WATER QUALITY SUMMARY

GREAT POND, BELGRADE

MIDAS: 5274, Sample Station # 1, (Southeast Hoyt Island)

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

Water quality monitoring datasets for Great Pond have been collected since 1970. During this period, 9 years of basic chemical information was collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Great Pond is considered above average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Great Pond is low-moderate. Non-nuisance Gloeotrichia blooms occur fairly regularly.

Water Quality Measures: Great Pond is a non-colored lake (average color 14 SPU) with an average SDT of 6.3 m (20.7 ft). The range of water column TP for Great Pond is 6 - 11 parts per billion (ppb) with an average of 9 ppb. Chla ranges from 2.5 – 9.5 ppb with an average of 5.0 ppb. Recent dissolved oxygen (DO) profiles show moderate DO depletion in deep areas of the lake. However, the profile on 8/20/03 had water less than 2 ppm as shallow as 30 feet. The potential for phosphorus to leave the bottom sediments and become available to algae in the water column (internal loading) is moderate and deep water TP levels in the 20+ ppb range have been found on two occasions since 1990. 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.

The Belgrade Regional Conservation Alliance (BRCA) has completed watershed surveys in the Great Pond direct watershed (2000) and all of the sub-watersheds upstream of Great Pond (1998-1999). The results of this project have been used to finalize a Watershed Management Plan for the entire Great Pond watershed (2001). These projects were accomplished using state funding obtained under DEP's Non-Point Source Program. Additional federal funding has been obtained under the same program to begin correcting erosion problems identified during the survey process.

The Belgrade Lakes Conservation Corps, operating under the 'umbrella' of BRCA, has been operating in the chain of Belgrade Lakes since 1996. The Corps employs high school age young adults to implement erosion controls that do not require heavy equipment (rip-rap, plunge pools, buffer plantings). Cost is shared between homeowners and supporters of the Corps.

The Belgrade Lakes Association, one of the oldest in the state and encompassing both Great and Long Ponds, has been extremely active in lake protection activities.

Sample Station # 2, (Northwest Hoyt Island)

Water quality monitoring datasets for Great Pond have been collected since 1970. During this period, 14 years of basic chemical information was collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Great Pond is considered average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Great Pond is low-moderate. Non-nuisance Gloeotrichia blooms occur fairly regularly.

Water Quality Measures: Great Pond is a non-colored lake (average color 14 SPU) with an average SDT of 6.0 m (19.8 ft). The range of water column TP for Great Pond is 9 - 12 parts per billion (ppb) with an average of 10 ppb. Chla ranges from 2.6 – 7.4 ppb with an average of 4.8 ppb. Recent dissolved oxygen (DO) profiles show moderate-high DO depletion in deep areas of the lake. In August of 2003, DO in water below 30 ft was less than 2 ppm. The potential for phosphorus to leave the bottom sediments and become available to algae in the water column (internal loading) is moderate and deep water TP readings have been in the 20+ range occasionally. 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.

The Belgrade Regional Conservation Alliance (BRCA) has completed watershed surveys in the Great Pond direct watershed (2000) and all of the sub-watersheds upstream of Great Pond (1998-1999). The results of this project are being used to finalize a Watershed Management Plan for the entire Great Pond watershed (2001). These projects were accomplished using state funding obtained under DEP's Non-Point Source Program. Additional federal funding has been obtained under the same program to begin correcting erosion problems identified during the survey process.

The Belgrade Lakes Conservation Corps, operating under the 'umbrella' of BRCA, has been operating in the chain of Belgrade Lakes since 1996. The Corps employs high school age young adults to implement erosion controls that do not require heavy equipment (rip-rap, plunge pools, buffer plantings). Cost is shared between homeowners and supporters of the Corps.

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See the Maine DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be obtained by contacting 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://www.mainevolunteerlakemonitors.org.

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