



ORIGINAL

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September 25, 2002

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

FILED  
OFFICE OF THE SECRETARY  
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FEDERAL ENERGY  
REGULATORY COMMISSION

**Subject: Monitoring Results Of The 2002 Survey Of Purple Loosestrife Populations On The White River Flowage (FERC Project No. 2444), the Superior Falls Flowage (FERC Project No. 2587), the Big Falls Flowage (FERC Project No. 2390), The Thornapple Flowage (FERC Project No. 2475) And The Hayward Flowage (FERC Project No. 2417).**

Dear Acting Secretary:

Enclosed is an original and eight copies of the 2002 purple loosestrife monitoring report for the above-mentioned projects as directed by the Federal Energy Regulatory Commission's (Commission) license orders. The license orders requires Northern States Power Company – Wisconsin (d.b.a. Xcel Energy) to perform annual surveys of project shorelines for the presence of purple loosestrife and to file the monitoring results with the Commission.

The above-mentioned flowages were surveyed in August and an estimate of purple loosestrife densities were determined and compared to previous years' surveys. The 2002 monitoring results indicated that purple loosestrife presence and abundance were similar to the monitoring results from previous years.

If you have any questions in regards to the monitoring results or to this filing, please feel free to give me a call at (715) 839-2692 or Mr. Robert Olson of my staff at (715) 839-1353.

Very truly yours,

Lloyd Everhart  
Administrator, Hydro Licensing

Attachment: Purple Loosestrife Monitoring Report

- c: Janet Smith (U.S. Fish and Wildlife Service)
- Angie Tornes (National Park Service)
- Jeff Scheirer (Wisconsin DNR)
- Project Files

**Monitoring Results Of Purple Loosestrife Surveys  
Performed On The White River, Superior Falls, Big Falls,  
Thornapple And Hayward Flowages.**

**September 26, 2002**

## **Monitoring Results Of Purple Loosestrife Surveys Performed On The White River Flowage, The Superior Falls Flowage, The Big Falls Flowage, The Thornapple Flowage And The Hayward Flowage.**

### **1.0 Introduction**

The operating licenses for the White River, Superior Falls, Big Falls, Thornapple and Hayward hydro projects directed the Licensee to develop a purple loosestrife (Lythrum salicaria) monitoring plan for project shorelines. The plans were developed with input from the Wisconsin Department of Natural Resources (WDNR), the U.S. Fish and Wildlife Service (USFWS) and the National Park Service (NPS). The plans involve annual monitoring of project shorelines during a period of peak purple loosestrife biomass (late July through August). The following report is a summary of the surveys that were performed during the 2002 field season and comparisons made to the results of surveys from previous years.

### **2.0 Methods**

The shorelines of the Big Falls and Thornapple Flowages were surveyed for purple loosestrife on August 26, the Superior Falls and White River Flowages were surveyed on August 27, and the Hayward Flowage was surveyed on August 28. The survey dates coincided with the time of maximum flowering where purple loosestrife could be easily identified and surveyed for relative abundance. The project lands downstream from the Hayward Hydro Project were also surveyed.

Project shorelines were classified to indicate whether purple loosestrife was absent, present or abundant. Present indicated a light scattering of a few plants over an area, and in most cases, presence was limited to only an individual plant. Abundant indicated a dense growth of numerous plants over an area. Absent indicated that no purple loosestrife plants were present. Using these determinations of infestation, purple loosestrife locations were mapped on bathymetric maps and an estimate of shoreline miles occupied determined using a planimeter. This method overestimates the amount of shoreline where loosestrife is present, as a single dot from a highlighting pen covers a much larger area on the map than the individual plant. However, the method has been used consistently over the survey period and provides for a reliable and consistent means for comparing changes in loosestrife populations from year to year.

### **3.0 Results**

**3.1 White River Flowage.** Purple loosestrife plants were not found on the shorelines of the White River Flowage. This was similar to the findings from surveys conducted between 1998-2001.

**3.2 Superior Falls Flowage.** The shorelines of the flowage were absent of any purple loosestrife plants, which was similar to the findings from surveys conducted between

1998-2001. In addition to the purple loosestrife surveys, a survey of flowage waters for Eurasian milfoil (Myriophyllum spicatum) was conducted and no plants were observed.

**3.3 Big Falls Flowage.** There were no purple loosestrife plants found on the shorelines of the Big Falls Flowage. Again, this was similar to the results of the previous surveys conducted between 1998-2001.

**3.4 Thornapple Flowage.** A number of purple loosestrife plants were found to be growing on the shorelines of the Thornapple Flowage (*Figure 1*). The majority of plants appear largely concentrated in the wetland area in the middle part of the flowage and in some of the small backwater areas surrounding the flowage. Otherwise, purple loosestrife was present throughout much of the flowage shoreline as scattered pioneering plants. Many of the scattered plants were located on shorelines where lakefront homes and lawns had caused a disturbance to the natural shoreline.

Purple loosestrife was observed as present on 2.52 miles or 33.1% of the total shoreline. This was the same presence found in the 2001 survey. Purple loosestrife was observed as abundant on 0.48 miles or 6.4% of the total shoreline in 2002. This was slightly less than the previous survey, which indicated loosestrife as abundant on 0.67 miles or 8.8% of the total shoreline. The limited overall change in presence and abundance of loosestrife indicates that the plants have likely reached their peak numbers, which is limited by suitable growing conditions. Many of the pioneering plants don't appear to be exceptionally healthy as the shoreline areas where these plants are located are more upland, with steep shoreline banks, that don't provide suitable growing conditions for abundant loosestrife populations. The wetland areas have greater populations of loosestrife plants. The purple loosestrife density classification used during the 2002 survey was modified in 2000 and included only present and abundant ratings instead of the present, common and abundant ratings previously used. Licensee is not aware of any purple loosestrife control measures being utilized on the Thornapple Flowage.

**3.5 Hayward Flowage.**

Purple loosestrife plants were prevalent in some shoreline areas on the Hayward Flowage. A single reach of shoreline was found to have a large and very dense population (*Figure 2*).

An initial survey of purple loosestrife on the flowage was completed in August of 1997. This survey estimated that, of the 8.64 miles of shoreline, 0.3 miles (3.5%) were classified as present and 0.7 miles (8.1%) were classified as abundant. The 1998 survey yielded very similar results to the 1997 survey. The 1999 survey results indicated that purple loosestrife populations that were rated as abundant were reduced to 0.25 miles and 2.9 percent of the total shoreline. Areas where purple loosestrife was present increased to 1.08 miles or to 12.5 percent of the total shoreline.

The 2001 survey indicated that purple loosestrife was present on 1.13 miles or 13.1% of the total shoreline. The 2002 survey found a reduction in loosestrife presence and abundance. Loosestrife was present on only 0.9 miles or 10.4% of the shoreline. Areas where loosestrife was considered abundant also dropped to 0.07 miles, or 0.81% of the shoreline. During the 2002 survey, observations made in some of the areas that have historically been heavily infested with loosestrife, indicated that there were many skeletal remains of loosestrife from previous years, although the abundance of live plants appeared to be significantly reduced. There may also be a varying opinion during surveying of purple loosestrife abundance from year to year, although the density change observed indicates that some control program has been implemented. Many of the pioneering plants were located on shorelines where human development has disturbed the natural shoreline.

The main areas of purple loosestrife infestation on the Hayward Flowage are concentrated in the northwest section of the flowage at the mouth of Smith Lake Creek. Although this survey does not provide any direct evidence, it is highly possible that the source of the purple loosestrife is located somewhere upstream on Smith Lake Creek, not farther up the Namekagon River.

Project lands on the Namekagon River immediately downstream from the Hayward Dam were also surveyed and several loosestrife plants were found. Purple loosestrife was also present downstream from the Hayward Project during the 2001 survey. Licensee is aware that the NPS implemented a control program several years ago on the reach of river downstream from the Hayward Project.

Licensee has donated money to the Hayward High School's Environmental Studies class over the last several years to initiate a biological control program for purple loosestrife on Lake Hayward. Their efforts appear to have been successful in reducing the quantity of purple loosestrife present on the Hayward Flowage.

**4.0 Conclusion**

Purple loosestrife was not present on the White River Flowage, the Superior Falls Flowage or the Big Falls Flowage. The Thornapple Flowage shorelines are scattered with purple loosestrife plants, although there are heavier densities in a few of the wetland areas where growing conditions are more suitable. The number of pioneering plants appears to be constant from the 2001 survey. The areas around the Thornapple Flowage that have steeper slopes at the shoreline have limited purple loosestrife presence and abundance. The Hayward Flowage has a population of purple loosestrife that appears to be reducing in abundance, although in some areas, purple loosestrife is still the dominant plant species. The abundant populations found in several areas on the Thornapple and Hayward Flowages are significant enough that they are a good seed source for spreading to unpopulated shorelines as well as the downstream river sections.

H:\references\purpleloosestrife\2002report.doc

# LARGE-FORMAT IMAGES

One or more large-format images (over 8 1/2" X 11") go here.  
These images are available in FERRIS at:

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