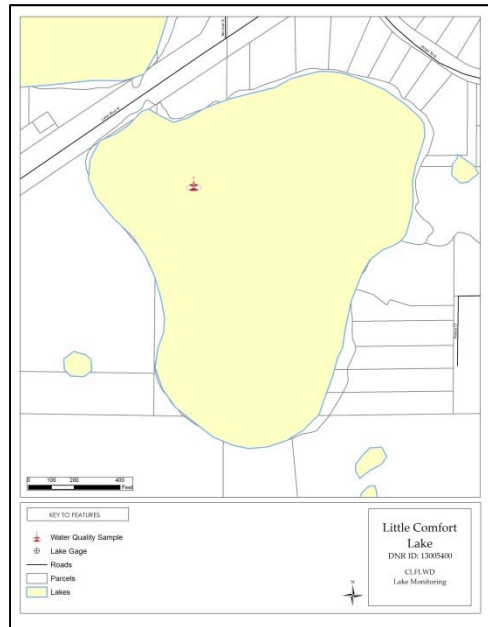


## Little Comfort Lake

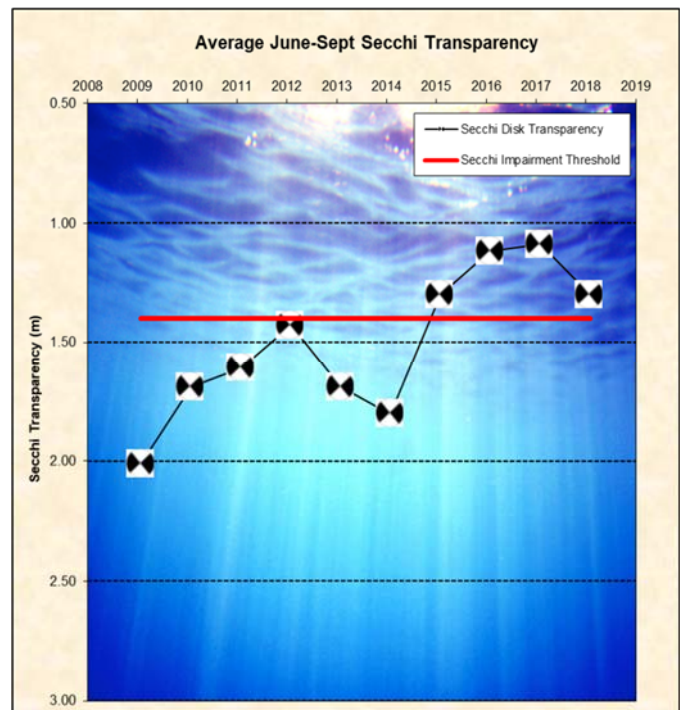
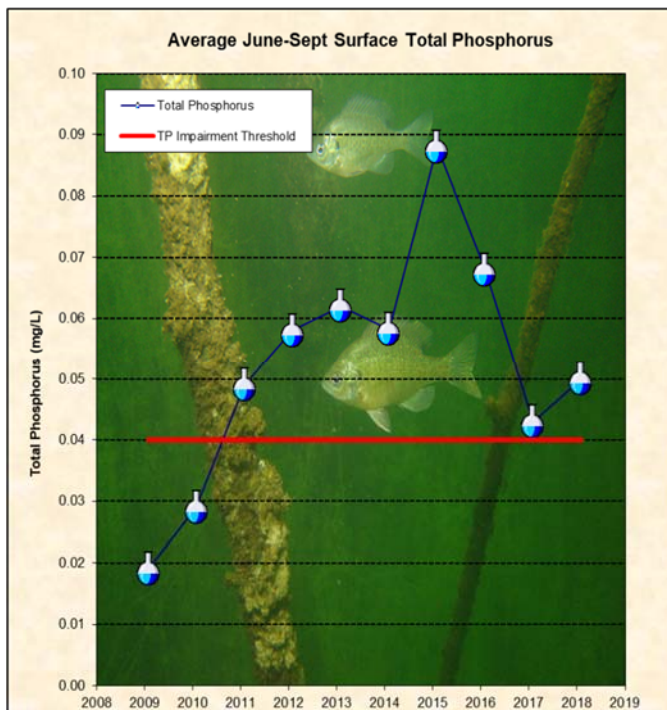
### 2018 Lake Grade: C

- DNR ID #: 13005400
- Municipality: Chisago City
- Location: Section 27 T33N-R21W
- Lake Size: 36 acres
- Maximum Depth (2018): 54 ft.
- Ordinary High Water Mark: 887.2 ft.
- 44% Littoral  
Note: Littoral area is the portion of the lake <15 ft. and dominated by aquatic vegetation.



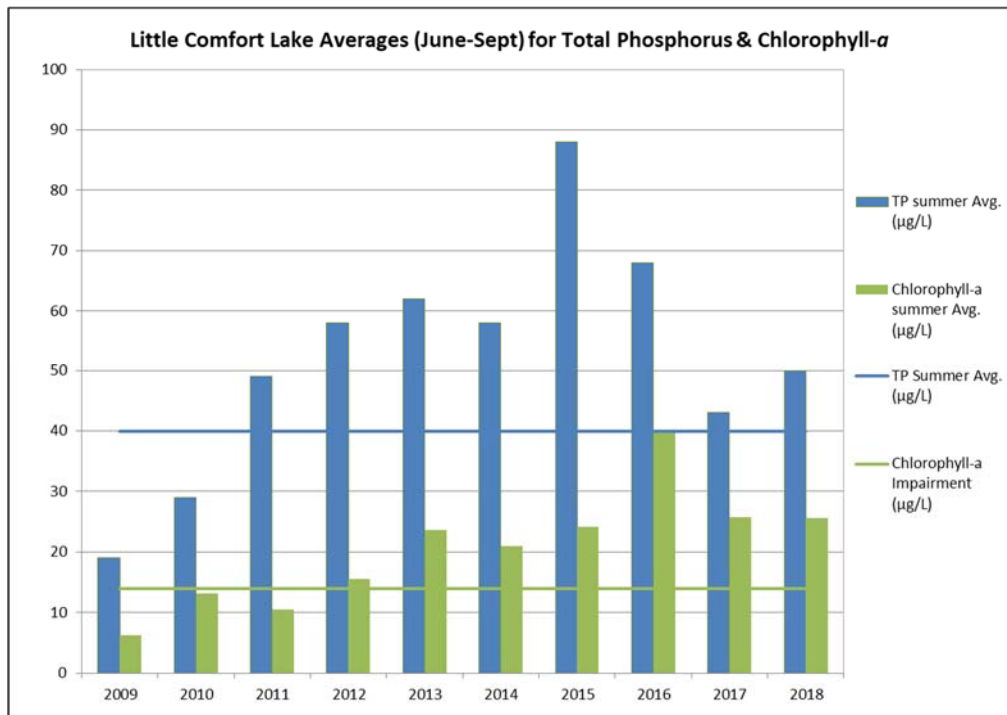
### Summary Points

- Based on the chlorophyll-*a* results Little Comfort Lake was considered eutrophic in 2018, according to the Carlson Trophic State Index.
- There are an insufficient number of years of data to determine long term water quality trends at this time.
- The major land use is rural/agricultural.
- The lake stratified in 2018 with the thermocline varying between 3 and 4 meters.
- Little Comfort Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency's Impaired Waters List.
- Curly-leaf pondweed (invasive aquatic plant) and Zebra mussels are present in this lake. A report has been made of the presence of Eurasian watermilfoil but that has yet to be verified.



Date/Time	Total Phosphorus (mg/L)	Uncorrected Trichromatic Chlorophyll-a (µg/L)	Pheophytin-Corrected Chlorophyll-a (µg/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depth (m)	Surface Temperature (Celsius)	Surface Dissolved Oxygen (mg/L)
5/14/2018 10:55	0.038	21.0	19.0	0.92	0.91	18.9	11.49
5/30/2018 10:15	0.039	10.0	14.0	0.84	1.83	24.6	6.99
6/14/2018 9:44	0.033	5.8	5.0	0.88	1.83	22.9	7.64
6/25/2018 11:21	0.033	8.1	6.5	0.91	1.37	24.7	6.92
7/9/2018 11:21	0.045	32.0	30.0	1.20	0.91	26.8	7.63
7/23/2018 12:10	0.114	43.0	41.0	1.50	0.76	25.9	8.90
8/6/2018 14:11	0.052	46.0	43.0	1.30	0.91	24.3	8.34
8/20/2018 10:50	0.050	25.0	24.0	1.20	1.07	25.2	7.05
9/5/2018 12:38	0.033	29.0	28.0	1.00	1.37	22.4	7.40
9/17/2018 10:34	0.043	28.0	27.0	1.00	2.13	24.1	8.29
10/2/2018 8:18	0.035	19.0	19.0	1.00	1.83	12.4	6.20
10/16/2018 12:08	0.064	20.0	18.0	1.30	1.52	7.7	8.08
<b>2018 Average</b>	0.048	23.9	22.9	1.09	1.37	21.7	7.91
<b>2018 Summer Average</b>	0.050	27.1	25.6	1.12	1.30	24.5	7.77
<b>Volunteer Data</b>							
5/25/2018 13:00	0.029	14.0	12.0	0.86	1.50	24.0	NA
6/20/2018 11:00	0.026	7.7	6.7	0.83	1.80	24.3	NA
7/14/2018 10:00	0.068	33.0	31.0	1.20	1.00	26.5	NA
7/26/2018 11:00	0.032	24.0	23.0	1.00	1.10	25.8	NA
8/9/2018 10:00	0.031	22.0	20.0	1.00	1.40	25.9	NA
9/25/2018 14:00	0.028	14.0	13.0	1.00	2.30	15.1	NA
<b>2018 Average</b>	0.036	19.1	17.6	0.98	1.52	23.6	NA
<b>2018 Summer Average</b>	0.037	20.1	18.7	1.01	1.45	23.3	NA
Water quality thresholds are 0.04 mg/L TP, 14 µg/L CL-a, 1.4 m Secchi depth*							
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 µg/L CL-a, 1.0 m Secchi depth*							
	<b>High</b>	<b>High Date</b>	<b>Low</b>	<b>Low Date</b>	<b>Average</b>		
<b>2018 Elevation (ft)</b>	NA	NA	NA	NA	NA		

\*Data requirements and determinations of use assessment according to the MPCA's Guidance Manual for Assessing the Quality of Minnesota Surface Waters: "Samples must be collected over a minimum of 2 years and data used for assessments must be collected from June to September. Typically, a minimum of 8 individual data points for TP, corrected chlorophyll-a (chl-a corrected for pheophytin), and Secchi are required. Data used for phosphorus and chlorophyll-a calculations are limited to those collected from the upper most 3 meters of the water column (surface). If more than one sample is collected in a lake per day, these values are averaged to yield a daily average value. Following this step, all June to September data for the 10-year assessment window are averaged to determine summer-mean values for TP, corrected chl-a, and Secchi depth. These values are then compared to the standards and the assessment is made."



<b>Lake Water Quality Summary</b>										
	<b>Lake Grades (May-Sept)</b>									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total Phosphorus (mg/L)	C	C	C	D	C	C	C	C	B	A
Chlorophyll-a (µg/L)	C	C	C	C	C	C	B	B	B	A
Secchi depth (ft)	C	C	C	C	C	C	C	C	C	C
<b>Overall</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C-</b>	<b>C</b>	<b>C</b>	<b>C+</b>	<b>C+</b>	<b>B-</b>	<b>B+</b>

## **Little Comfort Lake Water Surface Elevation Statistics**

Outlet Elevation: 885.7 ft.

Ordinary High Water Level (OHW) Elevation: 887.2 ft.

100 Year Flood Elevation (CLFLWD): 892.1 ft.

Highest Recorded Elevation: 887.81 ft. (05/08/2001)

Lowest Recorded Elevation: 885.41 ft. (09/05/2003)

Datum: NGVD 29 (ft.)

\*Elevation data has not been recorded on this lake since 2004.