20081007-0192 FERC PDF (Unofficial) 10/02/2008

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FEDERAL ENERGY REGULATORY COMMISSION

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

September 26, 2008

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

Subject: **Monitoring Results Of The 2008 Survey Of Purple Loosestrife Populations At The White River Hydro (FERC Project #2444), Superior Falls Hydro (FERC Project #2587), Hayward Hydro (FERC Project #2417), Big Falls Hydro (FERC Project #2390), And Thornapple Hydro (FERC Project #2475)**

Dear Secretary:

Enclosed are an original and eight copies of the 2008 purple loosestrife report for the above-referenced hydro projects. The operating license issued by the Federal Energy Regulatory Commission (FERC) for each project directs the Licensee to annually monitor project shorelines for purple loosestrife presence. The results are then documented and submitted to the Commission.

This year's surveys were conducted in August during a period of peak loosestrife flowering. The results were then compared to previous surveys in order to determine any trends. Superior Falls, White River, and Big Falls continue to remain free of any infestations. Thornapple continues to show a downward trend in both presence and abundance, while Lake Hayward's population remains relatively stable.

Should you have any questions regarding this report, please feel free to contact Matthew Miller of this office by telephone at (715) 839-1353 or by electronic mail at matthew.j.miller@xcelenergy.com.

Sincerely,

William Zawacki
Director, Hydro Plants

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Enclosure: 2008 Purple Loosestrife Report

C: Ms. Louise Clemency (U.S. Fish and Wildlife Service)
Mr. Jeff Scheirer (Wisconsin DNR)
Project Files

H:\References\All Plants\Purple Loosestrife\2008 Purple Loosestrife Letter.doc

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2008 Purple Loosestrife Report For Superior Falls Flowage, White River Flowage, Lake Hayward, Big Falls Flowage And Thornapple Flowage.

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Results Of The 2008 Purple Loosestrife Surveys Performed On Superior Falls Flowage, White River Flowage, Lake Hayward, Big Falls Flowage And Thornapple Flowage.

1.0 INTRODUCTION

The operating licenses for the above-mentioned 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 plan involves annual monitoring of project shorelines during the period of peak purple loosestrife biomass (late July through August). The following report is a summary of the surveys that were performed in August 2008, including a comparison with surveys from previous years.

2.0 METHODS

The Superior Falls and White River Flowages were surveyed on August 11, while Lake Hayward was surveyed on August 12. Project lands downstream of the Hayward Hydro Project were also surveyed. Big Falls and Thornapple Flowages were surveyed on August 26. The survey dates coincided with peak flowering whereby purple loosestrife could easily be identified and documented for relative abundance. Field observations were conducted by boat with the aid of binoculars.

Shorelines infested with purple loosestrife were divided into two classes, either present or abundant. Areas categorized as present indicated a single plant or a few plants scattered along the shoreline. Those areas categorized as abundant indicated a large concentration of plants approaching a near monotypic stand. The areas of infestation were then documented on a bathymetric map and the length of shoreline was calculated with a planimeter. This method has a tendency to overestimate the amount of shoreline that is infested, as a single dot on the map often indicates just one plant. However, it does provide a reliable indication of the relative abundance of purple loosestrife and whether it is increasing or decreasing in coverage from year to year.

3.0 RESULTS

3.1 Superior Falls Flowage. No purple loosestrife was observed on the Superior Falls Flowage. The findings were consistent with surveys conducted between 1998-2007. A survey of flowage waters was also conducted for Eurasian Milfoil (Myriophyllum spicatum) and no plants were found. This is also consistent with the results of past surveys.

3.2 White River Flowage. There was no documentation of purple loosestrife on

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the White River flowage. The findings were consistent with surveys conducted between 1998-2007.

3.3 Lake Hayward. The presence and abundance of purple loosestrife on Lake Hayward has been relatively stable over the last several years. Licensee is aware of control efforts by the National Park Service in the Hayward Project tailwaters. Once again, no loosestrife was observed in this region.

The 2002 survey had found a significant reduction in loosestrife presence and abundance. Field observations made in 2002 revealed only remnants of loosestrife plants where they had historically been abundant. In 2003, Licensee intensely searched the shoreline for loosestrife plants, as areas that had abundant populations in previous years were now almost non-existent. Purple loosestrife has historically been abundant near the Smith Lake Creek inlet. Field observations this year indicated a slight increase in abundance in this region. Meanwhile, the presence of loosestrife actually showed a slight decrease. The table below summarizes the results of surveys from Lake Hayward since they began in 1997.

Year	Shoreline Miles (Present)	Shoreline Miles (Abundant)
1997	0.3	0.70
1998	Shoreline coverage not determined	
1999	1.08	0.25
2000	1.28	0.10
2001	1.13	0.19
2002	0.90	0.07
2003	0.10	0.07
2004	0.54	0.0
2005	0.54	0.0
2006	0.82	0.04
2007	0.80	0.04
2008	0.46	0.07

Licensee donated money to the Hayward High School's Environmental Studies class a number of years ago to initiate a biological control program for purple loosestrife on Lake Hayward. The class cooperated with the WDNR to secure a population of leaf-eating beetles (*Galerucella calmariensis* or *G. pusilla)* which specifically targets purple loosestrife plants. The beetles were then transplanted to those areas with the greatest concentration of plants. Their efforts appear to have been very successful over the last several years, especially in those areas classified as abundant. Continued monitoring will help determine the long-range benefits of the biological control program

3.4 Big Falls Flowage. There were no purple loosestrife plants found on the shoreline of Big Falls Flowage. Again, this was similar to the results of previous surveys conducted between 1998-2007.

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3.5 Thornapple Flowage. The presence of purple loosestrife was comparable to the results from last year and continues to show a downward trend over the past four years. Purple loosestrife was found to be present along 1.3 miles of shoreline in 2008 versus 1.4 miles in 2007. The decline in loosestrife presence is likely an indication that the plants have reached their peak numbers due to available habitat. The majority of pioneering plants are located on less than suitable habitat where the banks are steep or shaded. Many shoreline areas categorized as present were often the result of a disturbance along privately developed shorelines.

The abundance of loosestrife showed a marked decline from 0.33 miles of shoreline in 2007 to 0.15 miles in 2008. As expected, wetland areas accounted for the majority of abundant infestations. The table below summarizes the findings from surveys conducted between 1998-2008 on the Thornapple Flowage.

Year	Shoreline Miles (Present)	Shoreline Miles Common	Shoreline Miles (Abundant)
1998	*Shoreline coverage not determined*		
1999	2.36	0.27	0.67
2000	1.64	-	0.70
2001	2.52	-	0.67
2002	2.52	-	0.48
2003	2.10	-	0.48
2004	2.33	-	0.45
2005	2.15	-	0.42
2006	1.76	-	0.39
2007	1.40	-	0.33
2008	1.30	-	0.15

In July of 2004, Licensee cooperated with the Lake Holcombe Improvement Association (LHIA) to introduce a beetle population to the shorelines of the Thornapple Flowage that specifically targets purple loosestrife plants. Approximately 20,000 beetles were introduced in the wetland areas of the flowage where purple loosestrife densities have historically been highest. Earlier introductions of these beetles at Licensee's Hayward and Holcombe projects have been met with great success. Field observations from this year's survey showed only remnants of loosestrife plants where they had previously been documented as abundant since 1998. Future surveys will hopefully confirm if the decrease in abundance documented in 2008 is the result of the beetle introduction.

The wetland areas in the middle portion of the flowage comprise the majority of the heavily infested areas. This concentration of plants is likely the seed source for newly infested areas downstream, including the potential of infesting the tailwater region. Licensee will continue to monitor purple loosestrife densities on the flowage throughout the term of the license.

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4.0 CONCLUSION

Purple loosestrife was not documented on the White River Flowage, the Superior Falls Flowage or the Big Falls Flowage. Much of the Thornapple Flowage shoreline is scattered with purple loosestrife plants, with heavier concentrations confined to the wetland areas. It is these high-density areas that provide a good seed source for further infestations, including the potential for infecting waters downstream of the project. The number of pioneering plants appears to have stabilized over the past few years. The abundance of purple loosestrife, after several years of relative stability, showed a marked decline in 2008. This decline may be attributed to the biological control efforts of 2004. It may have taken several years for the beetle population to become established with their impacts just beginning to appear this year.

Lake Hayward has experienced a drastic decline in purple loosestrife over the past several years due to the introduction of a beetle population which specifically targets the plant. Since 2004, the abundance has slowly increased, especially when compared to last year's results. The long-term effectiveness of the biological control program should be determined in subsequent surveys.

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PURPLE LOOSESTRIFE MONITORING

AUGUST 12, 2008

AREAS OF PURPLE LOOSESTRIFE PRESENT OR COMMON

7.2 CLICKS / 1 MILE = 3.3 CLICKS / X MILES

X = 0.46 MILES = 2420 FT

OR 5.3% OF SHORELINE

AREAS OF PURPLE LOOSESTRIFE ABUNDANT

7.2 CLICKS / MILE = 0.5 CLICKS / X MILES

X = 0.07 MILES = 370 FT

OR 0.81% OF SHORELINE

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

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

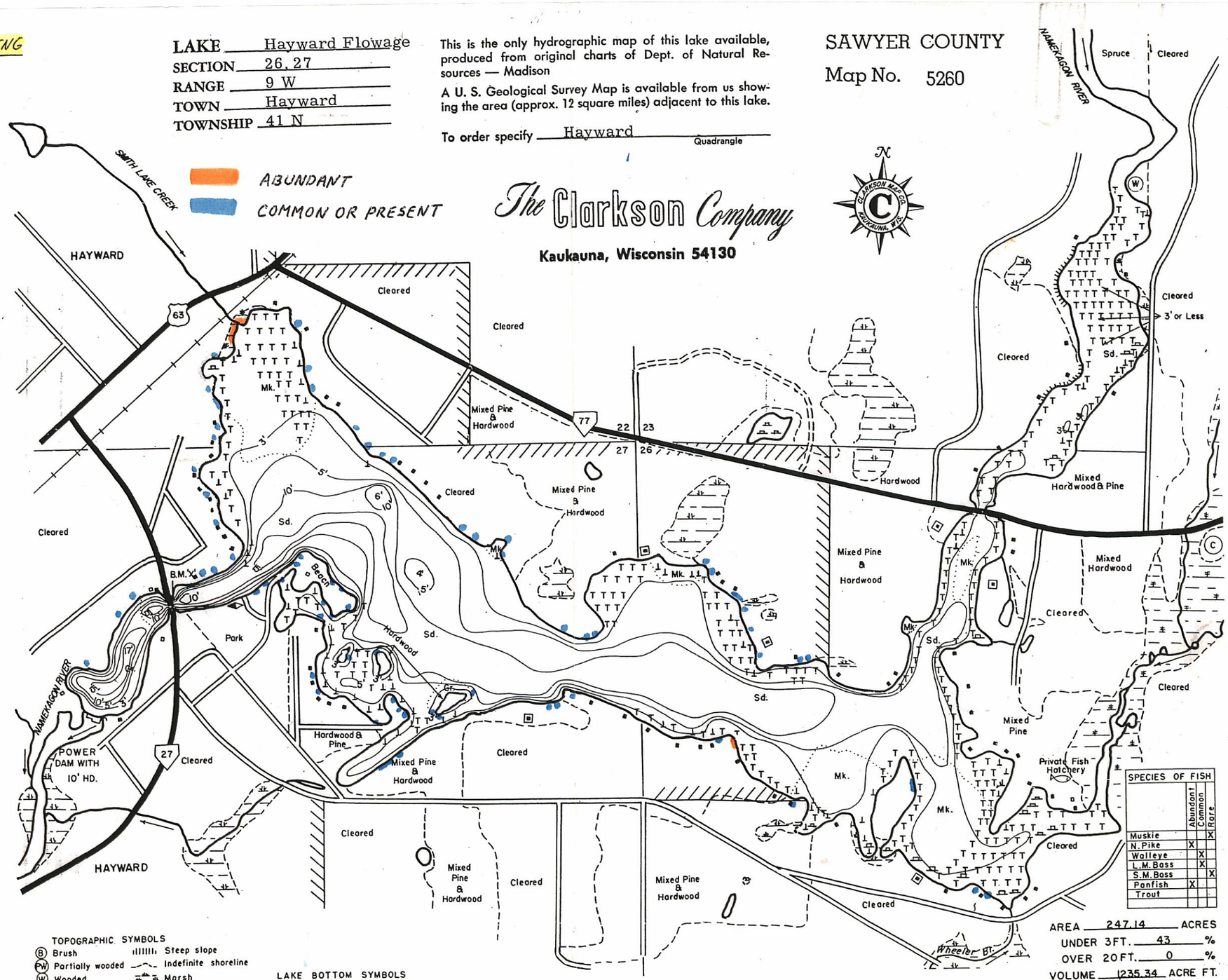
A U. S. Geological Survey Map is available from us showing the area (approx. 12 square miles) adjacent to this lake.

To order specify Hayward Quadrangle

SAWYER COUNTY
Map No. 5260

ABUNDANT
COMMON OR PRESENT

The Clarkson Company
Kaukauna, Wisconsin 54130



TOPOGRAPHIC SYMBOLS

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

LAKE BOTTOM SYMBOLS

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

◇ Access ◆ Access with Parking ◆ Boat Livery

SPECIES OF FISH	Abundant	Common	Rare
Muskie			X
N. Pike	X		
Walleye		X	
L.M. Bass		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

Public 081007-0193-001

PURPLE LOOSESTRIFE MONITORING

AUGUST 26 2008

ABUNDANT

COMMON OR PRESENT

AREAS OF PURPLE LOOSESTRIFE PRESENT OR COMMON

2.5 CLICKS / 4000 FT = 4.4 CLICKS / X

X = 7040 FT = 1.3 MILES
OR 17.1% OF SHORELINE

AREAS OF PURPLE LOOSESTRIFE ABUNDANT

2.5 CLICKS / 4000 FT = .5 CLICKS / X

X = 800 FT = 0.15 MILES
OR 2.0% OF SHORELINE

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.

5129

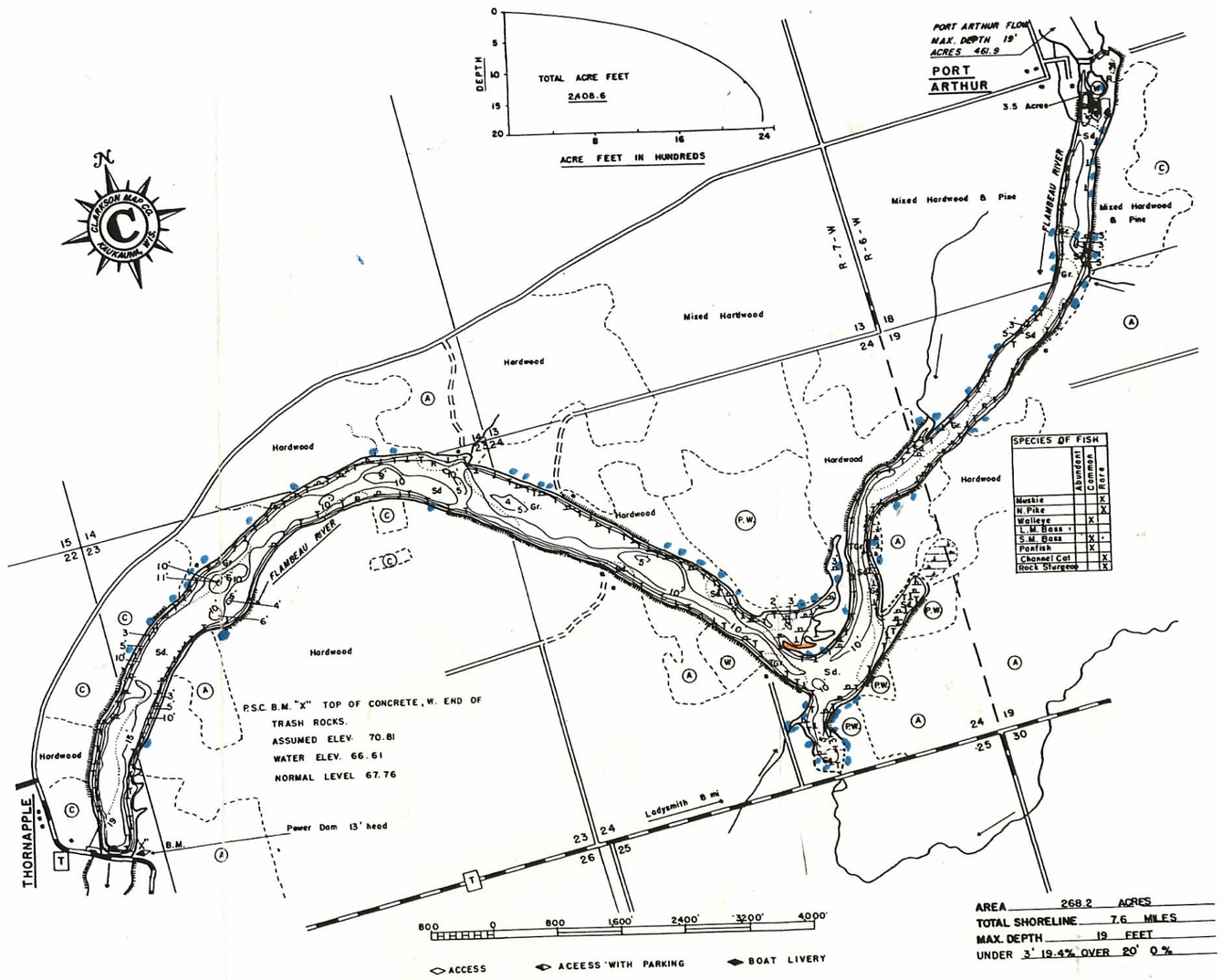
LEGEND

TOPOGRAPHIC SYMBOLS

- BRUSH REFUGE
- SAPLING TANGLE
- SPAWNING BOX
- MINNOW SPAWNER
- WEED BED
- ROCKY SHOAL
- DWELLING
- ABANDONED DWELLING
- RESORT
- STEEP SLOPE
- SPRING
- INTERMITTENT INLET
- BRUSH
- WOODED (W)
- PASTURED (P)
- CULTIVATED (C)
- ENCROACH. SHORE.
- PERMANENT INLET
- PERMANENT OUTLET
- MARSH
- 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. ⊥
- FIBROUS PEAT F
- DETRITUS D
- MARL M
- GRAVEL G
- BEDROCK Br.
- SUBMERGENT VEGET. T



CLARKSON MAP CO.
724 DESNOYER STREET
Kaukauna, Wisconsin 54130

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