

LAKE: PUFFERS P (ECHO L) (VLMP 19)  
 TOWN: DEXTER  
 COUNTY: PENOBSCOT

MIDAS: 744  
 TRUE BASIN: 1  
 SAMPLE STATION: 1

WHOLE LAKE INFORMATION

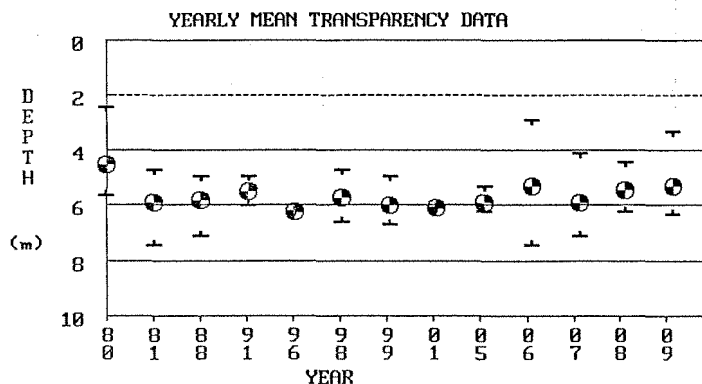
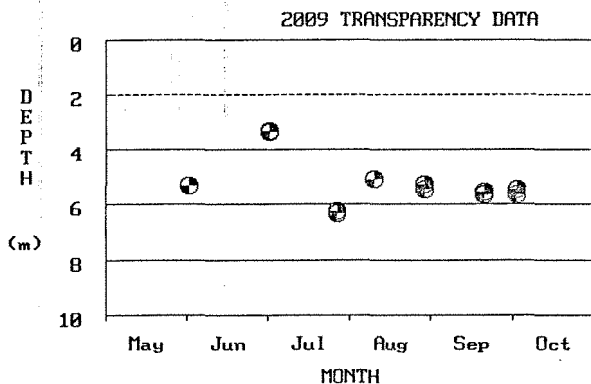
MAX. DEPTH: 16 m. (52 ft.)  
 MEAN DEPTH: 5 m. (16 ft.)  
 DELORME ATLAS #: 32  
 USGS QUAD: DEXTER  
 IFW REGION B: Belgrade Lakes (Augusta)  
 IFW FISH. MANAGMENT: Coldwater

TRUE BASIN CHARACTERISTICS

SURFACE AREA: 36.0 ha. (89.0 a.)  
 FLUSHING RATE: 1.63 flushes/yr.  
 VOLUME: 1393717.0 cu. m. (1131 ac.-ft.)  
 DIRECT DRAINAGE AREA: 4.10 sq. km. (1.58 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. PUFFERS P (ECHO 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	MEAN pH	MEAN ALK	MEAN COND.	TOTAL PHOS. MEANS (ppb)				SECCHI DISK (m.)				CHLOROPHYLL A(ppb)			TROPHIC STATE INDICES			
	(SPU)		(mg/l)	(uS	EPI	SURF	BOT.	PRO.	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHL
				/cm)	CORE	GRAB	GRAB	GRAB											
1980	-	-	-	-	21	-	-	-	2.4	4.5	5.6	6	-	-	-	62	-	54	-
1981	-	-	-	-	10	-	-	-	4.7	5.9	7.4	6	0.7	1.7	3.2	43	-	40	27
1988	-	-	-	-	-	-	-	-	4.9	5.8	7.1	3	-	-	-	-	-	-	-
1991	12	7.98	62.0	119	14	-	80	-	4.9	5.5	6.0	2	2.3	2.3	2.3	-	-	-	-
1996	10	-	62.0	165	10	-	191	-	6.2	6.2	6.2	1	2.0	2.0	2.0	-	-	-	-
1998	-	-	-	-	-	-	-	-	4.7	5.7	6.6	3	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	4.9	6.0	6.7	5	-	-	-	-	-	39	-
2001	16	8.13	16.5	190	7	-	55	-	6.1	6.1	6.1	1	4.0	4.0	4.0	-	-	-	-
2005	-	-	-	-	-	-	-	-	5.3	5.9	6.2	3	-	-	-	-	-	-	-
2006	15	8.24	67.2	157	10	-	36	-	2.9	5.3	7.4	4	3.4	3.4	3.4	-	-	-	-
2007	-	-	-	-	-	-	-	-	4.1	5.9	7.1	4	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	4.4	5.4	6.2	5	-	-	-	-	-	44	-
2009	-	-	-	-	-	-	-	-	3.3	5.3	6.3	5	-	-	-	-	-	45	-
SUMMARY:	13	8.10	51.9	158	12	-	90	-	2.4	5.7	7.4	13	0.7	2.7	4.0	53	-	45	27

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LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

DEPTH	SAMPLE DATE							
	08/27/91		08/15/96		08/15/01		08/10/06	
m	°C	ppm	°C	ppm	°C	ppm	°C	ppm
0.0	21.0	8.7	23.9	8.9	25.8	7.6	23.7	8.4
1.0	21.0	8.7	23.8	9.0	25.2	7.7	23.9	8.4
2.0	21.0	8.6	23.2	9.0	25.0	7.7	24.0	8.3
3.0	21.0	8.5	23.0	9.0	24.8	7.7	24.0	8.1
4.0	21.0	8.5	21.8	9.5	24.4	7.5	23.7	7.5
5.0	20.2	7.3	17.7	9.2	17.3	9.7	19.8	5.2
6.0	16.0	8.0	13.9	8.3	12.3	7.4	17.1	1.4
7.0	11.8	5.4	10.7	3.5	9.1	5.6	14.0	0.7
8.0	9.2	1.7	8.8	0.5	7.2	3.0	11.7	0.3
9.0	7.4	0.7	7.3	0.4	6.0	1.1	10.5	0.3
10.0	7.0	0.5	6.8	0.2	5.5	0.8	9.7	0.3
11.0	7.0	0.5	6.2	0.1	5.4	0.7	9.2	0.2
12.0	6.9	0.5	6.1	0.1	5.3	0.7	9.0	0.2
13.0	6.6	0.5	6.0	0.1	5.2	0.7	8.9	0.2
14.0	6.5	0.5	5.9	0.1	5.2	0.7	-	-
15.0	6.5	0.4	5.9	0.1	-	-	-	-

## WATER QUALITY SUMMARY

### **PUFFERS POND (ECHO LAKE), DEXTER**

Midas: 0744, Sample Station # 1, center of large area of pond

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 Puffers Pond has been collected since 1980. During this period, 5 years of basic chemical information was collected, in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Puffers Pond is considered to be average, based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance alga blooms on Puffers Pond is low.

Water Quality Measures: Puffers Pond is a non-colored lake (average color 12 SPU) with an average SDT of 5.7m (18.8ft). The range of water column TP for Puffers Pond is 7-21 parts per billion (ppb) with an average of 13 ppb (State average 12 ppb), while Chla ranges from 1.2-4.0 ppb with an average of 2.5 ppb (State average 4.8 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 low to 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.

Inland Fisheries and Wildlife manage this pond as a cold-water fishery.

Puffer's Pond was one of seven lakes studied in the 1980 and 1981 by the Penobscot Valley Regional Planning Commission. Puffer's drains into Sebec Lake, whose water quality has been degraded over the years by direct and indirect discharges. As part of the restoration of Sebec's water quality, the Soil Conservation Service is helping area farmers control nutrient rich run-off from their farmlands. Data gathered on Puffer's will be used to establish the efficiency of watershed controls. Water quality has improved slightly since the study in the early 80's.

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

Filename: puff0744, Revised: 02, By: jp