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2008 NOV 10 A 11:47

FEDERAL ENERGY
COMMISSION

October 30, 2008

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

**Subject: 2008 Purple Loosestrife Report for Holcombe Hydro (P-1982),
Cornell Hydro (P-2639), Jim Falls Hydro (P-2491), Wissota
Hydro (P-2567), Chippewa Falls Hydro (P-2440) and Dells
Hydro (P-2670)**

049

Dear Secretary,

049 036 022

067 039

Enclosed are an original and eight copies of the 2008 Purple Loosestrife Report for the above referenced hydro projects. Pursuant to the Exotics Control Plan of the operating license for each project, the licensee is required to annually monitor and eradicate pioneering purple loosestrife plants on NSPW owned shorelines.

Overall, the monitoring results for this year are similar to past years. Chippewa Falls Flowage and Lake Wissota continue to remain free of loosestrife. One plant was documented on Dells Pond (NSPW land) and was chemically treated. Results from Old Abe Lake (Jim Falls) and Cornell Flowage were similar to last year. Holcombe Flowage continues to have the greatest infestation among the projects since the monitoring program began. However, previous biological control efforts in combination with continued chemical treatment have been very effective on Lake Holcombe.

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

Ms. Kimberly D. Bose, Secretary
October 30, 2008
Page 2 of 2

Attachments

C: Mr. Brian Guthman (LHIA)
Mr. Bob Baczynski (WDNR)
Ms. Louise Clemency (USFWS)

References\All Plants\Purple Loosestrife\Purple Loosestrife Cover Letter 2008 103008.doc

PURPLE LOOSESTRIFE ASSESSMENT – 2008

**Dells Pond, Chippewa Falls Flowage, Lake Wissota, Old Abe Lake,
Cornell Flowage and Lake Holcombe**

Prepared for:

**Northern States Power Co. – Wisconsin (d.b.a. Xcel Energy)
Matthew J. Miller
P.O. Box 8
Eau Claire, WI 54702
715-839-1353**

Prepared by:



Great Lakes Environmental Center

**739 Hastings Street
Traverse City, MI 49686**

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Christopher J. Turner
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October 2, 2008

INTRODUCTION

Purple Loosestrife (*Lythrum salicaria* L.) is an erect, herbaceous perennial of Eurasian origin that became established in the estuaries of northeastern North America by the early 1800's. Since then, this highly invasive species has spread throughout the much of the United States, including most of Wisconsin's counties. As purple loosestrife expands its local distribution and becomes more numerous, it poses a serious threat to native emergent vegetation in shallow-water marshes and shorelines by displacing native food and cover plants in the waterways.

As a part of a license agreement for the six Lower Chippewa River Hydroelectric Projects, Northern States Power Company (d.b.a. Xcel Energy) has agreed to monitor each of the impoundments created by these hydroelectric projects for the presence and spread of purple loosestrife. The surveys are to take place each year in the late summer when loosestrife blooms are easily detectable. Additionally, Xcel Energy has committed to treating any small clusters of pioneering plants, which occur on Xcel Energy-owned lands with an approved aquatic herbicide.

METHODS

Following the same approach as previous yearly surveys, an inspection of the entire shorelines of Dells Pond, Chippewa Falls Flowage, Lake Wissota, Old Abe Lake, Cornell Flowage and Lake Holcombe was performed from a boat. Dates of the surveys fell between August 15 and September 15, 2008. The surveyor motored slowly around the shoreline looking for purple loosestrife plants. When loosestrife was discovered, the location was marked on a map of the waterbody. Loosestrife infestations were classified as either "present" or "abundant" and marked on the map with a specific color. "Present" meant that a few plants were sparsely inhabiting the area, but they did not comprise a large percentage of the vegetation in that area. "Abundant" indicated that more dense loosestrife growth existed and that the loosestrife made up a significant portion of that shoreline's vegetation. "Present" was indicated on the maps by a blue highlight; "abundant" was marked in orange.

By referencing the location of the purple loosestrife plants with land ownership maps provided by Xcel Energy, the surveyor determined if the plants were on Xcel Energy-owned lands. If the plants were on Xcel Energy land, and if it was only a minor infestation, the plants were sprayed with Rodeo[®] (an aquatic herbicide) from a backpack sprayer. Through past work, it has been determined that herbicide application can be used as an effective treatment for small loosestrife populations, but it is much less effective at controlling larger infestations. If any major infestations were noted on Xcel Energy land, they were not to be treated, but documented for the possibility of a different eradication method in the future.

Additionally, an inspection was to be done in the Jim Falls spillway channel adjacent to the downstream powerhouse. This area has been known to contain purple loosestrife in locally large numbers; therefore the goal of this effort was to characterize the purple loosestrife infestation, not generate a comprehensive map of the area or monitor the spread of the loosestrife. This portion of the task was to be completed on foot.

RESULTS AND DISCUSSION

Through the roving shoreline surveys, no purple loosestrife was found anywhere in the Chippewa Falls Flowage which was consistent with findings from previous years' monitoring. No purple loosestrife plants were found on Lake Wissota either, even though two plants were observed last year.

During the 2005 survey, a single loosestrife plant was found (and treated) in the uppermost portion of Lake Wissota. This plant did not grow back in 2006 and was again absent in 2007. Two other plants, however, were found in the same general area of Lake Wissota in 2007. One plant was located at a private residence on the west shore directly across from the downstream tip of the uppermost island in the flowage. The second plant was located approximately ½ mile downstream, also on the west shoreline. These were both single plants. The downstream plant was treated with herbicide, but the upstream plant was located adjacent to a landscaped private lawn and therefore was not treated. Neither of these plants were noted during the 2008 survey. The treated plant did not

grow back and the shoreline that contained the other plant had recently been rip-rapped. No other plants were found anywhere in Lake Wissota.

A single purple loosestrife plant was found on Dells Pond. This plant was observed on one of the islands just downstream from the Highway 312 bridge (see Dells Pond Map). Loosestrife plants were noted (and treated) in this location in 2005, but not in 2006; and three plants were seen in 2007. It is common for purple loosestrife to grow some years and lie dormant during others. This island is owned by NSP, and this loosestrife plant was treated with herbicide.

Holcombe Flowage was found to contain the most purple loosestrife of any of the six impoundments surveyed. While a number of new plants were found during the survey, the majority of the infestation areas have been noted in previous years. New infestation is generally associated with areas where the native plant life has been disturbed in some way. This disturbance can come from urbanization (clearing for home sites, swimming areas or fishing areas), road improvements, or from erosion. It is also common to have plants only grow during select years. This may be the case on Holcombe Flowage; new plants growing this year, while other plants that were previously noted did not grow at all this year.

Each of the previous years' surveys on Holcombe Flowage have documented continued improvement and the continued success of the beetle introduction on purple loosestrife infestation. In 2008, however; numerous areas of "present" infestations were found and noted on bathymetric maps, and four areas were classified as "abundant". This shows a slight increase in the loosestrife infestation from last year.

A single plant was seen at a private residence at the end of 274th Ave (Sheet 1). And three plants were seen among the backwater complex near 272nd Ave. Two of these four location have been noted on and off over the last few years; the other two are new plant locations. All four of these locations are on private lawn areas.

Three single plant clumps were noted just north of Birch Creek Park (Sheet 2). This compares to just one plant in 2007. Three small infestations of one to a few plants were found near the mouth of the riverine section of the Flowage (Sheet 2). Several plant clumps were found along the shores of the riverine upper section of the impoundment

(see Sheet 3); approximately one-fourth of these plants are located on Xcel Energy land. This area seems roughly the same as last year.

Several plant clumps were found scattered along the north and south shores of the main flowage (see Sheet 2), while many of these plants have been noted in the past, many of them appear to be new infestations. Overall, this seems to be a general increase in plant density in the main flowage area. Only a few of these locations are on Xcel Energy-owned lands

The majority of plants on Lake Holcombe were again found in the area on and around Pine Island and along Highway 27; two of the areas were classified as abundant (see Sheet 2). Similar to the 2007 survey, this represents an overall increase in plant density from last year. Several small infestations and two abundant locations were found just to the east of the Highway 27 bridge (see Sheet 4). This also shows a small increase from previous years' surveys. The one individual plant clump that was found in 2005 and 2006 (and treated with herbicide) on the north shore of the flowage half way between Main Creek and the Highway 27 bridge was not seen in this year's survey. No purple loosestrife was found in Main Creek, Jump River, Pine Lake, or Cranberry Lake.

Cornell Flowage was found to contain several small infestations of purple loosestrife and one area where loosestrife was abundant (see map of Cornell Flowage). Three of the small infestations were located in the main flowage on the northwest bank and have been seen in past years. These plants are on the County Highway I right-of-way. All of these occurrences were either single clumps or clumps of only a few plant masses and comprised a total of less than 30 feet of shoreline. There appears to be a similar number of plants along this area as in last year's survey. The heavier infestation was located in the first island upstream of the STH 64 bridge in the main flowage. Numerous loosestrife plants populated a low-lying stretch of shoreline for approximately 60 feet. These plants were also noted in previous years. Three new plants were noted on Cornell Flowage in 2008. One plant was located on the second island upstream of the STH 64 bridge in the main flowage; the second was on the south shore directly south of the island, and the third was in the side channel that runs south of the Brunet Island State Park island complex. None of the current loosestrife locations were located on Xcel Energy lands.

Four small loosestrife infestations were found on the upper portion of Old Abe Lake (see Old Abe Lake Bathymetric Map - Sheet 3). Two of these are the exact same locations noted during last year's survey. Both of the locations were on the west shoreline; the upstream location consisting of a single loosestrife plant, and the downstream location consisting of 3 plants spread over 20 feet of shoreline. The two new locations were single plants located on the east shoreline. None of the purple loosestrife locations on Cornell Flowage are on Xcel Energy lands. The total amount of shoreline affected by purple loosestrife on Old Abe Lake is less than 25 feet.

The minimum flow channel at the Jim Falls Hydro is still an area of high purple loosestrife infestation. Loosestrife was found scattered throughout the channel, with the lower third of the channel being moderately to highly infested. Several areas consist of dense loosestrife growth (specifically under the CTH Y bridge). Overall, it appears that the density is generally lower again this year. Unfortunately, this location is very close to the upper extent of Lake Wissota. With a heavy population such as this, seed production could be quite high and it is likely that loosestrife will continue to invade the upper reaches of Lake Wissota. Herbicidal treatments would have limited effect on the infestation in the Jim Falls minimum flow channel. This area may be a candidate for other types of treatment (i.e. biological controls).

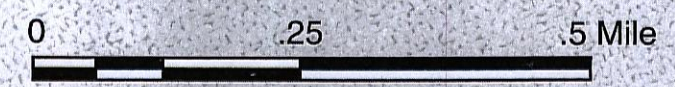
LOWER HOLCOMBE FLOWAGE

BATHYMETRIC MAP Five Foot Depth Contours

Townships 32 and 33 North
Range 6 and 7 West
Birch Creek and
Lake Holcombe Townships
Chippewa County

Measured From Full Pool Elevation 1,044.15
Lake Surveyed 1995 -1996

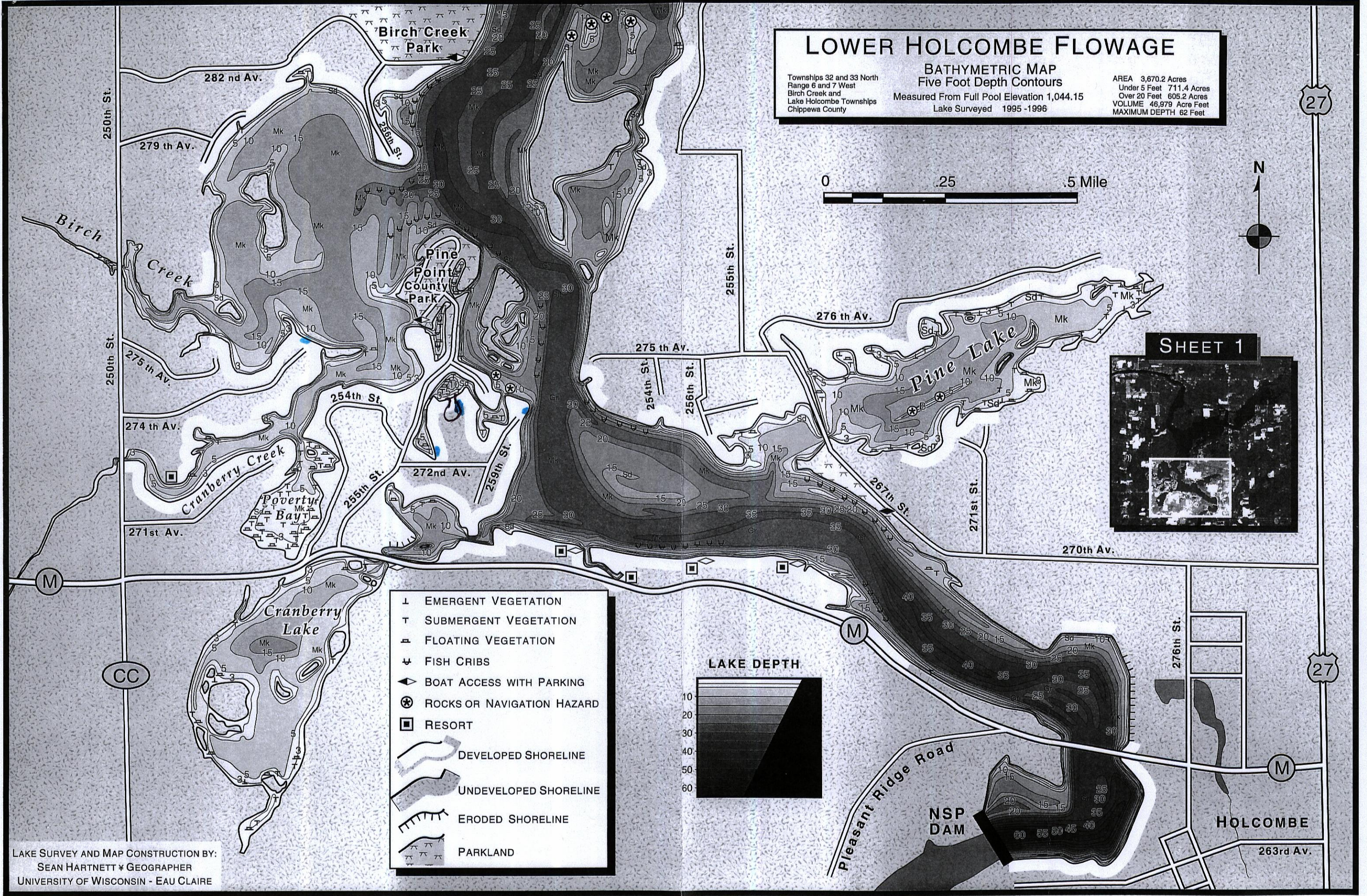
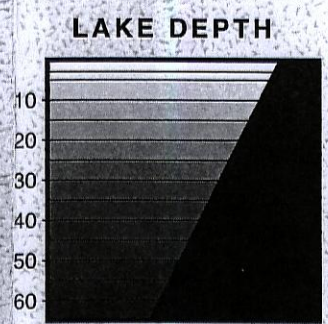
AREA 3,670.2 Acres
Under 5 Feet 711.4 Acres
Over 20 Feet 605.2 Acres
VOLUME 46,979 Acre Feet
MAXIMUM DEPTH 62 Feet



SHEET 1



- ⊥ EMERGENT VEGETATION
- ⊥ SUBMERGENT VEGETATION
- ⊥ FLOATING VEGETATION
- ⊥ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ⊛ ROCKS OR NAVIGATION HAZARD
- ◻ RESORT
- DEVELOPED SHORELINE
- UNDEVELOPED SHORELINE
- ERODED SHORELINE
- PARKLAND



LAKE SURVEY AND MAP CONSTRUCTION BY:
SEAN HARTNETT * GEOGRAPHER
UNIVERSITY OF WISCONSIN - EAU CLAIRE

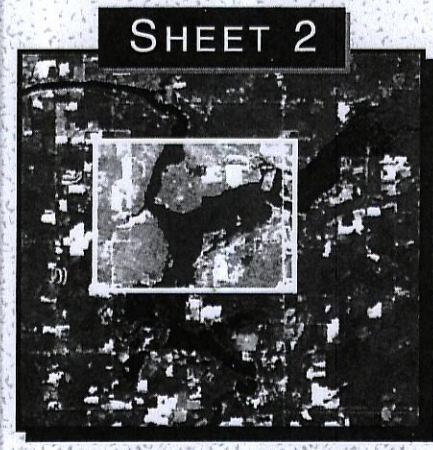
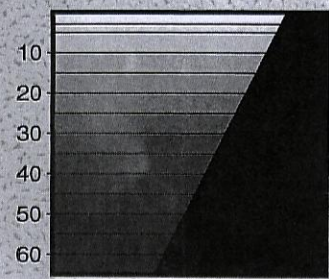
Public

2008117-0036.001

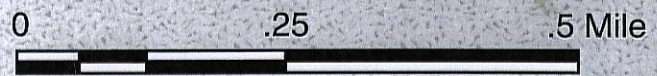
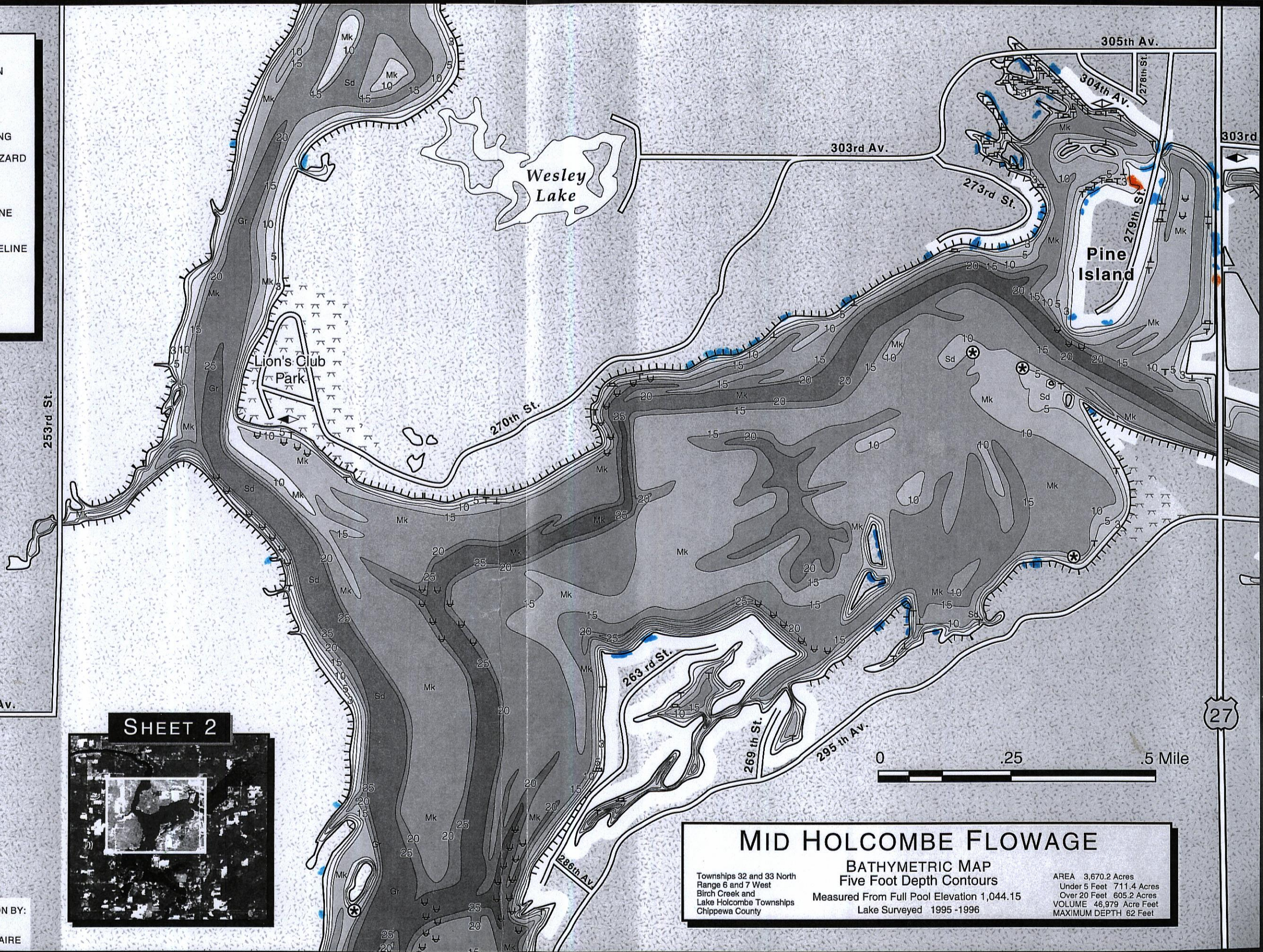
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- ⊥ EMERGENT VEGETATION
- T SUBMERGENT VEGETATION
- ▤ FLOATING VEGETATION
- ⌵ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ⊗ ROCKS OR NAVIGATION HAZARD
- ▣ RESORT
- DEVELOPED SHORELINE
- UNDEVELOPED SHORELINE
- ERODED SHORELINE
- PARKLAND

LAKE DEPTH



LAKE SURVEY AND MAP CONSTRUCTION BY:
 SEAN HARTNETT * GEOGRAPHER
 UNIVERSITY OF WISCONSIN - EAU CLAIRE



MID HOLCOMBE FLOWAGE
BATHYMETRIC MAP
 Five Foot Depth Contours

Townships 32 and 33 North
 Range 6 and 7 West
 Birch Creek and
 Lake Holcombe Townships
 Chippewa County

Measured From Full Pool Elevation 1,044.15
 Lake Surveyed 1995 -1996

AREA 3,670.2 Acres
 Under 5 Feet 711.4 Acres
 Over 20 Feet 605.2 Acres
 VOLUME 46,979 Acre Feet
 MAXIMUM DEPTH 62 Feet

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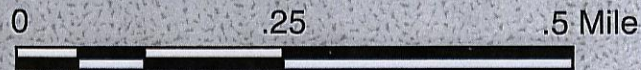
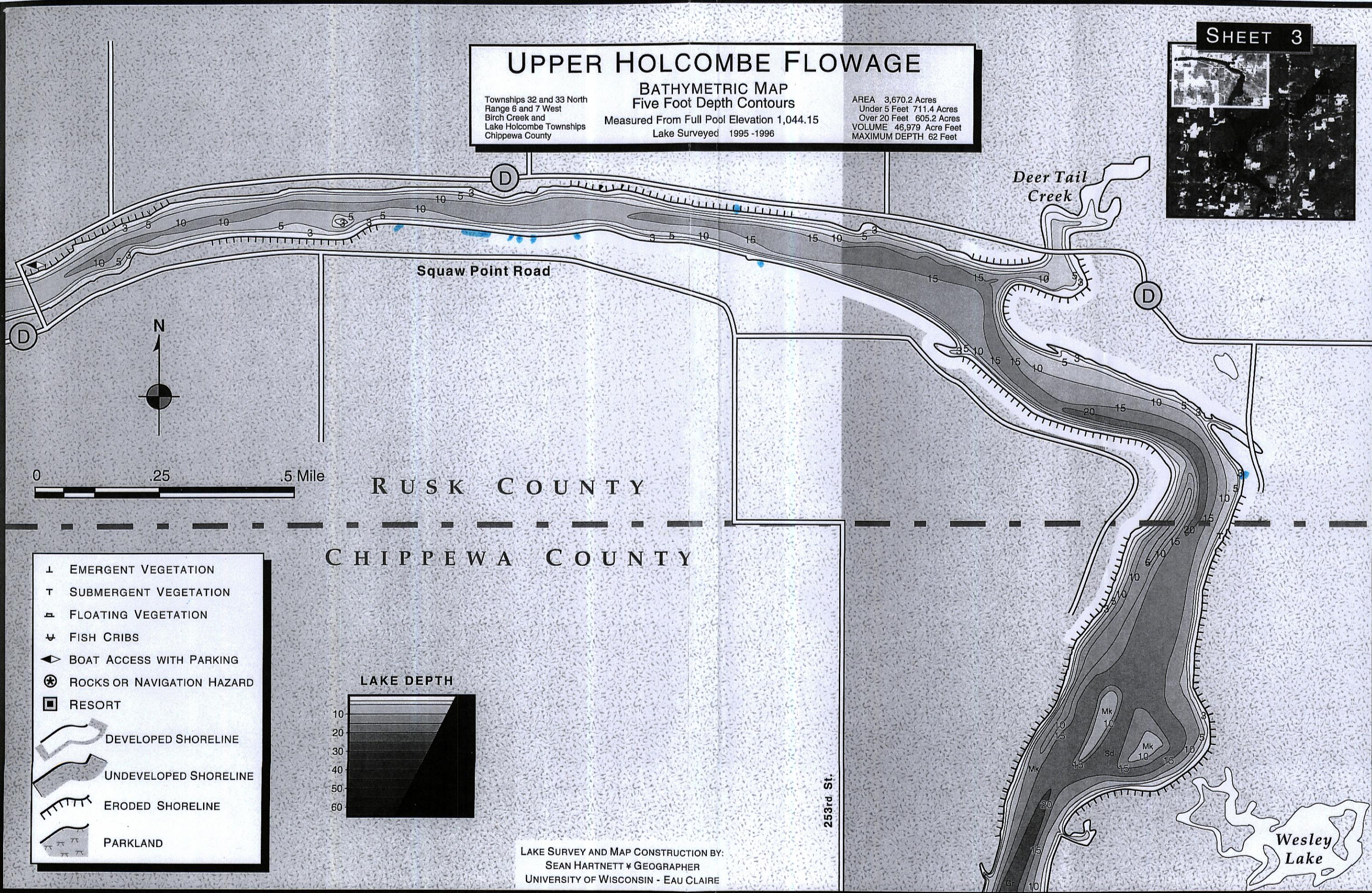
UPPER HOLCOMBE FLOWAGE

BATHYMETRIC MAP Five Foot Depth Contours

Townships 32 and 33 North
Range 6 and 7 West
Birch Creek and
Lake Holcombe Townships
Chippewa County

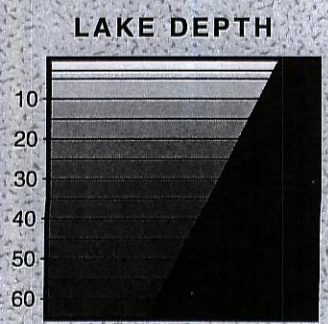
Measured From Full Pool Elevation 1,044.15
Lake Surveyed 1995 -1996

AREA 3,670.2 Acres
Under 5 Feet 711.4 Acres
Over 20 Feet 605.2 Acres
VOLUME 46,979 Acre Feet
MAXIMUM DEPTH 62 Feet



RUSK COUNTY
CHIPPEWA COUNTY

- ⊥ EMERGENT VEGETATION
- ⊥ SUBMERGENT VEGETATION
- ▤ FLOATING VEGETATION
- ⊕ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ⊗ ROCKS OR NAVIGATION HAZARD
- RESORT
- DEVELOPED SHORELINE
- UNDEVELOPED SHORELINE
- ERODED SHORELINE
- PARKLAND



LAKE SURVEY AND MAP CONSTRUCTION BY:
SEAN HARTNETT * GEOGRAPHER
UNIVERSITY OF WISCONSIN - EAU CLAIRE

2008/117. 0036. 003

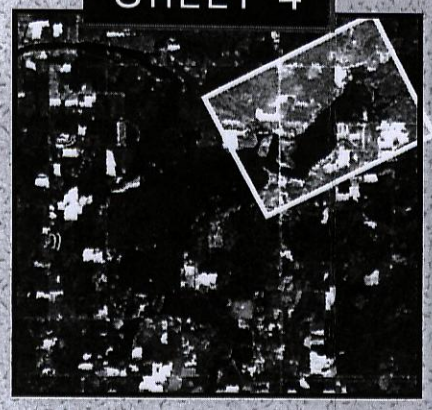
JUMP RIVER / HOLCOMBE FLOWAGE

BATHYMETRIC MAP
Five Foot Depth Contours
 Measured From Full Pool Elevation 1,044.15
 Lake Surveyed 1995 -1996

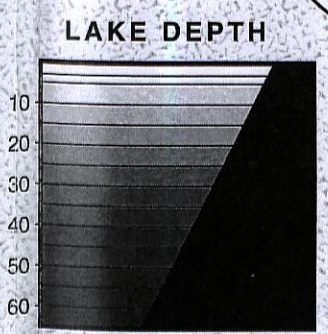
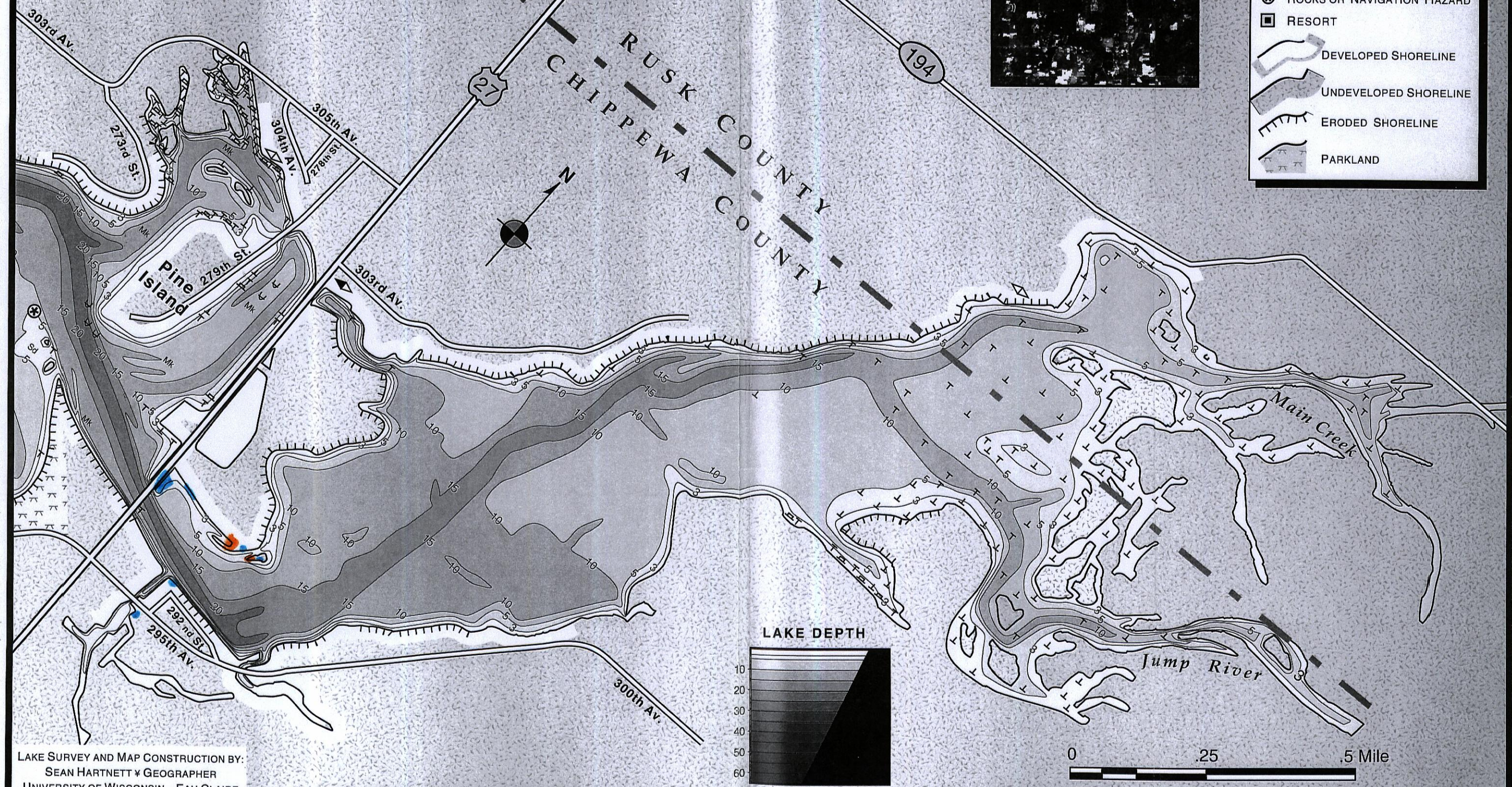
AREA 3,670.2 Acres
 Under 5 Feet 711.4 Acres
 Over 20 Feet 605.2 Acres
 VOLUME 46,979 Acre Feet
 MAXIMUM DEPTH 62 Feet

Townships 32 and 33 North
 Range 6 and 7 West
 Birch Creek and
 Lake Holcombe Townships
 Chippewa County

SHEET 4



- L EMERGENT VEGETATION
- T SUBMERGENT VEGETATION
- ▤ FLOATING VEGETATION
- ⊕ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ⊗ ROCKS OR NAVIGATION HAZARD
- RESORT
- DEVELOPED SHORELINE
- - - UNDEVELOPED SHORELINE
- ~ ERODED SHORELINE
- ▨ PARKLAND



LAKE SURVEY AND MAP CONSTRUCTION BY:
 SEAN HARTNETT * GEOGRAPHER
 UNIVERSITY OF WISCONSIN - EAU CLAIRE

20081117.0036.004

LAKE Cornell Flowage
 SECTION 6, 7, 8, 12, 13, 18
 RANGE 6, 7 W
 TOWN Holcombe, Cleveland
 TOWNSHIP 31 N

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

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

CHIPPEWA COUNTY

Map No. 1083

2008 Purple Loosestrife Survey

Present
Abundant

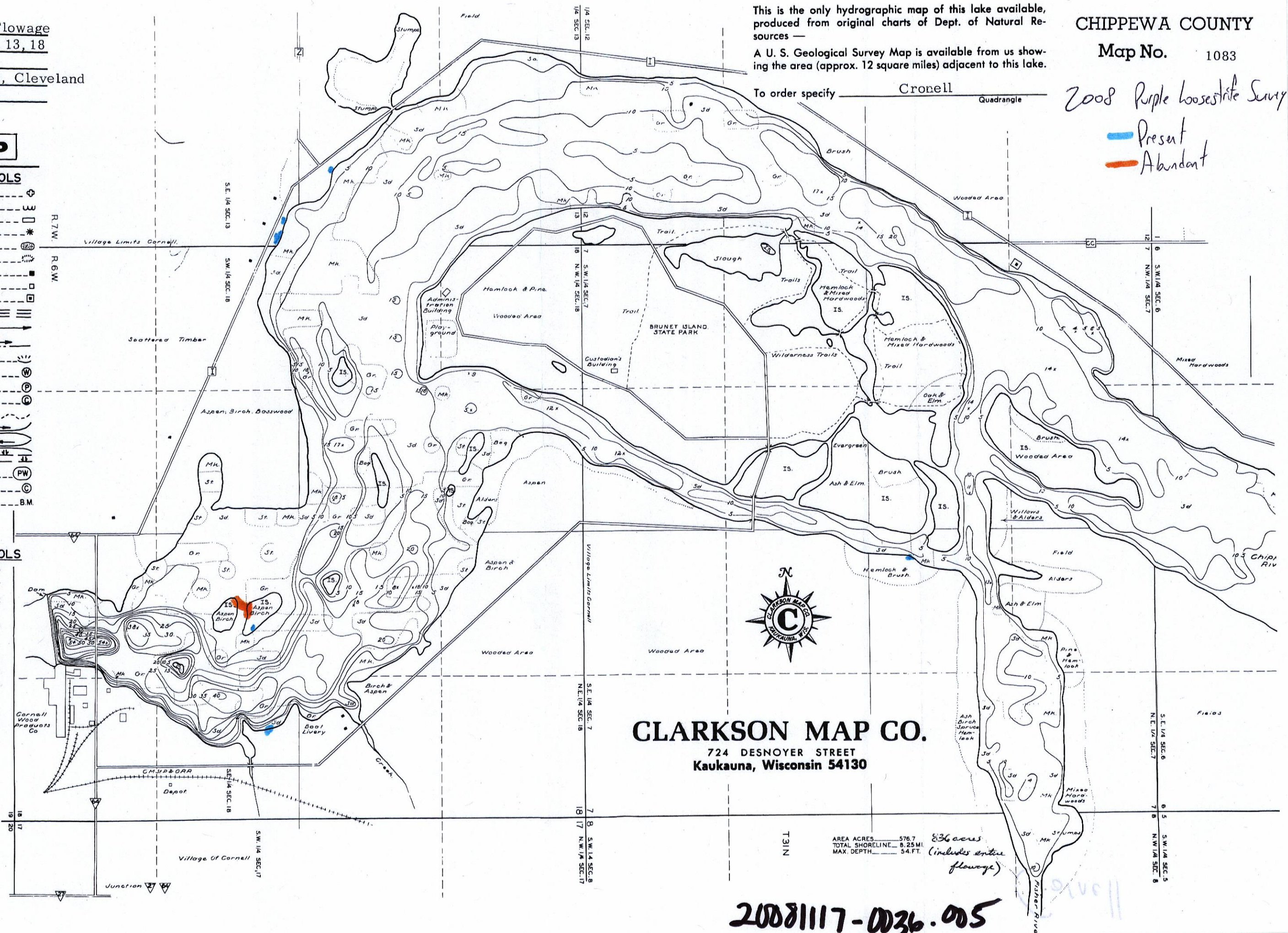
LEGEND

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
- 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



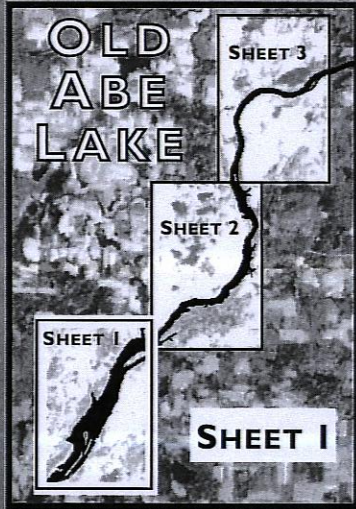
CLARKSON MAP CO.
 724 DESNOYER STREET
 Kaukauna, Wisconsin 54130

AREA ACRES 576.7 *836 acres*
 TOTAL SHORELINE 8.25 MI.
 MAX. DEPTH 54 FT. *(includes entire flowage)*

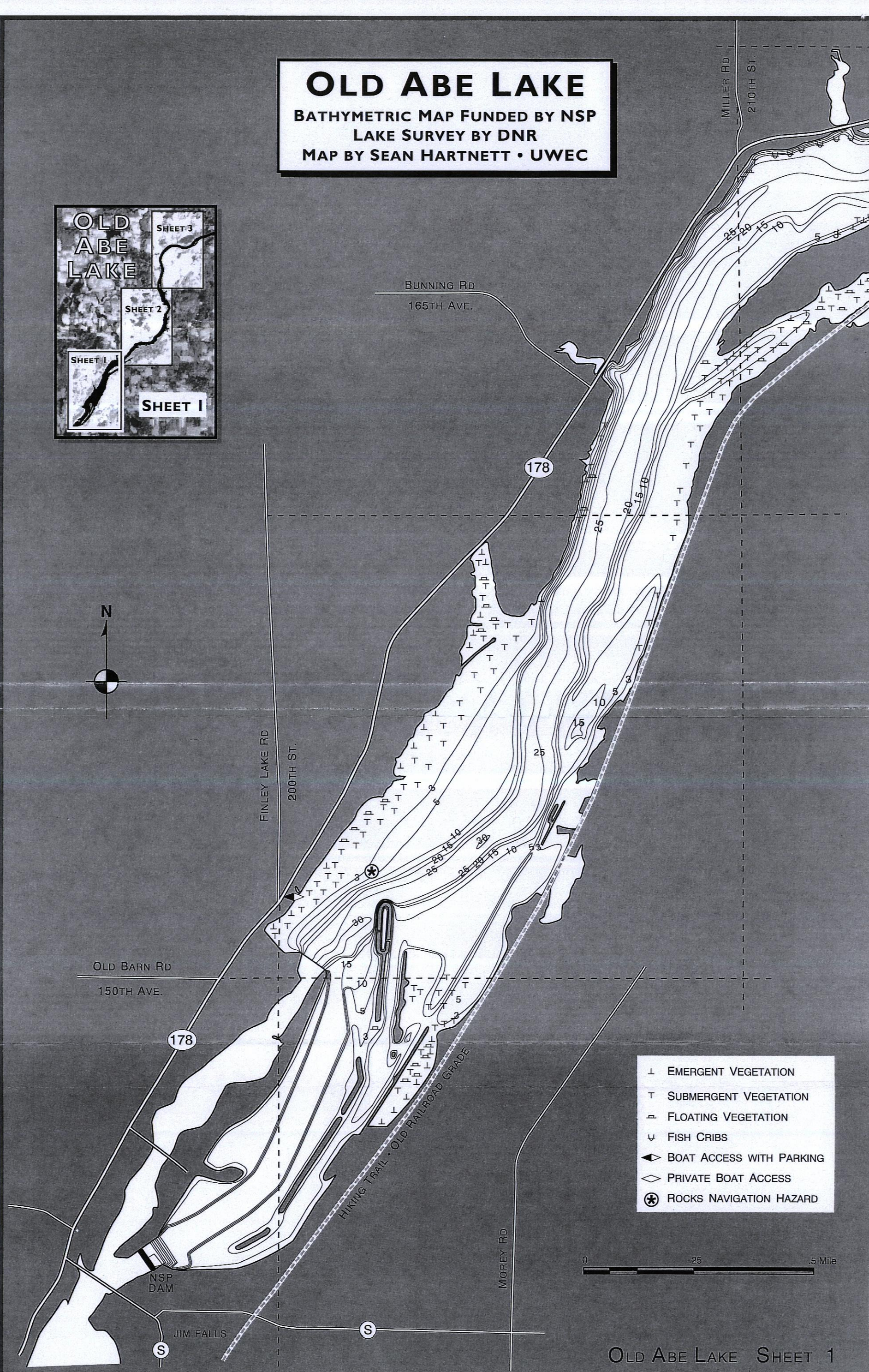
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OLD ABE LAKE

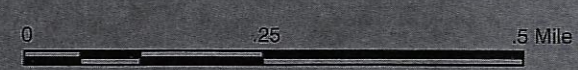
BATHYMETRIC MAP FUNDED BY NSP
LAKE SURVEY BY DNR
MAP BY SEAN HARTNETT • UWEC



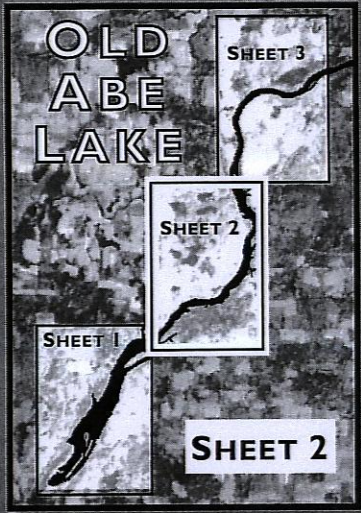
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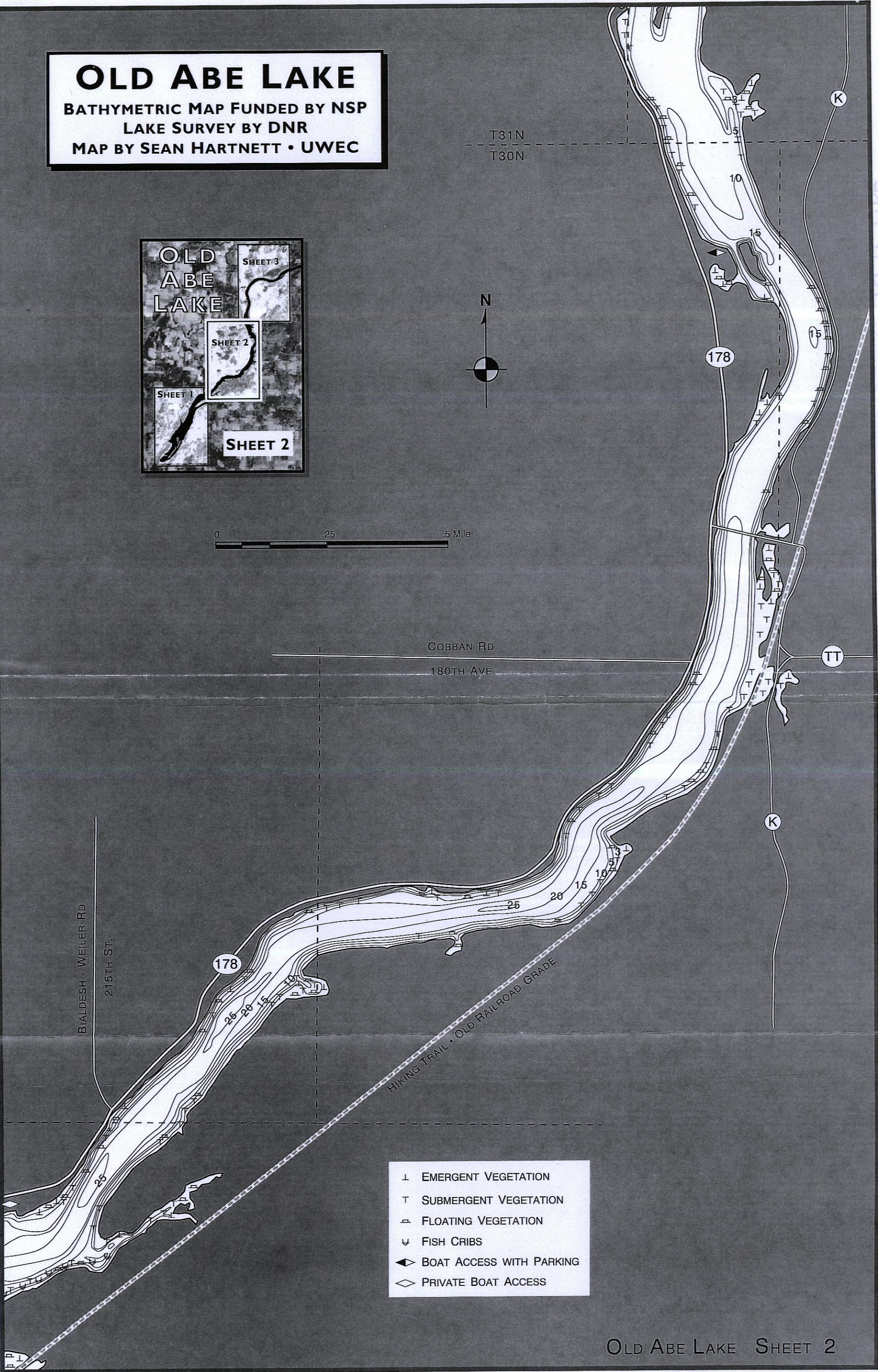
- ⊥ EMERGENT VEGETATION
- T SUBMERGENT VEGETATION
- ▤ FLOATING VEGETATION
- ∩ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ◇ PRIVATE BOAT ACCESS
- ⊛ ROCKS NAVIGATION HAZARD



OLD ABE LAKE
 BATHYMETRIC MAP FUNDED BY NSP
 LAKE SURVEY BY DNR
 MAP BY SEAN HARTNETT • UWEC



T31N
 T30N



- ⊥ EMERGENT VEGETATION
- T SUBMERGENT VEGETATION
- ▣ FLOATING VEGETATION
- ∨ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ◇ PRIVATE BOAT ACCESS

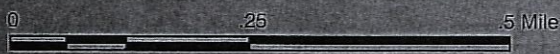
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OLD ABE LAKE

BATHYMETRIC MAP FUNDED BY NSP
 LAKE SURVEY BY DNR
 MAP BY SEAN HARTNETT • UWEC



- ⊥ EMERGENT VEGETATION
- ⊥ SUBMERGENT VEGETATION
- ⊥ FLOATING VEGETATION
- ⊥ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING



2008 Purple loosestrife survey
— Present
— Abundant

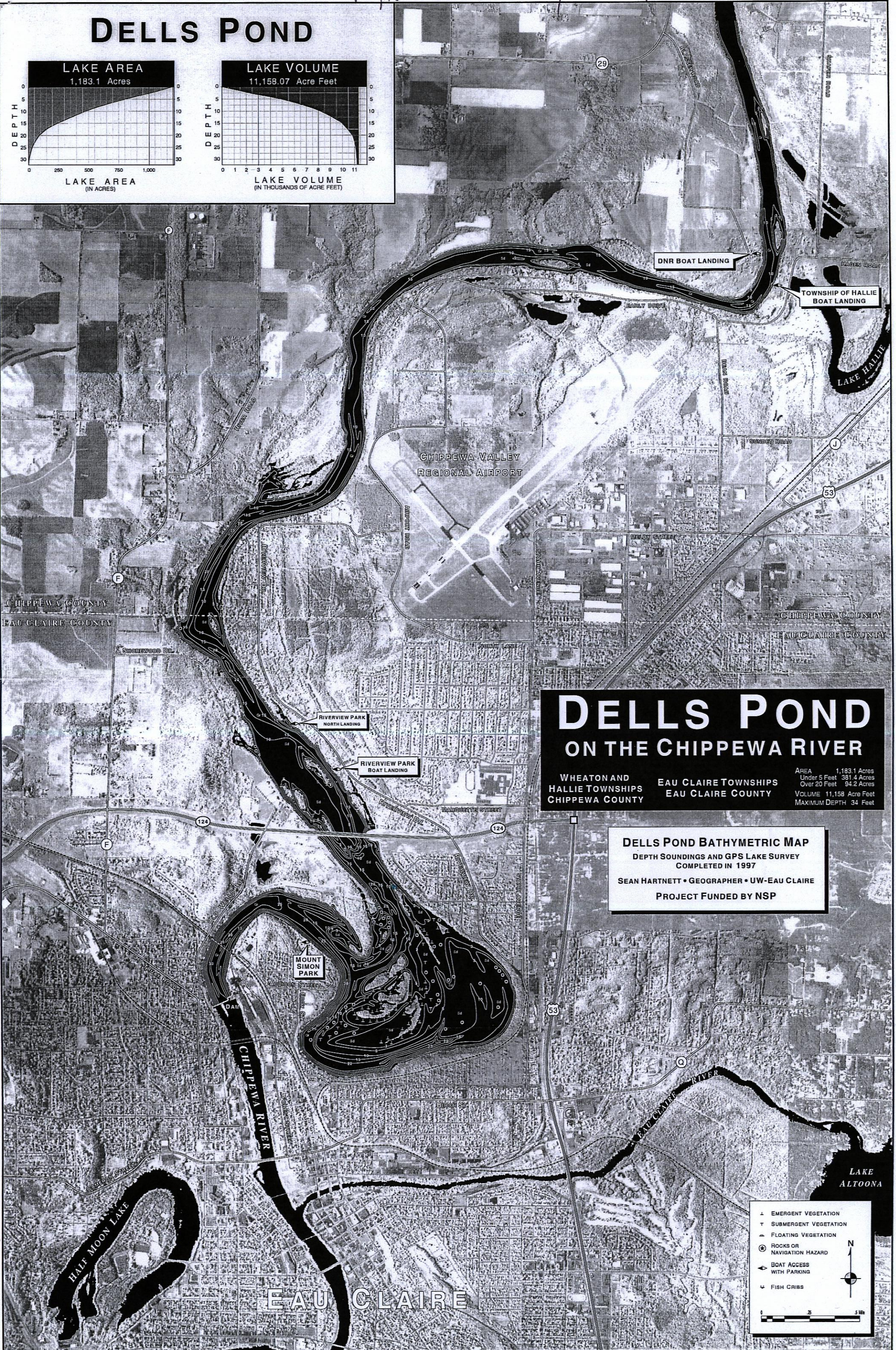
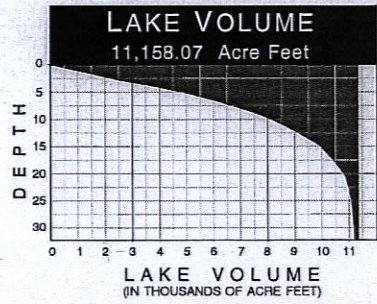
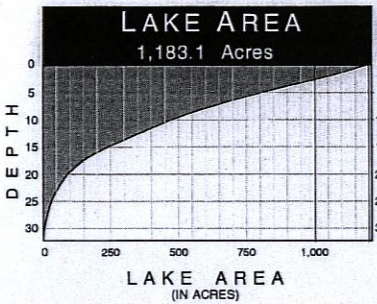


OLD ABE LAKE SHEET 3

20081117-0036-008

019 App

DELLS POND

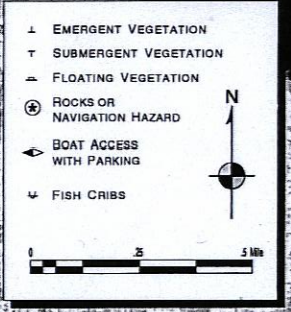


DELLS POND ON THE CHIPPEWA RIVER

WHEATON AND HALLIE TOWNSHIPS CHIPPEWA COUNTY
 EAU CLAIRE TOWNSHIPS EAU CLAIRE COUNTY

AREA 1,183.1 Acres
 Under 5 Feet 381.4 Acres
 Over 20 Feet 94.2 Acres
 VOLUME 11,158 Acre Feet
 MAXIMUM DEPTH 34 Feet

DELLS POND BATHYMETRIC MAP
 DEPTH SOUNDINGS AND GPS LAKE SURVEY
 COMPLETED IN 1997
 SEAN HARTNETT • GEOGRAPHER • UW-EAU CLAIRE
 PROJECT FUNDED BY NSP



2008117-0036.001