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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	NUTT POND	Lake Area (ha):	6.52
Town:	MANCHESTER	Maximum depth (m):	9.2
County:	Hillsborough	Mean depth (m):	4.0
River Basin:	Merrimack	Volume (m^3):	260500
Latitude:	42°57'37" N	Relative depth:	3.2
Longitude:	71°26'58" W	Shore configuration:	1.05
Elevation (ft):	237	Areal water load (m/yr):	12.30
Shore length (m):	950	Flushing rate (yr^{-1}):	3.10
Watershed area (ha):	168.0	P retention coeff.:	0.53
% watershed ponded:	0.0	Lake type:	natural w/dam

BIOLOGICAL:		31 January 1996	6 July 1995
DOM. PHYTOPLANKTON (% TOTAL)	#1	MALLOMONAS 45%	CERATIUM 85%
	#2	ASTERIONELLA 40%	
	#3		
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			5.97
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 73%	CONOCHILOIDES 22%
	#2	LRG. RND. CILIATE 10%	BOSMINA 16%
	#3		NAUPLIUS LARVA 16%
ROTIFERS/LITER		140	146
MICROCRUSTACEA/LITER		26	132
ZOOPLANKTON ABUNDANCE (#/L)		188	282
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			1.2
BOTTOM DISSOLVED OXYGEN (mg/L)		0.0	0.2
BACTERIA (E. coli, #/100 ml)	#1		17
	#2		49
	#3		37

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	2.7
Hypolimnion volume (m^3) :	24500
Anoxic volume (m^3) :	69000

CHEMICAL:

Lake: NUTT POND
Town: MANCHESTER

	31 January 1996		6 July 1995		
DEPTH (m)	3.0	6.0	1.0	4.5	8.0
pH (units)	6.3	6.3	8.9	6.4	6.7
A.N.C. (Alkalinity)	12.0	15.7	15.8		
NITRATE NITROGEN	0.33	0.41	< 0.10		0.06
TOTAL KJELDAHL NITROGEN	0.62	0.73	0.33	0.49	3.93
TOTAL PHOSPHORUS	0.040	0.037	0.025	0.017	0.217
CONDUCTIVITY (µmhos/cm)	567.0	771.0	467.0	569.0	1419.0
APPARENT COLOR (cpu)	40	43	32	33	90
MAGNESIUM			2.15		
CALCIUM			11.9		
SODIUM			72.2		
POTASSIUM			2.04		
CHLORIDE	170	246	139		471
SULFATE			12		2
TN : TP	24	31	13		18
CALCITE SATURATION INDEX			0.1		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1995

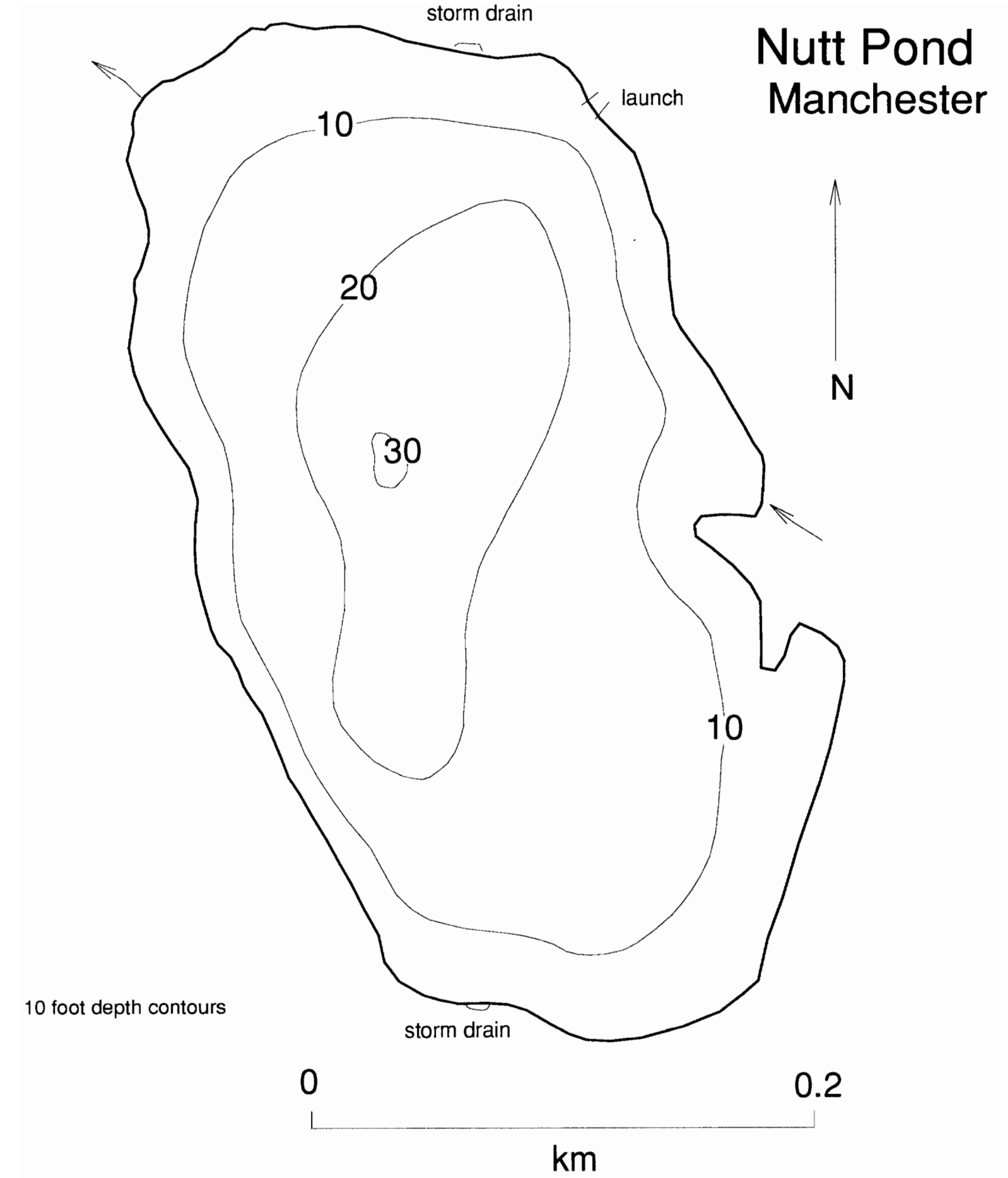
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
4	4	1	1	10	Meso.

COMMENTS:

1. This pond was previously surveyed and classified in 1981. The major trophic difference between the two years was in algal abundance: chlorophyll went from 39 mg/m^3 in 1981 to 6 mg/m^3 in 1995. Water clarity was also somewhat better in 1995. These changes resulted in a mesotrophic rating in 1995 compared to a eutrophic rating in 1981. More frequent sampling is needed to see if this is a real trend or a seasonal/yearly variation. Also, since there was no change in the epilimnetic phosphorus concentration between the two years, there is the question of other factors limiting algal growth in 1995 (zooplankton were very common). The blue-green algae *Oscillatoria* was dominant in 1981 while the dinoflagellate *Ceratium* was dominant in 1995.

2. This is a highly urbanized pond in Manchester that drains large impervious surfaces and highways. Sodium, chloride and conductivity values are extremely high for NH lakes.

3. Internal release of sediment phosphorus is very evident in the anoxic bottom waters.


storm drain
Nutt Pond
Manchester
launch
10
20
30
N
10
10 foot depth contours
storm drain
0
0.2
km

FIELD DATA SHEET

LAKE: NUTT POND
DATE: 07/06/95

TOWN: MANCHESTER
WEATHER: HOT & HAZY

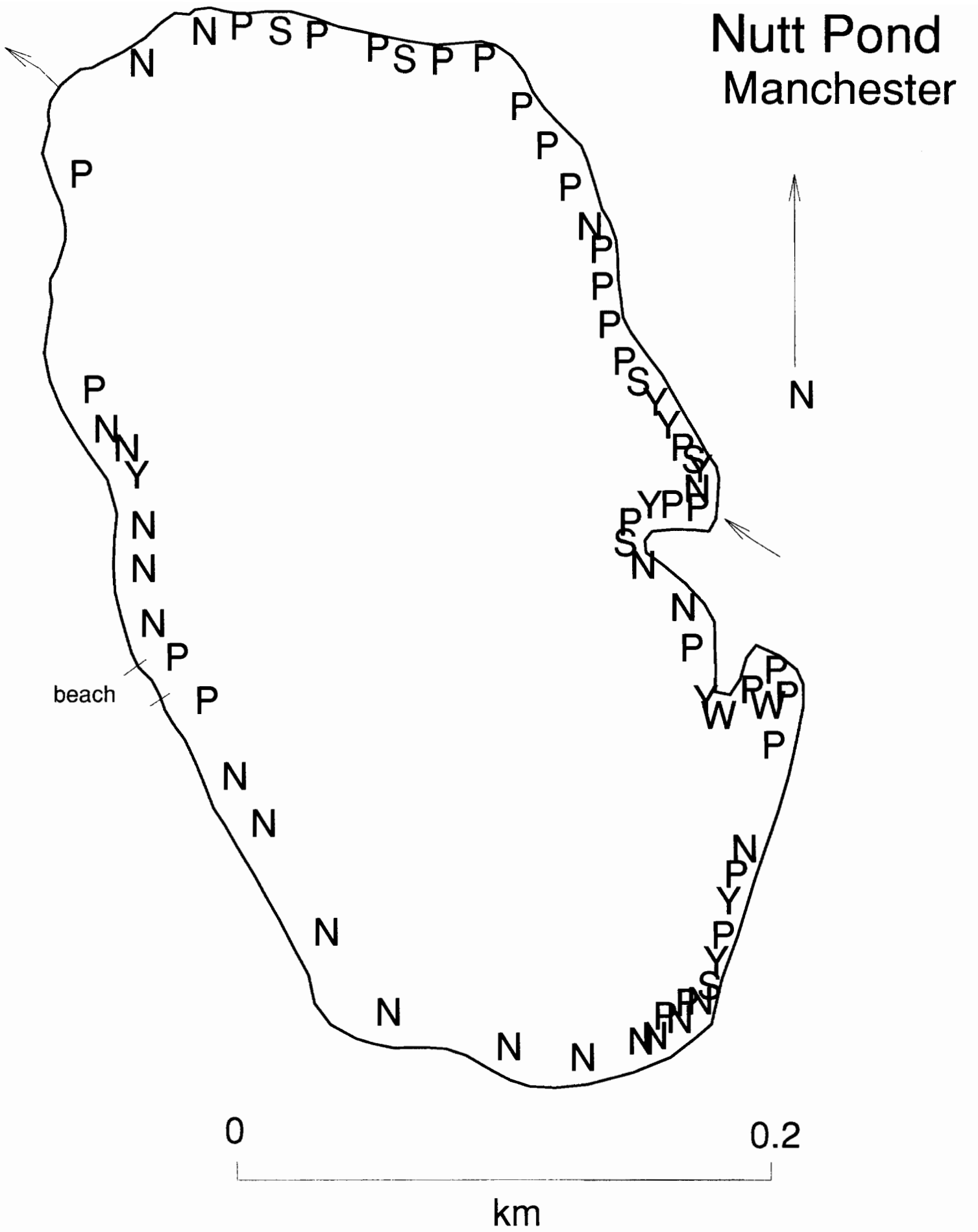
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	25.5	9.5	114 %
	1.0	25.5	9.5	114 %
	2.0	24.0	11.0	131 %
	3.0	18.0	4.9	51 %
	4.0	14.0	0.6	6 %
	5.0	11.0	0.1	1 %
	6.0	9.0	0.1	1 %
	7.0	7.2	0.1	1 %
	8.0	6.5	0.1	1 %
	9.0	6.5	0.2	2 %

SECCHI DISK (m): 1.2
BOTTOM DEPTH (m): 9.2
TIME: 1030

COMMENTS:

The entire hypolimnion was devoid of oxygen. The extent of the dissolved oxygen depletion was greater than what occurred in 1981.

*Dissolved oxygen values are in mg/L


Nutt Pond
Manchester
N
beach
0
0.2
km

AQUATIC PLANT SURVEY

LAKE: NUTT POND TOWN: MANCHESTER DATE: 07/06/95

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
N	Nymphaea	White water lily	Scattered
Y	Nuphar	Yellow water lily	Sparse
P	Pontederia cordata	Pickerelweed	Scattered
S	Sparganium	Bur reed	Sparse
W	Potamogeton	Pondweed	Sparse

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

1. At least two species of pondweed were present.
2. Observed a cormorant and two kingfishers; also a rat in the storm drain.