

SUMMARY OF EURASIAN WATER MILFOIL ACTIVITIES
for the
CLOVERLEAF LAKES
SHAWANO COUNTY, WISCONSIN
Grant No. ALPT-004-04



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Summary

The Cloverleaf Lakes (Grass Pine and Round Lakes), Shawano County, Wisconsin undertook a 3 year Eurasian Water Milfoil (EWM) control program in 2004. With the Town of Belle Plaine as its sponsor, the group sought and received funding from the Wisconsin Department of Natural Resources (DNR) Lake Management Planning Grant Program. This program was part of a combined effort of pre-treatment and post-treatment surveys, treatment of EWM, boat launch observation, and a Rapid Response Program to address Curly-Leaf Pondweed.

Pre-survey of the Cloverleaf Lakes in 2004 indicated 68 acres of EWM in Grass and Pine Lakes.

Selective treatment with Navigate (a granular form of 2,4-D) for EWM took place in May 2004, 2005, and 2006 to treat the remaining EWM. Visual observations, marking buoys, GPS locators, and commercial granule spreaders were used to perform the treatment.

Post-treatment EWM surveys were conducted at least 30 days after treatment. Surveys indicated mainly lower plant acreage and density, with some spread of EWM to the adjoining Round Lake.

In 2005 some EWM beds were also managed with SCUBA cutting. This method was very labor intensive, but appeared to be effective.

Acreage of EWM was reduced from an initial 68 acres to what is estimated to be 15 acres during this 3 year program. Native species appear to be viable and overtaking areas previously occupied by solely EWM.

It is recommended that the program be extended for another 3 year period and coupled with further boat launch observations and other exotic species management.

Sensitive Areas

In 2003 the DNR performed a "Sensitive Area Survey" for the Cloverleaf Lakes. Over 25 acres of Grass, Pine, and Round Lakes were determined to be Sensitive Areas (Figure 2). Sensitive areas are those that might provide unique and/or critical ecological habitat. These areas are mainly undisturbed shoreline areas.

Project Goals

The goal is to reduce the total acreage of EWM by 50% annually in areas with established native plants. In dense stands of only EWM, the goal is to reduce overall density of EWM by 50% annually while maintaining or increasing native aquatic plant populations.

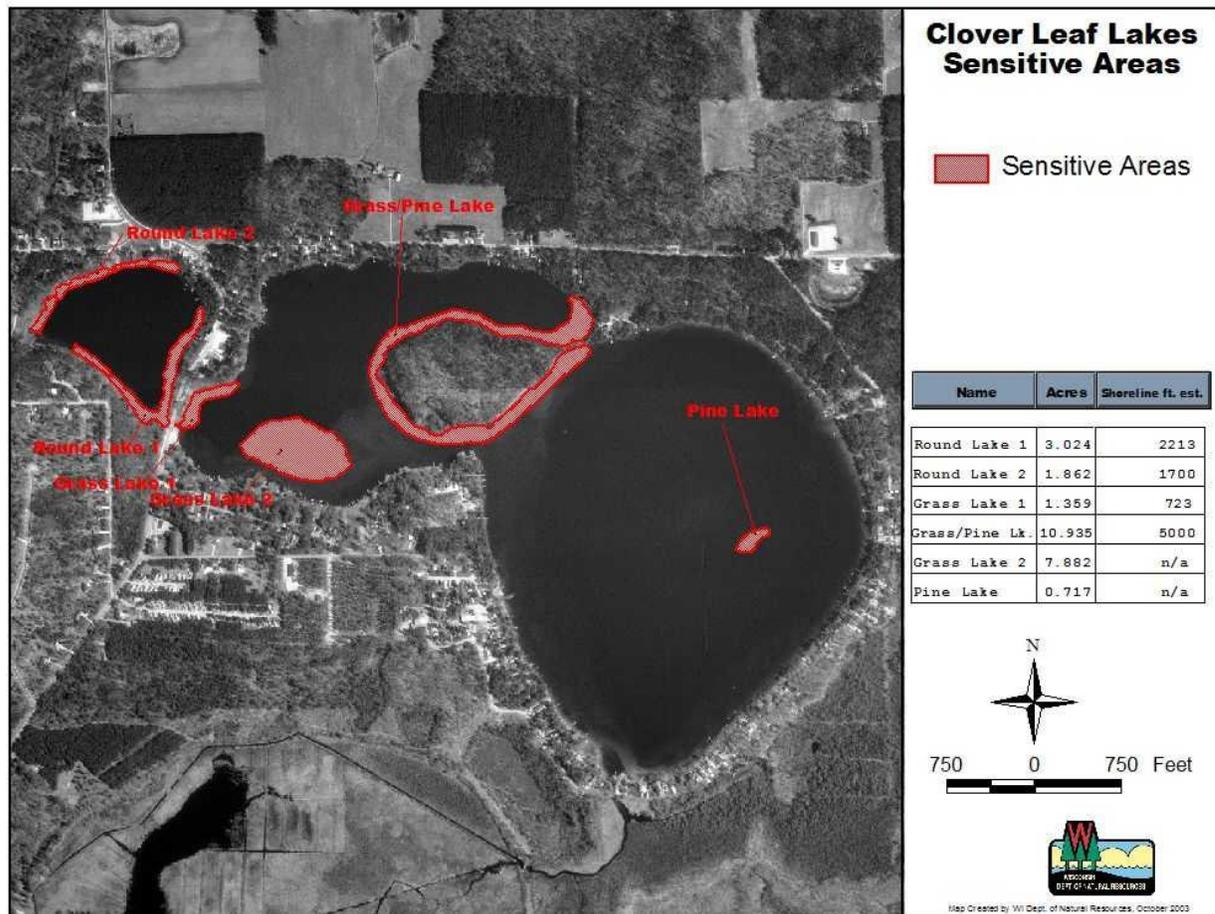


Figure 2. WDNR Designated Sensitive Areas, Cloverleaf Lakes, Shawano County, Wisconsin.

Methods

Aquatic Plant Survey

Aquatic plants on the Cloverleaf Lakes were surveyed prior to and at least 30 days after treatment in each of 2004, 2005, and 2006. Observations were made throughout the littoral zones of Grass, Pine, and Round Lakes on relatively clear, calm days with good water visibility.

SCUBA, rakes, and underwater cameras were used in determining the presence or absence of EWM.

Aquatic Plant Treatment

Selective treatment of EWM with granular 2,4-D (Navigate) took place in May of each year 2004 to 2006. Visual observations, marking buoys, GPS locators, and commercial granule spreaders were used to perform the treatment. Treatment took place on Grass, Pine, and Round Lakes.

2004 Treatment

In 2004 68 acres of EWM were treated in Grass and Pine Lakes (Figure 3). All areas were treated at a rate of 100 pounds of Navigate per acre.

41 acres were treated in 2005; and 20 acres of EWM were treated in 2006 with Navigate (granular 2,4-D).

2005 Treatment

41 acres of EWM were treated in Grass, Pine, and Round Lakes. All acreage was treated with 100 pounds of Navigate per acre.

2006 Treatment

2006 marked the first year that some of the EWM was treated at a higher rate. 15 acres were treated at 150 pounds Navigate per acre (suspected hybridized EWM areas) and 5 acres were treated at 100 pounds Navigate per acre.

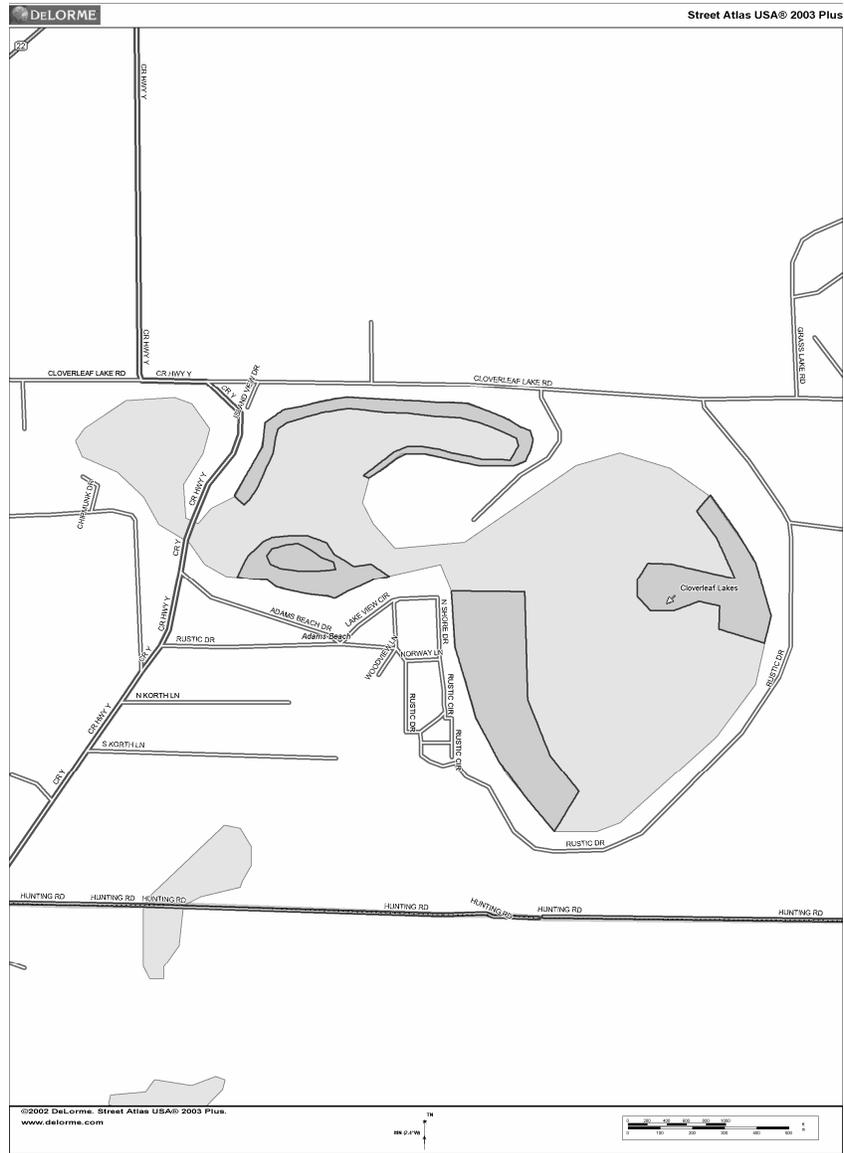


Figure 3. 2004 EWM Treatment Area, Cloverleaf Lakes, Shawano County, Wisconsin.

Results and Discussion

Remaining EWM

A EWM survey completed in September 2006 indicated approximately 15 acres of EWM remaining in the Cloverleaf Lakes. Much of the EWM was individual plants as opposed to dense beds which were present at many locations (Grass and Pine Lakes). Round Lake developed EWM growth areas along the south shore which were not observed in the past.

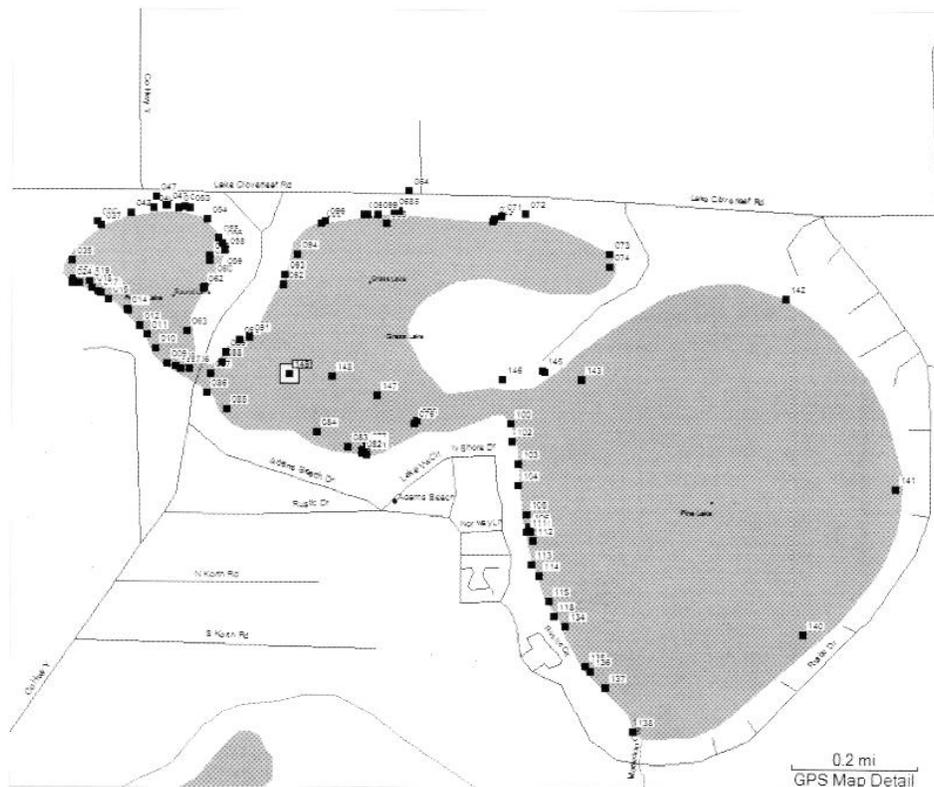


Figure 6. September, 2006 EWM Observations (Post Treatment Survey) Cloverleaf Lakes, Shawano County, Wisconsin.

Conclusion and Recommendations

Future EWM Management

The Navigate treatment program appears to be effective for the Cloverleaf Lakes. Acreage of EWM was reduced from an initial 68 acres to what is estimated to be 15 acres during this 3 year program.

It is recommended that the program be extended for another 3 year period and coupled with further boat launch observations and other exotic species management.