



Wisconsin River Power Company
(owners of the Petenwell & Castle Rock Hydroelectric Plants)
P.O. Box 19001
Green Bay, WI 54307-9001

December 14, 2011

FERC Project No. 1984

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

Dear Secretary Bose:

Exotic Species Report for FERC Project No. 1984

As per the Order Approving the Revised Invasive Species Monitoring Plan for the Petenwell-Castle Rock Hydroelectric Project (FERC Project No. 1984) issued on July 13, 2005, Wisconsin River Power Company is submitting the survey results for purple loosestrife, Eurasian water milfoil (EWM) and zebra mussels.

Purple Loosestrife

Surveys for purple loosestrife were completed on July 22 and July 26, 2011. The survey identified a total of twenty-three (23) purple loosestrife colonies at the project. Twenty (20) of those were located on the Petenwell Reservoir and three (3) were located on the Castle Rock Reservoir. This compares to a total of twenty-two (22) colonies noted in 2010.

No colonies were cut or sprayed with herbicide in order to avoid 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 WRPCO GIS system. Plant vigor information was recorded for each colony. Of the twenty-three (23) colonies noted during the survey, fourteen (14) showed signs of beetle feeding.

WRPCO released beetles at the Petenwell Reservoir on July 17, 2011. Approximately 2000 beetles were released. The beetles were reared in potted purple loosestrife plants.

The 2011 Petenwell-Castle Rock Project, purple loosestrife figure including colony locations, identification numbers and beetle release location, is found in Appendix A. The purple loosestrife general plant vigor survey forms are also found in Appendix A.

Eurasian Water Milfoil

Eurasian water milfoil (EWM) surveys were conducted in 2009. EWM surveys are conducted every three years. The next survey is scheduled for 2012.

Ms. Kimberly D. Bose, Secretary

December 14, 2011

Page 2 of 2

Zebra Mussels

Per the FERC correspondence to WRPCO, dated June 5, 2006, WRPCO is required to conduct monthly inspections for zebra mussels at the Petenwell and Castle Rock reservoirs. The surveys are to be conducted once each month from May to September on an annual basis. The surveys are also to be conducted during the winter drawdown period and during any maintenance related drawdown. Zebra mussels were found on substrate samplers at both reservoirs. At some point after zebra mussels were found, WRPCO staff removed the samplers assuming that no further sampling was necessary. Once it was noted that samplers were removed, WRPCO staff were informed that the substrate samplers must be in place from May through September of each year. In order to avoid this situation in the future, a training session with the WRPCO staff regarding all environmental compliance issues will be conducted prior to February 28, 2012. A summary of the substrate sampler results that were taken can be found in Appendix B.

Five hard surface locations on the two reservoirs were also monitored for zebra mussels during the winter drawdown. The figure in Appendix B indicates these locations. No zebra mussels were noted during the hard surface inspections.

Zebra mussels were found during routine maintenance operations at the Petenwell dam. Mussels were found in the cooling water intake, within generating Unit #4 and on the dam itself.

Documentation of submittal of these reports to the Wisconsin Department of Natural Resources and the United States Fish and Wildlife Service has been included in Appendix C. No comments were received from any of the resource agencies.

If you have any questions or comments regarding invasive species monitoring at the Petenwell-Castle Rock Project, please do not hesitate to contact Darrin Johnson at (715) 345-7509.

Sincerely,

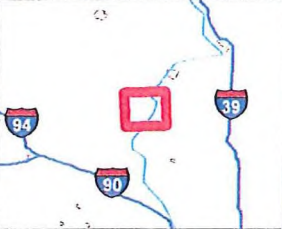
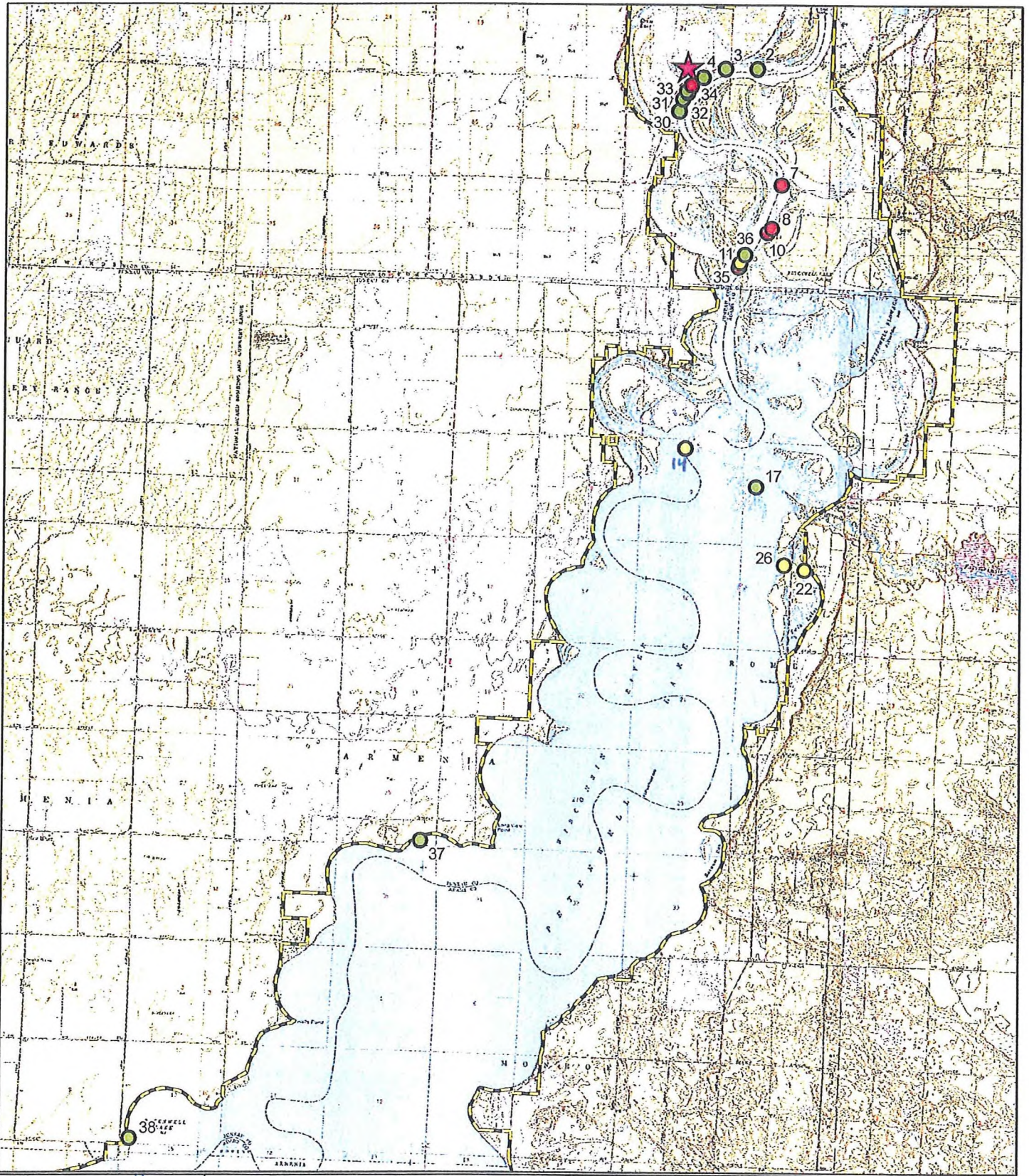


Terry P Jensky
Vice President - Energy Supply Operations

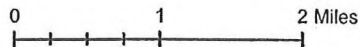
cc:	Howard Giesler, WPS	Gil Snyder, WPS
	Bruce Crocker, WPS	Jeff Klaas, WRPC
	Joan Johaneck, WPS	Shawn Puzen, IBS
	Pat Grant, FERC-Chicago	

APPENDIX A

PURPLE LOOSESTRIFE SURVEY RESULTS



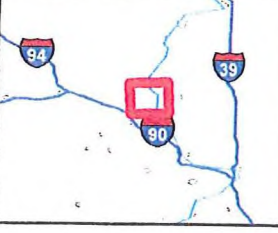
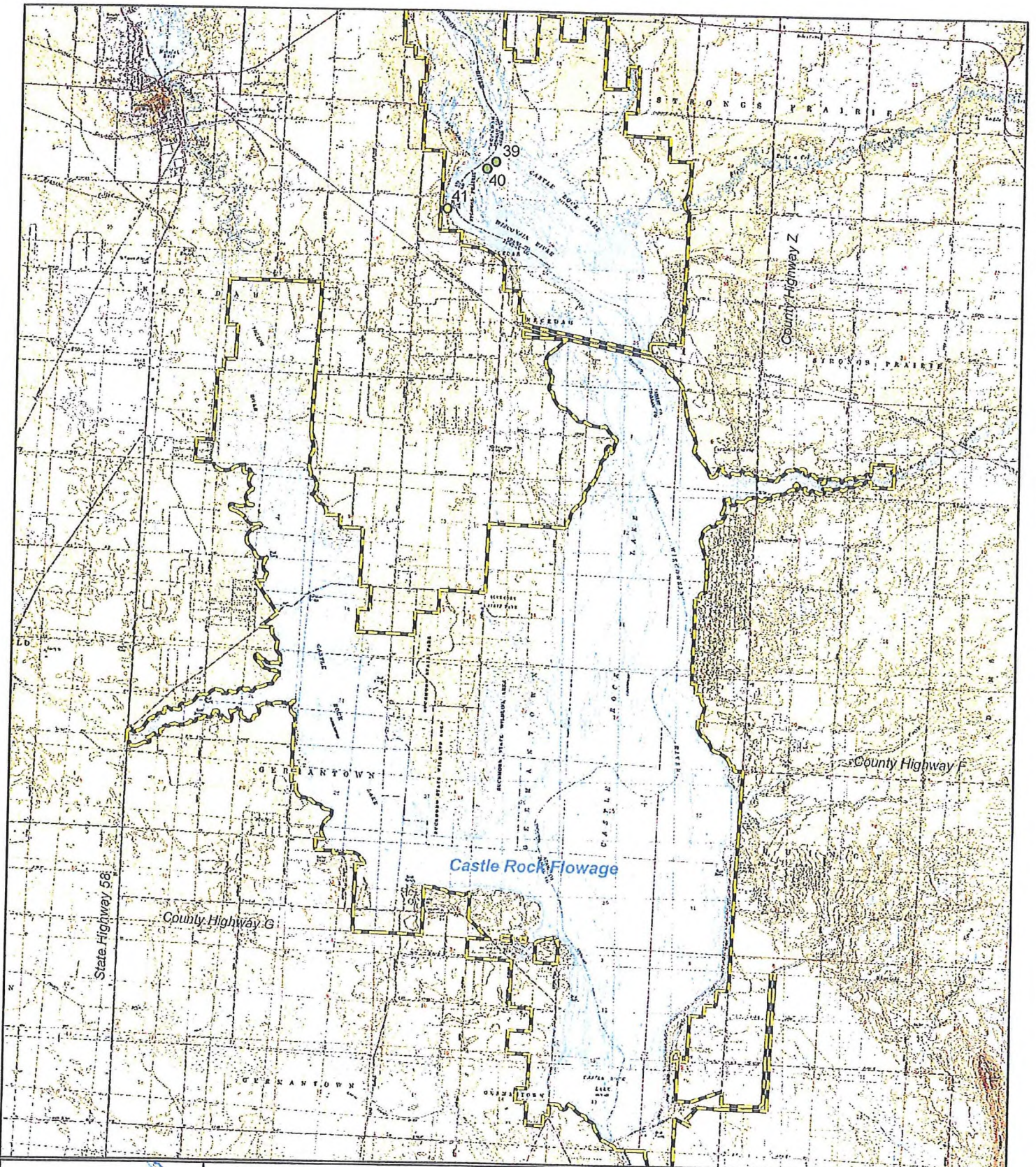
**Wisconsin River Power Company
Petenwell Flowage
2011 Invasive Plant Survey**



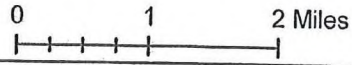
10/31/11

Legend

- Project Boundary
- Beetle Release Site
- Purple Loosestrife 0-5 Plants
- Purple Loosestrife 6-50 Plants
- Purple Loosestrife >50 Plants



**Wisconsin River Power Company
Castle Rock Flowage
2011 Invasive Plant Survey**



10/28/11

Legend	
Project Boundary	Purple Loosestrife
Beetle Release Site	0-5 Plants
	6-50 Plants
	>50 Plants

Purple Loosestrife Survey Form

Hydroelectric Project

WRPCO

Inspection Date

7-22-11 and 7-26-11

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			No Plants Noted				
2	L	4	4	3	11	Feeding	240
3	S	4	4	4	12	No Feeding	238
4	S	4	4	4	12	No Feeding	237
5			No Plants Noted				
6			No Plants Noted				
7	L	4	4	4	12	No Feeding	230
8	L	4	4	3	11	Feeding	227
9			No Plants Noted				
10	L	4	4	4	12	No Feeding	226
11	M	3	4	3	10	Feeding	224

Purple Loosestrife Survey Form

Hydroelectric Project

WRPCO

Inspection Date

7-22-2011 and 7-26-2011

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			
12			No Plants Noted				
13			No Plants Noted				
14	S	3	1	1	5	Heavy Feeding	246
15			No Plants Noted				
16			No Plants Noted				
17	S	3	3	3	9	Feeding	NA
18			No Plants Noted				
19			No Plants Noted				
20			No Plants Noted				
21			No Plants Noted				
22	M	3	2	1	6	Heavy Feeding	NA

Purple Loosestrife Survey Form

Hydroelectric Project

WRPCO

Inspection Date

7-22-11 and 7-26-11

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			No Plants Noted				
24			No Plants Noted				
25			No Plants Noted				
26	M	3	2	1	6	Heavy Feeding	NA
27			No Plants Noted				
28			No Plants Noted				
29			No Plants Noted				
30	S	4	4	3	11	Feeding	231
31	S	4	4	3	11	Feeding	232
32	S	4	4	3	11	Feeding	233
33	S	4	4	3	11	Feeding	234

APPENDIX B
ZEBRA MUSSEL SURVEY RESULTS

**ZEBRA MUSSEL INSPECTION RESULTS
WRPCO HYDROELECTRIC PROJECTS**

HYDRO NAME

- Petenwell Flowage
 Castle Rock Flowage

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>5-16-11</u>	
COMMENTS/RESULTS: <u>NO ZEBRA MUSSELS</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>6-15-11</u> <u>DA</u>	
COMMENTS/RESULTS: <u>There were 3 ZEBRA MUSSELS on trap</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>7-15-11</u>	
COMMENTS/RESULTS: <u>There were about the same</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>8/15/11</u>	
COMMENTS/RESULTS: <u>Same as last month</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>10-11-11</u>	
COMMENTS/RESULTS: <u>NO ZEBRA MUSSELS</u>	

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

ZEBRA MUSSEL INSPECTION RESULTS WRPCO HYDROELECTRIC PROJECTS

HYDRO NAME

- Petenwell Flowage
- Castle Rock Flowage

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 5-16-11
 COMMENTS/RESULTS: None seen today

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 6/16/11
 COMMENTS/RESULTS: There are Zebra Mussels on the trap small ones

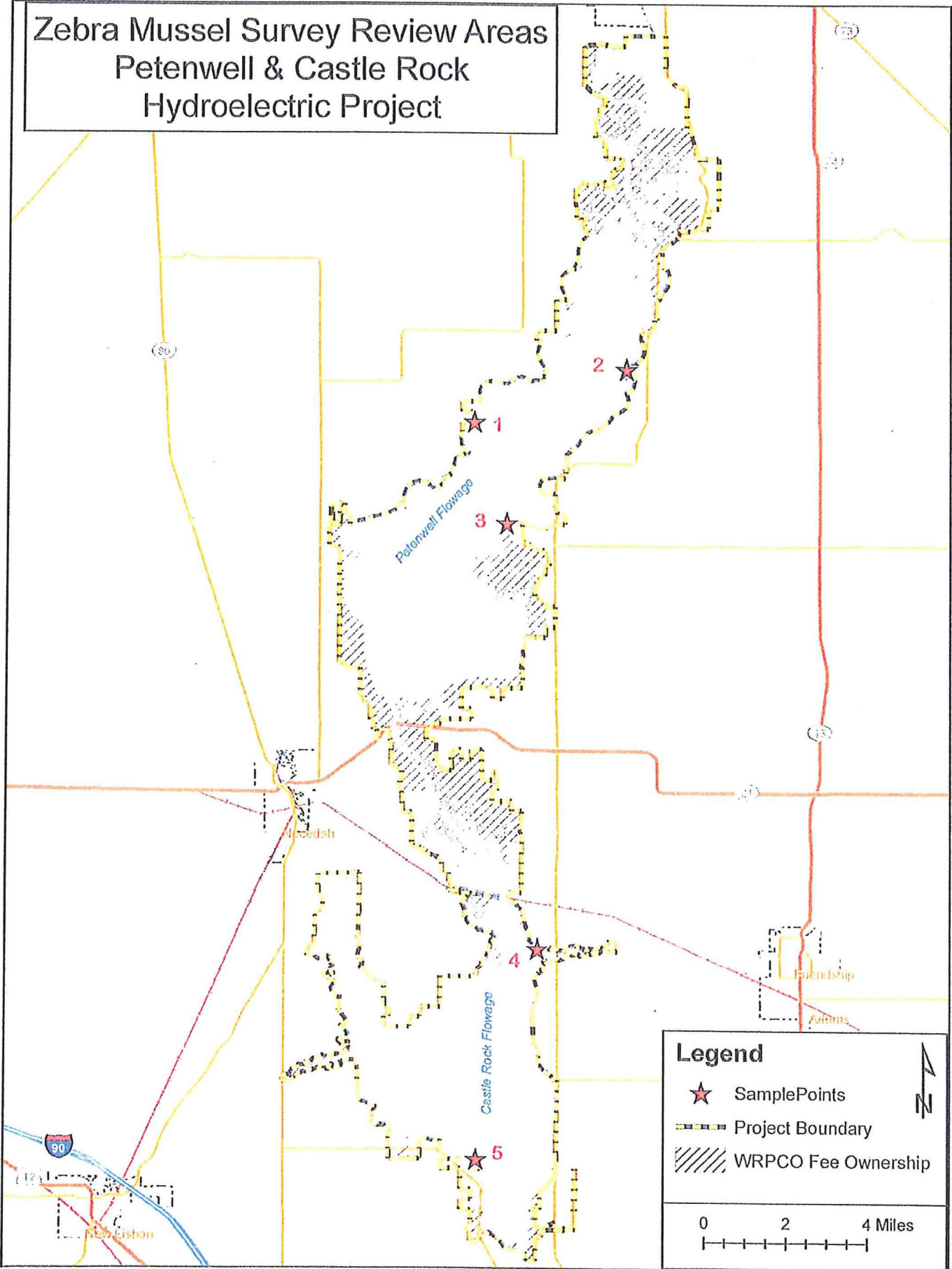
INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 7/15/11
 COMMENTS/RESULTS: same as last month

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 10-11-11
 COMMENTS/RESULTS: No Zebra's Just 1 crayfish

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: _____
 COMMENTS/RESULTS: _____

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: _____
 COMMENTS/RESULTS: _____

Zebra Mussel Survey Review Areas Petenwell & Castle Rock Hydroelectric Project



Hard Surface Zebra Mussel Inspections

<u>Date</u>	<u>Location</u>	<u>Zebra Mussels (Y/N)</u>
3/16/2011	1	N
3/16/2011	2	N
3/16/2011	3	N
3/16/2011	4	N
3/16/2011	5	N

APPENDIX C

DOCUMENTATION OF CONSULTATION



Wisconsin River Power Company
(owners of the Petenwell & Castle Rock Hydroelectric Plants)
P.O. Box 19001
Green Bay, WI 54307-9001

November 7, 2011

Mr. Nick Utrup
USFWS
2661 Tower Drive
New Franken, WI 54229

Ms. Cheryl Laatsch
WDNR
101 South Webster Street OE/7
Madison, WI 53707

Dear Mr. Utrup and Ms. Laatsch:

RE: Exotic Species Report for FERC Project No. 1984

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No colonies were cut or sprayed with herbicide in order to avoid 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 WRPCO GIS system. Plant vigor information was recorded for each colony. Of the twenty-three (23) colonies noted during the survey, fourteen (14) showed signs of beetle feeding.

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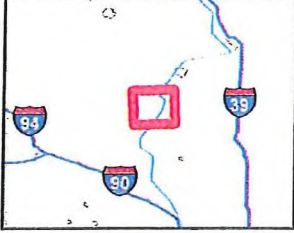
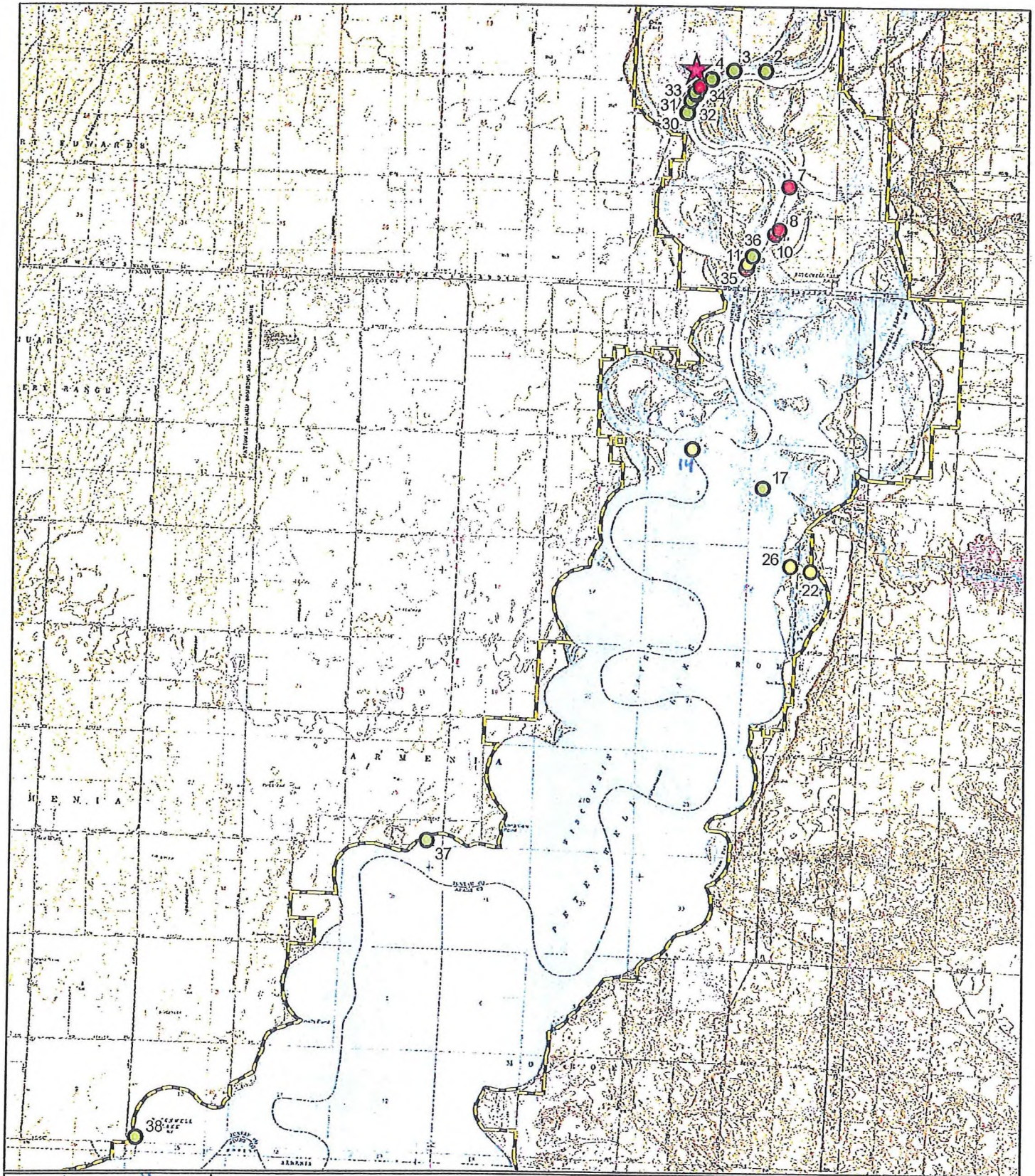
The 2011 Petenwell-Castle Rock Project purple loosestrife figure including colony locations, identification numbers and beetle release location is found in Appendix A. The purple loosestrife general plant vigor survey forms are also found in Appendix A.

Eurasian Water Milfoil

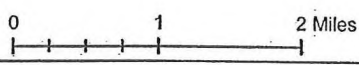
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APPENDIX A

PURPLE LOOSESTRIFE SURVEY RESULTS

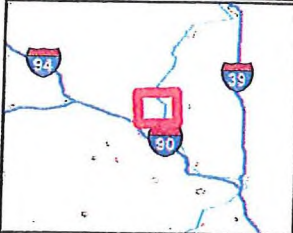
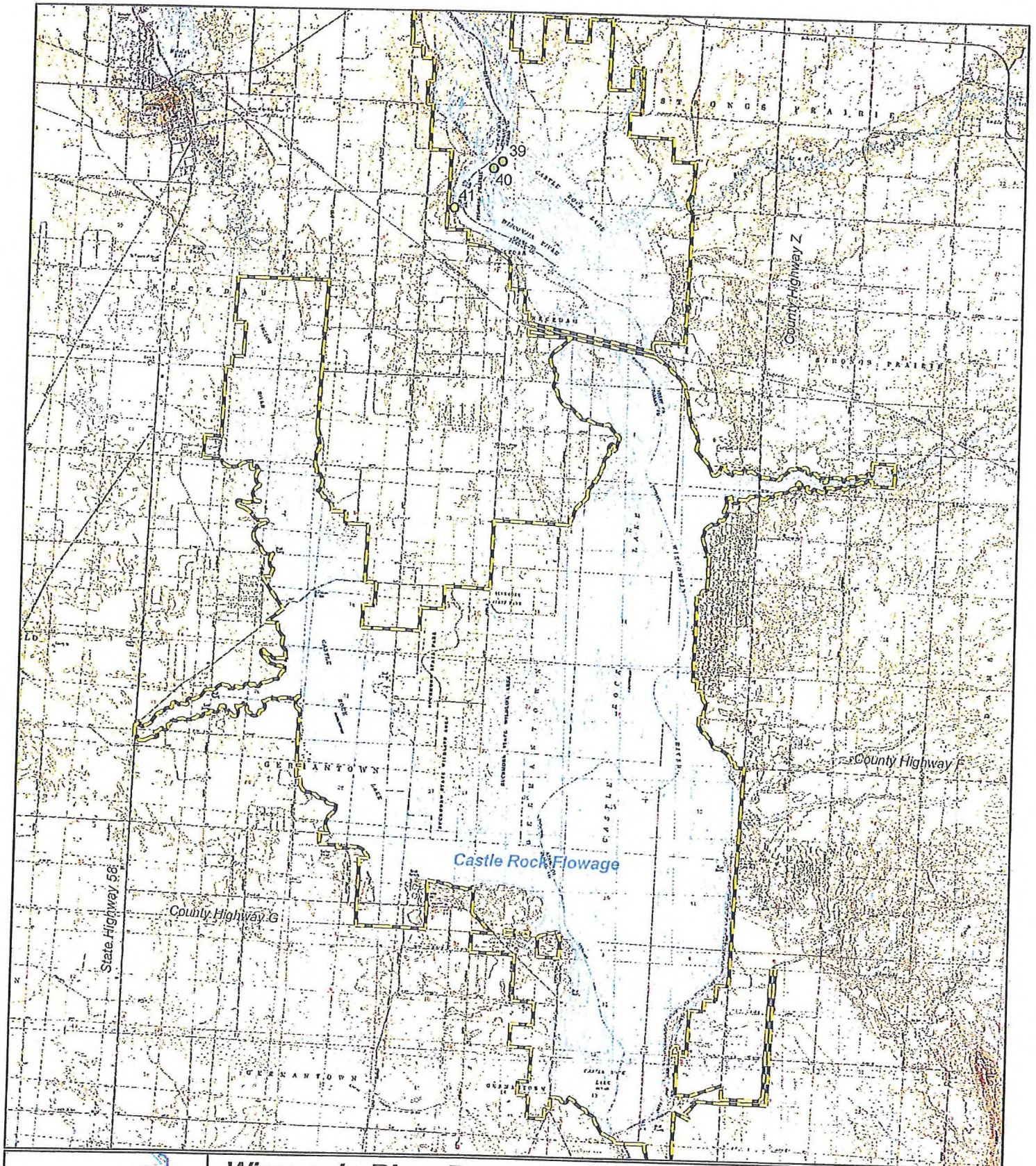


**Wisconsin River Power Company
Petenwell Flowage
2011 Invasive Plant Survey**

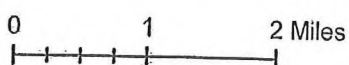


10/31/11

Legend	
Project Boundary	Purple Loosestrife
Beetle Release Site	0-5 Plants
	6-50 Plants
	>50 Plants



**Wisconsin River Power Company
Castle Rock Flowage
2011 Invasive Plant Survey**



10/28/11

Legend

Project Boundary	Purple Loosestrife
Beetle Release Site	0-5 Plants
	6-50 Plants
	>50 Plants

Purple Loosestrife Survey Form

Hydroelectric Project

WRPCO

Inspection Date

7-22-11 and 7-26-11

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
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1			No Plants Noted				
2	L	4	4	3	11	Feeding	240
3	S	4	4	4	12	No Feeding	238
4	S	4	4	4	12	No Feeding	237
5			No Plants Noted				
6			No Plants Noted				
7	L	4	4	4	12	No Feeding	230
8	L	4	4	3	11	Feeding	227
9			No Plants Noted				
10	L	4	4	4	12	No Feeding	226
11	M	3	4	3	10	Feeding	224

Purple Loosestrife Survey Form

Hydroelectric Project

WRPCO

Inspection Date

7-22-2011 and 7-26-2011

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
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12			No Plants Noted				
13			No Plants Noted				
14	S	3	1	1	5	Heavy Feeding	246
15			No Plants Noted				
16			No Plants Noted				
17	S	3	3	3	9	Feeding	NA
18			No Plants Noted				
19			No Plants Noted				
20			No Plants Noted				
21			No Plants Noted				
22	M	3	2	1	6	Heavy Feeding	NA

Purple Loosestrife Survey Form

Hydroelectric Project

WRPCO

Inspection Date

7-22-11 and 7-26-11

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
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23			No Plants Noted				
24			No Plants Noted				
25			No Plants Noted				
26	M	3	2	1	6	Heavy Feeding	NA
27			No Plants Noted				
28			No Plants Noted				
29			No Plants Noted				
30	S	4	4	3	11	Feeding	231
31	S	4	4	3	11	Feeding	232
32	S	4	4	3	11	Feeding	233
33	S	4	4	3	11	Feeding	234

APPENDIX B

ZEBRA MUSSEL SURVEY RESULTS

**ZEBRA MUSSEL INSPECTION RESULTS
WRPCO HYDROELECTRIC PROJECTS**

HYDRO NAME

- Petenwell Flowage
 Castle Rock Flowage

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>5-16-11</u>	
COMMENTS/RESULTS: <u>NO ZEBRA MUSSELS</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>6-15-11</u> <u>DA</u>	
COMMENTS/RESULTS: <u>There were 3 ZEBRA MUSSELS on trap</u>	

INSPECTION TYPE: <input type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>7-15-11</u>	
COMMENTS/RESULTS: <u>There were about the same</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>8/15/11</u>	
COMMENTS/RESULTS: <u>Same as last month</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>10-11-11</u>	
COMMENTS/RESULTS: <u>NO ZEBRA MUSSELS</u>	

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

ZEBRA MUSSEL INSPECTION RESULTS
WRPCO HYDROELECTRIC PROJECTS

HYDRO NAME

- Petenwell Flowage
- Castle Rock Flowage

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 5-16-11
 COMMENTS/RESULTS: None seen today

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 6/16/11
 COMMENTS/RESULTS: There are Zebra Mussels on the trap small ones

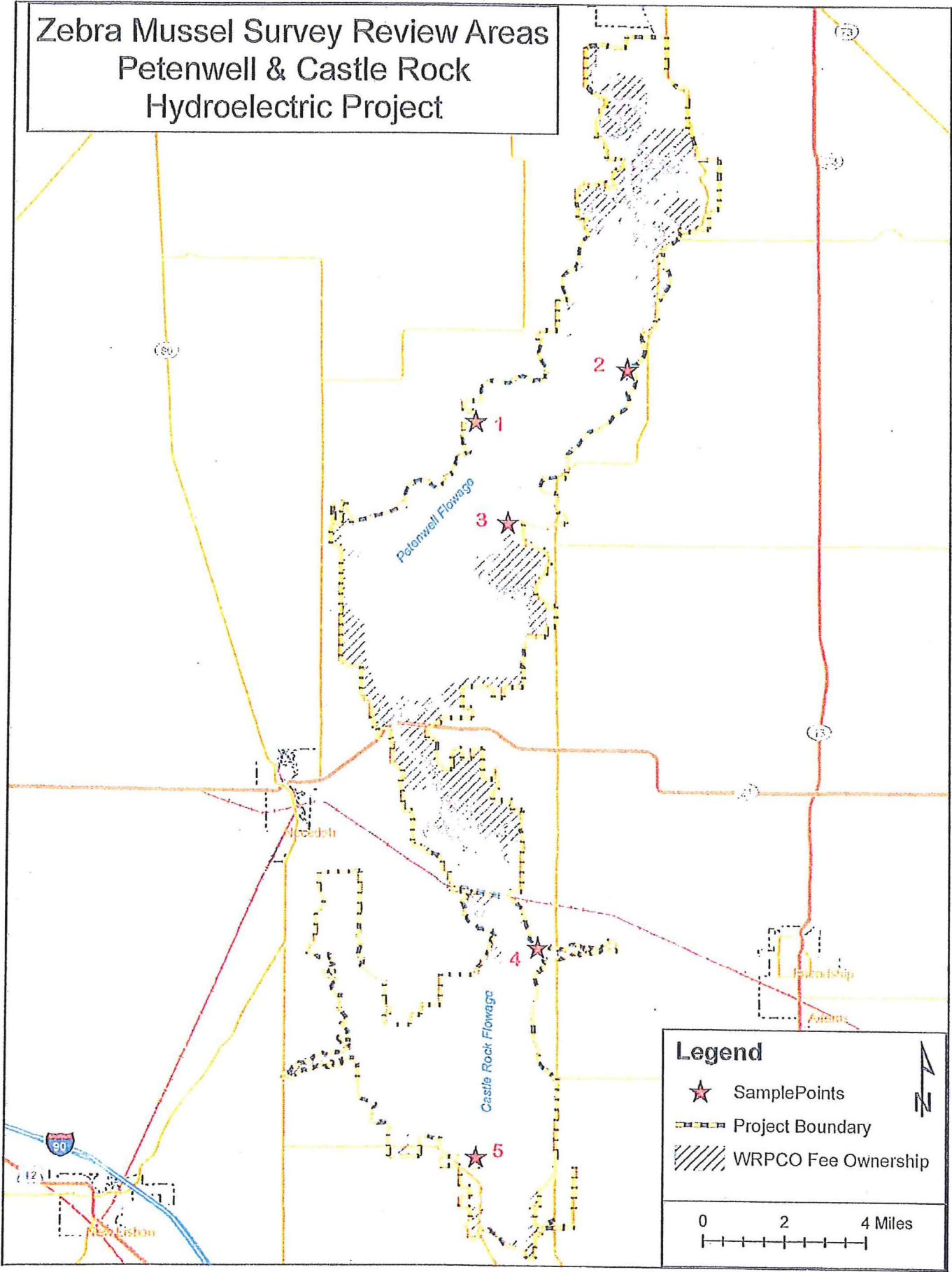
INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 7/15/11
 COMMENTS/RESULTS: same as last month

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: 10-16-11
 COMMENTS/RESULTS: No Zebras Just 1 crayfish

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: _____
 COMMENTS/RESULTS: _____

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
 DATE: _____
 COMMENTS/RESULTS: _____

Zebra Mussel Survey Review Areas Petenwell & Castle Rock Hydroelectric Project



Hard Surface Zebra Mussel Inspections

<u>Date</u>	<u>Location</u>	<u>Zebra Mussels (Y/N)</u>
3/16/2011	1	N
3/16/2011	2	N
3/16/2011	3	N
3/16/2011	4	N
3/16/2011	5	N

Document Content(s)

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WRPCO APPENDICES.PDF.....3-28