



Minnesota Pollution Control Agency

520 Lafayette Road
St. Paul, MN 55155-4194

Flat Lake, Becker County

National Lake Assessment Project (NLAP)

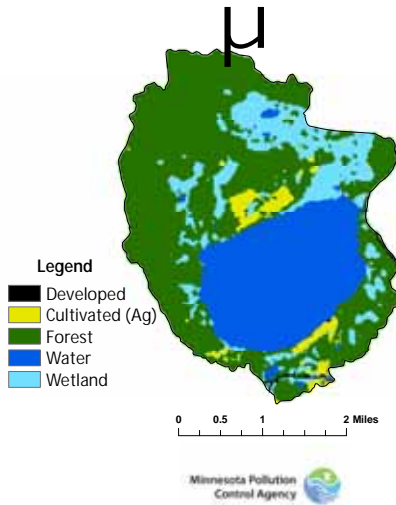
Sample Date: August 7, 2007

Minnesota Lake ID: 03-0242
Area: 1,836 acres
Watershed Area: 6,268 acres
Ecoregion: Northern Lakes and Forests (NLF)

NLAP ID: 1134
Maximum Depth: 21 ft
Mean Depth: 4 ft



Flat Lake Land Use



Land Use	Flat Lake Land Use %	NLF Typical Land Use %
Developed	1	0 – 7
Cultivated (Ag)	3	<1
Pasture & Open	0	0 – 6
Forest	54	54 – 87
Water & Wetland	42	14 – 31
Feedlots (#)	0	

Minnesota 2000 level 1 Landsat Landcover Classification.img

University of Minnesota Remote & Geospatial Analysis Lab

Flat Lake 2007 as compared to typical range for NLF ecoregion reference lakes. Single NLAP visit based on U.S. Environmental Protection Agency protocol as compared to typical range for summer-means.

Parameter	Flat Lake	NLF
Number of reference lakes	1	32
Total Phosphorus (µg/L)	24	14 – 27
Chlorophyll-a (µg/L)	9	4 – 10
Secchi Disk (feet)	4.6	8 -15
(meters)	1.4	2.4 – 4.6
Total Kjeldahl Nitrogen (mg/L)	0.8	0.4 – 0.75
Alkalinity (mg/L)		40 – 140
Color (Pt-Co U)	20	10 – 35
pH (SU)	8.9	7.2 – 8.3
Chloride (mg/L)	0.6	0.6 – 1.2
Total Suspended Solids (mg/L)		<1 – 2
Total Suspended Inorganic Solids (mg/L)		<1 - 2
Conductivity (umhos/cm)	187	50 – 250
TN:TP ratio	40:1	25:1 - 35:1
Microcystin(µg/L)	Near Shore	<10 Low Risk
WHO risk Category*	Index Site	10-20 Moderate Risk
	2.7	20- 200 High Risk
	4.1	

* Guidelines for safe recreational water environments (World Health Organization, 2003)

µg/L = micrograms per liter

mg/L = milligrams per liter

umhos/cm = micromhos per centimeter

Pt-Co-U = Platinum Cobalt Units

SU = Standard Units

Mixing Status: mixed with no temperature layer (polymictic)

**Temperature and Dissolved Oxygen Profile for Flat Lake. August 7, 2007.
Temp (C) and DO (mg/L)**

