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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	RED HILL POND	Lake Area (ha):	40.02
Town:	SANDWICH	Maximum depth (m):	7.0
County:	Carroll	Mean depth (m):	3.1
River Basin:	Merrimack	Volume (m^3):	1247500
Latitude:	43°48' N	Relative depth:	1.0
Longitude:	71°25' W	Shore configuration:	1.52
Elevation (ft):	631	Areal water load (m/yr):	9.42
Shore length (m):	3400	Flushing rate (yr^{-1}):	3.00
Watershed area (ha):	777.0	P retention coeff.:	0.56
% watershed ponded:	1.0	Lake type:	natural w/dam

BIOLOGICAL:	10 March 1988	30 July 1987
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	CHRYSOSPHAERELLA 50%
#2		PERIDINIUM 30%
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		710.0
CHLOROPHYLL-A (µg/L)		12.26
DOM. ZOOPLANKTON (% TOTAL) #1	PERITRICH CILIATE 57%	KELLICOTTIA 62%
#2	KERATELLA 25%	CYCLOPOID COPEPOD 11%
#3		HOLOPEDIUM 9%
ROTIFERS/LITER	16	194
MICROCRUSTACEA/LITER	4	72
ZOOPLANKTON ABUNDANCE (#/L)	61	266
VASCULAR PLANT ABUNDANCE		Abundant
SECCHI DISK TRANSPARENCY (m)		2.8
BOTTOM DISSOLVED OXYGEN (mg/L)	2.2	0.2
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 3.4
Hypolimnion volume (m^3): 13000

CHEMICAL:

Lake: RED HILL POND
Town: SANDWICH

	10 March 1988		30 July 1987		
DEPTH (m)	2.5	4.5	2.5		5.0
pH (units)	5.6	5.6	6.2		5.8
A.N.C. (Alkalinity)	3.4	3.8	2.2		2.4
NITRATE NITROGEN	< 0.05	0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.43		0.78		0.62
TOTAL PHOSPHORUS	0.010	0.013	0.018		0.020
CONDUCTIVITY (µ mhos/cm)	27.6	27.5	19.7		22.0
APPARENT COLOR (cpu)	62	65	53		80
MAGNESIUM			0.24		
CALCIUM			1.5		
SODIUM			1.7		
POTASSIUM			0.20		
CHLORIDE	3	3	< 2		< 2
SULFATE	3	2	2		2
TN : TP	43		43		31
CALCITE SATURATION INDEX			4.6		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1987

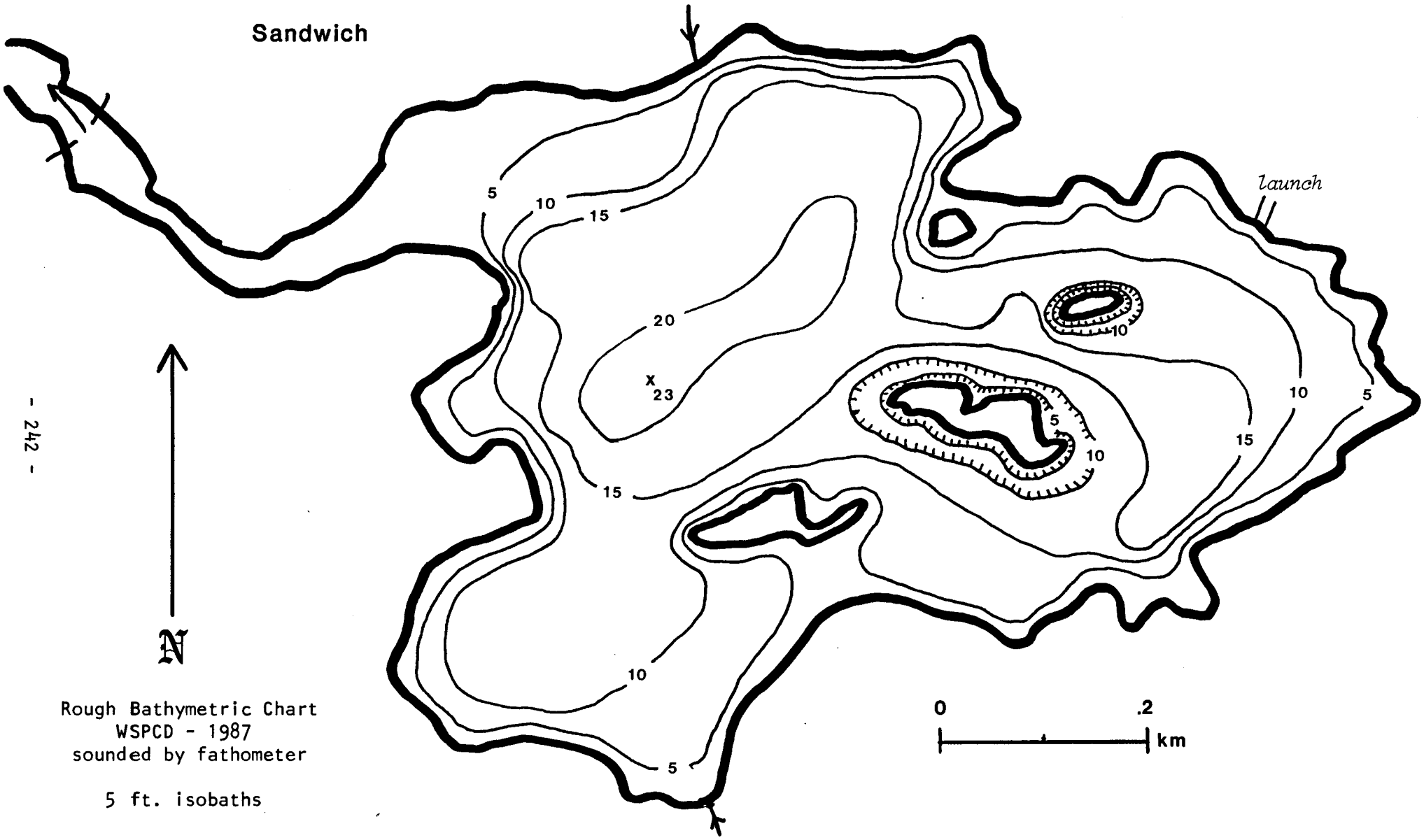
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	2	3	3	13	Eutro.

COMMENTS:

1. A scenic pond with only one house and with much of the pond surrounded by bogs or marshes.

2. The whole-water phytoplankton was 35% bluegreens and 30% greens. Dominant genera were Merismopedia (30%) and tiny green flagellates (20%).

Red Hill Pond



Rough Bathymetric Chart
WSPCD - 1987
sounded by fathometer

5 ft. isobaths

FIELD DATA SHEET

LAKE: RED HILL POND
DATE: 07/30/87

TOWN: SANDWICH
WEATHER: SUNNY, MODERATE BREEZE

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	24.0	7.6	89 %
	1.0	23.5	7.3	83 %
	2.0	23.0	7.2	82 %
	2.5	22.5	5.6	63 %
	3.0	21.8	4.1	45 %
	3.5	19.5	0.4	4 %
	4.0	17.2	0.2	2 %
	5.0	14.0	0.2	2 %
	6.0	11.5	0.2	2 %
	6.5	11.0	0.2	2 %

SECCHI DISK (m): 2.8

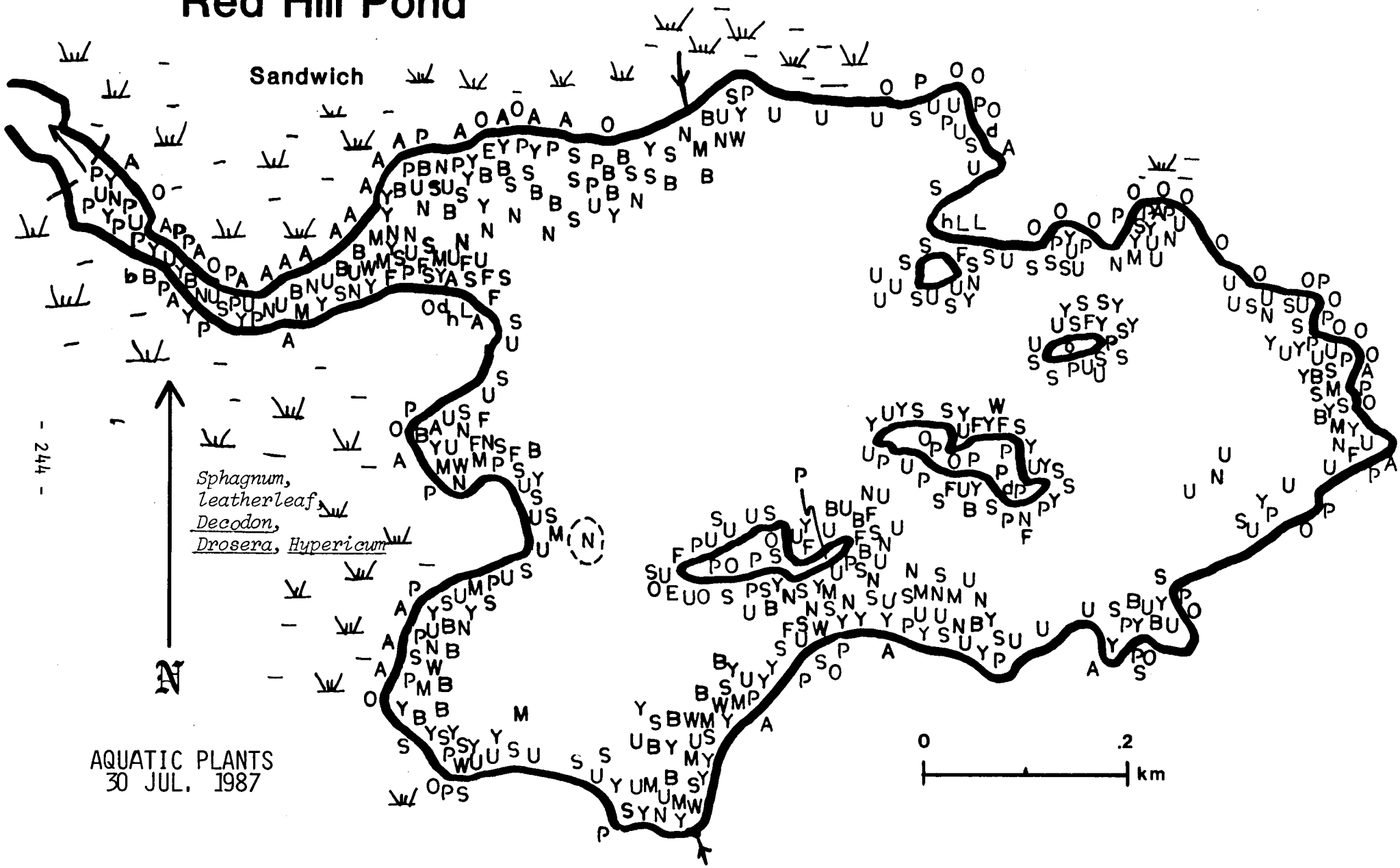
BOTTOM DEPTH (m): 7.0

TIME: 1340

COMMENTS:

*Dissolved oxygen values are in mg/L

Red Hill Pond



AQUATIC PLANTS
30 JUL. 1987

AQUATIC PLANT SURVEY

LAKE: RED HILL POND TOWN: SANDWICH DATE: 07/30/87

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
U	Utricularia	Bladderwort	Abundant
C	Ceratophyllum demersum	Coontail	Sparse
M	Myriophyllum humile	Water milfoil	Scattered
B	Brasenia schreberi	Water shield	Common
N	Nymphaea	White water lily	Common
E	Eriocaulon septangulare	Pipewort	Sparse
S	Sparganium	Bur reed	Common
Y	Nuphar	Yellow water lily	Common
A	Sagittaria/Peltandra	Arrow-leafed emergents	Scattered
O	Cephalanthus occidentalis	Buttonbush	Scattered
b	Scirpus validus	Softstem bulrush	Sparse
W	Potamogeton	Pondweed	Scattered
F	Nymphoides cordatum	Floating heart	Scattered
d	Dulichium arundinaceum	Three-way sedge	Sparse
L	Lobelia cardinalis	Cardinal flower	Sparse
h	Hypericum	St. John's-wort	Sparse
P	Pontederia cordata	Pickerelweed	Common

OVERALL ABUNDANCE: Abundant

GENERAL OBSERVATIONS:

1. At least two species of pondweeds were present: P. natans and P. Robbinsii.
2. Bladderwort was probably distributed beyond where the bottom was visible. Much bladderwort was observed washed up on shore.
3. Plants observed in the bog at the western end of the lake included sphagnum, leatherleaf, sundew, swamp loosestrife, and St. John's-wort. These plants are not depicted on the map.