

Lake Status

Overall Strategy: Impaired Watershed Management

Water Quality Rating: D+: Secchi – 3.1 ft.; TP – 80 µg/L

Impairment: *Aquatic recreation* due to excess nutrients in the lake.

Water Quality Trend: Secchi & TP – No Trend

Shoreland Classification: Natural Environment

Subwatershed Land Cover: 12% developed, 6% forests and woodlands, 6% grassland/shrubland/sparse vegetation, 40% lakes and open water wetlands, 9% planted or cultivated, 27% wetlands.



Resource Goals

Short Term Goals – Year 2015

- Maintain a water quality rating of at least D.
- Maintain a five-year mean summer phosphorus concentration at or below 75 µg/L ± 4%.
- Maintain a mean summer secchi depth no less than 2.5 ft.
- Establish an active Lake Association for teaming on lake management and education.
- Revise goals based on the CMSCWD Lake TMDL Study.

Long Range Goals - Year 2020

- Maintain a water quality rating of at least D.
- Achieve a five-year mean summer phosphorus concentration at or below 60 µg/L ± 4%.
- Maintain a mean summer secchi depth no less than 2.5 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	82001900
Section	19
Township	30
Range	20
Lake Area	54 acres
Subwatershed Area	140 acres
Outlet Elevation	888.3
Low Water Level	886.79 (‘97)
High Water Level	891.50 (‘95)
Ordinary High Water	888.30 ft.
100-Yr. Flood Elev	N/A
Greatest Depth	13 ft
Control Structures:	None
Fish Species:	Bullhead
Aquatic Nuisance Species:	Purple Loosestrife (1999) Curlyleaf Pondweed Reed Canary Grass
CMSCWD References:	WCD Water Monitoring Report (‘08) DNR Lake Water Level Report CMWD Silver Creek Corridor Management Plan (‘04) CMSCWD TMDL - Phase I Report (‘08)

Implementation

Operational Priorities

Impaired Watershed Management per TMDL Study Recommendations

Education

Impaired Watershed Education Program per TMDL Study Recommendations

Regulatory

Activities impacting South Twin 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:

- CMSCWD Lake TMDL Study
- Best Management Practices (BMP) Program per TMDL Study Recommendations
- Water Quality Monitoring Program per TMDL Study Recommendations
- Permitting Program

Future/Potential:

- TMDL Implementation Plan Projects
- Develop management and implement buffer restoration for the former Johnson property

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

Overall Assessment: South Twin Lake

South Twin Lake is a shallow lake with poor water quality. The lake and contributing watershed were recently annexed into the City of Stillwater. An suburban development (Millbrook) is currently being constructed along the western shore. In-lake phosphorus concentrations commonly exceed the MPCA shallow lake standard of (60µg/L), and the lake is therefore listed as impaired. In 2008 the lake did not meet the MPCA shallow lake standard of 1 m for sechi depth transparency. South Twin along with North Twin, Silver, Carol and Loon Lakes form the headwaters of the Silver Creek Flowage and a part of the Silver Creek Protective Corridor. Current and future phases of the Millbrook development could pose additional problems if not managed properly and District permit conditions are not followed. Potential stormwater discharge from future development outside (east) of the watershed district is also a concern.

Based on an Aerial Lakeshore Analysis study (1998), the greatest influence on the lake is agricultural runoff from non-point source pollution. The recommendations from that study are to develop and/or expand a vegetative buffer around the lake and to install berms to redirect stormwater away from the lake. A permanent native vegetation buffer has been established along the entire western shoreline as part of the Millbrook Development. In addition a portion of the eastern shoreline was donated to the District by former owners and a conservation easement established.

South Twin Lake is one of 9 lakes in the CMSCWD on the EPA's 303(d) list of impaired waters impaired for nutrients. Phase I of the Lake Total Maximum Daily Load (TMDL) Study is complete. The target completion date for the South Twin Lake TMDL is 2016. South Twin Lake has achieved the 2010 goals of a mean summer secchi depth of no less than 2.5 ft and a five-year mean summer phosphorus concentration at or below 175 µg/L ± 4% based on the 2008 WCD Water Monitoring Report. Maintaining this water quality are the 2015 goals. South Twin Lake's overall water quality grade is only 'D+'. Due to its nutrient impairment, South Twin Lake is undergoing impaired watershed management.

