

TROPHIC CLASSIFICATION OF N.H. LAKES AND PONDS

NAME Crystal Lake TOWN Manchester CO Hillsborough RIVER Merrimack
BASIN Merrimack

I. POTENTIAL FOR NUTRIENT ENRICHMENT

Latitude: 42°57'N

Longitude: 71°25'W

A. NATURAL PHYSICAL FACTORS

1. Area (ha) 7.53
2. Max. depth (m) 7.01
3. Mean depth (m) 3.1
4. Elevation (ft) 206
5. Shore length (m) 1,100
6. Volume (m³) 234,900
7. Volume/shore length 212.9
8. % Stratification -
9. Watershed area (ha) 81.0

10. Watershed area
Volume 3
11. Bottom slope 2.3
12. Shore config. 1.15
13. Flushing rate 2.1
14. Water renewal time 0.49
15. Drainage density -
16. % Watershed ponded -
17. Phos. retent. coeff. R 0.62

B. CULTURAL FACTORS

1. % Shore developed
2. Number nearshore homes
3. # nearshore homes/mile shore
4. Volume lake/# nearshore homes

5. Estimate of non-point Tot-P loading:

- a. Land Use
- b. Precipitation
- c. Subsurface disposal
- d. Other

II. INDICATORS OF TROPHIC CONDITION

(mg/l unless indicated otherwise)

A. Winter Data:

Date 27 January 1981

Weather Partly cloudy

Depth(m)	2.0	4.0
Alkalinity	21.5	20.6
PO ₄ -P	-	0.009
Total-P	0.019	0.017
NO ₂ +NO ₃ -N	<0.05	<0.05
Kjeld-N	0.76	0.74
Total-N	-	-
Tot-N/Tot-P	-	-
NO ₂ +NO ₃ -N/PO ₄ -P	-	-

Bottom: Depth 5.5m D.O. 8.4 % Sat. 63.2

% Organic matter sediment 36.9

- Dom. Phytopl. 1. Synura - 50%
2. Dinobryon - 35%
Dom. Zoopl. 1. Diaptomus - 35%
2. Keratella - 35%

B. Summer Data:

Date 14 July 1981Weather Partly cloudy, breezy, showers
24.5°C

	Depth (m)	Mid-ep	Mid-therm	Mid-hyp
pH (units)		3.0	5.0	6.5
Alkalinity		7.3	6.9	6.6
PO ₄ -P		21.9	23.0	30.2
Total-P		<0.001	<0.001	<0.001
NO ₂ +NO ₃ -N		0.043	0.054	0.080
Kjeld-N		<0.05	<0.05	<0.05
Total Residue		0.50	0.70	1.6
Color (units)		-	-	-
Turb. (NTU)		25	30	120
Spec. Conduct. (μMhos/cm)		3.5	4.1	13.2
Tot. Org. Carbon		317	310	309
Chloride		-	-	-
Mg		81	81	78
Ca		1.33	-	-
Na		11	-	-
K		42	-	-
[Mg+Ca] / [Na+K]		1.9	-	-
Tot-N/Tot-P		.28	-	-
NO ₂ +NO ₃ -N/PO ₄ -P		-	-	-

Station Location

Bottom: Depth 6.0 m D.O. 0.5 % Sat. 5Epilimnetic alkalinity decrease -PO₄-P ratio: epi/hyp -Total-P ratio: epi/hyp -Secchi disk transparency (M) 2.0% organic Matter sediment -

Vascular Plants Common

- Dom. Vasc. Plants: 1. Decodon
2. Pontederia cordata
3. Nymphaea

Ash-Free Dry Weight

Chlorophyll a 28.23 (mg/m³)
Tot. Zoopl. Cnts. 390.9 (cells/liter)

- Dom. Phytopl. 1. Dinobryon - 70%
2. Anacystis - 25%

- Dom. Zoopl. 1. Synchaeta - 55%
2. Nauplius larva - 20%

TROPIC CLASSIFICATION 1981

: Vasc.

D.O. S.D. Plants Chl a Total Class.

Classification Points:

3	2	2	5	12	Eutro.
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COMMENTS:

FIELD DATA SHEET

WATER BODY Crystal Lake TOWN Manchester By WSPCC
DATE COLLECTED 14 July 1981 WEATHER Partly cloudy; showers, breeze 24.5°C

STATION	DEPTH (M)	TEMP. (°C)	*DISSOLVED OXYGEN	OXYGEN: % SATURATION			
	6.0	11.5	0.5	5			
	5.0	16.5	2.4	24			
	4.0	19.0	9.2	98			
	3.0	24.9	8.3	99			
	2.0	26.2	8.5	104			
	1.0	26.5	8.5	104			
	surface	26.5	8.4	102			

SECCHI DISK (M) 2.0

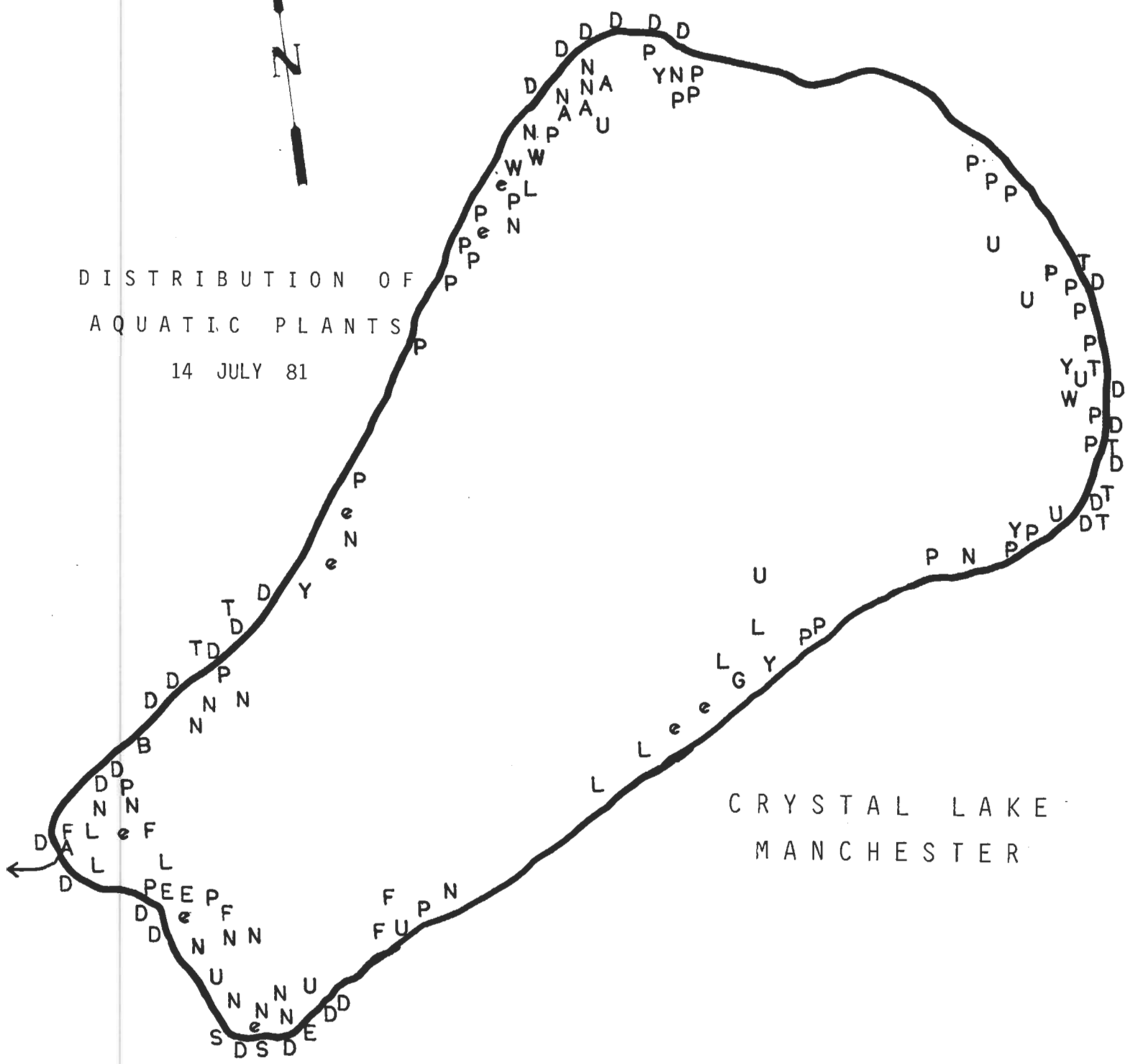
COMMENTS:

BOTTOM DEPTH (M) 6.5TIME 1:05 - 1:15

* Dissolved oxygen values in mg/L 75



DISTRIBUTION OF
AQUATIC PLANTS
14 JULY 81



CRYSTAL LAKE
MANCHESTER

0 ————— 2 KM

AQUATIC PLANT SURVEY

LAKE Crystal Lake TOWN Manchester DATE 14 July 81 BY WS&PCC

[illegible]

OVERALL ABUNDANCE Common

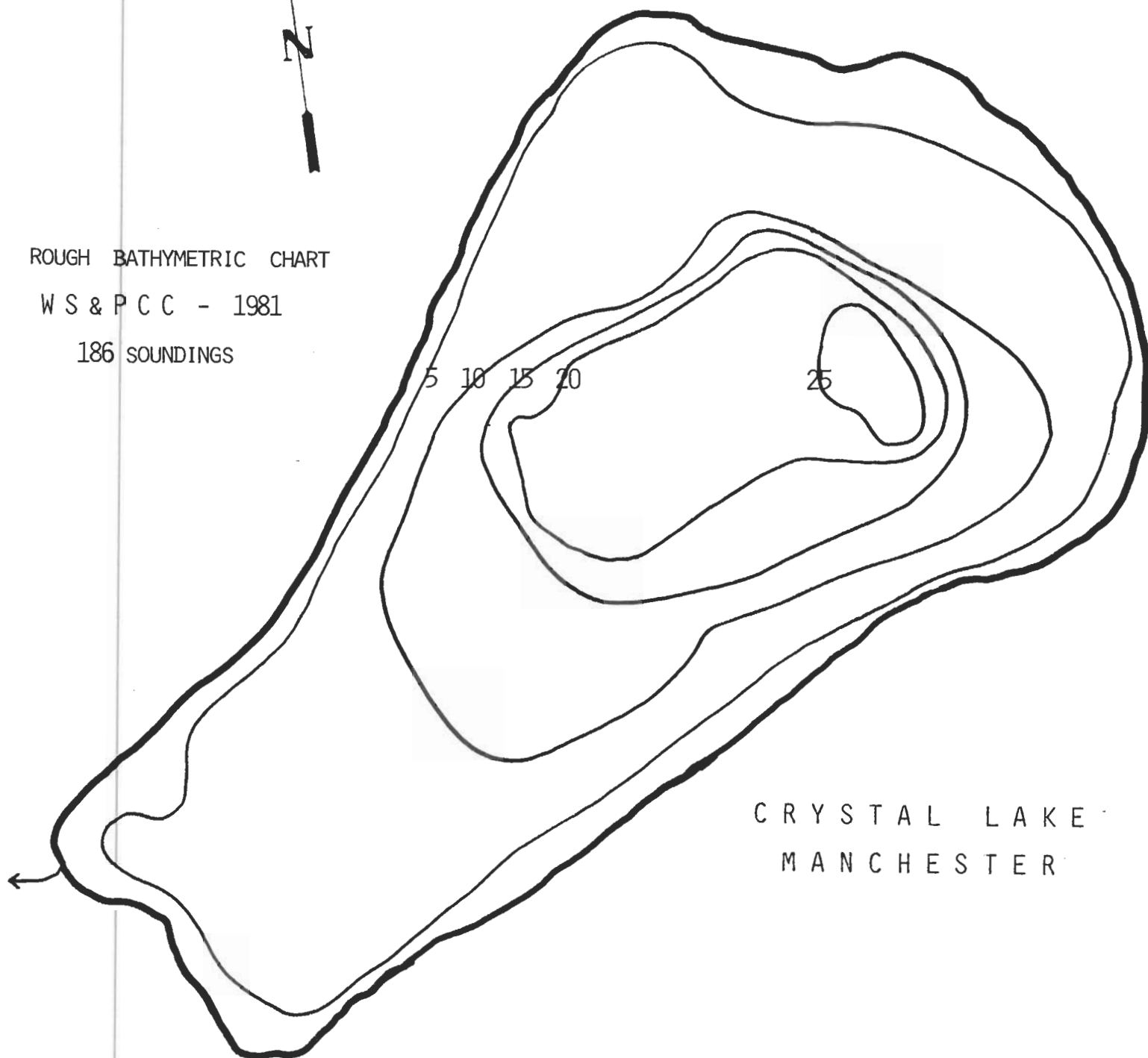
GENERAL OBSERVATIONS:



ROUGH BATHYMETRIC CHART

W S & P C C - 1981

186 SOUNDINGS



CRYSTAL LAKE
MANCHESTER

5 FT. ISOBATHS

0 ————— .2 KM