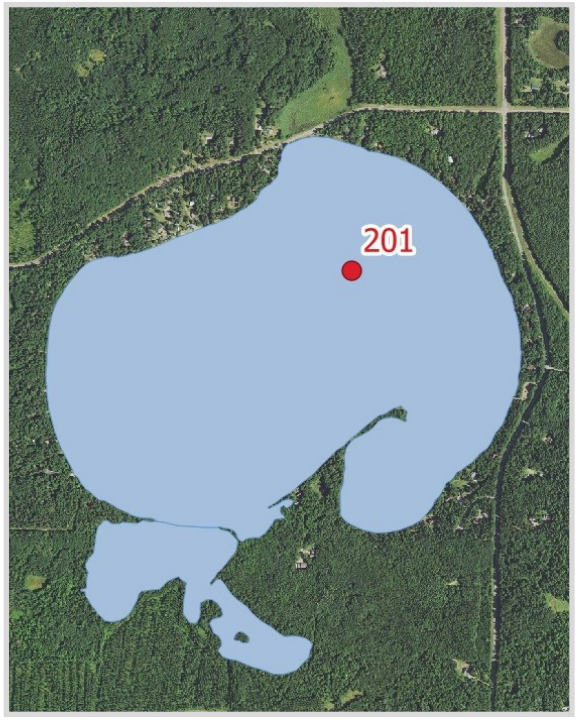
Bass Lake 18-0256-00

Lake Stats



Ecoregion:	Northern Lakes and Forests
Major Drainage Basin:	Mississippi River Brainerd (07010104)
Surface Area (acres):	294
Littoral Area (acres):	185
% Littoral area:	63%
Max Depth (ft):	21
Inlets/Outlets:	0/0
Public Accesses:	1
Development/Use Class:	Recreational Development / 2B
Impairments:	None listed
Lake Association:	Bass Lake Association
Website:	https://basslakeassociation.weebly.com/
Aquatic Invasive Species:	None listed

Fish Species: black crappie, bluegill, brown bullhead, hybrid sunfish, large-mouth bass, northern pike, pumpkinseed, sunfish, walleye, yellow bullhead, yellow perch, white sucker, banded killifish, blacknose shiner, bluntnose minnow, brook stickleback, golden shiner, Iowa darter, sand shiner, spottail shiner

Summary

Bass Lake has good water quality overall and shows no significant long term trends (it is neither improving or declining in water quality). Bass Lake has no inlets or outlets and therefore the largest determinant for the future water quality of the lake will be the land use practices in the shoreland zone and within the greater watershed.

Water Quality Characteristics

Site 201

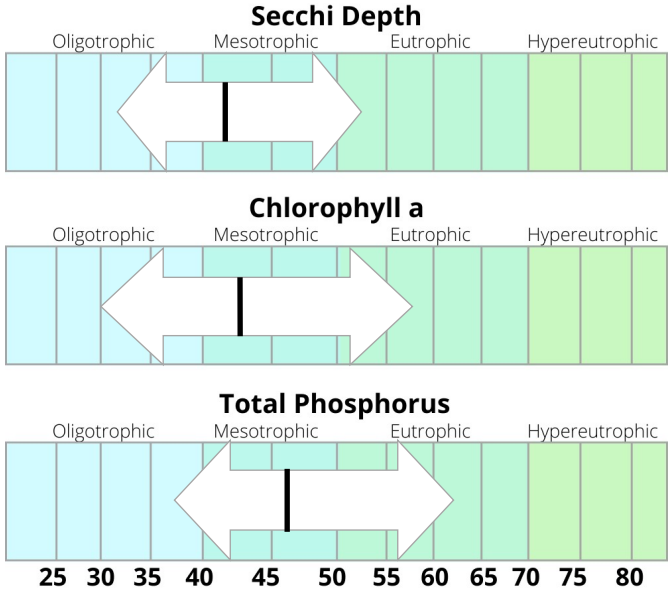
Years Monitored: 2000-2021 (Gap: 2003-2006)

Parameters	Historical	2021
Phosphorus (mg/L) Mean	0.019	0.020
Phosphorus (mg/L) Min	0.010	0.014
Phosphorus (mg/L) Max	0.055	0.025
Number of Observations	50	4

Chlorophyll-a (µg/L) Mean	4.9	4.9
Chlorophyll-a (µg/L) Min	1.0	2.4
Chlorophyll-a (µg/L) Max	15.0	6.4
Number of Observations	46	4

Secchi Depth (ft) Mean	11.24	14.0
Secchi Depth (ft) Min	5.50	11.0
Secchi Depth (ft) Max	21.60	19.0
Number of Observations	72	3

Trophic State: Mesotrophic (44)



The figure above shows minimum and maximum values with white arrows and the mean with black line.

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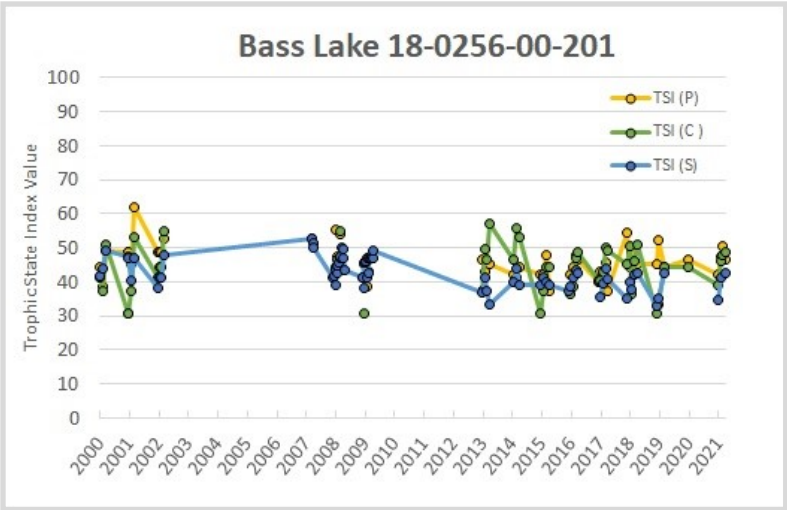

Long-term Trends

Recommended minimum of 8-10 years of data with 4+ readings per season. Minimum confidence accepted by MPCA is 90%.

Data Quality:	Good
Data Used:	2001-2002, 2013, 2015, 2016-2018, 2021
Total Phosphorus:	No Trend (95% probability)
Chlorophyll-a:	No Trend (95% probability)
Secchi Depth:	No Trend (95% probability)

Data Comparison

ECOREGION: Northern Lakes and Forests

Reference Range based on interquartile range (25th-75th percentile) for ecoregion reference lakes. Eutrophication (Impairment) Standard from MN Rule 7050.0222 for Class 2B waters by ecoregion.

Parameter	Reference Range	Eutrophication Standard	Bass Lake (Historical Mean)	Conclusion
Total Phosphorus (mg/L)	0.014 - 0.027	< 0.030	0.019	Within range and meets standard
Chlorophyll-a (µg/L)	< 10	< 9	4.9	Within range and meets standard
Secchi Depth (ft)	7.8 - 15	> 6.5	11.2	Within range and meets standard

Lakeshed Information

Analysis from the Crow Wing County Water Plan (2013 revision).

Name:	Mission Creek
Area (acres):	8,149
Public Lands (% Protected):	40-60%
Land Use Disturbance:	8-15% disturbed
Water Quality Trends:	Improving and Declining
Risk Classification:	Enhance-Protection

Enhance-Protection Risk Classification:

Watershed has a percentage of protected lands that is generally less than 40% but also has many potential risk factors that could negatively impact the surface water (and/or groundwater) systems of the watershed. Moderate amounts of impervious surfaces, development pressures (existing or potential), disturbed land cover classes, animal units, extractive uses, and/ or drainage systems are likely within the watershed. In addition, lakes or streams that are impaired or have declining trends in water quality may also be present. The watershed is in fair condition but has great opportunities for project implementation and further protection efforts.