



Minnesota Pollution Control Agency

520 Lafayette Road
St. Paul, MN 55155-4194

Vesper Lake, Cook County

National Lake Assessment Project (NLAP)

Sample Date: July 31, 2007

Minnesota Lake ID: 16-0414

Area: 16 acres

Watershed Area: 8,625 acres

Ecoregion: Northern Lakes and Forests (NLF)

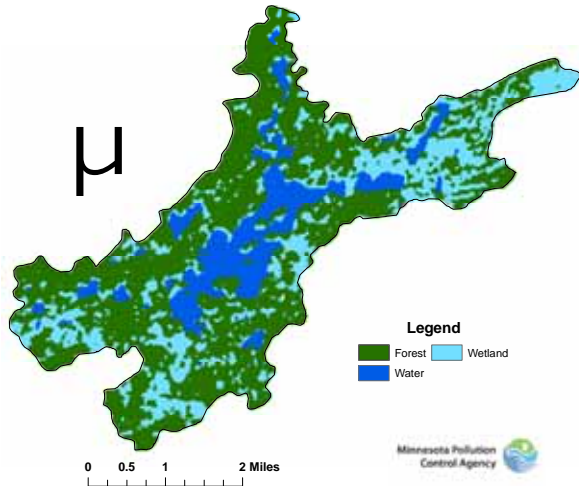
NLAP ID: 0782

Maximum Depth: 31 ft

Mean Depth: 15 ft



Vesper Lake Land Use
Cook County



Land Use	Vesper Land Use %	NLF Typical Land Use %
Developed	0	0-7
Cultivated (Ag)	0	<1
Pasture & Open	0	0-6
Forest	60	54-81
Water & Wetland	40	14-31
Feedlots (#)	0	

Minnesota 2000 level 1 Landsat Landcover
Classification.img

University of Minnesota Remote & Geospatial Analysis Lab

Vesper 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	Vesper Lak	NLF
Number of reference lakes	1	32
Total Phosphorus (µg/L)	7	14 - 27
Chlorophyll-a (µg/L)	3	4 - 10
Secchi Disk (feet)	7.2	8 - 15
(meters)	2.2	2.4 - 4.6
Total Kjeldahl Nitrogen (mg/L)	0.4	0.4 - 0.75
Alkalinity (mg/L)		40 - 140
Color (Pt-Co U)	33	10 - 35
pH (SU)	6.45	7.2 - 8.3
Chloride (mg/L)	0.7	0.6 - 1.2
Total Suspended Solids (mg/L)		<1 - 2
Total Suspended Inorganic Solids (mg/L)		<1 - 2
Conductivity (umhos/cm)	26	50 - 250
TN:TP ratio	63:1	25:1 - 35:1
Microcystin(µg/L)	Near Shore	<10 Low Risk
WHO risk Category*	Index Site	10-20 Moderate Risk
	<0.15	20- 200 High Risk

* 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: thermally stratified (dimictic)

**Temperature and Dissolved Oxygen Profile for Vesper Lake. July 31, 2007.
 Temp. (C) and DO (mg/L)**

