#### CONSOLIDATED WATER POWER COMPANY

General Offices P.O. Box 8050 Wisconsin Rapids, WI 54495-8050 A subsidiary of NewPage Corporation

October 23, 2008

Office of the Secretary, Federal Energy Regulatory Commission 888 1<sup>st</sup> Street, N.E. Washington, D.C. 20426

Little Quinnesec Falls Hydroelectric Project, FERC No. 2536 – Article 409, 2008 Exotic Species Report

In accordance with the Commission order approving the monitoring plan for Purple Loosestrife and Eurasian Water Milfoil (EWM) within the Project boundary, we are submitting the enclosed report for 2008. During the 2008 survey, 4 sites were observed with EWM, down drastically from 2007. The three 2008 sites approved by the Michigan Department of Environmental Quality for chemical treatment were effectively treated and no EWM was observed during the August survey. Agency consultation proposed the following 2009 treatment plans: (1) no chemical treatment to evaluate 2008 chemical treatment impacts and (2) develop a weevil strategy plan for site K downstream of Big Quinnesec Falls. We (NewPage) agree with the consultation recommendations and will develop a weevil strategy plan this winter for agency review by April 30, 2009.

No evidence of Purple Loosestrife was found within the Project. However, we (NewPage) will work with the City of Niagara to coordinate chemical treatment of Purple Loosestrife along the shoreline downstream of the project boundary.

Enclosed in the report are details describing the two-dosage herbicide treatment approach undertaken to control Eurasian Milfoil within the Project Boundary.

Appropriate signage and brochures are located at the river boat access sites detailing specific control measures for exotic species.

Sincerely,

NEWPAGE CORPORATION

Shomes J. With

Thomas J. Witt Resources Manager

Enclosure: White Water Associates, Inc. Report

- CC: File (Little Quinnesec Falls, LG-90-30 Article 409) K.F. Goodreau – N
  - Ms. Peggy A. Harding, Regional Director FERC, Chicago, IL
  - Ms. Jessica Mistak Michigan Department of Natural Resources, 484 Cherry Creek Road, Marquette, MI 49855
  - Mr. John Suppnick, Michigan Department of Environmental Quality, 300 S. Washington, 2<sup>nd</sup> Floor, Knapp Center, Lansing, MI 48933
  - Mr. Michael Donofrio, Wisconsin Department of Natural Resources, 101 North Ogden, Peshtigo, WI 54157
  - Ms. Louise Clemency, U.S. Fish & Wildlife Service, New Franken, WI 54311-8331
  - Mr. Don Novak, Administrator, City of Niagara, 1029 Roosevelt Road, Niagara, WI 54151 Ms. Angie Tornes – National Park Service, Milwaukee, WI

# Appendix A – Consultation Letter and Responses 2008

### CONSOLIDATED WATER POWER COMPANY

General Offices P.O. Box 8050 Wisconsin Rapids, WI 54495-8050 A subsidiary of NewPage Corporation

October 6, 2008

Ms. Jessica Mistak Michigan Department of Natural Resources 484 Cherry Creek Road Marquette, MI 49855

Mr. John Suppnick Michigan Department of Environmental Quality 303 S. Washington 2<sup>nd</sup> Floor, Knapp Center Lansing, MI 48933

Mr. Michael Donofrio Wisconsin Department of Natural Resources 101 North Ogden Pestigo, WI 54157

Ms. Louise Clemency U.S. Fish & Wildlife Service Green Bay Field Office 2661 Scott Tower Drive New Franken, WI 54229-9565

Ms. Angie Tornes National Park Service 626 E. Wisconsin Avenue, Suite 100 Milwaukee, WI 53202

Little Quinnesec Falls Hydroelectric Project, FERC No. 2536 – Article 409, 2007 Exotic Species Report for Agency Consultation

In accordance with the Commission order approving the monitoring plan for Purple Loosestrife and Eurasian Milfoil within the Project boundary, we are email attaching the 2008 report for your review and consultation. The actual report will be mailed within the next three weeks.

During the 2008 survey, 4 sites were observed with Eurasian Water Milfoil (EWM), down drastically from 2007. The three 2008 sites approved by the Michigan Department of Environmental Quality for chemical treatment where effectively treated and no EWM was observed at the sites during the August survey. Attached is the final report describing the herbicide treatment undertaken to control Eurasian Milfoil within the Project Boundary.

It is recommended for consultation review that no sites be chemically treated for EWM in 2009 to allow time to survey the 2008 chemically treated sites, the revegetation of EWM and other aquatic plant life response to the chemical treatment. The aerial site K will be reviewed for possible weevil treatment in the next several years if the area continues to expand.

No evidence of Purple Loosestrife was found within the Project, however a few cut stalks were found further downstream on private property. The Niagara City Park (along HWY 141) downstream of the private properties and outside of the license survey area does have an abundance of Purple Loosestrife. We have recommended chemical treatment of this area to the city of Niagara. The city of Niagara has agreed to this recommendation and we will recommend a suitable chemical to be applied in 2009 by the city.

Appropriate signage informing area users of the river are located at the boat access sites. Additionally, this information is being forwarded to the City of Niagara concurrent with this filing recommending that they treat the Purple Loosestrife in accordance with our consultant's 2008 report.

To simplify the transmission of your comments, concerns and/or concurrence feel free to provide them via email at <u>tom.witt@newpagecorp.com</u>, telephonically at (715) 422-3927 or U.S. mail at the above address. All comments will be filed with the final plan to the FERC as evidence of consultation with the respective agencies.

Sincerely,

CONSOLIDATED WATER POWER COMPANY

Thomas (). With

Thomas J. Witt Resources Manager

Enclosure: White Water Associates, Inc. Report (email attachment)

cc: File (Little Quinnesec Falls, LG-90-30 Article 409– 2008 Exotic Species Report, consultation letter) Ken Goodreau – NewPage

	***		
vv	ITT	10	

From: Sent: To:	Jessica Mistak [MISTAKJL@michigan.gov] Wednesday, October 15, 2008 3:27 PM Louise Clemency - USFWS; John Suppnick; Witt, Tom; Angie (Angie, Tornes@nps.gov): Michael Donofrio@wisconsin.gov	Tornes
Cc: Subject:	Goodreau, Ken Re: Little Quinnesec Falls - Project No. 2536, 2008 Exotic	SpeciesReport

Hi Tom,

The Michigan Department of Natural Resources has reviewed the 2008 Exotic Species Report for Little Quinnesec Falls and we are encouraged to see that the treatment for Eurasian watermilfoil is proving effective.

We agree with your recommendations to not pursue chemical treatment for Eurasian watermilfoil in 2009 and, instead, monitor the vegetation response. We also agree that Site K may be a candidate for biological control and recommend that you put together a strategy for weevil introduction for agency review. In developing the strategy, you might want to contact Mike Grisar (Mike.Grisar@we-energies.com or (414) 221-5426) for insight on We Energies' success using weevils.

We appreciate your efforts in coordinating with the City of Niagara for treatment of purple loosestrife downstream of the project boundary.

Thank you, Jessica

Jessica Mistak, Senior Fisheries Biologist DNR Marquette Fisheries Station 484 Cherry Creek Rd Marquette, MI 49855 906-249-1611 ext. 308 FAX 906-249-3190

>>> "Witt, Tom" <Tom.Witt@newpagecorp.com> 10/06/2008 11:08 AM >>> Attached is the cover letter for the Little Quinnesec Falls Hydroelectric Project (FERC No. 2536) detailing the summary and consultation review request for the Article 409, 2008 Exotic Species Report. The actual 2008 Exotic Species Report is also attached.

I will be following up on this email by phone in the next several weeks to review the report and recommendations for 2009 Eurasian Water Milfoil treatment. This review will be incorporated into the 2008 FERC annual filing.

Thomas J. Witt Resources Manager Consolidated Water Power Company (715) 422-3927

This electronic message contains information from NewPage Corporation or subsidiary companies, which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify NewPage immediately at postmaster@newpagecorp.com.

1

Witt, Tom

From: Sent: To:	Witt, Tom Thursday, October 16, 2008 9:08 AM Jessica Mistak; Louise Clemency - USFWS; John Suppnick; Angie Tornes (Angie Tornes@pps.gov): Michael Donofrio@wisconsin.gov
Cc: Subject:	Goodreau, Ken; Witt, Tom RE: Little Quinnesec Falls - Project No. 2536, 2008 Exotic SpeciesReport
The Little Quinnesed	Falls Hydroelectric Project No. 2536 will work on a strategy for

weevil introduction at Site K over this coming winter to introduce for agency review. I will check with WE Energies and the City of Norway on their weevil introduction findings.

Thomas J. Witt Resources Manager Consolidated Water Power Company (715) 422-3927

-----Original Message-----From: Jessica Mistak [mailto:MISTAKJL@michigan.gov] Sent: Wednesday, October 15, 2008 3:27 PM To: Louise Clemency - USFWS; John Suppnick; Witt, Tom; Angie Tornes (Angie\_Tornes@nps.gov); Michael.Donofrio@wisconsin.gov Cc: Goodreau, Ken Subject: Re: Little Quinnesec Falls - Project No. 2536, 2008 Exotic SpeciesReport

Hi Tom, The Michigan Department of Natural Resources has reviewed the 2008 Exotic Species Report for Little Quinnesec Falls and we are encouraged to see that the treatment for Eurasian watermilfoil is proving effective.

We agree with your recommendations to not pursue chemical treatment for Eurasian watermilfoil in 2009 and, instead, monitor the vegetation response. We also agree that Site K may be a candidate for biological control and recommend that you put together a strategy for weevil introduction for agency review. In developing the strategy, you might want to contact Mike Grisar (Mike.Grisar@we-energies.com or (414) 221-5426) for insight on We Energies' success using weevils.

We appreciate your efforts in coordinating with the City of Niagara for treatment of purple loosestrife downstream of the project boundary.

Thank you, Jessica

Jessica Mistak, Senior Fisheries Biologist DNR Marquette Fisheries Station 484 Cherry Creek Rd Marquette, MI 49855 906-249-1611 ext. 308 FAX 906-249-3190

>>> "Witt, Tom" <Tom.Witt@newpagecorp.com> 10/06/2008 11:08 AM >>> Attached is the cover letter for the Little Quinnesec Falls Hydroelectric Project (FERC No. 2536) detailing the summary and consultation review request for the Article 409, 2008 Exotic Species Report. The actual 2008 Exotic Species Report is also attached.

I will be following up on this email by phone in the next several weeks to review the report and recommendations for 2009 Eurasian Water Milfoil treatment. This review will be incorporated into the 2008 FERC annual filing.

Thomas J. Witt Resources Manager Consolidated Water Power Company (715) 422-3927

This electronic message contains information from NewPage Corporation or subsidiary companies, which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify NewPage immediately at postmaster@newpagecorp.com.

This email has been scanned for all viruses by the MessageLabs SkyScan service.

2

W	itt,	Tom	

From:	Witt, Tom
Sent:	Friday, October 17, 2008 9:34 AM
10:	Donofrio, Michael C - DNR'; Jessica Mistak; Louise Clemency - USFWS; John Suppnick;
Cc:	Goodreau Ken
Subject:	RE: Little Quinnesec Falls - Project No. 2536, 2008 ExoticSpeciesReport
Thank you for this winter.	your response. NewPage will incorporate MDNR thoughts into a strategy over
Thomas J. Witt	
Resources Mana	ger
(715) 422-3927	ater Power Company
Original 1 From: Donofrio	Message Michael C - DNR [mailto:Michael Dopofrio@wisconsin gov]
Sent: Friday, (	October 17, 2008 9:07 AM
Cc: Goodreau, 1	Ken Ken
Subject: RE: L	ittle Quinnesec Falls - Project No. 2536, 2008 ExoticSpeciesReport
We agree with M	MIDNR comments
P Michael Donot	Frio
Peshtigo Fisher	cies Supervisor
Bureau of Fishe	eries Management
Wisconsin Depar	rtment of Natural Resources
101 N Ogden Rd, Daabting WT F	P.O. Box 208
(*) phone:	(715)582-5050
(*) fax:	(715) 582–5005
(*) e-mail:	Michael.Donofrio@Wisconsin.gov
Original M	lessage
rom: Witt, Tom	[mailto:Tom.Witt@newpagecorp.com]
Sent: Thursday,	October 16, 2008 9:08 AM
ichael C - DNR	Car; Louise Clemency - USEWS; John Supphick; Tornes, Angle; Donofrio,
c: Goodreau, K	en; Witt, Tom
ubject: RE: Li	ttle Quinnesec Falls - Project No. 2536, 2008 ExoticSpeciesReport
be Little Ouin	nesec Falls Hydroclostric Draiget No. 2526 will woll as a start of Su
eevil introduc ill check with	We Energies and the City of Norway on their weevil introduction findings.
homas J. Witt	
esources Manage	er
onsolidated Wat 715) 422-3927	ter Power Company
Original Me	essage
com: Jessica Mi	stak [mailto:MISTAKJL@michigan.gov]
. Louise Clore	UCLODER 15, 2008 3:27 PM
ngie_Tornes@np	mcy - Usrws; Jonn Suppnick; Witt, Tom; Angie Tornes S.gov); Michael.Donofrio@wisconsin.gov
	<b>1</b>

Cc: Goodreau, Ken Subject: Re: Little Quinnesec Falls - Project No. 2536, 2008 Exotic SpeciesReport

Hi Tom, The Michigan Department of Natural Resources has reviewed the 2008 Exotic Species Report for Little Quinnesec Falls and we are encouraged to see that the treatment for Eurasian watermilfoil is proving effective.

We agree with your recommendations to not pursue chemical treatment for Eurasian watermilfoil in 2009 and, instead, monitor the vegetation response. We also agree that Site K may be a candidate for biological control and recommend that you put together a strategy for weevil introduction for agency review. In developing the strategy, you might want to contact Mike Grisar (Mike.Grisar@we-energies.com or (414) 221-5426) for insight on We Energies' success using weevils.

We appreciate your efforts in coordinating with the City of Niagara for treatment of purple loosestrife downstream of the project boundary.

Thank you, Jessica

Jessica Mistak, Senior Fisheries Biologist DNR Marquette Fisheries Station 484 Cherry Creek Rd Marquette, MI 49855 906-249-1611 ext. 308 FAX 906-249-3190

>>> "Witt, Tom" <Tom.Witt@newpagecorp.com> 10/06/2008 11:08 AM >>> Attached is the cover letter for the Little Quinnesec Falls Hydroelectric Project (FERC No. 2536) detailing the summary and consultation review request for the Article 409, 2008 Exotic Species Report. The actual 2008 Exotic Species Report is also attached.

I will be following up on this email by phone in the next several weeks to review the report and recommendations for 2009 Eurasian Water Milfoil treatment. This review will be incorporated into the 2008 FERC annual filing.

Thomas J. Witt Resources Manager Consolidated Water Power Company (715) 422-3927

This electronic message contains information from NewPage Corporation or subsidiary companies, which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify NewPage immediately at postmaster@newpagecorp.com.

This email has been scanned for all viruses by the MessageLabs SkyScan service.

This electronic message contains information from NewPage Corporation or subsidiary companies, which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify NewPage immediately at postmaster@newpagecorp.com.

### **PROJECT REPORT**

# Monitoring The Little Quinnesec Falls Hydroelectric Project for Eurasian Water Milfoil and Purple Loosestrife

FERC Hydro Project No. 2536, Little Quinnesec Falls



### Prepared for:

NewPage Corporation Ken Goodreau, Utilities & Engineering Manager 1101 Mill Street, Niagara, WI. 54151 Thomas J. Witt, Resources Manager Consolidated Water Power Company P.O. Box 8050, Wisconsin Rapids, WI 54495

### Prepared by:

White Water Associates, Inc. (With contributions from Thomas Witt) Contact: Dean B. Premo, Ph.D., Senior Ecologist 429 River Lane, P.O. Box 27 Amasa, Michigan 49903

Date: September 2008

## **PROJECT REPORT**

# Monitoring The Little Quinnesec Falls Hydroelectric Project for Eurasian Water Milfoil and Purple Loosestrife FERC Hydro Project No. 2536, Little Quinnesec Falls

Fieldwork:	David Tiller, B.S., Field Biologist Bill Artwich, Field Biologist Thomas Witt (Consolidated Water Power Co.)
Data Analysis And Report	Dean Premo, Senior Ecologist Kent Premo, Technical Support Scientist David Tiller, B.S. Field Biologist Thomas Witt (Consolidated Water Power Co.)
Cite as:	Premo, Dean, David Tiller, Kent Premo, and Thomas Witt. 2008. Monitoring the Little Quinnesec Falls Hydroelectric Project for Eurasian Water Milfoil and Purple Loosestrife (FERC Hydro Project No. 2536, Little Quinnesec Falls). Report to Consolidated Water Power Company (subsidiary of NewPage Corporation) by White Water Associates, Inc.

# TABLE OF CONTENTS

SUMMARY	1
INTRODUCTION AND BACKGROUND	2
METHODS	3
FINDINGS	4
Eurasian Water Milfoil	4
Purple Loosestrife	6
CONCLUSIONS	7

Appendix A – FIGURES AND TABLES

Appendix B – PHOTOS

Appendix C – EURASIAN WATER MILFOIL HERBICIDE TREATMENT REPORT

# List of Figures and Tables in Appendix A

Figure 1. Locations of Eurasian water milfoil (EWM) in the Little Quinnesec Falls Project (FERC #2536), 2002-2008.

Table 1. History of Eurasian water milfoil (*Myriophyllum spicatum* L.) in the Little Quinnesec Falls Project (FERC #2536).

Table 2. Summary of Eurasian water milfoil in the Little Quinnesec Falls Project (FERC #2536).

# List of Photos in Appendix B

Photo 1. *Mryiophyllum spicatum* (Eurasian water milfoil) with a typical number of leaflets (14 on this specimen -counting on one side of the leaf).

Photo 2. Eurasian water milfoil leaf with a typical number of leaflets (14 on this specimen - counting on one side of the leaf).

Photo 3. Eurasian water milfoil leaf with a typical number of leaflets and some calcium precipitate encrusting the leaf.

Photo 4. Eurasian water milfoil leaf displaying no evidence of weevil damage to the stems.

# List of Contents in Appendix C

September 29, 2008, Memo to Dean Premo (White Water Associates) from Tom Witt (Stora Enso). A narrative detailing the 2008 treatment of Eurasian Water Milfoil with herbicide on selected sites in the Little Quinnesec Falls Project area.

Menominee River Backwater Areas Aquatic Vegetation Survey Maps (4 pages).

Standard Aquatic Vegetation Assessment Site Species Density Sheet (completed on 5/29/2008 by Wisconsin Lake and Pond Resource, LLC) (3 pages).

Standard Aquatic Vegetation Assessment Site Species Density Sheet (completed on 7/9/2008 by Wisconsin Lake and Pond Resource, LLC) (3 pages).

Standard Aquatic Vegetation Assessment Site Species Density Sheet (completed on 8/6/2008 by Wisconsin Lake and Pond Resource, LLC) (3 pages).

### SUMMARY

Monitoring for Eurasian water milfoil (*Myriophyllum spicatum*) and purple loosestrife (*Lythrum salicaria*) was conducted on the Little Quinnesec Falls Project (FERC Hydro Project No. 2536) in 2008 as required by Article 409 of the FERC order issuing a project license. Annual monitoring for these species has occurred at this project since 1998. Both plants have been reported in the Menominee River basin since 1990 although none in the project area before 2002.

Scientists from White Water Associates (an independent consulting firm) conducted fieldwork from a boat and on foot on August 7 and 8, 2008. Tom Witt (Consolidated Water Power Company; subsidiary of NewPage Corporation) assisted the White Water team.

The project area continues to have a robust diversity of native aquatic plants including native water milfoils. In 2008, four sites were documented with rooted Eurasian water milfoil. This was a decrease of ten sites since 2007. Three of the sites (Sites D, L, and O) where Eurasian water milfoil was not observed be attributed to a 2008 herbicide treatment targeted at this invasive species. Eurasian water milfoil had not previously been recorded at one of the four 2008 sites. Three of the four 2008 sites had fifteen or fewer Eurasian water milfoil. One site (Site K) had an estimated 200 plants in 2008 (an increase from 2007). In 2008, there was a decrease in the number of sites of occurrence of Eurasian water milfoil and a relatively smaller decrease in numbers of plants. As in 2007, the actual area of coverage remains very small in 2008. Sites where Eurasian water milfoil has been found are shallow backwaters and areas with little current. In all cases, the species is part of a diverse community of native plants that seemingly keeps it in check. Eurasian water milfoil should continue to be monitored in the project area, especially those areas where chemical treatments have been applied.

Purple loosestrife plants were not observed in the project area in 2008. Nevertheless, immediately downstream of the project area a few plants were observed on private lots. A number of purple loosestrife plants were also observed at the Niagara City Park downstream of the project area.

### INTRODUCTION AND BACKGROUND

Monitoring for Eurasian water milfoil (*Myriophyllum spicatum*) and purple loosestrife (*Lythrum salicaria*) was conducted on the Little Quinnesec Falls Project (FERC Hydro Project No. 2536) in 2008 as required by Article 409 of the FERC order issuing a project license. Annual monitoring for these non-native plant species has occurred at this project since 1998. There have been reports of both Eurasian water milfoil and purple loosestrife within the Menominee River basin since 1990 although none from the project area prior to 2002. Eurasian water milfoil has been reported since 1995 from the Twin Falls Flowage immediately upstream of the project area.

Neither Eurasian water milfoil nor purple loosestrife were reported from the Little Quinnesec Falls project during surveys conducted for the license application process (1990) and neither species was confirmed within the project area during monitoring in 1998, 1999, 2000, or 2001. Eurasian water milfoil was first documented in 2002 by observation of a few plants at two locations. Most locations where Eurasian water milfoil has been found since 2002 have been small areas containing small numbers of individual plants mixed within a diverse community of native aquatic plants. Since 2006, a couple of relatively small areas hosted larger numbers of Eurasian water milfoil (one to two hundred individual plants). "Beds" or "colonies" where Eurasian water milfoil is the dominant plant have not been observed in the project area through 2007. In 2002, several specimens of Eurasian water milfoil and both native water milfoil species (*M. sibiricum* and *M. heterophyllum*) were collected from the Little Quinnesec Falls project area and sent to experts Drs. Donald Les and Michael Moody of the University of Connecticut for further identification by genetic analysis. Their analysis of these specimens indicated that no hybrids were present, only the pure forms of each of the three species.

Purple loosestrife was first in 1998 growing along the Wisconsin shoreline of the river below the Little Quinnesec Dam (about 100 feet below the public access site). This area is within the one-quarter mile project survey area. Each year White Water Associates staff removed these plants by hand pulling, but they persisted until 2005 when they were absent. In 2005 a single non-flowering plant and two flowering plants were found near the first private property residence about 30 feet downstream of the original patch. White Water staff pulled these plants in 2005 and they were absent in 2006. In 2007, six flowering purple loosestrife plants were observed along the Wisconsin shoreline downstream of the rafter's boat launch. These were removed, bagged and disposed of by Stora Enso staff. Downstream from this area, and outside the project survey area,

there were numerous flowering purple loosestrife plants in 2007. The City of Niagara was contacted by Stora Enso (hereafter "NewPage") staff and agreed to dispose of these plants.

This document reports on 2008 survey results and presents information in five sections: (1) Summary, (2) Introduction and Background, (3) Methods, (4) Findings, and (5) Conclusions. Three appendices are included: Appendix A with a figure and tables; Appendix B with photos; and Appendix C with a report describing an herbicide treatment of Eurasian water milfoil conducted by NewPage and a contractor in 2008.

#### METHODS

The fieldwork for the survey was completed on August 7 and 8, 2008. Tom Witt (NewPage) participated in the two-day survey along with David Tiller and Bill Artwich of White Water Associates. The reservoir and the river downstream of the dam were surveyed. We used a 14-foot boat and 9.9 HP engine to survey the shoreline and other likely areas between the Little Quinnesec Falls Dam and the more upstream Big Quinnesec Falls Dam, including the numerous backwater wetlands. Most of the backwater wetlands are shallow and densely vegetated with a diversity of aquatic plants making motor use difficult. Relatively shallow backwater areas encountered during the survey made it difficult to access a number of remote backwaters.

We visually surveyed for Eurasian water milfoil in aquatic plant beds and took samples by hand and metal garden rake. We closely examined the leaves of suspect plants, counting leaflets (average number of leaflets is the main morphological trait used to separate the native northern water milfoil (*Myriophyllum sibiricum*) from Eurasian water milfoil, although there is considerable variability within each species. Generally, the average number of leaflets for northern water milfoil is 5-11 with a reported maximum of 13. The average number for Eurasian water milfoil is 14-17 with a maximum of 20. Also useful later in the season is the presence of winter buds (turions) on northern water milfoil, structures not found on Eurasian water milfoil. Where Eurasian water milfoil was observed, we also examined for evidence of weevil herbivory.

In May and July 2008, NewPage (with assistance from a contractor) treated three areas of the impoundment that harbored Eurasian water milfoil. A description of the treatments and outcomes was prepared by Tom Witt of NewPage and is included as Appendix C.

Purple loosestrife when flowering is showy and easily identified. Peak blossoming extends from late July through August in northern Michigan. All wetlands and backwaters connected to the project area reservoir were visually inspected. Binoculars were used to scan the shore and less accessible backwaters. The project area downstream of the Little Quinnesec Falls dam was surveyed on foot and from a 17-foot canoe on August 8, 2008. As a single loosestrife plant can produce prodigious quantities of seeds, physical on-site surveys are necessary to ensure thorough survey.

### FINDINGS

This report section presents the findings from the 2008 survey and integrates information from past surveys to provide insight into population dynamics of Eurasian water milfoil and purple loosestrife in the Little Quinnesec Falls project area.

### **Eurasian Water Milfoil**

The project area continues to have a robust diversity of native aquatic plants. Native water milfoils in the flowage include *Myriophyllum heterophyllum* and *M. sibiricum. Vallisneria americana* and *Potamogeton richardsonii* continue to be some of the most abundant species throughout the flowage. Other species comprising the aquatic plant community include *Elodea canadensis, Elodea nuttallii, Potamogeton spirillus, P. epihydrus, P. diversifolius, P. zosterformis, P. robbinsii, Zosterella dubia, Ceratophyllum demersum, Ranunculus longirostris, Utricularia vulgaris, and Megalodonta beckii.* 

The aerial photo shown in Figure 1 summarizes shows all sites where Eurasian water milfoil has been detected in the Little Quinnesec Falls project area since 2002. Table 1 presents additional information about these areas, including the latitude/longitude, selected backwater surface area, estimated number of plants observed, and plant surface area involved. Table 2 summarizes the data over all years to provide historical context.

As in past years of monitoring at the Little Quinnesec Falls project area, the plants identified as Eurasian water milfoil exhibit considerable morphological variation. The numbers of leaflets are sometimes intermediate between the northern water milfoil and the Eurasian water

milfoil. Appendix B presents photos that illustrate some of the variability (these photos were taken during the 2006 survey).

In the 2008 survey, we detected four sites in the project area with rooted Eurasian water milfoil. This represents a decline of overall number of sites (fourteen sites were detected in 2007). Only one of the four 2008 sites had not had Eurasian water milfoil in the past. This single new site (Site T, see Figure 1) had six plants. Three of the four 2008 sites had fifteen or fewer Eurasian water milfoil (Sites A, I, and T). Site K had an estimated 200 plants in 2008 (an increase from 2007).

Site I (see Figure 1) is the original location for Eurasian water milfoil on the Little Quinnesec Falls project area. It has consistently had a few rooted plants in 2002, 2003, 2004, and 2005. Despite very thorough searching in this area, we could not detect any plants in 2006. The shallow backwater level encountered during the 2007 survey prevented us from thoroughly searching the vicinity of Site I. In 2008, we found nine Eurasian water milfoil plants at Site I in the area between the north and south arms of this bay.

The number of sites with Eurasian water milfoil decreased in 2008 (relative to 2007). The number of plants and the surface area of coverage were reduced as well. Much of this difference resulted from the loss of plants from three areas that were chemically treated in 2007 and 2008. We did not observe Eurasian water milfoil at chemically treated Sites D, L, and O in 2008. Likewise, no Eurasian water milfoil was observed at Site E. This site is located immediately downstream of Site L and may have been affected by the herbicide treatment at Site L although other sub-populations sometimes disappear for no apparent reason (more on this topic below).

Site D has had Eurasian water milfoil from 2004 to 2007, but none was observed in 2008 (this area has had two years of chemical treatment, see Appendix C). The diversity and abundance other aquatic plants were reduced at Site D in 2008 (as compared to previous monitoring years). Site D is part of a human-created canal system that extends from the river (see Figure 1). The conditions of Site D were thoroughly described in the 2007 monitoring report. Site D was treated with herbicide in 2007 and 2008 (the 2008 activity and its outcomes are described by a report in Appendix C).

Eurasian water milfoil were not observed at Site L in 2008 and were absent from the nearby (downstream) Site E. Like Site D, Site L was treated with herbicide in 2007 and 2008 and more detail can be gleaned in Appendix C. We observed filamentous algae at Site E.

Over the years of monitoring at the Little Quinnesec Falls Project we have noted that small sub-populations of Eurasian water milfoil come and go and (rarely) come back again. No

Eurasian water milfoil was observed at Sites F, H, N, and P in 2008, but all had small populations (fifteen or fewer plants) in the previous year. Site I was the site of the original find of Eurasian water milfoil in the Little Quinnesec Falls Project (first detected in 2002). It was present in very small numbers (see Table 1) through 2005. We observed no Eurasian water milfoil at Site I in 2006 and 2007, but it was observed in the 2008 survey. The reasons for this rather tenuous hold for some of these small sub-populations are unknown, but may indicate the relative difficulty of invading a thriving native plant community.

The actual surface area coverage of Eurasian water milfoil relative to the size of the impoundment remains very small (see Table 2 for summary). We used 349 acres as the size of the project area when calculating percentages. Clearly not all of the impoundment is suitable to Eurasian water milfoil because of depth or water current. Using aerial photo interpretation and inthe-field ground-truthing, we roughly estimate that between 100 and 150 acres of the project area might be suitable Eurasian water milfoil habitat (primarily consisting of shoreline areas and quiet backwaters). Even if this more conservative estimate of habitat is used the relative amount of coverage of existing Eurasian water milfoil is miniscule. The sites where Eurasian water milfoil has been found in the Little Quinnesec Fall project have been fairly shallow backwaters and areas with little current. In all cases, the species is part of a diverse and healthy community of native aquatic plants including Potamogeton foliosus, Ranunculus longgirostris, Utricularia vulgaris, Ceratophyllum demersum and the native milfoil, Myriophyllum sibiricum. In most of the sites where it is found as a rooted plant, the number of plants is very low. Eurasian water milfoil does not appear to be "taking over" the locations in which it is found, although the population size at Site K has increased. Future observations of chemically treated sites may provide interesting insight regarding the persistence of both the native flora and Eurasian water milfoil.

### **Purple Loosestrife**

As in past years of the survey, no purple loosestrife was found within the portion of the project area, lying between the Little Quinnesec Dam and the Big Quinnesec Dam.

Purple loosestrife has been found each year starting in 1998 until present growing along the Wisconsin shoreline of the river downstream of the Little Quinnesec Dam about 100 feet downstream of the public access site. This area is within the one-quarter mile project survey area. Each year, White Water Associates staff removed these plants by hand pulling, but the plants

persisted until 2005 when they were absent. In 2005, a single non-flowering plant and two flowering plants were found near the first private property residence about 30 feet downstream of the original patch. White Water Associates staff pulled these three plants in 2005 and this site was absent of plants in 2006 and 2007. In 2007, we observed no purple loosestrife on the Michigan side of the river below the Little Quinnesec Falls Dam. In 2007, six purple loosestrife plants were located on the Wisconsin side of the river, downstream of the rafter's boat launch. NewPage staff removed, bagged, and disposed of these plants. Additional purple loosestrife plants were observed on the Wisconsin shoreline outside of the project survey area along the Niagara City Park. The City of Niagara was contacted by NewPage staff and agreed to dispose of these plants.

In 2008, we observed no purple loosestrife plants on corporate property downstream of the Little Quinnesec Dam. There were, however, cut or broken plants on private property (residences) on the Wisconsin side of the river. We also observed more purple loosestrife on the Niagara City Park. Niagara City Park officials have been contacted by NewPage. Park officials are considering a plan to chemically treat the purple loosestrife. NewPage will submit to City Park officials a chemical MSDS to reference for chemical purchase.

A single pulling of purple loosestrife plants is not sufficient to eliminate the species as it can sprout from fragments of roots left in the soil, or seeds still present in the seed bank. Removal of the flowering stalks each year limits the number of seeds produced and the species' ability to propagate via seeds. More effective control would require application of herbicide to freshly cut stems. Repeated pulling of the existing stems of loosestrife has prevented it from blooming and spreading and may finally effect its complete eradication at this site.

### CONCLUSIONS

Eurasian water milfoil is known for spreading rapidly, usurping space, and dominating the aquatic plant community. Over the years at the Little Quinnesec Falls Project area, the Eurasian water milfoil has been quite limited in occurrence and numbers. It may be that the robust populations of native plants help keep this invasive species in check. In 2008, there was a decrease in the number of sites of occurrence of Eurasian water milfoil (four sites as compared to fourteen in 2007) and a relatively smaller decrease in numbers of plants. As in 2007, the actual area of coverage remains very small in 2008. Three of the four 2008 sites had fifteen or fewer plants. Eurasian water milfoil should continue to be monitored in the project area for changes in

extent and population size, especially those areas where chemical treatments have been applied to diminish Eurasian water milfoil population.

During our field surveys in 2006, we attempted to hand-pull some of the individual Eurasian water milfoil plants, but found this to be an impractical means of control in this setting. First of all there is uncertainty about getting the underground portion of the plant and a danger of fragmenting the upper portions and setting some adrift to possibly colonize other areas. The process of wading or swimming and pulling the plants muddles the water making for difficult visibility. We also tried using a rake to pull the plants but the same difficulties exist as with the hand pulling. An attempt at herbicide control of Eurasian water milfoil at three project area sites showed little or no effect in 2007. In 2008, increased chemical dosage at these same sites appears to have been very effective in reducing Eurasian water milfoil in the 2008 season. Future monitoring will help determine the long-term result of this chemical treatment. See Appendix C for more details on the chemical treatment of 2008.

Purple loosestrife plants were not observed in the project area in 2008. Nevertheless, a number of plants exist immediately downstream of the project area on private and public land. Judging from the previous years' experience, hand pulling and disposal appears to be successful at controlling the spread of purple loosestrife downstream of the Wisconsin rafter's boat launch. Nevertheless, persistence in this effort is necessary.

In 1999, brochures on loosestrife control were made available to the public. Warning signs from the Wisconsin DNR, advocating that boaters clean their boats and motors of any plant material from other bodies of water, were posted at boat landings in 2001 and are still present.

# APPENDIX A Location and History of Eurasian Water Milfoil

(FIGURE 1, TABLES 1 AND 2)



<b>Fable</b>	1. His	story of Eura	sian Wate	er Milfoil	(Myriop	hyllum s	spicatum	L.) in the Little	Quinnes	ec Falls Project (FERC #2536)
Site	Year	Latitude & Longitude Coordinates	Present (Y/N)	Rooted (Y/N)	Number of Plants	Surface Area (sq. ft).	Surface Area (acres)	% Project boundary acres (349 acres)	Weevil evidence (Y/N) <sup>1</sup>	Comments
۲	2004	45.78759 -88.03029	≻	z	~	2	0.00005	0.000000		Floating un-rooted mass (ca. 4 square feet) of <i>M. spicatum</i> at entrance to small bay.
A	2006		≻	×	2	4	60000.0	0.000000	z	After absence in 2005, two rooted <i>M.</i> s <i>picatum</i> in 2006.
A	2007		≻	×	2	4	60000.0	0.00000	z	Two rooted <i>M. spicatum</i> plants among abundant native milfoil and bladderwort.
A	2008		≻	~	12	24	0.00028	0.000001	z	Twelve rooted <i>M. spicatum</i> plants among abundant native milfoil and bladderwort.
В	2005	45.78848 -88.03040	≻	z	۲	2	0.00005	0.000000		Small un-rooted mass (ca. 2 square feet) of <i>M. spicatum</i> floating downstream.
υ	2002	45.79125 -88.02352	≻	~	2	4	0.00009	0.00000		Two rooted plants present in 2002, but absent in subsequent years.
Ω	2004	45.79701 -88.00139	≻	×	9	12	0.00028	0.000001		A few rooted plants of <i>M. spicatum</i> , mixed with a variety of native aquatic plants.
Ω	2005		≻	×	10	20	0.00046	0.000001		A few rooted plants of <i>M. spicatum</i> , mixed with a variety of native aquatic plants.
Ω	2006		~	$\succ$	100	200	0.00459	0.000013	z	Rooted plants have increased in number to ca. 100 rooted plants approximately 150 feet in either direction from the GPS point.
Ω	2007		≻	×	100	200	0.00459	0.000013	z	Rooted plants at about the same number and dispersion as in 2006.
D	2008		z							Chemically treated area with no <i>M. spicatum</i> and few other macrophytes observed.
Ш	2004	45.7963 -87.99399	Y	z	٢	2	0.00005	0.00000		Floating un-rooted mass (ca. 2 square feet) of <i>M. spicatum</i> found along river's edge.
ш	2006		>	≻	4	ω	0.00018	0.00001	z	After an absence in 2005, 4 rooted plants were present in 2006. These are downslope from several houses on the bank and docks that accommodate boats and pontoon boats.

sec Falls Project (FERC #2536)	Comments	Three rooted plants observed in 2007 in conditions similar to 2006.	None were present in the 2008 survey. Few aquatic macrophytes present; significant filamentous algae present.	Floating un-rooted mass (ca. 2 square feet) of <i>M. spicatum</i> found along river's edge right at the mouth of Fumee Creek.	Two rooted <i>M. spicatum</i> found along river's edge right at the mouth of Fumee Creek.	Two rooted <i>M. spicatum</i> found along river's edge right at the mouth of Fumee Creek.	No M. spicatum observed (only native milfoil)	Floating un-rooted mass (ca. 2 square feet) of <i>M. spicatum</i> caught along river's edge upstream of fire dock.	Floating un-rooted mass (ca. 2 square feet) caught along river's edge.	Fifteen rooted <i>M. spicatum</i> (each ca. 2 sq ft) were observed among a diverse community of native aquatic plants. Eight of these plants were just upstream of the downstream tip of the island on the were just upstream of the downstream tip of the island.	No M. spicatum observed in 2008.	A few rooted plants scattered within a species-rich community of native aquatic plants. This was original site for <i>M. spicatum</i> in the Little Quinnesec Falls Project area.
Quinnes	Weevil evidence (Y/N) <sup>1</sup>				z	z				z		
L.) in the Little	% Project boundary acres (349 acres)	0.000000		0.000000	0.000000	0.000000		0.000000	0.000000	0.00002		0.000000
picatum	Surface Area (acres)	0.00014		0.00005	60000.0	0.0000		0.0005	0.00005	0.00069		0.00014
hyllum s	Surface Area (sq. ft).	9		7	4	4		2	2	30		Q
(Myriop	Number of Plants	ю		-	7	7		۲	-	15		ε
er Milfoil	Rooted (Y/N)	~		z	≻	≻		z	z	>	Ν	~
sian Wat	Present (Y/N)	~	z	≻	~	~	z	≻	~	>	z	<b>&gt;</b>
tory of Euras	Latitude & Longitude Coordinates			45.7921 -87.98744				45.77982 -87.98366	45.77453 -87.98065			45.79204 -87.98893
1. His	Year	2007	2008	2004	2006	2007	2008	2004	2004	2007	2008	2002
Table	Site Code	ш	ш	ш	ш	ш	ш	ڻ ا	т	т	н	_

Table	1. His	tory of Eura	sian Wat	er Milfoil	(Myriop	hyllum s	picatum	L.) in the Little	Quinnes	ec Falls Project (FERC #2536)
Site Code	Year	Latitude & Longitude Coordinates	Present (Y/N)	Rooted (Y/N)	Number of Plants	Surface Area (sq. ft).	Surface Area (acres)	% Project boundary acres (349 acres)	Weevil evidence (Y/N) <sup>1</sup>	Comments
_	2003		>	~	4	12	0.00028	0.000001		A few rooted plants scattered within a species-rich community of native plants.
_	2004		~	≻	4	12	0.00028	0.000001		A few rooted plants scattered within a species-rich community of native plants.
_	2005		>	~	4	12	0.00028	0.000001		A few rooted plants scattered within a species-rich community of native plants.
_	2006		z							All M. spicatum were absent.
_	2007		z							The low water prevented entry into this bay in 2007. We assume no change since 2006.
_	2008		≻	≻	6	18	0.00021	0.00001	z	Nine plants scattered in channel between long bay and short bay.
<b>٦</b>	2006	45.79119 -88.01104	≻	z	-	N	0.00005	0.00000	z	Floating un-rooted mass (ca. 2 sq. feet) of <i>M. spicatum</i> in area of diverse native plants.
٦	2007		~	z	с	9	0.00014	0.000000	z	Floating un-rooted plant fragments (ca. 6 sq. feet) of <i>M. spicatum</i> in area of diverse native plants.
۔ ۲	2008		z							No M. spicatum observed in 2008.
х	2006	45.78674 -88.034822	٨	Y	3	9	0.00014	0.00000	z	Three rooted <i>M. spicatum</i> (each ca. 2 sq ft) observed in a bed of yellow water lilies.
х	2007		>	≻	100	200	0.00459	0.000013	z	Rooted plants have increased in number to ca. 100 rooted plants in an area approximately 100x300 feet. These plants are mixed in with <i>Nuphar, Valisineria</i> , and <i>Potamogeton richardsonii</i>
х	2008		>	≻	200	400	0.00918	0.00026	z	Rooted plants have increased in number to ca. 200 rooted plants in an area approximately 100x300 feet. These plants are mixed in with <i>Nuphar, Valisineria</i> , and <i>Potamogeton richardsonii</i>

Table	1. His	story of Euras	sian Wate	er Milfoil	(Myriop	hyllum s	spicatum	L.) in the Little	Quinnes	ec Falls Project (FERC #2536)
Site Code	Year	Latitude & Longitude Coordinates	Present (Y/N)	Rooted (Y/N)	Number of Plants	Surface Area (sq. ft).	Surface Area (acres)	% Project boundary acres (349 acres)	Weevil evidence (Y/N) <sup>1</sup>	Comments
	2006	45.796423 -87.996198	~	~	15	30	0.00069	0.000002	z	Fifteen rooted <i>M. spicatum</i> (each ca. 2 sq ft) were observed among a diverse community of native aquatic plants.
	2007		>	<b>≻</b>	15	30	0.00069	0.000002	z	Low water in 2007 prevented access into all parts of this bay, so it was estimated that the same number of rooted <i>M. spicatum</i> were present as in 2006 (among a diverse community of native aquatic plants).
	2008		z							This area was chemically treated in 2007 and 2008.
Σ	2006	45.78440 -87.984675	~	~	~	2	0.00005	0.000000	z	An individual rooted plant of <i>M. spicatum</i> (ca. 2 square feet) was observed among native plants at the mouth of a small bay.
Σ	2007		z							No M. spicatum were observed in 2007.
Σ	2008		z							No M. spicatum were observed in 2008.
z	2006	45.780751 -87.984406	~	~	Q	12	0.00028	0.000001	z	Six individual rooted <i>M. spicatum</i> (each ca. 2 sq ft) observed among a community of native plants at the mouth of a small bay.
z	2007		*	~	Q	12	0.00028	0.000001	z	Low water conditions during the 2007 survey prevented access to this shallow bay; we therefore assume conditions to be the same as in 2006.
z	2008		z	z						Low backwater conditions during the 2008 survey prevented thorough access to this shallow bay.
0	2006	45.791406 -87.985502	7	7	7	14	0.00032	0.000001	z	Seven individual rooted <i>M. spicatum</i> (each ca. 2 sq ft) observed among a diverse community of native plants in a bay upstream of Verso park.
0	2007		~	≻	9	12	0.00028	0.000001	z	Six individual rooted <i>M. spicatum</i> (each ca. 2 sq ft) observed among a community of native plants in bay upstream of Verso park.

Table	1. His	story of Euras	sian Wat	er Milfoil	(Myriop	hyllum s	spicatum	L.) in the Little	Quinnes	sc Falls Project (FERC #2536)
Site Code	Year	Latitude & Longitude Coordinates	Present (Y/N)	Rooted (Y/N)	Number of Plants	Surface Area (sq. ft).	Surface Area (acres)	% Project boundary acres (349 acres)	Weevil evidence (Y/N) <sup>1</sup>	Comments
0	2008		z							No <i>M. spicatum</i> were observed in 2008. This area was chemically treated.
٩	2007	45.790 -88.041	≻	≻	15	30	0.00069	0.000002	z	This was a new find in 2007 in an area just below the Big Quinnesec Dam on the north side of the river in a bay with little or no current. Distributed in an area of 10x20 feet.
٩.	2008		z	z						No M. spicatum were observed in 2008.
a	2007	45.7949 -88.0025	>	>	15	30	0.00069	0.000002	z	This new area was in the area where old man-made excavations (canals) were made. These plants were scattered throughout the backwater channel just outside of the created channels.
Ø	2008		z							No M. spicatum were observed in 2008.
Я	2007	45.7956 -88.0026	Y	γ	2	4	0.00009	0.00000		Two rooted plants present in 2007 among native plants.
R	2008		z							No M. spicatum were observed in 2008.
S	2007	45.789 -87.987	~	~	9	12	0.00028	0.000001	z	Six rooted <i>M. spicatum</i> (each ca. 2 sq ft) were observed among a community of native plants in quiet water along the river's edge.
S	2008		Z							No M. spicatum were observed in 2008.
Т	2008	45.79036 -88.03532	~	~	9	12	0.00028	0.000001	z	Six rooted <i>M. spicatum</i> (each ca. 2 sq ft) were observed among a community of native plants in quiet water along the river's edge.
И	2008	The area downstream of LQF Dam	z							<i>M. spicatum</i> was not observed in the portion of the project area that is downstream of the Little Quinnesec Falls Dam.

 $^1$ Field staff began checking for evidence of weevil herbivory on  $\underline{M}$ . <u>spicatum</u> in 2006.

# Table 2. Summary of Total Plant Observations of Eurasian Water Milfoil(EWM) in the Little Quinnesec Falls Project (FERC #2536)

· /				-	
Year of Survey	Number of Sites Observed with EWM	Estimated Number of Plants	Surface Area (square feet) <sup>1</sup>	Surface Area (acres) <sup>1</sup>	Percent Project Boundary Acres <sup>2</sup>
2002	2	5	10	0.00023	0.000001
2003	1	4	12	0.00028	0.000001
2004	2	15	34	0.00078	0.000002
2005	2	14	32	0.00073	0.000002
2006	8	139	278	0.00638	0.000018
2007	14 <sup>3</sup>	290	580	0.01331	0.000038
2008	4	213	426	0.00978	0.000028

<sup>1</sup> The surface area is based on the total number of plants (rooted and un-rooted) and assumes two square feet of surface area coverage (as viewed from above) for each plant.

<sup>2</sup> Calculation of percent project boundary acres assumes 349 acres for the project area.

<sup>3</sup> *The 2007 report indicated thirteen sites when, in fact, there were fourteen..* 

APPENDIX B (PHOTOS)



Photo 1. *Mryiophyllum spicatum* (Eurasian water milfoil) with a typical number of leaflets (14 on this specimen -counting on one side of the leaf).

Photo 2. Eurasian water milfoil leaf with a typical number of leaflets (14 on this specimen -counting on one side of the leaf).



Photo 3. Eurasian water milfoil leaf with a typical number of leaflets and some calcium precipitate encrust-ing the leaf (this specimen was from the humanmade channel designated Location D on Figure 1).





Photo 4. Eurasian water milfoil leaf displaying no evidence of weevil damage to the stems. (Despite careful inspection, no weevil evidence was detected on Eurasian water milfoil in the Little Quinnesec Falls population.)

# **APPENDIX C**

# Report on 2008 Herbicide Treatment for Eurasian Water Milfoil at selected sites in the Little Quinnesec Falls Project Area

By Tom J. Witt, Resources Manager Consolidated Water Power Company P.O. Box 8050 Wisconsin Rapids, WI 54495

### CONSOLIDATED WATER POWER COMPANY

General Offices P.O. Box 8050 Wisconsin Rapids, WI 54495-8050 A subsidiary of NewPage Corporation

September 29, 2008

Dean Premo - White Water Associates, Inc.

### Eurasian Water Milfoil Chemical Treatment Report for 2008 – Little Quinnesec Falls (No. 2536) Hydroelectric Project

Dear Mr. Premo:

The Stora Enso Niagara mill (now under NewPage Corporation ownership) submitted to FERC a fall 2006 Eurasian Water Milfoil (EWM) Control Plan for Article 409. This plan was accepted by FERC on February 7, 2007 (Project No. 2536-071). Three project backwater areas where treated chemically with 2,4 D in 2007. The 2007 chemical results were ineffective. Consultation with the MDNR and WDNR indicated another attempt was warranted in 2008. The focus of the 2008 chemical treatment was to apply 2,4 D again at the three Michigan areas before the river temperature reached 60 F. Chemical treatment dosage would be at 150#/acre, followed by a second treatment 4-6 weeks later at 100#/acre.

#### TIME SEQUENCE

3/12/08 - Permit submitted to Michigan DEQ for approval applying 2,4 D chemical at 150# per acre to three Michigan backwater areas and then 4-6 weeks later at 100#/acre.

**4/30/08** - Permit approved by Michigan DEQ for chemical treatment by Wisconsin Lake and Pond Resource, LLC. Permit # 08-98-1309-0.

**5/29/08** - Wisconsin Lake and Pond Resource LLC applied 2,4 D chemical at 150#/acre to the three Michigan permit approved areas (3.98 acres total). Aerial A-1 provides the location of all 3 sites on the Menominee River. Aerials A-2, A-3 and A-4 give an enlarged view of the individual treatment areas along with the non-treatment control areas. The aquatic vegetation surveys were completed per the MDEQ procedure prior to chemically treating each site. These surveys are referenced as Table 1-A, 1-B and 1-C. River temperature was approximately 56 degrees F on this day.

7/09/08 - Follow-up chemical effectiveness aquatic vegetation surveys completed with Wisconsin Lake and Pond Resource, LLC. Aquatic Vegetation Surveys (Tables 2-A, 2-B and 2-C) were completed similarly to the 5/29/08 surveys.

7/10/08 – Wisconsin Lake and Pond Resource, LLC applied 2,4 D chemical at 100#/acre to the three Michigan permit approved areas. If an area was observed free of Eurasian Water Milfoil, the area was not chemically treated again (mainly case for portions of sites A and B and all of H).

**8/6/08** - Follow-up chemical effectiveness aquatic vegetation surveys completed with Wisconsin Lake and Pond Resource, LLC. Aquatic Vegetation Surveys (Tables 3-A, 3-B and 3-C) were completed similarly to the 5/29/08 surveys.

8/22/08 – Faxed chemical treatment data with aquatic vegetation surveys to MDEQ per permit requirements.

# **Chemical Treatment Notes**

### Site #1: AVAS A, B, C and D (aerial map A-2)

- 1. Dye was added after the treatment area with no movement or flow detected.
- 2. AVAS A and B areas were estimated at 0.48 acres for chemical treatment.
- 3. EWM in AVAS A and B ranged between 2-20% of the vegetation prior to chemical treatment.
- 4. Treating AVAS A and B at 150 #/acre was 95% effective with EWM elimination.
- 5. The second treatment at 100#/acre was applied only to area where EWM remained.
- 6. The last aquatic vegetation survey revealed there was a reduction in natural aquatic vegetation density for AVAS A and B. This is most likely a result of the chemical treatment impact in the man-made canal.
- 7. Most abundant species were chara, EWM, native milfoil, yellow waterlily, coontail and bulrush. All but EWM were present in the last aquatic vegetation surveys.

### Site #2: AVAS E, F and G (aerial map A-3)

- 1. Dye was added in AVAS F indicating no detectable flow.
- 2. AVAS E and F areas were estimated at 2.87 acres for chemical treatment.
- 3. EWM in AVAS E and F ranged between 2-20% and 20-60% of the vegetation prior to chemical treatment.
- 4. Treating AVAS A and B at 150 #/acre was 95% effective with EWM elimination.
- 5. The second treatment at 100#/acre was applied to both the AVAS E and F areas.
- 6. The last aquatic vegetation survey did not indicate a reduction in natural aquatic vegetation density for AVAS E and F.
- 7. Most abundant species were EWM, flat stem pondweed, wild celery, yellow waterlily and coontail. All were present in all surveys. Chemical treatment did not impact the non-EWM species.

### Site #3: AVAS H and I (aerial map A-4)

- 1. Dye was added in AVAS H indicating no detectable flow.
- 2. AVAS H and I area was estimated at 0.63 acres for chemical treatment.
- 3. EWM in AVAS H ranged between 2-20% of the vegetation prior to chemical treatment.
- 4. Treating AVAS H at 150 #/acre was 100% effective with EWM elimination.
- 5. The second treatment at 100#/acre was not applied since no EWM was present.
- 6. The last aquatic vegetation survey did not indicate a reduction in natural aquatic vegetation density for AVAS E and F.
- 7. Most abundant species were hard to detail because the three surveys show a diverse culture that change over this time. Chemical treatment did not appear to impact the non-EWM species.

### **Summary**

The 2,4 D chemical treatment was effective at greatly reducing or eliminating the Eurasian Water Milfoil at the 150#/acre dosage prior to the river reaching 60 degrees F. Chemical treatment did negatively impact the diverse aquatic vegetation at site #1 for AVAS A and B, but not at the other chemically treated areas (AVAS E, F and H).

# **Recommendations**

Eurasian Water Milfoil appears to be effectively eliminated at the 150#/acrea chemical treatment level within the three Michigan sites. These three Michigan treatment sites should be monitored in 2009 without any further chemical treatment to evaluate the recovery of natural river aquatic vegetation re-establishing itself and the rate if any at which EWM propagates. No other project boundary areas are recommended for 2009 chemical treatment due to the low EWM counts in the four observed EWM sites identified in the 2008 "Monitoring The Little Quinnesec Falls Hydroelectric Project for Eurasian Water Milfoil and Purple Loosestrife" report. NewPage will review this recommendation with the WDNR, MDNR and U.S. Fish and Wildlife agencies.

There is a potential site (K reference in the "Monitoring" report) just downstream of the Big Quinnesec Falls dam in the main river channel where EWM has shown accelerated growth over the last two years. This area is not recommended for chemical treatment at this time. The area could be a potential for weevil introduction, as none were observed in this area over the last two years. NewPage will review this opportunity with the WDNR, MDNR and U.S. Fish and Wildlife agencies.

Sincerely,

CONSOLIDATED WATER POWER COMPANY

Thomas J. Witt Resources Manager

cc: File, OM-40-50 Ea Project, 2008 Annual Exotic Species - Article 409 File

Proposed areas for treatment of Eurasian watermilfoil in 2008 on the Menominee River, Dickinson County, MI. Proposed herbicide: Navigate<sup>®</sup> (granular 2,4-D).



Site 1:	700' x 30'	= 0.48 acre
Site 2:	1000' x 125'	= 2.87 acre
Site 3:	230' x 120'	= 0.63 acre
Total		3.98 acre

# DE

Approved Treatment Map for 2008 Permit Number: 08-98-1109-0 Map \_\_\_\_\_\_ of \_\_4\_\_\_\_

Proposed treatment area #1, Menominee River, Dickinson County, MI. Proposed herbicide: Navigate<sup>®</sup> (granular 2,4-D).



Aquatic Vegetation Assessment Sites (AVAS)



Proposed treatment areas (Sites A & B <5 ft deep)

Untreated (control) areas (Sites C & D <5 ft deep)

# DE

Approved Treatment Map for 2008 Permit Number: 03-98-1209-3 Map 2 of Y D~

Proposed treatment area #2, Menominee River, Dickinson County, MI. Proposed herbicide: Navigate<sup>®</sup> (granular 2,4-D).



Aquatic Vegetation Assessment Sites (AVAS)



Proposed treatment areas (Site E <5 ft deep, Site F max 10 ft deep)

Untreated (control) area (Site G max 10 ft deep)

# DE😎

Approved Treatment Map for 2008 Permit Number:  $\Delta = 2205 - 2$ Map \_\_\_\_\_\_ of \_\_\_\_\_

Proposed treatment area #3, Menominee River, Dickinson County, MI, Proposed herbicide: Navigate<sup>®</sup> (granular 2,4-D).



Aquatic Vegetation Assessment Sites (AVAS)



Proposed treatment area (Site H <5 ft deep)



Untreated (control) area (Site I <5 ft deep)

# DEQ

Approved Treatment Map for 2008 Permit Number:  $22^{2} + 2^{2} + 3^{2} + 5^{2$ 

Nem	andard Aquatic Vege	<i>ler</i> tatio	n A	c sses	Count SMe	y <u>Dic</u> ent Si	te S	011 peci	Sur es L	rveyor Jensi	<sub>vame</sub> <u>Brad KoosT</u> - ty Sheet	Bnd	Re:	source		Survey	Date:	5	<u> 29</u> ]	<u>′08</u> ]_т.
<b>_</b>	•						. جيات	1									مەربىيە مەربىيە	L	ļ	
Cod	Piant Name	igu Ni Ja				$\frac{1 \text{ Asses}}{10, \text{ NC}}$	smen NC	NO Site		D D. Cod 7 No.	Plant Name		IIC Ve NO. J	Retation NO.	n A NO. L	NO.	NO.	NO D	NO P	
ī	Eurasian watermilfoil	e	$\mathbf{x} \in \mathbf{C}$	5						1	Eurasian watermilfoil		+							
2	Curly leaf pondweed		~			0			-	2	Curly leaf pondweed			 						
3	Chara	<u>D</u>	<u> </u>	$\sum C$		<u>0.</u>		-	-	3	Chara		این این ا		غديانيد			ي من من من		
4	I nin lear pondweed	-		5			:	4.	4	4	Thin leaf pondweed	- <del>-</del> -	-					بەرچىنە	مىرىيەر <u>ب</u> ار	
<u> </u>	r ini sicili polidweed	and the second		.   <b>F</b>			+->_		••••	2	Fiat sign pondweed							ni. Tri itter		
6	Robbins pondweed		+-						- 	6	Robbins bondweed		<u></u>	<u> </u>	<u>.</u>					
7	Variable pondweed						+	1		7	Variable pondweed		<u> </u>					لتستخ		
8	White stem pondweed								-1	8	White stem pondweed	radam in								
9	Richardsons pondwee	d A	F	۱Ť	1 (	2				9	Richardsons pondweed									
10	Illinois pondweed		T	]						10	Illinois pondweed			<b></b>			··· •			ć
			10				<u> </u>			+								1		
11	Large leaf pondweed		+	4	- 			<u> </u>			Large leaf pondweed	بار منهم				ب مرتبعه ا		أبهجه		
12	American pondweed						-			12	American pondweed			مەنبە بىلىر					پېښې، مې	ļ
13	Floating lear pondwee	a H	+ 4		-	÷.	1	<u> </u>		15	Floating leat pondweed	-					-			
14	Water stargrass				~	· · · · · · · · ·	-	- 		14	Water stargrass	-	چنجب ج							Ş
13	WING CEIERY		-	-	Ļ			+			Wild Celery						- +			2
16	A mowhead (submerger	nt)		7			1	+	4	16	Attoucheed (outmargan)	<u>і</u>		- 		┉┉┥	-+			
17	Native milfoil	2	1		÷.		. ·		···	17	Native milfoil							+		
18	Whorled watermilfoil	<u> </u>			4					18	Whorled watermilfoil	-			-+					· ·
19	Various leaf watermilf	oîl		- K. K. K.						19	Various leaf watermilfo	ii -	*							
20	Coontail									20	Coontail	~~		urun ubia	m. et	3455 1				
			Ţ	<b>-</b>		1			1.54444		and and a second sec Second second second Second second second Second second second Second second second Second second	H	inv	-	<b>y</b> '	tre	at	Me	na t	
21	Elodea									21	Elodea	-1, 1 	101		1999) 1995 - 1995				411	1
22	Bladderwort		1	, .	ļ	4			ant a m	22	Bladderwort	NA	4	act		1.10	ς.	നം		nY w
23	Bladderwort (mini)			-		-			•. • • • • • •	23	Bladderwort (mini)	' ' `	1 1	দ্র্হা			<b>~</b>	Ţ	e staar Konstaar	
24 36	Buttercup	4	ļ	dini.		· · · · · · · · · · · ·				24	Buttercup	۰ł-	$\pm h$	2 C	vi	Flet		ol	We	rat
23	Najas spp.		- -			+				22	Najas spp.	<b>.</b>				1		V		
26	Prittle poied		ł	-	-		- , iii		ri -	26	Brittle paied	Sit	е.			her	e	(1)	àS	n
20	Sago nondweed								مهد مين	27	Saco nondweed	1.	1963			<u>,</u> L.		16		
28	webs knowledge								14. AN	28	ingo ponenceo	SIM	μ	-QUI		(目に	)	TYX	3 I	1V(
29								~	,	29	• • • • • • • • • • • • • • • • • • • •				1000			30.0	63	
30	White waterlily						مەر مەر مەر مەر بەر ي	w brazł		30	White waterlily					an is Grae				
31	Yellow waterlily	A	A	A			· · · · · · · · · · · · · · · · · · ·			31	Yellow waterlily									
32	Watershield	ļ., .								32	Watershield									
33	Small duckweed			ļ			 			33	Small duckweed									
34	Great duckweed	<b>.</b>				i de la casada				34	Great duckweed	- 1990) 	<del>+</del> = ar€atài		***			~~ <del>.</del>		
35	Watermeal		T						-	35	Watermeal		: 	÷.,	-		: 	.   . 		
	A many states and states	÷	-			1		·		26	A mostly on -	- +	·							
27	nirowiicao Pickerelweed									37 1	1110WICHO			÷	-					
38	Arrow anim	,					•	4	ri i	38	IUNDICIWCCO		··		+					
39	Cattail	A	p.	ρ		+ +				39 (	Lattail		-+-	; <del>.   .</del>	<u>-</u>			┈┯╇┯		
40	Bulrush	ť'n.	Ă	A	C		+ · · · ·		-+	40 1	Bulrush				+			÷÷÷		
	······································				~~			t		••• ••••			·'-	·	1			+		
<b>\$1</b>	ris						- 1			41 I	ris	•		·						
12	Swamp Loosestrife							Ī	- ]	42 5	wamp Loosestrife	·					-		1	-
• E	Pumle Loosestrife	1			.*			Ţ	T	43 I	urple Loosestrife				1					
រ រ	mpio Boososano					2		بالبيد يسر	النعيب			. 1			-	. 1.		4.		

# 20081027-5056 FERC PDF (Unofficial) 10/24/2008 5:19:34 PM

Site: Area 2 county. Dickinson surveyor Name Brad Roost-Wisc. Lake + Bond Resource

Lake Name Menominee River

Survey Date 5/29/08

Code No. 1 1 2 ( 3 ( 4 1 5 F 6 R 7 V 8 W 9 R 10 III 11 Lz 12 Au	Plant Name Eurasian watermilfoil Curly leaf pondweed Chara Thin leaf pondweed Tat stem pondweed Small pondweed Cobbins pondweed Variable pondweed Vhite stem pondweed Ichardsons pondweed linois pondweed	iguati NO.				NO E C	Ment No. E B	Site 1 NO. G	NO NO H	Cod No.	e Plani Name	qui NC I	tic V NO	egetat NO K	ion A NO	SSESSI NO. M	inent NO.	Site NO	Numb		<u> </u>	
No.   1 1   2 (   3 (   4 1   5 F   6 R   7 V   8 W   9 R   10 11   11 La   12 Au	Plant Name Eurasian watermilfoil Curly leaf pondweed Chara Chin leaf pondweed Plat stem pondweed Small pondweed Variable pondweed Variable pondweed Variable pondweed Ichardsons pondweed linois pondweed		NO		2	NO E C	B	NO. G	NO. M	Cod No.	Plant Name	NC	NO J	NO.	NO L	NO. M	NO.		NO.		<b>`</b> >	••••••••••••••••••••••••••••••••••••••
1 1 2 ( 3 ( 4 1 5 F 6 R 7 V 8 W 9 R 10 111 1 La 2 Au	Eurasian watermilfoil Curly leaf pondweed Chara Thin leaf pondweed Plat stem pondweed Small pondweed Cobbins pondweed Variable pondweed Vhite stem pondweed Ichardsons pondweed linois pondweed					2	ß	C		1			1		+	بمغيبه والمجر		1		1 Y		
2 ( 3 ( 4 1 5 F 6 R 7 V 8 W 9 R 10 III 11 La	Curly leaf pondweed Chara Chin leaf pondweed Clat stem pondweed Small pondweed Cobbins pondweed Cariable pondweed Vhite stem pondweed Ichardsons pondweed Linois pondweed					R		C	n ≈ 30-44.	1 +	Furning water	4					-	ļ				
3 ( 4 ] 5 F 6 R 7 V 8 W 9 R 0 III 1 Li 2 Au	Chara Chin leaf pondweed Tat stem pondweed Small pondweed Cobbins pondweed Cobbins pondweed Variable pondweed Vnite stem pondweed Ichardsons pondweed linois pondweed					2		C		1 7	Curasian waterminion	-	1	4	ļ			<u> </u>			1 A	
4 ] 5 F 6 R 7 V 8 W 9 R 10 III 1 L 2 A	Thin leaf pondweed Tat stem pondweed Small pondweed Cobbins pondweed Variable pondweed Vhite stem pondweed Ichardsons pondweed linois pondweed					2			لي اليوريدي ا	2	Curly lear pondweed	-		1						N	5 12	÷.,
5 F 6 R 7 V 8 W 9 R 10 III 11 L 12 A	Tat stem pondweed Small pondweed Cobbins pondweed Pariable pondweed White stem pondweed Ichardsons pondweed linois pondweed				-	2									<u> </u>	مىلىنىيە				S	<u>8</u> 8	÷
6 R 7 V 8 W 9 R 10 III 11 L 12 A	Small pondweed tobbins pondweed ariable pondweed white stem pondweed tohardsons pondweed linois pondweed						a	$\sim$			Thin lear pondweed	ļ.	<b>.</b>							Ó		с. 2014 г.
6 R 7 V 8 W 9 R 10 III 11 L 12 A	cobbins pondweed ariable pondweed Vhite stem pondweed ichardsons pondweed linois pondweed				1 1 4 4	12	2	<u>.</u> С.	••: ••		r lat stem pondweed		1 							Ċ	5	
7 V 8 W 9 R 10 II 11 L 12 A	ariable pondweed Vhite stem pondweed Ichardsons pondweed linois pondweed					0	D			Ē	D 11.			in the						- V	<b>\$</b>	1
8 W 9 R 10 II 11 La 12 Au	Vhite stem pondweed Ichardsons pondweed linois pondweed		ا به م		÷	*****	·····	~		0	KODDINS pondweed		 							Q	) -	e i e i
9 R 10 II 11 La 12 Ai	ichardsons pondweed linois pondweed		1						- 4	/	variable pondweed	 		-6						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		S. 1
10 11 11 Li 12 Ai	linois pondweed	- 5-			-					8	White stem pondweed											18.
11 La 12 Au	mors pond noco	·								9	Richardsons pondweed										v	
11 Li 12 Ai							-			10	Illinois pondweed					T		····			<u>Š</u>	e de La del
2 A	are feetnondward	- in in in it is a second s	-			···.														Ģ	× .	• .
	merican pondwaad		·	· · · · · · · · · · ·				- 4	,	11	Large leaf pondweed				-				1	Ň/	R	$\frac{1}{2}$
2 DI	merican pondweed	2.2	4	<b>.</b> .					ا ہے۔ بلیجتی	12	American pondweed					a sing	i i i			ģ		
3 17 10 A 1171	Oating icar pondweed		ļ		- 4		-		د اخته د	13	Ploating leaf pondweed				·····	5-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1				9	N)	1. J. J.
4 VV	ater stargrass	-				<u>.</u>				14	Water stargrass			~			sin hindre			0	S.	•
5 W)	ild Celery		-			1	B			15	Wild Celery				<del>~~ ~</del>						8	
												ي المراجع ( المعال		· · · · · · · · · · · · · · · · · · ·		·						11
6 <u>A</u>	rowhead (submergent)			- E						16 /	Trowhead (submergent)		··· •			·						
7 Na	tive milfoil				1		-		1	17 1	Vative milfoil	-+				┈╶┢╌╴		-+-				· * .
8 WI	horled watermilfoil									18 5	Whorled watermilfoil			÷			-+		المشع			
9 Va	rious leaf watermilfoil	1								19	arione lasfaratantificit						·					11.
0 Co	ontail					2	a	~. <b>†</b> ?	1	n r	and ical waterininon		ناریند	•••••							· · · ·	18.2
			-	1. <del> </del>											- Continue					<u>,</u> , , ,		
I Elo	dea	~ † ·	-		-	-	2	·	1	1 175	na standar a standar		i din									
Bla	dderwort		-				2	÷	14		lodea	-	·				•					÷
Bla	dderwort (mini)			4	•		-		12	Z B	ladderwort			1								
But	teroup						-			3 B	ladderwort (mini)							-		* 2 1		
Nei	acreup			. <u> </u> .	-				12	4 B	uttercup							ومناقب				
14aj	as spp.	- <b>-</b>		43					2	5 N	ajas spp.				بسيابيه		-	~~			· · · · ·	1.
n in	ار این میکنونی به میرود است. میکنونین این این میکنونی					-	:			-		1				-			1			÷ 1
BIII	tie nalad		ļ			· · ·	· .   · . 		20	6 Bi	ittle naiad				·:	+++++++++++++++++++++++++++++++++++++++		÷:				
Sage	o pondweed								27	7 Sa	go pondweed	****										н н. Т
		- 	4						28	3	and a second and a s	÷	residence e	and and a second se	nije na	-			-	1.11		
	· · · · · · · · · · · · · · · · · · ·		1.					T	29	)		-n-fre	÷	┉╢┯┷┙	-	÷		╉╧┯	-			1
Whi	te waterlily		1						30	W	hite waterlily	÷			4	-		+	4		an an Taona an	· .
			1				1	1					÷		-				-			
Yell	ow waterlily	1		T.	c	12	,		31	Ye	llow waterlily								4	1.1		
Wate	ershield						4	+ .	30	W.	terchiald		- <b>-</b>		de de		-	- 				
Smal	ll duckweed	7	-	-	******		+	1 .	33	S.	all dualeus al	÷.		-	-	 				· · · ·		
Grea	t duckweed					+		1 .	30	G	an duckweed		÷.	-				L				
Wate	rmeal	+	•	4.4	+	+		· · · ·	24	ore W	ar ouckweed		-lii		ļ				1			· · ·
				1-		-	+		20	W2	itermeal	-		1					].· ·			
Arroi	whead					-	4		<u> </u>	4								1			1.11	
Picke	relweed				1		1	· 	36	Arr	owhead						1		1		1 	· .•
Arroi	N SEALORD	<u>+</u> +			,	ł	- i		37	Pic	kerelweed		l					†	1		, în	
Cotto	il				1		1	· · .	38	An	ow arum	T	1	1	<b>F</b>		∱• 	<b> </b>	1		ati Ati ati di	
Dul-	45	<u></u>  ∔			Ç.		ب		39	Can	tail		-	T				ļ÷~~~~,	1	1		
ouru	ISN	-	·	· · · · · · · · · · · · · · · · · · ·	В	B	1		40	Bul	rush	+	Ť	*****		~~ ~			<u>{</u> •			•
			بنين		1			, _ ]				<u>†</u> .,	+	†					1		a da Antonio	
Ins									41	Iris	······································	<b> </b>   						·		• •		÷
Swam	ip Loosestrife	l T			· •		J		42	Swa	mp Loosestrife	†			~ <u>+</u>	<u> </u>					· · · ·	جي -
Purple	e Loosestrife					-		• • • •	43	Purr	le Loosestrife						÷;		· ·			
			:			• ••••	~ ~ ~	·	44													
· · ·			Ť			• -	+	·· +	15									- 1				

			÷.					i i	Site	; f	łr	eaЗ								1	1
ke Nan	Menominee River			c	ounty	Die	Kir	Son	S.	irveyo	n N	me Brad Roost-Wi	sc, l	ak	e +		Sur	vey Da	ne: _	5/2	19/08
St	andard Aquatic Vegeta	tion	As	SAC	sme	nt S	ite	Sne	nies 1	Den	sit	v Sheet	nel	Kes	NUG T	<u>e</u>	्रि	1		1	Tabl
F		T	T	1	T	يې د کې د مېکې کې		T					-			indian Seleti					
		qua	tic V	egeti	ation	Asse	ssme	ent Si	te Nun	nb			lgu	ntic V	eget	ation	Asse	ssme	nt Si	te Nu	imb
Cod	e Plant Name	NO	NO	N	). N	0. N	<u>0   î</u>	10.	NO. N	0.0	ode 30	Plant Name	NC	). N	N N	2. N	O. N	0. N		NO.	<u>NO</u>
1			+2	1.4		<u> </u>		8	G		1		1-	- 2	fr		-42	1   1	<b>×</b>	-	
1	Eurasian watermilfoil								C	5	1	Eurasian watermilfoil	e	) 				57 <b>-</b> 3			
2	Curly leaf pondweed								T		2	Curly leaf pondweed			T						V 1A
3	Chara						-		(		3	Chara	c								22
4	Thin leaf pondweed										4	Thin leaf pondweed					-				)% °
5	Flat stem pondweed	 			and and an			-	E	5	5	Flat stem pondweed									<b>x</b>
						4							1	-	1					-	- 1
6	Robbins pondweed			-	د. دي ملينه	4					5	Robbins pondweed	موجع المحافظ الم	- -	4	بسبناسي		4	-		
17	variable pondweed					4.	÷.		-		4	variable pondweed		: 	+	-	-				😵
X	white stem pondweed		-					~	- 0		<u>}</u>	white stem pondweed			+	- <b> </b>			- 4-		ੇ ਯ
	reichardsons pondweed		ļ.	-			+		_  L	24.3	7	ruchardsons pondweed	Ľ	ų	4.	-	-				277 144
10	miniois pondweed		ļ	-				-1.1			2	mmors pondweed			+		-				-  _ N
11	1 area leef nondweed		<u> </u>		-+	-			+		1	I orga laofanada and	<u> </u>	4		-					- 98
12	American nondward			+		-				+7	$\frac{1}{2}$	Harge real pondweed		-	<b>.</b>				-		- v 8
13	Floating leaf pondweed				+-	-	-	- <del>The sec</del>	-	1	3	Floating leaf nondweed	<u></u>	+	+		i aliante de la competencia de la compe Competencia de la competencia de la comp		+-		- S í
14	Water starorass				- <b>-</b> -	÷.		-	-		4	Water stargrass	<b> </b>		+	÷	÷.	-di-	-	, ste	1 2 2
15	Wild Celery			<b>-</b>	-					1	5	Wild Celery		ł				+	-		- 3
-	· · · · · · · · · · · · · · · · · · ·									چيمل، ا		and the second secon			1	1	-	+-			
16	Arrowhead (submergent)							- <del>1</del>	••••••••••••••••••••••••••••••••••••••	T u	5	Arrowhead (submergent	)		, <b>-</b>	, ,		-			-1
17	Native milfoil	نيدي ـــــــ	·		-		*. <b> </b> *.*		P		7	Native milfoil			+		•		-		
18	Whorled watermilfoil		يرب، عمم						1	12	8	Whorled watermilfoil		-	 	-	1		inger	i serificia de la companya de la com La companya de la comp	
19	Various leaf watermilfoil									15	<u>,</u> ,	Various leaf watermilfoi	h ; ; 				-				
20	Coontail									20	) (	Coontail			19 il ann ainm 19					-	
												and the designation of the second									
21	Elodea								C	21	lI	Ilodea	C					1			
22	Bladderwort							·	: 	22	2 1	Bladderwort						<b>_</b>			
23	Bladderwort (mini)			• • • • •	1 · · .					23		Bladderwort (mini)	i) mangladar	- 	ېيد	Januar -	-	- 			and a state of the
24	Buttercup	y								24		Suttercup			 	-		+			
23	Najas spp.			- 1			4		-	23	11	vajas spp.	مېرمې م		بند، حق		Ang sa			inder se	
26	Drittle noind								~	26		mint a mind		***				+	4		_
20	Sano pondweed				1				••••	20		and pondweed	جيب <sup>ي</sup> ه	بناج			1	-	+	-	
28	bago ponencea	-						-		28	1	ago pondwood					ļ.,		-		***
29						نک () رو		و حد القد	· +····	29					جەنتىپىيە		<b> </b>	موجد ما ا	÷	-+	+
30	White waterlily	- 1					1	· • • • • •		30	V	Vhite waterlilv		, 		<u> </u>	<u> </u>	+			
						1.	 	<b></b>	· · · · · · · · · · · · · · · · · · ·	1	*		-				+	<b>.</b>			-
31	Yellow waterlily		···	. 1		t	1 	÷	C	31	Y	ellow waterlily	R	•			<u> </u>		1 1 1	+	-
32	Watershield			3 - 2 4 5 - 1 - 1 - 1				1		32	V	Vatershield	~		r sais		<u> </u>			-	<b>ल</b> जिल्लामा जिल्लामा जिल्लामा जिल्लामा
33	Small duckweed		· • • • • • •				1	1	T.	33	S	mall duckweed					<b> </b>	†	1		
34	Great duckweed	T	•				1	- <b>1</b>		34	G	reat duckweed	-		<del>بەر بەر</del> 	منتقب م ا		-	1.	1	1
35	Watermeal		]					-		35	V	Vatermeal							1		7
					-	5		<u> </u>	L.						··			· · · · · ·		1	1
36	Arrowhead	1			• ••			T		36	A	rrowhead						<u> </u>		1	]
37	Pickerelweed				···.		ļ	ļ.,		37	P	ickerelweed	+						<u> </u>	1	]
38	Arrow arum							<u>_</u>		38	Å	now arein							<u> </u>		
39 (	Cattail		·· +						ß.	39	C	attai)									
40 ]	Bulrush	; <b></b>		i 			ļ	+	B	40	B	ulrush	6			······			ļ	+	-
								·	-		ļ.	19 1								<u> </u>	
41 1	ITIS	÷ 1-		<del>.</del>				· 		41	ir o	IS					·····				-
42  } 12  7	wamp Loosesuile		·		·		د. ـ			42	131	wamp Loosestrife	·	<u>_``</u> _					+		
40 1	mbie roosesuite		].	. Sume	1			L		43	hu	upic Loosestrife		1	- 1				t i	1	1

	200 <u>. 1 - 7 Co 10 - 17 17 - 7 Co</u>		بىرىپۇر	na magina	·····			 			Wisc. Lake + F	and	Re	Sou	<u>y ce</u>	4 <del>.</del>	÷.	1	<del>ر</del> .	1
St	andard Aquatic Veg	etation	1A	SSESS	men	t Sit	e Sp	iecie	s De	ensi	ty Sheet				+	∔				T
·		-	t nite	Terrata	l.		ment	Qite 1	Jumb	ļ		loug	tic Ve	Petst	ion A	ssess	ment	Site 1	Vumb	
1Co	de Blant Name	NC	N	0.   NO	NO	NO	NO.	NO.	NO.	Code	Plant Name	NO.	NO.	NO.	NO.	NO.	NO.	NO	NO.	
N	b.	<b>A</b>	Ľ		10	E	F	↓€.	H.	No.			17	K	<u>L</u>	M	<u> N</u> _	0	F	
$\square$	Eurasian watermilfoi	I A			A	+	-  	+		1	Eurasian watermilfoil	- <del> </del> -	+			† —	1	1		
2	Curly leaf pondweed							-	1	2	Curly leaf pondweed		1		1	1				. *
3	Chara	D	1	B		I				3	Chara				<u> </u>					', :
4	Thin leaf pondweed					1		[		4	Thin leaf pondweed	ļ	ļ		 	ļ	ļ		ļ.,,	
5	Flat stem pondweed	A	E	<u>5 C</u>	C	i An i				5	Flat stem pondweed	ļ.,	ļ		ļ	ļ	Ļ		ļ	
			+		Į.,.		ļ	 		ļ		÷	ļ.,			ļ	<u> </u>	ļ		
6	Robbins pondweed		+		<b>_</b>	<u>.</u>	ļ	Ļ		6	Robbins pondweed		<u> </u>	-	+		<b> </b>	<u> </u>	┼╌╌┨	·
7	Variable pondweed	H	<u>.</u>	-	.] 	<u>+</u>	<b> </b>				Variable pondweed	+ -				<u> </u>	<u> </u>	<u> </u>		· · ·
8	White stem pondwee		12	10	-	1		{		8	White stem poneweeu	+	ł	نىيىنە <del>ب</del> ە		<u> </u>	<u></u>			
2	Kicnardsons pondwe	28  H	цC	рĮD	T			+		10	Illinais pandweed	<u>.</u>			<u> </u>		ŧ		<u>+</u> ]	
<u>  10</u>	Hunois ponoweed	·	- <b> </b> ;-	·+ -	+		 				TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	+	h		ŧ	<u></u>	h		+{	- 1 -
-	I anna lastaan Amard		+		+		,			11	Large leaf nondweed	÷			<b> </b>	<u>∔</u>			╞╌╌┨	
11	American pontimed		╉			·				12	American pondweed		4××.	÷• • • •	<u> </u>	<u> </u>	\$	· · · · · ·	† - †	
12	Floating leaf nondway	sd b	ł		<u>†</u>				· · · · •	13	Floating leaf pondweed	+	<u> </u> ;				<b>†</b> • • • • •	ine 201992 ; 1 :	1	
	Water starorace			1 .	f				وتي . راهم	14	Water stargrass	itin ina	╞╌╍╼			┝╼╤╼		- <b>-</b>	1	ï
15	Wild Celery	i saila sa sa I	A	tc	ſŗ.	1.	<b>.</b>	·		15	Wild Celery		چېني سرې ا	°•≟-••-∞ <sup>44</sup> 9	;	******	[			
<b> </b>		a i i i i i i i i i i i i i i i i i i i	11	+ -	~				• • • • • •											
16	Arrowhead (submerge		1	• •	+			** **		16	Arrowhead (submergent	)								2
17	Native milfoil		 	+ ,	A			· • • •	·• 、 •	17	Native milfoil	1				<b>a</b> r) <b>-</b> 20,0 - 1				-
18	Whorled watermilfoil			144-1	1 .		-			18	Whorled watermilfoil	† •• ·•								
19	Various leaf watermil	foil	-	-						19	Various leaf watermilfo	]								
20	Coontail				; ·		- :	1		20	Coontail									
				- <b>1</b>		1		1		· ••••										
21	Elodea			<b>A</b>					· · · · -	21	Elodea									
22,	Bladderwort			A	A.					22	Bladderwort	+								
23	Blådderwort (mini)			-			.			23	Bladderwort (mini)								أندين	
24	Buttercup		<i>.</i>							24	Buttercup		المرادد السينس		~		*			
25	Najas spp.	ېتى بېلىد.	- ~	4		a				23	Najas spp.	****					*	****		
		÷	922						.	30	Mulada and a								il	
26	Brittle natad		3	3	2	<b>.</b>	{			20	Price Basel									
27	Sago pondweed	16	0	r.	m			•	~	30	ango ponuweca	/- <b></b> -			-`#					
4ð 70	anique and a similar in provide the second		*** 1 <b>*</b> *	+-					-+	29	e e e e e e e e e e e e e e e e e e e			<del></del>						
47 3A	White pretertily	0	بىر ،	ta l	p			: • . • . • •	· ·	30	White waterfilv		ni sin		<del> </del>					
30	YT LILLS WERGELLLY	<u>+</u> <b>n</b>	بەر درم	121			+				······································							 		
31	Vellow waterfilv	a	ß	TA	P	•• ••• F	• †	Ť	••••	31Ť	Yellow waterfilv	منز شم			+	~~	*		in the second	
32	Watershield	-+9-			-	••••		÷.		32	Watershield		- 1	†	<del>ا</del> وير	÷. ~	, initianed -			
33	Small duckweed			+			†			33	Small duckweed	÷	+							
34	Great duckweed			44 <del>1</del>	· +	····· +		1		34	Great duckweed		·•••†				Î			
35	Watermeal	i of a start	e	+	-			- 1		35	Watermeal									
÷÷	and a state of the					Ť		1	]								1	I		
36	Arrowhead						T		I	36 .	Arrowhead		Ţ	1	]		Î			
37	Pickerelweed									37 1	Pickerelweed									
38	Arrow arum		مين. مورديه			÷		1	ļ.	38	Arrow anina								<b></b>	
39	Cattail.	<u> </u> B	B	B	₿↓			نې نېچېند	ار ج <del>ار</del> ب	39 (	Cattail		┉┈┿			•		+		
40	Bulrush		B	₿.	C_	ł	·	÷	, i	40  Î	Bulrush		• + • + + /							
	a de la constante de la consta La constante de la constante de		-1440 -1440-2		·	·				1.4						┉┟				
41	lris				-		·		<u> </u>	+1 1	FIS								+ <u> </u>	
<b>42</b>  }	Swamp Loosestrife	-	- 11. 200					,		14 K	wemp Loosessille						ici add			
43	Purple Loosestrife	╉╸				. inneife				1 24	urple Loosesmite		ا از		<del> </del>					
44					1.		- I			19		1	1		1					

Menominee Ri	ver		ounter	Dic	Kin	són	Surveron	n Ner	Brad Roost -					Survey	Date:	7	90	8
s Name: 1 1010/111100 11		ں 	ouny.				3041090		Wise Lake + Pon	dR	eso	U Y C	e.					
Standard Aquatic Vege	tation A	ssess	smer	nt Sit	e Sp	ecies	Den	sity	Sheet				ļ	÷	Ļ	···· ;===		Та
					بر. است.				مصریحہ بندی بادی کا ایک اور ایک ایک ایک ایک ا	anat	d Veo	Atoti	on Á	CCPOCT	nent	Lite N	lumb	
Coda	Augustic NO N	Vegeta	non J	NO	NO.	NO.	NO. Co	ode	***	NO.	NO.	NO.	NO	NO.	NO.	NO.	NO.	
No. Plant Name	A	5 C		Ē	E	G	HN	lo.	Piant Name	I	$\mathcal{J}$	K	6	Μ	N	0	P	
					- A-		·	1 12			┝╺┥					 		:
I Eurasian watermilfoil		+		÷₽	.Н.	Б.		2 0	Curasian waterminion					- -	ł			
2 Curly leaf pondweed		-	-			+		$\frac{2}{2}$	Carly lear ponoweed					+	<u> </u>	···· ··		
3 Chara	- ++								Lindia This less nondiverd					•			<b> </b>	•
4 Thin leaf pondweed					10				Plat otem pondweed	·	•			+	<b>.</b> .			$\sim C$
5 Flat stem pondweed				+0	D.	C	مذ م		Tat stem pondwood					+				
C m 111			·	+			17	6 5	Pohline pondweed									Ň
6 Robbins pondweed			-+		i Trans			7 1	Variable nondweed			ميد	ļ					Ğ
/ Variable pondweed				+	÷	- +		2 1	White stern nondweed			••••		<u>+</u>				6
8 White stem pondweed	a ·		-	2	12	ñ		9 6	Richardsons nondweed	ŀ				<u></u>				S
7 Richardsons pondwee			1.	U	φ,			0 1	llinois pondweed		, • <del> </del>			1	<b>⊨</b> :			1/
to minois pondweed		· + ·	-	12	6	i .  -	<b>ع</b> ر . 			-			-	<u>-</u>	-		1	ę
Small pondweed			-	Ų,	. 🖬 .	1	1		arge leaf nondweed		•••••			† –	· ·		1	20
11 Large lear pondweed			•				+ î	2 4	American nondweed	+	÷		• • • • •	- ·			·	<u> </u>
12 American pondweeu	$\mathbf{a}^{+}$	-4		÷.	÷	- +	1	3 F	Floating leaf nondweed		·····			ł				
13 Floating leaf pondwee	¥∔ ⊹ +		1	-		$\vdash$ $+$	1	4 1	Water starotass	~ -+		<b>-</b>						-
14 Water stargrass		÷		a	a	<u>^</u>		5 V	Wild Celery				· · ·					Ļ
15 who Celery	+		1		0			-+-			- +							V
		, j						61	Arrowhead (submergent)	<u> </u>				<b> </b> ,:-,				Ó
16 Arrownead (submerge		-		<u> </u> .		2	1	7 1	vative milfoil		<del> </del> <del> </del>							2
17 Native millou		-		4 1		0	1	8 V	Whorled watermilfoil	• • •	141 <b>0</b> 4					· · -		
18 Whorled Watermitton	S.IT	-1		i.				9 V	arious leaf watermilfoil		Ť	·· ·{						
19 Various Icar waterinin		-		ł.	1		2	1	oontail		· ···			<u>+</u>			[	
20 Coontain		-		÷		2								<u></u>			- 1	
Waley mangola		ł	÷	1		5	2	a <sup>T</sup> T	lodes	1	+							
21 Diouca		-	•	'n	6	U T	2	2 B	ladderwort	Ī	i i i							
22 Bladderwort (mini)			ľ	. <b>m</b> .	1:1	<b>- 1</b>	2	3 B	Hadderwort (mini)	· ·		<del>ب</del> د	••		1			
24 Butterron			1.	+		-  -	2	4 B	Buttercup			•		<b> </b>				
25 Naias snn			ť				2	5 N	lajas spp.	†								
22 (14gftp app.	-+	·†	h						1		- †	• –†				1	1	
26 Brittle naiad	-	-	• •			t	20	6 B	trittle naiad		••••				Ţ			
27 Seeo pondweed	4			B	A	B	2	7 S	ago pondweed	·1				1				
28		-	1	1.1		. – .	25	8		T	,							
29		1	-				29	9		f								
30 White waterlily		1	ļ		pl		30	0 W	Vhite waterlily		-	-		1				
	1	1										1						
31 Yellow waterlily	1	-†	1	B	B	B	3	1 Y	ellow waterlily	- · ·	1			1			]	
32 Watershield		-1	1	1	~		32	2 W	Vatershield	• • †		Ť						
33 Small duckweed		Ť	1	ľ	1	[	33	3  S	mail duckweed									
34 Great duckweed		· + · ·	- 1 <del>-</del> 1	† · ·	~		34	4 G	reat duckweed									
35 Watermeal	1.1.	1	1.				35	5 W	Vatermeal		1							
	· •	· !	ľ.															
36 Arrowhead		*	-		- †		36	6 A	rrowhead	Ì								
37 Pickerelweed			1				37	7 P	ickerelweed	- +	T			Ţ				
38 Arrow arum			1				38	8 A	ntow arum		1		1			Ţ	]	
39 Cattail		<u>]</u>		B	B	B	35	9  C	attail			T						
40 Bulrush	<b>†</b>	1	1.	Γĺ	A		40	0 B	ulrush				Ţ					
	<u>+-</u> +-	1	-		Ť	ſ	1											
41 Iris			1	1	1	1	41	l [fri	is	Ţ	Ī	Ι						
42 Swamp Loosestrife		1	1-	T		Ţ	42	2 Sv	wamp Loosestrife						T	T		
43 Purple Loosestrife							43	3 Pi	urple Loosestrife			T						
44			1	<b>†</b>			44	+		-					T		Ţ	
and the second		1	r	[ [	1	-	45	5				T	T	T	1	Ţ	T	

P-iWmellniandibil & Vegetation Survey lake Templates SPDENSITY WORKSHEET xls

							~	-	1		WISCI LANG - TOP	<u>10  </u>	12.2		<u></u>		F ·	1	T.
Sta	ndard Aquatic Veget	ation	Ass	iessi T	nen	. Su	e sp	icolo I		cusi	y oncer	÷	+,					+	
• • • • • • •		qua	l lic Ve	getat	on A	SSCSS	i ment	j Site I	i Vurnt	•	· · · · · · · · · · · · · · · · · · ·	qua	ic Ve	geteti	on A	i SSCSSI	nent	Site ?	Yumb
Code	Plant Namé	NO.	NO.	NO.	NO.	NO	NO	NO	NO	Code	Plant Name	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
NO.	·····	77	10	1.4	-M-	6	<u>_</u>		<u>_</u> a							1.1	1.12		-
1	Eurasian watermilfoil			-		, ,				1	Eurasian watermilfoil	4	ļ					ļ.,	
2	Curly leaf pondweed	-	<b> </b>	<u> </u>				<b> </b>		2	Curly leaf pondweed	a Aris-aini,	<u> </u>			ļ.,		<u> </u>	ļ
3	Chara		+	ļ			<u> </u>			3	Chara			. 		ļ			
4	Thin leaf pondweed				~			ļ	-	4	Thin leaf pondweed	+n							
5	Flat stem pondweed	-		<u> </u>		 	+		4	<b>.</b>	r lai siem pondweed	D	ļ						<u> </u>
	B-thins was downaid		<u> </u>				- +	<u> </u> , .	+	K	Robbins pondweed		<b> </b>						ļ
7	Kobbills pondweed			د سبب م		. جەد		+	a	7	Variable pondweed	+	<u> </u>						
0	White stem nondweed			k		<b>i</b> n				8	White stem pondweed	-t				<del>.</del>			+
9	Richardsons pondweed	ert en i	<u>[</u>	1	•÷	-		4	8	9	Richardsons pondweed	6	1		,			-	
10	Illinois pondweed	ingi a V	1			laine a	1			10	Illinois pondweed	1				••••••			
			1												: بندون است				
11	Large leaf pondweed		[						ļ	11	Large leaf pondweed	ļ				 بالمحادثة	ميند. سويد مانيم	 	1
12	American pondweed			L		ļ	ļ 			12	American pondweed	+	<b> </b>		ا. استرجیت		- 	• •	
13	Floating leaf pondweed	<u> </u>			n i i Karan		.* 		- 	13	Floating leaf pondweed	- 	ļ., ., .				·		<u> -</u>
14	Water stargrass		l		ې په به په	· · · · ·				14	Water stargrass	A				، بنينية			
15	Wild Celery		 						D	15	While Celery	<u>FC</u>			مەنە تېرىز		•		
	Water maryald	مرد مر ا مرد م		ļ, ,					b	12	A many straight to see the second				*****				
16	Arrowhead (submerger	n) 					- ·		'n	10	Arrownead (Submergent	1	<u>-</u> -						
17	Native millou			<b>.</b> .	1	a	er a	ł .	О.	18	Wharled watermilfail							n 1 <del>1</del>	*****
18	Whorieu Watermilliou									19	Various leaf watermilfoi	L				نېنىنېن ا			
17 76	Vanoas icar waterining	211 	1		- '		1  * •	<u>.</u>	ł	20	Coontail	Â				<del></del>	÷		•
20	Cootingit		-	-	·•*· · · ·		1			- II.	ya an utaning tang tang tang tang tang tang tang ta	τ <b>υ</b>				÷÷,			
21	Elodea								R	21	Elödea	ſ.	····	<u>1</u>			· · · · · ·	·	
22	Bladderwort					1999 - 1999 1999 - 1999 1999 - 1999			B	22	Bladderwort								
23	Bladderwort (mini)						·. ·			23	Bladderwort (mini)	-							
24	Buttercup			·						24	Buttercup	 							
25	Najas spp.		سېچ ا	: 	تاريخ ماني ماني					25	Najas spp.				~·		·		
	n ministration and a second			ં	: 			<b>4</b>			مى يىرىنى بىرىنى بىرىنى بىرىنىي بىرىنى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بى يىرىنىيى بىرىنى بىرىنى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنىيى بىرىنى								
26	Brittle naiad	4		ېېد ۽ حاصي		لمند ما ب		ومعود ويداو	r w. 7. rai r. 788	26	Brittle naiad		بتتبنتم	<u></u>					
27	Sago pondweed		. :			<u></u>			ې چەر مى <sup>ر د</sup>	21	Sago ponoweco		din sayaw						
28	Marata ny managana mangahina ny ina ao amin'ny taona dia kaodim-paositra amin' amin' amin' amin' amin' amin' am			έ			·· · · · · · ·		مۇم با مارم	40 70	مېلىمىرە ھەلەرلەر بەر ھەلەرلەر بار مەلەر مەلەر								{
29	White motorlily	4	( ) <u>-</u> 4	ä.		·	****	ېشىمەر مە	n in an	30	White waterhily	and on a ship	****		+	البرية مرتمو			
30	white watering		~~ <u>;</u>	÷							A CONTRACT OF	( , , ,	- : - : - :	os saide	·	ini ni			<u></u>
31	Yellow waterlily	****		; ;	u <b>- u</b>	** · ****	••••			31	Yellow waterlily			 	n rörösiði L				
32	Watershield	+	ig-1 + 1, <b>2001</b> -7	14772	الماليدر،	4.1 × 4	•••• •••	a i ian		32	Watershield	****	a- 7.3		-	-			
33	Small duckweed			r Kr				ann 4.9∖	<sub>-</sub>	33	Small duckweed								1
34	Great duckweed	····		·	+				· .	34	Great duckweed		and an and a second						
35	Watermeal	1								35	Watermeal		1						
	، معلم من المنظمة المعاملية المعامرة المعاملة المعاملة المعاملة المعاملة المعاملة المعاملة المعاملة المعاملة ال 	]_]	مىتىتى ئىتىشى ،								an tea state and the first second state the state of the				j.	] إ			
36	Arrowhead				- 					36	Arrowhead	B				~		;	
37	Pickerelweed				• « •		_	: . <del>.</del> .		37	Pickereiweed	- 		<u> </u> 		÷	╤┵╺╋	·	
38	Arrow arum				۲ بہ				`n‴	58	Arrow arum	0		••••••	┉┯╇				
39	Cattall	+	• • • • • • •						0	32	wattan Bulmich	Ľ,	<u></u>				,		
40	Buirusn	+		•~~ •~		- Andrew	•		P	100	Burleed	æ				ini			
	DUTIECO	┿┈┥		<u></u>					Bandy	41	lris	<u> </u>					-+		
12	Swamn Loosestrife		- 6.244 1	····	-	•••••		~3		42	Swamp Loosestrife					֠			-1
17	Purple Loosestrife	╉┈╌┤	· ~ <del>-</del> -				نامانہ ا	,		43	Purple Loosestrife			- t		+	†		
14		╪╍╍┤		ih j	••••			~~~ <del>~</del>		44				┉┽			innefin	ii-f	••
	فيصحب وبالأصور بينعيم وتبود وتعادر يترعوا تعاد	·+··	in and the second		·	····	·· +·	ana ang	********				···	÷	. vinnefer		•••••	·· ·-+	[

### 20081027-5056 FERC PDF (Unofficial) <u>10/24/2008</u> 5:19:34 PM

STATUTE TO DESCRIPTION OF THE PROPERTY OF THE

	Standard Amatin V-	منطقة أوري	ton a	K-S-				- <u>28 - 5</u>		<u></u>	I Lake + Pond Resa	NCC.		SUTV.	ey Dele:	010	1000
	portanciaro Aquatic Ver	cia	ion ,	25	SC8SI	nent	Site S	pecie	s Den	<u>isity</u>	/ Sheet					l i	Tah
				Ŷt_	i i haran araa ay		,	-	li di				1 +			for constant	ιαυ
	Code	*****	NO.	NO	NO	OR AS	NO NO	Sach	umb	<del>cit</del>		iquatio 1	egetation	Assas	smeni	Site Non	ab
	No. Plant Name		×1	B	10	Ď	ÊT	1 C	M	No.	Plant Name	NO. N	2. NO. 1	0.   NC	NO.	NO. N	0
					1.						and a second state for an angle was grant as a second	with the set	<del> .</del> K	- 12	_₩_	$\varrho_{ }r$	7
	I Eurasian watermilfo	1				A				ir	Burasian watermilifoil	nger-a- intela -					
	2 Curly leaf pondweed						1	1 1		2 6	Juriy leaf nondweed	- <del>∲</del> ;∳,	- <del>[</del>			. 15. 1	
	3 Chara		D	b i	С.			1	ممهند سرد	3 (	hara	+	-	, جيتاب	-tt		_
	4 Thin leaf pondweed	مۇسىغ (درەن 	ann dan i Clinic			nin <del>g</del> ia i			- e mitem	4 7		na minina mi Na minina mini	-	-	-		
	5 Flat stem pondweed	i i i	à r	2	e i	r.	5		·	2 2	an ica ponoweed	4	-	i i i	1		
	and the second		-4	U05-11	- <b>See.</b>	<b>.</b>		- I			Ter sicin bouoweed	+ + + - +	-				
	6 Robbins nondweed	in the second		1	••••••	an s aifer	÷.	14		7	يې و د بې د مېړې پېرې د د وې وې د د د وې وې د د د وې	L.					$1 \times 1$
	7 Variable nondweed		an aja. N		* 4	4	ţ.,	l i		> K	oobins pondweed			1			1 NI
	2 White stars southers	. L.	<b>1</b>		÷ įš		est.	-	1	/ ¥	ariable pondweed			1	1-1	ىرىمەرمۇمۇم - بار	1 8 8
	o white stell ponower	1		ł		 			8	3 14	hite stem pondweed			han in the second s Second second	ter and		1 8
	recoarcesons ponower	o f	t Č	€ [	6 ]	A .	्र इ.स. स		9	R	ichardsons pondweed		ئىر يەۋە 194 مەر يەر يەر يەر يەر يەر يەر يەر يەر يەر ي	مەدەمەتدە مەيۋۇيىسە بېرىمىيە	fra		8
	10 Illinois pondweed	ų.		4	, si	n shew			H	0 11	linois pondweed		<u>+</u>	÷į.			1 IÀ
			<u>.</u>	ĺ					1	1		e de la compañía de	h			· .	0
	11 Large leaf pondweed					н († 1997) 1997 - Долго († 1997)	19 4		1	i L	The lest monditioned	kunde .		-		ر بلو	19
ſ	12 American pondweed	· · ·		4		t, ₽	1	-	13	2 4	netican pondunce		han an fair a		e =-		1 × 17
	13 Floating leaf pondwee	đ		4	<b>۴</b> :	1			1. S.C. 1.3	1 61	national Doldiwece					. 1	
Ī	14 Water stargrass	¥"		2	ιų. T	4		• . <u>•</u> ••	11	117	oarnig isar pondweed	e a fin and	ar				l V
t	15 Wild Calery	К.		~	÷.	ýs.	- A-			-	aler stargrass	لم الم					
ŀ	hill and the	· 4.	H	t	<i>a</i> (	÷ ,	4	4	13	W	lid Celery					* <u>(</u>	1 7 8
+	Wegler mangold	ų.	_ H	ţ.	ż	ê s		1			1	• · · · • • • • • • • • • •	n n frision	ليندو بند منظر . الم		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	VS
1	10 Arrowneed (submerge	nt)	·			11 14 1			16	An	rowhead (submergent)	• • • •	e v serende sondering	for which	÷÷÷÷÷÷·	**- d- <u>:</u> ,,,	Ó ľ
	17 Native milfoil	Ĥ	Ĥ		¥.	1			17	Na	tive milfoil		*****	<u>}</u> -~-}	•		
	8 Whorled watermilfoil	2			-3 -				18	W	lorled watermilian						<u> </u>
	9 Various leaf watermillf	хÌ	2	т				1	19	Va	CONE DOT WARA		···· fa	Francis -			X
	0 Coontail	· · · ·	÷	÷	1			11	20	- -	and ical walchingion	an an					
1	<u></u>		i	Ť	F	ι.	τ –			- 00	offizit	: 	. I		l.		
17	1 Elodeo	· •	$\gamma_{\rm e} = 1$			,	-		1								
F		4	`,	Н			ЧЧ Ч		21	Elo	dea			r ≠ nr≉ ,	ŗ		1
1	2 Diducerwort	ł		H	H			4	22	Bla	dderwort		in the first Arming was			- 1	
-	Diagaerwon (mini)		,	4	;			1	23	Bla	dderwort (mini)	***	inter e consectiones Sectiones		ر. د مودام ز		
12	4 Buttercup	4	È,	ł	5 a	- 3-	, F	1	24	But	tercup	elenen en elenen. L	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		. <del>)  </del> -	+ +	
4	3 Najas spp.	1	1		Ĥ	2 •			25	Naji	as spp.		in the second second	ung ka			
		1 4. ·	1 	) (		1		1	· ·		1. 1. 1997 (no. 1997 - 1996) and a surface of the second second second second second second second second second		· • • • • • • • • •	e (. ), pe silipire e	-		
. [2]	S Brittle naiad	1	1					t.	26	Brip	de naiad	en fan an fan	wai manj	÷.	And a series		
2	Sago pondweed	R	P.	A	ំព			<b>k</b>	27	Segi	headhan	an the second	u eyfireyinife	<del>.</del>			
22	and manufacture and an a constraint of the second sec	9			1.8		4		28		- Poteo Francia			. 1	- June :		
24	n an				κ.	1 7	1	÷	100		in internet		- 1 - 1		ļ		
31	White waterlik	A		A	2			- 6. garden - 1.	22	¥¥л. <sup>1</sup>		- for show		marile		1	
†÷	A CONTRACT CONTRACT	M		Ц	Q		- Marine		30:1	whit	ic waterlily	j _C					•
1	The state of the s	<b>.</b>	0		بند	20 - 41 20 - 41		1 × 1	e e j nie		1. 			ا با <u>المحمد</u> ا			
15	reliow waterilly	b.	Б	6	в	, , ,	2. 		31 )	<i>lelle</i>	ow waterlily	r f	* *	: Anglis. I	, , <b>,</b>		
1 32	watershield	: ; ;			1		5 	{ j	32 V	Nate	rshield	*	+ +	÷÷.	4	h	
33	Small duckweed	1	<del>ب</del> ا ا			; ; ;	Ĩ	Î	33 8	inal	Iduckweed	rtra dire	يتهد سيسجه	~-{i			
34	Great duckweed		- •••••		с »ө,	1 in 1	beigr		34 6	Jreat	t duckweed		ndi mada	،	ار پیچتونہ مسؤدہ		
35	Watermeal				÷ ۱	р с. С. 21		t	35 11	Harn	Trakaj		···	د-بي <del>ريكر د</del> خ			
1	and the second	ļ		1	*	÷. ÷.	ľ.	\$ . :	: ::::::::::::::::::::::::::::::::::::				الم الم				
36	Arrowhead	1	- 1	•	•	4	1.18			-		÷					
34	Distantions	<del>[</del> -	·		i i		÷		30 A	mov	Wheed				Ţ		
20	1 TOKOLOWCOU			- 1			i i	2 3 4 4	37 P	icke	relweed			nie <b>Baie</b> sina C		·	
20	Autow Millin		- Northa	1 1 4		de la	÷.		38 A	rtov	y arum	1.1	- <del>1</del>		iter and		
- Kr	L HIIBH	Ø	р L		6	1			39 C	anai		**************************************	1-1-		<u> </u>	•	
40	Buirosh		51	<u>.</u>	C				40 B	ulru	sh		ntran nafiair	ىر مىل <del>ۇ</del> سەن.	t minit		
ا فرو میں دور اور		1		ج أر	17 M 17 M	5		ŗŗ		i		<u>+ -                                   </u>	from		ł. "ł		
41	Iris			1		T.			41 Iri	is	· · · · · · · · · · · · · · · · · · ·		┿╼╍┼╍╸		<u> </u>	-	
42	Swamp Loosestrife			4	• *	Ť	+	•	42 8		n I normalia		<u> </u>	+		_	
43	Purple Loosestrife			÷.	1				43 D.	بر من	P LOUSCSHITE	han national					
~~ 1	Er	J.			1. 	1			12 1 1	ubis	LOOSESTITIE			4	T		
44		1	Ţ	ş	ſ	1	<u> </u>		4.4								

										WJ	Lake + Pond Resou	<u>ere</u>							
Sta	andard Aquatic Vegeta	tion	As	Sessi	nen	t Sit	e Sj		s De	nsit	y Sheet	+		-				ļ	-
	-	linio		L.	A A	نىپ. مەمە		Oiral	Junk		د		4.57	<u> </u>		]	ļ.		ĻĻ
Cod	C Diant Name	NO.	NO.	NO	NO	NO	NO	NÓ	NO.	Code		NO	NO.	NO.	NO	NO.	NO.	NO.	NC
No.			B	16	0	Ē	LE.	G	H	No.		ŢZ	I	K.	16	M	N	D	P
1	Eurosian watermilfail		Į	<u></u>		<u> </u>	n	$+\pi$	$\left  - \right $	3	Furgion watermilfell	+	+	<u> </u>	<u> </u>	4		<del> </del>	
2	Curly lest nondweed						h	H.	┝╌┄╼┢╸	2	Curly leaf pandward	<u> </u>	<u> </u>	<u> </u>	+	+			
3	Chara	ŧ	<u>}</u>	·			+		<mark>{·····</mark>	3	Chara	+			<u> </u>	+	┼╾┾╸	-	
4	Thin leaf pondweed	1	<u> </u>	<u> </u>	 [	<b>.</b>		-	┨╍╍╺╉╸	4	Thin leaf nondweed	+	+		<u> </u>				
5	Flat stem pondweed		<b> </b>		(	e,	B	B		5	Flat stem pondweed	1			†	+	+		منابع دسم
n - en de la de	۵	<b>†</b>			894 mr	. <del></del>							<u> </u>			+			•••••••••••
6	Robbins pondweed		-			ficiant da				6	Robbins pondweed	<u>†</u>	1	<b> </b>	1	<del>  </del>	<b>†</b>		
7	Variable pondweed									7	Variable pondweed	<u> </u>			{		†	***	<u></u>
8	White stem pondweed			L.						8	White stem pondweed		1947-19-19-19-19-19-19-19-19-19-19-19-19-19-						
9	Richardsons pondweed					B	ß	B_		9	Richardsons pondweed			هزه فر ندر یہ ا	÷	1			فشاد سجدت
10	Illinois pondweed	a v 1441.174	: مبريدرد،	بينيب ب	وي المار الم					10	Illinois pondweed								
			يدرد م						н		۵۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰								
11	Large leaf pondweed	۔ بنیب میں		أحسمهم		• i		~ ~		11	Large leaf pondweed							I	
12	American pondweed	in			ار ان میں ان میں ا			<sup>-</sup>	, <u>  ]</u>	12	American pondweed			]	بىرىما				
13	Floating leaf pondweed					متبد شاواره				13	Floating leaf pondweed	*	). 					ļ.	 
14	Water stargrass									4	Water stargrass				لمخببت		,		يستغث
15	Wild Celery	• • • • •				C.	ю	C_		3	Wild Celery			~					
							**		·								┈┽		
10	Arrownead (submergent)									0 /	Arrownead (submergent)					• ····			
17	Nauve muton					•		В.	1 1 1	71	Native militoil				ا. اېندې، -			.:	
10	Witterious lasfumtetmilfoil		-				e • 174			0	Voriene leef waterminoli	-		~~~+					_
20	Coontail		·	. 1	~	A	• •/1	- 4	5	2 n	andas ical waaniiniiniinii				<u> </u>				
		÷ • •		·	·····	<b>I</b> T.,		•••••										· ••••	
21	Flodes			+	· . «	A	à	ł	13	1 1	Jodes						لمنشر .	<b></b>	/m.e.i
22	Bladderwort	··			n 93	n	€		$+\frac{7}{2}$	2 8	laddenwort		·	÷					-
23	Bladderwort (mini)			- +	** • • <b>*</b>	134	<u> </u>	~+	2	3 E	ladderwort (mini)			+		∻⊷∔			
24	Buttercup					· /•	· · · 4	1	2	4 E	luftercup				<del></del>	+		·	-
25	Najas spp.		- <b>[</b> -		jer ji	3.0 - 04. 	- -		2	5 N	lajas spp.	÷					÷	·	
			·			; <b>.</b> .	1	Ì	ţ		an a		- s - en fei	بېلىنىدە <del>ب</del>			ingui afra		
26	Brittle naizd	Ĩ						Ī	2	6 B	srittle naiad						+-		
27	Sago pondweed	]				A	ΑÌ	A	2	7 S	ago pondweed					or and the	çen selêş İ	÷÷	1
28		T	]			_			2	8							,		Ĩ
29						-			2	9									
30	White waterlily						41	,	3(	0 V	/hite waterlily				1				
		e in fi			-		-			4-									
1	Yellow waterlily	~		• # . ! • •		5	5	ВĻ	3	I Y	ellow waterlily								
32	Watershield		<del>.</del>						32	2 VA	/atershield	~							
13	Small duckweed								33	3 8	mall duckweed		,[		,	·			
4 (	Great duckweed	·				,			37	G	reat duckweed				÷	<u> </u>			
0	watermeai			~ ^	~ :				33	<u> </u>	atermeal			-	<u> </u>	<u> </u>		┯	
z	A manufacture of the second						-+-								·				
0 /	Sintranahuraad		-+-						20		Trownead			- <u>-</u>	-	بنبأ بجد			_
8	ATTOW AFITO	·····	. <del>إ</del> ت	- sarta.	•	-	~ <del> </del>	·	20		WARDINGGU			<u> </u>			<u> </u>		-
9 í	Cattall			: +	+0	、中	ζ†.	2+	30	c	attail	·			<u> </u>	•			-
0 1	Bulrash	·		· ···· .	+6		í t	<b>.</b>	40	B	ulrush	+			, i <del>sulpr</del> i s		····-		-
-				-+-	~		*	• †	1	f									-
11	rís t		Ť	••	 		•		41	Īri	**************************************	<b>.</b>	, <b>f</b> rie		·		-	÷∔	-
2 5	wamp Loosestrife	4¥	e na state de la constate de la cons	an a start and a start a		÷ 	-		42	Sv	vamp Loosestrife						-{		1
3 P	Purple Loosestrife			* **	 	••••			43	Pu	rple Loosestrife				┉┟┶	· • • • • • • • • • • • • • • • • • • •			1
4				֠; .		waider i I			44	. <del> </del> ~~~~			-	┙╋╍┿		i - eksi - eksi			1
	and the second secon		-4			<b>**</b>			1 4		**************************************	, mifere es					·	·	-

R: WmsUnlandlidLk Venstation Survey-lake/Templates/SPDENSITYWORKSHEET xis

	12		aterial star	-	-			<del>ministinu</del>		WI.	Lake + And Resource	<del>Ġ.,</del>	ويدر منصر ورث	مىندۇنيە بەرمە	-	in the second	-		
ану. 1913 г.	Su	andard Aquatic Veget	tion	Asse	SSID	ent S	lite S <sub>j</sub>	ecie	s De	ensi T	ty Sheet	•	<b>.</b>		u -u,u	-			Tabl
	-	1	qua	ic Veg	etatio	n Asse	ssment	Site N	umb		an and the second s		tie Ve	Seteti	on Ai	Sets	nent	Site N	unb
	Cod No	Plant Namo	NO.	NO C	NO	D A	O NO	NO.	NO H	Code No.	Plant Name	NO	NO.	NO.	NO	NO.	NO.	NO.	NP
n n Shiriyan		Direaday matamaligali									and an	era gerandiride ris disensista	**************************************						
	-	Curasian watermitten	1				بدر تعمل مع	-		1	Eurasian watermilitoil		-			مى ئەرەھەر ئىچە			
· · · .	3	Chara					-	+ +		4	Chara		- 		ېنه دينه مربو وې د د مربو	÷	iceir 1949		
	4	Thin leaf pondweed		ja se a se	بد مرجود مر ا	- Carlin			مىر مەرە ا	4	Thin leaf nondwood	• · • • • • • • • •		<u> </u>		متيعومهدووه			
	5	Flat stem pondweed			er i <del>sand</del> er I	1		+	r.	5	Flat stem pondweed	12			· · · · ·	•i≓n ni m			
÷				∲⊷—	weiten.	ar - ga ant u	- <b>1</b>			مششود ه	**************************************				الحدي. کا ا				
· · ·	6	Robbins pondweed	į.					7		6	Robbins pondweed			-			-10_2		t t
i.	7	Variable pondweed		internation Antoria			a a gra		B	7	Variable pondwced			1					
	8	White stem pondweed								8	White stem pondweed	_	1						¢
	19	Richardsons pondweed		- 4,		10 - 10 - 10			b.,	3	Richardsons pondweed	ß		n			,		
	10	llimois pondwced		ېلې د ا	Name of the S					10	lilinois pondweed		r id						
-	1	l sroe leefnondweed		et en alar.	·	्र - <u>-</u>				11	I orna labfa an dia			*	مهمین ا	•			i i
. •	13	American nondurant	<b>.</b>	ing land			.1		-	12	American nandword	+	1				·‡	-	ð
	13	Floating leaf pondweed		4						13	Floating leaf nondword							· · · · .	
••	14	Water stargrass		40 A.V.			مەر يېد ا	-		14	Water stargrass	1		~Ť	e norden	••••••		· .	
L	15	Wild Celery		*	3 <b>.</b> 19		÷		Ċ	15	Wild Celery	7	÷•••••	ينۇ <u>خەرى</u>	in second and a second s		<del>, a d</del>		1 5
		Water mariald				4) 	1		B		······································	~		• •••• •••			uni din		1 v
An t	16	Arrowhead (submergent)	2 . 2#**		1			et et l	Ť	16	Arrowhead (submergent	)	· ·}:				•••••• 	ut unenfisie.	1 2
	17	Native milfoil				-		1	B	17	Native milfoil				rimet.	, i	****	··· <del>~ †</del>	
	18	Whorled watermilfoil			4	4				18	Whorled watermilfoil		·	<b>-</b>		n' Innui 44 - 1		· · · · · · · · · · · · · · · · · · ·	
•	19	Various leaf watermilfoil						مساريته	5.	19 ]1	Various leaf watermilfoi	1					;**		
	20	Coontail				H	-i	- /		20 (	Coontail	8	an a						
		ing a second a second constant of the second se	,		3						***				, salar		*** · · • \$.4	+ لمجد	
	41	Eloges		-	÷		-		0	21 1	lodea	C		, and the second	,	ني أي	,		
	22	Diadacrwori Diadacrwori (mini)			1		i d		9	64 L 11 T	Stadderwort	: بلار -	r'r sign	· -		à l		·	1
	24	Buttencup								24 1	Suttereun	ing and			render.	·			
	25	Naias spp.	·			-			1	25 1	aias son.			بىستى مەرەبىر.	-	-		·	
•		and the second sec					\$1. <b>†</b>		÷.		- The second sec	er, en er i sjåre	u sidin				ver i fan i	4	
	26	Brittle naiad	4	*	1				2	16 E	bittle naiad			na singhi na si I	<b></b>	-:		r v afræir	
	27	Sago pondweed	1		1	79 T 14			2	7 \$	ago pondweed						ţ.	••••	1
	28	Read variable and an	į	- fa - fa-		і м.,			2	8					*			1	4
	29	·	1				an an		2	9						- <b></b>		1	1
	30	White waterfily	÷.	se des	Ň				3	0 1	White waterlily				E.		د. داریسی 		].
		and a second	<b>.</b>	ļ	i. F				1			يندو بېلې د سې					- (		
	31	reliow waterilly	1						3	IY	cllow waterhily	an national	in the second se	in alterio i	موجودهم	-19 			
	32 1	Watershield	-		<b>.</b> .		·	-		2 1	atershield								
	35 2	Small duckweed			4 4				13	3 3	mall duckweed			ىت. ئۇمىز	() niyfi		- <del>ساية</del> وب		
	25 1	Yeza duckweed	+				. · · · ·	e de la composición de la composicinde la composición de la composición de la composición de la compos		4 U 4 U	real duckweed	<b>a</b> na <b>j</b> ar va.				÷.		·	
	1.1.1.1		4					-			altrinesi			+	÷.	- kur -	milia	, africante	1
	36 4	Intowhead	-		- market	an a				6 A	rowhead	2	֠				<u></u>		
	37 P	lickerelweed		1.00,11.00 				-	3	7 Pi	ckerelweed	к <b>)</b>	 	~ 		- <del>fra</del>			ł
	38 A	utow brom			: بالذي <del>م</del>	international data			3	8 A.	TOW ARIM		-	-		- in the second			
	39 C	anail			1		-	B	3	C	attail		·		 				
	40 B	lulrush		0 ml 27 774	1		, in the second		4	B	ılrush					nije na seleta na se Seleta na seleta na s Seleta na seleta na s		in the second	
		Burreed		-				6	2	. (	Burreed	Bt			nifirm	-	••••••••••••••••••••••••••••••••••••••	+	
	41 Ir	is i					L		4	l [Iri	5				T	، ميد موجد [:	1	1	
	42 S	wamp Loosestrife							42	Sv	amp Loosestrife	1		1	1	1	1.	{	
	43 P	urple Loosestrife	- 	i sedage i se mag	-c;				43	Pu	rple Loosestrife		1			-	Ĩ		
	أ فاستعت		1	2	1 - 1		1	1	1 41	. 1	1	- F	1	1	1	1	1		

Document Content(s)	
102408finalFERCsub.PDF	.1-10
2008InvasSpecFinalRpt.PDF	.11-50