Lake Status

**Overall Strategy:** Routine Watershed Management

**Water Quality Rating:** C: Secchi – 4.2 ft.; TP – N/A

**Impairment:** Not Impaired

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

**Shoreland Classification:** Natural Environment

**Subwatershed Land Cover:** 3% developed, 14% forests and woodlands, 75 grassland/shrubland/sparse vegetation, 10% lakes and open water wetlands, 57% planted or cultivated, 9% wetlands.

Resource Goals

**Short Term Goals – Year 2015**

- Maintain a water quality rating of at least C.
- Achieve a five-year mean summer phosphorus concentration at or below 75 $\mu$g/L ± 4%.
- Maintain a mean summer secchi depth no less than 3.5 ft.
- Maintain District’s existing good relationship with Landowner and Land Manager for possible teaming on lake management and education opportunities. Work with county parks when the watershed is incorporated into the Big Marine Regional Park.

**Long Range Goals - Year 2020**

- Maintain a water quality rating of at least C.
- Achieve a five-year mean summer phosphorus concentration at or below 60 $\mu$g/L ± 4%.
- Maintain a mean summer secchi depth no less than 3.5 ft.
- Conduct watershed management in consideration of the area’s statewide importance to the Blanding’s turtle.

**DNR Fisheries Lake Management Plan:** None

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**BASIC FACTS**

<table>
<thead>
<tr>
<th>DNR ID</th>
<th>82003600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
<td>17</td>
</tr>
<tr>
<td>Township</td>
<td>31</td>
</tr>
<tr>
<td>Range</td>
<td>20</td>
</tr>
<tr>
<td>Lake Area</td>
<td>24 acres</td>
</tr>
<tr>
<td>Subwatershed Area</td>
<td>858 acres</td>
</tr>
<tr>
<td>Outlet Elevation</td>
<td>939.0 (btm)</td>
</tr>
<tr>
<td>Low Water Level</td>
<td>938.86 (‘96)</td>
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<tr>
<td>High Water Level</td>
<td>942.38 (‘79)</td>
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<tr>
<td>Ordinary High Water</td>
<td>N/A</td>
</tr>
<tr>
<td>100-Yr. Flood Elev</td>
<td>943.0 (FEMA)</td>
</tr>
<tr>
<td>Greatest Depth</td>
<td>8 ft.</td>
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</tbody>
</table>

**Control Structures:**
- Stop log control structure at outlet

**Fish Species:**
- Bass, Northern Pike, Sunfish, Carp, Bullhead

**Aquatic Nuisance Species:**
- Purple Loosestrife (1999)

**CMSCWD References:**
- WCD Water Monitoring Report (‘08)
- Mud-Turtle Lake Study (‘96)
- DNR Lake Water Level Report
Implementation

Operational Priorities
- Routine Watershed Management
- Provide Input to the Big Marine Regional Park Planning Process

Education
Routine Watershed Education Program

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

Projects
Current:
- Routine Watershed Water Quality Monitoring
- Routine Watershed Best Management Practices (BMP) Program
- Ongoing BMP Monitoring
- Permitting Program

Future/Potential:
- Purple Loosestrife Control and Collections

Overall Assessment: Turtle Lake

Turtle Lake is a shallow lake that is part of the Carnelian Creek Flowage. The lake is completely surrounded by a large, private livestock grazing operation. The grazing operation uses rotational grazing to manage pasture lands. There is no public access to the lake. In the past the lake has been subjected to considerable nutrient-laden runoff and erosion due to historic logging and farming practices. When the District last monitored for in-lake phosphorus concentrations in 2003 concentrations were significantly worse than the MPCA shallow lake standard of (60μg/L). In 2008 the lake was better than the MPCA shallow lake standard of 1 m for sechi depth transparency.

Water levels in Turtle Lake are maintained by the Turtle Lake control weir. This weir was installed by the District as part of the District’s 1985 Outlet project for the purpose of maintaining water levels in the upstream lakes and wetlands. The District operates the weir in accordance with a permit from the MN DNR.

Based on an Aerial Lakeshore Analysis study (1998), the greatest influence on the lake is runoff non-point source pollution. The most common issue was the lack of a natural vegetative buffer. The recommendations from that study are to investigate and correct all point and non-point sources of pollution to the lake and to create a forested buffer or a berm, adjacent to the shoreline, to reduce impacts of runoff from adjacent fields. The District has worked with the landowner to install fencing to exclude livestock from portions of the shoreland and outlet channel banks.

The overall water quality grade has increased steadily from F to C since 1991 based on the 2008 WCD Water Monitoring Report. Turtle Lake water quality appears to be highly dependent on the quality of discharge from Big Marine Lake and Carnelian Creek which flows through the Lake. Turtle Lake is undergoing routine watershed management.

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