

2008

**Curlyleaf Pondweed Survey and Treatment
Recommendations for 2009**

**PELICAN, BASS
&
LITTLE PELICAN LAKES**

By

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Pelican Channel
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Introduction

A curlyleaf pondweed survey was performed within Pelican and Little Pelican Lakes during June 2005 for the identification and mapping of curlyleaf pondweed area perimeters. The areas that were mapped as containing curlyleaf pondweed during 2005 received herbicidal treatment during May 2006. The herbicidal treatment program was very successful. The curlyleaf pondweed program was continued during 2007 and 2008. All of the areas that were treated for the control of curlyleaf pondweed during 2007 plus one additional area, Area A2, within Pelican Lake were surveyed during May of 2008. Over all there was seen to be an approximate 95% curlyleaf pondweed density reduction from 2005 to 2008. The areas that curlyleaf pondweed was identified within during the May 2008 pretreatment survey received herbicidal treatment during June 2008. This report contains 2008 survey findings and recommendations for 2009.

Objectives of Survey

The 2008 survey objectives include:

- 1) Conduct a pretreatment survey of areas A, A2, B, B1, C, D and E, as identified on the attached lake maps, to identify pretreatment information
- 2) Calculate acreage of CLP identified within Areas A, A2, B, B1, C, D and E
- 3) Conduct a post treatment survey and provide results of survey
- 4) Provide recommendations for 2009 curlyleaf pondweed control program

Objective Results and Recommendations

Objective 2): Calculate acreage of CLP identified within Areas A, A2, B, B1, C, D and E

Area **A**: approximately 3.50 acres

Area **A2**: approximately .23 acres [Additional treatment area in 2008 \(See Area A2 photo\)](#)

Area **B**: approximately 9.50 acres

Area **B1**: approximately 5.65 acres

Area **C**: approximately 7.0 acres

Area **D**: approximately 3.75 acres

Area **E**: approximately 1.60 acres

TOTAL ACREAGE: 31.23

Objective 3): Conduct a post treatment survey and provide results of survey

Herbicidal treatment of the above 31.23 acres was provided on June 4, 2008. All treated areas were post treatment surveyed during middle June 2008 and approximately 99% control of curlyleaf pondweed was obtained and no rooted curlyleaf pondweed was identified within any of the treatment areas. All areas were further surveyed an approximate distance of 300 feet beyond

the treatment perimeters. No curlyleaf pondweed was identified during the survey within a 300 foot perimeter outside of the treatment areas.

Whitestem, claspingleaf, largeleaf, sago, flat-stemmed, narrowleaf and bushy pondweeds, elodea, coontail, northern watermilfoil, bladderwort and other native plants were present and thriving within the treatment areas.

Objective 4): Provide recommendations for 2009 curlyleaf pondweed control program

Area A: The perimeter of the curlyleaf pondweed can be identified by the following gps coordinates and descriptions:

N46 41.850' W96 04.701' ([see photo 1](#)) light and sporadic to
N46 41.972' W96 04.812' (within 150 feet of shore)

N46 41.972' W96 04.812' lake wards to N46 42.007' W96 04.753'
northerly to N46 42.037' W96 04.781'
northerly to N46 42.114' W96 04.804' (Bob's creek inlet)

Area A has an approximate acreage of 3.48, with approximately 2.70 acres being within 150 feet of the shoreline and the maximum water depth is approximately 4.0 feet.

There were several storms with very high winds between the treatment date and the post treatment survey date, as a result of these winds Areas A and A2 were severely windswept and most aquatic vegetation was uprooted causing inconclusive survey results within these areas.

Area A2: This area is located north of Area A and is located within the following gps coordinates:

N46 42.275' W96 04.798' northeasterly to N46 42.306' W96 04.787'
(See Area A2 photo and Area A2 map)

The approximate curlyleaf pondweed acreage of this area is .23 acres with all of this area being within 150 feet of the shoreline.

Area B: Public Boat Access Bay located at the Pelican Channel inlet. The perimeter of this area is the entire shoreline, with the exception of the emergents, lakeward to the underwater rock ridge which is identified by the lakeward buoys. This underwater rock ridge is unmistakable and lies in a NE - SW direction.

The approximate curlyleaf pondweed acreage of this area is 9.41 acres with approximately one half of this area being within 150 feet of the shoreline.

Note: There is also a patch of curlyleaf pondweed located within 150 feet of shore west of the bay located at gps coordinate N46 42.147' W95 58.041'

There was a significant and dramatic reduction in the presence of curlyleaf pondweed during 2008 compared to 2005 and 2006. Very few curlyleaf pondweed plants were identified during 2008 within this area. Post treatment survey findings include healthy and moderate densities of whitestem pondweed. Curlyleaf pondweed had displaced most native plants within this area at the time of the 2005 and 2006 surveys. It is hopeful that native plants will continue to naturally reestablish within this area.

Area B1: This area is within Little Pelican Lake and is approximately 5.65 acres This area can be identified as from the shoreline to within the following gps coordinates and out to the eleven foot water depth contour:

From shore to N46 42.332' W95 57.207' lake ward to the 11 foot depth contour, follow this contour to about 150 feet northwest of N46 42.222' W95 57.092'

There was a very noticeable decrease of curlyleaf pondweed within this area during 2008 and a favorable increase in native aquatic plants such as whitestem pondweed and flatstem pondweed. Whitestem pondweed is often confused with curlyleaf pondweed. Whitestem pondweed is a desirable native aquatic plant and should be encouraged to become reestablished within the treatment areas ([see photos 2 and 5](#)). Reestablishment is very successful within this area at this time.

Curlyleaf pondweed was the dominant plant within area B1 during 2005 as seen by the uprooted plants being pushed over the cattails in [photo 3](#), yet during 2008 [photo 4](#) illustrates the significant improvement and lack of uprooted curlyleaf pondweed within the same area. These photos were taken at the entrance of Little Pelican Lake into the channel between Pelican and Little Pelican Lakes. Note the home in the top right corner of the photos.

Area C: This area is within Little Pelican Lake and is approximately 6.92 acres in size. This area was identified during 2005-2007 within the following gps coordinates land ward to shore:

N46 42.657' W95 56.884'
N46 42.672' W95 56.861'
N46 42.698' W95 56.852'
N46 42.715' W95 56.802'
N46 42.720' W95 56.765'
N46 42.723' W95 56.685'

Curlyleaf pondweed within this area is greatly diminished and a slight easterly 2008 adjustment to this areas perimeter is as follows:

N46 42.657' W95 56.884' [Deleted coordinate](#)
N46 42.672' W95 56.861'
N46 42.698' W95 56.852'
N46 42.715' W95 56.802'
N46 42.720' W95 56.765'
N46 42.723' W95 56.685'
N46 42.691' W95 56.629' [Additional coordinate](#)

The maximum water depth for this area is about ten feet and the acreage remains at 6.92 acres.

Area D: This area is the channel between Pelican and Little Pelican Lakes and contained approximately 3.75 acres of curlyleaf pondweed during 2005 and 2006.

A very significant and dramatic reduction of curlyleaf pondweed was also observed during 2007 and 2008 within this area ([see photo 8](#)) compared to 2005 ([see photo 9](#)), note the white camper in the top right of the photos. **Few curlyleaf pondweed plants were identified within this area during 2008 and this area should be considered for omission from treatment during 2009. The absence or presence of curlyleaf pondweed within this area during 2009 will be a determining factor.**

Area E: This area is located within Bass Lake, is approximately 1.6 acres in size and defined as follows: beginning at N46 40.92'9 W96 00.634' ([see photo 6](#)) to N46 40.968' W96 00.751' ([see photo 7](#)). The lake ward perimeter is the eleven foot depth contour and the land ward perimeter is to within approximately twenty-five feet of shore.

Discussion of Areas A, A2, B, B1, C, D and E

Goals of the curlyleaf pondweed herbicide control efforts include:

- 1) Minimization of floating and drifting cut and fragmented curlyleaf pondweed plants which will inevitably be spread throughout the lakes and transported to noninfested lakes
- 2) Prevention of the development and maturity of turions
- 3) Prevention of matting curlyleaf pondweed on the water's surface. This prevention will improve recreational activities and increase lake user safety
- 4) Allowance of the native plant community to become reestablished in places where they are currently being displaced by curlyleaf pondweed

It is recommended to budget for a total of approximately 31.23 acres of curlyleaf pondweed during May of 2009. There may be a significant reduction of this acreage during 2009. Due to 2008 weather conditions it is wise to not make a 2009 treatment acreage determination at this time but only following the 2009 pretreatment survey. Continued treatments and surveys are recommended for future years.

Areas A, A2, B, B1, C, D and E had very noticeable reductions in the presence of curlyleaf pondweed again during 2008. A Minnesota Department of Natural Resources (MN DNR) *permit to destroy aquatic vegetation* must be obtained yearly before the application of herbicide is allowed. All property owners that are adjacent to the treatment areas must provide written herbicide application authorization before the MN DNR will issue a permit. The 2006 property owners have provided written three year treatment authorization, only new property owner authorization will be required for 2009.

Property owners within the treatment areas were asked to keep their docks and boat lifts out of the lake until after the 2008 treatment was provided. The excellent treatment results during 2008 were obtained in part by their cooperation and it is highly recommended to continue this practice during every treatment year.

Summary/Discussion

One curlyleaf pondweed survey was performed within areas of Pelican, Little Pelican and Bass Lakes during mid May 2008. Treatment of 31.23 acres of curlyleaf pondweed was performed on June 4, 2008 within the surveyed areas. All of the areas were post treatment surveyed during middle June 2008 and excellent control results were achieved (no curlyleaf pondweed was identified within any of the treatment areas). There is no single contributing factor to this programs exceptional success. Participation by property owners, Lake Improvement District supporters, Lake Improvement District Board Persons, Minnesota Department of Natural Resources personnel and others have all contributed successfully. Continued surveying and herbicidal treatments are recommended in order to keep this exotic aquatic plant managed within Bass and Pelican Lakes. Eradication of this exotic species is not likely within any body of water but continued management practices can keep detrimental effects of this plant to a minimum.



PHOTO 1

Southmost perimeter of Area A
N46 41.850' W96 04.701'



Area A2

Curlyleaf Pondweed Identified 2007









PHOTO 6

Bass Lake
East Boundary
N46 40.929' W96 00.634'

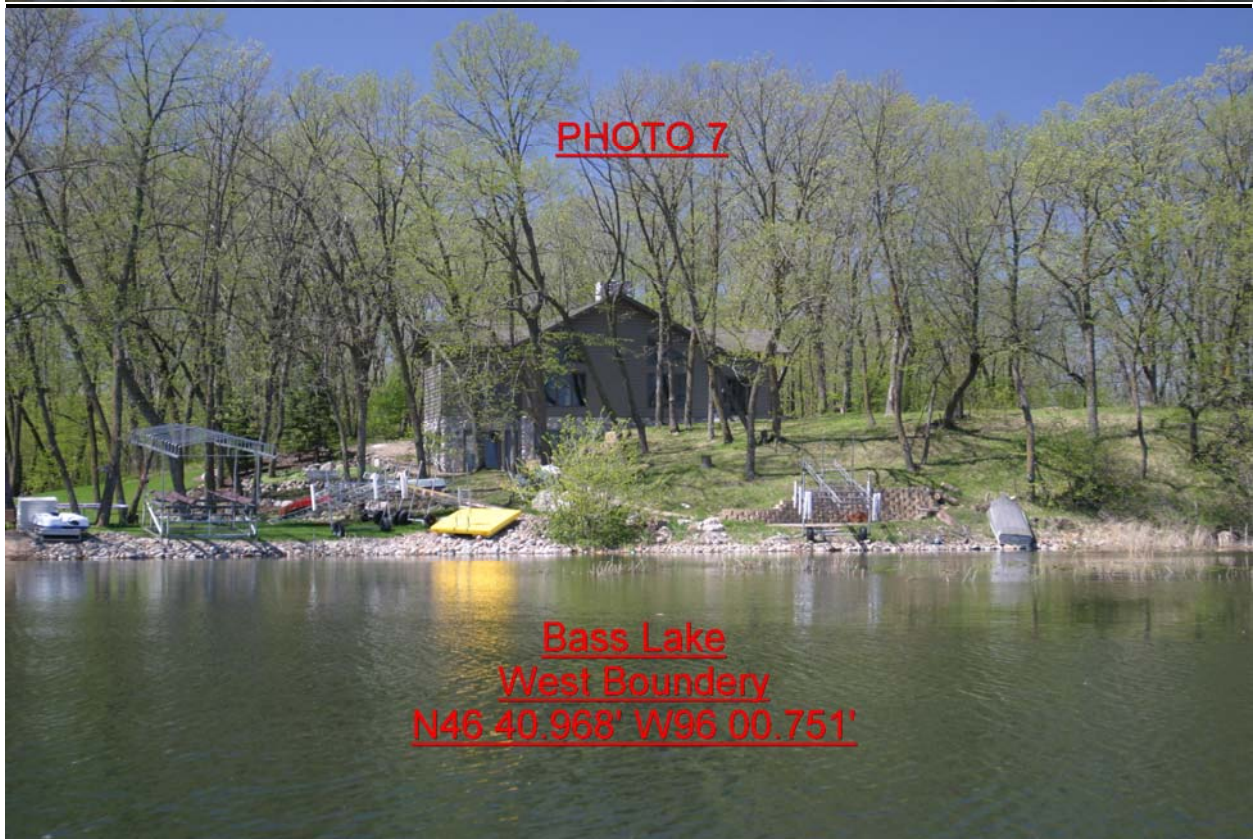


PHOTO 7

Bass Lake
West Boundary
N46 40.968' W96 00.751'



PHOTO 8

River Between Pelican
and Little Pelican Lakes
June 2007

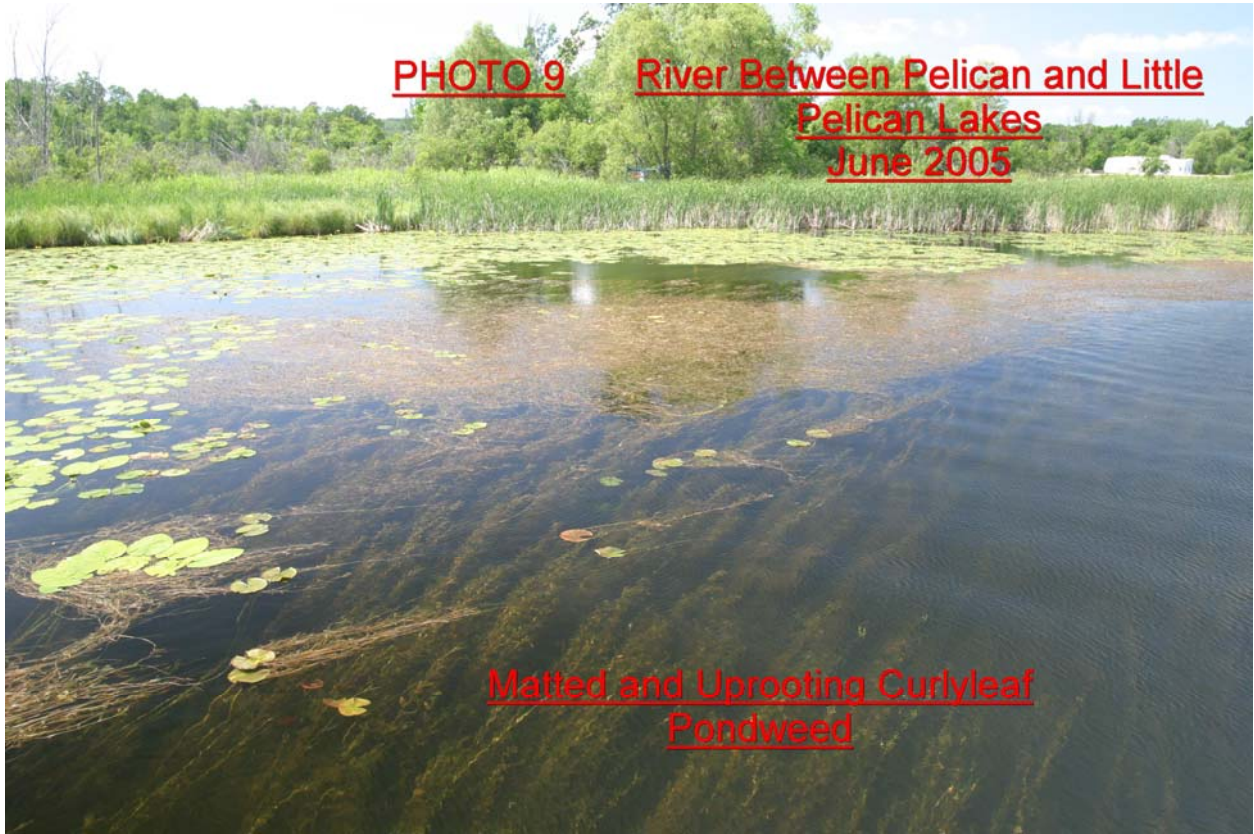


PHOTO 9

River Between Pelican and Little
Pelican Lakes
June 2005

Matted and Uprooting Curlyleaf
Pondweed