

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: MASCOMA LAKE, STN 1	Lake Area (ha):	451.18
Town: ENFIELD	Maximum depth (m):	20.1
County: Grafton	Mean depth (m):	8.7
River Basin: Connecticut	Volume (m <sup>3</sup> ):	39458000
Latitude: 43°37'36" N	Relative depth:	0.9
Longitude: 72°08'40" W	Shore configuration:	2.01
Elevation (ft): 751	Areal water load (m/yr):	40.10
Shore length (m): 15100	Flushing rate (yr <sup>-1</sup> ):	4.60
Watershed area (ha): 39627.0	P retention coeff.:	0.39
% watershed ponded: 2.2	Lake type:	natural w/dam

BIOLOGICAL:

15 February 2001

28 August 2000

DOM. PHYTOPLANKTON (% TOTAL)	#1	TABELLARIA 50%	TABELLARIA 50%
	#2	ASTERIONELLA 30%	RHIZOSOLENIA 25%
	#3	COELOSPHAERIUM 10%	ASTERIONELLA 20%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			4.01
DOM. ZOOPLANKTON (% TOTAL)	#1	NAUPLIUS LARVA 38%	KELICOTTIA 22%
	#2	KELICOTTIA 29%	NAUPLIUS LARVA 22%
	#3	CYCLOPOID COPEPOD 19%	POLYARTHRA 15%
ROTIFERS/LITER		6	70
MICROCRUSTACEA/LITER		15	33
ZOOPLANKTON ABUNDANCE (#/L)		21	119
VASCULAR PLANT ABUNDANCE			Sparse
SECCHI DISK TRANSPARENCY (m)			2.1
BOTTOM DISSOLVED OXYGEN (mg/L)		4.5	0.5
BACTERIA (E. coli, #/100 ml)	#1		< 10
	#2		< 10
	#3		< 10

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 7.4  
Hypolimnion volume (m<sup>3</sup>): 8727000  
Anoxic volume (m<sup>3</sup>): 959000

**CHEMICAL:**Lake: MASCOMA LAKE, STN 1  
Town: ENFIELD

	15 February 2001		28 August 2000		
DEPTH (m)	6.0	12.0	2.0	8.0	15.0
pH (units)	6.7	6.5	7.2	6.4	6.1
A.N.C. (Alkalinity)	10.3	10.5	10.8	8.8	7.1
NITRATE NITROGEN	0.07	0.09	< 0.05	0.10	0.16
TOTAL KJELDAHL NITROGEN	< 0.10	0.10	0.29	0.17	0.18
TOTAL PHOSPHORUS	0.005	<0.005	0.006	0.007	0.018
CONDUCTIVITY ( $\mu$ mhos/cm)	67.0	67.5	67.5	62.4	59.0
APPARENT COLOR (cpu)	22	24	27	30	44
MAGNESIUM			0.83		
CALCIUM			5.2		
SODIUM			5.6		
POTASSIUM			0.54		
CHLORIDE	8	8	9	7	7
SULFATE	5	5	5	5	5
TN : TP			48	39	19
CALCITE SATURATION INDEX					

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 2000**

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	3	0	1	9	Meso.

**COMMENTS:**

1. Previously surveyed in 1976 and 1985. The outlet stream (Mascoma River) is the public water supply for the Town of Lebanon.
2. Two boat launches: one near the dam and one near the bridge on the western shore. Both have parking available.

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: MASCOMA LAKE, STN 2	Lake Area (ha):	451.18
Town: ENFIELD	Maximum depth (m):	20.1
County: Grafton	Mean depth (m):	8.7
River Basin: Connecticut	Volume (m <sup>3</sup> ):	39458000
Latitude: 43°37'36" N	Relative depth:	0.9
Longitude: 72°08'40" W	Shore configuration:	2.01
Elevation (ft): 751	Areal water load (m/yr):	40.10
Shore length (m): 15100	Flushing rate (yr <sup>-1</sup> ):	4.60
Watershed area (ha): 39627.0	P retention coeff.:	0.39
% watershed ponded: 2.2	Lake type:	natural w/dam

BIOLOGICAL:

15 February 2001

28 August 2000

DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 60%	RHIZOSOLENIA 50%
	#2	TABELLARIA 25%	TABELLARIA 25%
	#3	COELOSOPHAERIUM 15%	ASTERIONELLA 8%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			4.39
DOM. ZOOPLANKTON (% TOTAL)	#1	NAUPLIUS LARVA 28%	COLLOTHECA 23%
	#2	KELLICOTTIA 22%	POLYARTHRA 19%
	#3		KELLICOTTIA 15%
ROTIFERS/LITER		13	138
MICROCRUSTACEA/LITER		23	25
ZOOPLANKTON ABUNDANCE (#/L)		36	203
VASCULAR PLANT ABUNDANCE			Sparse
SECCHI DISK TRANSPARENCY (m)			2.0
BOTTOM DISSOLVED OXYGEN (mg/L)		12.4	0.9
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None  
Hypolimnion volume (m<sup>3</sup>) : 8727000  
Anoxic volume (m<sup>3</sup>) : 959000

**CHEMICAL:**Lake: MASCOMA LAKE, STN 2  
Town: ENFIELD

	15 February 2001		28 August 2000		
DEPTH (m)	3.0	6.0	3.0		7.0
pH (units)	6.6	6.6	7.1		6.4
A.N.C. (Alkalinity)	10.4	10.4	10.7		11.2
NITRATE NITROGEN	0.12	0.09	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.18	0.16	0.23		0.23
TOTAL PHOSPHORUS	0.020	<0.005	0.014		0.008
CONDUCTIVITY ( $\mu$ mhos/cm)	73.8	69.8	68.7		67.0
APPARENT COLOR (cpu)	28	28	26		33
MAGNESIUM			0.86		
CALCIUM			5.3		
SODIUM			5.8		
POTASSIUM			0.54		
CHLORIDE	10	6	9		8
SULFATE	6	5	5		5
TN : TP	15		16		29
CALCITE SATURATION INDEX					

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 2000**

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	0	1	5	Meso.

**COMMENTS:**

1. Previously surveyed in 1976 and 1985 along with Station 1.

FIELD DATA SHEET

LAKE: MASCOMA LAKE, STN 1  
 DATE: 08/28/2000

TOWN: ENFIELD  
 WEATHER: sunny, windy

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	21.3	8.3	94 %
	1.0	21.3	8.4	94 %
	2.0	21.2	8.2	93 %
	3.0	21.0	8.2	92 %
	4.0	20.9	8.1	91 %
	5.0	20.3	7.3	81 %
	6.0	19.7	6.4	70 %
	7.0	18.0	4.0	42 %
	8.0	14.8	2.2	22 %
	9.0	13.1	1.9	18 %
	10.0	11.7	1.7	16 %
	11.0	10.7	1.6	14 %
	12.0	10.3	1.6	14 %
	13.0	10.1	1.6	14 %
	14.0	9.8	1.6	14 %
	15.0	9.3	1.5	13 %
	20.0	8.1	0.5	4 %

SECCHI DISK (m): 2.1  
 BOTTOM DEPTH (m): 20.1  
 TIME: 1200

COMMENTS:

\*Dissolved oxygen values are in mg/L

**FIELD DATA SHEET**

**LAKE: MASCOMA LAKE, STN 2**  
**DATE: 08/28/2000**

**TOWN: ENFIELD**  
**WEATHER: sunny, breezy**

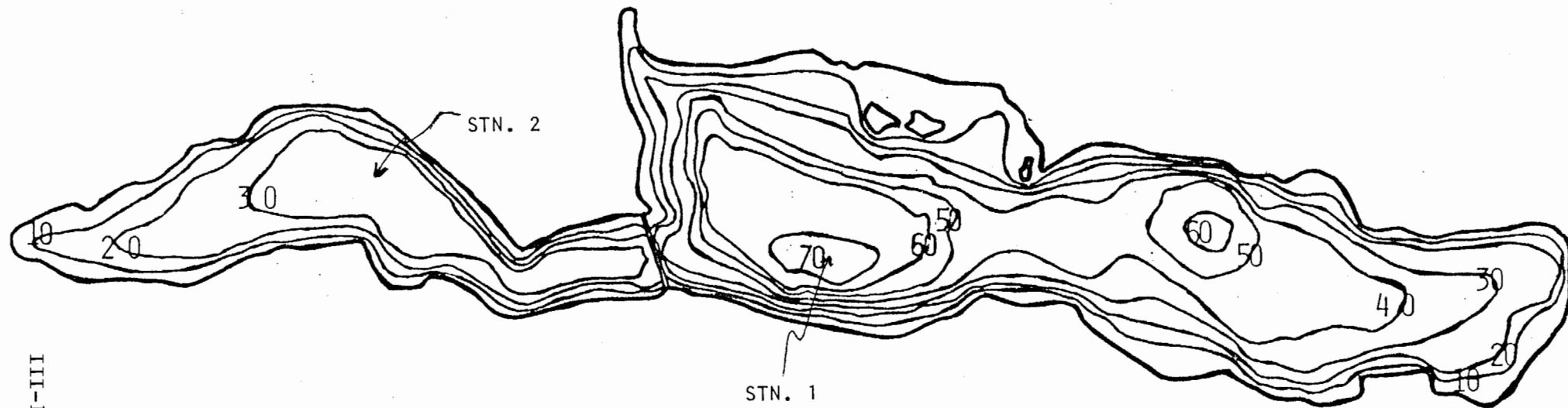
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	22.6	8.2	94 %
	1.0	21.4	8.0	91 %
	2.0	21.1	8.2	92 %
	3.0	20.9	8.1	91 %
	4.0	20.7	7.7	86 %
	5.0	20.1	6.4	71 %
	6.0	19.7	5.4	59 %
	7.0	18.4	2.2	23 %
	8.0	17.9	0.9	9 %

**SECCHI DISK (m): 2.0**  
**BOTTOM DEPTH (m): 9.0**  
**TIME: 1327**

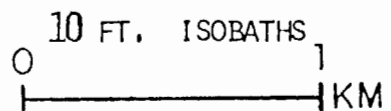
**COMMENTS:**

\*Dissolved oxygen values are in mg/L

LAKE MASCOMA  
ENFIELD

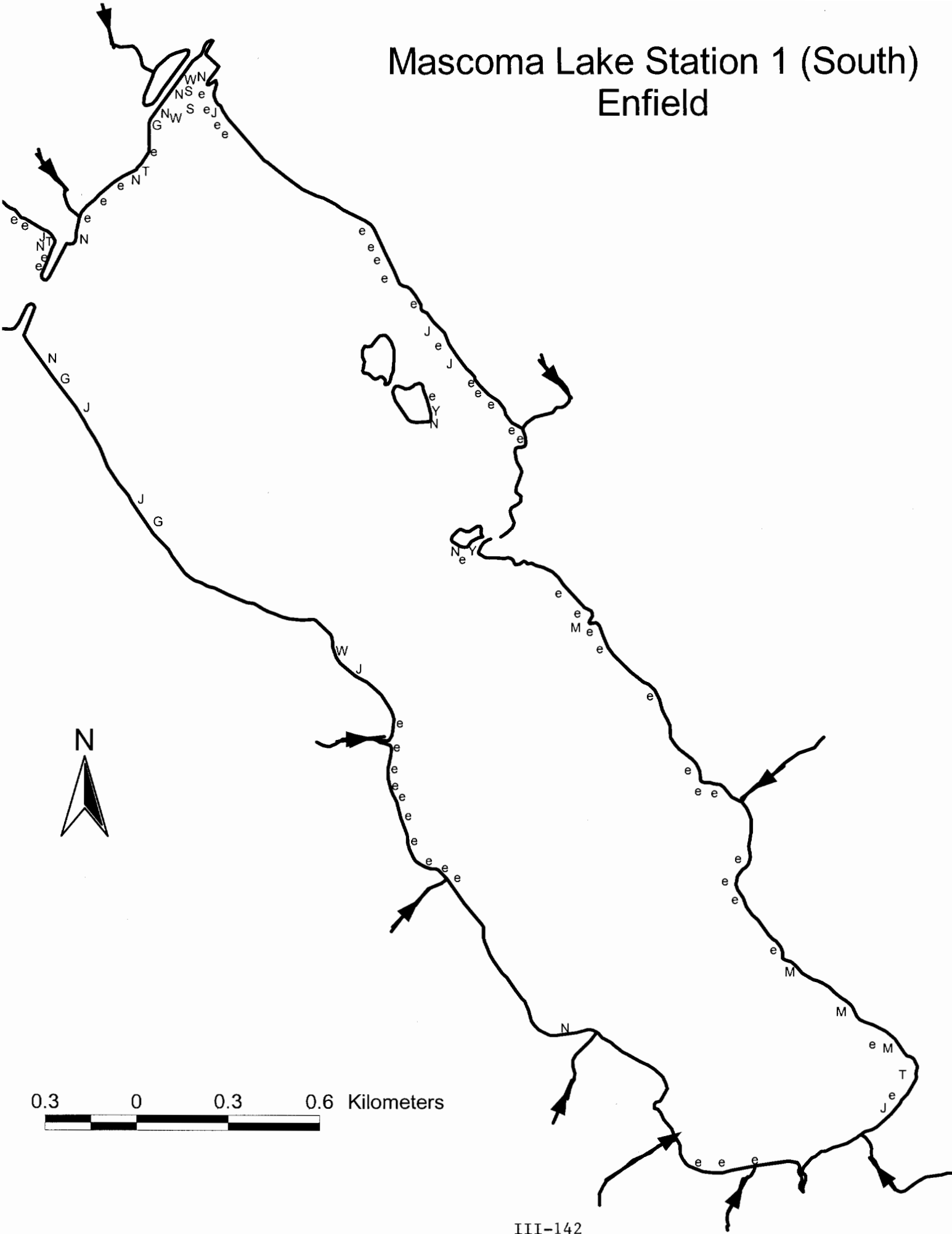


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BATHYMETRIC CHART  
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# Mascoma Lake Station 1 (South) Enfield





# Mascoma Lake Station 2 (North) Enfield

