West Battle 56-0239-00

Lake Information

MN Lake ID: 56-0239-00
County: Otter Tail
Ecoregion: NCHF
Major Drainage Basin: RD
Latitude/Longitude: 46.29166667 / -95.66694444
Years Monitored: 1997 - 2019
Monitored Sites: 201,202

View MPCA CLMP Historical Secchi Data
MPCA Assessment Report
Search County Monthly Precipitation Data

Physical Characteristics

Surface area (acres): 5624
Littoral area (acres): 2496
% Littoral area:
Max depth (ft): 113
Max depth (m):
Mean depth (ft): N/A
Watershed size (acres): N/A
Aquatic Invasive Species: Zebra Mussels

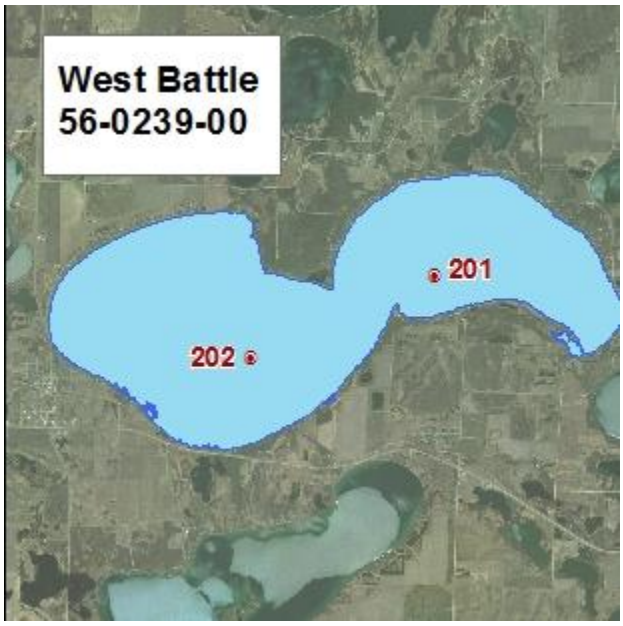
View MN DNR Fisheries Report
View MN DNR Lake Level Report

Water Quality Characteristics

(data from RMB monitoring database only)

Parameters	Prmary Site 201	Site 202
Total Phosphorus Mean:	12.6	12.7
Total Phosphorus Min:	7	6
Total Phosphorus Max:	30	92
Number of Observations:	93	49
Chlorophyll-a Mean:	3.2	2.8
Chlorophyll-a Min:	0.4	0.9
Chlorophyll-a Max:	7	6
Number of Observations:	92	48
Secchi Depth Mean:	13.3	13.8
Secchi Depth Min:	9.5	10.5
Secchi Depth Max:	22	22
Number of Observations:	93	48
Trophic State Index Mean:	40.3	39.3

Trophic State: Mesotrophic



Trends

(Primary site only. For detecting trends, a minimum of 8-10 years of data with 4 or more readings per season are recommended)

Years Monitored: 1997 - 2019
Total Phoshporus: Improving with 99.9% confidence.
Chlorophyll-a: Improving with 90% confidence.
Secchi Depth: Improving with 95% confidence.
Trophic State Index: Improving with 99.9% confidence.

Ecoregion Comparisons

(Primary site only. Comparisons are based on interquartile range, 25th-75th percentile, for ecoregion reference lakes)

Ecoregion: NCHF
Total phosphorus: Better Than Expected Range
Chlorophyll-a: Better Than Expected Range
Secchi depth: Better Than Expected Range

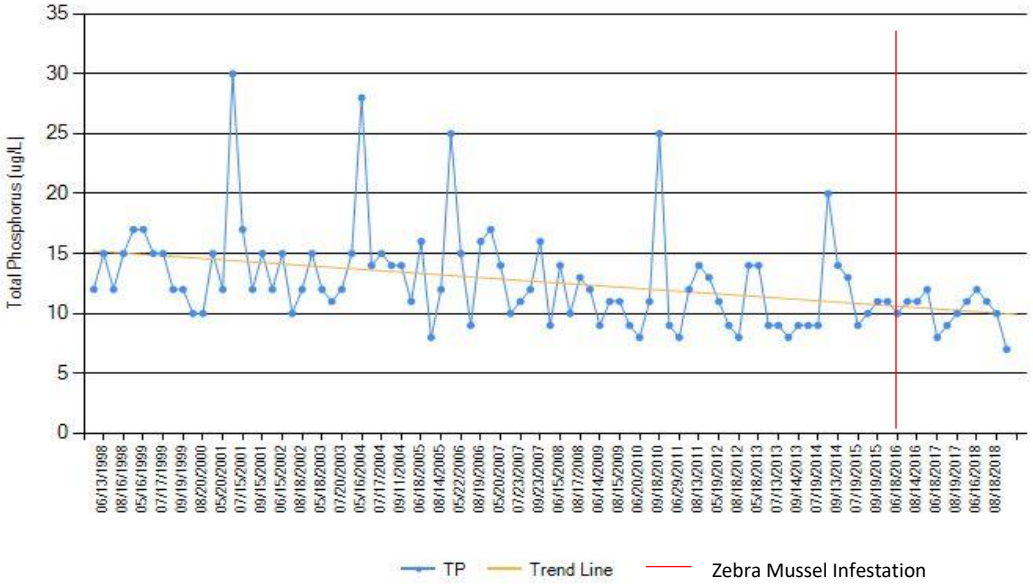
Fluctuations in the results for Chlorophyll a, Total Phosphorus, and secchi disk readings are normal to see over the course of the year as well as from year to year. It is not unheard of for a secchi disk reading to increase, especially in May when the chlorophyll a concentrations are still relatively low for the year. West Battle lake has a statistically significant improving water quality trend in all three parameters (Total Phosphorus, Chlorophyll a, and secchi disk readings) that are tested. Many lakes that are infested

with zebra mussels will see an increase in water clarity but the phosphorus and chlorophyll a will stay the relatively the same. Filamentous or “stringy green” algae are a biproduct of the zebra mussels, so sometimes lakes will see a slight increase in chlorophyll a as well. West Battle lake was infested with zebra mussels only 3 years ago in 2016. In the trend graphs on the following pages a red line indicates where in the timeline West Battle Lake was infested. It is important to continue monitoring to develop a better understanding of how the zebra mussels may alter the water chemistry in West Battle lake.

Trend Analysis Report

County	Lake	Site	Data Evaluated	Dates Evaluated
Otter Tail	West Battle (ID # 56-0239-00)	201		5/17/1998 - 5/18/2019

Total phosphorus is decreasing, which indicates improving water quality (99.9% confidence).



Trend Analysis Report

County	Lake	Site	Data Evaluated	Dates Evaluated
Otter Tail	West Battle (ID # 56-0239-00)	201		5/17/1998 - 5/18/2019

Chlorophyll-a is decreasing, which indicates water quality (90% confidence).

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Trend Analysis Report

County	Lake	Site	Data Evaluated	Dates Evaluated
Otter Tail	West Battle (ID # 56-0239-00)	201		5/17/1998 - 5/18/2019

Secchi depth is increasing, which indicates improving water quality (95% confidence).