-Not applicable

Abundance Scale 0=Absent, 1-Present, 2 Presence &lt; 1/2, 3=Equal presence to other species

4- Dominant Species Present, 5- Total Infestation

Note: all transects are 40 feet in length and proceed away from shore in a direction perpendicular to the shoreline

## APPENDIX C

### Zebra Mussel Survey Forms

## ZEBRA MUSSEL INSPECTION RESULTS WESTERN HYDROELECTRIC PROJECTS

**HYDRO NAME**

- |                                            |                                               |                                   |                                       |
|--------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Grandfather Falls | <input type="checkbox"/> Merrill              | <input type="checkbox"/> Tomahawk | <input type="checkbox"/> Otter Rapids |
| <input type="checkbox"/> Wausau            | <input checked="" type="checkbox"/> Alexander | <input type="checkbox"/> Jersey   | <input type="checkbox"/> Hat Rapids   |

<b>INSPECTION TYPE:</b> <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: <u>4-8-14</u>	
COMMENTS/RESULTS: <u>0</u>	

<b>INSPECTION TYPE:</b> <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: <u>5-11-14</u>	
COMMENTS/RESULTS: <u>0</u>	

<b>INSPECTION TYPE:</b> <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: <u>6-7-14</u>	
COMMENTS/RESULTS: <u>0</u>	

<b>INSPECTION TYPE:</b> <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: <u>7-15-14</u>	
COMMENTS/RESULTS: <u>0</u>	

<b>INSPECTION TYPE:</b> <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: <u>8-10-14</u>	
COMMENTS/RESULTS: <u>0</u>	

<b>INSPECTION TYPE:</b> <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: <u>9-13-14</u>	
COMMENTS/RESULTS: <u>0</u>	

<b>INSPECTION TYPE:</b> <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: <u>10-6-14</u>	
COMMENTS/RESULTS: <u>0</u>	

<b>INSPECTION TYPE:</b> <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: _____	
COMMENTS/RESULTS: _____	

<b>INSPECTION TYPE:</b> <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: _____	
COMMENTS/RESULTS: _____	

<b>INSPECTION TYPE:</b> <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRA WDOWN
DATE: _____	
COMMENTS/RESULTS: _____	



Wisconsin Public Service Corporation

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Green Bay, WI 54307-9001

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October 29, 2014

Phil Moy  
UW Manitowoc  
705 Viebann Street  
Manitowoc, WI 54420

Dear Mr. Moy:

**RE: Alexander Hydroelectric Project (FERC Project No. 1979) Zebra Mussel Survey Results**

As per the order approving the Invasive Species Monitoring Plan for the Alexander Hydroelectric Project issued March 4, 2005, Wisconsin Public Service Corporation (WPS) is submitting the survey results for zebra mussels.

Monthly inspections of substrate samplers for the presence of zebra mussels were conducted during the months of April through October. Zebra mussels were not found during any of the monthly inspections. A summary of the results has been included in Appendix A.

Please provide any comments you may have within 30 days. If you have any questions regarding this report, please contact Darrin Johnson at 715-345-7509.

Sincerely,

A handwritten signature in blue ink that reads "Darrin Johnson". The signature is written in a cursive style with a large, sweeping "D" and "J".

Darrin Johnson  
Environmental Consultant-Shoreline Management  
715-345-7509

Enc.



# Appendix A

## Zebra Mussel Survey Results

### ZEBRA MUSSEL INSPECTION RESULTS WESTERN HYDROELECTRIC PROJECTS

**HYDRO NAME**

- |                                            |                                               |                                   |                                       |
|--------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Grandfather Falls | <input type="checkbox"/> Merrill              | <input type="checkbox"/> Tomahawk | <input type="checkbox"/> Otter Rapids |
| <input type="checkbox"/> Wausau            | <input checked="" type="checkbox"/> Alexander | <input type="checkbox"/> Jersey   | <input type="checkbox"/> Hat Rapids   |

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: 4-8-14  
 COMMENTS/RESULTS: 0

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: 5-11-14  
 COMMENTS/RESULTS: 0

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: 6-7-14  
 COMMENTS/RESULTS: 0

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: 7-15-14  
 COMMENTS/RESULTS: 0

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: 8-10-14  
 COMMENTS/RESULTS: 0

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: 9-13-14  
 COMMENTS/RESULTS: 0

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: 10-6-14  
 COMMENTS/RESULTS: 0

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: \_\_\_\_\_  
 COMMENTS/RESULTS: \_\_\_\_\_

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: \_\_\_\_\_  
 COMMENTS/RESULTS: \_\_\_\_\_

**INSPECTION TYPE:**  MONTHLY INSPECTION       INSPECTION DURING DRAWDOWN  
 DATE: \_\_\_\_\_  
 COMMENTS/RESULTS: \_\_\_\_\_

## WDNR Comments

## Johnson, Darrin M

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**From:** Plude, Timothy M - DNR <Timothy.Plude@wisconsin.gov>  
**Sent:** Tuesday, December 09, 2014 12:09 PM  
**To:** Johnson, Darrin M  
**Subject:** FW: 2014 Alexander Invasive report (p-1979)

Hello Darrin,

My name is Tim Plude and I work with DNR-Lakes in the northern region, you probably know my coworkers (Kevin Gauthier, Jim Kreitlow and Cheryl Laatsch). Cheryl wanted me to share our comments directly to you for the Alexander, Lincoln Co. Report so that we can open up communication and have a discussion about monitoring/mgmt.. When you read the comments below, you can see suggestions for monitoring protocols and also ask about PL control. I would be happy to talk about these topics and share any relevant documents/information available. Feel free to contact me.

Thanks  
-Tim

**We are committed to service excellence.**

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Tim Plude

Aquatic Plant Management Specialist- Bureau of Water Quality  
Wisconsin Department of Natural Resources  
107 Sutliff Ave. Rhinelander, WI 54501  
Phone: (715)365-8905  
Fax: (715)365-8932  
[Timothy.Plude@wisconsin.gov](mailto:Timothy.Plude@wisconsin.gov)



[dnr.wi.gov](http://dnr.wi.gov)



---

**From:** Plude, Timothy M - DNR  
**Sent:** Wednesday, November 12, 2014 10:58 AM  
**To:** Laatsch, Cheryl - DNR  
**Cc:** Aartila, Tom P - DNR; Kreitlow, James D - DNR  
**Subject:** RE: 2014 Alexander Invasive report (p-1979)

Hello Cheryl,

I am glad to see they are going to continue releasing beetles for PL control. Has the discussion ever been started about cutting PL flower heads in the fall to prevent the seed dispersal (Gallerucella beetles only feed on stems and leaves)?

The EWM monitoring uses transect surveys targeted near boat landings, which is okay but, the way the State currently monitors for new AIS infestations uses an Early Detection Monitoring protocol. This protocol utilizes a meander survey around the entire perimeter of the lake/system, with targeted rake throws or snorkeling. This type of monitoring could be considered for future surveys and I can send along the protocol, if anyone is interested in reading it.

Thanks  
-Tim

**We are committed to service excellence.**

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Tim Plude  
Phone: (715) 365-8905

## WPS Response to DNR Comments

**Comment 1:** I am glad to see they are going to continue releasing beetles for PL control.

**WPS Response:** Comment noted.

**Comment 2:** Has the discussion ever been started about cutting PL flower heads in the fall to prevent the seed dispersal (Galerucella beetles only feed on stems and leaves)?

**WPS Response:** WPS completes invasive surveys as approved in the Invasive Species Monitoring Plan approved on March 4, 2005 and amended Purple Loosestrife Control Measures approved on July 9, 2009. WPS consulted with WDNR and FWS prior to submitting the plans to FERC for approval. WPS will continue to follow the procedures set forth in the approved plans.

**Comment 3:** The EWM monitoring uses transect surveys targeted near boat landings, which is okay but the State currently monitors for new AIS infestations uses and Early Detection Monitoring protocol. This protocol utilizes a meander survey around the entire perimeter of the lake/system, with targeted rake throws or snorkeling. This type of monitoring could be considered for future surveys and I can send along the protocol, if anyone is interested in reading it.

**WPS Response:** WPS completes invasive surveys as approved in the Invasive Species Monitoring Plan approved on March 4, 2005. WPS consulted with WDNR and FWS prior to submitting the plans to FERC for approval. WPS will continue to follow the procedures set forth in the approved plans.

**Comment 4:** My name is Tim Plude and I work with DNR-Lakes in the northern region, you probably know my co-workers (Kevin Gauthier, Jim Kreitlow and Cheryl Laatsch). Cheryl wanted me to share our comments directly to you for the Alexander, Lincoln Co. Report so that we can open up communication and have a discussion about monitoring/mgmt. When you read the comments below, you can see suggestions for monitoring protocols and also ask about PL control. I would be happy to talk about these topics and share any relevant documents/information available. Feel free to contact me.

**WPS Response:** WPS will discuss invasive species management at the annual resource agency meeting.

No Comments Were Received From FWS or UW Manitowoc

Document Content(s)

20160127 ALX Env out.PDF.....1-1  
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