

LAKE: BONNY EAGLE L (VLMP 05)
 TOWN: STANDISH
 COUNTY: CUMBERLAND

MIDAS: 5042
 TRUE BASIN: 1
 SAMPLE STATION: 1

WHOLE LAKE INFORMATION

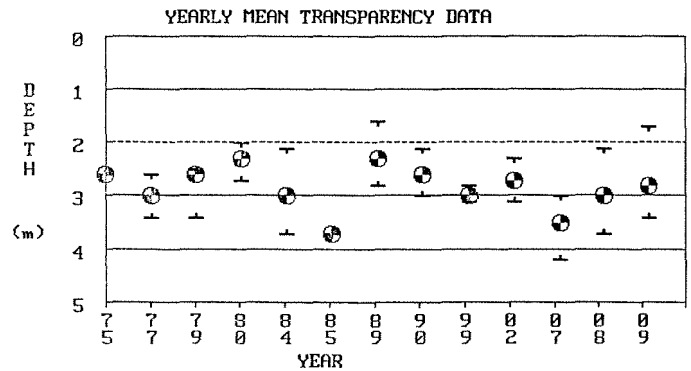
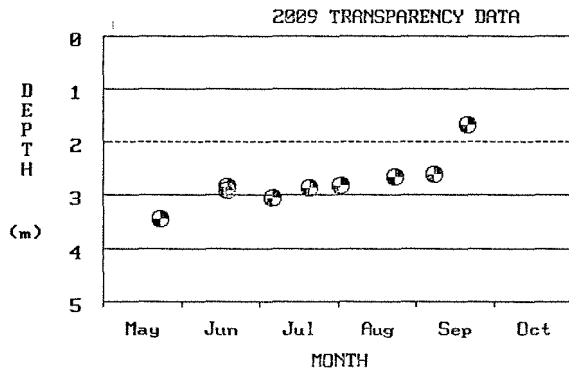
MAX. DEPTH: 7 m. (22 ft.)
 MEAN DEPTH: 4 m. (13 ft.)
 DELORME ATLAS #: 04
 USGS QUAD: STANDISH
 IFW REGION A: Sebago Lake (Gray)
 IFW FISH. MANAGMENT: Warmwater

TRUE BASIN CHARACTERISTICS

SURFACE AREA: 82.0 ha. (202.6 a.)
 FLUSHING RATE: 1.56 flushes/yr.
 VOLUME: 2731346.8 cu. m. (2216 ac.-ft.)
 DIRECT DRAINAGE AREA: 9.13 sq. km. (3.53 sq. mi.)

PLEASE NOTE THE FOLLOWING: The SAMPLE STATION # refers to the location sampled. The term TRUE BASIN is used to define areas within a lake that are separated by shallow reefs or shoals and therefore function as separate lakes. There are approximately 50 lakes in the state that have more than 1 True Basin. True Basin Characteristics are now being included in the first section of these reports to enable users of the Phosphorous Loading Methodology to better evaluate the data. If there is no data for a particular True Basin, True Basin Characteristics must be obtained from the DEP. BONNY EAGLE L has 1 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:



Note: 2009 graphs may indicate multiple readings taken on a given day.

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

[* indicates that Secchi disk was visable at bottom of lake (or one reading used in calculation was visable)].

YEAR	MEAN COLOR (SPU)	MEAN pH	MEAN ALK (mg/l)	MEAN COND. (uS/cm)	TOTAL PHOS. MEANS (ppb)			SECCHI DISK (m.)				CHLOROPHYLL A(ppb)			TROPHIC STATE INDICES					
				EPI	SURF	BOT.	PRO.	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHI		
1975	-	-	-	-	-	-	7	-	-	2.6	2.6	2.6	1	2.6	2.6	2.6	-	-	-	-
1977	70	6.80	4.0	52	-	-	-	23	2.6	3.0	3.4	1	5.5	6.0	6.4	-	-	-	-	
1979	100	-	-	-	-	-	8	-	2.5	2.6	3.4	3	-	-	-	-	-	-	-	
1980	90	-	6.0	39	16	-	-	-	2.0	2.3	2.7	5	3.6	5.5	8.9	-	-	-	55	
1984	-	-	-	-	-	-	-	-	2.1	3.0	3.7	5	-	-	-	-	-	-	-	
1985	40	6.90	5.0	41	15	-	-	-	3.7	3.7	3.7	1	-	-	-	-	-	-	-	
1989	-	-	-	-	-	-	-	-	1.6	2.3	2.8	6	-	-	-	-	-	-	-	
1990	70	6.42	10.0	45	14	-	-	-	2.1	2.6	3.0	5	5.9	5.9	5.9	-	-	-	-	
1999	40	-	5.0	57	13	-	28	-	2.8	3.0	3.1	1	19.0	19.0	19.0	-	-	-	-	
2002	-	-	-	-	-	-	-	-	2.3	2.7	3.1	5	-	-	-	-	-	-	-	
2007	-	-	-	-	-	-	-	-	3.0	3.5	4.2	3	-	-	-	-	-	-	-	
2008	105	6.78	5.8	67	-	13	-	-	2.1	3.0	3.7	5	-	-	-	-	-	-	-	
2009	-	-	-	-	-	-	-	-	1.7	2.8	3.4	5	-	-	-	-	-	-	-	
SUMMARY:	74	6.68	6.0	50	15	9	28	23	1.6	2.9	4.2	13	2.6	7.8	19.0	-	-	-	55	

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LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

DEPTH	SAMPLE DATE									
	09/02/77		09/24/80		09/09/85		09/12/90		08/27/99	
<u>m</u>	<u>°C</u>	<u>ppm</u>	<u>°C</u>	<u>ppm</u>	<u>°C</u>	<u>ppm</u>	<u>°C</u>	<u>ppm</u>	<u>°C</u>	<u>ppm</u>
0.0	23.0	8.8	19.0	9.0	21.2	8.8	20.8	7.9	23.9	8.7
1.0	23.0	8.8	-	-	21.2	8.8	20.8	7.8	23.7	8.6
2.0	23.0	8.8	18.0	8.6	20.8	8.8	20.6	7.6	22.7	8.1
3.0	23.0	8.8	-	-	19.9	8.3	20.6	7.6	21.5	5.5
4.0	19.8	5.7	18.0	8.6	19.0	6.8	20.0	4.9	21.0	2.9
5.0	19.4	4.5	18.0	8.0	18.8	5.8	19.1	2.5	19.0	0.2
6.0	-	-	18.0	6.5	18.5	4.7	17.0	0.2	17.7	0.2

WATER QUALITY SUMMARY

BONNY EAGLE LAKE, Standish

Midas: 5042, Sample Station # 1

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 present water quality, track algae blooms, and determine water quality trends. This dataset does not include bacteria, mercury, or nutrients other than phosphorus.

Water quality monitoring data for Bonny Eagle Lake has been collected since 1975. During this period, 5 years of basic chemical information was collected, in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Bonny Eagle Lake is considered to be slightly below average, based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Bonny Eagle Lake is moderate.

Water Quality Measures: Bonny Eagle Lake is a highly colored lake (average color 68 SPU) with an average SDT of 2.8m (9.2ft). The range of water column TP for Bonny Eagle Lake is 13 - 16 parts per billion (ppb) with an average of 15 ppb, while Chla ranges from 2.6 - 19.0 ppb with an average of 7.8 ppb. Recent dissolved oxygen (DO) profiles show moderate DO depletion in deep areas of the lake. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal loading) is moderate.

The flushing rate indicates how often the lake water is renewed. The ratio of drainage area runoff volume to the lake volume determines the flushing rate. Flushing rate is a key component of the water quality models DEP uses to predict changes in lake phosphorus concentrations. The average flushing rate is about 1-1.5 flushes per year for Maine lakes. The flushing rate for Bonny Eagle Lake is 1.56 flushes per year.

See ME-DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be found on the World Wide Web at <http://www.pearl.maine.edu> and/or <http://www.maine.gov/dep/blwq/lake.htm>, or telephone the ME-DEP at 207-287-3901 or the VLMP at 207-783-7733.

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