



SOUTH WASHINGTON WATERSHED DISTRICT

O'Connors Lake

DNR ID #82-000200	Municipality: Denmark Township
Surface Area: 23 Acres	Watershed Area: 6,018 Acres
Mean Depth:	Maximum Depth: 11 feet
SWWD Maximum Allowable Phosphorus Load: Maintain Existing	
SWWD Trophic State Index (TSI) Goal: Pending	

SWWD's Lower St. Croix watershed (LSC) covers roughly one fourth of the District and includes the O'Conner's Lake subwatershed (Map 1). While the rest of the Lower St Croix watershed drains to Lake St. Croix, O'Connors is land locked, terminating at O'Connors Lake.

This report summarizes current monitoring results for O'Connors. SWWD's monitoring programs are based on a Regional Assessment approach. By following a regional approach, monitoring is focused on key resources and watershed outlets throughout the District. SWWD monitors water quality within O'Connors Lake and at O'Connors Creek near its discharge into the lake.

Lake water quality is monitored through participation in the Metropolitan Council's Citizen

Assisted Monitoring Program (CAMP). Stream water quality is monitored with the use of an automated monitoring station that collects flow data and periodic water samples which are used in assessing water quality throughout the monitoring season. Monitoring results are presented below. All District data is available at www.swwdmn.org.



Map 1: O'Connors Watershed

O’Conner’s Lake



O’Conners Lake (Map 2) sits at the end of O’Conners Creek in a closed basin. The lake collects drainage from approximately 6,000 acres of agricultural and rural residential lands and drains into bedrock. O’Conners Lake and Creek were added to SWWD jurisdiction in 2010; however, lake monitoring through the CAMP program began in 2005.

Additional data for O’Conners Lake is available through the Metropolitan Council

Map 2: O’Conner’s Lake

(http://es.metc.state.mn.us/eims/lakes/list_parm.asp) and MN Department of Natural Resources (<http://www.dnr.state.mn.us/lakefind/index.html>), or by contacting SWWD.

O’Conner’s Lake water quality results are shown in Figures 2-4. The lake exhibits characteristics similar to other closed basin systems. Historically, water levels drop slowly during prolonged dry stretches and rise rapidly during wet years. It has remained consistently elevated since 2011 and breached earthen dams inundating an adjacent quarry in 2019. The lake remains high. Water quality is typically a major concern for lakes in closed basin systems as nutrients and pollutants continue to accumulate over time. There is no significant trend in water quality at O’Conner’s Lake although nutrients do become more concentrated during periods of low lake levels which are reflected in increased nuisance conditions. Annual lake grades, as assigned by the Metropolitan Council, for O’Conner’s Lake are listed in Table 1.

SWWD does not have in lake water quality goals for O’Conner’s Lake at this time. The lake does generally meet State Standards.

Figure 1: O'Connors Lake surface elevation

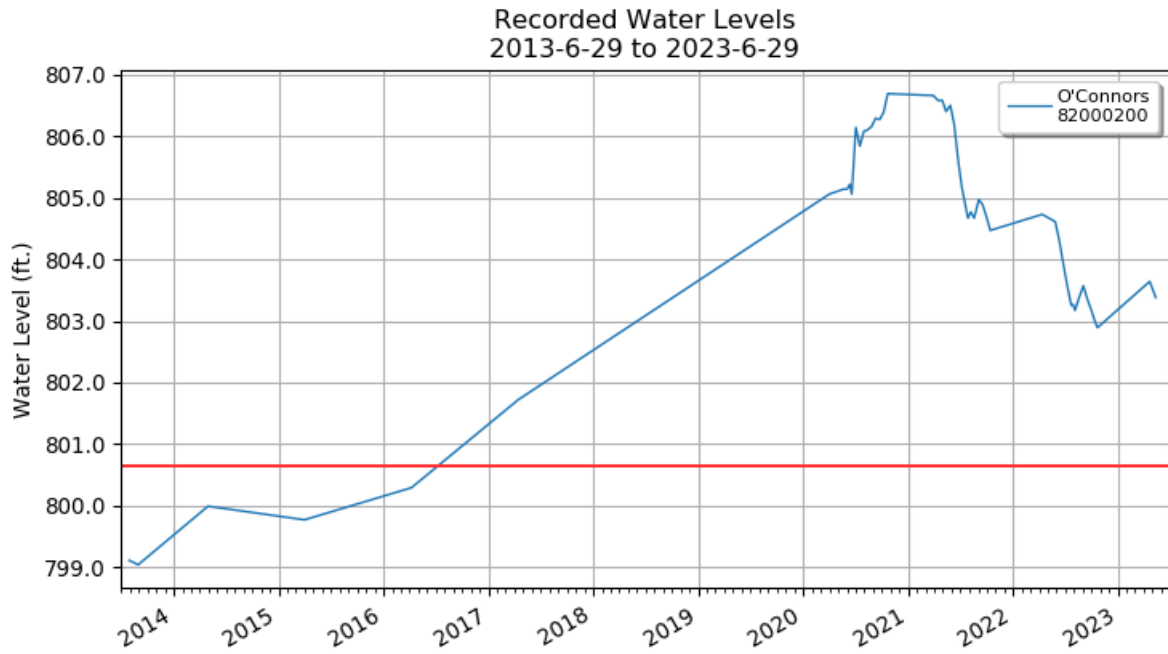


Figure 1: In-lake Total Phosphorus Concentration at O'Conner's Lake

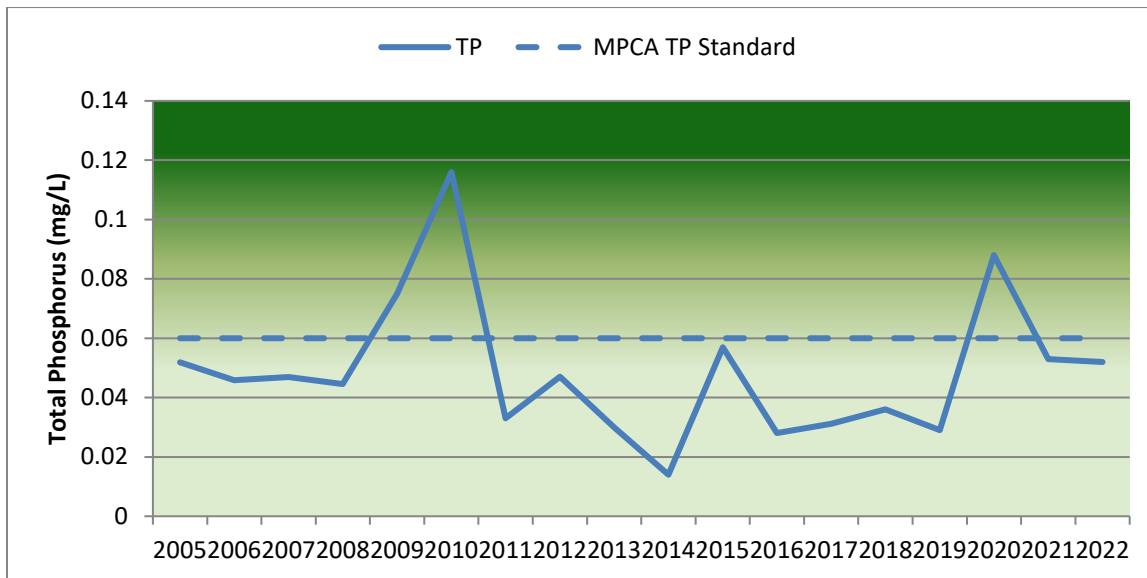


Figure 2: In-lake Chlorophyll a Concentration at O'Conner's Lake

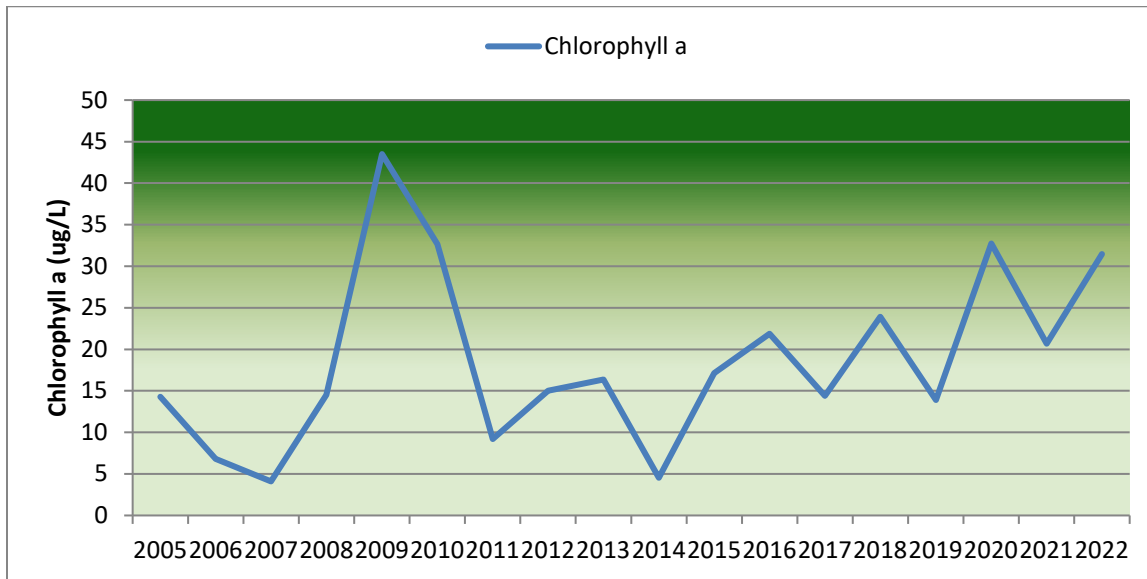


Figure 3: In-lake Secchi Transparency at O'Conner's Lake

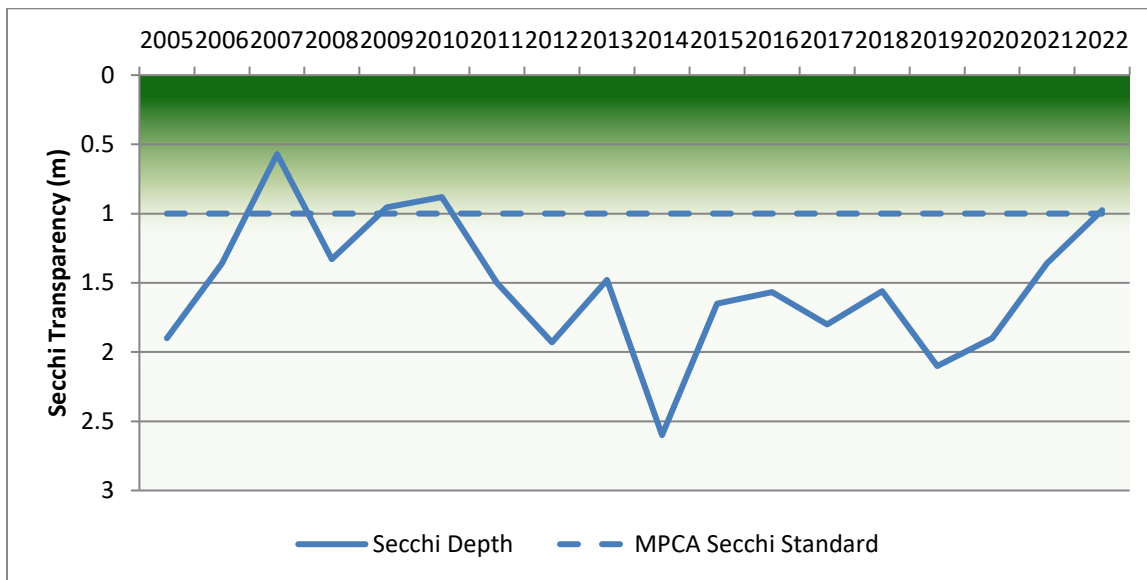


Table 1: Annual Lake Grades for O'Conner's Lake

Parameter	Lake Grade																		
	Trophic Status	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
Total Phosphorus	61; eutrophic	C	C	C	C	D	D	C	C	C	A	C	B	B	B	B	D	C	C
Chlorophyll	64; eutrophic	B	A	A	B	D	C	A	B	B	A	B	C	C	C	B	C	C	C
Secchi Transparency	60; eutrophic	C	C	F	C	D	D	C	C	C	B	C	C	C	C	B	C	C	D
Overall	eutrophic	C	B	C	C	D	D	B	C	C	A	C	C	C	C	B	C	C	C

O’Conner’s Creek

The O’Conner’s Creek regional assessment monitoring station was established in 2013 at the inlet to O’Conner’s Lake. Data from this site is used to assess the health of the O’Conner’s watershed. Historically forested, much of the watershed is now agricultural lands with some areas transitioning to residential.

SWWD’s annual loading data is summarized in Table 2. The dataset is limited with no apparent trends. Monitoring has not been possible at the established site since 2019 due to high water and backwater impacts from O’Connors Lake. SWWD is working to establish a site upstream to avoid high water.

Table 2: Loading Summary for O’Conner’s Creek

Year	April-Oct Precipitation (in)	Annual Precipitation (in)	April-Oct TP (lbs)	Projected Annual TP (lbs)	April-Oct TSS (lbs)	Projected Annual TSS (lbs)
2013	21.0	34.0	485	830	88,359	151,413
2014	26.9	39.2	513	879	93,959	161,009
2015	25.1	38.7	504	864	97,937	167,827
2016	31.9	37.5	512	878	75,354	129,127
2017	26	28.3	520	891	91,453	156,715
2018	24.6	28.3	414	710	67,975	116,482
2019	30.4	35.37	298	511	45,134	77,342
2020	NO DATA COLLECTED					
2021	NO DATA COLLECTED					

Note: Loads are reported for the April-October monitoring season and scaled up to project annual loading rates.