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September 28, 2001

REGULATORY ENERGY  
COMMISSION

Mr. David P. Boergers, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, D.C. 20426

Subject: Monitoring Results Of The 2001 Survey Of Purple Loosetrife 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) -038 044 017 043

Dear Secretary:

Enclosed is an original and eight copies of the 2001 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 2001 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: Jim Fossum (U.S. Fish and Wildlife Service)  
Angie Tornes (National Park Service)  
Jeff Scheirer (Wisconsin DNR)  
Project Files

H:\references\purpleloosetrife\092801\letter.doc

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FEDERAL ENERGY  
REGULATORY COMMISSION

**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.**

**September 28, 2001**

# **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 monitoring plans involve annual monitoring of project shorelines during a period of peak purple loosestrife biomass (late Jul through August). The following report is a summary of the surveys that were performed during the 2001 field season and comparisons made to the results of surveys from previous years.

## **2.0 Methods**

The shorelines of the Hayward and White River Flowages were surveyed for purple loosestrife on August 14, the Superior Falls Flowage was surveyed on August 15, and the Big Falls and Thornapple Flowages were surveyed on August 21. 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. 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.

## **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 1998-2000.

**3.2 Superior Falls Flowage.** The shorelines of the flowage was absent of any purple loosestrife plants which was similar to the findings from surveys conducted between 1998-2000. 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 1998-2000.

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.

Purple loosestrife was observed as present on 2.52 miles or 33.2% of the total shoreline. This was an increase of 0.88 miles or 53.7% from the 2000 survey. During the 2000 survey, purple loosestrife was observed to be present on 1.64 miles or 21.6% of the total shoreline. Purple loosestrife was observed as abundant on 0.67 miles or 8.8% of the total shoreline in 2001. This was similar to the previous survey, which indicated loosestrife as abundant on 0.70 miles or 9.2% of the total shoreline. The increase in overall coverage from 2.34 miles in 2000 to 3.19 miles in 2001 is likely the result of the continuing spread of pioneering plants. The purple loosestrife density classification used during the 2001 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 on the Hayward Flowage. Several stretches of shoreline were found to have large, very dense populations (*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 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. This was a slight decrease from the 2000 survey, which indicated that the quantity of shoreline with present loosestrife infestation was 1.28 miles or 14.8%. The amount of shoreline categorized as abundant with purple loosestrife in 2001 was calculated at 0.19 miles or 2.2% of the total shoreline. This was approximately twice the amount that was reported as abundant in 2000. The overall shoreline infestation, however, decreased slightly from 1.38 miles in 2000 to 1.32 miles in 2001. There may 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.

Project lands on the Namekagon River immediately downstream from the Hayward Dam were also surveyed and several loosestrife plants were found. Purple loosestrife was absent downstream from the Hayward Project during 2000 but present in the 1998 and 1999 surveys. Licensee is aware that the NPS implemented a control program several years ago on the reach of river downstream from the Hayward Project. Those efforts were apparently successful initially, however, pioneering plants have re-established.

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.

#### 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 conditions are more suitable. There also appears to be a noticeable increase in the number of pioneering plants which were responsible for a portion of the overall increase in shoreline infestation. The areas around the Thornapple Flowage that have steeper slopes at the shoreline have limited purple loosestrife presence and abundance. The Hayward Flowage has significant populations of purple loosestrife, including some areas where the plant is by far the dominant plant species. Furthermore, after the reduction of areas categorized as abundant in 2000 over previous years, it appears that these same infestations may be re-establishing. 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



**LEGEND**

**TOPOGRAPHIC SYMBOLS**

- BRUSH REFUGE ----- ⊕
- SAPLING TANGLE ----- ☞
- SPAWNING BOX ----- □
- MINNOW SPAWNER ----- \*
- WEED BED ----- [wavy lines]
- ROCKY SHOAL ----- [dotted]
- DWELLING ----- ■
- ABANDONED DWELLING ----- □
- RESORT ----- [square with X]
- STEEP SLOPE ----- [parallel lines]
- SPRING ----- [circle with arrow]
- INTERMITTENT INLET ----- [arrow]
- BRUSH ----- [wavy lines]
- WOODED ----- [W]
- PASTURED ----- [P]
- CULTIVATED ----- [C]
- ENCROACH. SHORE ----- [wavy line]
- PERMANENT INLET ----- [arrow]
- PERMANENT OUTLET ----- [arrow]
- MARSH ----- [wavy lines]
- PARTIALLY WOODED ----- [PW]
- CLEARED ----- [C]
- BENCH MARK ----- [B.M.]

**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

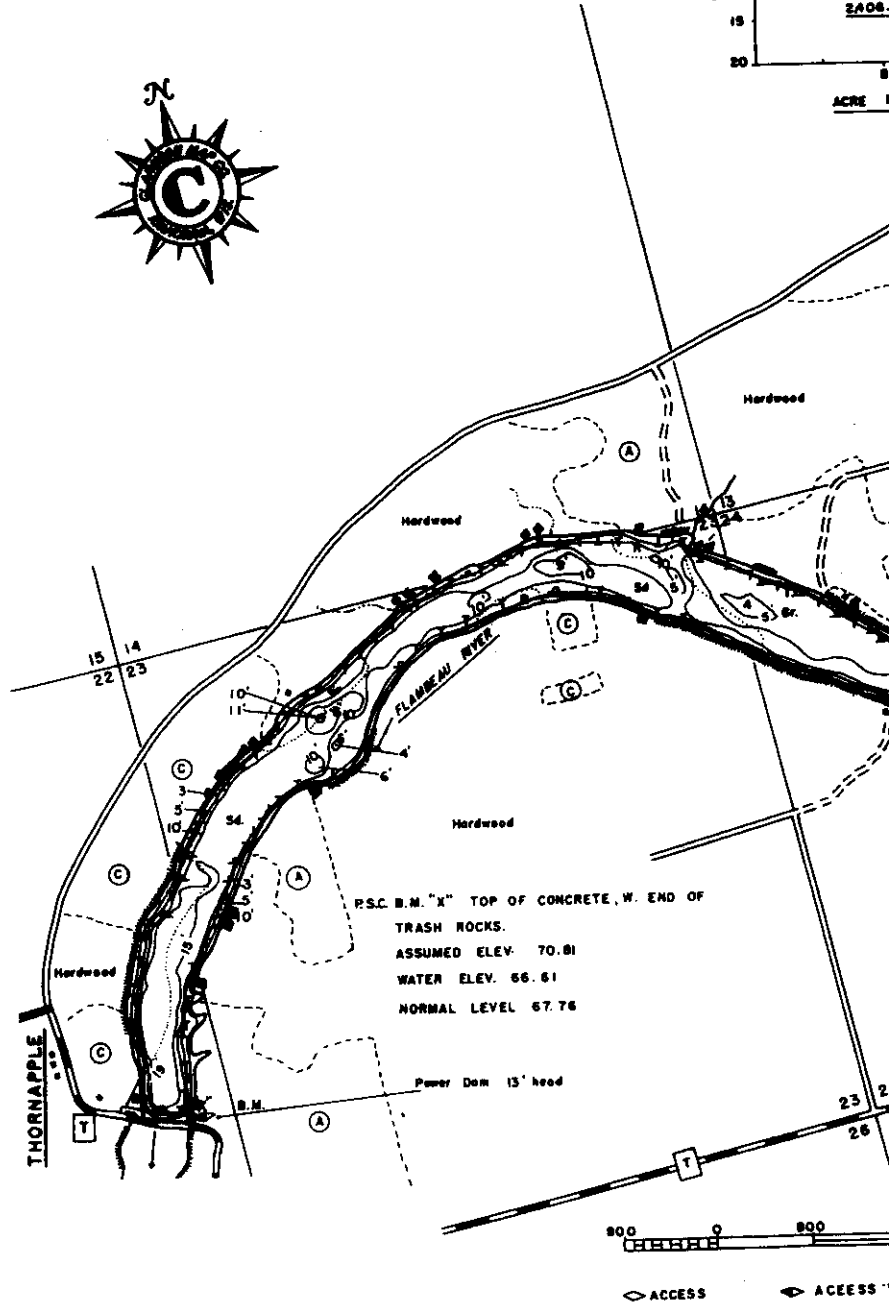
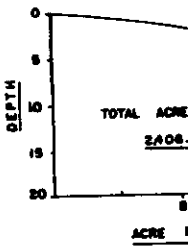
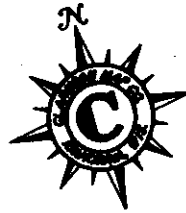


Figure 1. Locations of Purple



LAKE Hayward Flowage  
 SECTION 26, 27  
 RANGE 9 W  
 TOWN Hayward  
 TOWNSHIP 41 N

This is the or  
 produced fro  
 sources — M  
 A U. S. Geol  
 ing the area  
 To order spe

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▨ ABUNDANT  
 ■ PRESENT

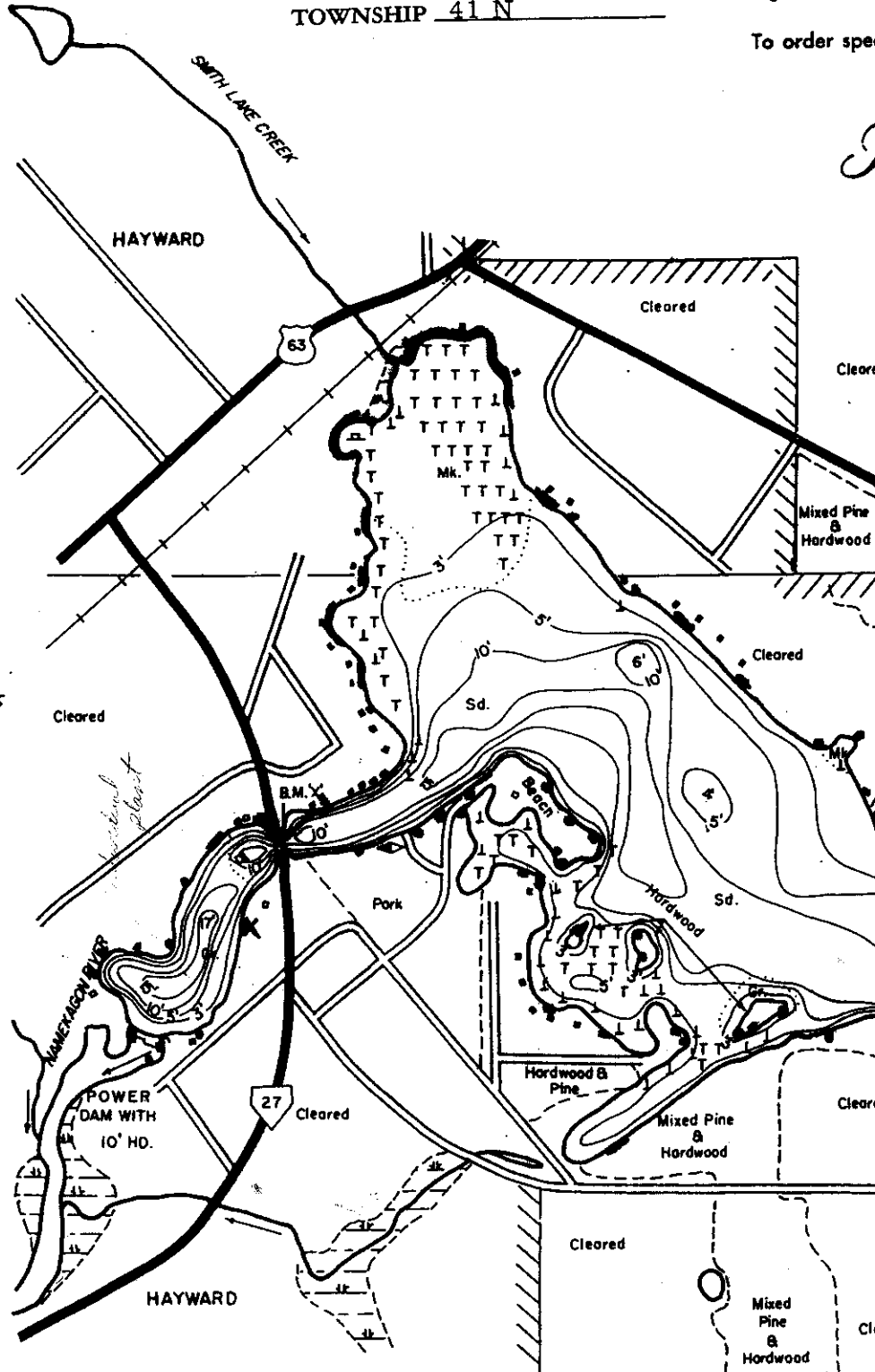
1/2 Mile = 3.6 CLICKS  
 1 Mile = 7.2 CLICKS

AREA OF LOOSESTRIPE PRESENT

8.1 CLICKS = 5940 FT = 1.13 Miles  
 = 13.1% OF SHORELINE

AREA OF LOOSESTRIPE ABUNDANT

1.4 CLICKS = 1026 FT = 0.19 Miles  
 = 2.2% OF SHORELINE



TOPOGRAPHIC SYMBOLS

- |                       |                        |
|-----------------------|------------------------|
| (B) Brush             | Steep slope            |
| (PW) Partially wooded | ~ Indefinite shoreline |
| (W) Wooded            | ~ Marsh                |
| (C) Cleared           | o Spring               |
| (P) Pastured          | ~ Intermittent stream  |
| (A) Agricultural      | ~ Permanent inlet      |
| B.M. Bench Mark       | ~ Permanent outlet     |
| ■ Dwelling            | ~ Dam                  |
| ▣ Resort              |                        |

LAKE BOTTOM SYMBOLS

- |          |                         |
|----------|-------------------------|
| P. Peat  | Gr. Gravel              |
| Mk. Muck | R. Rubble               |
| C. Clay  | Br. Bedrock             |
| M. Marl  | T Submergent vegetation |
| Sd. Sand | ⊥ Emergent vegetation   |
| St. Silt | ~ Floating vegetation   |

Figure 2. Locations of Purple L



hydrographic map of this lake available, original charts of Dept. of Natural Resources

al Survey Map is available from us showing (approx. 12 square miles) adjacent to this lake.

# SAWYER COUNTY

Map No. 5260

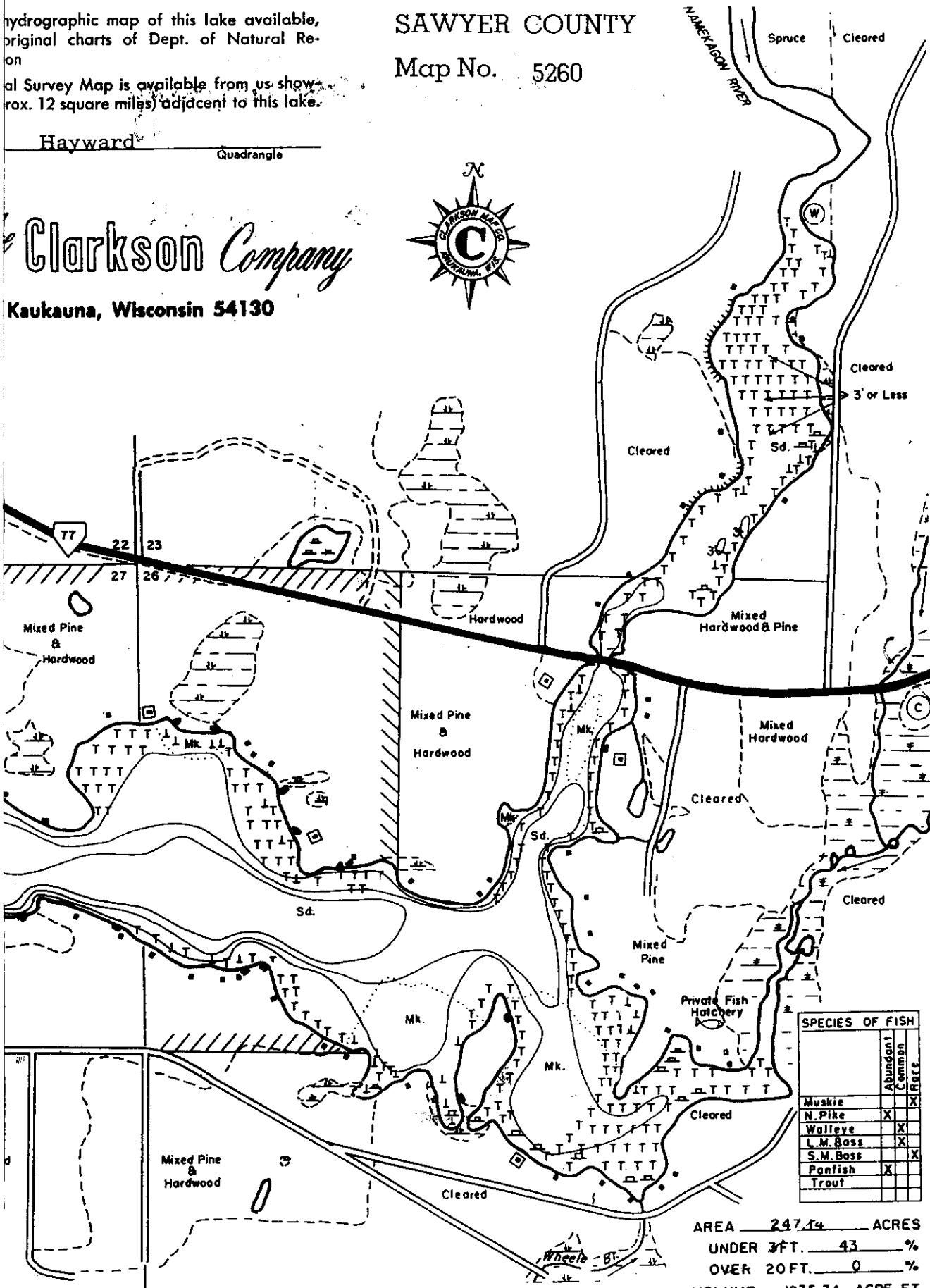
Hayward

Quadrangle

Clarkson Company



Kaukauna, Wisconsin 54130



SPECIES OF FISH		
	Abundant	Common
Muskie		X
N. Pike	X	X
Walleye	X	X
L.M. Bass	X	X
S.M. Bass		X
Panfish	X	
Trout		

AREA 247.14 ACRES  
 UNDER 3FT. 43 %  
 OVER 20FT. 0 %  
 VOLUME 1235.34 ACRE FT.  
 TOTAL ALK. 69 P.P.M.  
 SHORELINE 8.64 MILES  
 MAX. DEPTH 17 FEET

- ◇ Access
- ◊ Access with Parking
- ◆ Boat Livery

posestrife Infestations on the Hayward Flowage.