1414 West Hamilton Avenue
P.O. Box 8
Eau Claire, WI 54702-0008

November 5, 2014

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

Subject: **2014 Purple Loosestrife Monitoring Report**
Holcombe Hydro (P-1982), Cornell Hydro (P-2639), Jim Falls Hydro (P-2491), Wissota Hydro (P-2567), Chippewa Falls Hydro (P-2440) and Dells Hydro (P-2670)

Dear Secretary:

Enclosed is the 2014 Purple Loosestrife Monitoring Report for the above-referenced hydro projects. Pursuant to the 2001 Lower Chippewa River Settlement Agreement, Xcel Energy (licensee) is required to annually monitor for the presence of loosestrife at each impoundment and eradicate pioneering plants on company-owned shoreline. Purple loosestrife was absent from Chippewa Falls Flowage and Dells Pond this year, while just three plants were observed on Lake Wissota. Old Abe Flowage and Cornell Flowage showed modest declines in loosestrife infestation. Holcombe experienced an increase in the number of loosestrife infestations; however, the overall affected shoreline decreased.

In 2010, licensee partnered with Beaver Creek Reserve to introduce purple loosestrife beetles into the main spillway channel at Jim Falls. The beetles were introduced in early July at several locations in the spillway channel where loosestrife concentrations were greatest. Licensee and Beaver Creek Reserve partnered again in 2011 and introduced a second population of beetles into the spillway channel. Licensee continues to annually monitor this area in order to evaluate the success of the introduction.

Should you have any questions regarding this report, please contact Matthew Miller of this office at (715) 737-1353 or by e-mail at matthew.j.miller@xcelenergy.com.

Sincerely,

William Zawacki
Director, Hydro Plants

Enclosure

c: Nick Utrup - USFWS (via e-mail)
Cheryl Laatsch – WDNR (via e-mail)
Brian Guthman - LHIA (via e-mail)
Jeanette Kelly – Beaver Creek Reserve (via e-mail)

PURPLE LOOSESTRIFE ASSESSMENT – 2014

Dells Pond, Chippewa Falls Flowage, Lake Wissota, Old Abe Lake, Cornell Flowage, Lake Holcombe and Jim Falls Spillway Channel

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October 29, 2014

INTRODUCTION

Purple loosestrife (*Lythrum salicaria* L.) is an erect, herbaceous perennial of Eurasian origin that became established in the estuaries of northeastern North America by the early 1800's. Since then, this highly invasive species has spread throughout much of the United States, including most of Wisconsin's counties. As purple loosestrife expands its local distribution and becomes more widespread, it poses a serious threat to native emergent vegetation in shallow-water marshes and shorelines by displacing native food and cover plants in the waterways.

As part of the 2001 Lower Chippewa River Settlement Agreement, Xcel Energy agreed to monitor for the presence and spread of purple loosestrife at its six Lower Chippewa River hydroelectric projects. The surveys are to take place each year in the late summer when loosestrife blooms are easily detectable. Additionally, Xcel Energy committed to treating any small clusters of pioneering plants which occur on company-owned lands with an approved aquatic herbicide.

In 2010, Xcel Energy partnered with Beaver Creek Reserve to introduce European beetles (*Galerucella calmariensis* and/or *Galerucella pusilla*) into the main spillway channel adjacent to the Jim Falls Hydro. Beetles were again introduced into the same area during the summer of 2011. The beetles are commonly referred to as "Cella" foliage beetles or purple loosestrife bio-control beetles and they feed specifically on purple loosestrife plants. Their use has shown to be successful at decreasing the overall population of purple loosestrife. The locations and density of loosestrife within the Jim Falls spillway channel are therefore being monitored to determine the success of the beetle introduction.

METHODS

Following the same approach as previous surveys, an inspection of the entire shoreline of Dells Pond, Chippewa Falls Flowage, Lake Wissota, Old Abe Lake, Cornell Flowage and Lake Holcombe was performed by boat. The surveys were conducted between August 15 and September 15, 2014. The surveyor motored slowly around the shoreline looking for purple loosestrife plants. When loosestrife was discovered, the location was marked on a map and

coordinates were saved into a handheld GPS unit. Loosestrife infestations were classified as either "present" or "abundant" and marked on the map with a specific color. "Present" was defined as a few plants that sparsely inhabited the area but did not comprise a large percentage of the vegetation in that area. "Abundant" indicated that denser loosestrife growth existed and that the loosestrife made up a significant portion of the shoreline's overall vegetation.

By referencing the location of purple loosestrife plants with land ownership maps provided by Xcel Energy, the surveyor determined if the plants were on company-owned land. If the plants were on Xcel Energy land, and if it was only a minor infestation, the plants were sprayed with Rodeo® (an aquatic herbicide) from a backpack sprayer. From past work, it has been determined that herbicide application can be used as an effective treatment for small loosestrife populations, however, it is much less effective at controlling larger infestations. If major infestations were noted on Xcel Energy land, they were not to be treated, but documented for the possibility of a different eradication method in the future.

Using field maps, GPS coordinates, and notations made by the surveyor, the locations of purple loosestrife infestation were noted on the field maps and catalogued in a spreadsheet. The locations were then digitized onto GIS base maps (Wisconsin DNR 24K Hydrography version 6 and ESRI StreetMap USA). Locations of purple loosestrife are depicted on the maps using green for present and red for abundant. Due to the scale of the maps, locations covering less than 20 feet of shoreline are denoted by a dot while areas covering 20 feet of shoreline or greater are denoted by a line drawn to scale. Through the combined use of GPS, laser rangefinder, visual estimates, and GIS, the total length of shoreline infested by purple loosestrife was calculated for each flowage (Table 1). Appendix A includes survey maps for each flowage infested with loosestrife along with a corresponding catalog of each loosestrife location.

A survey of purple loosestrife was also conducted in the Jim Falls spillway channel adjacent to the downstream powerhouse. This area has been known to contain purple loosestrife in locally large numbers which prompted the introduction of purple loosestrife bio-control beetles. A comprehensive mapping effort of the area began in 2010 to monitor the spread of loosestrife and the success of the beetle introduction. This portion of the fieldwork

was completed on foot using GPS and maps to identify the locations and densities of the loosestrife within the channel.

RESULTS AND DISCUSSION

The number of purple loosestrife locations and the total length of shoreline infested for each flowage over the last three years are summarized below in Table 1. The standard approach used to tabulate abundance and shoreline coverage allows a direct comparison from year-to-year. This year's survey revealed a decrease in purple loosestrife infestation on all four impoundments that contain purple loosestrife (Holcombe Flowage, Old Abe Flowage, Cornell Flowage and Lake Wissota) compared to 2013. Collectively, the amount of loosestrife infestation has decreased since 2013 by roughly 20 percent. Table 2 includes a summary of the total number of loosestrife infestations and the total length of shoreline infested for all six hydro projects over the past three years.

Table 1. Summary of Purple Loosestrife Infestations on Six Lower Chippewa River Hydroelectric Projects, 2012-2014

	Number of purple loosestrife locations						Shoreline Affected (ft)					
	Present			Abundant			Present			Abundant		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
Holcombe	135	151	185	1	0	0	1134	2113	1685	137	0	0
Cornell	14	16	18	1	1	1	38	49	67	117	90	60
Old Abe	14	26	13	0	0	0	76	142	85	0	0	0
Wissota	8	10	3	0	0	0	20	23	9	0	0	0
Chippewa Falls	0	0	0	0	0	0	0	0	0	0	0	0
Dells	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Total Purple Loosestrife Infestations on Six Lower Chippewa River Hydroelectric Projects, 2012-2014

	2012	2013	2014
Total number of loosetrife points at Impoundments	173	204	220
Total shoreline affected in Impoundments	1522	2417	1906

There was no purple loosestrife found on the Chippewa Falls Flowage in 2014 which is consistent with findings from previous years. Dell's Pond was also absent from any loosestrife infestation this year as has been the case for the last five years.

The number of purple loosestrife locations found on Lake Wissota decreased from ten in 2013 to just three in 2014. These locations are all minor infestations with single plant clumps at each location (see map of Lake Wissota). Total shoreline infested on Lake Wissota decreased from 23 feet in 2013 to 9 feet in 2014.

Holcombe Flowage contained the most purple loosestrife among the six impoundments surveyed. There were 185 locations catergorized as present and no locations categorized as abundant (see Holcombe Flowage Map 1). Despite the fact that the number of infestations increased from the previous year's survey, the amount of shoreline affected decreased significantly. While a few new plants were found during the survey, the majority of the infested areas have been noted in previous years. New infestation is generally associated with areas where the native vegetation has been disturbed. This disturbance can come from urbanization (clearing for home sites, swimming areas or fishing areas), road improvements, or erosion. It is also common to have plants grow only during select years. This may be the case on Holcombe Flowage, with new plants growing this year, while previously observed plants did not.

The majority of plants on Lake Holcombe were again found in the area on and around Pine Island and along Highway 27. A comparison to the 2013 survey shows a lot of similarity in the overall loosestrife populations in this area (see Holcombe Map 2). Several small infestations were again found just to the east of the Highway 27 Bridge. This area was also very similar to the degree of infestation observed in last year’s survey. The only area of abundant plant growth documented in 2012 was classified as present in both 2013 and 2014, indicating a general decline in the number of plants in this area. No purple loosestrife was found in the Pine Lake or Cranberry Lake areas.

Several plant clumps were found scattered along the north and south shores of the main flowage (see Holcombe Map 3 and 4) with many of these plants having been documented in the past. The large islands near the south shore of the main flowage also contain several plants. Overall, there was a general decrease in plant density in the main basin.

The upstream reach of the flowage (see Holcombe Maps 5 and 6) also contains a number of purple loosestrife plants that have been noted in past surveys. The overall plant density in these areas was slightly less than what was documented in 2013.

In total, approximately 1,685 feet of shoreline was found to contain purple loosestrife on Lake Holcombe compared to 2,113 feet in 2013. As stated above, all infestations were classified as present. In 2012, 137 feet and 1,134 feet were reported as abundant and present respectively.

Cornell Flowage was found to contain 18 minor infestations classified as present and one location classified as abundant (see map of Cornell Flowage). Many of these locations had been noted in surveys from the last several years. The only area classified as abundant was located in a low lying area on an island just upstream from the State Highway 64 Bridge. This location has been classified as abundant in several previous surveys, including 2012 and 2013. While the overall number of loosestrife locations increased slightly from 2013, the total amount of shoreline affected decreased from 139 feet of shoreline in 2013 to 127 feet in 2014.

Thirteen areas of loosestrife infestation were found on Old Abe Lake (see map of Old Abe Flowage) all of which were classified as present. This represents a marked decrease in plant abundance from last year. Most of the locations consisted of single plants or a few plant clumps, many of which had been documented in past surveys. The largest decrease in loosestrife abundance occurred in an area in the upper part of the flowage where recent road work along Highway 178 eliminated many of the loosestrife plants.. The total amount of shoreline infested by purple loosestrife this year on Old Abe Lake was approximately 85 feet. This compares to 142 feet in 2013.

The minimum flow channel at Jim Falls Hydro remains infested with a relatively high concentration purple loosestrife plants. A significant decrease in the number of plants was noted in 2012; however, plant numbers have rebounded somewhat in 2013 and have increased further this year (Table 3). Loosestrife was found scattered throughout the channel, with the lower third of the channel being moderately infested (see maps of Jim Falls Spillway Channel). The area of greatest concentration occurs in the area just upstream from the County Highway Y Bridge (see Jim Falls Spillway map 2). The coverage of loosestrife in this area has decreased from approximately 16,165 square feet in 2013 to 11,064 square feet in 2014 (Table 4). The loosestrife is scattered throughout the area and therefore is not classified as abundant. Small loosestrife locations in both the upper and lower portions of the spillway channel increased slightly in both number and coverage. Overall, the number of loosestrife

locations increased from 36 in 2013 to 42 in 2014. Collectively, these amounted to 239 feet of infested shoreline versus 153 feet in 2013. Most of these locations were comprised of small plant clumps infesting between one and ten feet of shoreline, with a few more significant areas of infestation. Four years have passed since the introduction of the bio-control beetles. While it is still early to make a determination as to their success, the fact that the density of loosestrife in the lower area of the spillway channel is continuing to decrease is encouraging.

Table 3. Comparison of Purple Loosestrife Infestations in Jim Falls Spillway Channel – 2012 – 2014

	2012	2013	2014
Total number of loosetrife points at Jim Falls Spillway	19	36	42
Sq feet of Fim Falls Spillway infestation near Hwy Y	19,835	16,165	11,064
Total other shoreline affected at Jim Falls Spillway	52	153	239

Table 4. Summary of Purple Loosestrife Infestations in Jim Falls Spillway Channel – 2014

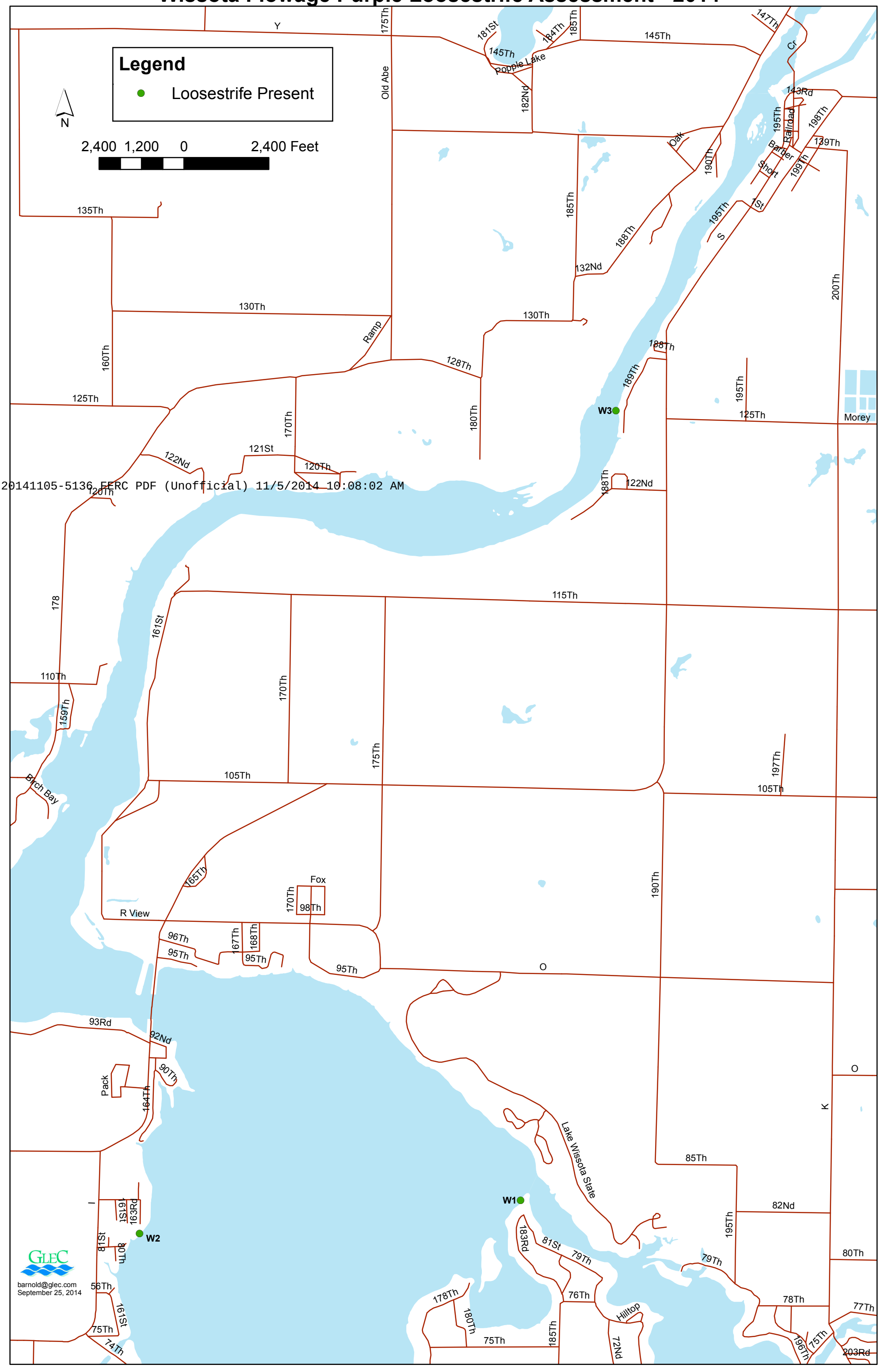
Map point	Abundant/ Present	# PLANTS	Coverage type	Area covered	
JF 1	Present	Multiple	Aerial	11,064	sq ft
JF 2	Present	Multiple	Point	8	ft
JF 3	Present	Multiple	Point	15	ft
JF 4	Present	Single	Point	2	ft
JF 5	Present	Single	Point	3	ft
JF 6	Present	Multiple	Point	22	ft
JF 7	Present	Multiple	Point	8	ft
JF 8	Present	Multiple	Point	6	ft
JF 9	Present	Multiple	Point	3	ft
JF 10	Present	Single	Point	2	ft
JF 11	Present	Multiple	Point	12	ft
JF 12	Present	Single	Point	4	ft
JF 13	Present	Multiple	Point	5	ft
JF 14	Present	Single	Point	5	ft
JF 15	Present	Multiple	Point	9	ft
JF 16	Present	Multiple	Point	4	ft
JF 17	Present	Multiple	Point	10	ft
JF 18	Present	Single	Point	3	ft
JF 19	Present	Single	Point	3	ft
JF 20	Present	Multiple	Point	5	ft
JF 21	Present	Single	Point	4	ft
JF 22	Present	Multiple	Point	7	ft
JF 23	Present	Single	Point	2	ft
JF 24	Present	Single	Point	4	ft
JF 25	Present	Single	Point	1	ft
JF 26	Present	Single	Point	3	ft
JF 27	Present	Single	Point	1	ft
JF 28	Present	Single	Point	3	ft
JF 29	Present	Single	Point	3	ft
JF 30	Present	Multiple	Point	3	ft
JF 31	Present	Multiple	Point	2	ft
JF 32	Present	Multiple	Point	10	ft
JF 33	Present	Multiple	Point	8	ft
JF 34	Present	Multiple	Point	12	ft
JF 35	Present	Multiple	Point	10	ft
JF 36	Present	Multiple	Point	5	ft
JF 37	Present	Multiple	Point	9	ft
JF 38	Present	Multiple	Point	13	ft
JF 39	Present	Single	Point	3	ft
JF 40	Present	Single	Point	5	ft
JF 41	Present	Single	Point	1	ft
JF 42	Present	Single	Point	1	ft

Appendix A

Survey Maps and Catalog of Purple Loosestrife Locations

2014

Wissota Flowage Purple Loosestrife Assessment - 2014



GLEC

barnold@glec.com
September 25, 2014

Holcombe Flowage Purple Loosestrife Assessment - 2014

Map 1 of 7

Legend

- Loosestrife Present
- Loosestrife Present

3,000 1,500 0 3,000 Feet

N

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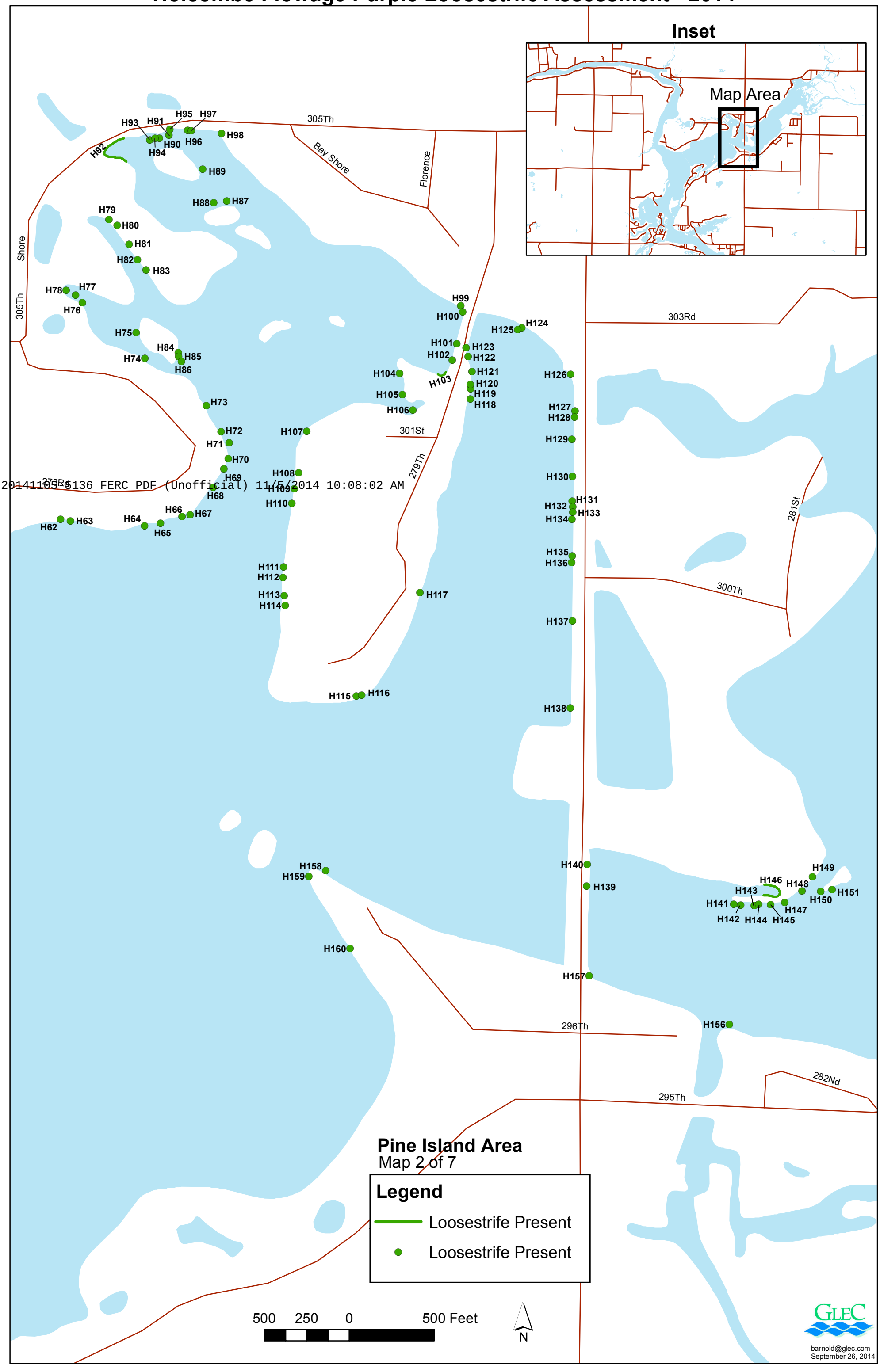
barnold@glec.com
September 26, 2014

Holcombe Flowage Purple Loosestrife Assessment - 2014



Pine Island Area
Map 2 of 7

Legend

- Loosestrife Present
- Loosestrife Present

500 250 0 500 Feet

N

GLEC

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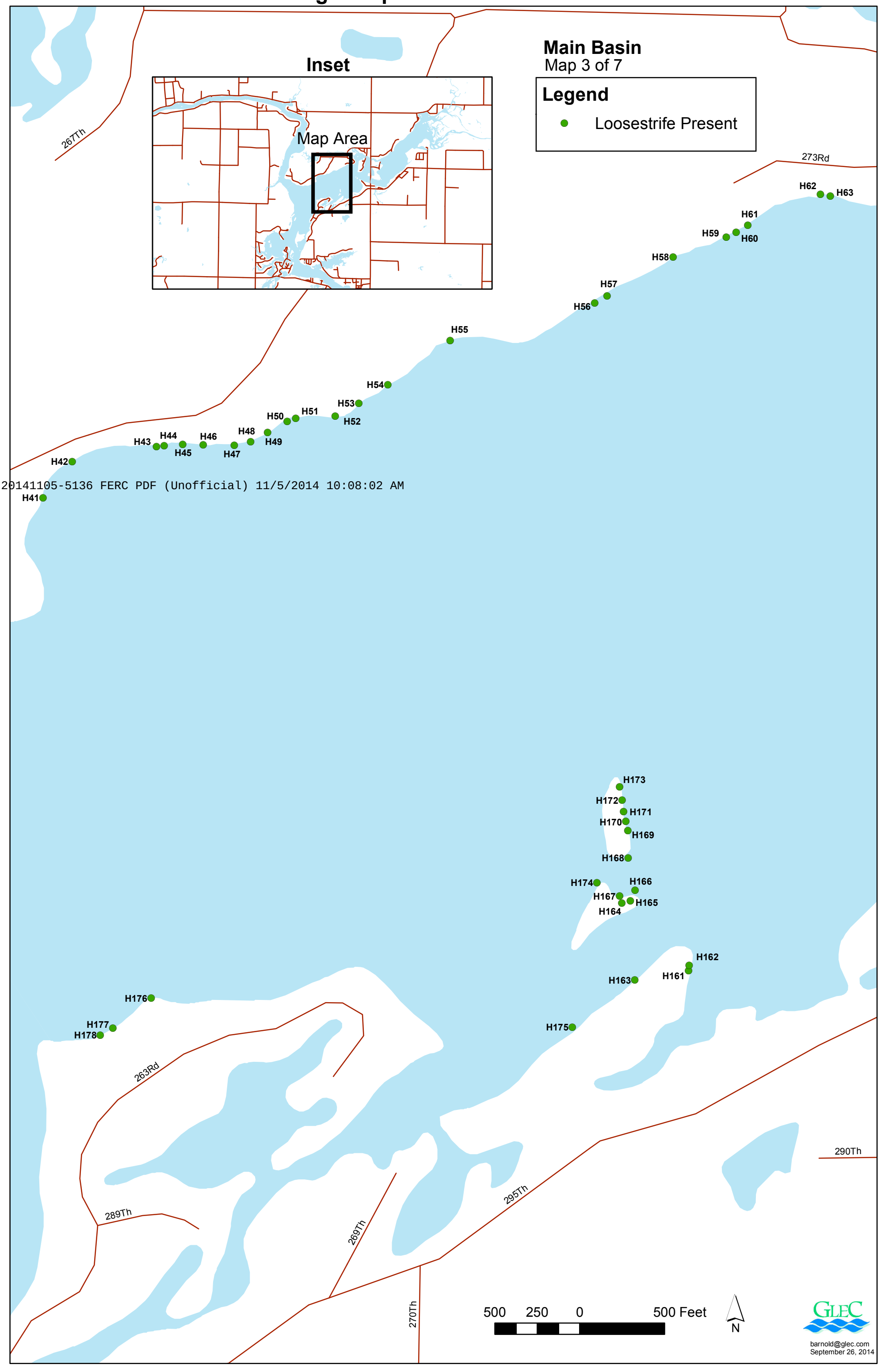
September 26, 2014

Holcombe Flowage Purple Loosestrife Assessment - 2014



20141105-5136 FERC PDF (Unofficial) 11/5/2014 10:08:02 AM

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September 26, 2014

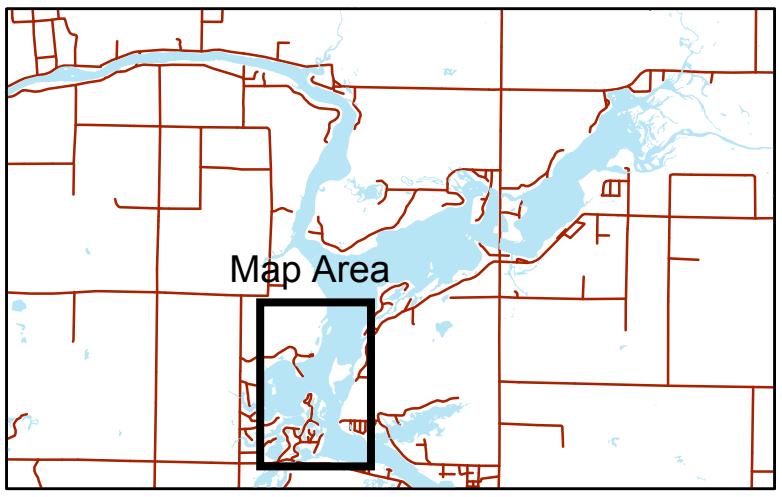
Holcombe Flowage Purple Loosestrife Assessment - 2014

Lower Basin
Map 4 of 7

Legend

- Loosestrife Present

Inset



650 325 0 650 Feet

N

H14
H13
H12
H8
H7
H6
H5
H11
H179
H180
H9
H10
H4
H3
H2
H1
H183
H185
H184
H182
H181

Park
256Th
263Rd
265Th
264Th
Pine Point
275Th
274Th
262Nd
264Th
Anderson
266Th
254Th
257Th
258Th
Wright
Warner
Skidmore
Flader
259Th
271St
255Th
M

GLEC

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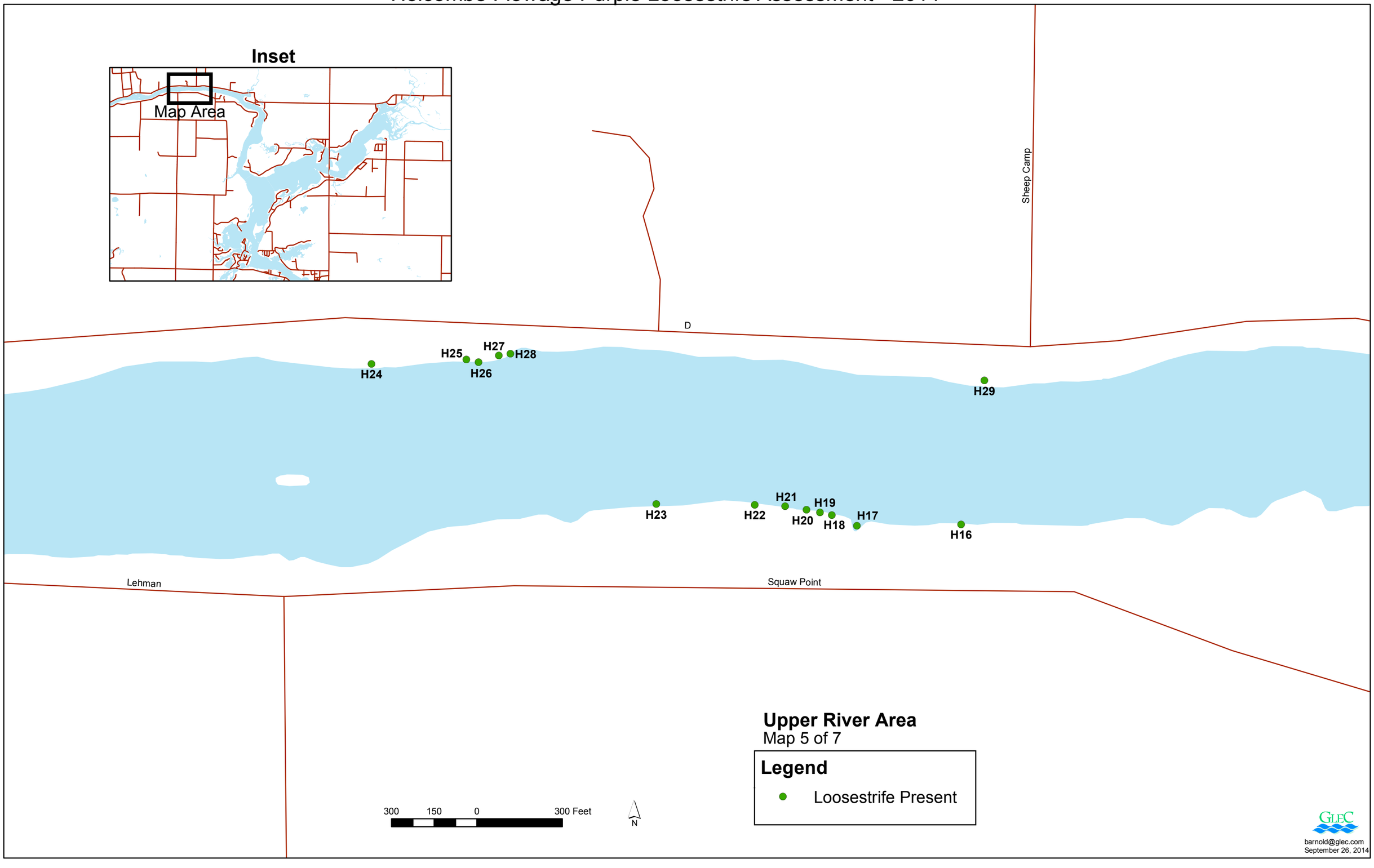
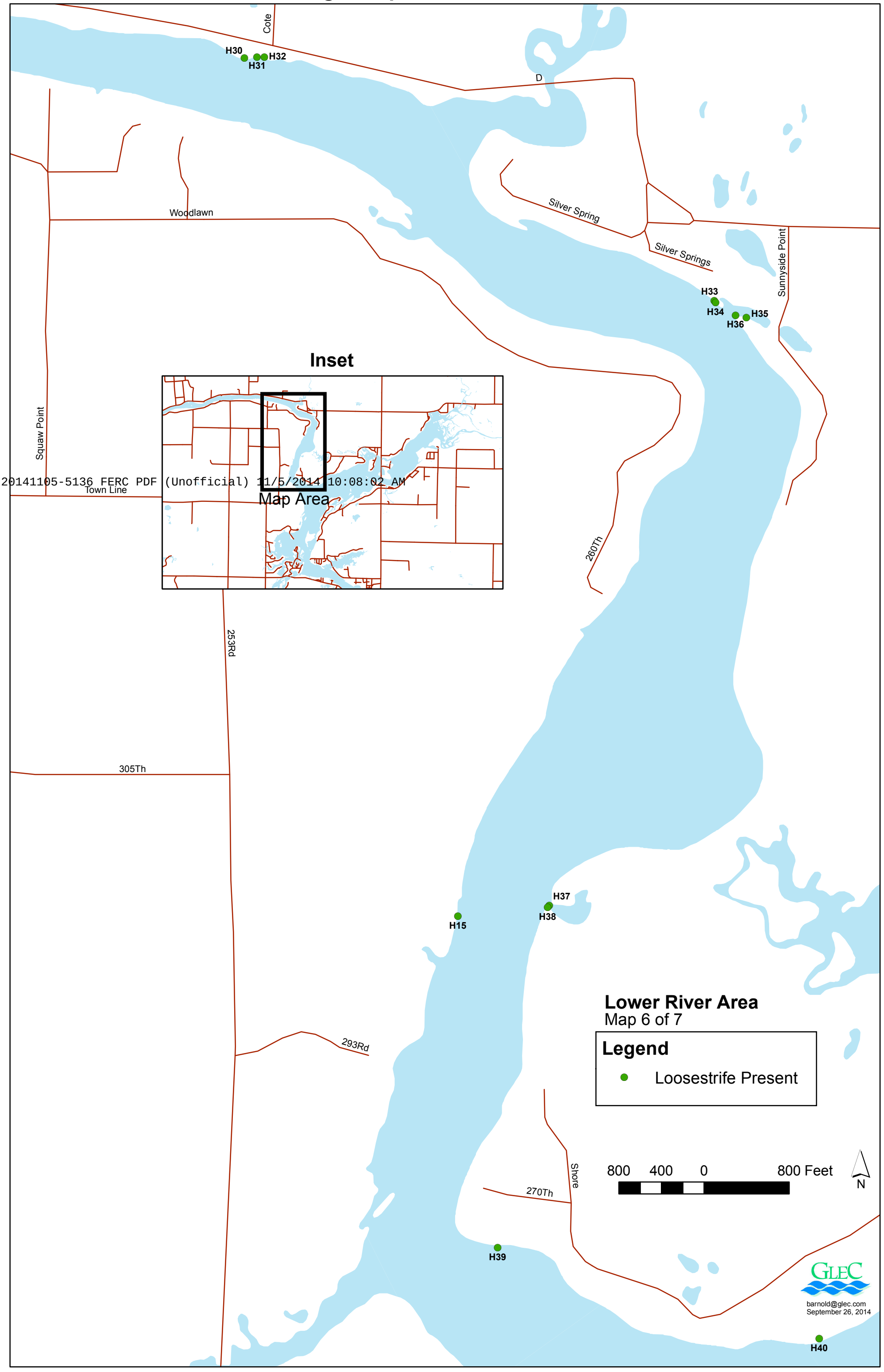
September 26, 2014

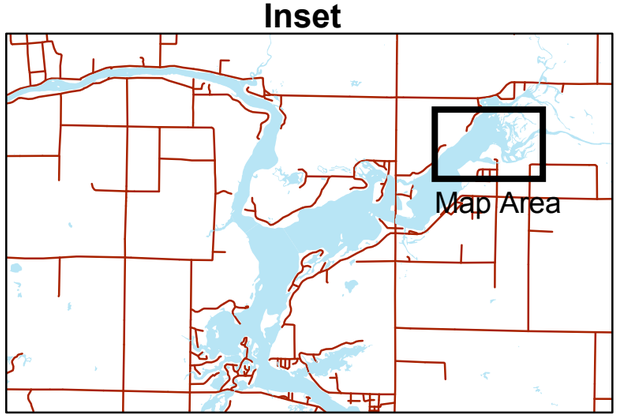
Holcombe Flowage Purple Loosestrife Assessment - 2014



Holcombe Flowage Purple Loosestrife Assessment - 2014



Holcombe Flowage Purple Loosestrife Assessment - 2014



Whispering Pines

H153

H154

Paradise Point

H152

H155

305Th

295Th

291St

292Nd

293Rd

305Th

300Th

Main Creek / Jump River Area

Map 7 of 7

Legend

Loosestrife Present

500 250 0 500 Feet

N

GLEC

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September 26, 2014

Cornell Flowage Purple Loosestrife Assessment - 2014

240Th
239Th
Cc
Brunet Island State
255Th
Brunet Island State
255Th
Brunet Island State
Ridgewood
Adrian
Anchor
Park
Mcintyre
Bay
Park
Riverside
Bridge
64
Bridge
Pine Point
Z

C14
C15
C16
C17
C18
C19
C13
C12
C11
C10
C9
C1
C8
C7
C2
C6
C5
C4
C3

Legend

Loosestrife Abundant

Loosestrife Present

1,000 500 0 1,000 Feet

N

GLEC

barnold@glec.com
September 25, 2014

Old Abe Flowage Purple Loosestrife Assessment - 2014

OA1
OA2
OA3
OA4
OA5
OA6
OA7
OA8
OA9
OA10
OA11
OA12
OA13

205Th
Meadow
220Th
210Th
Shed
Shed
Hoel
64
200Th
210Th
R
ZZ
235Th
200Th
Lemay
Bosanac
195Th
195Th
234Th
192Nd
205Th
210Th
190Th
190Th
190Th
190Th
Sandy
215Th
182Nd
Tt
240Th
180Th
Tt
175Th
210Th
170Th
170Th
170Th
165Th
178
206Th
Moucha
160Th
Bell
200Th
225Th
155Th
210Th
240Th
152Nd
150Th
Matatt
150Th
Cr
205Th
210Th
143Rd
S
142Nd
198Th
Anita
K

Legend

- Loosestrife Present

2,500 1,250 0 2,500 Feet

N

GLEC

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September 25, 2014

Jim Falls Spillway Channel Purple Loosestrife Assessment – 2014 (Map 1 of 4)

Jim Falls Spillway Channel Purple Loosestrife Assessment – 2014 (Map 2 of 4)

Jim Falls Spillway Channel Purple Loosestrife Assessment – 2014 (Map 3 of 4)

Jim Falls Spillway Channel Purple Loosestrife Assessment – 2014 (Map 4 of 4)

XCEL PURPLE LOOSESTRIFE LOCATIONS
2014
LAKE WISSOTA

Location #	Degree of Infestation	Single / Multiple	Coverage (ft)
W1	**Present**	Single	3
W2	**Present**	Single	3
W3	**Present**	Single	3

XCEL PURPLE LOOSESTRIFE LOCATIONS
2014
HOLCOMBE FLOWAGE

Location #	Degree of Infestation	Single / Multiple	Coverage (ft)	Location #	Degree of Infestation	Single / Multiple	Coverage (ft)
H1	Present	Multiple	190	H94	Present	Multiple	12
H2	Present	Single	4	H95	Present	Multiple	8
H3	Present	Multiple	5	H96	Present	Multiple	10
H4	Present	Multiple	6	H97	Present	Single	3
H5	Present	Multiple	3	H98	Present	Multiple	5
H6	Present	Multiple	6	H99	Present	Single	3
H7	Present	Single	1	H100	Present	Multiple	8
H8	Present	Single	1	H101	Present	Single	3
H9	Present	Single	3	H102	Present	Multiple	10
H10	Present	Single	1	H103	Present	Multiple	58
H11	Present	Single	2	H104	Present	Single	5
H12	Present	Multiple	3	H105	Present	Multiple	8
H13	Present	Single	2	H106	Present	Single	2
H14	Present	Multiple	3	H107	Present	Multiple	4
H15	Present	Single	2	H108	Present	Single	4
H16	Present	Multiple	10	H109	Present	Multiple	6
H17	Present	Single	3	H110	Present	Single	4
H18	Present	Single	3	H111	Present	Multiple	7
H19	Present	Multiple	4	H112	Present	Multiple	4
H20	Present	Multiple	5	H113	Present	Multiple	4
H21	Present	Multiple	3	H114	Present	Multiple	6
H22	Present	Single	2	H115	Present	Single	3
H23	Present	Single	3	H116	Present	Single	6
H24	Present	Multiple	8	H117	Present	Single	3
H25	Present	Single	4	H118	Present	Multiple	6
H26	Present	Single	3	H119	Present	Single	3
H27	Present	Multiple	4	H120	Present	Single	3
H28	Present	Multiple	6	H121	Present	Multiple	8
H29	Present	Single	3	H122	Present	Single	4
H30	Present	Single	3	H123	Present	Single	3
H31	Present	Single	3	H124	Present	Multiple	5
H32	Present	Multiple	5	H125	Present	Single	1
H33	Present	Single	2	H126	Present	Multiple	9
H34	Present	Single	2	H127	Present	Single	5
H35	Present	Single	3	H128	Present	Multiple	5
H36	Present	Single	3	H129	Present	Single	3
H37	Present	Multiple	4	H130	Present	Multiple	14
H38	Present	Single	2	H131	Present	Multiple	6
H39	Present	Single	5	H132	Present	Single	3
H40	Present	Single	2	H133	Present	Multiple	16
H41	Present	Multiple	5	H134	Present	Multiple	10
H42	Present	Single	3	H135	Present	Multiple	18
H43	Present	Multiple	6	H136	Present	Multiple	12
H44	Present	Multiple	3	H137	Present	Single	3
H45	Present	Single	2	H138	Present	Multiple	11
H46	Present	Single	2	H139	Present	Single	2
H47	Present	Multiple	6	H140	Present	Single	3
H48	Present	Single	4	H141	Present	Single	3
H49	Present	Multiple	10	H142	Present	Multiple	6
H50	Present	Multiple	8	H143	Present	Single	4
H51	Present	Single	3	H144	Present	Multiple	15

XCEL PURPLE LOOSESTRIFE LOCATIONS
2014
HOLCOMBE FLOWAGE

Location #	Degree of Infestation	Single / Multiple	Coverage (ft)
H52	Present	Multiple	4
H53	Present	Single	5
H54	Present	Single	2
H55	Present	Multiple	9
H56	Present	Multiple	6
H57	Present	Multiple	3
H58	Present	Single	2
H59	Present	Single	4
H60	Present	Single	3
H61	Present	Single	6
H62	Present	Multiple	4
H63	Present	Multiple	6
H64	Present	Single	2
H65	Present	Single	4
H66	Present	Single	3
H67	Present	Single	1
H68	Present	Multiple	5
H69	Present	Multiple	6
H70	Present	Multiple	8
H71	Present	Multiple	14
H72	Present	Multiple	7
H73	Present	Multiple	6
H74	Present	Multiple	4
H75	Present	Multiple	6
H76	Present	Multiple	8
H77	Present	Multiple	9
H78	Present	Single	2
H79	Present	Multiple	8
H80	Present	Multiple	30
H81	Present	Multiple	25
H82	Present	Multiple	50
H83	Present	Multiple	4
H84	Present	Single	5
H85	Present	Single	1
H86	Present	Single	2
H87	Present	Multiple	6
H88	Present	Multiple	6
H89	Present	Multiple	4
H90	Present	Multiple	7
H91	Present	Multiple	10
H92	Present	Multiple	304
H93	Present	Multiple	8
H145	Present	Single	2
H146	Present	Multiple	137
H147	Present	Single	4
H148	Present	Single	5
H149	Present	Single	1
H150	Present	Multiple	9
H151	Present	Single	3
H152	Present	Single	3
H153	Present	Multiple	10
H154	Present	Single	2
H155	Present	Multiple	3
H156	Present	Single	3
H157	Present	Single	2
H158	Present	Single	1
H159	Present	Single	3
H160	Present	Single	3
H161	Present	Multiple	6
H162	Present	Multiple	4
H163	Present	Single	1
H164	Present	Multiple	4
H165	Present	Multiple	18
H166	Present	Single	2
H167	Present	Multiple	7
H168	Present	Multiple	4
H169	Present	Multiple	10
H170	Present	Multiple	6
H171	Present	Single	3
H172	Present	Multiple	10
H173	Present	Multiple	12
H174	Present	Multiple	8
H175	Present	Single	2
H176	Present	Single	2
H177	Present	Single	2
H178	Present	Multiple	6
H179	Present	Multiple	4
H180	Present	Multiple	8
H181	Present	Single	3
H182	Present	Single	3
H183	Present	Single	2
H184	Present	Multiple	4
H185	Present	Multiple	8

XCEL PURPLE LOOSESTRIFE LOCATIONS
2014
CORNELL FLOWAGE

Location #	Degree of Infestation	Single / Multiple	Coverage (ft)
C1	**Present**	Single	3
C2	**Present**	Single	3
C3	**Present**	Single	2
C4	**Present**	Single	3
C5	**Present**	Multiple	7
C6	**Present**	Multiple	5
C7	**Present**	Single	3
C8	**Abundant**	Multiple	60
C9	**Present**	Single	2
C10	**Present**	Single	1
C11	**Present**	Single	2
C12	**Present**	Multiple	3
C13	**Present**	Multiple	16
C14	**Present**	Single	3
C15	**Present**	Single	3
C16	**Present**	Multiple	4
C17	**Present**	Single	3
C18	**Present**	Single	2
C19	**Present**	Single	2

XCEL PURPLE LOOSESTRIFE LOCATIONS
2014
OLD ABE FLOWAGE

Location #	Degree of Infestation	Single / Multiple	Coverage (ft)
OA1	**Present**	Single	2
OA2	**Present**	Multiple	20
OA3	**Present**	Single	2
OA4	**Present**	Multiple	20
OA5	**Present**	Multiple	6
OA6	**Present**	Single	1
OA7	**Present**	Multiple	16
OA8	**Present**	Single	1
OA9	**Present**	Single	5
OA10	**Present**	Single	3
OA11	**Present**	Single	3
OA12	**Present**	Single	3
OA13	**Present**	Single	3

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