Clemons Pond Water Quality Report for

2012 Monitoring Season

Thankfully the monitoring season for 2012 was again uneventful with respect to changes in water quality on the pond. Water clarity as measured by Secchi disc ranged from 4.6 to 6.7 meters with an average of 5.4 meters which is only 0.2 meters less than our historic average and very close to the average for all monitored Maine lakes. Interestingly, we did not see the significant loss of water clarity seen in many lakes and ponds last June following the period of very heavy rainfall.

Total phosphorus levels measured in late summer remained at 6 which is our average. Rising phosphorus levels which we have not seen could put us at risk for a serious algal bloom which would markedly reduce our enjoyment of the pond. This is very sensitive to shoreline development, run-off into the pond or leaking septic discharge into the pond and will continue to be closely monitored especially if there is develop along "Shepards" property.

Oxygen levels throughout the water column down to 13 meters followed their usual pattern from late spring into fall with gradual fall in levels below 4-5 meters starting in late summer.

Our first 2 monitoring trips onto the pond this spring showed typical results for this time of year with excellent water clarity of 6 meters or more. Water temperature on the surface on May 19th was 63 degrees at the surface and a bone numbing 44 degrees at the bottom. Oxygen levels were excellent and probably the highest we will see for the entire season.

Attached is the annual water quality report compiled and updated by the Maine VLMP and DEP which gives you a historical perspective on our water quality measurements. More information about water quality on all Maine lakes can be found at the Maine Volunteer Lakes Monitoring Program website: www.mainevlmp.org or the Lakes of Maine website: www.lakesofmaine.org.

Victor Lerish

5/24/13

WATER QUALITY SUMMARY

CLEMONS POND (BIG), HIRAM
MIDAS: 3174, 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 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 Big Clemons Pond have been collected since 1978 (16 years). During this period, five years of basic chemical information were collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Big Clemons Pond is considered slightly above average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Big Clemons Pond is low to moderate.

Water Quality Measures: Big Clemons Pond is a non-colored lake (average color 10 SPU) with an average SDT of 5.6 m (18.3 ft). The range of water column TP for Big Clemons Pond is 6 - 8 parts per billion (ppb) with an average of 7 ppb. Chla ranges from 1.9 - 3.2 ppb with an average of 2.7 ppb. Recent dissolved oxygen (DO) profiles show moderate 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.

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.

Filename: clem3174, Revised: 2/02, By: rb, 1/11By jp

LAKE: CLEMONS P (BIG) (VLMP 17)
TOWN: HIRAM
COUNTY: OXFORD

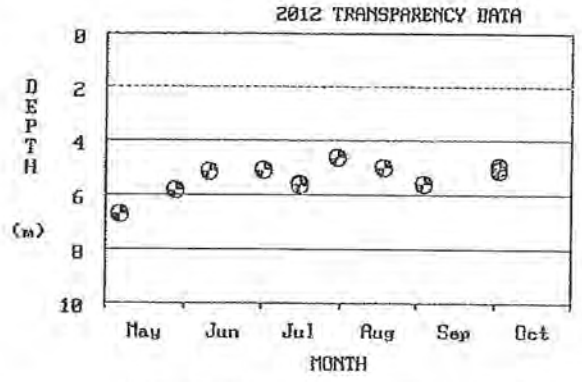
MIDAS: 3174
TRUE BASIN: 1
SAMPLE STATION: 1

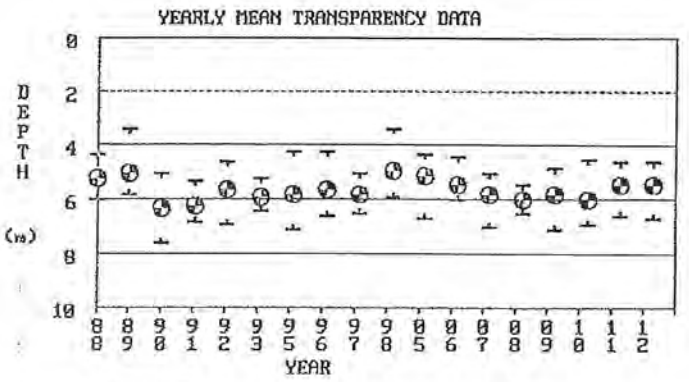
WHOLE LAKE INFORMATION
MAX. DEPTH: 13 m. (44 ft.)
MEAN DEPTH: 4 m. (12 ft.)
DELORME ATLAS #: 04
USGS QUAD: KEZAR FALLS
IFW REGION A: Sebago Lake (Gray)
IFW FISH. MANAGMENT: Warmwater & Coldwater

TRUE BASIN CHARACTERISTICS
SURFACE AREA: 34.0 ha. (84.0 a.)
FLUSHING RATE: 2.55 flushes/yr.
VOLUME: 1504027.5 cu. m. (1220 ac.-ft.)
DIRECT DRAINAGE AREA: 3.10 sq. km. (1.20 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. CLEMONS P (BIG) has 1 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:





Note: 2012 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) EPI CORE	SURF GRAB	BOT. GRAB	PRO. GRAB	SECCHI DISK (m.) MIN.	MEAN	MAX.	N	CHLOROPHYLL A(ppb) MIN.	MEAN	MAX.	TROPHIC STATE INDICES EPT PHOS C	G	SEC	CHL
1978	-	-	-	-	8	-	13	13	-	-	-		-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	4.3	5.2	6.0	5	-	-	-	-	-	46	-
1989	-	-	-	-	-	-	-	-	3.4	5.0	5.8	6	-	-	-	-	-	48	-
1990	10	6.71	10.5	31	6	-	-	-	5.0	6.3	7.6	5	-	-	-	-	-	37	-
1991	-	-	-	-	-	-	-	-	5.3	6.2	6.8	4	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	4.6	5.6	6.9	6	-	-	-	-	-	43	-
1993	-	-	-	-	-	-	-	-	5.2	5.9	6.4	4	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	4.2	5.8	7.1	5	-	-	-	-	-	41	-
1996	7	-	7.0	39	8	-	22	-	4.2	5.6	6.6	5	2.8	3.0	3.1	-	-	43	-
1997	6	7.01	8.0	40	-	-	-	-	5.0	5.8	6.5	5	3.2	3.2	3.2	-	-	41	-
1998	-	-	-	-	-	-	-	-	3.4	4.9	5.9	5	-	-	-	-	-	49	-
2005	-	-	-	-	-	5	-	-	4.3	5.1	6.7	6	-	-	-	-	-	47	-
2006	17	6.97	6.8	38	7	7	17	-	4.4	5.4	6.0	6	1.9	1.9	1.9	-	-	44	-
2007	-	-	-	-	-	7	-	-	5.0	5.8	7.0	6	-	-	-	-	-	41	-
2008	-	-	-	-	-	6	-	-	5.4	6.0	6.5	6	-	-	-	-	-	39	-

LAKE: CLEMONS P (BIG) (VLMP 17) MIDAS: 3174
TOWN: HIRAM *TRUE BASIN: 1
COUNTY: OXFORD *SAMPLE STATION: 1

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

	MEAN	MEAN	MEAN	MEAN	TOTAL PHOS. MEANS (ppb)				SECCHI DISK (m.)				CHLOROPHYLL A(ppb)			TROPHIC STATE INDICES			
	COLOR	pH	ALK	COND.	EPI	SURF	BOT.	PRO.								EPI PHOS			
YEAR	(SPU)		(mg/l)	(uS /cm)	CORE	GRAB	GRAB	GRAB	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHL
2009	-	-	-	-	-	5	-	-	4.8	5.8	7.1	5	-	-	-	-	-	41	-
2010	-	-	-	-	-	5	-	-	4.5	6.0	6.9	6	-	-	-	-	-	39	-
2011	12	7.17	7.4	36	-	7	-	-	4.6	5.4	6.6	6	-	-	-	-	-	44	-
2012	-	-	-	-	-	6	-	-	4.6	5.4	6.7	6	-	-	-	-	-	44	-
SUMMARY:	10	6.93	7.9	37	7	6	17	13	3.4	5.6	7.6	18	1.9	2.7	3.2	-	-	43	-

LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

	SAMPLE DATE															
DEPTH	08/29/10		09/12/10		09/29/10		08/17/11		09/05/11		09/25/11		08/17/12		09/03/12	
m	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm
0.0	22.4	8.3	21.3	8.0	22.4	8.3	23.1	8.5	24.0	8.2	23.5	8.4	24.9	7.9	23.2	8.2
1.0	22.2	8.3	21.4	8.0	22.2	8.3	22.8	8.5	24.0	8.2	21.2	8.6	24.7	8.0	23.2	8.2
2.0	22.2	8.3	21.5	8.0	22.2	8.3	22.6	8.5	23.6	8.2	20.1	8.5	24.6	7.9	23.2	8.2
3.0	21.9	8.2	21.5	8.0	21.9	8.2	22.5	8.4	22.8	8.4	19.4	8.4	24.5	7.9	23.1	8.2
4.0	21.7	8.1	21.5	8.0	21.7	8.1	22.5	8.4	22.3	7.8	19.0	8.3	22.6	7.9	23.0	8.1
5.0	21.2	7.7	21.4	7.9	21.2	7.7	20.0	10.8	20.8	7.2	18.8	8.1	18.9	6.9	18.6	5.4
6.0	19.6	6.8	20.3	6.2	19.6	6.8	14.9	11.5	16.7	9.6	17.9	6.9	15.2	3.9	15.3	2.2
7.0	15.5	5.5	16.2	4.1	15.5	5.5	11.4	8.1	12.6	8.6	14.8	4.4	12.5	1.2	12.6	0.3
8.0	11.9	4.5	12.5	2.7	11.9	4.5	9.0	3.6	9.6	1.2	11.3	2.0	10.8	0.2	10.9	0.2
9.0	9.6	0.6	10.0	0.4	9.6	0.6	7.7	0.5	8.2	0.2	8.8	0.6	9.8	0.1	9.8	0.0
10.0	8.4	0.2	8.5	0.2	8.4	0.2	7.2	0.2	7.4	0.1	7.7	0.3	9.0	0.0	9.1	0.0
11.0	7.6	0.0	7.7	0.0	7.6	0.0	6.8	0.2	6.9	0.0	7.0	0.2	8.6	0.0	8.4	0.0
12.0	7.2	0.0	7.3	0.0	7.2	0.0	6.6	0.1	6.6	0.0	6.8	0.1	8.2	0.0	8.2	0.0
13.0	7.1	0.0	-	-	7.1	0.0	6.4	0.1	6.6	0.0	6.7	0.0	8.1	0.0	8.3	0.0