

TROPHIC CLASSIFICATION OF N.H. LAKES AND PONDS

NAME Island Pond, Little TOWN Pelham CO Hillsborough RIVER Merrimack  
 BASIN Merrimack

I. POTENTIAL FOR NUTRIENT ENRICHMENT

Latitude 42°31'N Longitude 71°17'W

A. NATURAL PHYSICAL FACTORS

- |  |                                       |
|--|---------------------------------------|
| 1. Area (ha) <u>62.73</u>                    | 10. Watershed area<br>Volume <u>2</u> |
| 2. Max. depth (m) <u>16.8</u>                | 11. Bottom slope <u>1.9</u>           |
| 3. Mean depth (m) <u>4.9</u>                 | 12. Shore config. <u>--</u>           |
| 4. Elevation (ft) <u>145</u>                 | 13. Flushing rate <u>0.6</u>          |
| 5. Shore length (m) <u>2,600</u>             | 14. Water renewal time <u>1.7</u>     |
| 6. Volume (m <sup>3</sup> ) <u>3,064,000</u> | 15. Drainage density <u>-</u>         |
| 7. Volume/shore length <u>1,180</u>          | 16. % Watershed ponded <u>-</u>       |
| 8. % Stratification <u>17%</u>               | 17. Phos. retent. coeff. R <u>.76</u> |
| 9. Watershed area (ha) <u>373.0</u>          |                                       |

B. CULTURAL FACTORS

- |   |   |
|---|---|
| 1. % Shore developed <u>100% (1963)</u> | 5. Estimate of non-point Tot-P loading: |
| 2. Number nearshore homes _____         | a. Land Use _____                       |
| 3. # nearshore homes/mile shore _____   | b. Precipitation _____                  |
| 4. Volume lake/# nearshore homes _____  | c. Subsurface disposal _____            |
|   | d. Other _____                          |

II. INDICATORS OF TROPHIC CONDITION (mg/l unless indicated otherwise)

A. Winter Data:

Date 8 MAR 1976 Weather Partly cloudy; windy & cold

Depth(m)	1.0	
Alkalinity	4.0	
PO <sub>4</sub> -P	.001	
Total-P	.012	
NO <sub>2</sub> +NO <sub>3</sub> -N	.17	
Kjeld-N	.20	
Total-N	.37	
Tot-N/Tot-P	31	
NO <sub>2</sub> +NO <sub>3</sub> -N/PO <sub>4</sub> -P	170	

Bottom: Depth 8.2m D.O. 9.4 % Sat. 72

% Organic matter sediment 21.9%

Dom. Phytopl. 1. Dinobryon (50%)

2. \_\_\_\_\_

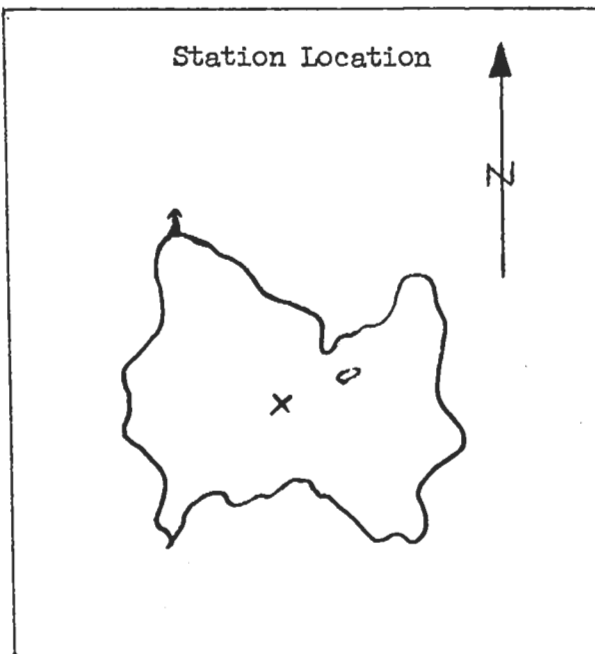
Dom. Zoopl. 1. Nauplii larvae (75%)

2. \_\_\_\_\_

B. Summer Data:

Date 28 August 1978 Weather Light sprinkle; surface calm;  
17.0° C

	Depth (m)	Mid-ep	Mid-therm	Mid-hyp
pH (units)	3.0	6.5	9.0	
Alkalinity	6.0	6.5	6.7	
PO <sub>4</sub> -P	6.0	5.0	5.0	
Total-P	<.001	<.001	<.001	
NO <sub>2</sub> +NO <sub>3</sub> -N	.005	.005	.015	
Kjeld-N	<.05	<.05	<.05	
Total Residue	.28	.28	.25	
Color (units)	27	29	32	
Turb. (NTU)	20	15	20	
Spec. Conduct. (µMhos/cm)	4.7	5.0	4.1	
Tot. Org. Carbon	73.7	72.3	71.3	
Chloride	7.0	-	-	
Mg	12	12	11	
Ca	.77	-	-	
Na	3.6	-	-	
K	7.1	-	-	
[Mg+Ca] / [Na+K]	0.8	-	-	
Tot-N/Tot-P	.55	-	-	
NO <sub>2</sub> +NO <sub>3</sub> -N/PO <sub>4</sub> -P	-	-	-	



Bottom: Depth 11.5 m D.O. 3.4 % Sat. 32%

Epilimnetic alkalinity decrease -2.0

PO<sub>4</sub>-P ratio: epi/hyp 1.00

Total-P ratio: epi/hyp .33

Secchi disk transparency (M) 5.5

% organic Matter sediment -

Vascular Plants	Scattered
Dom. Vasc. Plants:	1. <u>Pontederia</u>
	2. <u>Juncus</u>
	3. <u></u>
Ash-Free Dry Weight	-
Chlorophyll a	<u>3.18</u> (mg/m <sup>3</sup> )
Tot. Zoopl. Cnts.	<u>350</u> (cells/liter)
Dom. Phytopl.	1. <u>Anabaena - 35%</u>
	2. <u>Coelosphaerium - 20%</u>
Dom. Zoopl.	1. <u>Vorticella - 90%</u>
	2. <u></u>

TROPHIC CLASSIFICATION	<u>1978</u>	:	Vasc.			
		D.O.	S.D.	Plants	Chl a	Total Class.
Classification Points:	<u>2</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>4</u>	<u>Oligo.</u>

COMMENTS:

- 100% of the shoreline is developed.
- Most of the shoreline is rocky, therefore rooted plants are not a problem now and will probably not be a problem in the foreseeable future; however, clumps of the filamentous green alga Zygnema are common around the entire shoreline.
- The planktonic algae was not abundant at this time, but was dominated by two blue-green genera that have caused problems in other lakes.

FIELD DATA SHEET

WATER BODY Island Pond, Little

TOWN Pelham

By WSPCC

DATE COLLECTED Aug. 28, 1978

WEATHER light sprinkle; 17°C; no wind

STATION	DEPTH (M)	TEMP. (°C)	*DISSOLVED OXYGEN	OXYGEN: % SATURATION			
Deep Spot	0	22.2	7.6	86			
	1	22.2	7.6	86			
	2	22.1	7.6	86			
	3	22.0	7.4	84			
	4	22.0	7.4	84			
	5	21.9	7.0	80			
	6	21.0	6.6	73			
	7	16.2	7.6	77			
	8	14.0	6.2	60			
	9	12.5	3.4	32			
	9.3	12.5	3.2	30			

SECCHI DISK (M) 5.5

BOTTOM DEPTH (M) 11.5

TIME 1330 hrs.

COMMENTS:

\* Dissolved oxygen values in mg/L





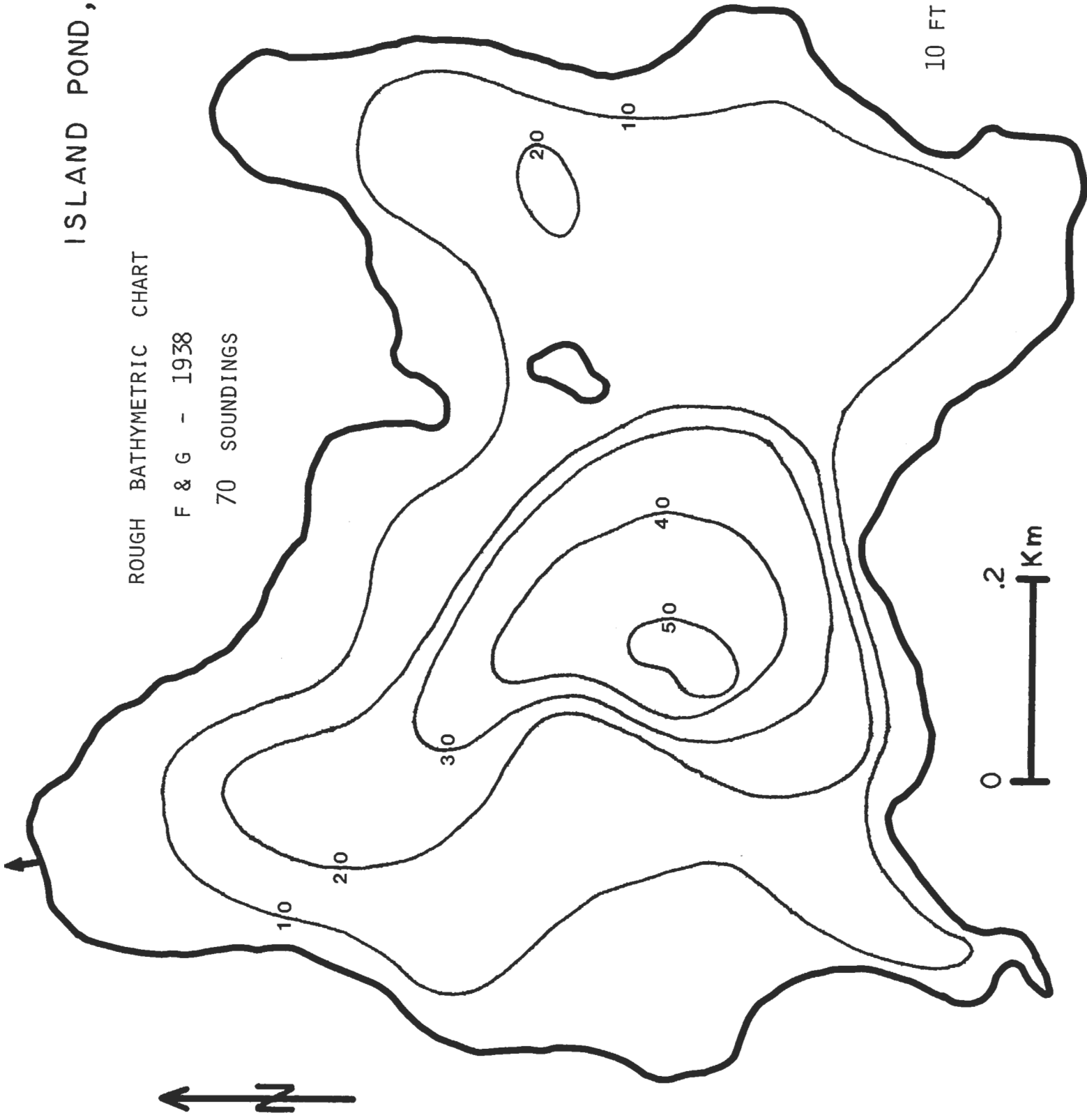
ISLAND POND, LITTLE

PELHAM

ROUGH BATHYMETRIC CHART

F & G - 1938

70 SOUNDINGS



10 FT. ISOBATHS