

Island 11-0257-00

MN Lake ID: 11-0257-00
 County: Cass
 Ecoregion: Northern Lakes and Forests
 Major Drainage Basin: Upper Mississippi River
 Latitude/Longitude: 46.89166667 / -94.32805556
 Water Body Type: Public Waters
 Monitored Sites (Primary): 202
 Monitored Sites (Secondary): N/A

Physical Characteristics

Surface area (acres): 184
 Littoral area (acres): 100
 % Littoral area: 54%
 Max depth (ft): 40 (m): 12.2
 Mean depth (ft): N/A (m): N/A
 Watershed size (acres): N/A

Water Quality Characteristics - Historical Means

Years monitored: 2007-2009

Parameters	Primary Site 202
Total Phosphorus Mean:	14.5
Total Phosphorus Min:	8
Total Phosphorus Max:	24
Number of Observations:	14
Chlorophyll-a Mean:	2.9
Chlorophyll-a Min:	1
Chlorophyll-a Max:	8
Number of Observations:	14
Secchi Depth Mean:	16.3
Secchi Depth Min:	12
Secchi Depth Max:	23
Number of Observations:	9
Trophic State Index Mean (Primary Site):	39.4
Trophic State:	Oligotrophic



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.

Island 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:	Better than expected range, which indicates better than expected water quality for the area
Secchi Depth:	Better than expected range, which indicates better than expected water quality for the area



Individual Lake Data Summary

County	MN Lake ID	Lake	Site	Date Range	Data Source
Cass	11-0257-00	Island	202 (Primary)	06-01-2007 - 09-30-2009	RMB Lab

Historical Mean	14.5	2.9	16.3	41	38	37	39
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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.
6/6/2007	5:15 PM	202	Kathy & Mike Froehlig	62421	RMB Lab	12	3	N/A	40	41	N/A	40
6/18/2007	12:00 AM	202	Kathy & Mike Froehlig	63205	RMB Lab	14	1	N/A	42	31	N/A	36
7/14/2007	7:30 PM	202	Kathy & Mike Froehlig	65132	RMB Lab	10	1	N/A	37	31	N/A	34
8/19/2007	4:30 PM	202	Kathy & Mike Froehlig	67020	RMB Lab	12	4	15.5	40	44	38	41
9/15/2007	6:30 PM	202	Kathy & Mike Froehlig	68578	RMB Lab	14	8	23	42	51	32	42
Annual Mean						12.4	3.4	19.2	40	39	35	38

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	1:00 PM	202	Kathy & Mike Froehlig	78454	RMB Lab	19	5	12	47	46	41	45
6/29/2008	8:30 PM	202	Kathy & Mike Froehlig	80736	RMB Lab	24	1	N/A	50	31	N/A	40
7/27/2008	1:30 PM	202	Bob Ladehoff	83601	RMB Lab	20	1	N/A	47	31	N/A	39
8/17/2008	7:30 PM	202	Kathy & Mike Froehlig	85418	RMB Lab	8	3	19	34	41	35	37
9/6/2008	5:00 PM	202	Kathy & Mike Froehlig	86952	RMB Lab	11	4	13	39	44	40	41
Annual Mean						16.4	2.8	14.7	43	38	38	40

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.
6/1/2009	8:00 AM	202	Bob Ladehoff	98201	RMB Lab	11	3	17.5	39	41	36	39
7/12/2009	8:00 PM	202	Bob Ladehoff	103447	RMB Lab	11	2	17	39	37	36	37
8/9/2009	6:40 PM	202	Kathy & Mike Froehlig	107094	RMB Lab	14	2	13	42	37	40	40
9/13/2009	1:00 PM	202	Bob Ladehoff	110803	RMB Lab	23	2	17	49	37	36	41
Annual Mean						14.8	2.2	16.1	42	38	37	39

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, chlorophyll *a*, or Secchi depth on Island Lake.