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ORIGINAL

December 1, 2011

The Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

RE: WVIC Project 2113; Purple Loosestrife Control Plan – 2011 Annual Monitoring Report

In accordance with the Federal Energy Regulatory Commission (FERC) "Order Amending Purple Loosestrife Control Plan" (Order) issued June 16, 2009, Wisconsin Valley Improvement Company (WVIC) herewith submits an original and eight copies of the Purple Loosestrife Control Plan - 2011 Annual Monitoring Report (Report) (Attachment 1).

In compliance with the Order, page 5, (B), the Report includes: 1) annual monitoring results identifying locations and abundance of purple loosestrife..., 2) information and/or results identifying the distribution and effectiveness of *Galerucella sp.* beetles ..., and 4) the Proposed Purple Loosestrife and Beetle Monitoring Plan for 2012 (management options that will be used in 2012). Management options that were followed in 2011 were presented in the 2010 annual report (...Monitoring Plan for 2010). Documentation of comments or recommendations from the Wisconsin DNR (WDNR) is included in Attachment 2, as required in the Order, page 5, (B) 3) as discussed below.

WVIC submitted the 2011 annual monitoring report and the proposed monitoring plan for 2012 to the WDNR and U.S. Fish and Wildlife Service (USFWS) for review and comment via email on October 13, 2011. WVIC did not receive any comments from the USFWS by the end of the 30-day comment period. Kevin Gauthier, WDNR Lakes Management Coordinator, responded via email November 21, 2011 that WDNR was satisfied with the 2011 annual monitoring report and the proposed 2012 monitoring plan. This email correspondence is included in Attachment 2. The 2011 Purple Loosestrife Annual Monitoring Report herewith submitted is unchanged from the Draft Report sent to the agencies.

Sincerely,

David M. Coon, Director
Environmental Affairs

Enclosures:
Attachment 1: WVIC Purple Loosestrife Annual Monitoring Report – 2011.
Attachment 2: Documentation of agency consultation and correspondence.

Cc: Pat Grant, Environmental Protection Specialist, FERC, Room 3130, 230 South Dearborn Street, Chicago, IL 60604

Attachment 1

Wisconsin Valley Improvement Company

Purple Loosestrife Annual Monitoring Report – 2011

October 12, 2011

Wisconsin Valley Improvement Company

Purple Loosestrife Annual Monitoring Report – 2011

October 12, 2011

Introduction

In compliance with Wisconsin Valley Improvement Company's (WVIC) 1996 FERC license (Project No. 2113), the purple loosestrife control program became a part of WVIC's FERC approved 1997 Fish and Wildlife Management Plan (Article 413). The Fish and Wildlife Management Plan was updated in 2001, 2006 and 2011 in accordance with a five-year update requirement in WVIC's FERC license. WVIC drafted a Modified Purple Loosestrife Control Plan in November 2008. The purpose of the Modified Plan was to terminate and/or phase out chemical control of loosestrife and implement biological control with *Galerucella sp.* beetles. The Plan was sent to Wisconsin DNR (WDNR) and US Fish and Wildlife Service (USFWS) for review and comment. Comments were received from WDNR and incorporated into the Plan. The Plan was sent to FERC November 26, 2008 as an amendment request to WVIC's Fish and Wildlife Management Plan. FERC issued an Order Amending the Plan June 16, 2009 and approved the Plan with minor reporting modifications.

This report represents the third in a series of five annual Purple Loosestrife Monitoring Reports required in the June 16, 2009 FERC Order.

2011 Field Monitoring Results

Willow Reservoir - On July 26, 2011 WVIC monitored the area of Willow Reservoir where loosestrife has historically occurred. Reservoir elevation was 1527.41 ft NGVD (1.94 ft. below full). The area was accessed by boat and then surveyed by walking the exposed shoreline and counting both immature and mature plants. GPS readings were taken every 100 ft where plants were observed. Loosestrife relative abundance was recorded as A (1-5 plants), B (6-50 plants), or C (50+ plants). Figure 1 is a distribution and relative abundance map of recorded locations in 2011 and Table 1 lists GPS coordinates for each observation.

Distribution of loosestrife in 2011 was generally limited to the area of small islands (Figure 1) in the southeastern most portion of the reservoir and similar to 2010. Relative abundance of loosestrife beds with 6-50 plants has continued to decline since 2008 when six beds were reported. Two loosestrife beds with 6-50 plants were reported in 2010 and only one bed (6-50 plants) was observed in 2011. No dense beds (50+ plants) were observed in 2010 or 2011. The general decline in loosestrife abundance and distribution since 2008 may be related to unfavorable loosestrife growing conditions in the dry sand environment caused by the drought and low water level that prevailed throughout the entire 2009 growing season. This was followed by near-full reservoir conditions in 2010 and 2011. Many of the loosestrife plants observed during the previous drought induced low-water years would have been flooded (overtopped) in 2010 and 2011. Loosestrife was not observed outside of its historic range at Willow.

Galerucella sp. beetles have not been observed at Willow Reservoir to date although they are present in the Tripoli area to the southwest, Rice Reservoir to the southeast and the Minocqua Reservoir system to the northeast, all within 10-12 miles of Willow. It is unlikely that the low relative abundance of loosestrife would support a sustained beetle population.

Rice Reservoir – On July 25, 2011 WVIC monitored the portions of Rice Reservoir where loosestrife has historically occurred. Reservoir elevation was 1461.50 ft. NGVD (1.75 ft below full). The general areas were accessed by boat and by walking the exposed shoreline and counting both immature and mature plants.

Relative abundance and distribution of loosestrife and *Galerucella sp.* beetle distribution was recorded with GPS. Figure 2 is a distribution map of recorded loosestrife and beetle activity locations in 2011 and Table 2 lists GPS coordinates for each observation.

Purple loosestrife distribution decreased in 2011 compared to 2010. Loosestrife was absent from several locations in 2011 where it had been observed in 2010 (refer to the 2010 annual report distribution map). Similarly, relative abundance declined by more than 50% compared to 2010 with 108 beds observed in 2010 and 48 observed in 2011. Dense loosestrife beds of 50+ plants declined from 14 beds in 2010 to 11 in 2011. This may have been a function of higher reservoir water levels beginning in mid-2010 and continuing during the 2011 growing season in combination with beetle activity, as discussed below. The greatest decline in relative abundance was loosestrife beds with 6-50 plants which declined from 39 in 2010 to 16 beds in 2011 and beds with 1-5 plants which declined from 55 in 2010 to 21 in 2011. The declines in these beds also appeared to be related to higher reservoir water levels during the growing season beginning in mid-2010 and 2011. As discussed in the 2010 Annual Report, successive years of drought conditions and related low water levels preceding 2010 allowed loosestrife plants to expand into the littoral area. Beginning in mid-2010 and continuing during the 2011 growing season, plants that had migrated outward from shore would have been flooded (overtopped). Loosestrife was not observed outside of its historic range at Rice.

Galerucella sp. beetle activity was observed at seven loosestrife beds in 2011 and in the same general areas as in 2010 (Figure 2). Adult beetles were observed in six beds and larvae in one bed. Significant leaf and stem damage characteristic of *Galerucella sp.* beetles was observed in each of the beds. Beetles have predominately inhabited dense beds of 50+ plants and have now inhabited Rice Reservoir for three consecutive years. The impact of the beetles combined with higher reservoir water levels the last two years may account for the reduction of dense beds (50+ plants) from 2010 to 2011. Since this is only the third year beetles have inhabited Rice Reservoir, their effectiveness in controlling loosestrife at this point has been limited pending further expansion/distribution of the beetle population. Continued monitoring will determine their ultimate effectiveness and ability to expand naturally and the need, if any, to introduce additional beetles.

Spirit Reservoir – On July 26, 2011 WVIC monitored the portion of Spirit Reservoir where loosestrife has historically occurred. Reservoir elevation was 1435.98 ft. NGVD (1.90 ft below full).The general areas were accessed by boat and by walking the exposed shoreline/causeway and counting both immature and mature plants. Relative abundance and distribution of loosestrife and *Galerucella sp.* beetle distribution was recorded with GPS. Figure 3 is a distribution map of recorded loosestrife and beetle activity locations in 2011 and Table 3 lists GPS coordinates for each observation.

Distribution of loosestrife in 2011 (Figure 3) remained confined to the Highway 86 bay and similar to 2010. Relative abundance of dense loosestrife beds (50+ plants) was similar between years with one dense bed reported each year. Loosestrife was not observed outside of its historic range at Spirit.

Overall relative abundance declined by more than 40% in 2011 with 38 loosestrife beds observed in 2010 and 22 observed in 2011. The decline was associated with beds of 1-5 plants that declined from 32 beds in 2010 to 16 beds in 2011. The loosestrife beds of 50+ plants (1 bed) and 6-50 plants (5 beds) remained the same between 2010 and 2011. Similar to Rice Reservoir, the decline of beds with 1-5 plants was likely related to higher reservoir water levels during the growing season beginning in mid-2010 and continuing during 2011. As discussed in the 2010 Annual Report, successive years of drought conditions and related low water levels preceding 2010 resulted in loosestrife plants expanding into the littoral area. Beginning in mid-2010 and continuing during the 2011 growing season, plants that had migrated outward from shore would have been flooded (overtopped).

Adult *Galerucella sp.* beetle activity was observed at one location in 2011 (Figure 3) compared to two locations in 2010. The eastern most location (a small island) where beetles were observed in 2010 was void of loosestrife in 2011. Beetles have now inhabited Spirit Reservoir for three of the last four years in generally the same area first observed in 2008. Significant leaf and stem damage characteristic of *Galerucella sp.* beetles was observed in the one bed of 6-50 plants. Their effectiveness in controlling loosestrife at this point has been limited pending further expansion/distribution of the beetle population. Continued monitoring will determine their ultimate effectiveness and ability to expand naturally and the need, if any, to introduce additional beetles.

Proposed Purple Loosestrife and Beetle Monitoring Plan for 2012

Results from 2011 monitoring indicate a general decline in relative abundance of purple loosestrife at Willow, Rice and Spirit reservoirs compared to 2010. The decline appeared to be related to higher water levels during the mid-2010 and entire 2011 growing seasons and to a limited extent to beetle activity at Rice Reservoir. The higher water levels in 2010 and 2011 flooded (overtopped) many of the loosestrife plants that had migrated outward from the shoreline during the preceding years of low water levels that resulted from drought conditions. Based on these results and with the continued existence of beetle populations at Rice and Spirit reservoirs, introductions of additional beetles are not being proposed for 2012. The current low relative abundance of loosestrife at Willow Reservoir would not likely support a sustained beetle population and no introductions of beetles are proposed at this time.

WVIC proposes to repeat the same monitoring survey at the three reservoirs (Willow, Rice and Spirit) during late-July or early-August in 2012 to document loosestrife distribution and abundance along with documenting any continued immigration and distribution of *Galerucella sp.* beetles. If loosestrife distribution and/or relative abundance should increase in 2012, the introduction of additional beetles could be considered for 2013. In compliance with the June 16, 2009 FERC Order, WVIC will submit a purple loosestrife annual monitoring report in October 2012 to WDNR and USFWS for review and comment and to confirm the monitoring approach for 2013. The 2012 report will then be submitted to FERC by December 31, 2012.

Figure 1

Table 1

Purple Loosestrife Survey - 2011				
Willow Reservoir				
Number	**Latitude**	**Longitude**	**Amount**	**Beetle Activity**
1	45° 41.30546	89° 50.47069	1-5 Plants	
2	45° 41.41555	89° 50.45484	1-5 Plants	
3	45° 41.34430	89° 50.44725	1-5 Plants	
4	45° 41.16500	89° 50.44148	6-50 Plants	
5	45° 41.40532	89° 50.44007	1-5 Plants	
6	45° 41.36089	89° 50.43341	1-5 Plants	

Figure 2

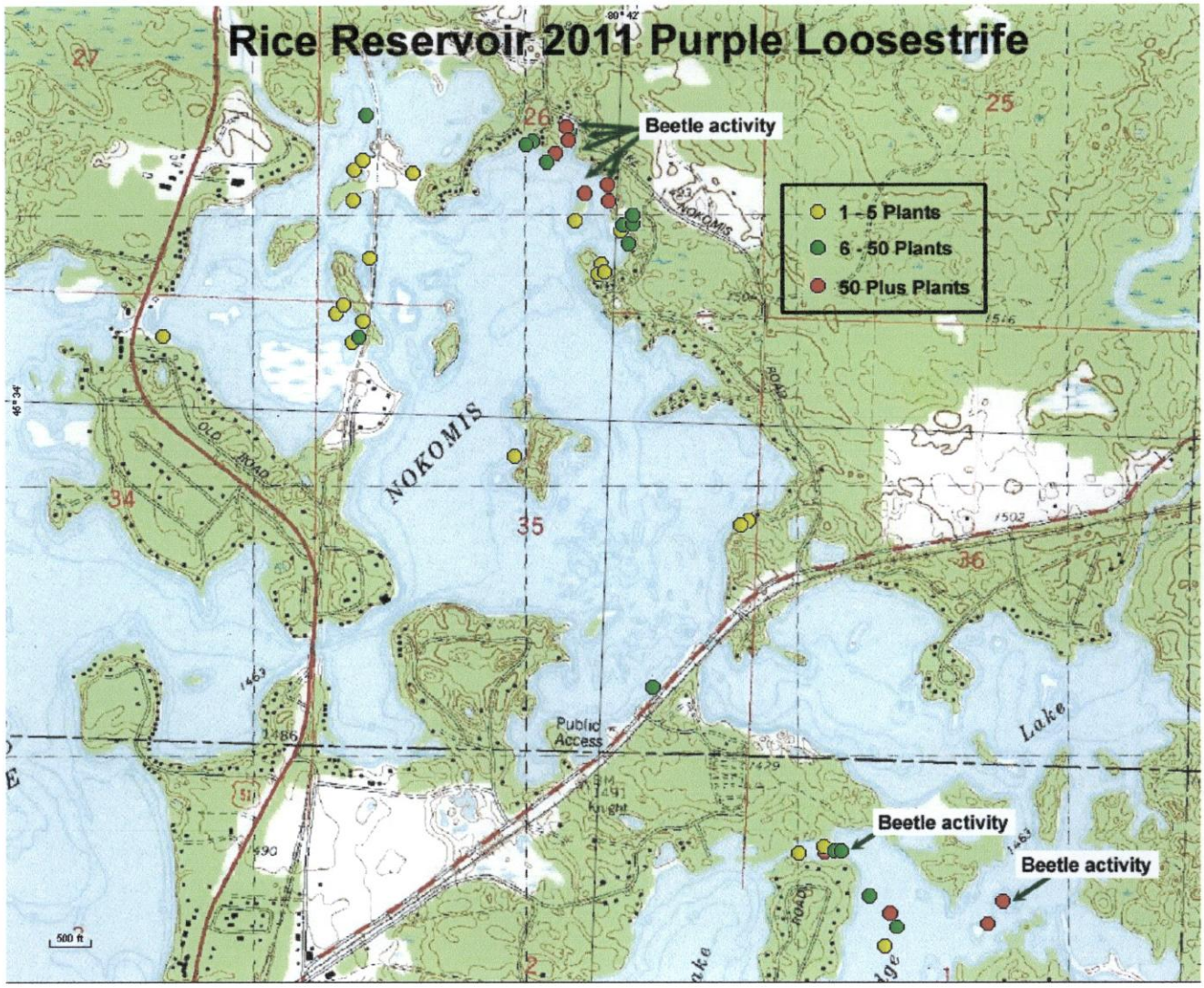

Table 2

Purple Loosestrife Survey – 2011					
Rice Reservoir					
Number	Latitude		Longitude	Amount	Beetle Activity
1	45°	34.13875	89° 43.27178	1-5 Plants	
2	45°	34.19509	89° 42.78467	1-5 Plants	
3	45°	34.21303	89° 42.76202	1-5 Plants	
4	45°	34.48244	89° 42.74517	1-5 Plants	
5	45°	34.42122	89° 42.74485	1-5 Plants	
6	45°	34.13862	89° 42.73394	1-5 Plants	
7	45°	34.50181	89° 42.72137	1-5 Plants	
8	45°	34.15036	89° 42.71785	6-50 Plants	
9	45°	34.59040	89° 42.71639	6-50 Plants	
10	45°	34.18246	89° 42.70620	1-5 Plants	
11	45°	34.30864	89° 42.69211	1-5 Plants	
12	45°	34.47847	89° 42.57865	1-5 Plants	
13	45°	33.92289	89° 42.26570	1-5 Plants	
14	45°	34.54384	89° 42.26283	6-50 Plants	
15	45°	34.54901	89° 42.24259	6-50 Plants	
16	45°	34.51106	89° 42.20142	6-50 Plants	Yes
17	45°	34.52873	89° 42.17864	50+ Plants	Yes
18	45°	34.58083	89° 42.14948	50+ Plants	Yes
19	45°	34.58131	89° 42.14693	6-50 Plants	
20	45°	34.55471	89° 42.14190	50+ Plants	
21	45°	34.57085	89° 42.14007	6-50 Plants	
22	45°	34.39433	89° 42.11582	1-5 Plants	
23	45°	34.44982	89° 42.09067	50+ Plants	Yes
24	45°	34.29070	89° 42.04671	1-5 Plants	
25	45°	34.31051	89° 42.03928	1-5 Plants	
26	45°	34.29525	89° 42.02993	1-5 Plants	
27	45°	34.46905	89° 42.02781	50+ Plants	Yes

Table 2 (cont.)

Purple Loosestrife Survey – 2011					
Rice Reservoir					
Number	**Latitude**		**Longitude**	**Amount**	**Beetle Activity**
28	45°	34.43654	89° 42.02299	50+ Plants	
29	45°	34.37981	89° 41.98676	1-5 Plants	
30	45°	34.38950	89° 41.98120	6-50 Plants	
31	45°	34.35352	89° 41.96345	6-50 Plants	
32	45°	34.41094	89° 41.95500	6-50 Plants	
33	45°	34.39225	89° 41.95447	6-50 Plants	
34	45°	33.47416	89° 41.85494	6-50 Plants	
35	45°	33.80254	89° 41.62031	1-5 Plants	
36	45°	33.81150	89° 41.60081	1-5 Plants	
37	45°	33.15391	89° 41.42607	1-5 Plants	
38	45°	33.16851	89° 41.35503	1-5 Plants	
39	45°	33.15815	89° 41.35268	50+ Plants	
40	45°	33.16078	89° 41.32602	6-50 Plants	
41	45°	33.16228	89° 41.30845	6-50 Plants	Yes
42	45°	33.07434	89° 41.22238	6-50 Plants	
43	45°	32.97389	89° 41.17647	1-5 Plants	
44	45°	33.04223	89° 41.16258	50+ Plants	
45	45°	33.01417	89° 41.14317	6-50 Plants	
46	45°	33.02724	89° 40.88697	50+ Plants	
47	45°	33.07251	89° 40.84411	50+ Plants	
48	45°	33.07277	89° 40.84389	50+ Plants	Yes

Figure 3

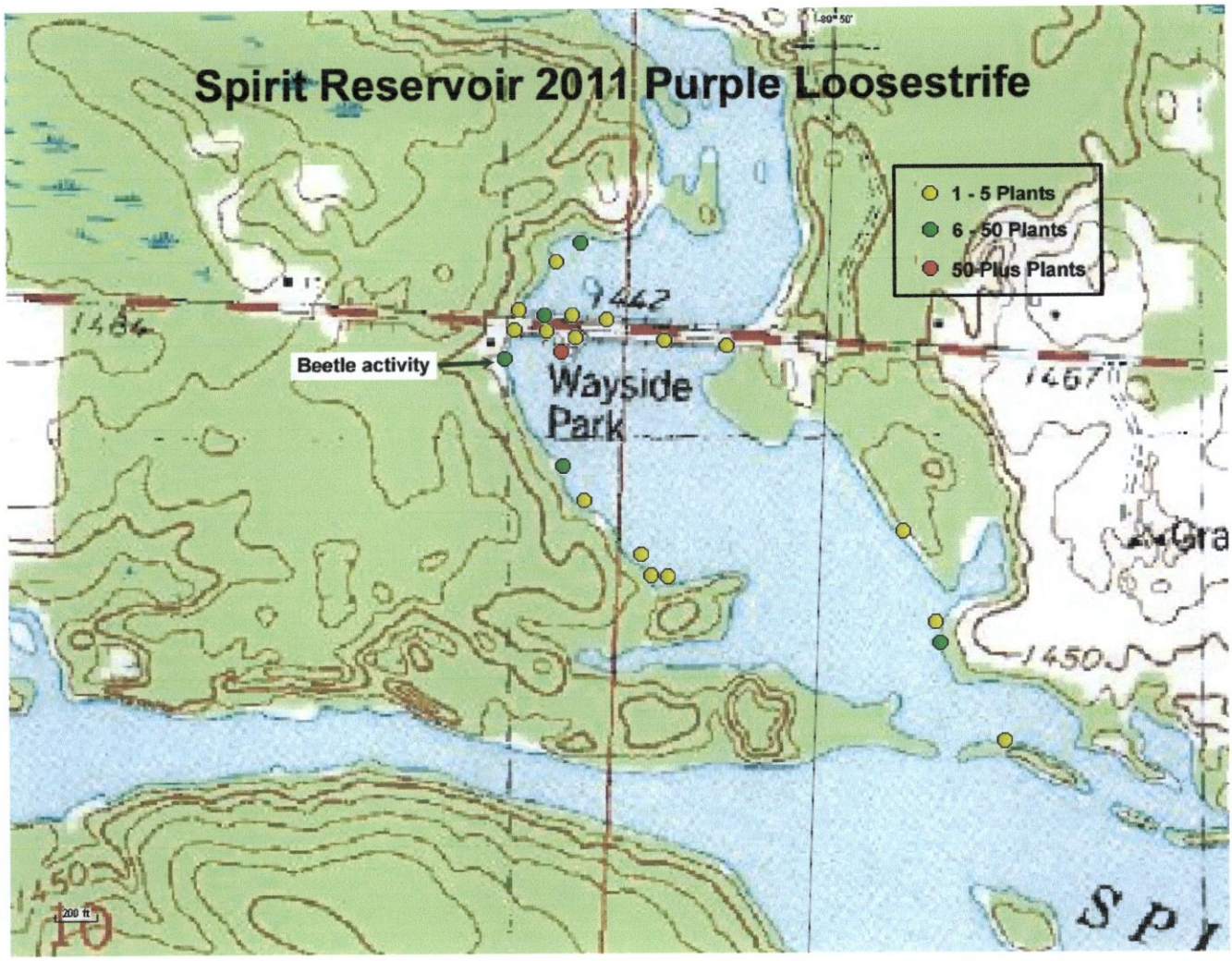

Table 3

Purple Loosestrife Survey - 2011					
Spirit Reservoir					
Number	**Latitude**		**Longitude**	**Amount**	**Beetle Activity**
1	45°	27.12246	89° 49.91503	1-5 Plants	
2	45°	27.05306	89° 49.87602	1-5 Plants	
3	45°	27.03682	89° 49.87058	6-50 Plants	
4	45°	26.96263	89° 49.79476	1-5 Plants	
5	45°	27.08142	89° 50.17274	1-5 Plants	
6	45°	27.08184	89° 50.19155	1-5 Plants	
7	45°	27.09843	89° 50.20410	1-5 Plants	Yes
8	45°	27.13887	89° 50.26804	1-5 Plants	
9	45°	27.16478	89° 50.29339	6-50 Plants	
10	45°	27.24634	89° 50.36114	6-50 Plants	
11	45°	27.26948	89° 50.35136	1-5 Plants	
12	45°	27.26948	89° 50.31532	1-5 Plants	
13	45°	27.25318	89° 50.29786	50+ Plants	
14	45°	27.26473	89° 50.28319	1-5 Plants	
15	45°	27.26489	89° 50.18454	1-5 Plants	
16	45°	27.26175	89° 50.11543	1-5 Plants	
17	45°	27.27969	89° 50.24966	1-5 Plants	
18	45°	27.28175	89° 50.28804	1-5 Plants	
19	45°	27.28137	89° 50.31858	6-50 Plants	
20	45°	27.28506	89° 50.34721	1-5 Plants	
21	45°	27.32280	89° 50.30637	1-5 Plants	
22	45°	27.33855	89° 50.28033	6-50 Plants	

Attachment 2

Consultation/Correspondence with Wisconsin DNR and USFWS

Dave Coon

From: Gauthier Sr, Kevin J - DNR [Kevin.GauthierSr@wisconsin.gov]
Sent: Monday, November 21, 2011 2:12 PM
To: Dave Coon
Subject: RE: 2011 Purple Loosestrife Annual Monitoring Report

Hi Dave,

Thanks for sending the 2011 WVIC PL Report. Report looks fine, as does the monitoring plans for 2012.

Have a Happy Thanksgiving!

Kevin

Kevin J. Gauthier
Lakes Management Coordinator
Wisconsin Department of Natural Resources
107 Sutliff Ave
Rhinelander, WI 54501
(☎) phone: (715) 365-8937
(☎) fax: (715) 365-8932
(✉) e-mail: Kevin.GauthierSr@wisconsin.gov

From: Dave Coon [mailto:Coon@wvic.com]
Sent: Thursday, October 13, 2011 11:05 AM
To: Gauthier Sr, Kevin J - DNR; Laatsch, Cheryl - DNR; Nick_Utrup@fws.gov
Subject: 2011 Purple Loosestrife Annual Monitoring Report

Kevin, Cheryl and Nick:

In compliance with the FERC Order Amending WVIC's Purple Loosestrife Control Plan dated June 16, 2009, I am submitting WVIC's Purple Loosestrife Annual Monitoring Report – 2011 for your review and comment. The report also contains WVIC's proposed purple loosestrife monitoring plan for 2012.

Please provide any comments to my attention via email or at the mailing address below by November 21, 2011.

Thank you.

Dave

David M. Coon
Director, Environmental Affairs

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