

Wisconsin River Power Company

(owners of the Petenwell & Castle Rock Hydroelectric Plants)

P.O. Box 19001 Green Bay, WI 54307-9001

December 14, 2010

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

Dear Secretary Bose:

2010 Exotic Species Monitoring for FERC Project No. 1984

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

Additionally, as per the Order Amending the Purple Loosestrife Control Measures in Approved Monitoring Plan for the Petenwell-Castle Rock Project (FERC no. 1984) issued on July 9, 2009, WRPCO revised survey methods to include general plant vigor information in its purple loosestrife survey results.

Purple Loosestrife

Surveys for purple loosestrife were completed for the Petenwell–Castle Rock Project on July 19 -20, 2010. The survey results indicated that there were a total of 22 purple loosestrife colonies at the project. This includes the addition of five newly identified colonies and the removal of eight previously existing colonies that were identified in 2009. Twenty of those colonies were located on the Petenwell Flowage, mainly on the northern end. Only two colonies were located on the Castle Rock Flowage. No colonies were cut or sprayed with herbicide in order 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 WRPCO GIS system. Plant vigor information was recorded for each colony. Of the 22 colonies, ten had a plant vigor of less than good. This is due to the presence of existing beetle populations at the project.

WRPCO, in coordination with the Central Wisconsin Nature Foundation, released beetles at the Petenwell-Castle Rock Hydroelectric Project on July 11 and 27, 2010. WRPCO estimates that approximately 8,000 beetles were released. The beetles were reared in potted purple loosestrife plants.

Ms. Kimberly D. Bose, Secretary December 14, 2010 Page 2 of 2

The 2010 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 completed every three years. The next survey is scheduled for 2012.

Zebra Mussels

Per the FERC correspondence to WRPCO, dated June 5, 2006, WRPCO is required to conduct monthly inspections for zebra mussels on the Petenwell and Castle Rock Flowages. The inspections 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 not found on any of the substrate samples during any of the monthly 2010 inspections. A summary of the substrate sampler results can be found in Appendix B.

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

Documentation of submittal of these reports to the resource agencies has been included in Appendix C.

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

Enc.

cc: Mr. Howard Giesler, WPS

Mr. Bruce Crocker, WPS Ms. Joan Johanek, WPS Ms. Pat Grant, FERC-Chicago Mr. Gil Snyder, WPS Mr. Jeff Klaas, WRPC Mr. Shawn Puzen, IBS

APPENDIX A

2010 INVASIVE SURVEY FIGURE AND PURPLE LOOSESTRIFE SURVEY RESULTS

APPENDIX B

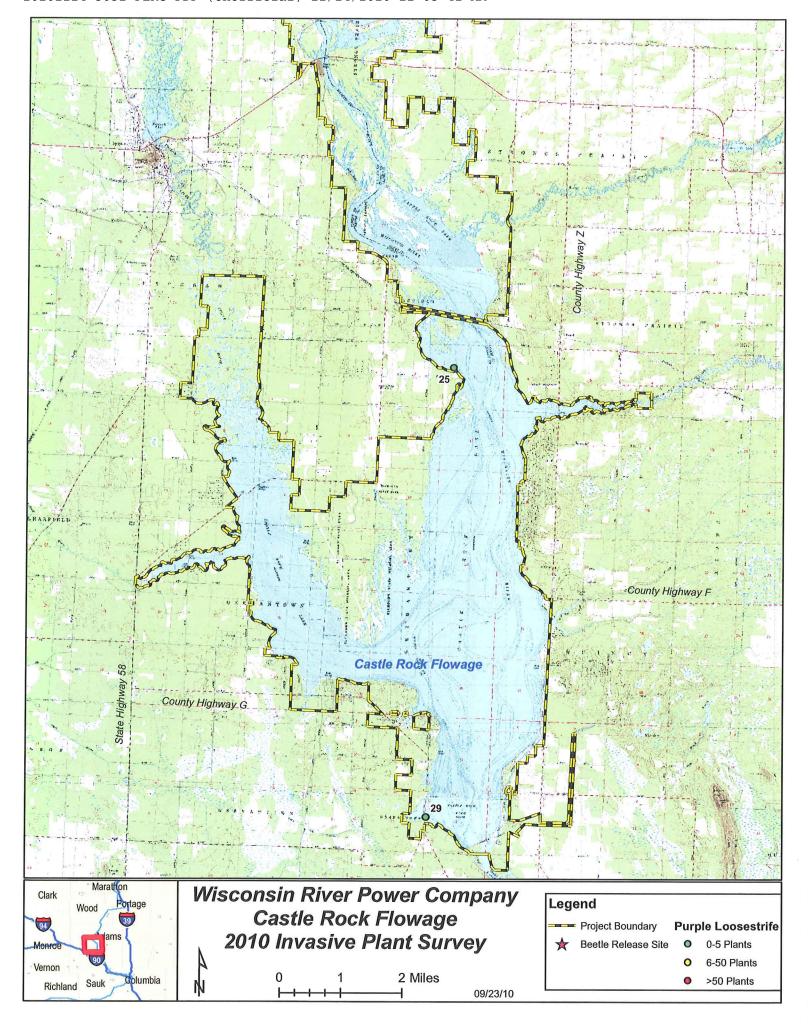
2010 ZEBRA MUSSEL SURVEY RESULTS AND FIGURE

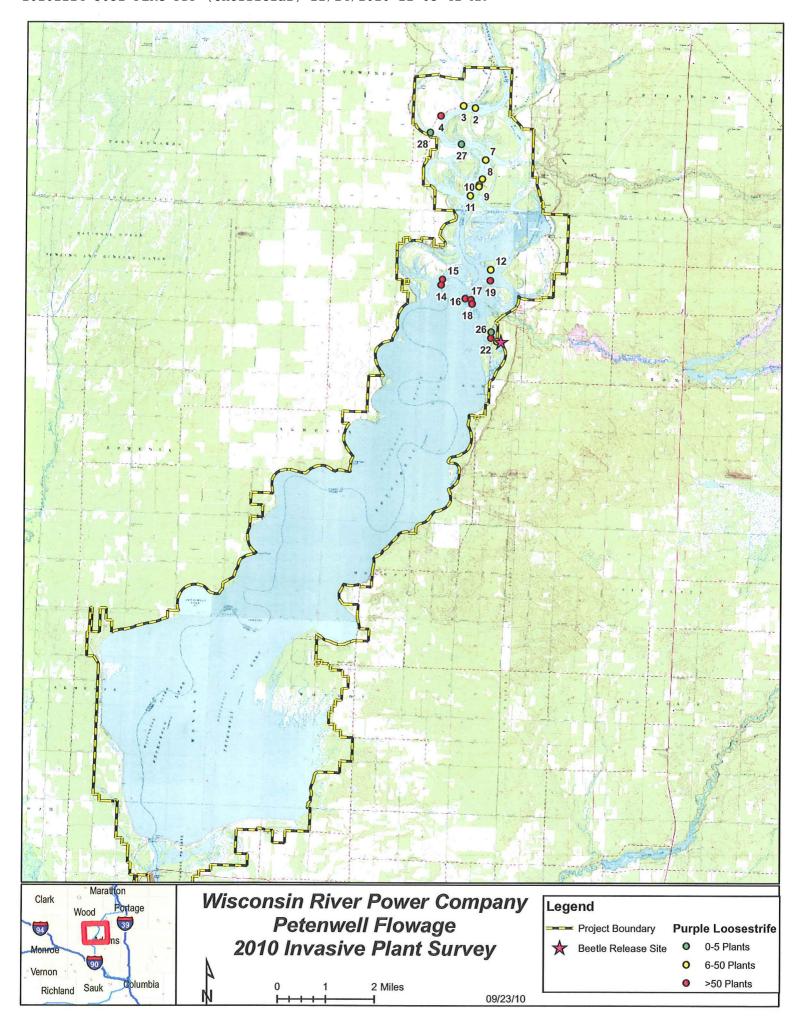
APPENDIX C

DOCUMENTATION OF CONSULTATION

APPENDIX A

2010 INVASIVE SURVEY FIGURE AND PURPLE LOOSESTRIFE SURVEY RESULTS





Hydroelectric Project Inspection Date Purple Loosestrife Survey Form WRPCO 2010 July 19-20, 2010

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Inspection	Date

General Pl				r. ,		
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	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		Notes
1						No PL-Removed from map
2	М	2	1	1	4	
3	М	2	1	1	4 '	
4	L	4	3	1	8	
5						No PL-Removed from map
6						No PL-Removed from map
7	M	2	2	1	5	
8	М	4	2	1	7	
9	М	4	2	1	7	
10	М	4	2	1	7	
11	М	4	3	3	10	

Purple Loosestrife Survey Form ctric Project WRPCO 2010 July 19-20, 2010

Hydroelectric Project

Inspection Date

			General Plant Vi			
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	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants		Total Plant Vigor 10-12≖good 7-9=fair 4-6=poor 0-3=very poor	Notes
12	М	4	3	4	11	
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Purple Loosestrife Survey Form
Hydroelectric Project | WRPCO 2010 |
Inspection Date | July 19-20, 2010 |

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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	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	4-6=poor	Notes
23	·					No PL-Removed from map
24						No PL-Removed from map
25	S	4	4	4-No feeding	12	
26	S	4	3	4	11	new
27	S	4	3	4	11	new
28	S	4	3	4	11	new
29	S	4	4	4-No feeding	12	new
30	М	3	3	3	9	New

APPENDIX B 2010 ZEBRA MUSSEL SURVEY RESULTS AND FIGURE

ZEBRA MUSSEL INSPECTION RESULTS WRPCO HYDROELECTRIC PROJECTS

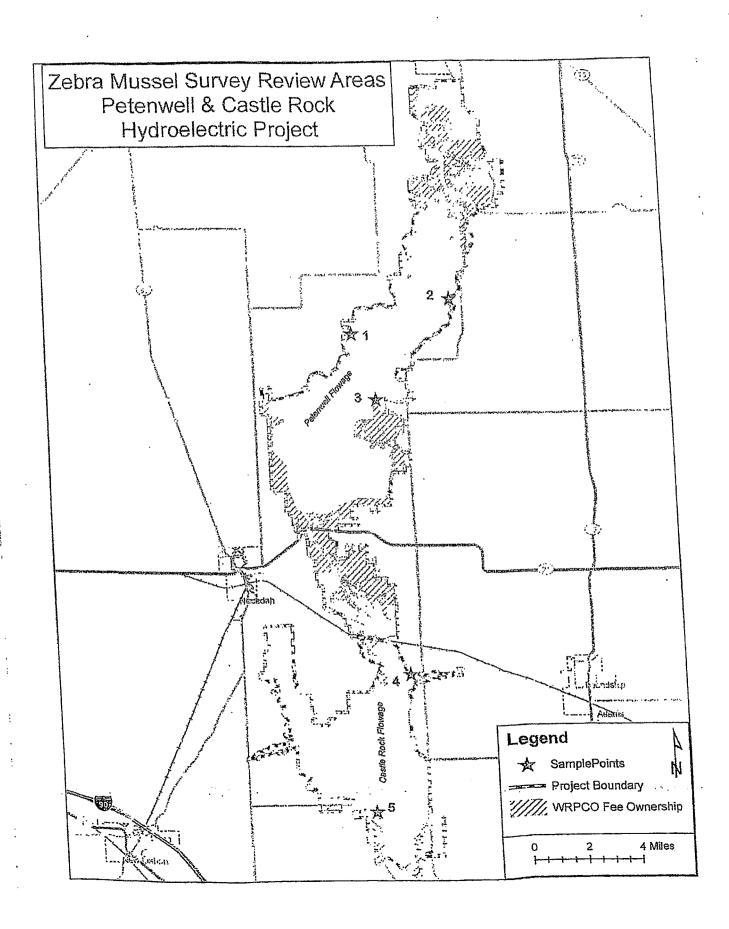
HYDRO NAME

Petenwell Flowage
Castle Rock Flowage

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ZEBRA MUSSEL INSPECTION RESULTS WRPCO HYDROELECTRIC PROJECTS

HYDRO NAME
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INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 3/3/10
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DATE: 5/17/16
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DATE: 6/15/0
COMMENTS/RESULTS: No Zabia musels of this fine
INSPECTION TYPE: ET MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 7-/5-70
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INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 8 /12/2
COMMENTS/RESULTS: No Zebra Mussels at this time.
INSPECTION TYPE: EI MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 9/16/10
COMMENTS/RESULTS:
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Zebra Mussel Hard Surface Inspections

March 16, 2010

Site Number	Zebra Mussels Present?
1	No
2	No
3	No
4	No
5	No

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

October 11, 2010

Mr. Nicholas Utrup
U.S. Fish & Wildlife Service
Department of the Interior
2661 Scott Tower Drive
New Franken, WI 54229-9565

Dear Mr. Utrup:

Exotic Species Monitoring for FERC Project No. 1984

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

Sincerely,

Darrin M. Johnson

Environmental Consultant

Enc.

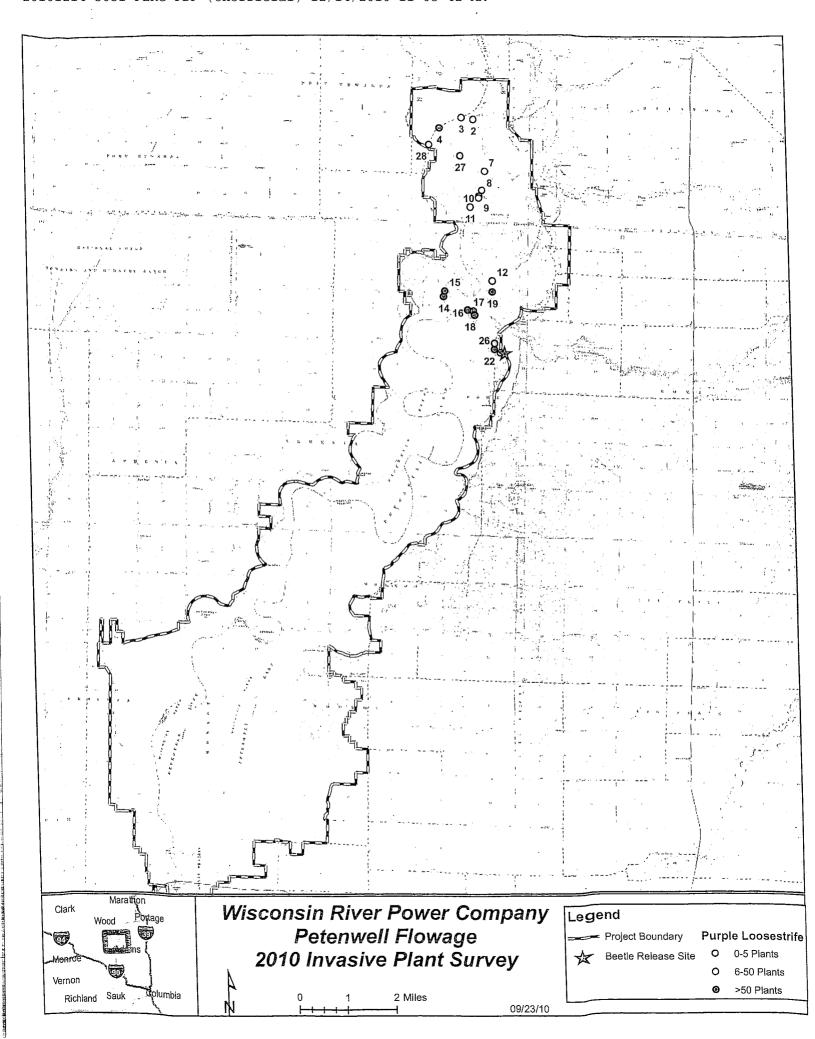
cc: Mr. Dale Simon, WDNR

Ms. Joan Johanek, WPSC - D2

Mr. Jeff Klaas - WRPCO

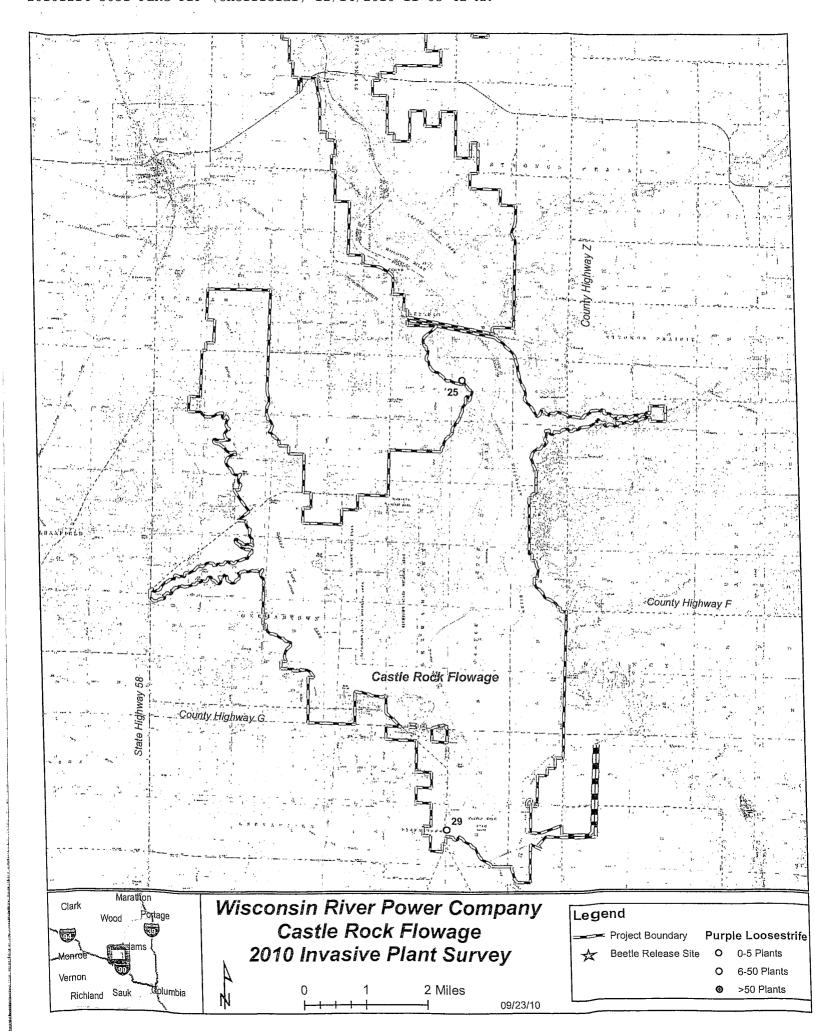
APPENDIX A

2010 INVASIVE SURVEY FIGURE AND PURPLE LOOSESTRIFE SURVEY RESULTS



Purple Loosestrife Survey Form
Hydroelectric Project
Inspection Date
WRPCO 2010
July 19-20, 2010

			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	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		Notes
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Purple Loosestrife Survey Form ctric Project WRPCO 2010 July 19-20, 2010

Hydroelectric Project Inspection Date

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Colony Number	Colany Size S 0-5 M 6-50 L >50	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	Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes
12	М	4	3		4 11	
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Purple Loosestrife Survey Form
Hydroelectric Project WRPCO 2010
Inspection Date July 19-20, 2010

		***************************************	General Plant Vi	gor		
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	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants		4-6=poor	Notes
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25	s	4	4	4-No feeding	12	
26	S	4	3	4	11	new
27	s	4	3	4	11	new
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29	s s	4	4	4-No feeding	12	new
30	о м	3	3	3	9	New

APPENDIX B 2010 ZEBRA MUSSEL SURVEY RESULTS AND FIGURE

ZEBRA MUSSEL INSPECTION RESULTS WRPCO HYDROELECTRIC PROJECTS

HYDRO NAME

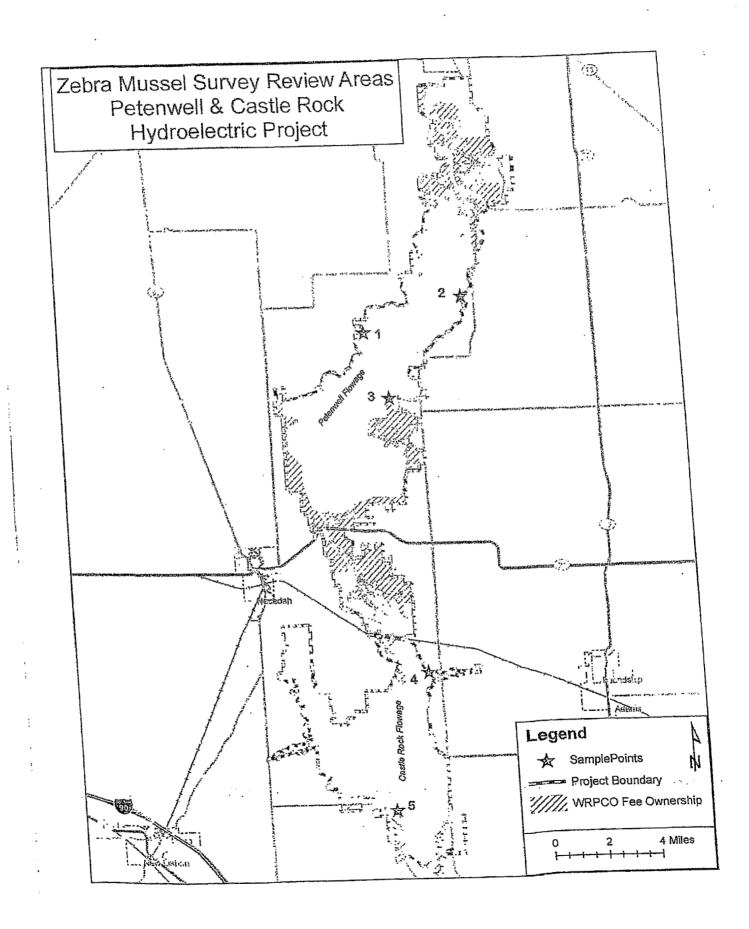
孙	Petenwell Flowage
	Castle Rock Flowage

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DATE: $S/ii/io$ (Div)	
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INSPECTION TYPE: A MONTHLY INSPECTION DATE: 6/16/10 (DW) COMMENTS/RESULTS: A MARKET	☐ INSPECTION DURING DRAWDOWN
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INSPECTION TYPE: EJ MONTHLY INSPECTION DATE: 7/15/10	☐ INSPECTION DURING DRAWDOWN
COMMENTS/RESULTS: DA None (Trap	um ad for gate work)
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DATE: 5/16/10 COMMENTS/RESULTS: 30 Mon- (Tva	puas and for got Lowk)
INSPECTION TYPE: EI MONTHLY INSPECTION	☐ INSPECTION DURING DRAWDOWN
DATE: 9/16/16 RO	••
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ZEBRA MUSSEL INSPECTION RESULTS WRPCO HYDROELECTRIC PROJECTS

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INSPECTION TYPE: D MONTHLY INSPECTION DURING DRAWDOWN
DATE: 3/3/10
COMMENTS/RESULTS: No Zebra Mussel 181 Golfes -7
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INSPECTION TYPE: EX MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 5/17/16
COMMENTS/RESULTS: No Zabra Mussel at this Time
INSPECTION TYPE: EMMONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 6/15/0
COMMENTS/RESULTS: No Zabia minerals of this fine
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NO CONDUN VICENMENT OF THE PROPERTY OF



Zebra Mussel Hard Surface Inspections

March 16, 2010

Site Number	Zebra Mussels Present?		
1	No		
2	No		
3	No		
4	No		
5	No		



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

October 11, 2010

Mr. Dan Houston Wisconsin Department of Natural Resources 5291 N State House Circle Mercer, WI 54547

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2	М	2	1	1	4	
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4	L	4	. 3	1	8	
5						No PL-Removed from map
6	3					No PL-Removed from map
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	зм	4	1	2	1 7	
9	э м		1	2	1 7	
1	ом		4	2	1 7	
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Purple Loosestrife Survey Form ctric Project WRPCO 2010 July 19-20, 2010

Hydroelectric Project

Inspection Date

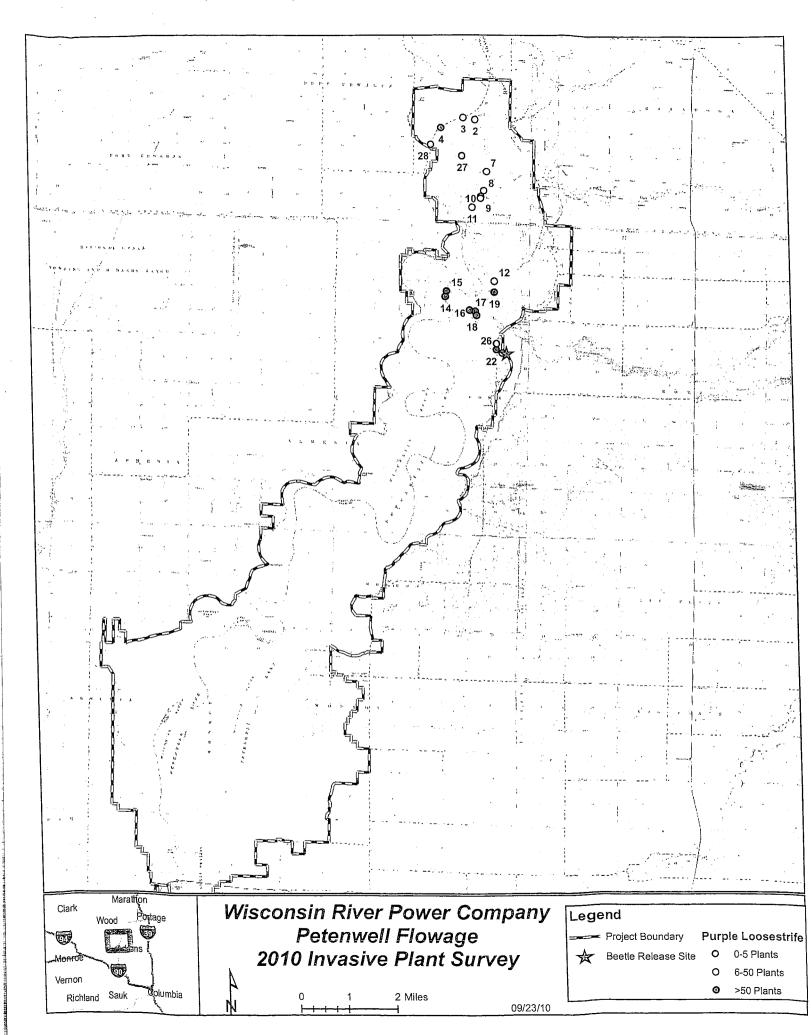
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Colony Number	Colony Size S 0-5 M 6-50 L >50	Plant Height 4=>4ft 3=2-4ft 2=1-2 ft 1= <1 ft	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	Beetle Feeding 4=0-25% feeding 3=26-50% feeding	Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes
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15	5 L	4	3		3 10	
10	5 L	4	3		3 10	
1	7 L	4	3		3 10	
1	8 L	4	3	3	3 10	
1	9 L	4	4	3	18 .	
	20					No PL-Removed from map
	21					No PL-Removed from map
	22 L		3	2	16	

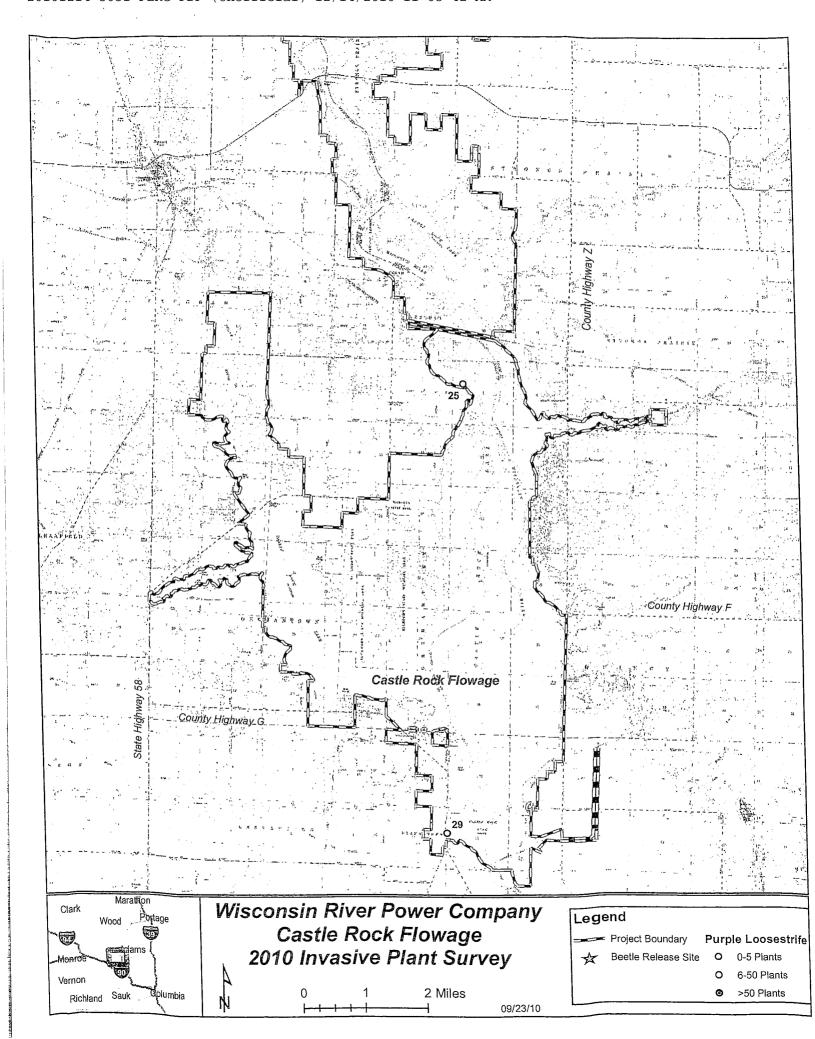
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July 19-20, 2010

			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	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	10-12=good	Notes
1						No PL-Removed from mag
2	M	2	1		1 4	
3	M	2	1		1 4 '	
	L	4	. 3		1 8	
í	5					No PL-Removed from ma
(6					No PL-Removed from ma
	7 M		2	2	1 5	
	8 M		4	2	1 7	
	9 M		4	2	17	
1	ОМ		4	2	1 7	
	11 14		4	3	3 10	

Purple Loosestrife Survey Form

Hydroelectric Project

WRPCO 2010 July 19-20, 2010 Inspection Date

			Canaral Diant Visa			
			General Plant Vigo	DT	Т	
Colony Number	Colony Size S 0-5 M 6-50 L >50		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	Total Plant Vigor 10-12=good 7-9=fair 4-6=poor 0-3=very poor	Notes
12	М	4	3		1 11	
13						No PL-Removed from map
14	L	4	3		3 10	
1	5 L	4	3		3 10	
1	6 L	4	3	3	3 10	
1	7 L	4		3	3 10	
1	18 L	4		3	3 10	
	19 L	4		3	18	
	20					No PL-Removed from map
	21					No PL-Removed from ma
	22 L		3	2	1 6	

Purple Loosestrife Survey Form
Hydroelectric Project WRPCO 2010
Inspection Date July 19-20, 2010

		THE PROPERTY AND ADDRESS OF THE PARTY AND ADDR	General Plant Vi	gor	manament of the factor of the second	
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	Plant Flowering 4=100% of plants 3=51-99% of plants 2=26-50% of plants 1= <25% of plants	4=0-25% feeding		Notes
23						No PL-Removed from map
24						No PL-Removed from map
25	s	4	4	4-No feeding	12	
26	S	4	3	4	11	new
27	S	4	3	4	11	new
28	s s	4	3	4	11	new
2!	9 S	4	4	4-No feeding	12	new
3	0 M	3	3	3	9	New
			·			

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70101714-5051	H.H.B(, DIJH	I I I I I I I I I I I I I I I I I I I	- T 7 / T 4 / J 11 T 1	1

APPENDIX B 2010 ZEBRA MUSSEL SURVEY RESULTS AND FIGURE

ZEBRA MUSSEL INSPECTION RESULTS WRPCO HYDROELECTRIC PROJECTS

HYDRO NAME

Petenwell Flowage
☐ Castle Rock Flowage

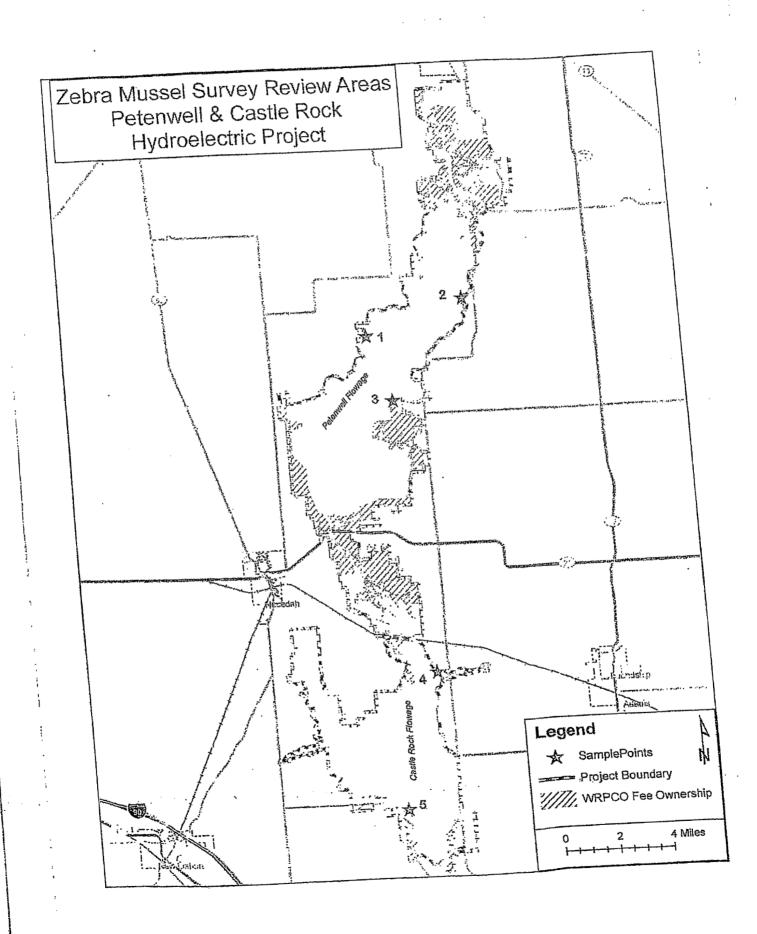
•	
INSPECTION TYPE: MONTHLY INSPECTION	INSPECTION DURING DRAWDOWN
DATE: 3/3/10 (7/4)	
COMMENTS/RESULTS:	
INSPECTION TYPE: EI I CONTHLY INSPECTION	☐ INSPECTION DURING DRAWDOWN
DATE: <u>S/17/10</u> (Dw)	
COMMENTS/RESULTS: ABNO	
	ET NIGOTONY DATES AS TO SELECT
INSPECTION TYPE: Z MONTHLY INSPECTION	☐ INSPECTION DURING DRAWDOWN
DATE: $6/16/10$ (DW)	
COMMENTS/RESULTS: //gare	
INCORPORTION MADE. ET MONTHIN VINCORECTION	EL PICHECTION DIMPIC DE VILDORDI
INSPECTION TYPE: EN MONTHLY INSPECTION DATE: 7/15/10	☐ INSPECTION DURING DRAWDOWN
COMMENTS/RESULTS: - None (Trap	10 1
COMMENTARESOLIS. JA None (1799	was and for sale work)
INSPECTION TYPE: MMONTHLY INSPECTION	☐ INSPECTION DURING DRAWDOWN
DATE: S/16/14	E ROLECTION DOIGHO DIGMOOMA
	10 24 1
COMMENTALISATION OF THE CONTROL OF T	up was and for gate Love
INSPECTION TYPE: LEI MONTHLY INSPECTION	☐ INSPECTION DURING DRAWDOWN
DATE: 9/16/10 RO	
COMMENTS/RESULTS:	
1. Alones	, ρ

HYDRO NAME

Petenwell Flowage

ZEBRA MUSSEL INSPECTION RESULTS WRPCO HYDROELECTRIC PROJECTS

,即 Castle Rock Flowage	
INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN DATE: 3/3/10	Ĭ.
COMMENTS/RESULTS: No Zabra Massal an Galles 1	
INSPECTION TYPE: LY MONTHLY INSPECTION LITINSPECTION DURING DRAWDOWN DATE: 5/17/15 COMMENTS/RESULTS: No Zebra Mussel at this June	N
INSPECTION TYPE: EMONTHLY INSPECTION INSPECTION DURING DRAWDOW DATE: 6/15/0 COMMENTS/RESULTS: No Zabia princeds of this time	N
INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOW DATE: 7-15-10 COMMENTS/RESULTS: No Zebra Musical of this time	⁄N
INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOW DATE: 8/12/2 COMMENTS/RESULTS: No Zebra: Mussels at this time	VN
INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOV DATE: 9/16/19 COMMENTS/RESULTS:	VN



Zebra Mussel Hard Surface Inspections

March 16, 2010

Site Number	Zebra Mussels Present?		
1	No		
2	No		
3	No		
4	No		
5	No		

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Document Content(s)
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Appendix A.PDF6-11
Appendix B.PDF
Appendix C.PDF