

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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: CRYSTAL LAKE	Lake Area (ha):	7.53
Town: MANCHESTER	Maximum depth (m):	6.4
County: Hillsborough	Mean depth (m):	2.9
River Basin: Merrimack	Volume (m ³):	217000
Latitude: 42°57'04" N	Relative depth:	2.1
Longitude: 71°24'32" W	Shore configuration:	1.13
Elevation (ft): 206	Areal water load (m/yr):	5.06
Shore length (m): 1100	Flushing rate (yr ⁻¹):	1.80
Watershed area (ha): 81.0	P retention coeff.:	0.66
% watershed ponded: 0.0	Lake type:	natural

BIOLOGICAL:

2 February 1998

30 June 1997

DOM. PHYTOPLANKTON (% TOTAL)	#1	COELOSPHAERIUM 40%	CERATIUM 70%
	#2	FRAGILARIA 30%	MALLOMONAS 13%
	#3	(ALL ALGAE SPARSE)	
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			6.40
DOM. ZOOPLANKTON (% TOTAL)	#1	NAUPLIUS LARVA 32%	CALANOID COPEPOD 30%
	#2	GASTROPUS 28%	NAUPLIUS LARVA 16%
	#3	BOSMINA 13%	
ROTIFERS/LITER		64	64
MICROCRUSTACEA/LITER		107	148
ZOOPLANKTON ABUNDANCE (#/L)		178	225
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			4.5
BOTTOM DISSOLVED OXYGEN (mg/L)		8.1	8.6
BACTERIA (E. coli, #/100 ml)	#1		4
	#2		10
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 3.6
Hypolimnion volume (m³) : None
Anoxic volume (m³) : None

CHEMICAL:

Lake: CRYSTAL LAKE

Town: MANCHESTER

	2 February 1998		30 June 1997		
DEPTH (m)	2.0	4.0	2.0		4.0
pH (units)	6.4	6.6	7.1		7.2
A.N.C. (Alkalinity)	18.9	19.2	16.1		14.0
NITRATE NITROGEN	0.36	0.34	0.29		0.35
TOTAL KJELDAHL NITROGEN	0.50	0.60	0.40		0.40
TOTAL PHOSPHORUS	0.010	0.011	0.019		0.021
CONDUCTIVITY (μ mhos/cm)	368.3	373.4	342.0		333.0
APPARENT COLOR (cpu)	7	7	8		8
MAGNESIUM			1.30		
CALCIUM			9.6		
SODIUM			56.6		
POTASSIUM			2.50		
CHLORIDE	100	103	86		83
SULFATE	9	9	9		9
TN : TP	86	85	36		36
CALCITE SATURATION INDEX			2.0		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1997

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	3	1	6	Meso.

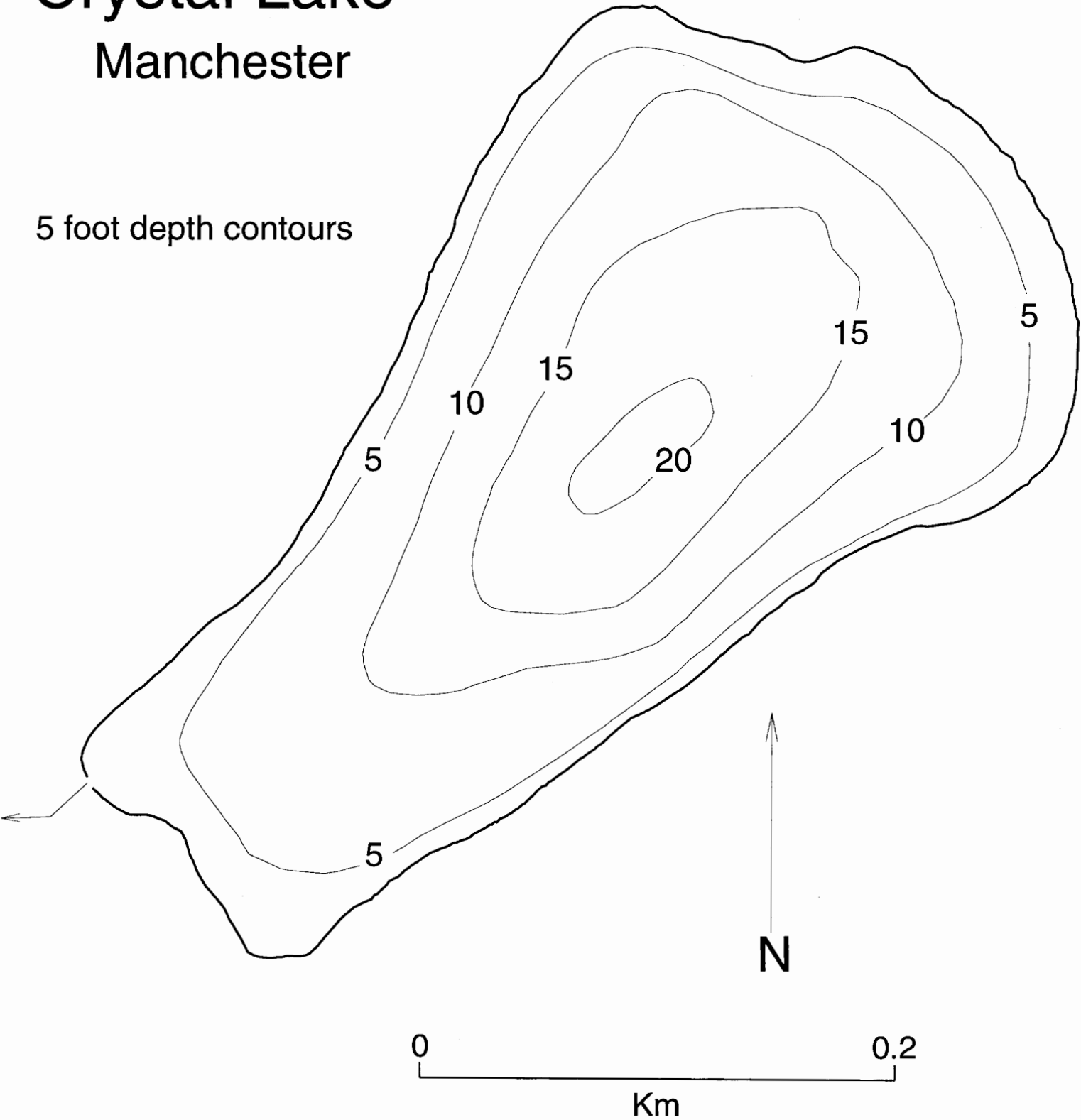
COMMENTS:

1. AKA Mosquito Pond.
2. This is an urban pond that supports a city beach. The pond was the subject of a 1981 diagnostic study, was on the list of impaired waters due to high chlorophyll levels, and was the site of a 1998 stormwater runoff treatment implementation project. The lake also participates annually in the DES Volunteer Lake Assessment Program (VLAP).
3. The lake was previously surveyed in 1981 and was classified eutrophic. Water clarity was much better and chlorophyll much lower in 1997 as compared to 1981. VLAP data shows relatively stable chlorophyll values around 6 mg/m³ since 1993.
4. The high sodium, chloride and conductivity values show urban runoff impacts, including salted roadway runoff.

Crystal Lake

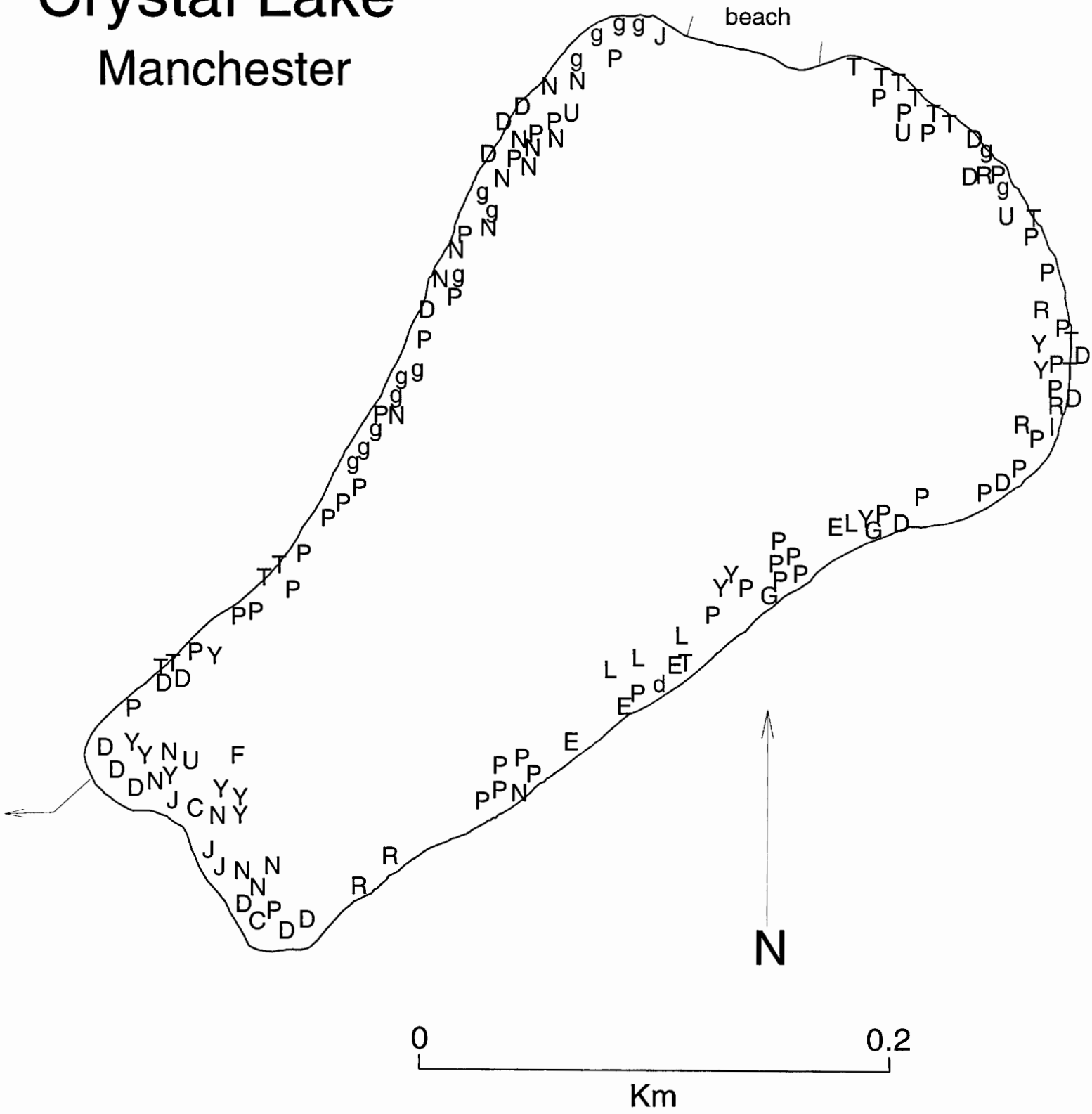
Manchester

5 foot depth contours



[illegible]

Manchester



[illegible]