



# Minnesota Pollution Control Agency

520 Lafayette Road  
St. Paul, MN 55155-4194

# West Leaf Lake, Otter Tail County

National Lake Assessment Project (NLAP)

Sample Date: August 1, 2007

**Minnesota Lake ID:** 56-0114

**Area:** 693 acres

**Watershed Area:** 12,642 acres

**Ecoregion:** North Central Hardwoods Forests (NCHF)

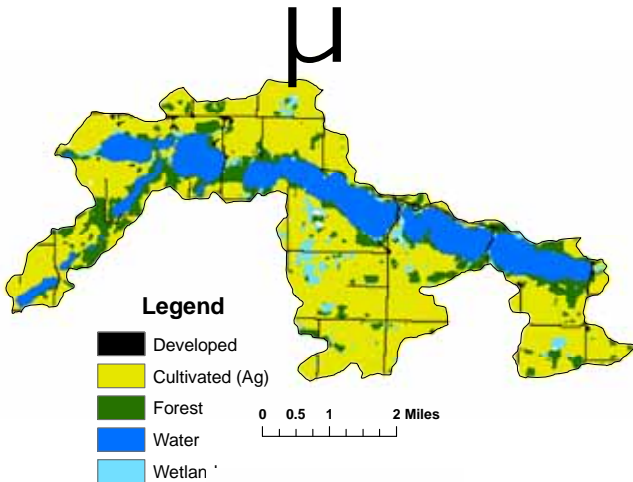
**NLAP ID:** 0878

**Maximum Depth:** 55 ft

**Mean Depth:** 35 ft



West Leaf Lake Land Use



| Land Use        | West Leaf Lake Land Use % | NCHF Typical Land Use % |
|-----------------|---------------------------|-------------------------|
| Developed       | 4                         | 2-9                     |
| Cultivated (Ag) | 58                        | 22-50                   |
| Pasture & Open  | 0                         | 11-25                   |
| Forest          | 14                        | 6-25                    |
| Water & Wetland | 24                        | 14-30                   |
| Feedlots (#)    | 6                         |                         |



Minnesota 2000 Level 1 Landsat Landcover Classification.img

University of Minnesota Remote & Geospatial Analysis Lab

**West Leaf 2007 as compared to typical range for NCHF ecoregion reference lakes. Single NLAP visit based on U.S. Environmental Protection Agency protocol as compared to typical range for summer-means. Data from Minnesota Department of Health (MDH) laboratory.**

| Parameter                               | West Leaf (MDH)                    | NCHF                                     |
|---|------------------------------------|--|
| Number of reference lakes               | 1                                  | 43                                       |
| Total Phosphorus (µg/L)                 | 17                                 | 23 - 50                                  |
| Chlorophyll-a (µg/L)                    | 7                                  | 5 - 22                                   |
| Secchi Disk (feet)                      | 5.2                                | 4.9 - 10.5                               |
| (meters)                                | 1.6                                | (1.5 - 3.2)                              |
| Total Kjeldahl Nitrogen (mg/L)          | 0.76                               | < 0.60 - 1.2                             |
| Alkalinity (mg/L)                       | 150                                | 75 - 150                                 |
| Color (Pt-Co U)                         | 5                                  | 10 - 20                                  |
| pH (SU)                                 | 8.5                                | 8.6 - 8.8                                |
| Chloride (mg/L)                         | 7                                  | 4 - 10                                   |
| Total Suspended Solids (mg/L)           | 3                                  | 2 - 6                                    |
| Total Suspended Inorganic Solids (mg/L) | 1.8                                | 1 - 2                                    |
| Conductivity (umhos/cm)                 | 233                                | 300 - 400                                |
| TN:TP ratio                             | 45:1                               | 25:1 - 35:1                              |
| Microcystin(µg/L)                       |                                    | <10 Low Risk                             |
| WHO risk Category*                      | Near Shore: 0.8<br>Index Site: 0.4 | 10-20 Moderate Risk<br>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 West Leaf Lake. August 1, 2007.**  
 Temp. (C) and DO (mg/L)

