

Lake Status

Overall Strategy: Routine Watershed Management

Water Quality Rating: C: Secchi – 3.6 ft;

TP (2007) – 24 µg/L

Impairment: Not Impaired

Water Quality Trend: Secchi – N/A (shallow);

TP – No Trend

Shoreland Classification: Natural Environment

Subwatershed Land Cover: 14% developed, 15% forests and woodlanes, 8% grassland/shrubland/sparse vegetation, 12% lakes and open water wetlands, 34% planted or cultivated, 17% wetlands.



Resource Goals

Short Term Goals – Year 2015

- Achieve a water quality rating of at least B.
- Maintain a five-year mean summer phosphorus concentration at or below 35 µg/l ± 4%.
- Achieve a mean summer secchi depth no less than 4.5 ft.
- Encourage an active Lake Association for teaming on lake management and education.

Long Range Goals - Year 2020

- Achieve a water quality rating of at least B.
- Maintain a five-year mean summer phosphorus concentration at or below 35 µg/l ± 4%.
- Achieve a mean summer secchi depth no less than 4.5 ft.
- Conduct watershed management in consideration of the area’s statewide importance to the Blanding’s turtle.

DNR Fisheries Lake Management Plan: None

BASIC FACTS

| | |
|----------------------------|--------------|
| DNR ID | 82001700 |
| Section | 18 |
| Township | 30 |
| Range | 20 |
| Lake Area | 63 acres |
| Subwatershed Area | 454 acres |
| Outlet Elevation | 883.1 |
| Low Water Level | 882.43 ('07) |
| High Water Level | 884.33 ('97) |
| Ordinary High Water | 883.10 |
| 100-Year Flood Elev | 886.8 |
| | (District) |
| Greatest Depth | 6 ft. |

Control Structures:

Outlet culvert with Clemson leveler

Fish Species:

Sunfish

Aquatic Nuisance Species:

None

CMSCWD References:

WCD Water Monitoring Report ('07 & '08)

DNR Lake Water Level Report

CMWD Silver Creek Corridor

Management Plan ('04)

Implementation

Operational Priorities

Routine Watershed Management

Education

Routine Watershed Education Program

Regulatory

Activities impacting Carol Lake will be regulated by the watershed district through its *Rules of the District*. Regulatory efforts will be coordinated with Stillwater Township, Washington County and the Minnesota DNR, where applicable.

Projects

Current:

- Routine Watershed Water Quality Monitoring
- Routine Watershed Best Management Practices (BMP) Program
- Ongoing Monitoring of BMPs
- Permitting Program
- Culvert Clearing and Maintenance

Future/Potential:

- Replacement of Outlet Culvert
- Replacement of Clemson Leveler for Beaver control

* See 2010 Watershed Management Plan Section V, *Lake Management Plans* for additional information on District lake management activities.

Overall Assessment: Carol Lake

Carol Lake is a shallow lake with surprisingly good water quality. Carol along with upstream North Twin, South Twin, Silver and Loon lakes form the headwaters of the Silver Creek Flowage. Future development of this lake if not managed properly could result in increased phosphorus loading resulting in degradation of water quality. Carol Lake is downstream of Loon Lake and South Twin Lake which are impaired waters. Based on measured lake characteristics and land use in the lake's minor subwatershed, water quality modeling indicates that minimal protection efforts to reduce phosphorus input to the lake can help maintain its good water quality. Residents indicated that they value the opportunity the lake provides them to interact with nature. Some residents did raise a concern that the outlet culvert was keeping the lake levels higher than they historically were.

Shoreland Best Management Practices (BMPs) have been implemented in the Carol Lake watershed. In particular, the metal culvert was replaced and a Clemson Leveler was installed at the outlet to Silver Lake in conjunction with agricultural BMPs on the adjacent horse farm. The outlet is ready for replacement again and beaver activity at the outlet continues to be a regular nuisance that requires routine maintenance to keep the culvert unplugged.

Carol Lake has achieved the 2010 water quality goal of a five-year mean summer phosphorus concentration at or below 35 $\mu\text{g/l} \pm 4\%$. However, it has not yet achieved the 2010 goals of a water quality rating of 'B' and a mean summer secchi depth no less than 4.5 ft. These goals have been transferred to 2015 goals and Carol Lake is undergoing routine watershed management.

