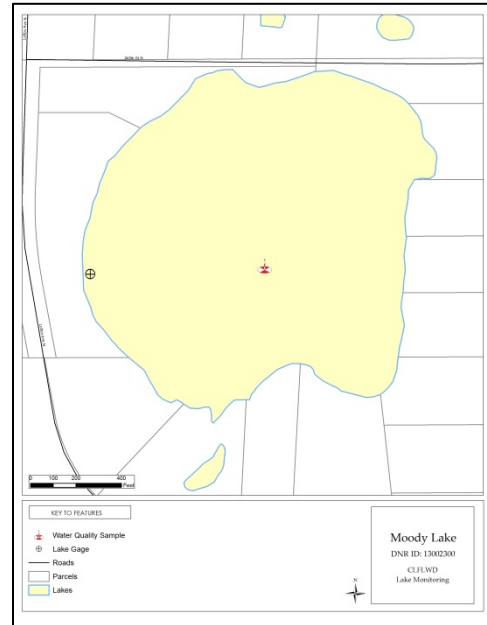


Moody Lake

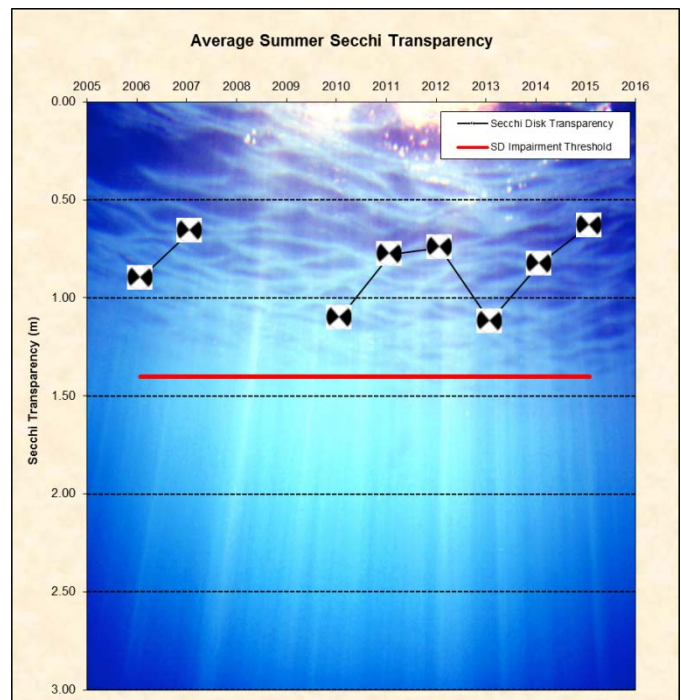
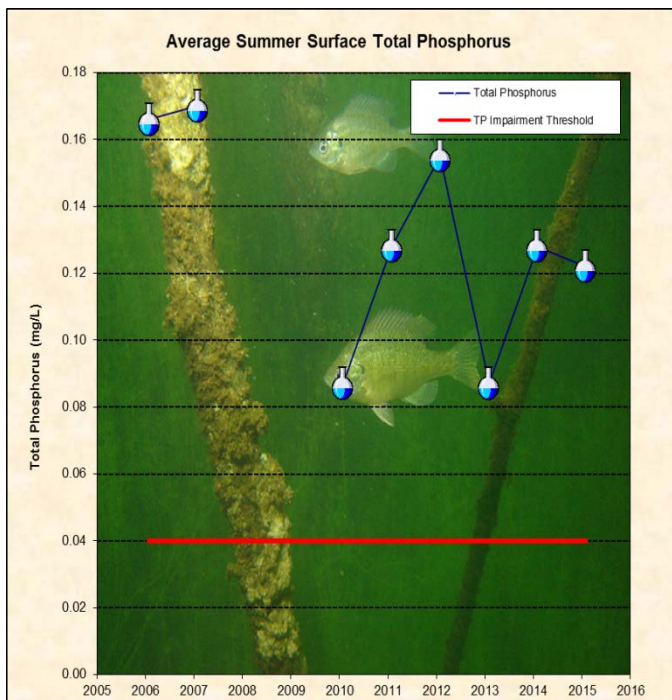
2015 Lake Grade: D-

- DNR ID #: 13002300
 - Municipality: Chisago Lakes Township
 - Location: SW^{1/4} Section 32 T33N-R20W
 - Lake Size: 45.33 acres
 - Maximum Depth (2015): 47 ft.
 - Ordinary High Water Mark: N/A
 - 49% Littoral
- Note: Littoral area is the portion of the lake <15 ft. and dominated by aquatic vegetation.

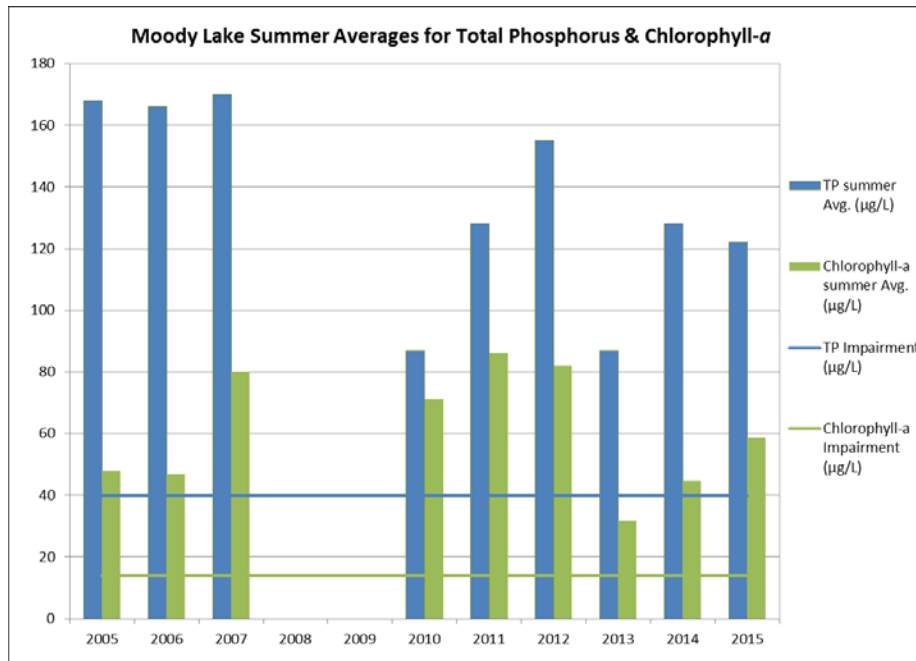


Summary Points

- Based on the chlorophyll-*a* results Moody Lake was considered hypereutrophic in 2015, according to the Carlson Trophic State Index.
- Using the Kendall's Tau correlation test ($p < 0.05$) there is a statistically significant **improving** trend for the average total phosphorus and no trend for the average Secchi transparency at this time.
- The major land use is rural/agricultural.
- The lake stratified in 2015 with the thermocline varying between 4 and 6 meters.
- Moody Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency's Impaired Waters List.
- Curly-leaf Pondweed (an invasive aquatic plant) is present in this lake.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (µg/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depth (m)	Surface Temperature (Celsius)	Surface Dissolved Oxygen (mg/L)
4/22/2015 10:29	0.158	63.0	2.40	1.07	9.3	9.14
5/5/2015 9:46	0.056	9.3	1.70	1.83	16.9	8.85
5/20/2015 14:15	0.101	11.0	1.80	2.13	14.4	8.84
6/2/2015 11:25	0.079	46.0	1.80	0.91	18.7	10.83
6/16/2015 15:12	0.114	17.0	2.20	1.07	25.3	6.03
7/1/2015 8:17	0.158	67.0	2.20	0.46	24.1	6.41
7/16/2015 9:01	0.175	110.0	2.70	0.30	24.5	8.44
7/30/2015 10:14	0.195	67.0	2.20	0.61	24.1	5.02
8/11/2015 13:36	0.138	69.0	1.90	0.46	25.5	10.90
8/26/2015 10:25	0.089	65.0	1.70	0.46	20.1	9.18
9/11/2015 8:51	0.084	47.0	2.10	0.46	21.0	3.73
9/22/2015 9:25	0.067	40.0	1.80	0.91	19.3	5.12
10/6/2015 9:50	0.060	42.0	1.80	0.61	15.6	6.29
10/19/2015 13:05	0.175	16.0	2.10	0.76	11.2	4.40
2015 Average	0.118	47.8	2.03	0.86	19.3	7.37
2015 Summer Average	0.122	58.7	2.07	0.63	22.5	7.30
Volunteer Data						
4/27/2015 19:00	0.148	52.0	3.00	0.90	14.4	NA
5/14/2015 18:00	0.079	32.0	1.80	0.70	28.5	NA
5/17/2015 12:00	0.073	8.3	1.50	3.00	17.0	NA
5/31/2015 14:00	0.142	60.0	3.00	1.20	18.4	NA
6/28/2015 18:00	0.154	8.7	2.20	0.60	25.8	NA
7/12/2015 18:00	0.462	249.0	7.50	0.60	27.0	NA
8/9/2015 19:00	0.471	252.0	6.00	0.70	24.4	NA
9/5/2015 19:00	0.090	79.0	2.20	0.40	24.7	NA
9/20/2015 16:30	0.064	48.0	1.60	0.70	22.7	NA
9/26/2015 12:30	0.183	120.0	2.20			NA
10/4/2015 16:00	0.080	47.0	1.60	0.80	16.4	NA
10/18/2015 16:00	0.408	42.0	5.70	1.50	11.4	NA
2015 Average	0.196	83.2	3.19	1.01	21.0	NA
2015 Summer Average	0.237	126.1	3.62	0.60	24.9	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*						
2015 Elevation (ft)	High	High Date	Low	Low Date	Average	
	913.32	9/22/2015	912.30	5/5/2015	912.92	
*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."						



Lake Water Quality Summary										
	Lake Grades									
	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Total Phosphorus (mg/L)	D	D	D	F	D	D	NA	NA	F	F
Chlorophyll-a (µg/L)	D	C	C	F	F	D	NA	NA	F	D
Secchi depth (ft)	F	D	D	D	D	D	NA	NA	F	D
Overall	D-	D+	D+	F+	D-	D	NA	NA	F	D-

Moody Lake Water Surface Elevation Statistics

Ordinary High Water Level (OHW) Elevation: N/A

100 Year Flood Elevation (CLFLWD): 892.1 ft.

Highest Recorded Elevation: 913.32 ft. (09/22/2015)

Lowest Recorded Elevation: 911.78 ft. (10/10/2013)

Datum: NGVD 29 (ft.)

