

## Wisconsin Department of Natural Resources SWIMS Project Summary

### General Project Information

**Project ID:** LPL-054 (4012-1)

**Name:** CHAIN O'LAKES PROTECTIVE ASSOCIATION: Little Waupaca Chain O Lakes Management Planning

**Type:** Lakes Grant

**Subtype:** Large Scale Lake Planning

**Status:** COMPLETE

**Start Date:** 4/1/1991

**End Date:** 6/30/1994

**Purpose:** 1) Review existing data on Little Chain O'Lakes (Knight, Orlando, Pope, Marl, and Manomin Lakes) and watershed to define data gaps and assess data gathering needs.2) Initiate public involvement/information program which may include workshops, public meetings, newsletters, local media, fact sheet. 2) Monitor water quality at sites as described in application.4) Initiate development of water quality maintenance program (landowner based program investigating methods to protect the Little Chain's high water quality.5) Prepare base maps of lakes and watershed. Map land use including soil disturbing uses, nonpoint pollution problems, and environmentally sensitive areas.6) Final lake management plan will include summary of data gathered, public involvement activities, 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
IPS Environmental and Analytic	OTHER	COMPLETE	4/1/1991	6/30/1994	IPS Environmental and Analytical Services	
Waupaca Chain O Lakes Associat	GRANT_RECIPIENT	ACTIVE	4/1/1991	6/30/1994	Waupaca Chain O Lakes Association	

### Project Statuses

Date	Reported By	Status	Comments
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### Actions

Action	Detailed Description	Start Date	End Date	Status
Data analysis, report production	10100660	4/1/1991		PROPOSED
Hold Workshops	10100660	4/1/1991		PROPOSED
Monitor Water Quality or Sediment		4/1/1991	6/30/1994	PROPOSED
Watershed Mapping or Assessment	10100660	4/1/1991		PROPOSED

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Grant Awarded	1) Review existing data on Little Chain O'Lakes (Knight, Orlando, Pope, Marl, and Manomin Lakes) and watershed to define data gaps and assess data gathering needs.2) Initiate public involvement/information program which may include workshops, public meetings, newsletters, local media, fact sheet. 2) Monitor water quality at sites as described in application.4) Initiate development of water quality maintenance program (landowner based program investigating methods to protect the Little Chain's high water quality.5) Prepare base maps of lakes and watershed. Map land use including soil disturbing uses, nonpoint pollution problems, and environmentally sensitive areas.6) Final lake management plan will include summary of data gathered, public involvement activities, base and land use maps, and management recommendations.	4/1/1991		COMPLETE
Lake Management Plan Development		4/1/1991	6/30/1994	PROPOSED

### Monitoring Stations

Station ID	Name	Comments
693095	Knight Lake - Deep Hole	
693099	Manomin Lake - Deep Hole	
693098	Marl Lake - Deep Hole	
693096	Orlando Lake - Deep Hole	
693097	Pope Lake - Deep Hole	

### Assessment Units

WBIC	Segment	Local Name	Official Name
261200	1	Long Lake	Long Lake
262600	1	Orlando Lake	Lake Orlando
262700	1	Knight Lake	Knight Lake
262800	1	Manomin Lake	Manomin Lake
262900	1	Pope Lake	Pope Lake
264100	1	Marl Lake	Marl 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	Method Description
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## Wisconsin Department of Natural Resources SWIMS Project Summary

Fieldwork Events				
Start Date	Status	Field ID	Station ID	Station Name
2/4/1992	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
2/4/1992	COMPLETE	1402S	693097	Pope Lake - Deep Hole
2/4/1992	COMPLETE	1403S	693098	Marl Lake - Deep Hole
2/4/1992	COMPLETE	1404S	693095	Knight Lake - Deep Hole
2/4/1992	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
9/23/1992 10:28	COMPLETE	1403S	693098	Marl Lake - Deep Hole
9/23/1992 10:40	COMPLETE	1402S	693097	Pope Lake - Deep Hole
9/23/1992 10:53	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
9/23/1992 11:07	COMPLETE	1404S	693095	Knight Lake - Deep Hole
2/3/1993 10:58	COMPLETE	1403S	693098	Marl Lake - Deep Hole
2/3/1993 11:18	COMPLETE	1402S	693097	Pope Lake - Deep Hole
2/3/1993 11:55	COMPLETE	1404S	693095	Knight Lake - Deep Hole
2/3/1993 12:17	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
2/3/1993 12:44	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
5/18/1993 7:51	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
5/18/1993 8:16	COMPLETE	1402S	693097	Pope Lake - Deep Hole
5/18/1993 8:30	COMPLETE	1403S	693098	Marl Lake - Deep Hole
5/18/1993 9:06	COMPLETE	1404S	693095	Knight Lake - Deep Hole
5/20/1993 13:10	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
8/17/1993 7:31	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
8/17/1993 7:48	COMPLETE	1402S	693097	Pope Lake - Deep Hole
8/17/1993 8:08	COMPLETE	1403S	693098	Marl Lake - Deep Hole
8/17/1993 8:48	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
10/6/1993 13:08	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
10/6/1993 13:18	COMPLETE	1402S	693097	Pope Lake - Deep Hole
10/6/1993 13:27	COMPLETE	1403S	693098	Marl Lake - Deep Hole
10/6/1993 13:45	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
2/15/1994 8:30	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
2/15/1994 10:21	COMPLETE	1402S	693097	Pope Lake - Deep Hole
2/15/1994 11:00	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
2/15/1994 11:53	COMPLETE	1403S	693098	Marl Lake - Deep Hole
5/2/1994 9:25	COMPLETE	1403S	693098	Marl Lake - Deep Hole
5/2/1994 9:32	COMPLETE	1402S	693097	Pope Lake - Deep Hole

## Wisconsin Department of Natural Resources SWIMS Project Summary

5/2/1994 9:46	COMPLETE	1401S	693099	Manomin Lake - Deep Hole
5/2/1994 10:01	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
8/1/1994 9:08	COMPLETE	1403S	693099	Manomin Lake - Deep Hole
8/1/1994 9:25	COMPLETE	1402S	693097	Pope Lake - Deep Hole
8/1/1994 9:40	COMPLETE	1401S	693098	Marl Lake - Deep Hole
8/1/1994 10:00	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
9/21/1994	COMPLETE	1405S	693096	Orlando Lake - Deep Hole
9/21/1994 7:45	COMPLETE	1403S	693099	Manomin Lake - Deep Hole
9/21/1994 8:00	COMPLETE	1402S	693097	Pope Lake - Deep Hole
9/21/1994 8:20	COMPLETE	1401S	693098	Marl Lake - Deep Hole

### Documents

Title	Description	Author	Published	Comments
Phase II - Little Chain O' Lakes Management Plan - Waupaca County, Wisconsin	The Little Chain project group consists of Marl, Pope, Manomin, Knight and Orlando Lakes of the Chain O' Lakes, a group of 22 mostly interconnected relatively small lakes in Waupaca County, Wisconsin. Water quality is good to very good and related to substantial groundwater inflow. Water quality, along with the Chain's proximity to population centers, contribute to highly developed shoreline areas (many permanent residential) and periodic high to excessive non-resident recreational use. An initial resource assessment was made in 1992 (Phase I Chain O' Lakes Management Plan); this document supplements the 1992 report with Phase II efforts toward development of a comprehensive lake management plan. The Chain O' Lakes watershed, primarily agricultural but with significant forested and wetland areas, is a subwatershed of the Tomorrow/Waupaca River basin which has recently been granted Priority Watershed Project Status. Variable, but generally low groundwater nitrate levels were observed in the Chain subwatershed during the appraisal phase of the Priority Watershed Project. Overland flow nutrient and sediment inputs were estimated to be lower than expected, but field estimates for nutrients were substantially higher. Lake modeling for some Chain lakes	IPS Environmental and Analytical Services	12/31/1995	

## Wisconsin Department of Natural Resources SWIMS Project Summary

indicated a natural process of phosphorus removal by marl precipitation. Little Chain water quality monitoring during Phases I and II indicated in-lake nutrient levels below those typical of Wisconsin lakes overall and of lakes in the Chain O' Lakes' ecoregion. Hartman's Creek inflow, however, appeared to slightly elevate nutrient levels in the more downstream Little Chain lakes. The Little Chain is less developed than the other Chain O' Lakes project groups and recreational use survey results suggested that the opinion of the Little Chain user group differ from those of Chain O' Lakes overall and various resident group users. Results indicated periodic excessive use during summer weekends or holidays with perceived safety problems and diminished recreational enjoyment of the resource related primarily to non-resident or commercial watercraft. Residents fully agreed there is adequate public boater access, disagreed with the establishment of a public park or restrooms, and were nearly evenly divided on establishment of a public swimming beach. A majority of Little Chain residents agreed additional water use regulations need to be enacted and enforced and also agreed there should be limits set on the number of watercraft on the Chain. Purple loosestrife, an exotic potentially nuisance plant, was not present in the Little Chain, but is established in nearby Chain O' Lakes project groups. Water quality protection and water use conflict minimization are priority management objectives for the Little Chain and all Chain O' Lakes residents. Specific recommendations for the Little Chain include private well testing for nitrates and/or pesticides, more event sampling (coordinated with flow and rainfall monitoring) and purple loosestrife surveillance. Other recommendations are applicable to the Little and other Chain project groups and emphasize continued focus and expanded involvement (designated Chain O' Lakes Property Owners

## Wisconsin Department of Natural Resources SWIMS Project Summary

	Association individuals or committees) in watershed-wide surface water and groundwater quality issues, use management, and exotic species control. These recommendations, which include trend monitoring for water quality, are designed to identify potential problem areas or conflicts before they become widespread or severe.			
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### Budget

**Combined Budgets:**

**Combined WSLH:**

**Combined Total:**                    \$0.00

### Funding

Organization	Source	Type	Amount	Start Date	End Date
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