Child 11-0263-00

MN Lake ID:	11-0263-00
County:	Cass
Ecoregion:	Northern Lakes and Forests
Major Drainage Basin:	Upper Mississippi River
Latitude/Longitude:	46.94750000 / -94.34608333
Water Body Type:	Public Waters
Monitored Sites (Primary):	202
Monitored Sites (Secondary):	N/A

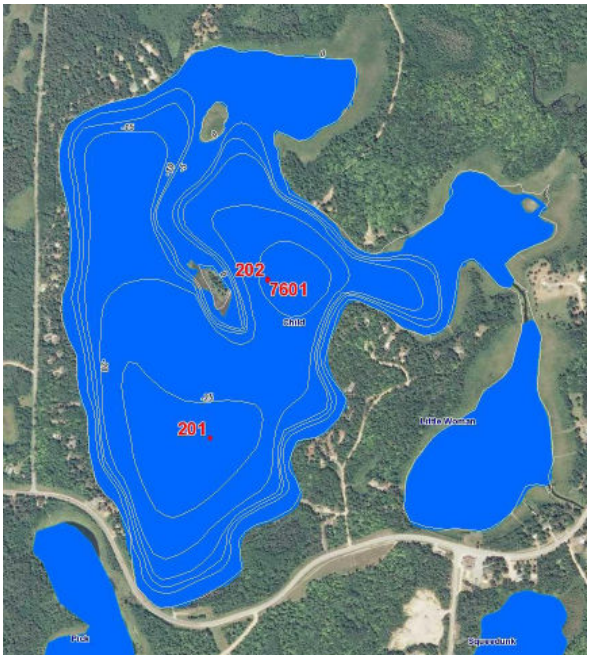
Physical Characteristics

Surface area (acres):	313	
Littoral area (acres):	157	
% Littoral area:	50%	
Max depth (ft):	29	(m): 8.8
Mean depth (ft):	14	(m): 4.3
Watershed size (acres):	N/A	

Water Quality Characteristics - Historical Means

Years monitored: 2008-2009

Parameters	Primary Site 202
Total Phosphorus Mean:	23
Total Phosphorus Min:	10
Total Phosphorus Max:	41
Number of Observations:	8
Chlorophyll-a Mean:	5
Chlorophyll-a Min:	2
Chlorophyll-a Max:	13
Number of Observations:	8
Secchi Depth Mean:	13.1
Secchi Depth Min:	10
Secchi Depth Max:	17
Number of Observations:	8
Trophic State Index Mean (Primary Site):	44
Trophic State:	Mesotrophic



Ecoregion Comparisons

Minnesota is divided into 7 ecoregions based on land use, vegetation, precipitation and geology. The MPCA has developed a way to determine the "average range" of water quality expected for lakes in each ecoregion.

From 1985-1988, the MPCA evaluated the lake water quality for chosen reference lakes. These reference lakes are not considered pristine, but are considered to have little human impact and therefore are representative of the typical lakes within the ecoregion. The "average range" refers to the 25th - 75th percentile range for data within each ecoregion.

Cass County is in the Northern Lakes and Forests Ecoregion.
Child Lake compares to the ecoregion average ranges as indicated below:

Total Phosphorus:	Within expected range, which indicates expected water quality for the area
Chlorophyll-a:	Within expected range, which indicates expected water quality for the area
Secchi Depth:	Within expected range, which indicates expected water quality for the area

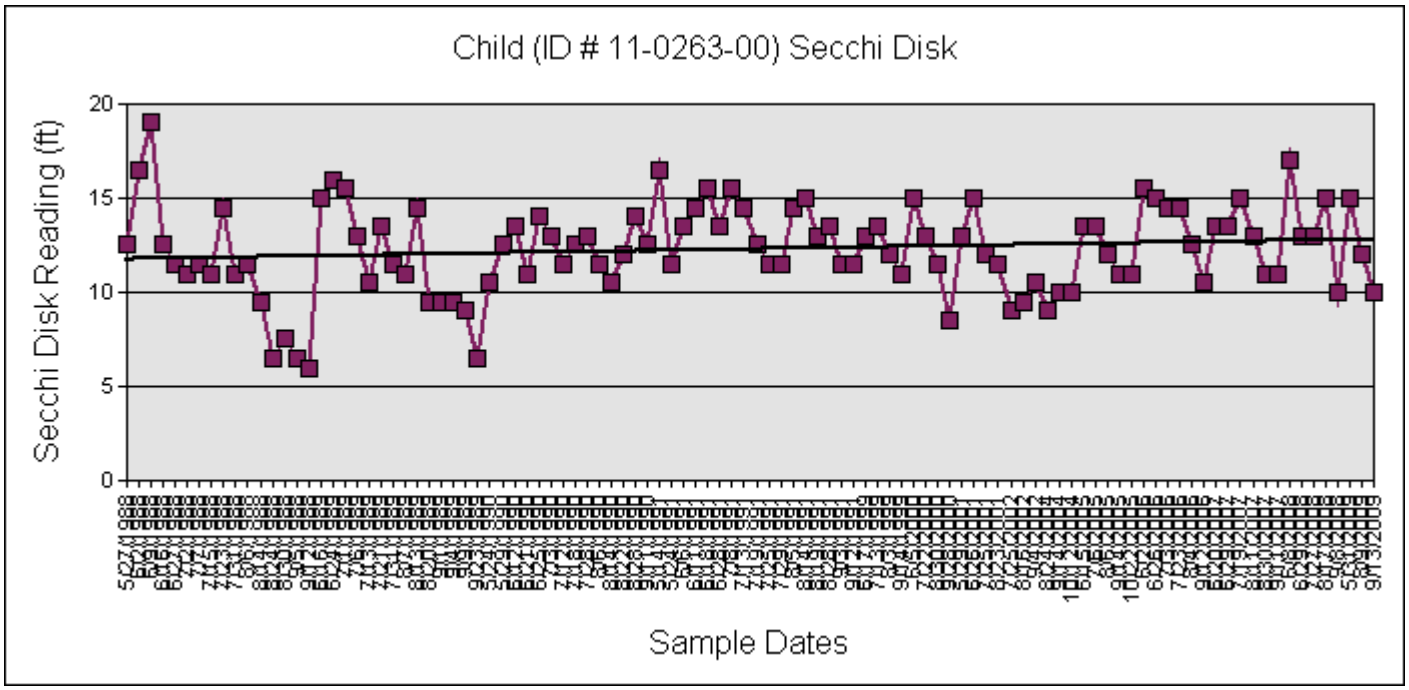
Trend Analysis Report

For detecting trends, a minimum of 8-10 years of data with 4 or more readings per season are recommended. Minimum confidence accepted by the MPCA is 90%. This means that there is a 90% chance that the data are showing a true trend and a 10% chance that the trend is a random result of the data. Only short-term trends can be determined with just a few years of data, because there can be different wet years and dry years, water levels, weather, etc., that affect the water quality naturally.

There is not enough historical data to perform trend analysis for total phosphorus or chlorophyll *a* on Child Lake. Site 202 had enough transparency data to perform a long-term Secchi depth trend analysis. The data was analyzed using the Mann Kendall Trend Analysis.

County	MN Lake ID	Lake	Site	Data Evaluated	Date Range	Data Source
Cass	11-0263-00	Child	202 (Primary)	Secchi Disk	05-01-1988 - 09-30-2009	All Historical

No Significant Trend Exists



Individual Lake Data Summary

County	MN Lake ID	Lake	Site	Date Range	Data Source
Cass	11-0263-00	Child	202 (Primary)	06-01-2008 - 09-30-2009	RMB Lab

Historical Mean						**23**	**5**	**13.1**	**47**	**44**	**40**	**44**
Date	Time	Site	Sampler	Lab Code	Data Source	TP ug/L	ChlA ug/L	Secchi Ft.	TSI Phos.	TSI ChlAL	TSI Secchi Ft.	TSI Avg.
6/8/2008	3:00 PM	202	Schires & Lange	78449	RMB Lab	32	2	17	54	37	36	42
6/29/2008	10:00 AM	202	Schires & Lange	80731	RMB Lab	13	6	13	41	48	40	43
7/27/2008	3:30 PM	202	Schires & Lange	83605	RMB Lab	10	3	13	37	41	40	39
8/17/2008	3:45 PM	202	Schires & Lange	85408	RMB Lab	14	2	15	42	37	38	39
9/8/2008	8:30 AM	202	Schires & Lange	86951	RMB Lab	21	6	10	48	48	44	47
Annual Mean						**18**	**3.8**	**13.6**	**44**	**42**	**39**	**42**
Date	Time	Site	Sampler	Lab Code	Data Source	TP ug/L	ChlA ug/L	Secchi Ft.	TSI Phos.	TSI ChlAL	TSI Secchi Ft.	TSI Avg.
5/31/2009	3:30 PM	202	Schires & Lange	98179	RMB Lab	35	3	15	55	41	38	45
8/9/2009	2:30 PM	202	Arlan Schires	107112	RMB Lab	18	5	12	46	46	41	44
9/13/2009	5:30 PM	202	Arlan Schires	110808	RMB Lab	41	13	10	58	56	44	53
Annual Mean						**31.3**	**7**	**12.3**	**53**	**47**	**41**	**47**

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