We Energies
2008 Annual Report - Nuisance Plant Control Survey
Way Dam & Michigamme Reservoir
FERC Project #1759

We Energies' Environmental department staff, Mr. Mike Grisar and Mr. John Hrobar, conducted a survey from a boat at the Way Dam and Michigamme Reservoir project on July 28, 2009. The survey was specific to monitoring for the presence of purple loosestrife (*Lythrum salicaria*) in the Michigamme River portion of the project area. While the license requires a survey on an alternating year basis, We Energies is committed to minimizing the potential for a prolific invasion of this species at Way Dam and Michigamme Reservoir and conducted an interim survey in 2009.

Additionally, We Energies' Environmental Department staff, Mr. Grisar and Mr. Tim Muehlfeld surveyed the Michigamme River from the Highway 95 bridge north of Channing, MI downstream to Newberg Road at the Way Dam project boundary. This survey occurred on July 27, 2009. This is an approximate 5-mile stretch of the river that We Energies committed to surveying during the annual agency meeting in Fall 2008. The effort was done to determine the extent of purple loosestrife immediately upstream of the Way Dam project, and to attempt to minimize the potential for a prolific invasion within the project limits and further down through the Menominee system.

Way Dam and Michigamme Reservoir Project Area

Purple loosestrife was observed, mapped, and removed at four locations (attached map) in 2006. All four locations (stands 1-4) occurred within the eastern portion of the project area along the shorelines of the Michigamme River, three near the mouth of the Michigamme River where it empties into the reservoir and one in the far eastern reaches of the project area.

While the license requires a survey on an alternating year basis (even years), We Energies conducted an interim survey in 2007 and again in 2009. In 2007, purple loosestrife was observed at two of the same locations identified in 2006 (i.e. stands 1 and 3). It was observed at four new locations upstream from stands 1 and 3, three of which were in the vicinity of Weber Lake, and one was along the river channel upstream from Weber Lake.

During the 2008 survey, the purple loosestrife population in the Michigamme River portion of this reservoir experienced an increase from previous survey years (Table 1). Since 2006, increases exceeding 600% and 300% have been observed in the number of plants and the number of stems recorded, respectively. In a similar trend, the number of second year plant observations has doubled in each of the two years since 2006, totaling nine in 2008. The number of stems recorded per plant substantially decreased from 2007 to 2008.

A trend of an increasing purple loosestrife infestation again continued in 2009. Although fewer purple loosestrife locations were observed, the number of plants observed and total number of stems increased by over 60% between 2008 and 2009 (~24x and >5x that of 2006 levels, respectively). The number of stems observed per plant remained relatively constant between 2008 and 2009. The total number of second year plants more than tripled since 2008.

Table 1. Summary of purple loosestrife observations 2006-2009.

	2006	2007	2008	2009
# of Observed Stands	4	6	30	28
# of Plants Observed	4	9	57	94
# of Stems Observed	51	128	160	271
Stems Observed per Plant	12.75	14.22	2.81	2.88
2nd-year Plants Observations	2	4	9	31

Purple loosestrife has been found at 43 total locations in the past 4 years. A majority of the stands are comprised of one or two plants at each location. Three stands (numbers 1, 4, and 38), are exhibiting characteristics of becoming larger populations of purple loosestrife beyond just one or two plants per stand. At each of these locations the number and spatial distribution of observed plants is spreading. Stand number 1 was relatively small in size with only 5 plants in the same vicinity, but is spreading from previous years. Stand number 4 expanded to 5 plants as well, with all the plants in relative close proximity. However, stands number 40-43 are new stands observed in 2009, and occur in the same general vicinity as Stand number 4. Stand number 38 is a stand just north of Weber Lake that was discovered in a small cove behind a line of tall cat-tails in 2009. This stand was comprised of 29 plants, of which 6 were second-year plants and 23 were first-year. This stand was observed for the first time in 2009.

Unlike previous years, not all observed purple loosestrife plants during the 2009 survey were in full flower as many of them had just begun flowering. There was no evidence that any of the plants had set seed. All plants encountered were hand pulled while entirely removing the stems, and as much of the root material as possible. Effectiveness of the hand pulling in each of the previous years is exemplified by the fact that half of the stands previously observed were not present in 2008. Again, in 2009, half of the plants observed in 2008 were no longer present. Stands observed over multiple years are generally at locations where second year plants were encountered and removed in previous years. Plants observed at some stands are likely the result of seed production, while some repeat stands exhibit regeneration from root material that was not feasible to remove the prior year.

In 2009, 33 first-year plants and 22 second-year plants were documented at locations not previously recorded. Of the second year plants, the two-year old plant material appeared to be very small (<3' tall) and few stemmed. They all occurred among tall and dense wetland vegetation, and were not detectable during the 2008 survey.

We Energies plans to continue surveying for purple loosestrife at the Way Dam & Michigamme Reservoir project site annually to minimize the potential for mature plants setting and releasing seed into the reservoir.

Michigamme River – Highway 95 to Newberg Road

The increase in purple loosestrife within the Way Dam project lands is concerning as there is a viable purple loosestrife population occurring upstream of the Way Dam project area. In agreeing to conduct a survey on the Michigamme River further upstream from the project area, the company hopes to develop a better understanding of the extent to which purple loosestrife occurs upstream of the reservoir system.

The July 27, 2009 survey yielded fifty-six purple loosestrife stands along the Michigamme River. These stands were mapped and removed (attached map). Within these stands, 79 multi-year plants were encountered and 34 first-year plants (113 plants in total). A total of 361 stems were counted. Not all observed purple loosestrife plants were in full flower as many of them had just begun flowering. There was no evidence that any of the plants had set seed. All plants encountered were hand pulled while entirely removing the stems, and as much of the root material as possible.

A majority of the plants were growing in sandy and rocky shorelines and exposed bars relatively devoid of organic soil. The lack of nutrient rich soils along these shores resulted in stunted growth and relatively few stems per plant. A majority of the plants were found to occur on the alluvial bars generally along the inside shoreline of the stream meanders.

We Energies plans to continue to survey and remove purple loosestrife from this stretch between Highway 95 and Newberg Road in 2010. The company is also actively enlisting support from state and local agencies to assist in combating the probable spread of this species in the Menominee River system. We have received anecdotal reports that the loosestrife originates in the Michigamme River near Republic, MI and is scattered along the shores of the Michigamme River down to the Way Dam project lands.

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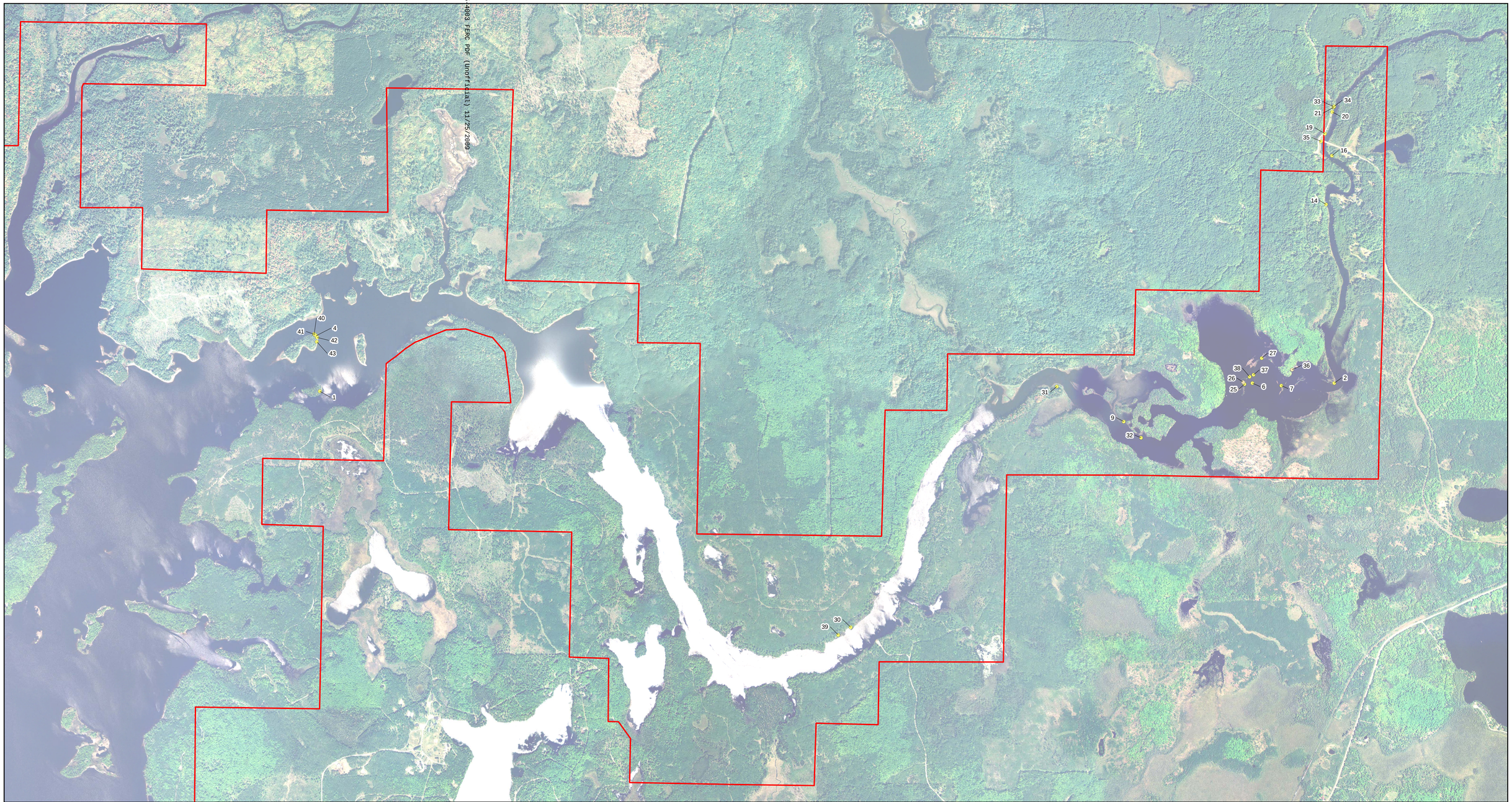

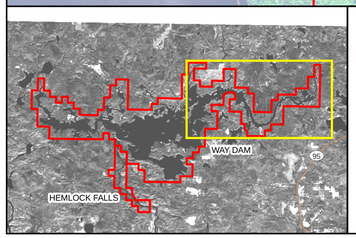

Public Boat Launch

FERC Hydro Project Boundary

Year 2009 Field Work

- sparse
- moderate sparse
- moderate
- moderate dense
- dense

Feet

1,000 0 1,000 2,000

N W E S

Way Dam Hydro Project - Year 2009
Eurasian Water Milfoil and Purple Loosestrife Survey

Source: USDA -NAIP Imagery, 2005
GPS field data collected 7/28/2009

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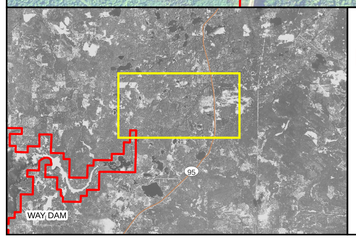
20091125-4003 FERC PDF (Unofficial) 11/25/2009



Public Boat Launch

FERC Hydro Project Boundary

Year 2009 Field Work

sparse

moderate sparse

Feet

1,000 0 1,000 2,000

N W E S

Michigamme River - Year 2009
Eurasian Water Milfoil and Purple Loosestrife Survey

Source: USDA -NAIP Imagery, 2005
GPS field data collected 7/27/2009

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