

## Wisconsin Department of Natural Resources SWIMS Project Summary

### General Project Information

**Project ID:** LPL-060 (4016-1)  
**Name:** CLOVER LEAF LAKES PROTECTIVE ASSOCIATION: Pine Lake Management Planning  
**Type:** Lakes Grant  
**Subtype:** Large Scale Lake Planning  
**Status:** COMPLETE  
**Start Date:** 04/02/1991  
**End Date:** 06/30/1993  
**Purpose:** 1) Review existing lake data to define data gathering needs; 2) Initiate public involvement/information program which may include workshops, public meetings, newsletters, fact sheet, local media.3) Conduct water quality monitoring at one site as specified in the application. 4) Collect and analyze a winter sample as specified in the application. 5) Conduct a macrophyte survey as described in the application.6) Conduct a literature search on methods to control swimmers itch. 7) Prepare base maps of the lake and watershed including land use information.7) Prepare a final lake management plan that includes summary of data gathered, public involvement activities, aquatic plant survey, base and land use maps, and management recommendations.

**Objective:**  
**Comments:**  
**Outcome:**  
**Study Design:**  
**QA Measures:**

### People

Name	Role	Status	Start Date	End Date	Organization	Comments
Cloverleaf Lakes Protective A	GRANT_RECIP	ACTIVE	04/02/1991	06/30/1993	Cloverleaf Lakes Protective Association	

### Project Statuses

Date	Reported By	Status	Comments
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### Actions

Action	Detailed Description	Start	End Date	Status
Monitor Water Quality or Sediment	10100510	04/02/1991		PROPOSED
Informational Meetings	10100510	04/02/1991		PROPOSED
Aquatic Plant Monitoring or Survey		04/02/1991	06/30/1993	PROPOSED
Hold Workshops	10100510	04/02/1991		PROPOSED
Watershed Mapping or Assessment		04/02/1991	06/30/1993	PROPOSED
Lake Management Plan Development		04/02/1991	06/30/1993	PROPOSED
Develop/Distribute Newsletter	10100510	04/02/1991		PROPOSED

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Action	Detailed Description	Start	End Date	Status
Grant Awarded	1) Review existing lake data to define data gathering needs; 2) Initiate public involvement/information program which may include workshops, public meetings, newsletters, fact sheet, local media.3) Conduct water quality monitoring at one site as specified in the application. 4) Collect and analyze a winter sample as specified in the application. 5) Conduct a macrophyte survey as described in the application.6) Conduct a literature search on methods to control swimmers itch. 7) Prepare base maps of the lake and watershed including land use information.7) Prepare a final lake management plan that includes summary of data gathered, public involvement activities, aquatic plant survey, base and land use maps, and management recommendations.	04/02/1991		COMPLETE
Data analysis, report production	10100510	04/02/1991		PROPOSED

### Monitoring Stations

Station ID	Name	Comments
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### Assessment Units

WBIC	Segment	Local Name	Official Name
299000	1	Un Spring	Cloverleaf Chain
299100	1	Pine Lake (Cloverleaf Chain)	Pine Lake

### Lab Account Codes

Account Code	Description	Start Date	End Date
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### Forms

Form Code	Form Name
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### Methods

Method Code	Description
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### Fieldwork Events

Start Date	Status	Field ID	Station ID	Station Name
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### Documents

Title	Description	Author	Published	Comments
Lake Management Plan-Pine Lake - Shawano County, Wisconsin	Pine Lake, Shawano County, is the lower, largest, and shallowest lake of a three lake "chain" known as the Cloverleaf Lakes. Groundwater is a primary source of inflow to the chain. This, combined with a primarily wooded watershed, results in a relatively low potential for sediment and nutrient input. Water quality was fair to good for all parameters measured; transparency, nutrients and	IPS Environmental and Analytical Services	06/30/1992	

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Title	Description	Author	Published	Comments
	<p>chlorophyll ~ indicated a mesotrophic status. Pine Lake stratified during summer and exhibited high nutrient levels and near-anoxic conditions near bottom in deeper portions of the basin.</p> <p>Macrophyte growth in Pine Lake, in general contrast to the upper lakes in the chain, occurred across a rather extensive littoral zone. Bushy pondweed (<i>Najas</i> sp.), a plant known to reach nuisance levels, and water celery (<i>Vallisneria americana</i>), a relatively desirable plant from the viewpoint of habitat provision, were most common. Water milfoil, which may include Eurasian Milfoil, an exotic species was also relatively common. Macrophyte compositional differences from that observed in adjacent Grass Lake may be related to substrate differences, e.g., generally harder substrate in Pine Lake. Overall management objectives for Pine Lake should emphasize protection and improvement/enhancement of this already high quality resource.</p> <ul style="list-style-type: none"> <li>- Regular water quality monitoring should be continued track water quality trends. Event monitoring should sources of overland drainage (parking areas, roads). Self-Help Secchi monitoring should be continued.</li> <li>- Riparian land owner education and diligence with respect to runoff control, yard waste and fertilizer management should be encouraged to minimize sediment and nutrient input to the lake. Runoff or erosion prone areas should be identified and protective measures implemented where possible.</li> <li>- Macrophyte management in near shore areas should be limited to manual harvest (if necessary or desired) to improve aesthetics and minimize build-up of organic sediments. Water milfoil species should be determined; Eurasian Milfoil, if present, should be selectively removed.</li> <li>- Macrophyte management should be limited to localized nuisance species control and should emphasize creation of edge and protection of desirable species assemblages.</li> </ul>			

**Budget**

Combined Budgets:

Combined SLOH:

Combined Total:

**Funding**

April 7, 2020

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Organization	Source	Type	Amount	Start Date	End Date
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