

WATER QUALITY SUMMARY

DAMARISCOTTA LAKE, JEFFERSON

MIDAS: 5400, Sample Station # 1 (Northern)

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 data for bacteria, mercury, or nutrients other than phosphorus.

Water quality monitoring data have been collected at Station #1 on Damariscotta Lake since 1977. During this period, 21 years of basic chemical information was collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Damariscotta Lake is considered above average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Damariscotta Lake is low.

Water Quality Measures: Damariscotta Lake is a non-colored lake (average color 18 SPU) with an average SDT of 5.2 m (17.4 ft). The range of water column TP for Damariscotta Lake is 7 - 14 parts per billion (ppb) with an average of 9 ppb. Chla ranges from 0.7 - 7.9 ppb with an average of 4.7 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 low to moderate. Oxygen levels below 5 parts per million stress certain cold water fish; a persistent loss of oxygen may eliminate or reduce habitat for sensitive cold water species.

In 2001, federal funds were used to develop a Watershed Management Plan for Damariscotta Lake. This plan included posting signs on all major roads in the watershed to increase awareness of the watershed boundaries. Changes in land use anywhere in a lake's watershed, not just the shoreline, can affect the water quality of the lake.

See ME-DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be found on the Internet at <http://www.lakesofmaine.org/> 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.

Filename: dam54001, Revised: 12/04, By: JM Revised:2/11,JP

LAKE: DAMARISCOTTA L (VLMP 15)
 TOWN: JEFFERSON
 COUNTY: LINCOLN

MIDAS: 5400
 TRUE BASIN: 2
 SAMPLE STATION: 2

WHOLE LAKE INFORMATION

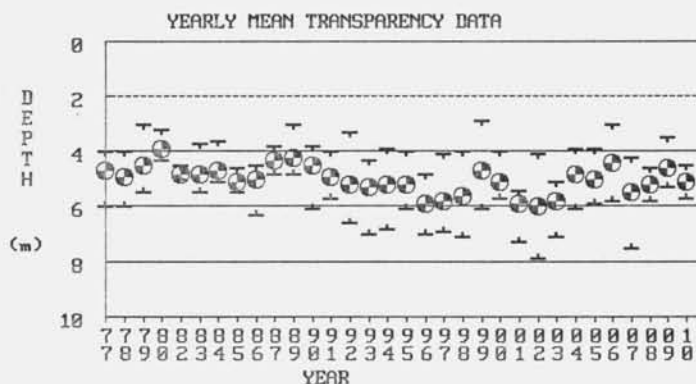
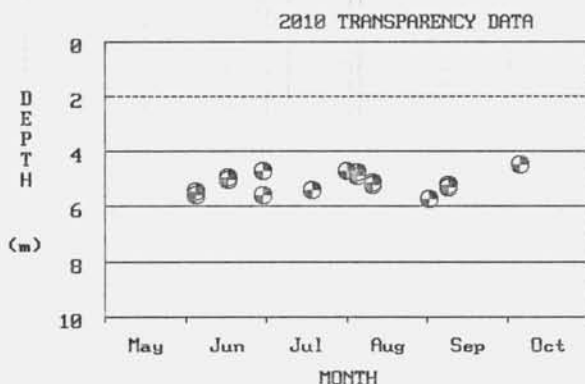
MAX. DEPTH: 35 m. (114 ft.)
 MEAN DEPTH: 9 m. (30 ft.)
 DELORME ATLAS #: 13
 USGS QUAD: JEFFERSON
 IFW REGION B: Belgrade Lakes (Augusta)
 IFW FISH. MANAGMENT: Warmwater & Coldwater

TRUE BASIN CHARACTERISTICS

SURFACE AREA: 636.5 ha. (1572.8 a.)
 FLUSHING RATE: 2.22 flushes/yr.
 VOLUME: 33292959.0 cu. m. (27007 ac.-ft.)
 DIRECT DRAINAGE AREA: 18.02 sq. km. (6.96 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. DAMARISCOTTA L has 3 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:



Note: 2010 graphs may indicate multiple readings taken on a given day.

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

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

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.	EPI PHOS		SEC	CHL
					CORE	GRAB	GRAB	GRAB								C	G		
1977	-	-	-	-	-	-	-	-	4.0	4.7	6.0	4	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	4.0	4.9	6.0	5	-	-	-	-	-	49	-
1979	30	6.60	9.0	45	-	-	-	-	3.0	4.5	5.5	6	3.9	3.9	3.9	-	-	54	-
1980	-	-	-	-	-	-	-	-	3.2	3.9	4.3	7	-	-	-	-	-	62	-
1982	-	-	-	-	-	-	-	-	4.5	4.8	5.0	3	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	3.7	4.8	5.5	5	-	-	-	-	-	50	-
1984	-	-	-	-	-	-	-	-	3.6	4.7	5.1	4	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	4.6	5.1	5.5	2	-	-	-	-	-	-	-
1986	-	-	-	-	9	-	-	-	4.5	5.0	6.3	5	2.2	4.1	7.4	40	-	48	48
1987	-	-	-	-	-	-	-	-	3.8	4.3	4.8	3	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	3.0	4.2	4.8	3	-	-	-	-	-	-	-
1990	-	-	-	-	10	-	20	13	3.8	4.5	6.1	6	2.7	5.3	6.6	-	-	54	55
1991	-	6.99	-	-	10	-	77	-	4.0	4.9	5.7	6	3.6	5.1	6.5	41	-	49	54
1992	-	6.95	8.5	-	10	-	12	-	3.3	5.2	6.6	6	3.2	5.2	8.6	-	-	46	54
1993	15	6.89	9.5	-	10	-	22	-	4.3	5.3	7.0	6	2.0	3.6	5.5	41	-	45	45

LAKE: DAMARISCOTTA L (VLMP 15)
 TOWN: JEFFERSON
 COUNTY: LINCOLN

MIDAS: 5400
 *TRUE BASIN: 2
 *SAMPLE STATION: 2

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

YEAR	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.											
	(SPU)		(mg/l)	(uS	CORE	GRAB	GRAB	GRAB	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHL
1994	16	5.93	8.1	-	8	-	32	-	3.9	5.2	6.8	6	2.8	10.3	29.8	38	-	46	73
1995	22	-	6.8	-	7	-	30	-	4.0	5.2	6.1	6	-	-	-	-	-	46	-
1996	19	7.10	6.7	-	8	-	23	-	4.8	5.9	7.0	6	1.2	4.3	5.5	38	-	40	49
1997	19	6.99	8.3	-	9	-	33	-	4.1	5.8	6.9	6	5.1	6.1	7.0	-	-	41	-
1998	16	6.92	8.5	-	9	-	23	-	4.0	5.6	7.1	6	7.9	7.9	7.9	-	-	43	-
1999	17	7.00	8.0	48	11	-	33	-	2.9	4.7	6.1	5	5.6	6.1	6.7	-	-	52	-
2000	18	6.83	8.5	-	9	-	22	-	4.0	5.1	5.7	5	3.3	4.6	6.4	-	-	47	-
2001	12	6.98	6.7	-	9	-	89	-	5.4	5.9	7.3	5	2.4	4.5	6.7	-	-	40	-
2002	10	6.80	5.5	-	10	-	110	-	4.1	6.0	7.9	6	2.1	3.8	5.7	-	-	39	-
2003	17	-	9.0	54	8	-	21	-	5.1	5.8	7.1	4	1.8	4.3	6.7	-	-	-	-
2004	30	6.70	8.5	-	9	-	50	-	3.9	4.8	6.1	5	5.3	5.4	5.6	-	-	50	-
2005	28	6.70	7.5	-	10	-	27	-	3.9	5.0	5.9	5	5.2	6.0	7.6	-	-	48	-
2006	31	-	7.3	-	10	-	120	-	3.0	4.4	5.8	6	2.5	4.8	6.4	-	-	55	-
2007	23	-	-	-	9	-	-	-	4.2	5.5	7.5	6	3.6	3.6	3.6	-	-	43	-
2008	-	-	-	-	-	-	-	-	4.6	5.2	5.8	5	-	-	-	-	-	46	-
2009	28	6.70	6.5	-	10	-	26	-	3.5	4.6	5.3	5	6.1	6.1	6.1	-	-	53	-
2010	-	-	-	-	10	-	99	-	4.5	5.1	5.7	5	4.2	4.2	4.2	-	-	47	-
SUMMARY:	21	6.67	7.8	49	9	-	46	13	2.9	5.0	7.9	32	1.2	5.2	29.8	40	-	48	54

LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

DEPTH	SAMPLE DATE															
	08/25/09		08/28/09		09/11/09		09/22/09		08/04/10		08/10/10		08/31/10		09/08/10	
	m	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C
0.0	27.6	7.6	25.3	7.7	23.3	7.2	19.1	7.8	26.7	7.9	26.6	7.8	25.2	8.7	24.0	7.2
1.0	26.9	7.7	24.7	7.8	21.9	7.1	19.2	7.7	25.4	8.0	25.9	7.9	25.0	8.7	23.7	7.3
2.0	26.5	7.7	24.4	7.6	21.7	7.0	19.3	7.6	25.0	8.0	25.5	8.0	24.3	8.7	23.6	7.2
3.0	26.1	7.6	24.3	7.6	21.6	7.0	19.3	7.5	24.8	8.0	24.9	7.7	24.0	8.5	23.5	7.1
4.0	26.1	7.5	24.2	7.4	21.5	7.1	19.3	7.4	24.7	8.0	24.7	7.8	22.7	7.9	23.5	7.1
5.0	24.4	4.5	24.1	7.3	21.5	7.1	19.3	7.5	24.4	7.6	24.4	7.4	22.5	7.7	23.4	6.9
6.0	22.2	2.1	21.2	2.3	21.5	7.1	19.3	7.5	24.0	6.8	23.8	6.2	22.2	7.1	23.4	6.7
7.0	20.6	1.0	19.7	0.9	21.4	7.2	19.2	7.4	22.3	3.1	22.1	2.1	22.0	6.9	23.1	5.4
8.0	19.4	0.3	18.5	0.1	20.9	3.6	19.2	7.3	20.5	0.7	21.0	0.2	21.8	6.3	22.6	3.8
9.0	18.7	0.2	18.0	0.1	19.5	0.0	19.2	7.3	19.1	0.2	19.1	0.1	21.0	4.0	22.2	3.1
10.0	18.2	0.2	17.4	0.1	18.8	0.0	19.2	7.2	18.2	0.1	18.2	0.0	18.0	0.1	20.5	0.1
11.0	17.5	0.1	16.5	0.1	17.9	0.0	18.9	6.0	17.0	0.1	17.1	0.0	16.6	0.1	18.3	0.1
12.0	16.6	0.0	15.7	0.2	17.0	0.0	17.0	0.1	15.8	0.1	16.0	0.0	15.4	0.1	16.7	0.1
13.0	15.8	0.0	14.8	0.2	16.1	0.0	16.1	0.1	15.0	0.1	15.2	0.1	14.6	0.1	15.9	0.1
14.0	15.0	0.0	14.3	0.2	15.6	0.0	15.5	0.0	14.6	0.1	14.6	0.1	14.1	0.1	15.2	0.1
15.0	14.7	0.0	14.0	0.2	15.0	0.0	15.1	0.0	14.3	0.1	14.3	0.0	13.8	0.1	14.9	0.1
16.0	14.4	0.0	13.6	0.3	14.8	0.0	14.7	0.0	-	-	14.1	0.1	13.6	0.1	14.6	0.1
17.0	14.3	0.0	13.5	0.3	14.6	0.0	14.6	0.0	-	-	13.9	0.1	13.5	0.1	14.2	0.0
18.0	14.1	0.0	13.4	0.3	14.4	0.0	14.3	0.0	-	-	13.8	0.1	13.3	0.1	14.1	0.0
19.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.0	-	-	-	-	-	-	-	-	13.9	0.1	-	-	-	-	-	-

WATER QUALITY SUMMARY

DAMARISCOTTA LAKE, JEFFERSON

MIDAS: 5400, Sample Station # 2 (middle basin)

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 data for bacteria, mercury, or nutrients other than phosphorus.

Water quality monitoring data have been collected from Station #2 on Damariscotta Lake since 1977. During this period, 17 years of basic chemical information was collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Damariscotta Lake is considered average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Damariscotta Lake is low to moderate.

Water Quality Measures: Damariscotta Lake is a non-colored lake (average color 21 SPU) with an average SDT of 5.0 m (16.4 ft). The range of water column TP for Damariscotta Lake is 7 - 11 parts per billion (ppb) with an average of 9 ppb. Chla ranges from 1.2 - 29.8 ppb with an average of 5.2 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.

In 2001, federal funds were used to develop a Watershed Management Plan for Damariscotta Lake. This plan included posting signs on all major roads in the watershed to increase awareness of the watershed boundaries. Changes in land use anywhere in a lake's watershed, not just the shoreline, can affect the water quality of the lake.

See ME-DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be found on the Internet at <http://www.lakesofmaine.org/> 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.

Filename: dam54002, Revised: 12/04, By: JM Revised: 2/11, By JP

LAKE: DAMARISCOTTA L (VLMP 15)
 TOWN: JEFFERSON
 COUNTY: LINCOLN

MIDAS: 5400
 TRUE BASIN: 3
 SAMPLE STATION: 3

WHOLE LAKE INFORMATION

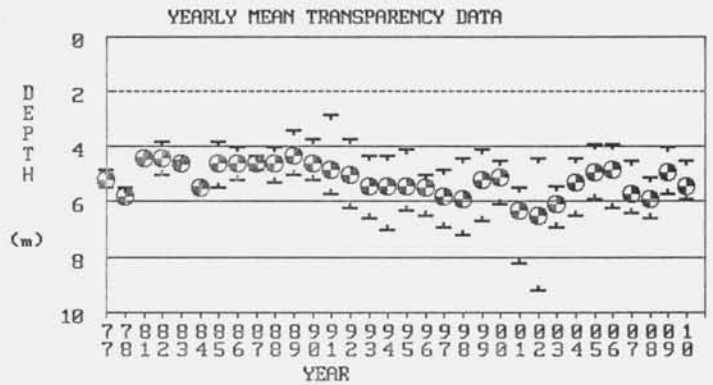
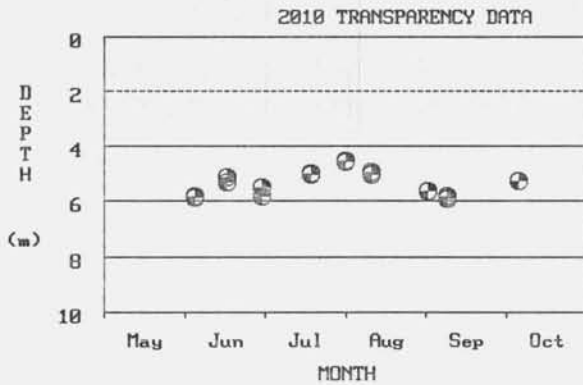
MAX. DEPTH: 35 m. (114 ft.)
 MEAN DEPTH: 9 m. (30 ft.)
 DELORME ATLAS #: 13
 USGS QUAD: JEFFERSON
 IFW REGION B: Belgrade Lakes (Augusta)
 IFW FISH. MANAGMENT: Warmwater & Coldwater

TRUE BASIN CHARACTERISTICS

SURFACE AREA: 409.4 ha. (1011.6 a.)
 FLUSHING RATE: 26.34 flushes/yr.
 VOLUME: 3314615.0 cu. m. (2689 ac.-ft.)
 DIRECT DRAINAGE AREA: 18.44 sq. km. (7.12 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. DAMARISCOTTA L has 3 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:



Note: 2010 graphs may indicate multiple readings taken on a given day.

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

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

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	CHL
1977	-	-	-	-	-	-	-	-	4.8	5.2	5.5	2	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	5.5	5.8	6.0	1	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	4.4	4.4	4.4	1	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	3.8	4.4	5.0	5	-	-	-	-	-	55	-
1983	-	-	-	-	-	-	-	-	4.5	4.6	4.6	2	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	5.5	5.5	5.5	1	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	3.8	4.6	5.5	6	-	-	-	-	-	53	-
1986	-	-	-	-	11	-	-	-	4.0	4.6	5.2	5	2.5	4.2	7.7	44	-	53	-
1987	-	-	-	-	-	-	-	-	4.3	4.6	4.8	4	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	4.0	4.6	5.3	5	-	-	-	-	-	53	-
1989	-	-	-	-	-	-	-	-	3.4	4.3	5.0	6	-	-	-	-	-	56	-
1990	-	-	-	-	10	-	14	12	3.7	4.6	5.2	6	3.5	4.7	6.7	-	-	53	-
1991	-	6.90	6.9	-	11	18	44	-	2.8	4.8	5.7	6	2.6	5.4	12.2	44	-	50	55
1992	-	6.95	10.0	-	11	-	11	-	3.7	5.0	6.2	6	2.8	4.8	8.4	-	-	48	52
1993	12	6.38	8.4	-	8	-	20	-	4.3	5.4	6.6	6	2.0	3.6	5.0	37	-	44	44

WATER QUALITY SUMMARY

DAMARISCOTTA LAKE, JEFFERSON

MIDAS: 5400, Sample Station # 3 (Southern)

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 data for bacteria, mercury, or nutrients other than phosphorus.

Water quality monitoring data have been collected from Station #3 on Damariscotta Lake since 1977. During this period, 15 years of basic chemical information was collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Damariscotta Lake is considered average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Damariscotta Lake is low to moderate.

Water Quality Measures: Damariscotta Lake is a non-colored lake (average color 16 SPU) with an average SDT of 5.2 m (17.1 ft). The range of water column TP for Damariscotta Lake is 8 - 17 parts per billion (ppb) with an average of 11 ppb. Chla ranges from 1.4 - 12.2 ppb with an average of 4.6 ppb. Recent dissolved oxygen (DO) profiles show high 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 to high. 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.

In 2001, federal funds were used to develop a Watershed Management Plan for Damariscotta Lake. This plan included posting signs on all major roads in the watershed to increase awareness of the watershed boundaries. Changes in land use anywhere in a lake's watershed, not just the shoreline, can affect the water quality of the lake.

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