

LAKE: SPENCER P (VLMP 21 )  
 TOWN: E MIDDLESEX CANAL GR  
 COUNTY: PISCATAQUIS

MIDAS: 404  
 TRUE BASIN: 1  
 SAMPLE STATION: 1

WHOLE LAKE INFORMATION

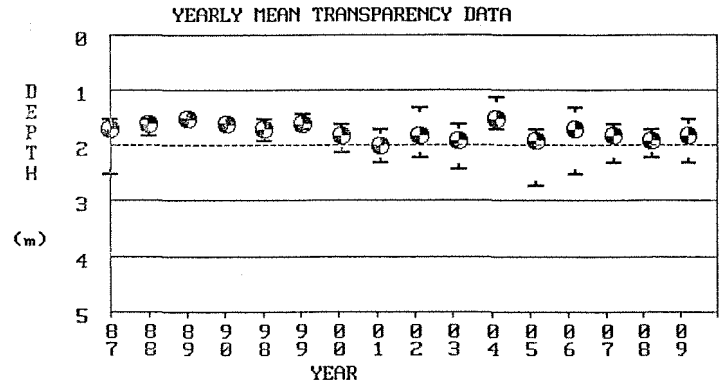
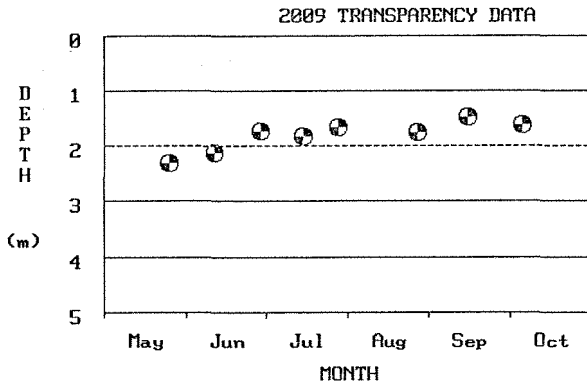
MAX. DEPTH: 5 m. (16 ft.)  
 MEAN DEPTH: 2 m. (5 ft.)  
 DELORME ATLAS #: 41  
 USGS QUAD: SPENCER BAY  
 IFW REGION E: Moosehead Lake (Greenville)  
 IFW FISH. MANAGMENT: Coldwater

TRUE BASIN CHARACTERISTICS

SURFACE AREA: 415.0 ha. (1025.5 a.)  
 FLUSHING RATE: 5.41 flushes/yr.  
 VOLUME: 6096428.0 cu. m. (4945 ac.-ft.)  
 DIRECT DRAINAGE AREA: 38.91 sq. km. (15.02 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. SPENCER P 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	MEAN	MEAN	MEAN	TOTAL PHOS. MEANS (ppb)				SECCHI DISK (m.)				CHLOROPHYLL A(ppb)			TROPIC STATE INDICES			
	COLOR	pH	ALK	COND.	EPI	SURF	BOT.	PRO.	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHL
	(SPU)		(mg/l)	(uS	/cm)	CORE	GRAB	GRAB	GRAB										
1987	-	-	-	-	-	-	-	-	1.5	1.7	2.5	5	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	1.5	1.6	1.8	3	-	-	-	-	-	-	-
1989	-	5.42	-	-	22	-	-	-	1.5	1.5	1.5	1	-	-	-	-	-	-	-
1990	40	7.11	9.5	39	37	-	-	-	1.6	1.6	1.6	1	13.6	13.6	13.6	-	-	-	-
1998	32	-	14.0	39	-	22	-	-	1.5	1.7	1.9	4	6.9	6.9	6.9	-	-	-	-
1999	-	-	-	-	-	-	-	-	1.4	1.6	1.7	6	-	-	-	-	-	-	-
2000	57	-	11.5	36	19	-	-	-	1.6	1.8	2.1	5	7.1	7.1	7.1	-	-	-	-
2001	-	-	-	-	-	-	-	-	1.7	2.0	2.3	5	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	1.3	1.8	2.2	5	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	1.6	1.9	2.4	5	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	1.1	1.5	1.7	6	-	-	-	-	-	-	-
2005	54	7.02	10.6	36	-	18	-	-	1.7	1.9	2.7	5	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	1.3	1.7	2.5	5	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	1.6	1.8	2.3	6	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	1.7	1.9	2.2	5	-	-	-	-	-	-	-

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	COLOR (SPU)	pH	ALK (mg/l)	COND. (uS /cm)	EPI	SURF	BOT.	PRO.	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	EPI PHOS		SEC	CHL
2009	-	-	-	-	-	14	-	-	1.5	1.8	2.3	6	-	-	-	-	-	-	-
SUMMARY:	46	5.88	11.4	38	26	18	-	-	1.1	1.7	2.7	16	6.9	9.2	13.6	-	-	-	-

LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

DEPTH	SAMPLE DATE							
	09/06/89		09/11/90		08/19/98		08/16/00	
m	°C	ppm	°C	ppm	°C	ppm	°C	ppm
0.0	-	-	17.0	9.3	20.0	8.4	21.3	8.9
1.0	16.5	8.8	17.0	9.4	20.2	8.3	21.3	9.0
2.0	16.0	7.2	17.0	9.4	20.2	7.9	21.3	8.8
3.0	16.0	6.0	-	-	-	-	21.3	8.8
4.0	-	-	-	-	-	-	21.2	8.6

## WATER QUALITY SUMMARY

### **SPENCER POND, East Middlesex Canal Grant**

Midas: 0404, Station: Primary (01)

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 Spencer Pond have been collected since 1987. During this period, 5 years of basic chemical information was collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Spencer Pond is considered to be average, based on measures of SDT, total phosphorus (TP) and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Spencer Pond is moderate to high.

Water Quality Measures: Spencer Pond is a colored lake (average color 46 SPU) with an average SDT of 1.7m (5.8ft). The range of water column TP for Spencer Pond is 19 - 37 parts per billion (ppb) with an average of 26 ppb, while Chla ranges from 7.1 - 13.6 ppb with an average of 9.2 ppb. Recent dissolved oxygen (DO) profiles show no 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. 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. Habitat is not restricted at this time.

Consistently low SDTs during the open water season often occur when water is highly colored but can also occur when sediment is re-suspended due to wind action. Spencer Pond color levels are not high enough to entirely account for the consistently low SDTs. Spencer is rather shallow and has a large surface area making it a candidate for turbidity due to sediment re-suspension. TP and Chla levels suggest that algal growth does decrease clarity but to a lesser degree.

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>.

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