

**Lake Status**

**Overall Strategy:** Routine Watershed Management  
**Water Quality Rating:** D: Secchi – 2.8 ft.; TP – 121 µg/L  
**Impairment:** Not Impaired  
**Water Quality Trend:** Secchi – No Trend; TP – N/A  
**Shoreland Classification:** Natural Environment  
**Subwatershed Land Cover:**  
 3% developed, 26% forests and woodlands, 11% grassland/shrubland/sparse vegetation, 15% land and open water wetlands, 25% planted or cultivated, 19% wetlands.



**Resource Goals**

**Short Term Goals – Year 2015**

- Achieve a water quality rating of at least C.
- Achieve a five-year mean summer phosphorus concentration at or below 50 µg/L ± 4%.
- Achieve a mean summer secchi depth no less than 4.5 ft.
- Maintain District’s existing good relationship with Landowner and Land Manager for possible teaming on lake management and education opportunities.

**Long Range Goals - Year 2020**

- Achieve a water quality rating of at least C.
- Achieve a five-year mean summer phosphorus concentration at or below 40 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	
<b>DNR ID</b>	82007600
<b>Section</b>	12
<b>Township</b>	31
<b>Range</b>	21
<b>Lake Area</b>	45 acres
<b>Subwatershed Area</b>	603 acres
<b>Outlet Elevation</b>	N/A
<b>Low Water Level</b>	981.75 ('00)
<b>High Water Level</b>	986.46 ('03)
<b>Ordinary high Water</b>	N/A
<b>100-Yr. Flood Elev</b>	987.1 (FEMA)
<b>Greatest Depth</b>	39 ft.
<b>Control Structures:</b>	None
<b>Fish Species:</b>	Sunfish, Crappies, Largemouth Bass, Walleye
<b>Aquatic Nuisance Species:</b>	Reed Canary Grass
<b>CMSCWD References:</b>	WCD Water Monitoring Report ('08) DNR Lake Water Level Report

## Implementation

### Operational Priorities

Routine Watershed Management

### Education

Routine Watershed Education Program

### Regulatory

Activities impacting Barker Lake will be regulated by the watershed district through its *Rules of the District*. Regulatory efforts will be coordinated with May Township, the City of Hugo, Washington County, and MNDNR, where applicable.

---

## Projects

### Current:

- Routine Watershed Water Quality Monitoring
- Routine Watershed Best Management Practices (BMP) Program
- Permitting Program

### Future/Potential:

- None at this time.

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

## Overall Assessment: Barker Lake

Barker Lake is a long and shallow lake completely surrounded by a large, private livestock grazing operation. 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. In 2007 in-lake phosphorus concentrations were at or exceeding the MPCA shallow lake standard of (60µg/L) as they were in 2001. No in-lake phosphorus readings were taken in between. In 2007 the lake was better than the MPCA shallow lake standard of 1-m for sechi depth transparency.

Based on an Aerial Lakeshore Analysis study (1998), non-point source runoff has the greatest influence on the lake. The recommendations from that study are to exclude livestock from the lake, develop and expand a forested buffer strip around the lake and install minor erosion control. The grazing operation currently practices rotational grazing. The practice appears to help maintain healthy vegetation in the pastures draining to the lake especially when compared to typical feedlot operations; however, no studies have been completed on the benefits or impacts to the lake by this practice.

Based on measured lake characteristics and land use in the lake's minor subwatershed, water quality modeling indicates that a significant amount of phosphorus needs to be removed to improve the water quality of the lake. An analysis to determine if phosphorus loading sources are primarily due to external or internal loadings would need to be performed to identify the most cost effective improvement projects. Without extensive improvement efforts, this lake will continue to exceed the recommended phosphorus concentration limit (40µg/L). At this time, Barker Lake is undergoing routine watershed management.

