

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: ISLAND POND, LITTLE	Lake Area (ha):	62.73
Town: PELHAM	Maximum depth (m):	15.5
County: Hillsborough	Mean depth (m):	5.5
River Basin: Merrimack	Volume (m ³):	3466500
Latitude: 42°43'39" N	Relative depth:	1.7
Longitude: 71°17'21" W	Shore configuration:	1.00
Elevation (ft): 145	Areal water load (m/yr):	2.09
Shore length (m): 2600	Flushing rate (yr ⁻¹):	0.40
Watershed area (ha): 284.9	P retention coeff.:	0.80
% watershed ponded: 0.0	Lake type:	natural w/dam

BIOLOGICAL:

	24 February 1993	18 August 1992
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 95%	MICROCYSTIS 40%
#2		COELOSPHAERIUM 30%
#3		BOTRYOCOCCUS 15%
PHYTOPLANKTON ABUNDANCE (cells/mL)		970
CHLOROPHYLL-A (µg/L)		2.92
DOM. ZOOPLANKTON (% TOTAL) #1	NAUPLIUS LARVA 66%	NAUPLIUS LARVA 74%
#2	CILIATE SPP. 43%	
#3		
ROTIFERS/LITER	4	<1
MICROCRUSTACEA/LITER	26	18
ZOOPLANKTON ABUNDANCE (#/L)	35	19
VASCULAR PLANT ABUNDANCE		Sparse
SECCHI DISK TRANSPARENCY (m)		5.5
BOTTOM DISSOLVED OXYGEN (mg/L)	10.8	0.4
BACTERIA (E. coli, #/100 ml) #1		
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 6.8
Hypolimnion volume (m³): 306000
Anoxic volume (m³): 9500

CHEMICAL:Lake: ISLAND POND, LITTLE
Town: PELHAM

	24 February 1993		18 August 1992		
DEPTH (m)	2.5	8.5	2.5	7.5	12.0
pH (units)	6.7	6.6	7.0	6.5	6.3
A.N.C. (Alkalinity)	7.6	7.3	6.4	7.9	7.9
NITRATE NITROGEN	0.04	0.05	< 0.02	< 0.02	0.15
TOTAL KJELDAHL NITROGEN	0.20	0.22	0.33	1.01	0.33
TOTAL PHOSPHORUS	0.008	0.007	0.011	0.007	0.009
CONDUCTIVITY (μ mhos/cm)	115.5	116.1	111.9	108.6	111.1
APPARENT COLOR (cpu)	33	40	16	14	16
MAGNESIUM			1.09		
CALCIUM			5.0		
SODIUM			12.7		
POTASSIUM			1.13		
CHLORIDE	23	24	23	23	22
SULFATE	8	8	7	8	8
TN : TP	30	39	30	144	53
CALCITE SATURATION INDEX			2.8		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1992

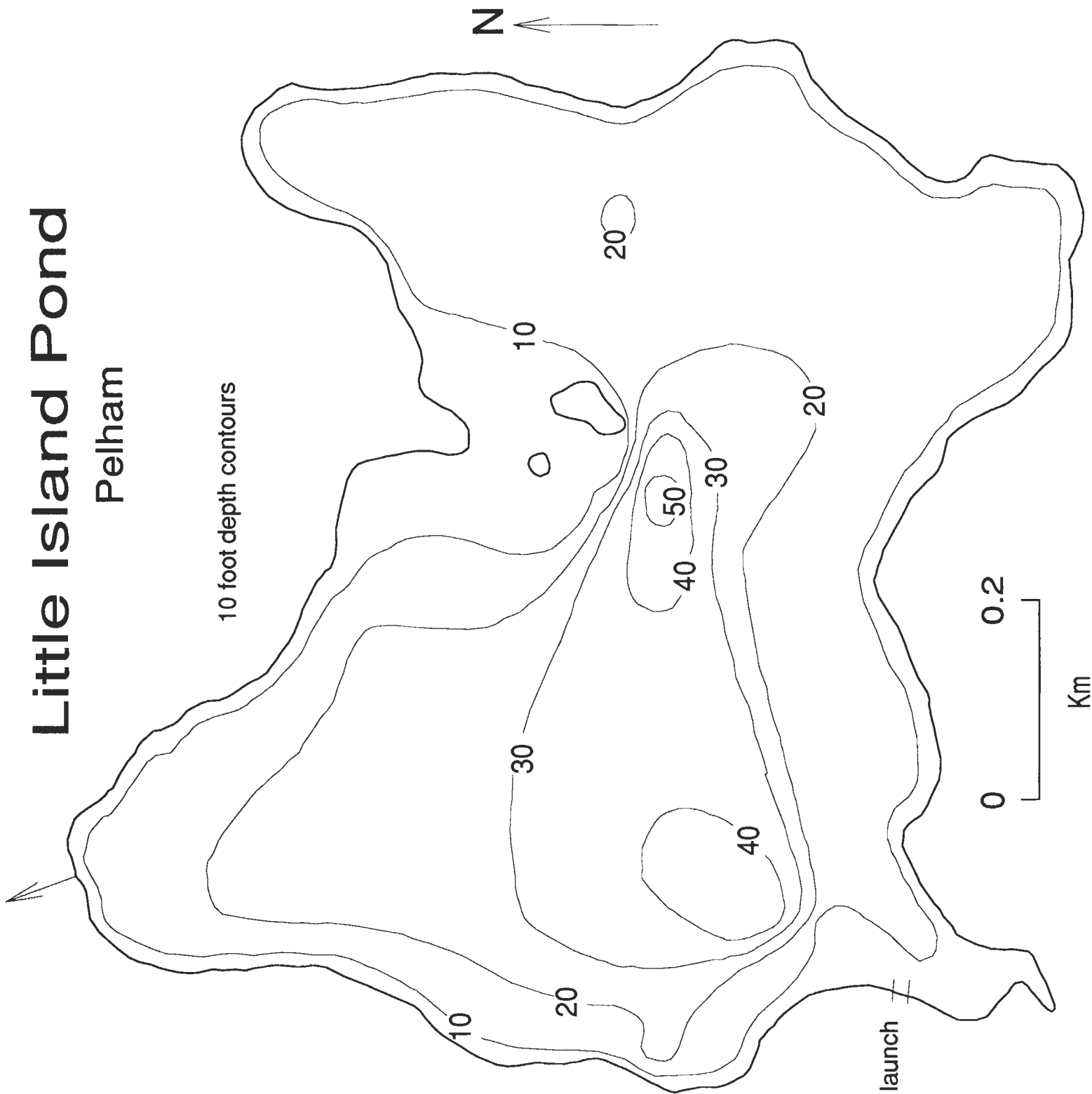
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
3	1	0	0	4	Oligo.

COMMENTS:

1. No good access point; launched boat at the end of West Shore Road -- launch area was very narrow and rocky, with a steep drop off.
2. Pond was previously surveyed in 1978. There was no change in trophic classification between the two years.
3. Chroomonas (25%), Cryptomonas (15%) and Sphaerocystis (10%) were the dominant genera of wholewater phytoplankton. Dominant classes were cryptomonads (40%) greens (35%) and blue-greens (15%).

Little Island Pond

Pelham



FIELD DATA SHEET

LAKE: ISLAND POND, LITTLE
 DATE: 08/18/92

TOWN: PELHAM
 WEATHER: RAIN

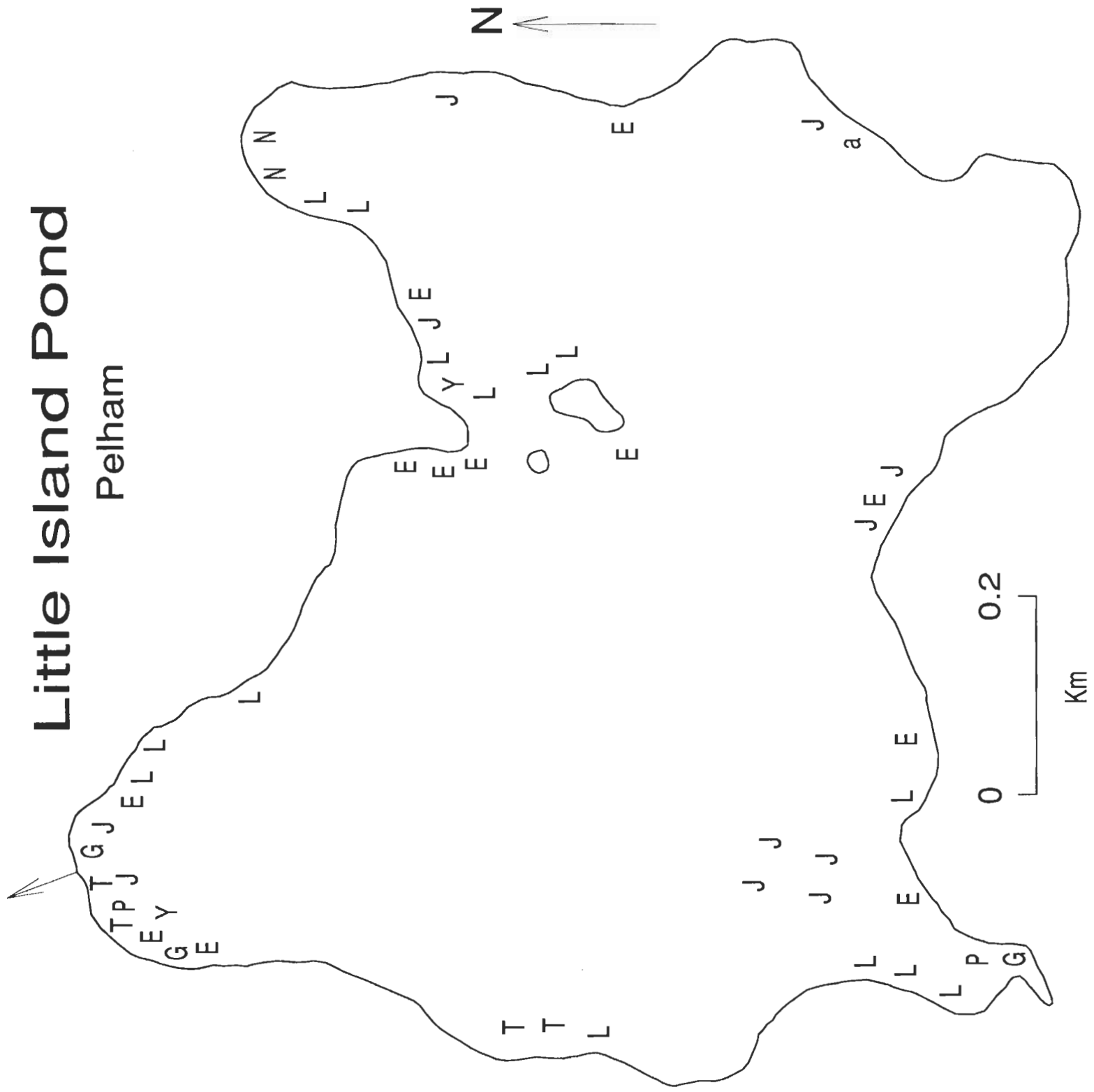
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	21.0	8.0	90 %
1.0	21.0	7.8	86 %
2.0	21.0	7.8	86 %
3.0	21.0	7.9	87 %
4.0	21.0	7.8	86 %
5.0	21.0	7.6	84 %
6.0	20.0	7.3	80 %
7.0	13.5	6.2	59 %
8.0	10.7	5.3	47 %
9.0	9.0	4.2	36 %
10.0	8.1	3.5	29 %
11.0	7.9	2.5	20 %
12.0	7.7	2.1	17 %
13.0	7.5	1.4	11 %
14.0	7.5	0.5	4 %
15.0	7.5	0.4	3 %

SECCHI DISK (m): 5.5
 BOTTOM DEPTH (m): 15.5
 TIME: 1400
 COMMENTS:

*Dissolved oxygen values are in mg/L

Little Island Pond

Pelham



AQUATIC PLANT SURVEY

LAKE: ISLAND POND, LITTLE

TOWN: PELHAM

DATE: 08/18/92

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
L	Nymphaea	Pink water lily	Sparse
E	Eriocaulon septangulare	Pipewort	Sparse
G	Gramineae	Grass family	Sparse
a	Peltandra virginica	Arrow arum	Sparse
J	Juncus	Rush	Sparse
N	Nymphaea	White water lily	Sparse
Y	Nuphar	Yellow water lily	Sparse
P	Pontederia cordata	Pickeralweed	Sparse
T	Typha	Cattail	Sparse

OVERALL ABUNDANCE: Sparse

GENERAL OBSERVATIONS:

1. Shoreline is fairly rocky and thus not conducive to rooted plant growth.