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REGULATORY ENERGY
COMMISSION

October 12, 2006

Ms. Magalie Roman Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

Subject: Results of Purple Loosestrife Monitoring Required By The License And The Exotics Control Plan (Appendix M) of the Lower Chippewa River Settlement Agreement.
Holcombe (Project No. 1982), Cornell (Project No. 2639), Jim Falls (Project No. 2491), Wissota (FERC Project 2567), Chippewa Falls (FERC Project No. 2440) and Dells (FERC Project No. 2670) Hydroelectric Projects.

Dear Secretary Salas:

Enclosed is an original and eight copies of a report produced by Great Lakes Environmental Center (GLEC) that summarizes the results of the purple loosestrife monitoring that was performed on shoreline properties in 2006 pursuant to the Exotics Control Plan contained within the Lower Chippewa River Settlement Agreement. Northern States Power Company – Wisconsin, d.b.a. Xcel Energy (Licensee), is required to perform monitoring surveys annually to track long-term changes in purple loosestrife presence and abundance.

The results overall were consistent with those found in 2005 with the exception that there were no purple loosestrife plants found on Lake Wissota or on Dells Pond. It is unclear if spraying efforts in 2005 were effective in eliminating the plant or if the plants did not germinate in 2006 due to unsuitable growing conditions.

An effort was made to spray all pioneering plants on company-owned lands in order to eradicate them before they become fully established. However, the areas with the most abundant purple loosestrife populations were on private land and were not sprayed. The biological control utilized on Lake Holcombe for the last several years has been

Ms. Magalie Roman Salas
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effective in severely limiting the amount of purple loosestrife present at the site and it is hoped that this trend will continue into the future.

Should you have any comments or questions on GLEC's report, please feel free to contact me by telephone at (715) 839-1353 or by e-mail at robert.w.olson@xcelenergy.com.

Sincerely,



Robert W. Olson
Hydro License Compliance Consultant

Enclosure: 2006 Purple Loosestrife Monitoring Report

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

H:\references\PurpleLoosestrifeMonitoring\10122006letter.doc

PURPLE LOOSESTRIFE ASSESSMENT – 2006

**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)
Robert W. Olson
P.O. Box 8
Eau Claire, WI 54702
715-839-1353**

Prepared by:



Great Lakes Environmental Center

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

**Principal contact:
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September 15, 2006

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, 2006. 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 denser 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 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. Additionally, no purple loosestrife was noted in either Lake Wissota or Dells Pond. Both of these impoundments each had small isolated loosestrife plants during surveys in previous years. All these plants were treated with aquatic herbicide in past years as well. It is possible that the treatments have been effective and the loosestrife plants have been killed, or these plants may just be dormant this year due to weather conditions. If this is the case, it is possible these plants will regrow again in subsequent years. This has been seen in the past years of surveys; certain plants will grow one year, not grow the next and regrow again in the following year or years.

Holcombe Flowage was found to contain the most purple loosestrife of any of the six impoundments surveyed. While a few 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. As mentioned above, it is also common to have plants only grow during select years. This is again the case on Holcombe Flowage; new plants growing this year, while other plants that were previously noted did not grow at all this year.

While numerous areas of "present" infestations were found and noted on bathymetric maps of Holcombe Flowage, no areas were classified as "abundant". This shows marked improvement from previous surveys and documents the continued success of the beetle introduction. When compared to last year's survey, it appears the infestation is roughly the same overall. Some areas are less infested, and some are ¹more infested.

Single plant clumps were found on the shore of two separate private residences; one in a small embayment near 259th Avenue and one near the end of 274th Avenue (see Sheet 1). A single plant clump was also noted just north of Birch Creek Park (Sheet 1). 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. Four small plant clumps were found on the north shore of the main flowage (see Sheet 2), one plant was found in a small embayment on the west side of the main flowage, and one plant was found on the south shore of the main flowage (on Xcel Energy-owned lands). The majority of plants were again found in the area on and around Pine Island and along Highway 27, some of the areas being very close to classified as abundant (see Sheet 4). This area was generally the same as last year, though certain areas had denser loosestrife growth and certain areas were sparser. Three small infestations were found just to the east of the Highway 27 bridge; and one individual plant clump was found on the north shore of the flowage half way between Main Creek and the Highway 27 bridge (see Sheet 4); this single clump is located on Xcel Energy land and was noted in last year's survey. No purple loosestrife was found in Main Creek, Jump River, Pine Lake, or Cranberry Lake.

Cornell Flowage was found to contain five small infestations of purple loosestrife and one area where loosestrife was abundant (Sheet 5). Three of the small infestations were located in the main flowage on the northwest bank and have been seen in past years. The two other small locations were single plants; one located on the north shore between

Highway 64 and dam; and the other located on the downstream tip of the island just upstream from Highway 64. All of these occurrences were either single clumps or clumps of only a few plant masses and comprised a total of less than 20 feet of shoreline. 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 80 feet. None of these loosestrife locations were located on Xcel Energy lands.

Two small loosestrife infestations were found on the upper portion of Old Abe Lake (Sheets 6, 7 and 8). This compares to four plants being present during last year's survey. Both of the locations were on the west shoreline and each was comprised of a single clump of loosestrife plants. None of these locations are on Xcel Energy lands. The total amount of shoreline affected by purple loosestrife on Old Abe Lake is less than 10 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 heavily infested. Several areas consist of dense loosestrife growth (specifically under the CTH Y bridge). 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 start to further invade the upper reaches of Lake Wissota in the near future. 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).

See Sheet 2

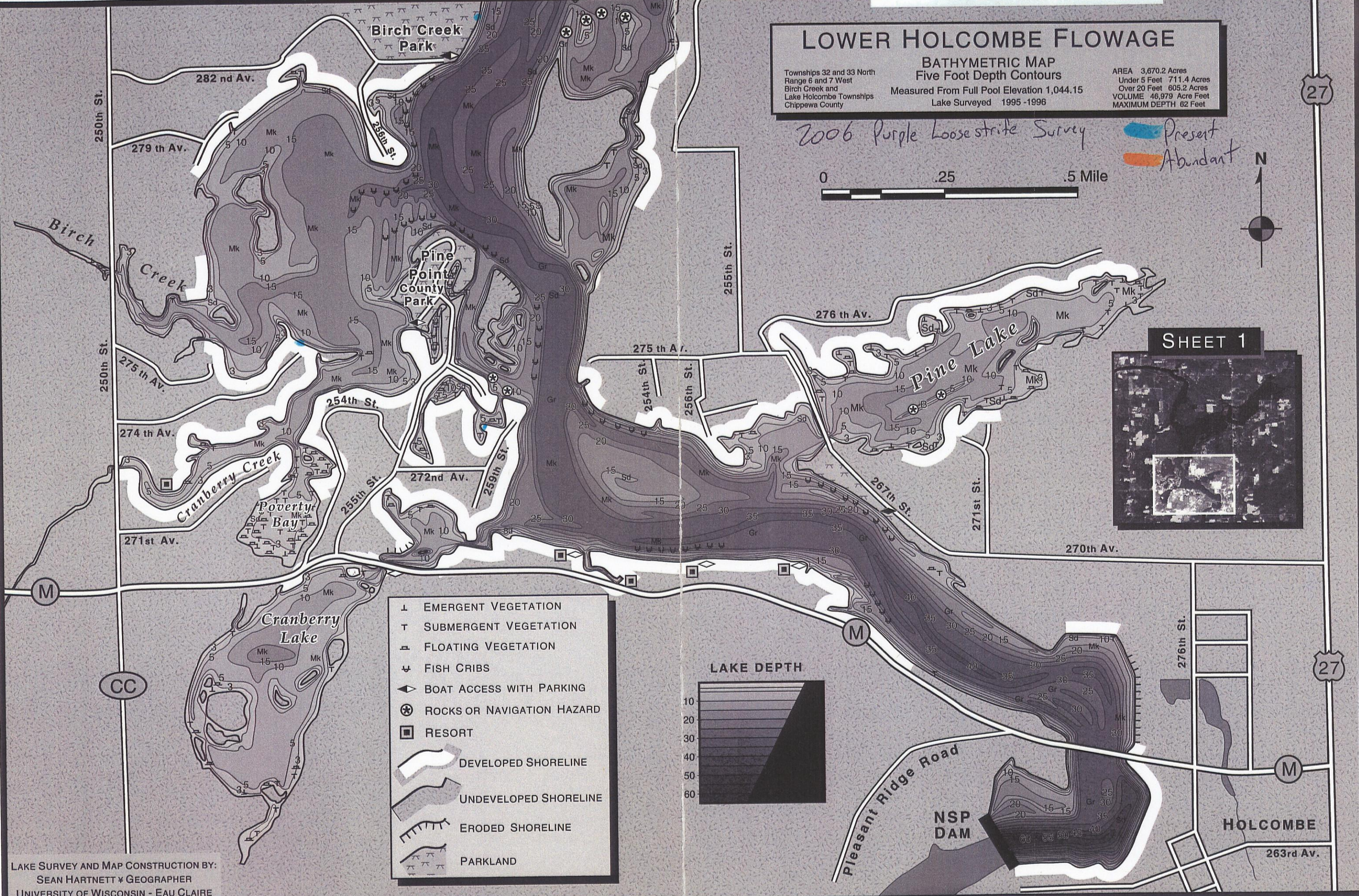
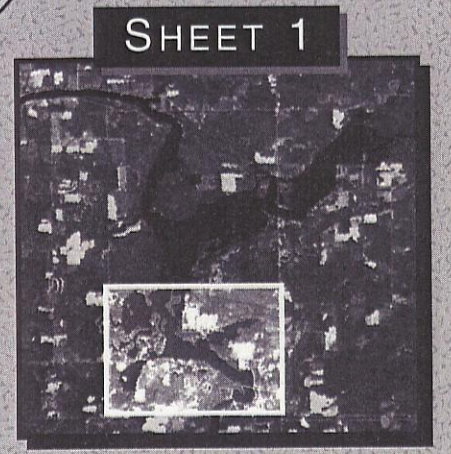
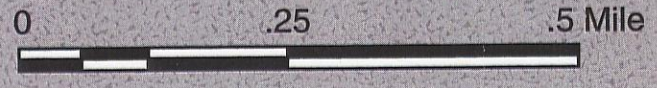
LOWER HOLCOMBE FLOWAGE
BATHYMETRIC MAP
 Five Foot Depth Contours
 Measured From Full Pool Elevation 1,044.15
 Lake Surveyed 1995 -1996

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

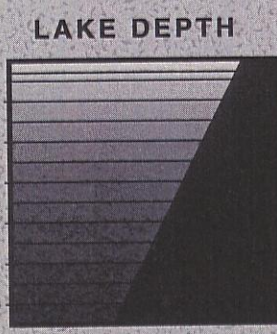
AREA 3,670.2 Acres
 Under 5 Feet 711.4 Acres
 Over 20 Feet 605.2 Acres
 VOLUME 46,979 Acre Feet
 MAXIMUM DEPTH 82 Feet

2006 Purple Loosestrife Survey

Present
 Abundant



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



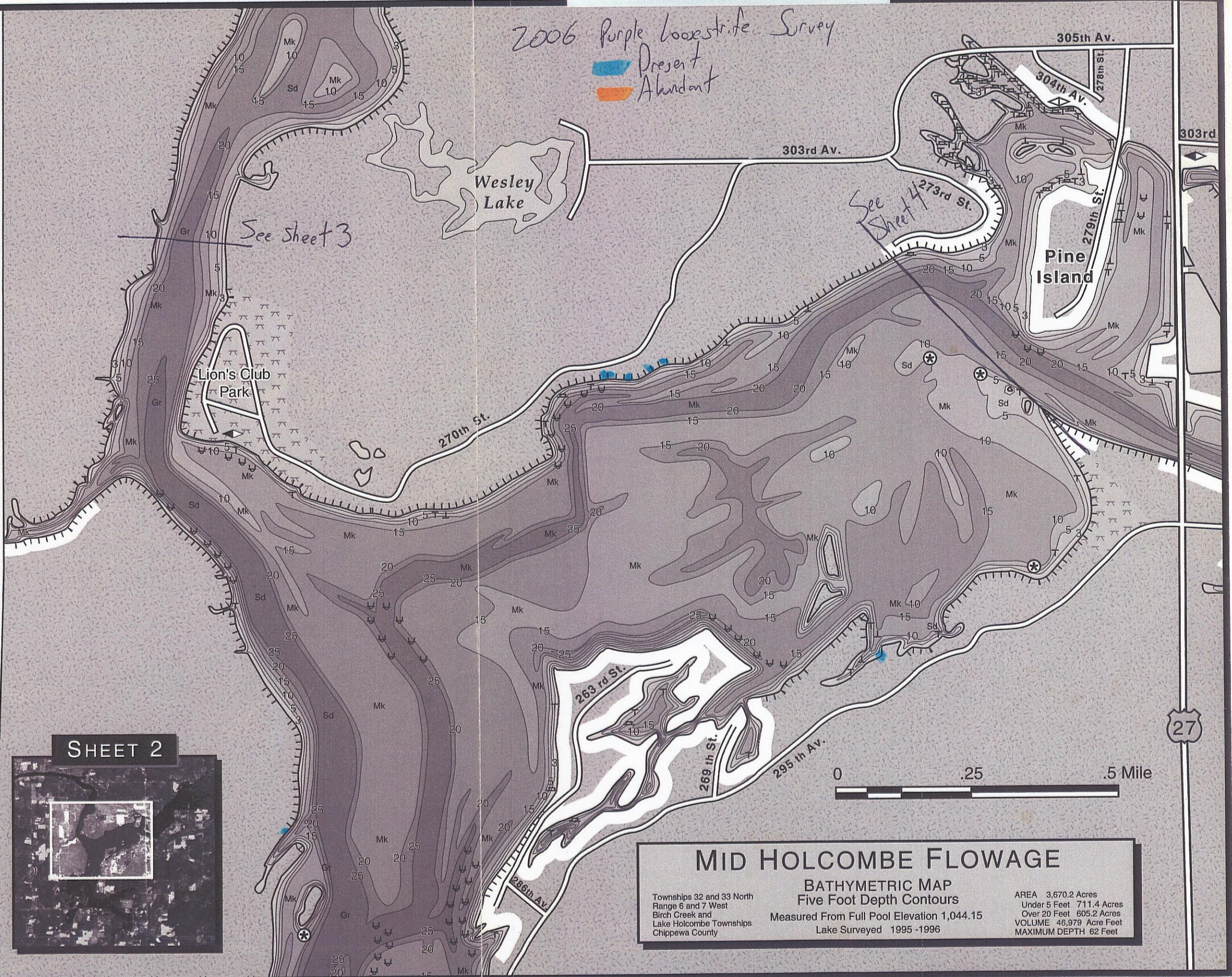
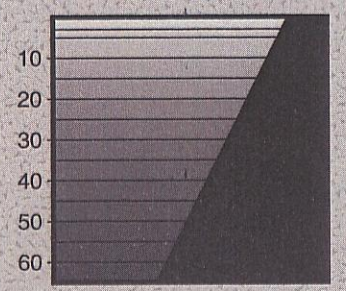
LAKE SURVEY AND MAP CONSTRUCTION BY:
 SEAN HARTNETT * GEOGRAPHER
 UNIVERSITY OF WISCONSIN - EAU CLAIRE

Public 061020-0027-001

2006 Purple Loach Strife Survey
 Present
 Abundant

- ⊥ 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

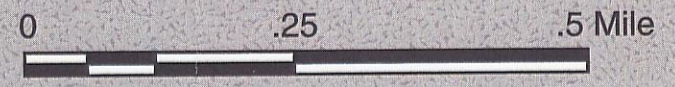
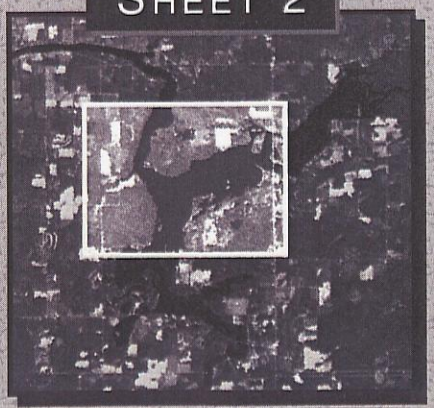


290 th Av.

250th St.

253rd St.

SHEET 2



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

See Sheet 1

061020-0027-002

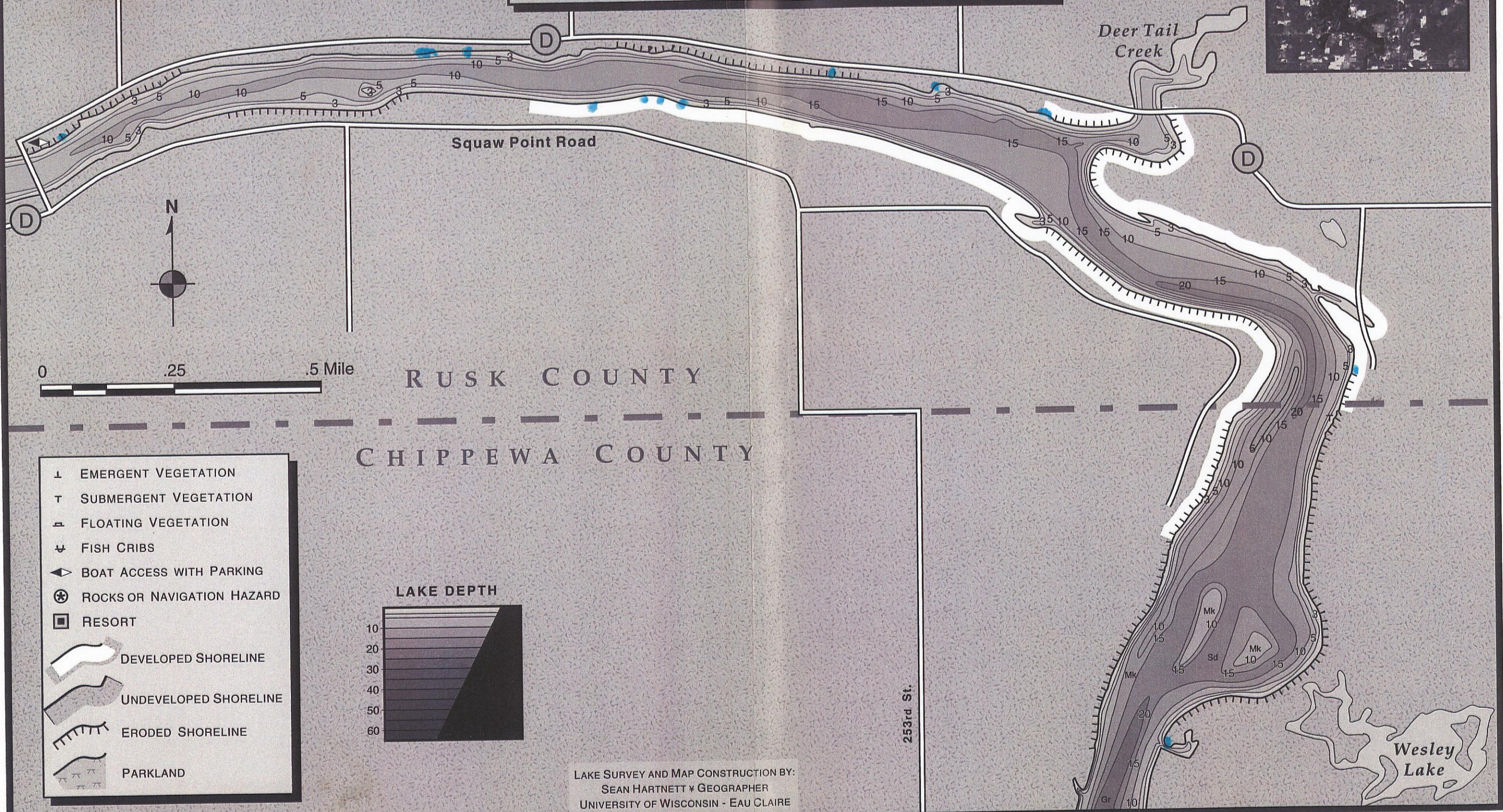
2006 Purple Loosetrife Survey
 Present
 Abundant

UPPER HOLCOMBE FLOWAGE

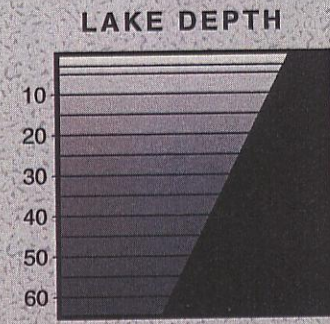
Townships 32 and 33 North
 Range 6 and 7 West
 Birch Creek and
 Lake Holcombe Townships
 Chippewa County

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



- ⊥ 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

JUMP RIVER / HOLCOMBE FLOWAGE

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

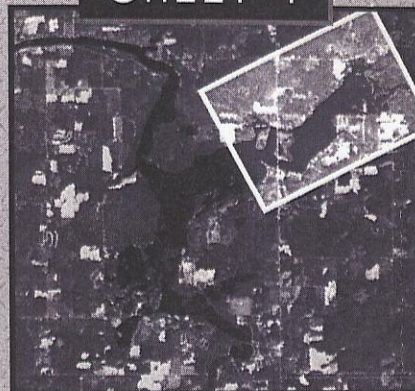
BATHYMETRIC MAP
Five Foot Depth Contours
Measured From Full Pool Elevation 1,044.15
Lake Surveyed 1995 -1996

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

2006 Purple Loosestrife Survey

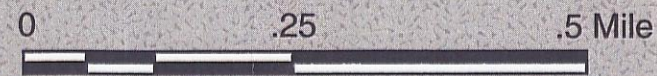
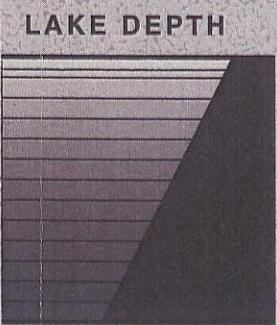
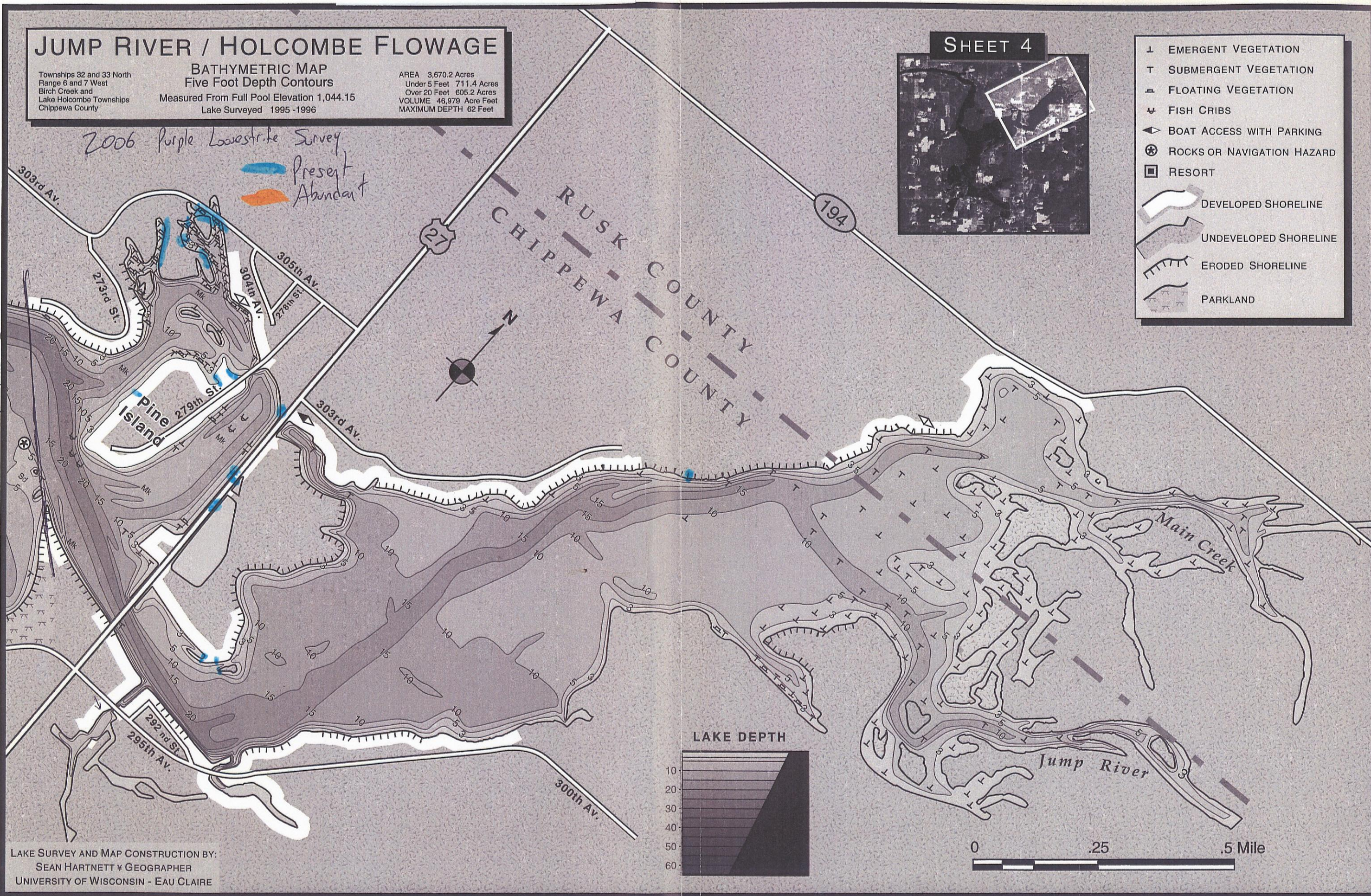
 Present
 Abundant

SHEET 4



- ⊥ 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

See Sheet 2



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

061020-0027-004

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

Sheet 5

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

CHIPPEWA COUNTY

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

Map No. 1083

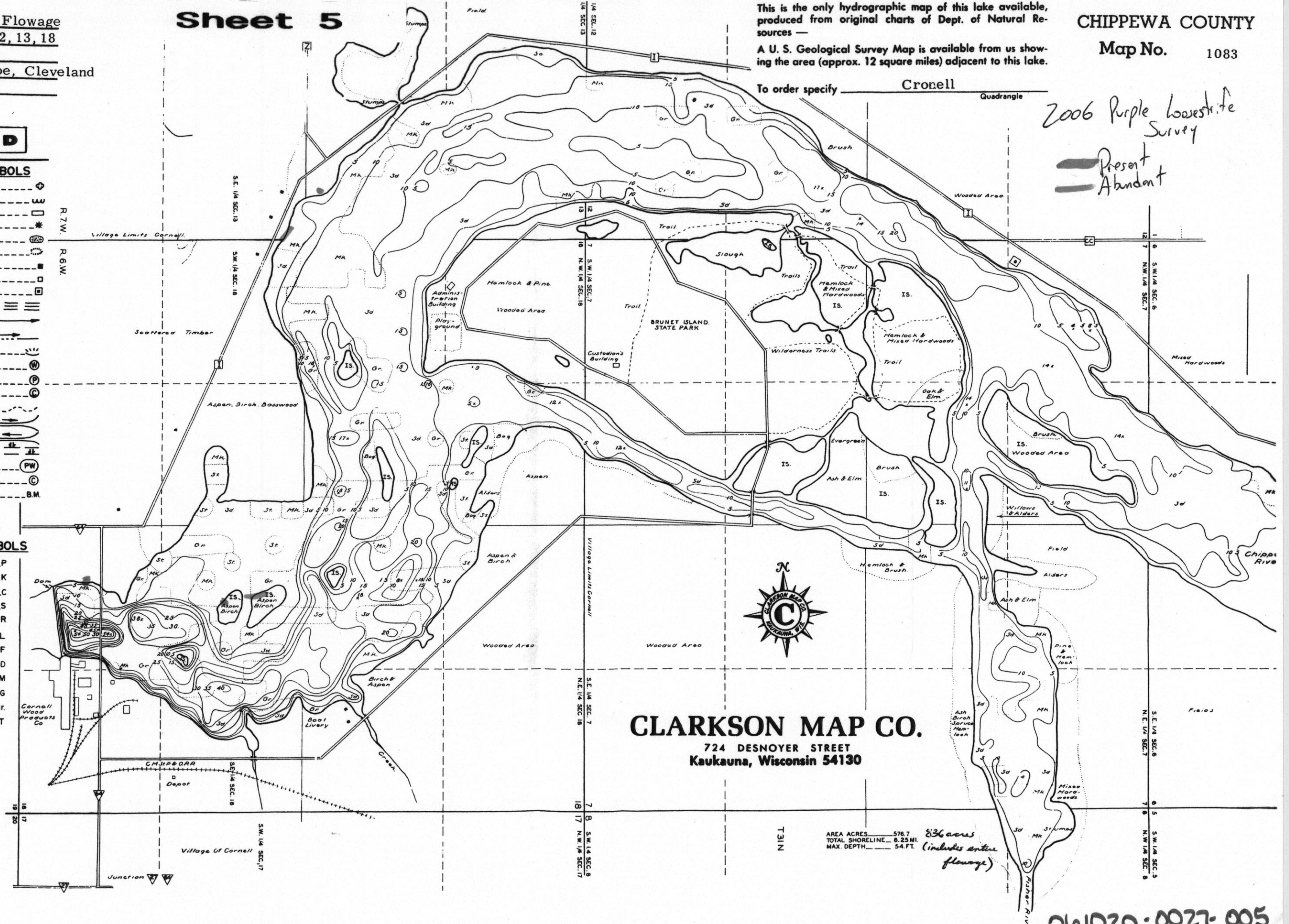
LEGEND

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
- MUCK
- CLAY
- SAND
- RUBBLE
- EMERGENT VEGET.
- FIBROUS PEAT
- DETRITUS
- MARL
- GRAVEL
- BEDROCK
- SUBMERGENT VEGET.



CLARKSON MAP CO.
 724 DESNOYER STREET
 Kaukauna, Wisconsin 54130

AREA ACRES 576.7
 TOTAL SHORELINE 8.25 MI.
 MAX. DEPTH 54 FT.

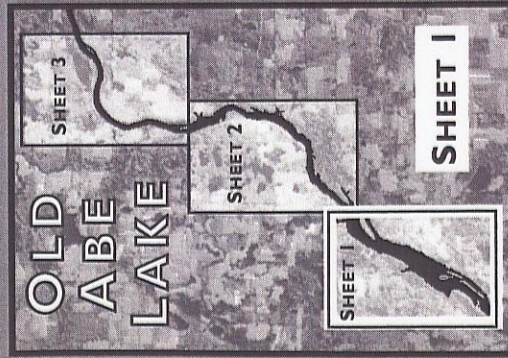
836 acres (includes entire flowage)

2006 Purple Loamstrite Survey
 Present
 Abundant

061020-0027-005

OLD ABE LAKE

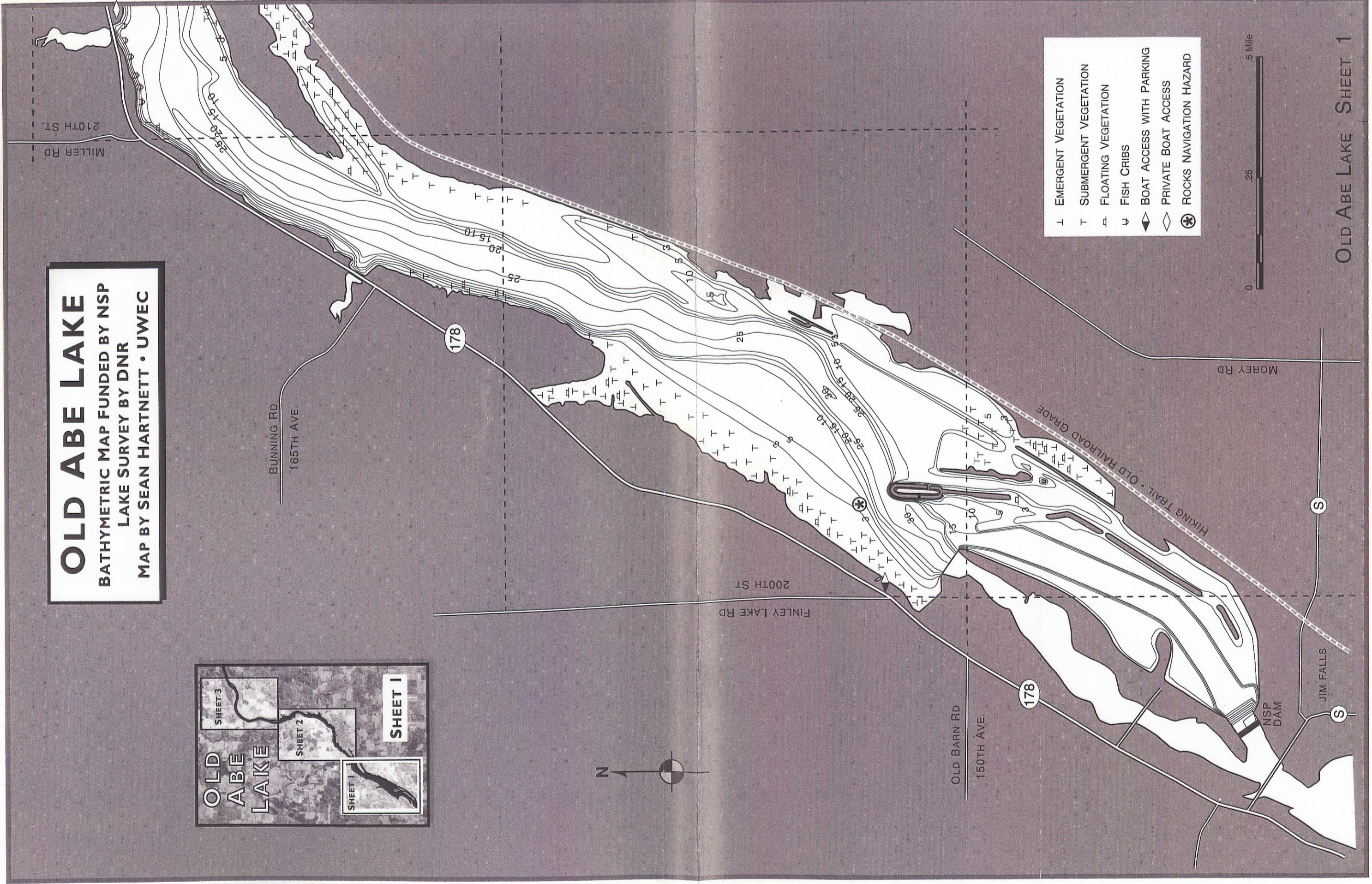
BATHYMETRIC MAP FUNDED BY NSP
LAKE SURVEY BY DNR
MAP BY SEAN HARTNETT • UWEC



- ┆ EMERGENT VEGETATION
- T SUBMERGENT VEGETATION
- ▣ FLOATING VEGETATION
- ∩ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ◇ PRIVATE BOAT ACCESS
- ⊗ ROCKS NAVIGATION HAZARD



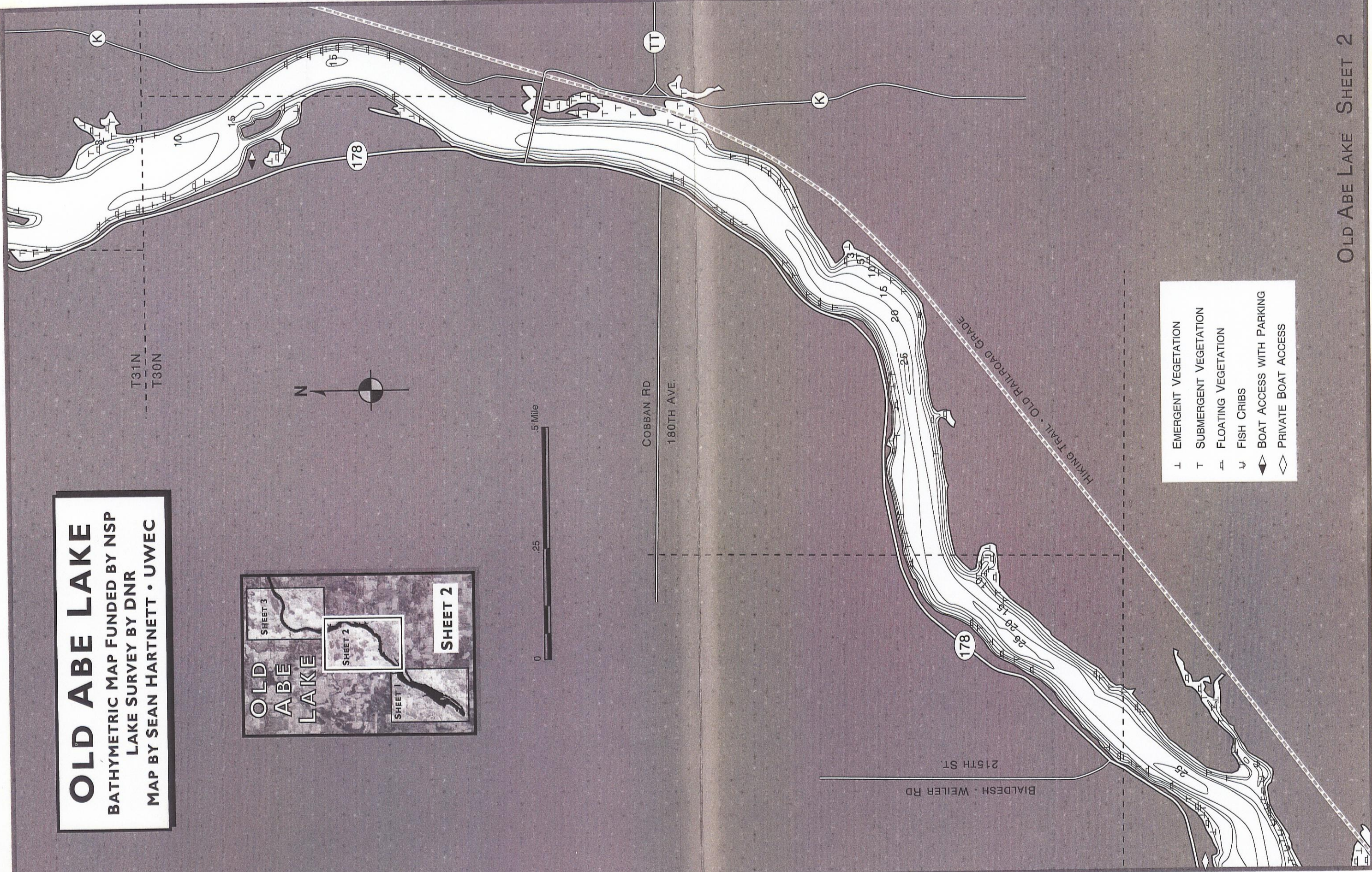
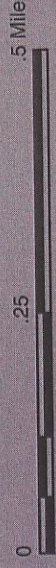
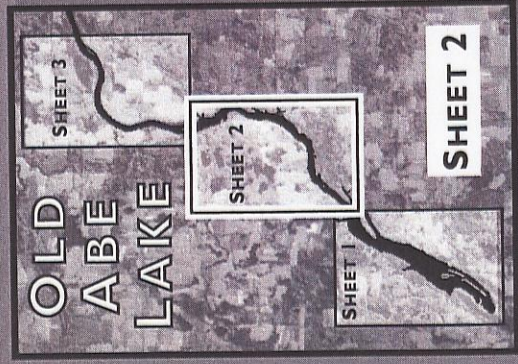
OLD ABE LAKE SHEET 1



061020-0027-006

OLD ABE LAKE

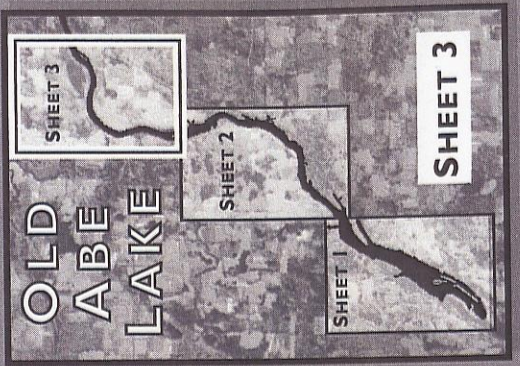
BATHYMETRIC MAP FUNDED BY NSP
LAKE SURVEY BY DNR
MAP BY SEAN HARTNETT • UWEC



- ┆ EMERGENT VEGETATION
- T SUBMERGENT VEGETATION
- ▭ FLOATING VEGETATION
- ∪ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING
- ◇ PRIVATE BOAT ACCESS

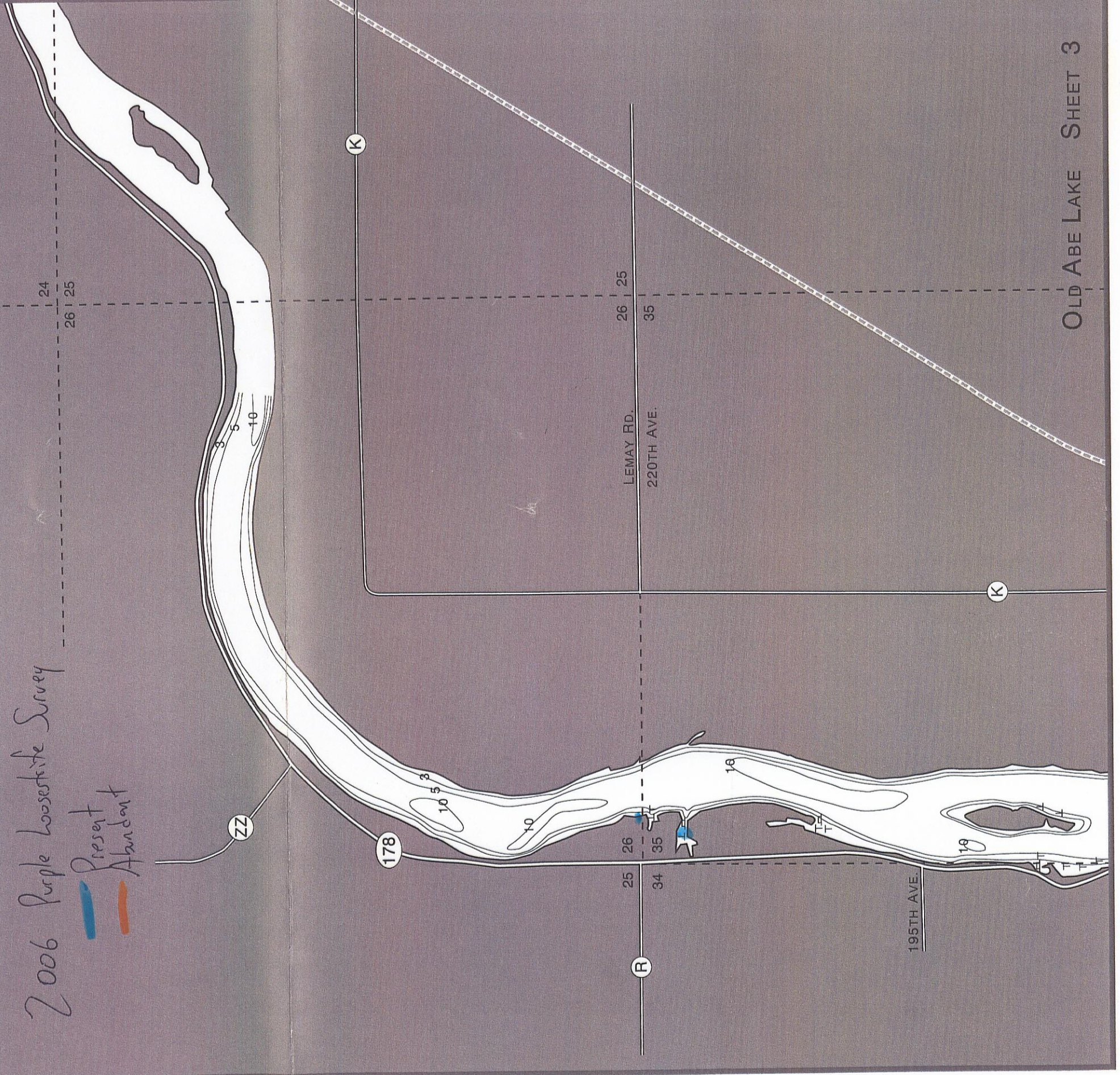
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OLD ABE LAKE
 BATHYMETRIC MAP FUNDED BY NSP
 LAKE SURVEY BY DNR
 MAP BY SEAN HARTNETT • UWEC



- ┆ EMERGENT VEGETATION
- ┆ SUBMERGENT VEGETATION
- ▣ FLOATING VEGETATION
- ∩ FISH CRIBS
- ◀ BOAT ACCESS WITH PARKING

2006 Purple Loosestrife Survey
 Present
 Abundant



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