

PUBLIC INFORMATION

December 3, 2015

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

Re: Rhinelander Hydroelectric Project
FERC Project No. 2161
Expera Specialty Solutions LLC
2015 Invasive Species Report for the Rhinelander Hydroelectric Project, Rhinelander, Oneida County,
Wisconsin

Dear Secretary Bose,

Pursuant to Article 406 of its FERC license for the Rhinelander Hydroelectric Project (FERC Project 2161) Expera Specialty Solutions, LLC is submitting the Invasive Species Report for 2015. Included are copies of the letters to the U.S. Fish and Wildlife Service and the Wisconsin DNR for agency review and comment. No comments were received. Lab results of the Zebra Mussel and Spiny Waterflea are pending, and if positive will be submitted.

- (1) 2015 Invasive Species Report for the Rhinelander Hydroelectric Project (FERC 2161)
- (2) Agency consultation request to Nicholas J. Utrup, U.S. Fish and Wildlife Service, dated October 20, 2015. No Reply
- (3) Agency comments Wisconsin Department of Natural Resources dated October 20, 2015. No Reply

If you have any questions, please do not hesitate to contact me. Thank you for your attention and consideration.

Sincerely,



Gary Renel
E/I Utility Manager
Expera Specialty Solutions
515 West Davenport Street Rhinelander, WI 54501
P 715-369-4244 / C 715-367-4388
makingbigideasfly
experaspecialty.com

October 20, 2015

Mr. Nicholas J Utrup
Wisconsin Hydropower Coordinator
U.S. Fish and Wildlife Service
Green Bay Ecological Service Field Office
2661 Scott Tower Drive
New Franken, WI 54229

Re: Rhinelander Hydroelectric Project
FERC Project No. 2161
Expera Specialty Solutions LLC
DRAFT of 2015 Invasive Species Report for the Rhinelander Hydroelectric Project,
Rhinelander , Oneida County, Wisconsin

Dear Mr. Utrup,

Pursuant to Article 406 of its FERC license for the Rhinelander Hydroelectric Project (FERC Project 2161) Expera Specialty Solutions LLC is obligated to monitor invasive species. Reports are submitted to the U.S. Fish and Wildlife Service and the Wisconsin DNR for agency review and comment.

Please respond with any comment within 30 days of receipt of this letter. If you have no comment, we would appreciate receiving a word to the effect. In the absence of response within 30 days we will assume that comments are not forthcoming.

If you have any questions, please do not hesitate to contact me. Thank you for your attention and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Renel", with a long horizontal flourish extending to the right.

Gary Renel
E/I Utility Manager

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Pc: John Zygaj / Chicago Regional Office FERC

October 20, 2015

Cheryl Laatsch
Water Regulations and Zoning Specialist
Wisconsin Department of Natural Resources
PO Box 7921
Madison WI 53707-7921

Re: Rhinelander Hydroelectric Project
FERC Project No. 2161
Expera Specialty Solutions LLC
DRAFT of 2015 Invasive Species Report for the Rhinelander Hydroelectric Project,
Rhinelander, Oneida County, Wisconsin

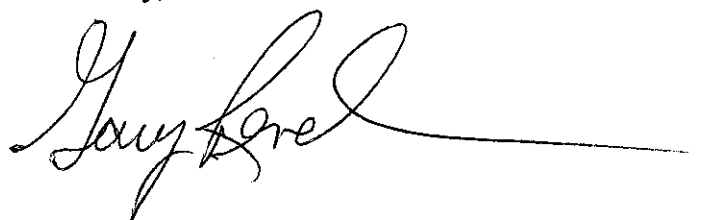
Dear Cheryl,

Pursuant to Article 406 of its FERC license for the Rhinelander Hydroelectric Project (FERC Project 2161) Expera Specialty Solutions, LLC is obligated to monitor invasive species. Reports are submitted to the U.S. Fish and Wildlife Service and the Wisconsin DNR for agency review and comment.

Please respond with any comment within 30 days of receipt of this letter. If you have no comment, we would appreciate receiving a word to the effect. In the absence of response within 30 days we will assume that comments are not forthcoming.

If you have any questions, please do not hesitate to contact me. Thank you for your attention and consideration.

Sincerely,

A handwritten signature in black ink that reads "Gary Renel". The signature is fluid and cursive, with a long horizontal line extending to the right from the end of the name.

Gary Renel
E/I Utility Manager

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Pc: John Zygaj / Chicago Regional Office FERC

2015
Invasive Species Report
For The
Rhineland Hydroelectric Project
Oneida County, Wisconsin
FERC project No. 2161

Prepared for:

Expera Specialty Solutions LLC
515 West Davenport Street
Rhineland, Wisconsin 54501

Prepared by:

Alan W. Wirt
Water Resource Management Specialist
Wisconsin Department of Natural Resources
Rhineland, Wisconsin 54501

Table of Contents

1.0 Summary	1
2.0 Introduction	1
3.0 Project area	3
4.0 Methods	4
4.1 Meandering survey.....	4
4.2 Early detection survey.....	4
4.3 Spiny water flea survey.....	4
4.4 Zebra mussel survey.....	4
4.5 Watercraft inspections	4
4.6 Vouchering.....	5
5.0 Results	5
5.1 Curly-leaf pondweed (<i>Potamogeton crispus</i>)	5
5.2 Purple loosestrife (<i>Lythrum salicaria</i>)	6
5.3 Aquatic forget-me-not (<i>Myosotis scorpioides</i>)	9
5.4 Spiny water flea (<i>Bythotrephes cederstroemi</i>).....	10
5.5 Zebra mussel (<i>Dreissena polymorpha</i>)	11
5.6 Yellow iris (<i>Iris pseudacorus</i>)	12
5.7 Chinese mystery snail (<i>Cipangopaludina chinensis</i>).....	18
5.8 Rusty crayfish (<i>Orconectes rusticus</i>).....	18
5.9 Eurasian water-milfoil (<i>Myriophyllum spicatum</i>).....	18
5.10 Watercraft inspections.....	18
8.0 Mapping tools	18
9.0 Literature cited	19

List of Tables

Table 1: Rhinelander Flowage curly-leaf pondweed data.....	5
Table 2: Rhinelander Flowage purple loosestrife data.....	7
Table 3: Spiny water flea sampling point data sheet.....	11
Table 4: Zebra mussel sampling point data sheet	12
Table 5 Yellow iris GPS sampling point data sheet.....	12

List of Figures

Figure 1: Rhinelander Flowage curly-leaf pondweed locations.....	6
Figure 2: Rhinelander Flowage above dam purple loosestrife locations	8
Figure 3: Rhinelander Flowage below dam purple loosestrife locations	9
Figure 4: Site locations for spiny water flea samples	10
Figure 5: Site locations for zebra mussel samples	11
Figure 6: Site locations for yellow iris.....	17

List of Appendices

Appendix 1: Order amending invasive species management plan.....	20
Appendix 2: Memorandum of understanding	24
Appendix 3: Rhinelander flowage boat landings	28
Appendix 4: Wisconsin Department of Natural Resources aquatic invasive species early detection monitoring protocols	29
Appendix 5: Aquatic invasive species early detection monitoring datasheets.....	42
Appendix 6: Watercraft inspection protocol	44
Appendix 7: Form 3200-120.....	53

1.0 SUMMARY

Aquatic Invasive Species (AIS) monitoring and watercraft inspections began on June 1, 2015 and were completed on August 21, 2015. Yellow iris, Chinese mystery snail, rusty crayfish, and purple loosestrife were observed in 2015.

Curly-leaf pondweed was not located during the survey of 2015. Known locations of curly-leaf pondweed were visited and no rooted vegetation was found.

During meandering surveys in 2015 only one location was found to contain purple loosestrife, with five plants present, compared to nine plants in the same location in 2014. The population was located along Manor Rd on Boom Lake. The five plants that were present were pulled from the site and properly disposed of.

Yellow iris was present throughout the project boundaries. Levels appeared to be stable by a comparison of the survey in 2014. The location of all yellow iris located within the project boundaries had been GPS marked and mapped to better understand the potential increase or decrease of populations.

Chinese mystery snails have been previously noted and in 2015 were located within the entire project boundaries. The largest populations were noted in the upper river portions.

Rusty crayfish were also found throughout the project boundaries and have been previously noted to be in the system.

Eurasian water-milfoil was not observed during any surveys and it has not been previously reported.

Watercraft inspections were conducted with 152 total hours logged, 140 hours were spent at Hodag Park and 12 hours off of Apperson Drive. There were 986 people contacted and 402 watercrafts inspected.

2.0 Introduction

The Rhinelander Flowage is comprised of Boom Lake, Bass Lake, Thunder Lake and Lake Creek and extends through Tomahawk, Newbold, Pine Lake, and Pelican townships in Oneida County. The Rhinelander Flowage was formed when a mud and timber dam was constructed on

the Wisconsin River in 1882. In 1903, the present dam was constructed for the purpose of generating power for the new paper mill (IMFWisconsin, 2013). Aquatic invasive species (AIS) were first documented in the Rhinelander Flowage in 2006 with the discovery of rusty crayfish and purple loosestrife. It is possible that both species were present prior to that and just not reported.

AIS are of concern because they can threaten the balance and diversity of a water body. AIS tend to be aggressive, altering habitat in which they invade and can out-compete native species for food and shelter. They can create recreational issues that become a nuisance to the public. AIS can also have economic impacts, as much money and labor can be spent monitoring and mitigating their impacts (McFarlane 2012).

The Federal Energy Regulatory Commission license for the operation of the Rhinelander Flowage dam pertaining to article 406 requires the licensee to file an invasive species management plan to monitor species such as, purple loosestrife, Eurasian water-milfoil and other possible invasive species (Appendix 1). The invasive species management plan requires the licensee to conduct annual surveys for AIS and file annual reports with the Federal Energy Regulatory Commission.

Activities to meet requirements as listed in the plan could include:

- Watercraft inspections
- AIS monitoring
- Public education and involvement
- Updating signage as needed
- Aquatic plant surveys
- AIS mapping
- AIS removal
- Other AIS related activities

A Memorandum of Understanding between Wausau Paper and Wisconsin Department of Natural Resources (WDNR) was signed in 2013, where Wausau Paper agrees to reimburse WDNR for annual expenditures on agreed upon AIS activities (Appendix 2).

The activities agreed upon for 2015 included the following:

- 1) Monitor existing AIS populations, which include curly-leaf pondweed, purple loosestrife, rusty crayfish, and Chinese mystery snails.
- 2) Search for new AIS, to include Eurasian water-milfoil, zebra mussel and spiny water flea
- 3) Perform watercraft inspections
- 4) Control existing AIS populations as appropriate

3.0 Project area

The Rhinelander Flowage is a soft water drainage system having slightly alkaline, clear water of low transparency. Sand is the predominant littoral material (75 percent) with muck (23 percent) and very limited area of gravel. The shoreline is predominantly upland with wetland of shrub type adjoining portions of the flowage; a good development of wild rice exists in the upper end (Andrews, 1966).

There are eight boat landings throughout the Rhinelander Flowage. Five landings are located along the upper portion. The Town of Pike has three of them, two off of River Rd and one along Journeys End Rd. The Town of Newbold has two, one off of Surf Rd and the other off of Apperson Dr. There is another public boat landing on Boom Lake in Hodag Park. Lake Creek has a landing off of River Rd and Bass Lake has one access point off of Moon Lite Bay Rd (Appendix 3).

The upstream and downstream survey limits for the Rhinelander Hydroelectric Project were defined as follows;

- The water and shoreline of the Rhinelander Flowage from N45° 44' 10.1", W89° 31' 08.4" WGS84 to approximately 0.5 miles upstream from the McNaughton Road Bridge to the dam at the Rhinelander Hydroelectric Project.
- The waters and shoreline of the power canal bypass reach, and tailrace from the dam at the Rhinelander Hydroelectric Project downstream to N45° 38' 12.4", W 89° 25' 0.00" WGS84 approximately 400' downstream of the Davenport Street Bridge.

- Waters and shoreline of Boom Lake, Bass Lake, Thunder Lake and of Lake Creek; up to the confluence with the stream from South Pine Lake at 45° 40' 24.5" W 89° 24' 57.5" WGS84 (Appendix 3).

4.0 Methods

4.1 Meandering survey

A meandering survey consists of driving a boat slowly along the shoreline of a lake between shallow water and maximum rooting depth of aquatic plants or 100 feet from shore, whichever comes first. Rake throws; D-nets, snorkeling, aqua scopes, and underwater cameras can be used as necessary to aid in searching for AIS during a meandering survey.

4.2 Early detection survey

This is a baseline lake-wide AIS monitoring survey with standard operating procedures (Appendix 4).

4.3 Spiny water flea survey

See Appendix 4, water flea tows, page 33

4.4 Zebra mussel survey

See Appendix 4, veliger tows, page 34

4.5 Watercraft inspections

Watercraft inspections are performed by a trained individual at a boat landing. See Appendix 6 for specific inspection methodology. All data is collected on Form 3200-120 (Appendix 7) and then entered into the WDNR SWIMS database.

4.6 Vouchering

All newly discovered AIS have specimens collected and sent to an appropriate laboratory for verification. Vouchering protocols can be found in Appendix 4, voucher collection protocol, page 32.

5.0 Results

Curly-leaf pondweed, purple loosestrife, aquatic forget-me-not, yellow iris, Chinese mystery snail, rusty crayfish and Eurasian water-milfoil were monitored using meandering and early detection survey methods. Bass lake was monitored as part of the DNR 200 Lakes Project following the AIS early detection monitoring protocol and survey results are in Appendix 5.

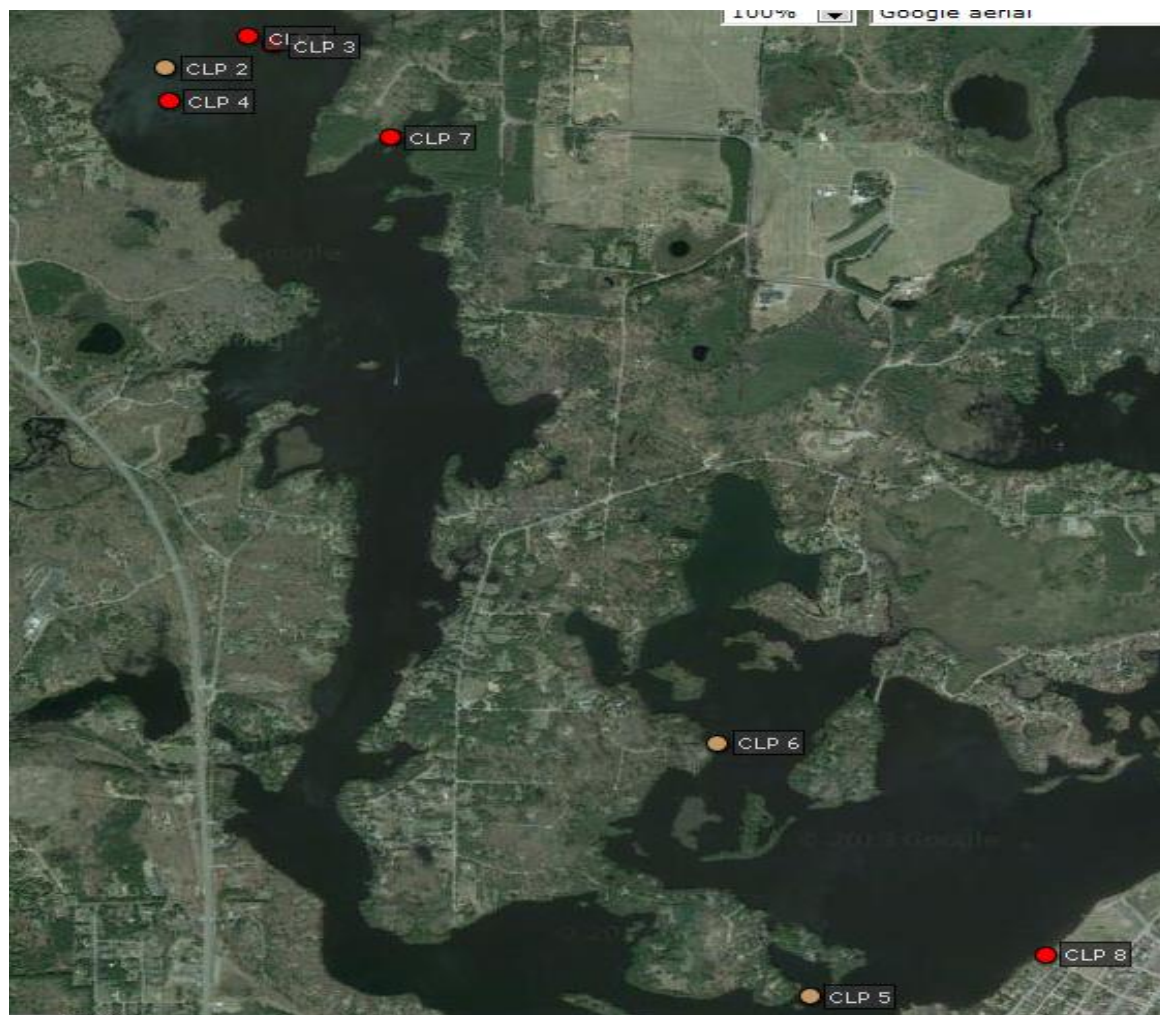
5.1 Curly-leaf pondweed

Curly-leaf pondweed was not located within the project boundaries in 2015. All previously known locations were revisited and checked, no rooted curly-leaf pondweed was located.

Table 1: Rhinelander Flowage curly-leaf pondweed (CLP) data

Site	Latitude	Longitude	2015 Status	Comments
CLP 1	45.68529116	-89.44893605	Not Present	No rooted CLP observed
CLP 2	45.68414	-89.45236	Not Present	No rooted CLP observed
CLP 3	45.68498841	-89.44790868	Not Present	No rooted CLP observed
CLP 4	45.68285	-89.45226	Not present	No rooted CLP observed
CLP 5	45.64882519	-89.42564551	Not Present	No rooted CLP observed
CLP 6	45.65847	-89.42947	Not Present	No rooted CLP observed
CLP 7	45.68147	-89.44308	Not Present	No rooted CLP observed
CLP 8	45.65043	-89.41584	Not Present	No rooted CLP observed

Figure 1: Rhinelander Flowage curly-leaf pondweed (CLP) locations



**Circles: Curly-leaf pondweed observed prior to but not in 2015

5.2 Purple loosestrife

One location of purple loosestrife was observed in 2015, five plants were removed from a previously recorded location. The location had sixteen actively growing plants in 2013 and nine in 2014. *PL100* is located along Manor Road on Boom Lake. The location was documented with a GPS and all plants observed were pulled. Care was taken to remove the root system and all plants were properly disposed of. Table 2 lists all current and previous locations and population status. Figures 2 and 3 display all locations of purple loosestrife documented during 2015 and previous years.

Table 2: Rhinelander Flowage purple loosestrife (PL) data

SITE #	Latitude	Longitude	# OF PLANTS	PRESENT LAST YEAR?	PULLED THIS YEAR?	PULLED LAST YEAR?	BEETLE DAMAGE?	YEAR FIRST OBSERVED	COMMENTS 2013
PL001	45.66255558	-89.43352777	2	NO	NO	No	NO	2006	NOT PRESENT
PL010	45.65824997	-89.42256	10	NO	NO	NO	NO	2007	NOT PRESENT
PL016	45.65930558	-89.42255552	1	NO	NO	NO	NO	2009	NOT PRESENT
PL017	45.6570278	-89.42277781	0	NO	NO	NO	NO	2009	NOT PRESENT
PL018	45.65394443	-89.42980553	0	NO	NO	NO	NO	2009	NOT PRESENT
PL020	45.65931	-89.41575	0	NO	NO	NO	NO	2010	NOT PRESENT
PL023	45.66278	-89.43389	2	NO	NO	NO	NO	2010	NOT PRESENT
PL024	45.66067	-89.43917	0	NO	NO	NO	NO	2010	NOT PRESENT
PL025	45.66092	-89.43869	0	NO	NO	NO	NO	2010	NOT PRESENT
PL026	45.65837586	-89.42275417	0	NO	NO	NO	NO	2011	NOT PRESENT
PL036	45.66104	-89.42197	1	NO	NO	NO	NO	2012	NOT PRESENT
PL037	45.66029	-89.42274	2	NO	NO	NO	NO	2012	NOT PRESENT
PL002	45.63680554	-89.41697225	10	NO	NO	NO	NO	2006	NOT PRESENT
PL004	45.63836114	-89.4155278	2	NO	NO	NO	NO	2006	NOT PRESENT
PL005	45.63891669	-89.41616667	2	NO	NO	NO	NO	2006	NOT PRESENT
PL006	45.63916664	-89.41708331	0	NO	NO	NO	NO	2006	NOT PRESENT
PL008	45.63994448	-89.41938892	0	NO	NO	NO	NO	2006	NOT PRESENT
PL009	45.63911115	-89.41669447	0	NO	NO	NO	NO	2006	NOT PRESENT
PL011	45.63813885	-89.41547222	5	NO	NO	NO	NO	2007	NOT PRESENT
PL012	45.63999997	-89.41944441	0	NO	NO	NO	NO	2007	NOT PRESENT
PL013	45.63991665	-89.41927778	0	NO	NO	NO	NO	2007	NOT PRESENT
PL015	45.64019443	-89.41977776	0	NO	NO	NO	NO	2008	NOT PRESENT
PL019	45.63680554	-89.41602778	4	NO	NO	NO	NO	2009	NOT PRESENT
PL021	45.63867	-89.41572	0	NO	NO	NO	NO	2010	NOT PRESENT
<i>PL100</i>	45.66042	-89.42264	5	YES	YES	YES	NO	2013	PLANT PULLED

Site #'s in *italics* indicate purple loosestrife presence in 2015

Figure 2: Rhinelander Flowage above dam purple loosestrife (PL) locations



**Stars: 2015 purple loosestrife locations

**Circles: Prior purple loosestrife locations

Figure 3: Rhinelander Flowage below dam purple loosestrife (PL) locations



**Circles: Prior purple loosestrife locations

Note: No purple loosestrife observed in 2014

5.3 Aquatic forget-me-not

In surveys conducted during 2015 Aquatic forget-me-nots were located in many new locations. It was first documented in 2013, and will be continued to be monitored. Aquatic forget-me-not had been added to the invasive species restricted list in 2015.

5.4 Spiny water flea

Spiny water flea was monitored using water flea survey methods. The survey was completed on August 5, 2015 by two DNR employees. Five sites were sampled during survey for the presence of spiny water flea (Figure 4). After collection, samples were sent to a laboratory for analysis. Table 3 lists information collected as part of the sites sampled. Laboratory results are pending and once results are received, all data will be entered into the WDNR SWIMS database. No spiny water fleas have been detected in surveys completed prior to 2015.

Figure 4: Site locations for spiny water flea samples in the Rhinelander Flowage

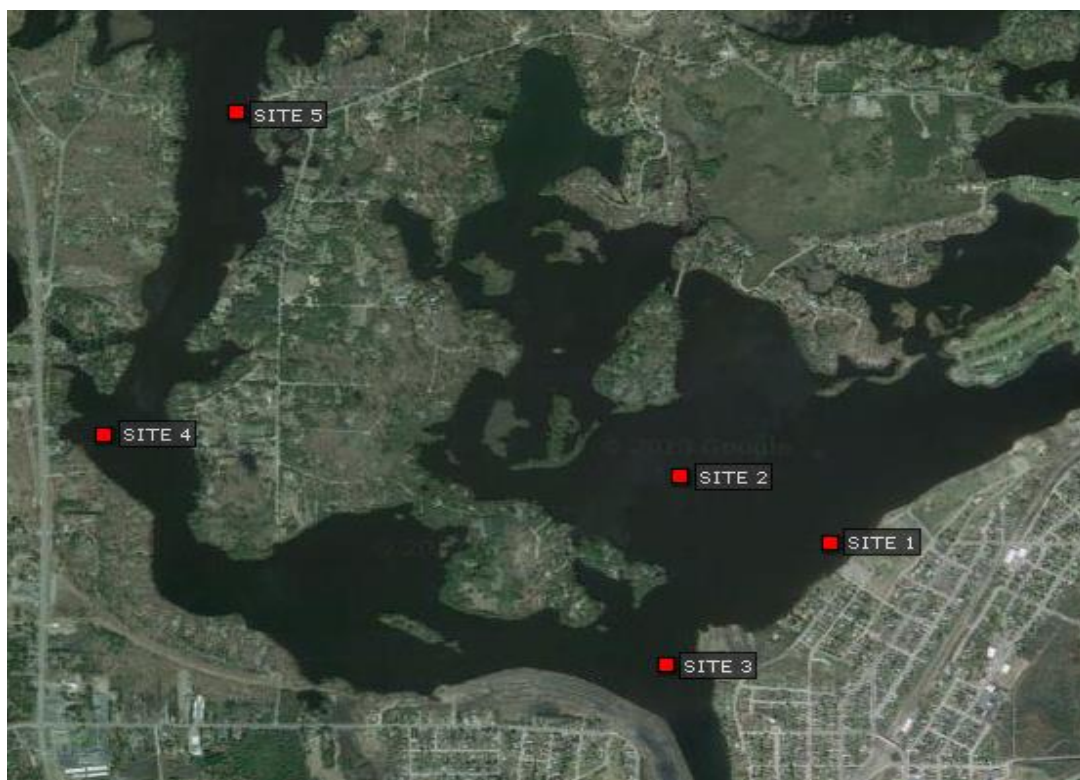


Table 3: Spiny water flea sampling point data sheet

Site	Secchi Depth (m)	Depth Sampled(m)	Tow Pattern	Results
1	1.25	6	Oblique	***
2	1.25	6	Oblique	***
3	1.25	2	Oblique	***
4	1.25	2	Oblique	***
5	1.25	2	Oblique	***

5.5 Zebra mussel

Zebra mussels were monitored using veliger survey methods. Three sites were sampled on August 5, 2015 by two DNR employees (Figure 5). Samples were sent to a laboratory for analysis. Table 4 lists information collected as part of the sites sampled. Laboratory results are pending and once results are received, all data will be entered into the WDNR SWIMS database. No zebra mussel veligers have been detected in surveys previous to 2015.

Figure 5: Site locations for zebra mussel samples in the Rhinelander Flowage



Table 4: Zebra mussel sample points data sheet

Site	Secchi Depth (m)	Depth Sampled (m)	Number of Tows	Results
1	1.25	2	1	***
2	1.25	6	1	***
3	1.25	2	1	***

5.6 Yellow iris

Yellow iris was observed throughout the project boundaries in 2015. GPS points were taken during shoreline monitoring. During 2015 when yellow iris was located seed pods were removed when possible and educational material was presented to shoreline owners. Populations of yellow iris appear to be stable between the 2014 to 2015 survey but the current data will assist in monitoring any increase or decrease of the populations.

Table 5: Yellow iris (YI) data within project boundaries.

Location Name	Latitude	Longitude	2015 Present/Absent
YI1	45.704063	-89.512608	Present in 2015
YI2	45.704036	-89.512562	Present in 2015
YI3	45.704035	-89.512409	Present in 2015
YI4	45.704033	-89.512361	Present in 2015
YI5	45.704072	-89.512128	Present in 2015
YI6	45.704025	-89.51136	Present in 2015
YI7	45.703941	-89.511554	Present in 2015
YI8	45.703903	-89.51087	Present in 2015
YI9	45.703911	-89.510837	Present in 2015
YI10	45.704411	-89.5023	Present in 2015
YI11	45.706299	-89.493234	Present in 2015
YI12	45.681756	-89.455276	Present in 2015
YI13	45.681232	-89.454803	Present in 2015
YI14	45.679965	-89.441661	Present in 2015
YI15	45.670474	-89.436865	Present in 2015
YI16	45.657405	-89.447711	Present in 2015
YI17	45.654826	-89.449434	Present in 2015
YI18	45.65144	-89.44039	Present in 2015
YI19	45.641528	-89.420297	Present in 2015
YI20	45.641511	-89.420206	Present in 2015
YI22	45.641579	-89.420004	Present in 2015

YI23	45.643848	-89.420375	Present in 2015
YI24	45.645368	-89.420941	Present in 2015
YI25	45.6484059	-89.4212008	Present in 2015
YI26	45.6484434	-89.4208038	Present in 2015
YI27	45.6482859	-89.4197094	Present in 2015
YI28	45.6483759	-89.418776	Present in 2015
YI29	45.6492534	-89.4174778	Present in 2015
YI30	45.6501459	-89.4162011	Present in 2015
YI31	45.6504459	-89.4157183	Present in 2015
YI32	45.6505284	-89.4156003	Present in 2015
YI33	45.6511209	-89.4146562	Present in 2015
YI34	45.6517058	-89.4142056	Present in 2015
YI35	45.6519233	-89.4140232	Present in 2015
YI36	45.6525083	-89.4133687	Present in 2015
YI37	45.6526508	-89.412843	Present in 2015
YI38	45.6535882	-89.4109333	Present in 2015
YI39	45.6536482	-89.4106972	Present in 2015
YI40	45.6537007	-89.4105792	Present in 2015
YI41	45.6541882	-89.4091415	Present in 2015
YI42	45.6542257	-89.4089806	Present in 2015
YI43	45.6544356	-89.4085622	Present in 2015
YI44	45.6551331	-89.4073498	Present in 2015
YI45	45.6551931	-89.4072318	Present in 2015
YI46	45.655433	-89.4063413	Present in 2015
YI47	45.6554705	-89.406116	Present in 2015
YI48	45.6560855	-89.4050324	Present in 2015
YI49	45.656093	-89.404968	Present in 2015
YI50	45.6560405	-89.4047749	Present in 2015
YI51	45.6560255	-89.4047105	Present in 2015
YI52	45.6561904	-89.4040561	Present in 2015
YI53	45.6577652	-89.410429	Present in 2015
YI54	45.6603673	-89.4130361	Present in 2015
YI55	45.6607647	-89.4150746	Present in 2015
YI56	45.6601198	-89.4148707	Present in 2015
YI57	45.6597899	-89.414506	Present in 2015
YI58	45.6584551	-89.4140553	Present in 2015
YI59	45.6584139	-89.4140124	Present in 2015
YI60	45.6583239	-89.4139212	Present in 2015
YI61	45.6590625	-89.4177997	Present in 2015
YI62	45.6596549	-89.4182611	Present in 2015
YI63	45.6598799	-89.4187117	Present in 2015

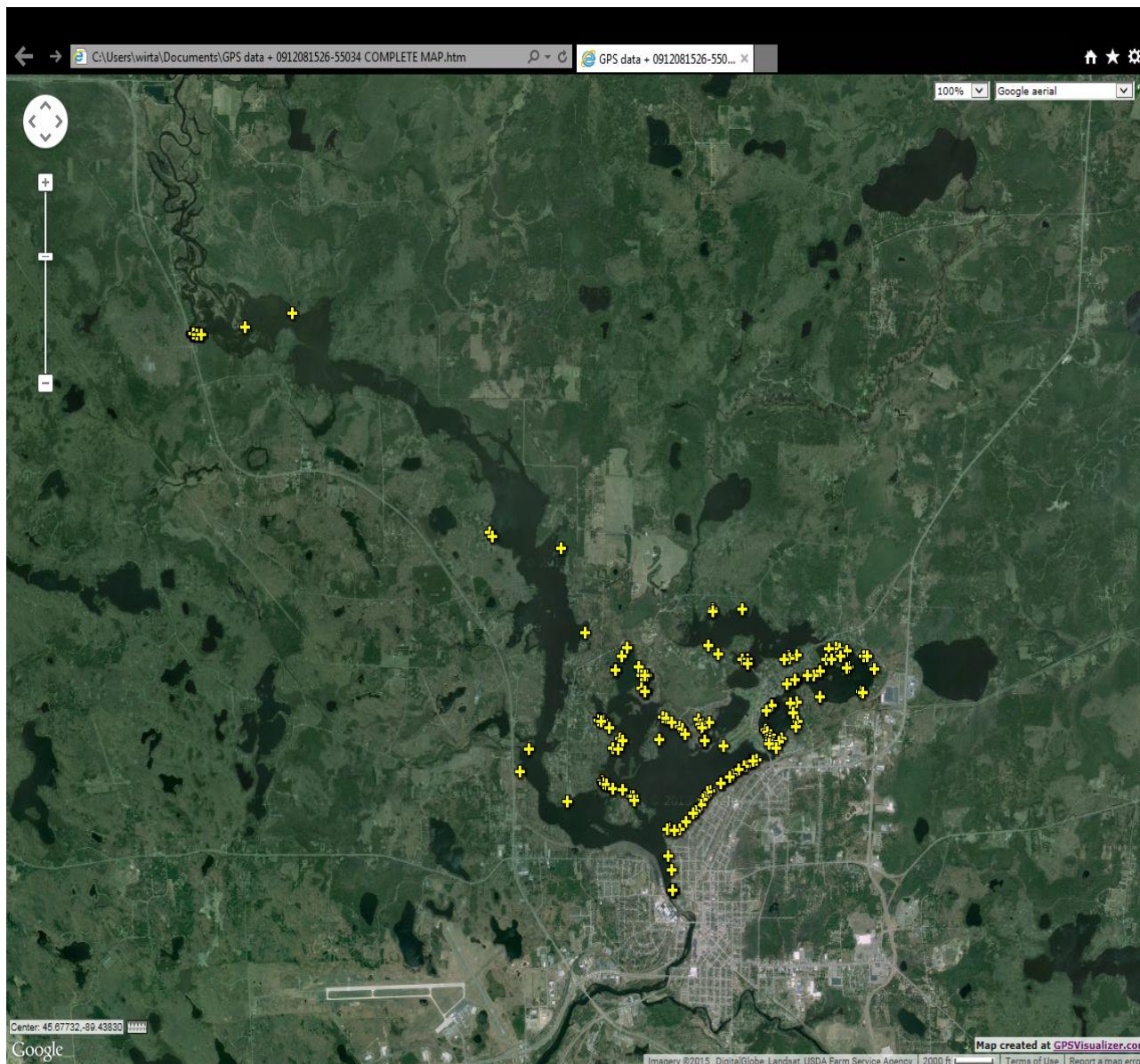
YI64	45.6603373	-89.4202888	Present in 2015
YI65	45.6608996	-89.4213402	Present in 2015
YI66	45.6609746	-89.4220269	Present in 2015
YI67	45.6584926	-89.4227135	Present in 2015
YI68	45.6642438	-89.4261467	Present in 2015
YI69	45.6638464	-89.4254923	Present in 2015
YI70	45.6638614	-89.4252563	Present in 2015
YI71	45.6639814	-89.4251919	Present in 2015
YI72	45.6656534	-89.4249666	Present in 2015
YI73	45.6656534	-89.4251704	Present in 2015
YI74	45.6656235	-89.4255352	Present in 2015
YI75	45.6656684	-89.4261789	Present in 2015
YI76	45.6666057	-89.4265866	Present in 2015
YI77	45.6687349	-89.4289523	Present in 2015
YI78	45.6678278	-89.429875	Present in 2015
YI79	45.6663095	-89.4311839	Present in 2015
YI80	45.6662758	-89.4310766	Present in 2015
YI81	45.6607122	-89.4344509	Present in 2015
YI82	45.6606597	-89.4343007	Present in 2015
YI83	45.6605172	-89.4339037	Present in 2015
YI84	45.6606447	-89.4335282	Present in 2015
YI85	45.6597524	-89.4323695	Present in 2015
YI86	45.6585451	-89.4301915	Present in 2015
YI87	45.6582751	-89.4297945	Present in 2015
YI88	45.6573678	-89.4306099	Present in 2015
YI89	45.6574803	-89.4315648	Present in 2015
YI90	45.6537382	-89.4336462	Present in 2015
YI91	45.6535882	-89.4334424	Present in 2015
YI92	45.6534907	-89.43326	Present in 2015
YI93	45.6534682	-89.4328201	Present in 2015
YI94	45.6529508	-89.4318008	Present in 2015
YI95	45.6529133	-89.431715	Present in 2015
YI96	45.6528383	-89.4296658	Present in 2015
YI97	45.6520733	-89.4280457	Present in 2015
YI98	45.6520733	-89.4277024	Present in 2015
YI99	45.6516533	-89.4274664	Present in 2015
YI100	45.6574278	-89.4001722	Present in 2015
YI101	45.6581477	-89.3996572	Present in 2015
YI102	45.6585076	-89.3991852	Present in 2015
YI103	45.6598574	-89.3963528	Present in 2015
YI104	45.6604572	-89.3961382	Present in 2015

YI105	45.661477	-89.3968678	Present in 2015
YI106	45.6624968	-89.3975115	Present in 2015
YI107	45.6625868	-89.3963099	Present in 2015
YI108	45.6632466	-89.3918252	Present in 2015
YI109	45.6638464	-89.3839288	Present in 2015
YI110	45.6636815	-89.3836069	Present in 2015
YI111	45.6663807	-89.3812466	Present in 2015
YI112	45.6678053	-89.3826413	Present in 2015
YI113	45.6678503	-89.3833494	Present in 2015
YI114	45.6684201	-89.3866539	Present in 2015
YI115	45.66866	-89.3880057	Present in 2015
YI116	45.6687499	-89.3887353	Present in 2015
YI117	45.668615	-89.3900657	Present in 2015
YI118	45.6730383	-89.4066525	Present in 2015
YI119	45.6730383	-89.4124031	Present in 2015
YI120	45.6728733	-89.4124889	Present in 2015
YI121	45.6690498	-89.4132829	Present in 2015
YI122	45.6680902	-89.4113088	Present in 2015
YI123	45.6674604	-89.4067383	Present in 2015
YI124	45.6674304	-89.4056439	Present in 2015
YI125	45.6670405	-89.4056225	Present in 2015
YI126	45.6669955	-89.4056225	Present in 2015
YI127	45.6674454	-89.3987346	Present in 2015
YI128	45.6675953	-89.3976831	Present in 2015
YI129	45.6678503	-89.3978977	Present in 2015
YI130	45.6679102	-89.3962884	Present in 2015
YI131	45.6674154	-89.3905377	Present in 2015
YI132	45.6674604	-89.3903661	Present in 2015
YI133	45.6674154	-89.3895292	Present in 2015
YI134	45.6677753	-89.3878984	Present in 2015
YI135	45.6679252	-89.3877268	Present in 2015
YI136	45.6665607	-89.3863106	Present in 2015
YI137	45.6665157	-89.3866324	Present in 2015
YI138	45.6661858	-89.3917823	Present in 2015
YI139	45.6661408	-89.3917823	Present in 2015
YI140	45.665601	-89.3930054	Present in 2015
YI141	45.665586	-89.394207	Present in 2015
YI142	45.6652111	-89.3963742	Present in 2015
YI143	45.6651811	-89.3965888	Present in 2015
YI144	45.6651811	-89.3966746	Present in 2015
YI145	45.6647162	-89.398241	Present in 2015

YI146	45.6624593	-89.4009608	Present in 2015
YI147	45.6623018	-89.4010037	Present in 2015
YI148	45.6617132	-89.4020927	Present in 2015
YI149	45.6595537	-89.4023877	Present in 2015
YI150	45.6595087	-89.4022858	Present in 2015
YI151	45.6593437	-89.4019908	Present in 2015
YI152	45.6589575	-89.4012451	Present in 2015
YI153	45.6586051	-89.40139	Present in 2015
YI154	45.6585563	-89.4014168	Present in 2015
YI155	45.658382	-89.4014919	Present in 2015
YI156	45.6579752	-89.4016716	Present in 2015

**GPS locations of yellow iris within project boundaries.

Figure 6: Mapped location of yellow iris



*Location of yellow iris in 2015

5.7 Chinese mystery snail

Chinese mystery snails were observed throughout the project boundaries in 2015 and were known to be present previous to 2015. The largest populations observed were up river locations adjacent to the wild rice fields.

5.8 Rusty crayfish

Rusty crayfish were observed throughout the project boundaries in 2015 and were known to be present previous to 2015.

5.9 Eurasian water-milfoil

Eurasian water-milfoil was not observed during any surveys in 2015 and has never been detected previous to 2015.

5.10 Watercraft inspections

Inspections were completed from June 1, 2015 to August 21, 2015. The inspections were completed using the watercraft inspection report form 3200-120 (Appendix 7). Inspection days focused on Friday, Saturday and Sunday to maximize the amount of boater contacts. Inspection locations were chosen based on the highest amount of traffic. Hodag Park boat landing was the primary location, and the boat launch off of Apperson Drive in the town of McNaughton was a secondary location. A total of 163 hours were logged resulting in 1044 people contacted and 421 watercrafts inspected. 147 hours were spent at Hodag Park and 16 hours off of Apperson Drive. During inspections there were zero noncompliance issues, all people contacted seemed eager to participate and were given up-to-date AIS information.

6.0 Mapping Tools

The maps were created using the website *GPSVisualizer.com*. This is an online utility that creates maps from various forms of GPS data. The GPS points taken throughout the survey were uploaded to generate the maps in this report.

7.0 Literature cited

IMFWisconsin, *History of the Rhinelander Chain*, Uncategorized.

Rhinelander. Web. Feb, 2013

McFarland, Erin, *Watercraft Inspector Handbook*, Wisconsin Lakes Partnership, 2012.

Andrew, M. Lloyd and Threinen, C.W., *Surface Water Resources of Oneida County*, Lakes and Streams Classification Project, Madison Wisconsin, 1966.

Appendix 1: Order amending invasive species management plan

135 FERC ¶ 62,132
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Wausau Paper Specialty Products, LLC

Project No. 2161-019

ORDER AMENDING INVASIVE SPECIES MANAGEMENT
PLAN PURSUANT TO ARTICLE 406

(Issued May 11, 2011)

1. On February 10, 2011, Wausau Paper Specialty Products, LLC (licensee), filed a request to amend the invasive species management plan for the Rhinelander Hydroelectric Project (FERC No. 2161), pursuant to article 406 of the project license.¹ The project is located on the upper Wisconsin River in Tomahawk, Newbold, Pine Lake, and Pelican townships, Oneida County, Wisconsin.

BACKGROUND

2. Article 406 requires the licensee,² after consultation with the Wisconsin Department of Natural Resources (Wisconsin DNR) and the U.S. Fish and Wildlife Service (FWS), to file an exotic species control plan to monitor invasive species, such as purple loosestrife (*Lythrum salicaria*) and Eurasian water milfoil (*Myriophyllum spicatum*), at the project. The approved invasive species management plan, as modified, requires the licensee to conduct annual surveys for invasive plants, especially purple loosestrife and Eurasian water milfoil, in project lands and waters, for at least five consecutive years.³ The approved invasive species management plan requires the licensee to file annual monitoring reports with the Wisconsin DNR and FWS for review, and to file the annual monitoring reports, with any resource agency comments and recommendations, with the Federal Energy Regulatory Commission (Commission). The

¹ Order Issuing New License issued August 20, 2003 (104 FERC ¶ 62,134).

² On December 28, 2006, the Commission issued an Order Approving Transfer of License from Rhinelander Paper Company to Wausau Paper Specialty Products. *See* (117 FERC ¶ 62,270).

³ Order Modifying And Approving Invasive Species Management Plan Pursuant To Article 406 issued April 27, 2006 (115 FERC ¶ 62,106).

licensee filed the five annual monitoring reports with the Wisconsin DNR and FWS, and subsequently with the Commission, in a timely manner.

3. The approved invasive species management plan requires that the fifth monitoring report be a comprehensive report containing a comparison of all data collected in the previous five years. Further, it states that if, after five consecutive years, there appears to be either no invasive plant species present or no spread of existing invasive plants, then the licensee may propose an alternative monitoring and reporting frequency, after consulting with the resource agencies.

4. The licensee filed its fifth monitoring report on December 10, 2010, which documented the survey of project lands and waters for invasive species for 2010. The licensee filed its comprehensive summary report separately on February 10, 2011, along with its request to amend the plan.

LICENSEE'S SUMMARY REPORT

5. In 2006, a baseline meander survey for purple loosestrife and Eurasian water milfoil was conducted for the project. Annual surveys were conducted in 2007, 2008, 2009, and 2010. During all of the surveys, no Eurasian water milfoil was found. In addition, point intercept surveys for Eurasian water milfoil were performed concurrently with the meander surveys, in all survey years at the project, and no Eurasian water milfoil was found.

6. In all survey years, purple loosestrife was found within the limits of the project, both upstream and downstream of the project dam. The total number of occurrences and plants has remained relatively low during the five years of surveys:

- 2006 - one occurrence (16 plants) located in the upstream (impoundment) and eight occurrences (28 plants) downstream (bypass reach and tailrace) of the dam (total = 44 plants)
- 2007 - two occurrences (14 plants) located in the upstream and five occurrences (25 plants) downstream of the dam (total = 39 plants)
- 2008 - two occurrences (12 plants) located in the upstream and nine occurrences (40 plants) downstream of the dam (total = 52 plants)
- 2009 - five occurrences (20 plants) located in the upstream and four occurrences (28 plants) downstream of the dam (total = 48 plants)
- 2010 - nine occurrences (35 plants) located in the upstream and eight occurrences (23 plants) downstream of the dam (total = 58 plants).

7. Overall, the number of purple loosestrife plants observed downstream of the dam has remained about the same while those upstream of the dam have shown an increase. The licensee cites the use of the *Galerucella* beetle as a biological control and the ability of the survey crew to remove the seed heads or to pull many of the plants from licensee-owned and/or publicly-accessible lands downstream of the dam. The licensee cites the absence of the *Galerucella* beetle and the difficulty in obtaining permission from land owners to enter their property to remove the plants upstream of the dam.

LICENSEE'S PROPOSED AMENDMENT

8. The licensee proposes, after consultation with the Wisconsin DNR, to provide funding to the Wisconsin DNR to hire a seasonal summer employee from mid-May through August. This person will be directed by the Wisconsin DNR and their duties would be focused both on control and monitoring of purple loosestrife in the project area. The licensee proposes that the seasonal employee's activities would include:

- watercraft inspections
- Aquatic Invasive Species (AIS) monitoring (Eurasian water milfoil, curly leaf pond weed, purple loosestrife, spiny water-flea, zebra mussels, and possibly others)
- public education and involvement
- updating signage as needed
- aquatic plant surveys
- AIS and aquatic plant mapping
- AIS removal
- train volunteers on watercraft inspection and citizen volunteering monitoring activities
- other AIS related activities as needed.

9. The licensee proposes to fund this position for a period of five years. At the end of the five-year period, the licensee proposes, in consultation with the resource agencies, to review the effectiveness of this procedure in the control of purple loosestrife and other invasive species. The licensee states that the funding of the AIS person would be a valuable contribution in the control of invasive species, and that the funding would provide a more effective and coordinated use of funds to enhance the quality of the project area.

licensee filed the five annual monitoring reports with the Wisconsin DNR and FWS, and subsequently with the Commission, in a timely manner.

3. The approved invasive species management plan requires that the fifth monitoring report be a comprehensive report containing a comparison of all data collected in the previous five years. Further, it states that if, after five consecutive years, there appears to be either no invasive plant species present or no spread of existing invasive plants, then the licensee may propose an alternative monitoring and reporting frequency, after consulting with the resource agencies.

4. The licensee filed its fifth monitoring report on December 10, 2010, which documented the survey of project lands and waters for invasive species for 2010. The licensee filed its comprehensive summary report separately on February 10, 2011, along with its request to amend the plan.

LICENSEE'S SUMMARY REPORT

5. In 2006, a baseline meander survey for purple loosestrife and Eurasian water milfoil was conducted for the project. Annual surveys were conducted in 2007, 2008, 2009, and 2010. During all of the surveys, no Eurasian water milfoil was found. In addition, point intercept surveys for Eurasian water milfoil were performed concurrently with the meander surveys, in all survey years at the project, and no Eurasian water milfoil was found.

6. In all survey years, purple loosestrife was found within the limits of the project, both upstream and downstream of the project dam. The total number of occurrences and plants has remained relatively low during the five years of surveys:

- 2006 - one occurrence (16 plants) located in the upstream (impoundment) and eight occurrences (28 plants) downstream (bypass reach and tailrace) of the dam (total = 44 plants)
- 2007 - two occurrences (14 plants) located in the upstream and five occurrences (25 plants) downstream of the dam (total = 39 plants)
- 2008 - two occurrences (12 plants) located in the upstream and nine occurrences (40 plants) downstream of the dam (total = 52 plants)
- 2009 - five occurrences (20 plants) located in the upstream and four occurrences (28 plants) downstream of the dam (total = 48 plants)
- 2010 - nine occurrences (35 plants) located in the upstream and eight occurrences (23 plants) downstream of the dam (total = 58 plants).

Appendix 2: Memorandum of understanding

MEMORANDUM OF UNDERSTANDING

BETWEEN

WAUSAU PAPER MILLS, LLC (“WPM”)
100 PAPER PLACE
MOSINEE, WI 54455

AND

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
 (“WDNR”)
P. O. BOX 7921
MADISON, WI 53707

THIS MEMORANDUM OF UNDERSTANDING (“MOU”), is made by and between WPM and WDNR.

WITNESSETH: In consideration of the mutual promises herein contained, the parties have agreed and hereby do enter into this MOU according to the provisions set out herein:

A. The WDNR agrees to perform the following services:

WDNR agrees to provide an employee to perform and fulfill those seasonal services as specified in FERC License Article 406 for the Rhinelander Hydroelectric Project No. 2161 (issued August 20, 2003), as modified by that certain “Order Amending Invasive Species Management Plan Pursuant To Article 406 (issued May 11, 2011) (hereinafter, the “Invasive Species Order”). The terms and provisions of the said Invasive Species Order are incorporated into this MOU as if set forth at length herein and a copy of the Invasive Species Order is attached and incorporated hereto and marked as Exhibit A to this MOU. Specifically, WDNR agrees that said employee shall perform those tasks itemized in paragraph number 8 and ordering paragraph (B) of the Invasive Species Order. WDNR further agrees that said employee shall develop, prepare, and provide to WPM for its timely submission to FERC thereafter those annual monitoring reports and the comprehensive summary report as specified in ordering paragraph (C) of the Invasive Species Order. The parties hereto understand and acknowledge that WPM holds the ultimate obligation to comply with the provisions of the Invasive Species Order. In acknowledgment thereof, WDNR agrees that it shall use its best efforts to ensure that the tasks will be performed and the annual monitoring reports and comprehensive summary report will be developed, prepared and provided to WPM so as to allow WPM to timely meet its obligations as set forth in the said Invasive Species Order, particularly paragraph number 8 and ordering paragraphs (B) and (C) thereof. To that end, WDNR agrees that said employee shall develop, prepare, and provide the annual monitoring reports and the comprehensive summary report in final draft form to WPM by no later than **October 1** for the years in which annual monitoring reports are required to be submitted for agency consultation, and the finalized annual monitoring reports and the finalized comprehensive summary report shall be submitted to WPM

by no later than **December 1** for the years in which annual monitoring reports are required to be submitted to the FERC.

WDNR acknowledges that all of the tasks contemplated herein, all of the reporting contemplated herein, and all of the compensation for the performance of said tasks and reporting herein are for services and reporting within the Rhinelander Hydroelectric Project No. 2161 project boundary (hereinafter, "Project Boundary"). WDNR acknowledges, conversely, that any invasive species activities that the WDNR might conduct and/or report on outside the said Project Boundary are outside the scope of this MOU and are not to be compensated with any of the funds to be paid pursuant to this MOU.

In addition, WDNR agrees that the said employee shall attend and participate in status/updating meetings with WPM and/or WDNR as may be required from time to time.

WDNR further agrees that the following general expectations shall apply to said employee:

Employee is to be familiar with the current Article 406 Invasive Species Plan. Employees duties are expected to fulfill the plan requirements.

Employee is not authorized to represent Wausau Paper to the media, unless so directed and authorized in accordance with Wausau Paper Corporate policies.

Employee is expected to be a visual representative of professionalism, and environmental stewardship for both the WDNR and Wausau Paper.

WDNR will provide management and oversight of all employees associated with the scope of work.

Employee will at all times be considered an employee of WDNR and not of WPM.

B. Wausau Paper agrees to perform the following services:

1. Reimburse WDNR for the combined wages and expenses incurred in performing the services pursuant to this MOU in an amount not to exceed eight thousand dollars (\$8,000.00) per year for the duration of this MOU.
2. Provide WDNR with the Project Boundary map.
3. Grant access to the WDNR for any land owned or controlled by Wausau Paper within the Project Boundary.
4. WDNR will provide an itemized invoice for the actual net costs incurred for review and acceptance at the completion of the scope of work. WDNR will submit the invoice no later than 90 days from the end the season. Payment shall be made only after WDNR has completely performed the duties under this MOU.
5. Invoices by the WDNR will be sent to:

Accounts Payable
Wausau Paper
PO Box 900
Mosinee, WI 54455

C. The parties further agree that the following shall be essential terms and conditions of this MOU:

1. No person on the grounds of handicap, race, color, religion, sex or national origin, will be excluded from participation in, or be denied benefits of, or be otherwise subjected to discrimination in the performance of this MOU, or in the employment practices of the MOU.
2. The term of this MOU shall be from October 01, 2012, through December 31, 2015.
3. This MOU may be terminated by either party by giving written notice to the other, as least thirty (30) days before the effective date of the termination. In that event, the WDNR shall be entitled to receive just and equitable compensation for any satisfactory authorized work completed as of the termination date.
4. This MOU may be modified only by amendment executed by all parties hereto. The MOU, in no case can fulfill less than the license requirement of this position.
5. The WDNR shall, for a period of three (3) years after completion and acceptance by Wausau Paper, maintain books, records, documents, and other evidence directly pertinent to performance on work under this MOU in accordance with generally accepted accounting principles and practices. The WDNR shall also maintain the financial information and data used in the preparation or support of the cost submission in effect on the date of execution of this contract and a copy of the cost summary submitted to Wausau Paper.
6. Subject to assessment by the FERC, this position will be reviewed after the end of the 5th year ending December 31, 2015.
7. Each party agrees that, as related to this MOU, any loss or expense (including costs and attorney fees) by reason of liability imposed by law, will be charged to the party responsible for the officer, employee or agent whose activity caused the loss or expense.

D. All communications regarding this MOU will be made through the designated contacts. The designated contacts are:

Cara Kurtenbach
Wausau Paper
100 Paper Place
Mosinee, WI 54455
(715) 692-2023

Gary Renel
Rhineland Mill
515 West Davenport Street
Rhineland, WI 54401
(715) 369-4244

Program Contact: Cheryl Laatsch, Acting FERC Coordinator
Wisconsin Department of Natural Resources
101 S. Webster St
Madison WI 53707
(920) 387-7869

Financial Contact: Christina Isenring
Wisconsin Department of Natural Resources
101 S Webster Street
Madison WI 53707
(608) 266-5285

Reference: Exhibit A: FERC Article 406.

IN WITNESS WHEREOF, the parties have by their duly authorized representatives set their signatures.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Cathy Stepp, Secretary

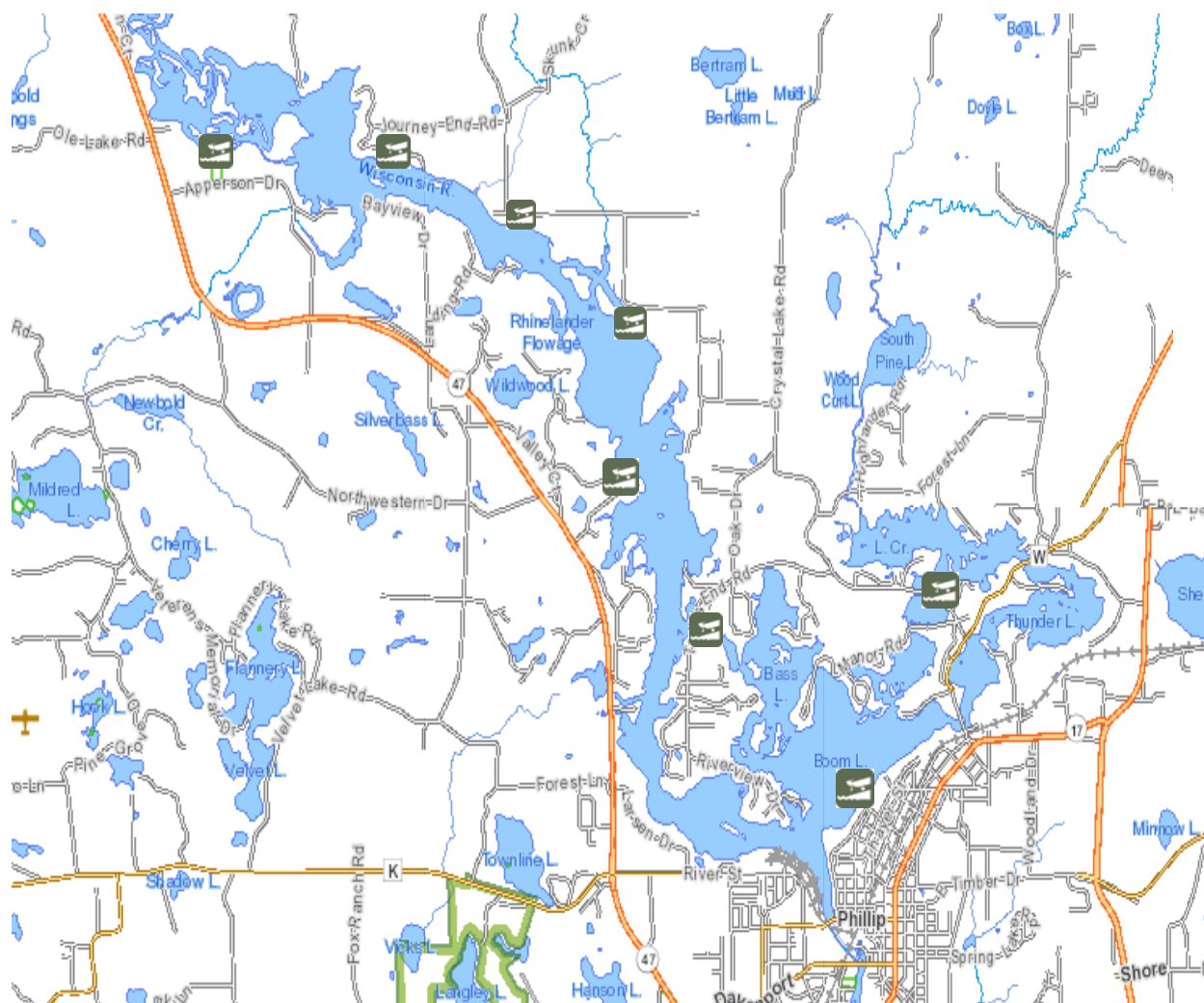
Date

WAUSAU PAPER MILLS, LLC

By: Jeffery A. Verdoorn
As its: VP of Operations

Date

Appendix 3: Rhinelander Flowage boat landings



Appendix 4

Aquatic Invasive Species Early Detection Monitoring in Lakes

State of Wisconsin Department of Natural Resources STANDARD OPERATING PROCEDURES

*Bureau of Water Quality
March 2015*

BACKGROUND

The Wisconsin Department of Natural Resources (DNR) currently relies upon a strong network of volunteers (Citizen Lake Monitoring Network – CLMN), partners (e.g. Wisconsin River Alliance, Great Lakes Indian Fish and Wildlife Commission, University of Wisconsin-Madison, County AIS Staff) and Department staff to monitor lakes and streams for new aquatic invasive species (AIS). This system has been adequate to date but does not enable a statewide assessment of AIS presence/absence or the rate of spread and therefore an evaluation of the effectiveness of the State's AIS message which is aimed at stopping the spread of AIS by targeting transient boaters.

The statewide monitoring strategy outlined below will provide DNR and partners with information to:

1. Establish baseline data on statewide AIS distribution.
2. Track the rate of AIS spread in a number of vulnerable waterbodies that will represent the state as a whole.
3. Evaluate the effectiveness of outreach and education efforts aimed at stopping the spread of AIS.

In addition to these three priority objectives this monitoring strategy may trigger statewide, regional or local implementation of a rapid response strategy, lead to an assessment of abundance and frequency within a waterbody and/or an evaluation of management activities. These secondary monitoring activities will depend on staff and funding availability and will likely be funded through competitive projects and AIS or other grants or by DNR partners.

To have a statistically valid assessment of AIS spread in the state's lakes the DNR is monitoring 200 randomly selected lakes per year over a 5 year period. At the end of the five years the Department will be able to say with statistical validity what the rate of AIS spread is within the state and whether that rate of spread increased or decreased by as little as 3% annually or if it stayed the same.

Monitoring will be conducted by WDNR staff, partners, and volunteers. The statewide AIS monitoring coordinator (Ferry) will develop monitoring protocols and coordinate monitoring efforts. The three Great Lakes Basin AIS Specialist's (Bates, Nault, and Plude) are specifically hired to conduct monitoring and response in counties that touch the Great Lakes Basin. Regional DNR AIS coordinators and staff will

implement monitoring in non-Great Lakes basin counties (NORc-Hansen/Kreitlow, NORr-Gauthier, NORs-Toshner/Smith, SCR-Graham and WCRProvost/Lepsch). The Great Lakes Indian Fish and Wildlife Commission, county AIS staff and Citizen Lake Monitoring volunteers will help where appropriate.

FIELD PREPARATION



Field
Preparation.docx

TARGET SPECIES

Table 1. Species targeted for aquatic invasive species surveys. Species with an asterisk (*) are used for statistical analysis to track the rate of spread.

Common Name	Latin Name	Species Code
Aquatic Plants		
European Frog-bit	<i>Hydrocharis morus-ranae</i>	EFB
Yellow Floating Heart	<i>Nymphoides peltata</i>	YFH
Water Chestnut	<i>Trapa natans</i>	WC
Brazilian Waterweed	<i>Egeria densa</i>	BWW
Hydrilla	<i>Hydrilla verticillata</i>	HYD
Curly-Leaf Pondweed*	<i>Potamogeton crispus</i>	CLP
Fanwort	<i>Camboba caroliniana</i>	FW
Parrot Feather	<i>Myriophyllum aquaticum</i>	PF
Eurasian Water Milfoil*	<i>Myriophyllum spicatum</i>	EWM
Water Hyacinth	<i>Eichhornia crassipes</i> and <i>E. azurea</i>	WH
Water Lettuce	<i>Pistia stratiotes</i>	WL
Didymo	<i>Didymosphenia geminata</i>	DIDY
Wetland Plants		
Flowering Rush*	<i>Butomus umbellatus</i>	FR
Phragmites*	<i>Phragmites australis</i>	PHRG
Japanese Knotweed	<i>Polygonum cuspidatum</i>	JK
Giant Knotweed	<i>Polygonum sachalinense</i>	GK
Purple Loosestrife*	<i>Lythrum salicaria</i>	PL
Japanese Hop	<i>Humulus japonicus</i>	JH
Yellow Iris	<i>Iris pseudoacorus</i>	YI
Invertebrates		
Zebra Mussels*	<i>Dreissena polymorpha</i>	ZM
Quagga Mussels*	<i>Dreissena bugensis</i>	QM
Asian Clam	<i>Corbicula fluminea</i>	AC

Faucet Snails	<i>Bithynia tentaculata</i>	FS
Spiny Waterfleas	<i>Bythotrephes longimanus</i>	SWF
Chinese Mystery Snails*	<i>Cipangopalundina chinensis</i>	CMS
Banded mystery Snails*	<i>Viviparus georgianus</i>	BMS
New Zealand Mudsnailed	<i>Potamopyrgus antipodarum</i>	NZMS
Red Swamp Crayfish	<i>Procambarus clarkii</i>	RSC
Rusty Crayfish	<i>Orconectes rusticus</i>	RC

*Used in statistical analysis.

For guidance on target species identification and habitat preference, please review the attached and the following websites:



AIS identification
guide.docx



Stream_RiversGuide

_NONPRINT VERSION

- DNR website:
<http://dnr.wi.gov/topic/Invasives/species.asp?filterBy=Aquatic&filterVal=Y;>
- Aquatic Invasive Species Monitoring section of the Citizen Lake Monitoring Network Manual:
<http://www4.uwsp.edu/cnr/uwexplakes/clmn/publications.asp>.
- [Field guide to Wisconsin Streams](#)
- University of Wisconsin – La Crosse freshwater snail key:
<http://www.uwlax.edu/biology/faculty/perez/wifwsnailkey/wifwsnailkey.htm>.

SAMPLING PERIOD

Sampling will be completed from June 15 through September 15 of each year.

FIELD METHODS

Data Collection

Report data on the AIS Early Detection Monitoring form, zebra mussel veliger tow form, and waterflea tow report form.

<http://dnr.wi.gov/lakes/forms/3200-135-veliger.pdf> <http://dnr.wi.gov/lakes/forms/3200-128-waterflea.pdf>



EarlyDetectionForm_
v2015.pdf

Voucher Collection Protocol

- Collect specimens of **all observed** invasive plants, invertebrates, and didymo for verification and QAQC purposes.
 - Collect up to 5 intact specimens of plants from each lake. Place aquatic plants in a ziplock bag with a small amount of water and riparian/wetland plants in a bag with a wet paper towel. Try to get the root system, all leaves as well as seed heads and flowers when present.
 - Collect up to 20 individuals of Dreissenids and store in a sample bottle or Ziploc bag.
 - Collect up to 3 of other invertebrate species observed.
- While in the boat, store specimens in separate sample bottles or in Ziploc bags with water or a wet paper towel.
- Upon completion of the survey, specimens should be properly preserved. Plants should be vouchered once per week and animals should be preserved daily.
- See *Vouchering Preparation and Shipping* section below for appropriate vouchering protocols for each type of species and the location to send specimen.
- Record data on the Early Detection Form.

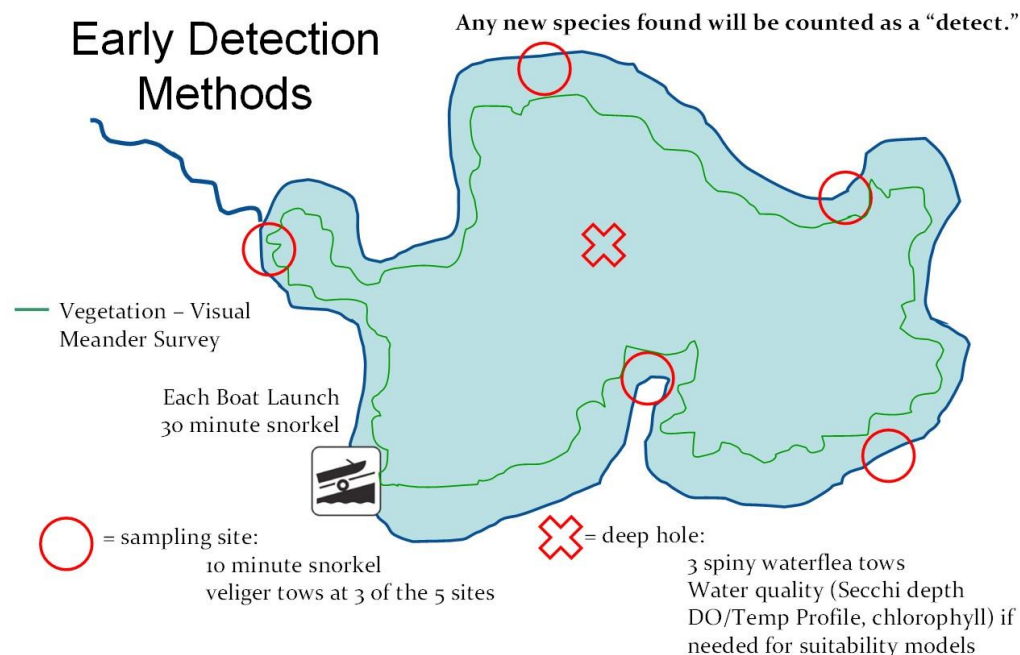


Figure 1. Schematic of AIS Early Detection Survey Design (Latzka and Van Egeren 2010). This map does not accurately illustrate tows and has additional water quality information that is not collected during these surveys.

Boat Landing Search(es)

- Survey all public boat landings (public and commercial). Do not include small, backyard boat ramps. Record the location of each boat landing from the shoreline in decimal degrees using a GPS (datum WGS84) whether or not any AIS are found.
- Each landing is searched for 30 minutes using snorkeling, D-nets, rakes, and surveying shoreline. Snorkel for 15 minutes covering an area of shoreline 200' long out to the maximum depth of plant growth or 100' from shore. For distance reference, baseball bases are 90' apart and a football field is 300' long. Spend 15 minutes using the D-net and rake in the shallow water and also examining the shoreline for 200'.
- For QAQC purposes, collect specimens of all AIS recorded.
- If there is poor visibility or safety is a concern (e.g. blue-green algae bloom), do not snorkel. Instead, analyze rake tows and D-net samples for about 30 minutes within the defined area (200' shoreline and 100' from shore). □ Record data on Early Detection form.

Water Quality

- From deep hole record the secchi disk depth reading (preferably between 10 am and 4 pm) and conductivity on the Early Detection form.

Waterflea Tows

- Collect 3 oblique waterfleas tows using a ~250 micron mesh net from the deep hole according to the Water Flea Monitoring Protocol:

http://dnr.wi.gov/lakes/forms/protocols/SpinyWaterflea_MonitoringProtocol.pdf.

- In shallow lakes, it is difficult to collect oblique tows. If possible, collect 3 horizontal tows. If the water is too shallow with dense macrophytes, attempt collecting 3 vertical tows, but avoid collecting macrophytes. Indicate on the data sheet comments if you could not collect a waterflea tow.
- Rinse samples into the sample bottle and decant as much water as possible. See the Voucher Preservation and Shipping section for instructions on preservation and labelling.
- Record data on Early Detection Form and also the Water Flea Tow Monitoring Report form 3200-128: <http://dnr.wi.gov/lakes/forms/3200-128-waterflea.pdf>.

Veliger Tows

Review the Dreissenid (Zebra and Quagga) Mussel Monitoring Protocol to gain background sampling information:

http://dnr.wi.gov/lakes/forms/protocols/ZebraMussel_MonitoringProtocol.pdf.

Revised Veliger Tow Protocols

- Variations from the established Dreissenid (Zebra and Quagga) Mussel Monitoring Protocol include using conductivity to determine whether veliger tows are conducted and also locations and depths within lakes to be sampled.
- Lakes with a conductivity of 99 umhos/cm or greater must be sampled for veligers. Historical conductivity records for some lakes are included in the lake list spreadsheet.
- Collect 3 vertical zebra mussel veliger net tows (using the 64 micron mesh net); one from the deep hole and 2 other tows from deep areas along the downwind side of the lake.
- Veligers are plankton and will move with the wind so sample deep, downwind portions of a lake. In lakes that stratify, veligers will be in higher abundance above the thermocline so samples should be collected slightly deeper than the established protocol indicates. Since most staff do not have dissolved oxygen probes to determine the depth of stratification, we have included estimates for sampling depth below.
- The depth of the veliger tow will depend on the depth of the water using the following criteria:
 - 1) if water column is **deeper than 6 meters** (~19.7 feet), then collect each tow with the ring of the net **4 meters** (~13.1feet) from the surface; or
 - 2) if the water column is **shallower than 6 meters** (~19.7 feet), attempt to collect a vertical tow with the ring of the net within **2 meters** of the bottom.
- The net must be lowered slowly to not disturb the bottom sediments and get sediment in the net. Rinse samples into the sample bottle and decant as much water as possible. □ Record data

on Early Detection Form and the Mussel Veliger Tow Monitoring Report (<http://dnr.wi.gov/lakes/forms/3200-135-veliger.pdf>). See Voucher Preservation and Shipping for instructions on preservation and labelling.

Targeted Search Sites

- Stop at each targeted search site and conduct 10 minute snorkel searches. If there are two people, one person should snorkel for 5 minutes while the other person examines the shallows and shoreline for 5 minutes (while also keeping watch on the snorkeler). If you find additional appropriate search sites during the shoreline meander, you can add additional 10 minute searches or replace the sites that you pre-selected.
- For QAQC purposes, collect specimens of all AIS recorded.
- If there is poor visibility or safety is a concern (e.g. blue-green algae bloom), do not snorkel. Instead, at each site analyze rake tows and D-net samples for about 10 minutes.
- Record the site number and location (center of site at shoreline in decimal degrees) of each site on the datasheet whether or not any AIS are found. Record the name of any species found and density rating (as defined on the datasheet). Record data on Early Detection Form.

Meander Survey

- During the meander survey, drive boat slowly between target sites and look for aquatic invasive plants, mussels, and snails in the water and along the shoreline. Meander between shallow water and maximum rooting depth or 100' from shore whichever comes first.
- If not snorkeling the target sites due to poor visibility or safety concerns, visibility will likely be difficult during the meander survey also. To sample during the meander survey in low visibility, collect 50 rake tows/D-net samples during the meander survey.
- Record the site number, location in decimal degrees and the name and density (as defined on the back of the datasheet) of each AIS occurrence observed. However, only collect separate GPS points from discretely different beds or populations of invasive species.
- If three discrete locations of a certain species are found either at targeted search sites and/or during the meander survey stop recording new locations during the meander survey. Three discrete locations of one species will indicate that the species is established in the lake.
- Collect specimens of all AIS reported for QAQC purposes.
- Record data on Early Detection Form.

FOLLOWING FIELD PROTOCOL

Equipment Disinfection



Equipment
Disinfection.docx

Notification

- If AIS not previously observed in a waterbody are found, follow the Department's communication protocol:
<http://dnr.wi.gov/lakes/invasives/AISDiscoveryCommunicationProtocol.pdf>.
- To expedite verification of a prohibited species or pioneer population, notify the regional DNR AIS Coordinator, Maureen, Amanda, and the appropriate taxonomic expert to request immediate verification.

Send weekly updates with what lakes have been surveyed and which AIS were observed in each lake to:

- DNR Central Office AIS Staff: Maureen.Ferry@wisconsin.gov and Amadan.Perdzock@wisconsin.gov
- Regional DNR Lake Coordinator
- Regional DNR Fish Biologist
- External partners (County, Great Lakes Indian Fish and Wildlife Commission)
- CLMN volunteer and lake association (confirm whether monitoring staff or the Lake Coordinator should inform the lake group) Other?

Data Entry

- Enter Early Detection form data into SWIMS once each week in the "Aquatic Invasive Species Early Detection Surveys 2015" project.
- Contact Maureen Ferry if you have questions about SWIMS data entry.

Voucher Preparation and Verification**Macrophytes**

- The following contains guidance on pressing plants and preparing plant vouchers:
 - Pressing plants guidance can be found in p. 25-26 in the aquatic plant monitoring protocol: <http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/Aquatic%20Plants/PI-Protocol-2010.pdf>.
 - Voucher preparation: <https://www.uwgb.edu/biodiversity/herbarium/voucher02.htm>
 - Background on label information to include on herbarium voucher labels: <https://www.uwgb.edu/biodiversity/herbarium/herbariumLabel01.htm>.
 - Acid-free herbarium paper is mandatory for vouchers.
 - For the Freckmann Herbarium, complete the attached voucher label on acid-free herbarium paper. Paperclip the label to the herbarium paper with the vouchered plant.
 - For the Wisconsin State Herbarium, complete the attached spreadsheet and paper clip a temporary label to the herbarium paper with the vouchered plant.
- Coordinate with regional staff to compile all plant vouchers.
- Each region should create a list of vouchers.

- Schedule an appointment with the herbarium for verification and vouchering.
- Have herbarium verify the vouchers by checking off the list of vouchers.
- Update SWIMS, as needed.
- Make a copy of the verified list and send to central office to attach to the updated SWIMS record. ○ The verification list must be mailed or emailed to Maureen.Ferry@wisconsin.gov and Jennifer.Filbert@wisconsin.gov.



Freckmann voucher UW Madison voucher labels.docx
list.xlsx

Dr. Robert Freckmann

Robert Freckmann Herbarium

800 Reserve Street

TNR 304

Stevens Point, WI 54481

rfreckma@uwsp.edu 715-346-4248

Mark Allen Wetter

Collections Manager/Senior Academic Curator

Wisconsin State Herbarium (WIS)

Department of Botany 430 Lincoln

Dr.

University of Wisconsin-Madison Madison,

WI 53706 mawetter@wisc.edu 608-262-

5109/262-2792

Snails, spiny water flea, zebra mussel veligers, and other invertebrates

- Preserve with 95% ethanol in a ratio of 4 parts ethanol and 1 part sample.
- If space allows, place all samples of the same type in the same jar and for spiny water flea and zebra mussel veliger tows, record "Y" that samples have been consolidated on the Early Detection Form. If needed, split the sample into two (or more) sample bottles and label as "1 of 2" and "2 of 2".
- **Please add sufficient ethanol** - samples without enough ethanol will smell bad.
- Include internal and external labels on all samples.

- Internal labels can be on Rite in the Rain paper with a #2 pencil. ○ External labels can be on Rite in the Rain paper or a heavy card stock with a #2 pencil.
- Do not use sharpies, pen or wax pencils - ethanol used to preserve the samples will wash the label off.
- Label sample jar with WBIC, lake name, county, sample date, sample type (snails, spiny water flea or zebra mussel) and collector.
- Legibility is appreciated.



Blank Labels.docx

- For snail specimens, please complete the attached “Snail collection” excel spreadsheet and email to gsandland@uwlax.edu and Maureen.ferry@wisconsin.gov.



Snail collection.xlsx

- Staff shipping samples that are preserved in ethanol MUST complete hazardous shipping training (<http://intranet.dnr.state.wi.us/int/es/science/ls/Shipping/Training/>).
- Samples shipped in ethanol should be enclosed in a Ziploc bag and stored vertically to prevent leakage.
- Place bottles in Ziploc facing same direction so that labels can be easily read when box is opened and bag is lifted.
- Samples that contain ethanol must attach a label identifying the appropriate ethanol label.



Ethanol labes.docx

- Ship samples in a Styrofoam insert to protect contents (<http://www.thermosafe.com/>).
 - If you want shipping containers returned after samples are analyzed, please complete the flip card return label (Ziploc envelope) that is supplied with the container. DNR Science Service Operations may use an existing account to return containers.
 - We do not have a shipping contract set up with UW La Crosse yet, so if you want your shipping containers returned, include a note for them to hold your container and DNR central office staff can pick them up.
- Ship the samples via SpeeDee, FedEx, Dunham or USPS.
- Hand delivery is nice, but can be an unnecessary hassle.



Shipping EtOH.pdf



USPS ethanol.pdf

- Be sure all bottles are labeled properly. Include a copy of the datasheets.
- Send samples to DNR Science Service and UW La Crosse each month.
- **Do not wait** to send samples until the end of summer as this increases work for the verifiers.

Send spiny water flea and zebra mussel samples to:

Paul Garrison

Wisconsin Dept. of Natural Resources Science Service Operations

2801 Progress Road

Madison, WI 53716

Send snail specimens to:

Greg Sandland

Biology Department

855 East Ave North

University of Wisconsin-La Crosse,

La Crosse, WI 54601

AIS Early Detection Monitoring Equipment List

All lakes

- ___ 54 µm plankton net (veliger samples)
- ___ 243 µm plankton net (waterflea samples)
- ___ Mesh bag (nylons or fruit mesh bags can be used) – to place specimens in underwater.
- ___ Ziploc bags for plant preservation (can be reused)
- ___ Waterproof paper (to print monitoring forms and specimen labels on)
- ___ Plastic bottles for benthic invertebrate specimens and plankton samples (~3 per lake)
- ___ Bottle labels ~ available from Maureen Ferry or Erin Vennie-Vollrath
- ___ Ethanol (95%) for veliger, waterflea, snail and mussel preservation
- ___ Squirt bottle(s) filled with ethanol or deionized water (for plankton samples)
- ___ GPS
- ___ Bathymetric map of lake
- ___ Plant press and herbarium paper
- ___ Depth finder (in boat or handheld)
- ___ Jonboat and/or canoe
- ___ Sorting trays for plants and inverts
- ___ Polarized sunglasses
- ___ Boat ladder (for easily exiting and entering the boat in deep water)
- ___ Tubs for equipment disinfection
- ___ Snorkel mask clearing solution
- ___ Sonde or Hydrolab (to measure conductivity)
- ___ Secchi disk
- ___ Backpack sprayer and bleach solution (for decontamination)
- ___ Shipping container <http://www.thermosafe.com/>

Turbid lakes

- ___ D-net
- ___ Aquatic plant rake ~ (detailed instructions in [aquatic plant monitoring protocol](#))

___ Latex or other gloves to protect hands from blue-green algae.

Clear lakes

___ Wetsuits

___ Snorkel, mask, fins and weightbelt

___ Diveflag, float and anchor

___ Stopwatch

Appendix 5: Bass Lake AIS early detection monitoring field results

Aquatic Invasive Species (AIS) Early Detection Monitoring Data Form

Form 3200-xxx (R 5/2015)

Instructions: **Bold** fields must be completed.

Location Name	WBIC	County	Date(s)	AIS sign?	Secchi (ft or m)	Conductivity (ZM ≥ 99 umhos/cm)	Collector(s)	Start Time	End Time	Total Hours (hrs x # ppl)
Bass (Boom)		Oneida	Yes	9/12/15	8.5ft		M. Nault R. Motif A. Wirt	8:30am	12:30pm	

STEP 1: Circle species that you looked for and review the Identification Handout.

AQUATIC PLANTS/ALGAE	Hydrilla	Water hyacinth	Water chestnut	Purple loosestrife	INVERTEBRATES	Faucet snails	Other (please specify)
European frogbit	Curly leaf pondweed	Water lettuce	RIPARIAN PLANTS	Yellow flag iris	Zebra/quagga mussels	Chinese/Banded mystery snails	
Yellow floating heart	Fanwort	Eurasian water milfoil	Flowering rush	Japanese knotweed	Asian clam	Rusty/red swamp crayfish	
Brazilian waterweed	Parrot feather	Didymo	Phragmites	Japanese hop	New Zealand mudsnails	Spiny/fishhook waterflea	

STEP 2: Record locations of sampling sites (in decimal degrees). Indicate whether snorkeled or why not. List AIS found and density at each site or record none. Collect a sample of any new AIS found. Collect five new invasive plant specimens, 20 Dreissenids, and up to 3 of each invertebrate species. Include internal and external labels with WBIC, name of lake, county, sample date, sample type (snails, spiny water flea or zebra mussel) and collector. Legibility is appreciated. If needed, preserve with adequate ethanol.

Site*	Latitude	Longitude	Snorkel (Y/N)	If no, indicate why†	Species name, density (1-5)‡, and live (L) or dead (D)§	Sample (Y/N)	Photo (Y/N)	No AIS	Comments
BL	45.65007	-89.41557							
MS1	45.65287	-89.42931	-	-	MyoSco - 2(L)	Y	N		
MS2	45.65334	-89.43320	-	-	PYI? - 2(L)	Y	N		not in bloom
TS1	45.65556	-89.43343	N	Choc. milk H ₂ O	CMS - 1(D); PYI? - 1(L)	Y	N		
MS3	45.65719	-89.43179	-		PYI? - 1(L)	N	N		" "
TS2	45.65813	-89.42779	N	" "	CMS - 1(L)	Y	N		
MS4	45.65969	-89.43226	-	-	MyoSco - 3(L); CMS - 1(D)	N	N		
MS5	45.65980	-89.43239	-	-	PYI? - 1(L); MyoSco - 2(L)	N	N		
BL	45.66327	-89.43558	N	" "	CMS - 1(L); MyoSco - 1(L)				

*boat landing (BL), target site (TS), meander survey (MS).

†Stained water, turbid water, blue-green bloom, chemical treatment, other (please describe).

‡Density ratings: 1-a few plants or invertebrates, 2-one or a few plant beds or colonies of invertebrates, 3-many small beds or scattered plants or colonies of invertebrates, 4-dense plant, snail, or mussel growth in a while bay or portion of the lake, or 5-dense plant, snail or mussel growth covering most shallow areas.

§Live (L) animals will contain flesh and live plants will generally be rooted. Dead (D) animals will not contain flesh and dead plants include sterile fragments.

Aquatic Invasive Species (AIS) Early Detection Monitoring Data Form

Form 3200-xxx (R 5/2015)

Instructions: Bold fields must be completed.

Location Name	WBIC	County	Date(s)	AIS sign?	Secchi (ft or m)	Conductivity (ZM > 99 umhos/cm)	Collector(s)	Start Time	End Time	Total Hours (hrs x # ppl)
Bass (Boon)		Oneida	8/12/15	Yes						

STEP 1: Circle species that you looked for and review the Identification Handout.

AQUATIC PLANTS/ALGAE	Hydrilla	Water hyacinth	Water chestnut	Purple loosestrife	INVERTEBRATES	Faucet snails	Other (please specify)
European frogbit	Curly leaf pondweed	Water lettuce	RIPARIAN PLANTS	Yellow flag iris	Zebra/quagga mussels	Chinese/Banded mystery snails	
Yellow floating heart	Fanwort	Eurasian water milfoil	Flowering rush	Japanese knotweed	Asian clam	Rusty/red swamp crayfish	
Brazilian waterweed	Parrot feather	Didymo	Phragmites	Japanese hop	New Zealand mudsnails	Spiny/fishhook waterflea	

STEP 2: Record locations of sampling sites (in decimal degrees). Indicate whether snorkeled or why not. List AIS found and density at each site or record none. Collect a sample of any new AIS found. Collect five new invasive plant specimens, 20 Dreissenids, and up to 3 of each invertebrate species. Include internal and external labels with WBIC, name of lake, county, sample date, sample type (snails, spiny water flea or zebra mussel) and collector. Legibility is appreciated. If needed, preserve with adequate ethanol.

Site*	Latitude	Longitude	Snorkel (Y/N)	If no, indicate why†	Species name, density (1-5)‡, and live (L) or dead (D)§	Sample (Y/N)	Photo (Y/N)	No AIS	Comments
T53	45.66103	-89.43337	N	" "	RC-2(L); CMS-1(L)	Y	N		
T54	45.66354	-89.42886	N	" "				X	
T55	45.65654	-89.42800	N	" "	CMS-1(L)				

*boat landing (BL), target site (TS), meander survey (MS).

†Stained water, turbid water, blue-green bloom, chemical treatment, other (please describe).

‡Density ratings: 1-a few plants or invertebrates, 2-one or a few plant beds or colonies of invertebrates, 3-many small beds or scattered plants or colonies of invertebrates, 4-dense plant, snail, or mussel growth in a while bay or portion of the lake, or 5-dense plant, snail or mussel growth covering most shallow areas.

§Live (L) animals will contain flesh and live plants will generally be rooted. Dead (D) animals will not contain flesh and dead plants include sterile fragments.

Appendix 6: Watercraft inspection protocol

Watercraft Inspections

Materials to Have When Working at a Boat Landing

Not all your materials need to be taken to the boat landings. It's better to sort through the materials and decide what educational information is best suited for your area. The "Clean Boats, Clean Waters" program provides a plastic container in which to store all the educational materials in the resource kit. We recommend at least one resource kit for every landing you are monitoring. By using multiple resource kits, each inspection team can have all the materials they need and have them protected from the weather.

A key brochure to distribute to all boaters is "Help Stop Aquatic Hitchhikers" (WT-801). This brochure not only has pictures of the different aquatic invasive species, but also describes the prevention steps that boaters need to take every time they leave the water. In addition, the brochure describes Wisconsin's illegal-to-launch law and the penalties that can occur if an invasive species is not removed before the boat is launched. This brochure is a good reminder to all boaters, whether or not they have talked with a watercraft inspector.

Select other materials to take to the boat launch based on which aquatic invasive is most threatening in your area. Perhaps Eurasian water-milfoil is really a pressing issue for your lake; then it makes sense to give boaters an EWM/NWM identification card in addition to the "Help Stop Aquatic Hitchhikers" brochure. Resist the temptation to give the boater one of every card in the resource kit because boaters will often discard them. It's best to start by handing out a little bit of information and have additional brochures available if the boaters want to learn more about a particular invasive species.

Boat landings can be very busy during the summer, and it is expected that you will need more materials. Please refer to the Aquatic Invasive Species Publication List in Section 9 of this handbook. This list explains what publications are available, how to order more publications, and how to print some brochures from Web site links.

Additional boat launch items to consider:

- Clipboard and pencil.
- Copy of the boat landing script (see Section 6).
- Watercraft Inspection Report and Watercraft Check Points List (see Section 7).
- Listing of lakes affected with AIS in your area.
- Wisconsin map.
- Stop Aquatic Hitchhikers decals.
- Selected free AIS publications (see Section 9).
- Plastic bags, permanent marker, and cooler to collect and store any suspect specimens.
- Cell phone and local contact phone numbers for emergencies.
- Digital camera

Watercraft Inspection Tips

Use the following DO and DON'T lists to prepare your boat landing message.

The DO List

- Wear the “Clean Boats, Clean Waters” T-shirt to promote the message. This message gives credibility to the
- Try to approach boat owners before they are on the ramp.
- Always ask if the boater would mind answering a few questions.
- Be polite and courteous to all boaters you encounter.
- Listen to a boater’s concerns. Remember that you are encouraging boaters to take an interest in invasive species.
- Make sure boaters know that they can make a difference!

The DON'T List

- Don't begin asking questions immediately upon approaching boaters, because as they might be confused about who you are and why they should give you their time.
- Avoid delaying boaters too much or causing a backup.
- Never preach to a boater; your mission is to educate, not alienate.
- Do not emphasize the idea that fines are involved, because this approach can make people hostile or defensive.
- If the boater is reluctant to cooperate, hand out educational material and record whatever information you can.

An effective watercraft team is prepared to raise boater awareness and to encourage and demonstrate the necessary steps to avoid spreading invasive species. On very rare occasions, you may be uncomfortable about a situation or person. Always back away from a potentially dangerous or violent situation. Never encourage confrontation, no matter how strongly you might feel about the subject. **Remember, you are not enforcers of rules and should never jeopardize your own safety.** If you are suspicious of someone (for example, a loiterer or someone who is not intending to go boating), do not hesitate to leave the launch site. You are better to be safe than sorry. If you feel that a boat launch site is unsafe in any way, please notify the organization you are working for.

Boat Landing Message

Getting out and speaking to the public can be intimidating. New inspectors can feel a little anxious and nervous. This prepared script will help inspectors practice and role-play before their first boater shows up at the landing. Practicing with other folks will give them the confidence it takes to greet a boater. If new inspectors really want to watch a “pro,” they just need to ask a few kids to get involved. Are kids intimidated? No way!

This prepared script is only one sample of the many methods of addressing boaters at the landings and performing watercraft inspections. Each inspector should develop his or her own style and learn how to adapt in a variety of boat landing experiences. Try to approach boaters before they are on the ramp, and

use the Watercraft Inspection Report form to record the information about the boater (see Section 7). At times you may have only 30 seconds to talk to the boater; other times, long lines at the landings may provide you with lots of time to talk. Remember, if the boater is not interested, just hand out educational material and record whatever information you can.

No matter what style you use to approach boaters, any watercraft inspection process should include these points:

1. Tell them who you are, whom you represent, and why you are there.
2. Ask if they have a short time to answer some questions.
3. Collect information on the Watercraft Inspection Report form.
4. Ask if they are familiar with aquatic invasive species, such as Eurasian water-milfoil or zebra mussels. Briefly explain about these invasive species or other invasives found locally.
5. Ask if they will join you in an inspection of their boat and equipment.
6. Talk while inspecting, and point out watercraft checkpoints. If they do not want to assist you in the inspection, continue to talk about invasive species as you inspect.
7. Give your final message, the prevention steps:
 - Inspect your boat, trailer and equipment and
 - Remove any attached aquatic plants, animals, and mud.
 - Drain all water from your boat, motor, bilge, live well, bait containers, and equipment.
 - Dispose of unwanted bait in the trash, not in the water or on the land.
 - Rinse your boat and recreational equipment with hot water OR dry for at least five days.
8. Give them the “Stop Aquatic Hitchhikers” decal and other educational materials.
9. Thank them for their time and cooperation!

Sample Script

As the boat approaches, write down the time of the boat inspection and if the boat is entering or leaving the water.

Introduce yourself:

Good Morning / Afternoon. I am from _____. We are working with state agencies and local groups to talk with boaters about invasive species and help them check their boats for Eurasian water-milfoil (EWM) and zebra mussels (ZM). We are trying to keep EWM/ZM and other harmful exotics from spreading from lake to lake. I have a few quick questions I would like to ask you, and then I would like to walk around your watercraft with you and point out a few places where these species can attach to boats and trailers.

Ask the questions and record on the Watercraft Inspection Report:

1. In the past 30 days, how many times have you been contacted by a watercraft inspector?
2. Was boat used during the past 5 days on a different waterbody? (If the answer is yes) Where?
3. In a typical month of boating, about how many waterbodies do you visit?

4. Last time you went boating, please describe the steps you took when removing your boat from the water. (Mark each step that is mentioned, “Took No Steps” if no steps were taken, or “I Did Not Ask Boater” if this question was not asked.)

5. In 2009, Wisconsin laws were passed that prevent the transport of aquatic plants, animals, and water from one waterbody to another. This includes draining water from containers holding your catch and livewells. Were you aware that this is the law?

(If the answer is no) As of 2009, Wisconsin laws prohibit the transport of plants, animals, or water from a boat landing. Fines for not complying with the rules can be upwards of \$300! I'm just here to share information with you on how to properly clean your boat so that you don't inadvertently transport aquatic invasive species from one lake to another. However, law enforcement officers will be out enforcing these AIS laws this summer, so I just wanted to let you know about the new rules.

Perform a watercraft check:

If you would walk around your boat with me, I can show you some areas to look for invasive hitchhikers.

Make sure you talk aloud as you inspect; it helps reinforce the “Clean, Boats, Clean Waters” behavior. Talk to boaters about inspecting and cleaning their watercraft and about draining the water from their boat—such as the bilge, bait buckets and live wells—before they leave the access.

Water is another way invasives can move from lake to lake so it is always a good idea to drain your water. Vegetation can be found on motor boats, the motor/prop, anchors, bunks, rollers, the trailer axle, lights/wiring; for jet skis, it can be found in the intake grate and propeller; and for sailboats, it can be found in the centerboards. Check your anchor and anchor line to see if any plants are clinging to it.

Some aquatic invasives, such as zebra mussels, are also found on the motor/prop, on the sides and bottom of boat below the waterline, on the anchor, and clinging to vegetation. It is a good idea to drain water from the motor, live well, bait well, bait bucket, bilge, and transom wells. Always inspect the hull and sides of your boat for aquatic invasives; if it feels gritty or sandy, it may be that new zebra mussels are attached.

An extra precaution that you can take to eliminate other aquatic invasives is to wash your boat with warm tap water or take your boat through a car wash or dry your boat and equipment in the sun for five days before entering another lake.

Leave boaters with a final message: “Clean Boats = Clean Waters”

Please make it a habit to:

Inspect your boat, trailer and equipment and

Remove any attached aquatic plants, animals, and mud.

Drain all water from boats, motors, live wells, bait containers, and equipment.

Dispose of unwanted bait in the trash, not in the water or on the land.

Rinse your boat and recreational equipment with hot water OR dry for at least five days.

Offer boaters the “Stop Aquatic Hitchhikers” brochure and decal and help them place the decal on the handle side of the trailer winch post. Tell them that this decal will let other inspectors know that you have talked to the boater this summer. Remind boaters to follow the precautions listed on the “Stop Aquatic Hitchhikers” decal every time they leave a water body.

Thank the boaters for their time and cooperation!

Potential Scenarios/Questions from Boaters

“Why are you out here wasting resources when the plant is going to come anyway?”

Even the most educated will ask this question. Just be prepared mentally for such viewpoints and think about why you are out here and what you will say in reply. Expect the unexpected. Here are some suggested responses:

Even if we cannot keep the plants out completely, we can prevent a lot of widespread damage. Prevention also gives us time to adopt new control methods as they are developed in the future. The longer we keep invasives out of a lake, the longer we put off the enormous costs of management and property devaluation.

“Aren’t all plants bad anyway?”

It is important to clear up this misconception! This is what you can say:

Native plants are essential lifelines for an aquatic ecosystem, providing the basis for all life within. The problem lies with non-native, invasive plants that have no natural inhibitors and, therefore, outcompete native plants, lowering the water body’s aquatic diversity.

“I don’t have time for this... I know all about it already!”

This remark is fairly common. If the boaters do not wish to help you with the survey, you must

respect their rights and let them be. In such a situation, the suggested action would be to offer them a brochure and wish them a nice day.

“Why did it take Wisconsin so long to do something, when milfoil has been a national problem for over a decade?”

There is no good answer to this question because it’s a very good point. Here is how you can respond:

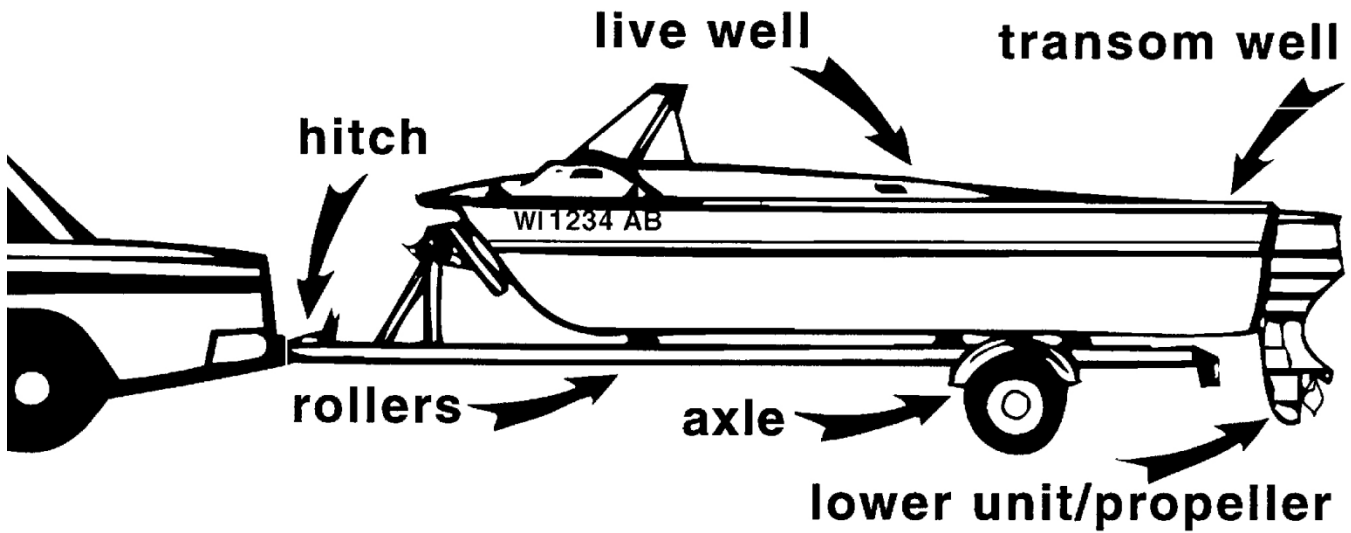
Traditionally, environmental problems become established before we do anything about them. In this case, we have learned from other states, and are trying to take action well before these plants spread to many of our sensitive environments. Instead of focusing on what could have been done, we should focus energies on the present and future.

“Why do I have to take these prevention steps when I only use my boat in one lake?”

This question gives you the opportunity to talk about the value of changing our behaviors and why it is important.

That’s a great question! Although you always visit the same lake, it is still useful for you to take these prevention steps every time you boat. Repeating these steps helps the actions become a regular part of your boating behavior, so that if you do ever decide to take your boat to another lake, you will remember to take the prevention steps. Prevention is the key to stopping the spread of aquatic invasive species.

Watercraft Check Points



Watercraft Check Points

Trailer:

- ✓ Axle
- ✓ Bunks
- ✓ Frame
- ✓ License Plate
- ✓ Lights/wiring
- ✓ Rollers
- ✓ Spare Tire
- ✓ Wheels
- ✓ Winch Rope

Boat Accessories:

- ✓ Anchor
- ✓ Bow Line
- ✓ Ladder
- ✓ Tow Rope
- ✓ Transducer

Other Accessories:

- ✓ Bait Bucket
- ✓ Fishing Line
- ✓ Landing Net

- ✓ Tackle

Boat:

- ✓ Floor
- ✓ Hull
- ✓ Livewell
- ✓ Transom Well

Motor:

- ✓ Intake Pipe
- ✓ Prop
- ✓ Lower Unit

How to Handle Violations

With thousands of boaters traveling throughout the state and with many of those boaters jumping from lake to lake within one day, it is very realistic to expect someone to try to launch a weed-filled trailer at your landing. Since 2001, it has been illegal to launch a boat or trailer with aquatic plants or zebra mussels attached, and in 2009 it became illegal to transport aquatic vegetation or water from one place to another, in addition to other AIS laws (see Section 3 for more details). Not all folks know about Wisconsin's AIS laws. Even after a number of publications, news articles, and television programs concerning invasive species, not all boaters realize the importance of their action or lack of action in preventing the spread. Keep in mind that you should first try to educate the public.

If you choose to report launching violations, make sure you have done your homework. Contact your local DNR Conservation Warden and local law enforcement to let them know that you'll be doing inspections. Ask if they are willing to provide you with support in the case of a violation, what information is necessary for enforcement, and more importantly, ask whether the enforcement officer will be willing to act on a violation if he or she has not witnessed the event. Knowing these answers before the event will certainly predict a better outcome.

So what happens when a boater violates an AIS law? Several options can occur, from the least offensive reaction to the strongest objections to remove and comply with the law.

The soft touch: Boaters who are unaware of the AIS laws will probably put the boat in the water and think nothing about it. Unfortunately, this has been the practice for many years, which is one reason Wisconsin is struggling to control the spread of aquatic invasive species. However, you have an opportunity to educate that boater about the dangers of invasive plants and the prevention steps that boaters need to take each time they leave a body of water. With luck, boaters will listen to your message and remove aquatic plants and drain all water without any assistance.

An assertive approach: So what do you do if a boater doesn't get the point? Offer to assist the boater in checking and removing any aquatic plants. Always ask permission first before you touch any boat, trailer, or personal equipment. If the boater gives you permission, go ahead and help remove the plants and ask if you can keep a sample, especially if you suspect an invasive species. Let the boater know that you're just trying to prevent them from receiving a citation from any law enforcement or wardens that stop by, because the wardens are stepping up the number of citations they're issuing for AIS violations.

The strongest approach: And what if the boater refuses to remove the aquatic plants or drain water from their boat and equipment? At this time, you really stress the fact that it is illegal to not comply with the prevention steps that you're recommending, and you use the Violation Report form to record the basic information that a law enforcement officer requires in order to pursue the complaint. If you take a picture, it should include the boat registration number and attached plants. Usually, by this last step, the boater complies, the plants come off the boat, and the lake remains safe from another invasive inoculation.

If the boater chooses to launch after all your efforts, then you can report the facts to a law enforcement officer. The definition of "law enforcement officer" for purposes of section 30.715 (4), Wisconsin Statutes, is noted at section 30.50 (4s), Wisconsin Statutes, which reads:

30.50 (4s) "Law enforcement officer" has the meaning specified under s. 165.85 (2) (c) and includes a person appointed as a conservation warden by the department under s. 23.10 (1).

Section 165.85 (2) (c), Wisconsin Statutes, in turn defines "law enforcement officer" as any person employed by the state or any political subdivision of the state, for the purpose of detecting and preventing crime and enforcing laws or ordinances and who is authorized to make arrests for violations of the laws or ordinances that the person is employed to enforce.

The definition of “law enforcement officer” is obviously very broad and would clearly allow law enforcement officers of counties and municipalities throughout the state to enforce the AIS regulations and laws. Your best resource is your regional DNR Water Guard or local DNR Conservation Warden. Before you pursue any enforcement action, make contact with your local warden to know what information the warden expects from you. The warden will decide how to process the violation.



We are excited to now have DNR Conservation Wardens devoted primarily to providing education and enforcement on the AIS laws and regulations. Each DNR region in Wisconsin has at least one Water Guard; in some cases, more than one.

Photo provided by WDNR6 - 17

AIS Violation Report Form

Landing/Location: _____
 Date: _____ Time: _____ AM or PM
 County: _____ Town/Village/City: _____
 Vehicle License Number: _____ State Registered: _____
 Boat Registration: _____ State
 Registered: _____ Car/Boat/Personal Watercraft Information - Year: _____
 Make: _____ Model: _____ Color: _____ Violator Information:
 Male or Female Name of Boat
 Operator: _____
 Hair: _____ Eyes: _____ Approx. Height/Weight: _____ Other
 Description (clothing, etc.): _____ Photo Taken
 of Violation: Yes or No Description of
 Violation/Comments: _____

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 _ CBCW Inspector's Contact Information - Name: _____ Phone
 Number: _____
 Address: _____

 ___ Please check box if law enforcement may contact you for more information about the violation. You will
 remain confidential in this case. Please check box if you do not want law enforcement to contact you
 for more information about the violation. **To report the violation, contact your area Water Guard
 or DNR Warden OR call 1-800-TIP-WDNR** Regional Water Guard Contact Info:

_____ Local DNR Warden Contact Info:

Appendix 7. Form 3200-120



State of Wisconsin
Department of Natural Resources
Wisconsin Lakes Partnership

Watercraft Inspection Report
Form 3200-120 (R 5/12)

Notice: Information is collected under s. 33.02, Wis. Stats. Personally identifiable information, including names of volunteers, will be broadly distributed in conjunction with lakes data.

Inspector Name(s)		<input type="checkbox"/> Volunteer <input type="checkbox"/> Paid		Date	Waterbody Name	County	Landing Location Description										
Inspection Time	Entering	Questions to Ask Boater In the past 30 days, how many times have you been contacted by an inspector?			Was boat used during the past 5 days on a different waterbody? Y N	If yes, where? Waterbody Name County / State	In a typical month of boating, about how many waterbodies do you visit? 1-2 3-4 5+	Last time you went boating, describe the steps you took when removing your boat from the water. (Mark each step that is mentioned.)	Inspect boat, trailer & equip for plants/animals	Remove any attached plants/animals N/A (nothing attached)	Drain All Water from... Live Boat well	Dispose of Unwanted Bait in Trash N/A (does not fish)	Took no steps	I did not ask boater	In 2009, WI laws passed that prevent transport of aquatic plants, animals & water from one waterbody to another. This includes draining water from containers holding your catch & livewells. Were you aware that this is the law? Y N Unsure	Number of People Contacted	
	Leaving																0 1-2 3-4 5+
am																	
pm																	
am																	
pm																	
am																	
pm																	
am																	
pm																	
am																	
pm																	
am																	
pm																	
Totals																	
Total Hours Spent at this Location		Comments:															

Please report totals online at: dnr.wi.gov/lakes/cbcw-data

If you have any questions, please call 715-346-4978.

Sheet ___ of ___



Document Content(s)

P-2161 Cover Letter AIS Report.PDF.....1-1

US Fish and Wildlife AIS Revuew Letter.PDF.....2-2

DNR Letter Review AIS.PDF.....3-3

2015 AIS Report.PDF.....4-59