



Northern States Power Company

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December 2, 1999

Jeff Scheirer
Wisconsin DNR
875 South Fourth Ave.
P.O. Box 220
Park Falls, WI 54552

Jim Fossum
Department of the Interior
U.S. Fish and Wildlife Service
1015 Challenger Court
Green Bay, WI 54301

Angie Tornes
Department of the Interior
National Park Service
310 W. Wisconsin Ave., Rm. 500
Milwaukee, WI 53202

SUBJECT: REPORT ON THE RESULTS OF THE PURPLE LOOSESTRIFE MONITORING ON THE WHITE RIVER FLOWAGE (FERC PROJECT NO. 2444), SUPERIOR FALLS FLOWAGE (FERC PROJECT NO. 2587), BIG FALLS FLOWAGE (FERC PROJECT NO. 2390), THORNAPPLE FLOWAGE (FERC PROJECT NO. 2475) AND THE HAYWARD FLOWAGE (FERC PROJECT NO. 2417).

Dear Mr. Scheirer, Mr. Fossum and Ms. Tornes:

Attached are the results of the purple loosestrife monitoring which took place in August of 1999 for the above-referenced flowages. The monitoring results were similar to those from the 1998 field survey. Eurasian milfoil monitoring at the Superior Falls Flowage could not be conducted this year because the flowage was drawn down for the majority of the summer and fall for dam rehabilitation.

The White River hydro project lands were also surveyed in August as required by the land management plan pursuant to Article 407 of the White River license. No changes or disturbances to the project lands were noted. The bald eagle nest on the Big Falls Flowage, located on the west side of the flowage, approximately one-half mile upstream from the dam, was occupied during the 1999 season and produced two young eagles which were observed roosting at the site in July.

If you have any questions in regards to the survey results or the techniques used, please feel free to give me a call at (715) 839-1353.

Sincerely,

Robert W. Olson
Coordinator, Licensing

Enclosure: Survey Results

c: Project Files

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Purple Loosestrife Assessment for the White River Flowage, Superior Falls Flowage, Big Falls Flowage, 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 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 monitoring 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 done during the 1999 field season.

2.0 Methods

The shorelines of the White River Flowage, Superior Falls Flowage, Big Falls Flowage, Thornapple Flowage and the Hayward Flowage were surveyed in August, 1999 for the presence of purple loosestrife (*Lythrum salicaria*). The project lands downstream from the Hayward Hydro Project were also surveyed. Project shorelines were rated to indicate whether purple loosestrife was absent, present or abundant. Present indicated a light scattering of a few plants over an area. 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 of the flowages.

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 the 1998 survey.

3.2 Superior Falls Flowage. The shorelines of the flowage was absent of any purple loosestrife plants which was similar to the findings from the 1998 survey.

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 1998 survey.

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.

Purple loosestrife was observed to be present on 2.36 miles or 31.0 percent of the shoreline. The plant was determined to be common on 0.27 miles or 3.6 percent of the shoreline. The plant was considered abundant on 0.67 miles or 8.8 percent of the

shoreline, mainly in the wetland area in the middle portion of the flowage. Licensee is unsure of how these estimates compare to previous years estimates although the locations where the purple loosestrife was found were similar to previous surveys performed on the flowage.

3.5 Hayward Flowage. Numerous purple loosestrife plants were found on the Hayward Flowage. Several stretches of shoreline were found to have large, very dense populations (see Figure 2).

An initial survey of purple loosestrife on the flowage was completed in August, 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 12.5 percent of the total shoreline. The density differences observed may have been the result of a varying opinion from a different surveyor or that the National Park Service (NPS) has implemented a control program on the Hayward Flowage. Licensee is aware that the NPS has implemented a control program downstream from the dam but is unsure whether such a program has been implemented on the flowage.

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 downstream from the Hayward Dam were found to contain three isolated population of purple loosestrife that were considered as being present. These were located immediately downstream from the spillway and powerhouse. Each of these populations appear to be about the same as those observed in the 1998 survey.

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 has a fair amount of purple loosestrife plants, largely concentrated in a few of the wetland areas. The areas around the Thornapple Flowage that have steeper slopes at the shoreline have limited purple loosestrife concentrations. The Hayward Flowage has significant populations of purple loosestrife, including some areas where the plant is by far the dominant plant species. Populations in both 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.

LAKE Thornapple Flow
 SECTION 18, 19, 22, 23, 24
 RANGE 6, 7 W
 TOWN Thornapple
 TOWNSHIP 34 N

This is the only hydrographic map of this lake available,
 produced from original charts of Dept. of Natural Resources — Madison


A U. S. Geological Survey Map is available from us showing
 the area (approx. 12 square miles) adjacent to this lake.

To order specify Thornapple Quadrangle

RUSK COUNTY

MAP NO.
























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 PRESENT
 COMMON
 ABUNDANT



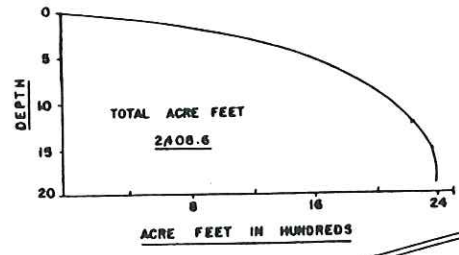
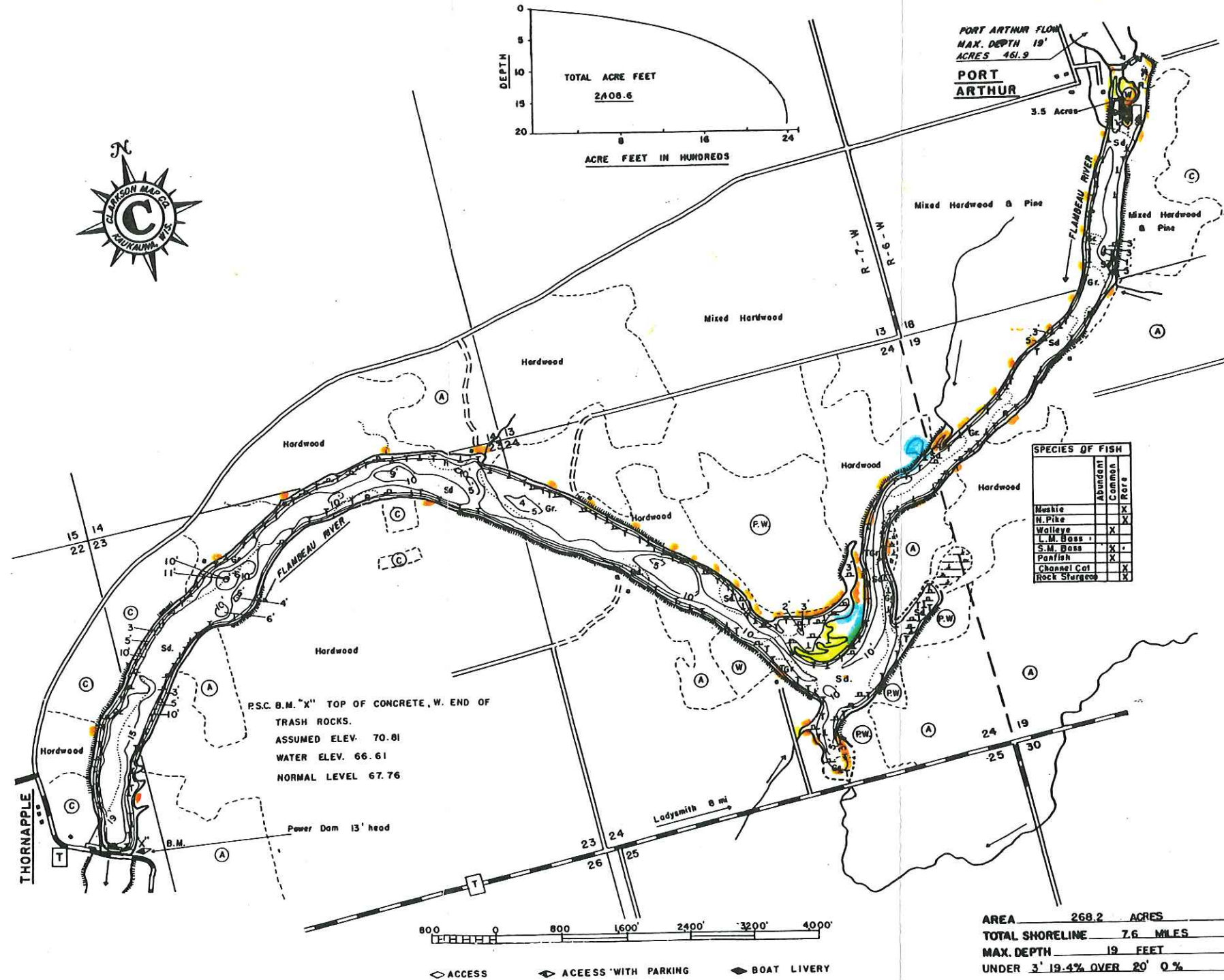
LEGEND

TOPOGRAPHIC SYMBOLS

- BRUSH REFUGE 
- SAPPING TANGLE 
- SPAWNING BOX 
- MINNOW SPAWNER 
- WEED BED 
- ROCKY SHOAL 
- DWELLING 
- ABANDONED DWELLING 
- RESORT 
- STEEP SLOPE 
- SPRING 
- INTERMITTENT INLET 
- BRUSH 
- WOODED 
- PASTURED 
- CULTIVATED 
- ENCROACH. SHORE 
- PERMANENT INLET 
- PERMANENT OUTLET 
- MARSH 
- PARTIALLY WOODED 
- CLEARED 
- BENCH MARK 

LAKE BOTTOM SYMBOLS

- PULPY PEAT.....P
- MUCK.....K
- CLAY.....C
- SAND.....S
- RUBBLE.....R
- EMERGENT VEGET.....L
- FIBROUS PEAT.....F
- DETRITUS.....D
- MARL.....M
- GRAVEL.....G
- BEDROCK.....Br.
- SUBMERGENT VEGET.....T



SPECIES OF FISH

Species	Abundant	Common	Rare
Muskie	X		
H. Pike	X		
Walleye	X		
L.M. Bass	X		
S.M. Bass	X		
Panfish	X		
Channel Cat	X		
Rock Sturgeon	X		

AREA 268.2 ACRES
 TOTAL SHORELINE 7.6 MILES
 MAX. DEPTH 19 FEET
 UNDER 3' 19.4% OVER 20' 0%

CLARKSON MAP CO.
 724 DESNOYER STREET
 Kaukauna, Wisconsin 54130

FIGURE 1