

Wisconsin Department of Natural Resources  
SWIMS Project Summary

General Project Information

**Project ID:** LPL-053 (4008-1)

**Name:** CHAIN O'LAKES PROTECTIVE ASSOCIATION: East 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 East Chain O Lakes (Dake and Miner Lakes) and watershed to define data gaps and assess data gathering needs.2) Initiate public involvement/information program which may include public meetings, workshops, local media, newsletters, fact sheets. 3) Perform water quality monitoring as described in application.4) Conduct macrophyte survey during late spring and mid to late summer. 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 |
|------|-------------|--------|----------|
|------|-------------|--------|----------|

Actions

| Action                             | Detailed Description | Start Date | End Date  | Status   |
|------------------------------------|----------------------|------------|-----------|----------|
| Monitor Water Quality or Sediment  |                      | 4/1/1991   | 6/30/1994 | PROPOSED |
| Aquatic Plant Monitoring or Survey |                      | 4/1/1991   | 6/30/1994 | PROPOSED |
| Develop/Distribute Newsletter      | 10100662             | 4/1/1991   |           | PROPOSED |
| Watershed Mapping or Assessment    | 10100662             | 4/1/1991   |           | PROPOSED |
| Lake Management Plan Development   |                      | 4/1/1991   | 6/30/1994 | PROPOSED |
| Informational Meetings             | 10100662             | 4/1/1991   |           | PROPOSED |
| Data analysis, report production   | 10100662             | 4/1/1991   |           | PROPOSED |
| Hold Workshops                     | 10100662             | 4/1/1991   |           | PROPOSED |

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|               |   |          |  |          |
|---------------|---|----------|--|----------|
| Grant Awarded | 1) Review existing data on East Chain O Lakes (Dake and Miner Lakes) and watershed to define data gaps and assess data gathering needs.2) Initiate public involvement/information program which may include public meetings, workshops, local media, newsletters, fact sheets. 3) Perform water quality monitoring as described in application.4) Conduct macrophyte survey during late spring and mid to late summer. 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 |
|---------------|---|----------|--|----------|

Monitoring Stations

| Station ID | Name                                | Comments |
|------------|-------------------------------------|----------|
| 693093     | Dake Lake - Deep Hole- Waupaca Co   |          |
| 693094     | Miner Lake - Deep Hole - Waupaca Co |          |

Assessment Units

| WBIC   | Segment | Local Name        | Official Name |
|--------|---------|-------------------|---------------|
| 261200 | 1       | Long Lake         | Long Lake     |
| 264700 | 1       | Dake Lake (Chain) | Dake Lake     |
| 264800 | 1       | Miner Lake        | Miner Lake    |

Lab Account Codes

| Account Code | Description | Start Date | End Date |
|--------------|-------------|------------|----------|
|--------------|-------------|------------|----------|

Forms

| Form Code | Form Name |
|-----------|-----------|
|-----------|-----------|

Methods

| Method Code | Method Description |
|-------------|--------------------|
|-------------|--------------------|

Fieldwork Events

| Start Date      | Status   | Field ID | Station ID | Station Name                        |
|-----------------|----------|----------|------------|-------------------------------------|
| 9/22/1992       | COMPLETE | 1302B    | 693094     | Miner Lake - Deep Hole - Waupaca Co |
| 9/22/1992 9:18  | COMPLETE | 1301S    | 693093     | Dake Lake - Deep Hole- Waupaca Co   |
| 9/22/1992 9:35  | COMPLETE | 1302S    | 693094     | Miner Lake - Deep Hole - Waupaca Co |
| 2/3/1993 9:53   | COMPLETE | 1302S    | 693094     | Miner Lake - Deep Hole - Waupaca Co |
| 2/3/1993 10:08  | COMPLETE | 1301S    | 693093     | Dake Lake - Deep Hole- Waupaca Co   |
| 5/19/1993 10:14 | COMPLETE | 1301S    | 693093     | Dake Lake - Deep Hole- Waupaca Co   |

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|                 |          |       |        |                                     |
|-----------------|----------|-------|--------|-------------------------------------|
| 5/19/1993 10:17 | COMPLETE | 1302S | 693094 | Miner Lake - Deep Hole - Waupaca Co |
| 5/19/1993 10:41 | COMPLETE | 1301B | 693093 | Dake Lake - Deep Hole- Waupaca Co   |
| 8/16/1993 10:41 | COMPLETE | 1301S | 693093 | Dake Lake - Deep Hole- Waupaca Co   |
| 8/16/1993 10:57 | COMPLETE | 1302S | 693094 | Miner Lake - Deep Hole - Waupaca Co |
| 10/4/1993 11:40 | COMPLETE | 1301S | 693093 | Dake Lake - Deep Hole- Waupaca Co   |
| 10/4/1993 11:55 | COMPLETE | 1302S | 693094 | Miner Lake - Deep Hole - Waupaca Co |
| 1/24/1994 7:44  | COMPLETE | 1301S | 693093 | Dake Lake - Deep Hole- Waupaca Co   |
| 1/24/1994 8:54  | COMPLETE | 1302S | 693094 | Miner Lake - Deep Hole - Waupaca Co |
| 5/3/1994 10:00  | COMPLETE | 1302S | 693094 | Miner Lake - Deep Hole - Waupaca Co |
| 5/3/1994 10:15  | COMPLETE | 1301S | 693093 | Dake Lake - Deep Hole- Waupaca Co   |
| 8/3/1994 10:30  | COMPLETE | 1301S | 693093 | Dake Lake - Deep Hole- Waupaca Co   |
| 8/3/1994 10:40  | COMPLETE | 1302S | 693094 | Miner Lake - Deep Hole - Waupaca Co |
| 9/21/1994 9:25  | COMPLETE | 1302S | 693094 | Miner Lake - Deep Hole - Waupaca Co |
| 9/21/1994 9:40  | COMPLETE | 1301S | 693093 | Dake Lake - Deep Hole- Waupaca Co   |

Documents

| Title  | Description  | Author                                    | Published  | Comments |
|--|--|---|------------|----------|
| Phase II - East Chain O' Lakes Management Plan - Waupaca County, Wisconsin | The East Chain project group consists of Miner and Dake 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 Plans); 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 | IPS Environmental and Analytical Services | 12/31/1995 |          |

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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. Modeling for some Chain lakes indicated a natural process of phosphorus removal by marl precipitation. East Chain water quality monitoring during Phases I and II indicated in-lake nutrient levels below those expected for the region. Surface total nitrogen levels in Miner and Dake Lakes were relatively lower than in most other Chain O' Lakes. Differences between the East Chain lakes, except those related to water column stratification in Miner Lake, were small. East Chain recreational use survey results were generally similar to those of the Chain O' Lakes overall and various resident user groups. 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 watercraft. Water safety enforcement was considered adequate at all times, slightly less so during periods of peak use, and no clear consensus was evident regarding the need for additional regulation. Residents agreed there was adequate access, disagreed with the need for a public park or swimming beach, and were slightly in favor of more water accessible public restrooms. Purple loosestrife, an exotic potentially nuisance plant, was not present in the East 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 East Chain and all Chain O' Lakes residents. Specific recommendations for the East Chain include private well testing for nitrates and pesticides, event sampling where appropriate to assess overland sediment and nutrient inflows, protection/maintenance of existing aquatic plant beds, monitoring for

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purple loosestrife establishment, and use management emphasis on the sport fishery or other more passive recreational uses. Other recommendations are applicable to the East and other Chain project groups and emphasize continued focus and expanded involvement (designated Chain O' Lakes Property Owners 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.

Budget

Combined Budgets:  
Combined WSLH:  
Combined Total: \$0.00

Funding

| Organization | Source | Type | Amount | Start Date | End Date |
|--------------|--------|------|--------|------------|----------|
|--------------|--------|------|--------|------------|----------|