

## WATER QUALITY SUMMARY

### **Highland Lake**, Bridgton

MIDAS: 3454, Sample Station # 1

The Maine Department of Environmental Protection (Maine DEP), the Volunteer Lake Monitoring Program (VLMP) and Lakes Environmental Association (LEA) have collaborated in the collection of lake data to evaluate water quality, track algal blooms, and determine historical water quality trends. This dataset does not include bacteria, mercury, or nutrients other than total phosphorus.

Water quality monitoring datasets for Highland Lake have been collected since 1976. During this period, 24 years of basic chemical information was collected in addition to 35 years of Secchi Disk Transparency (SDT) measures. The water quality of Highland Lake is considered above average based on measures of SDT, total phosphorus (TP) and chlorophyll-a (Chla). The potential for nuisance algal blooms on Highland Lake is low.

Water Quality Measures: Highland Lake is a non-colored lake (average color 14 SPU) with an average SDT of 6.7meters (22feet) The range of upper water column TP for Highland Lake is 4 - 16 parts per billion (ppb) with an average of 7 ppb. Chla ranges from 1.2 - 10.3 ppb with an average of 2.8 ppb. Recent dissolved oxygen (DO) profiles show moderate to high DO depletion in deep areas of the lake. The potential for phosphorus to leave the bottom sediments and become available to algae in the water column (internal loading) is moderate. Oxygen levels below 5 parts per million stress certain cold water fish, and a persistent loss of oxygen may eliminate or reduce habitat for sensitive cold water species (e.g., lake trout and landlocked Atlantic salmon).

Comments: Highland Lake is actively managed and annually monitored by the Lakes Environmental Association (LEA) with offices in Bridgton. Highland Lake was removed from the list of Maine lakes in non-attainment of water quality standards in 2006. A watershed-based management plan was implemented in 2006 through the efforts of Maine DEP and the Cumberland County Soil and Water Conservation District.

Nutrient Management: A Highland Lake combined Phosphorus Control Action Plan (PCAP) and Total Maximum Daily (Annual Phosphorus) Load (TMDL) report was prepared by Maine DEP during 2002-04 with assistance from the Maine Association of Conservation Districts (MACD) and Lakes Environmental Association (LEA) project team. Following Highland Lake stakeholder and public reviews, this document was approved by US-EPA (New England) on August 12, 2004. This final report, along with the EPA-New England review summary and letter of approval, can be found on the Maine DEP webpage at: <http://www.maine.gov/dep/water/monitoring/tmdl/tmdl2.html>.

See the Maine DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be obtained by contacting LEA at 207-647-8580, Maine DEP at 207-287-3901 or VLMP at 207-783-7733, and at these Websites: <http://www.lakesofmaine.org> and <http://www.maine.gov/dep/water/lakes/index.html> and <http://mainelakes.org/> and <http://www.mainevolunteerlakemonitors.org>.

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