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2007 OCT 22 P 3 11

FEDERAL ENERGY  
REGULATORY COMMISSION

October 17, 2007

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

P-1982-044  
P-2639-021  
P-2491-038  
P-2567-032  
P-2440-063  
P-2670-044

**Subject: Results of the 2007 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), Wisconsin (FERC Project 2567), Chippewa Falls (FERC Project No. 2440) and Dells (FERC Project No. 2670) Hydroelectric Projects.**

Dear Ms. Bose:

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 2007 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 of the monitoring were comparable to the last several years with slight increases or decreases in purple loosestrife presence and abundance. GLEC once again utilized chemical treatment on plants located on company-owned lands. The biological control utilized on Lake Holcombe for the last several years has been 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.

Ms. Kimberly D. Bose  
October 17, 2007  
Page 2 of 2

Should you have any comments or questions on GLEC's report or to the purple loosestrife monitoring, 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: 2007 Purple Loosestrife Monitoring Report

c: Mr. Brian Guthman (LHIA)  
Mr. Bob Baczynski (WDNR)  
Mr. Tyler Yasenak (USFWS)

H:\references\PurpleLoosestrifeMonitoring\10172007letter.doc

***PURPLE LOOSESTRIFE ASSESSMENT – 2007***

**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:**



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**September 25, 2007**

## **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 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, 2007. 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<sup>®</sup> (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. Very minor infestations were seen in both Lake Wissota and Dells Pond.

In Dells Pond, three loosestrife plants were observed on one of the islands just downstream from the Highway 312 bridge (see Dells Pond Map). These were individual plants spread over approximately 30 feet of shoreline. Loosestrife plants were noted (and treated) in this location in 2005, but not in 2006. It is common for purple loosestrife to grow some years and lie dormant during others. This island is owned by NSP, and all three plants were treated with herbicide.

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 (see Upper Lake Wissota Map). 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.

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. 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.

While numerous areas of “present” infestations were found and noted on bathymetric maps of Holcombe Flowage, no areas were classified as “abundant”. This shows continued 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 more infested.

A single plant clump was noted just north of Birch Creek Park (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 seemed somewhat improved from last year. One reason for the improvement, ironically, is the increasing amount of developed land along this stretch of the flowage. Certain areas that had been noted as infested in previous years have recently undergone substantial modification (i.e. rip rap and/or conversion to mowed lawn). While this does nothing to restore the shoreline to its natural state, it does aid in the removal of the purple loosestrife.

Several plant clumps were found scattered along 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). Several plants were also noted on the two islands located just off the south shore of the main flowage. Overall, this seems to be a general increase in plant density in the main flowage area.

The majority of plants on Lake Holcombe were again found in the area on and around Pine Island and along Highway 27, some of the areas are very close to being classified as abundant (see Sheet 2). This area was overall slightly denser than last year, though certain areas were more sparse. Three small infestations were found just to the east of the Highway 27 bridge (see Sheet 4). The one individual plant clump that was found in the previous two years (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 maps of Cornell Flowage). Each of the small infestations were located in the main flowage on the northwest bank and have been seen in past years. The 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 an increasing number of plants along this area. 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. None of the current loosestrife locations were located on Xcel Energy lands. Two other 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, were noted and treated last year, but were not seen this year.

Two small loosestrife infestations were found on the upper portion of Old Abe Lake (see Old Abe Lake Bathymetric Map - Sheet 3). 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. 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 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 slightly lower than last 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, as is evidenced by the two new occurrences in Upper 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).



# LARGE-FORMAT IMAGES

One or more large-format images (over 8½" X 11") go here. These images are available in E-Library at:

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Parent Accession No.: 20071025-0116

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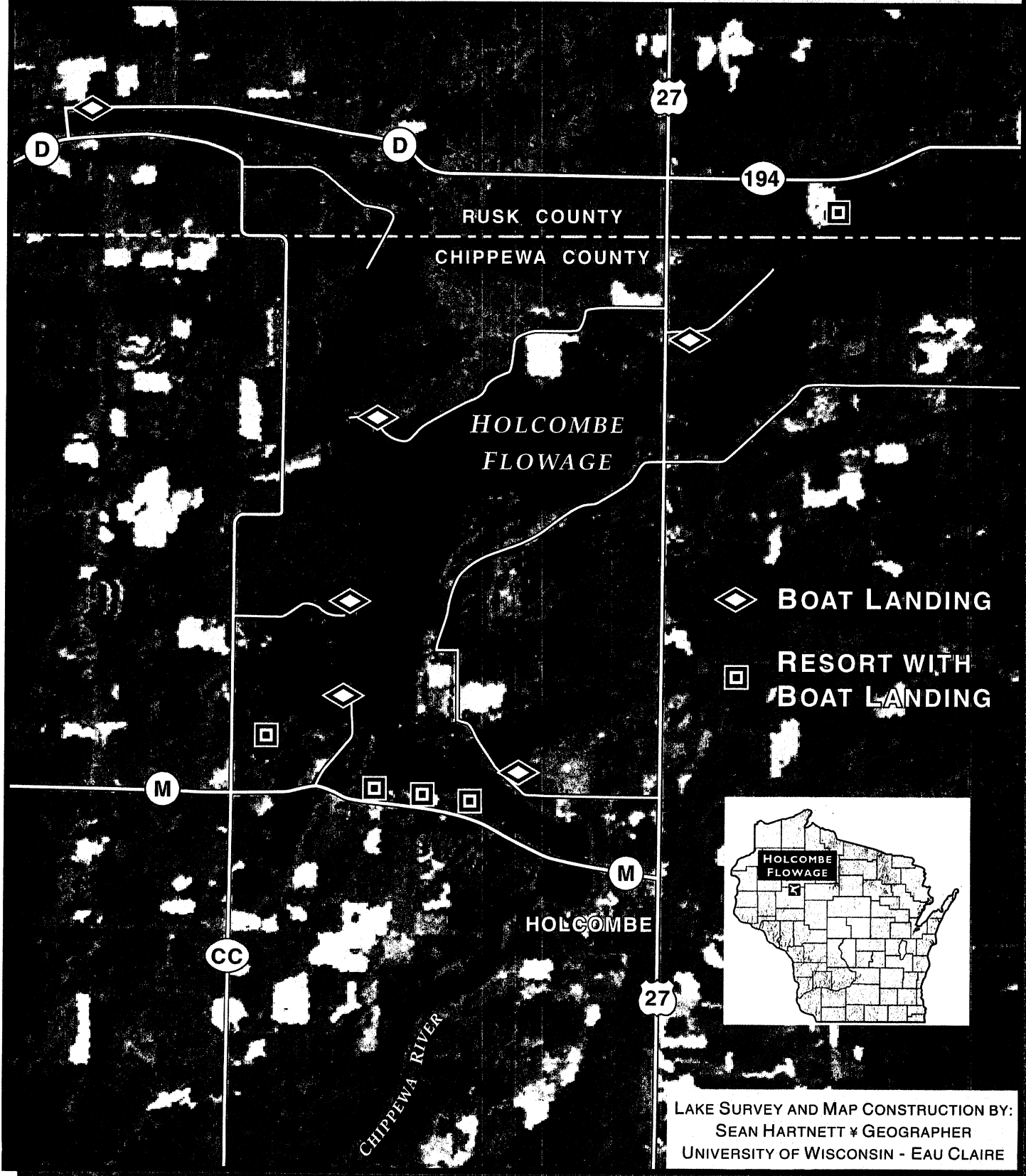
# HOLCOMBE FLOWAGE

Washington and Willard  
Townships in Rusk County  
Birch Creek and  
Lake Holcombe Townships  
in Chippewa County

## BATHYMETRIC MAP

Lake Depths Measured From Full Pool Elevation  
Lake Surveyed in 1995 and 1996 Utilizing  
GPS and Sonar Technologies

AREA 3,670.2 Acres  
Under 5 Feet 2,958.9 Acres  
Over 20 Feet 605.2 Acres  
VOLUME 46,979 Acre Feet  
MAXIMUM DEPTH 62 Feet



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

# UPPER LAKE WISSOTA



Upper end  
of Lake  
Wissota

2007 Purple Loosestrife Survey

Present  
Abundant

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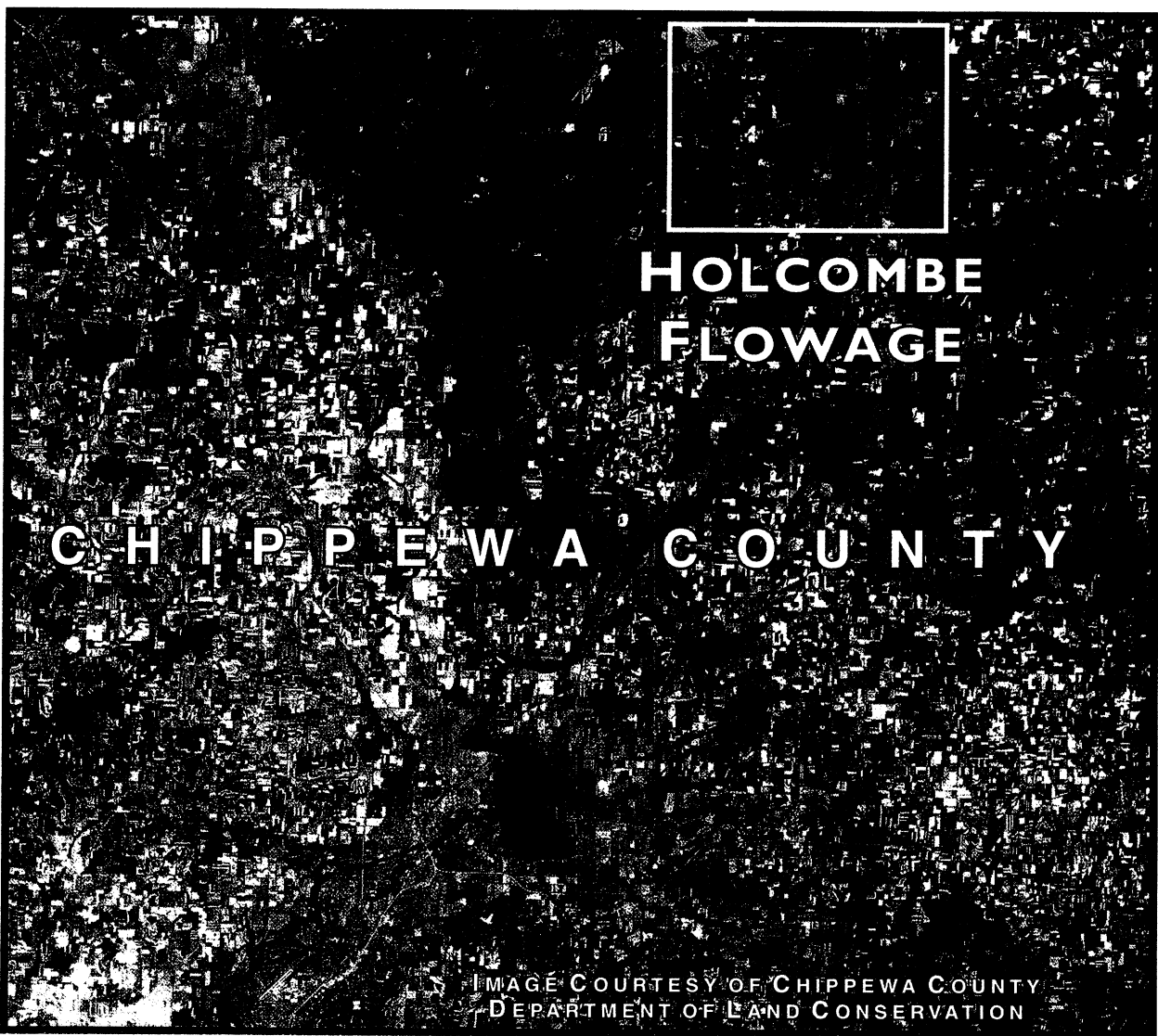
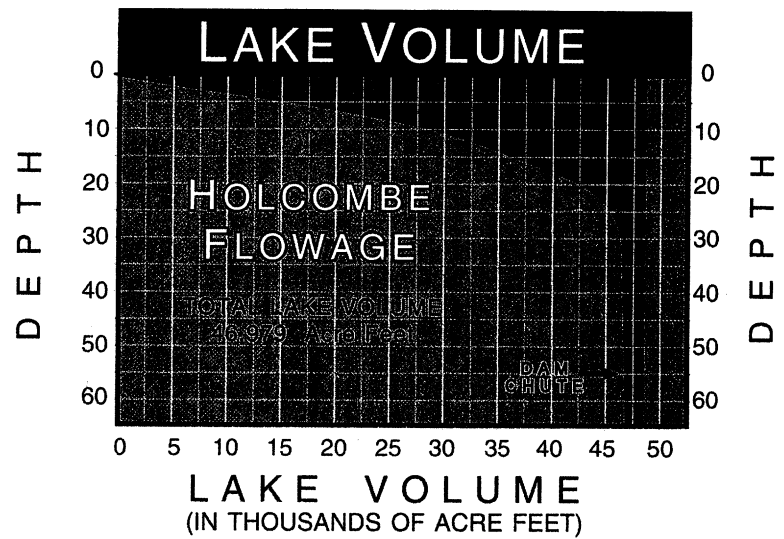
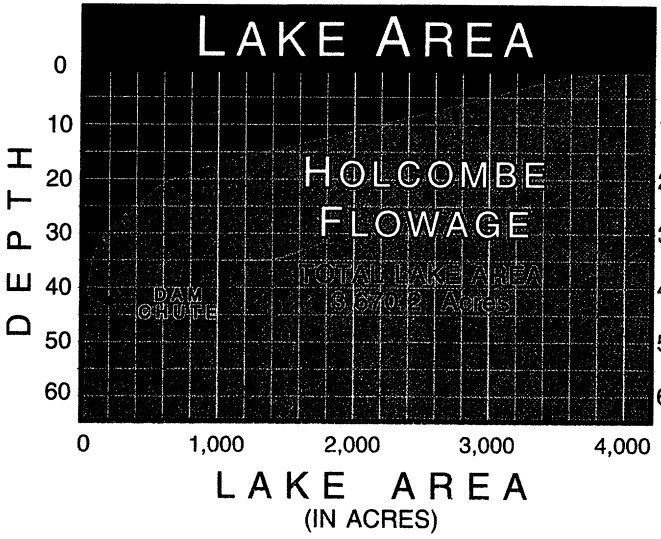
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Parent Accession No.: 20071025-0116

Set No.: 1 of 1

Number of page(s) in set: 4



<p><b>GPS Equipment Funded BY:</b> ARTS &amp; SCIENCES • UW-EAU CLAIRE</p> <p><b>Lake Survey Funded By:</b> US ARMY CORPS OF ENGINEERS NORTHERN STATES POWER WISCONSIN DEPT. OF NATURAL RESOURCES</p>	<p>Printing of this map was made possible through funding from LHIA Inc. and NSP.</p> <p>Join your local lake organization. <b>LAKE HOLCOMBE IMPROVEMENT ASSOCIATION INC. (LHIA)</b> P.O. Box 325 Holcombe, WI 54745</p>
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# LARGE-FORMAT IMAGES

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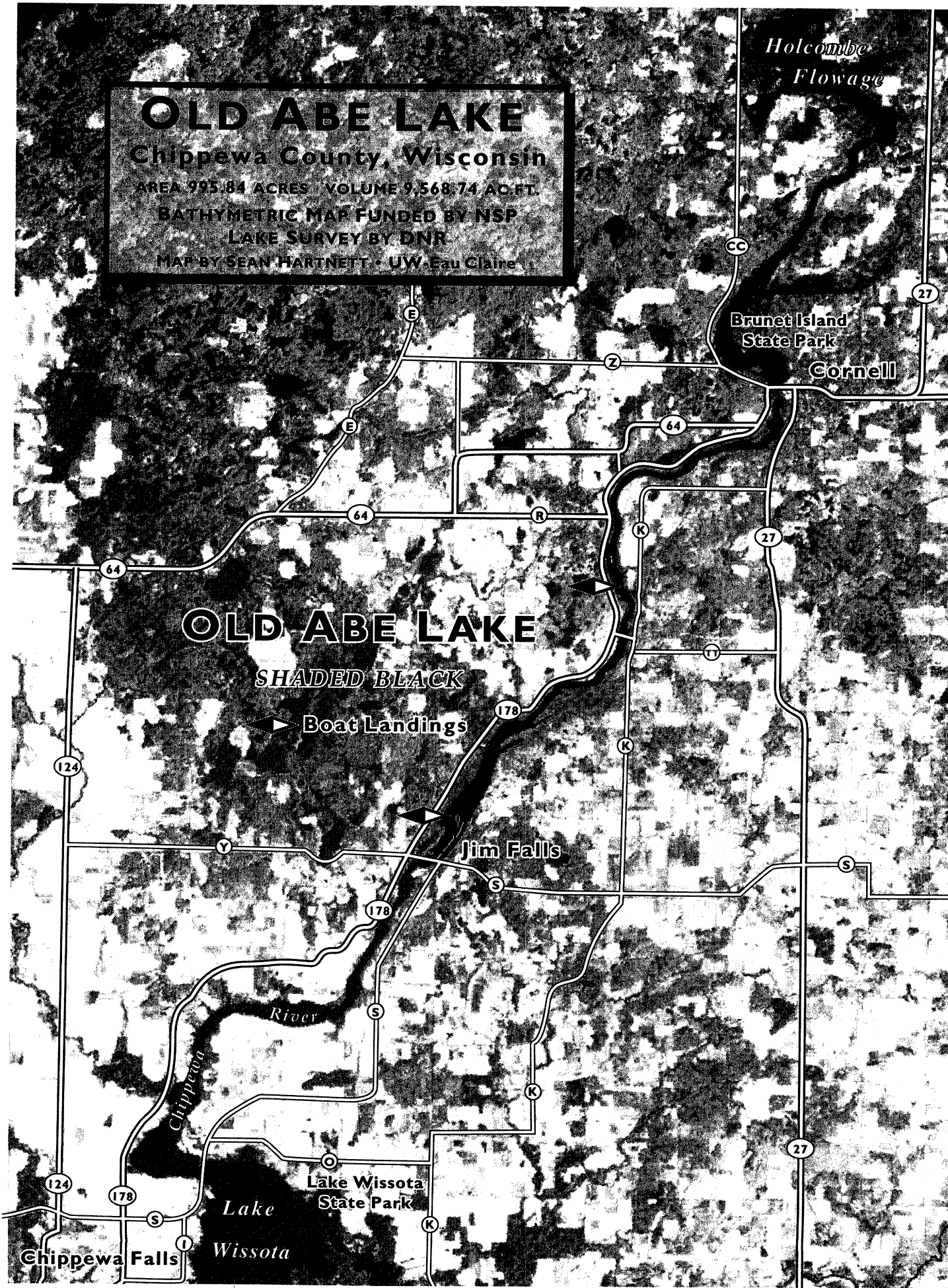
Parent Accession No.: 20071025-0119

Set No.: 1 of 1

Number of page(s) in set: 1



**OLD ABE LAKE**  
 Chippewa County, Wisconsin  
 AREA 993.84 ACRES VOLUME 9,568.74 AC FT.  
 BATHYMETRIC MAP FUNDED BY NSP  
 LAKE SURVEY BY DNR  
 MAP BY SEAN HARTNETT · UW-Eau Claire



**OLD ABE LAKE**  
 SHADED BLACK  
 Boat Landings

*Holcombe  
Flowage*

Brunet Island  
State Park

Cornell

Jim Falls

Lake Wissota  
State Park

Chippewa Falls

Lake  
Wissota

Chippewa  
River

# LARGE-FORMAT IMAGES

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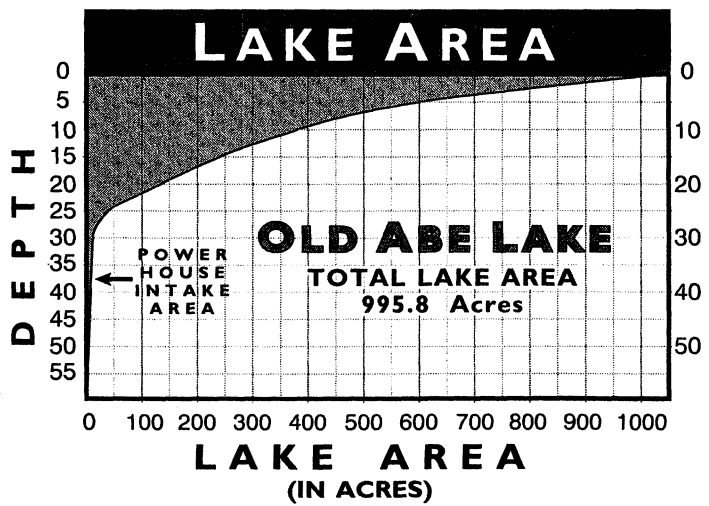
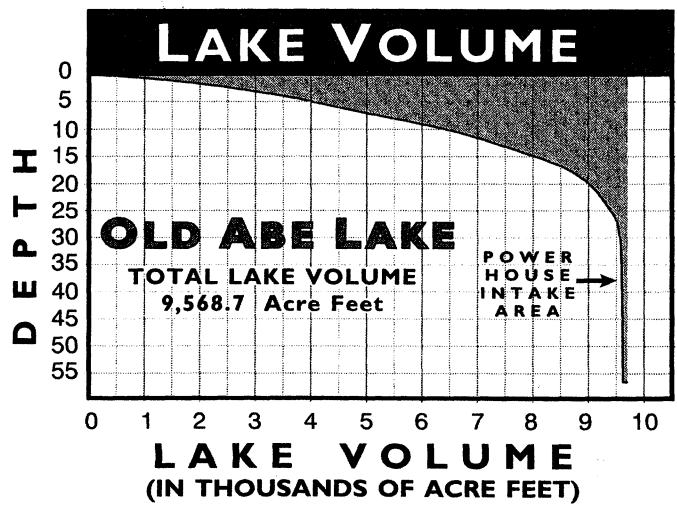
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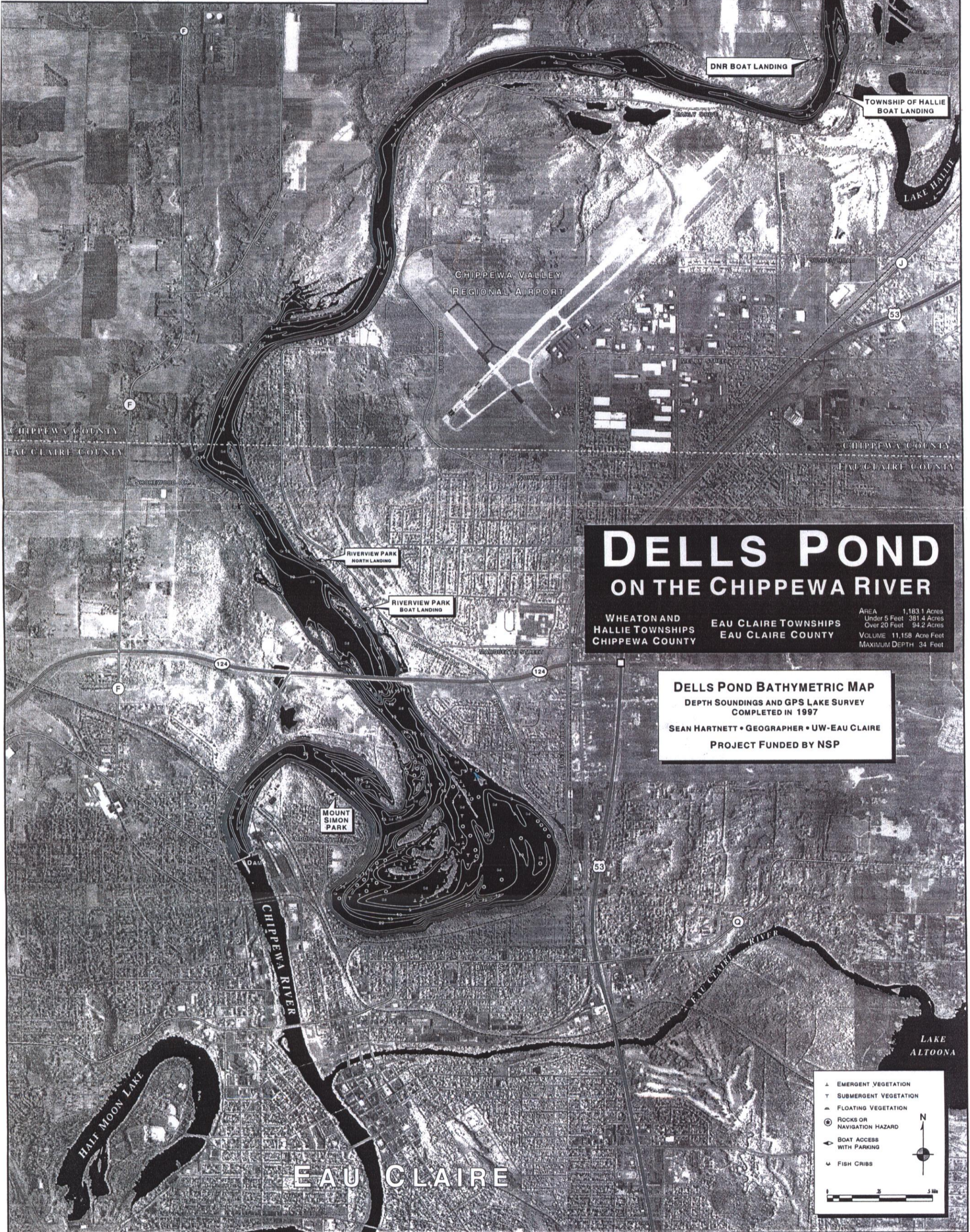
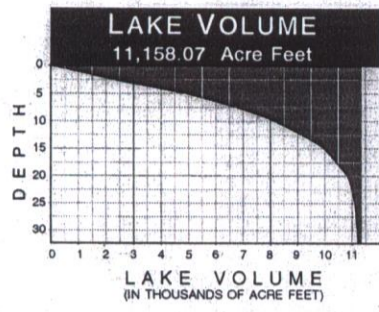
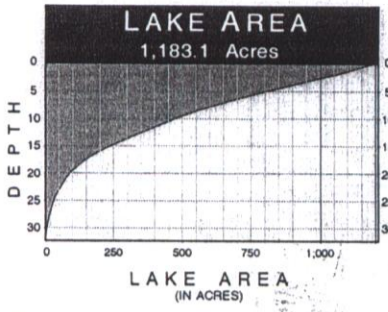


Townships 30 and 31 North Range 7 and 8 West Eagle Point, Estella, Arthur and Cleveland Townships Chippewa County	<h1>OLD ABE LAKE</h1> <h2>BATHYMETRIC MAP</h2> <p>Measured From Full Pool Elevation 953.2 Ft.</p>	AREA 995.8 Acres Under 5 Feet: 609.1 Acres Over 20 Feet: 138.5 Acres VOLUME 9,568.7 Acre Feet MAXIMUM DEPTH 33 Feet
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# 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

2007 Purple Loosetrike Survey

Present

Abundant

Public