NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION

LAKE TROPHIC DATA

MORPHOMETRIC:

LAKE	Orange Pond	LAKE AREA (HA)	11.49
TOWN	Orange	MAXIMUM DEPTH (M)	6.2
COUNTY	Grafton	MEAN DEPTH (M)	2.5
RIVER BASIN	Merrimack	VOLUME (M^3)	292,500
LATITUDE	43° 37'N	MUD SURFACE AREA (HA)	11.50
LONGITUDE	71° 57'W	RELATIVE DEPTH	1.6
ELEVATION (FT)	1383	SHORE CONFIGURATION	1.08
SHORE LENGTH (M)	1300	AREAL WATER LOAD (M/YR)	9.92
WATERSHED AREA (HA)	186.5	FLUSHING RATE (YR^{-1})	3.9
% WATERSHED PONDED	0%	PHOSPHORUS RETENTION COEFF.	0.55

BIOLOGICAL: DATE	21 JAN 1986	2 JUL 1985
DOM. PHYTOPLANKTON (% total) 1	Asterionella (40%)	Tabellaria (40%)
2	Rhyzosolenia (40%)	Dinobryon (25%)
NUMBER OF ALGAL GENERA	11	10
SPECIES DIVERSITY		2.20
CHLOROPHYLL a (µg/L)		12.22
DOM. ZOOPLANKTON (% total) 1	Keratella (40%)	Nauplii larvae (50%)
2	Polyarthra (40%)	Polyarthra (40%)
ROTIFERS/LITER	200	163
MICROCRUSTACEA/LITER	22	169
TOTAL ZOOPLANK. CNTS (cells/L)	232	332
VASCULAR PLANT ABUNDANCE		Sparse
DOMINANT VASCULAR PLANTS 1		
2		
3		
SECCHI DISK TRANSPARENCY (M)		1.8
BOTTOM DISS. OXYGEN (mg/L)	3.3	0.2
SEDIMENT: % ORGANIC MATTER		

LAKE TYPE: A natural pond raised by damming.

SUMMER THERMAL STRATIFICATION: YES ____ NO ____ WEAK X

IF YES, VOLUME OF HYPOLIMNION _____ (m^3) THERMOCLINE DEPTH _____ (m)

CHEMICAL: (mg/L unless indicated otherwise) LAKE: Orange Pond

	WINTER		SUMMER		
DATE	21 JAN 1986		2 JUL 1985		
DEPTH (M)	2.0	4.0	1.0	3.0	5.0
pH (UNITS)	6.2	6.2	6.9	6.8	6.4
ALKALINITY (I. P.)	4.9	6.3	3.7	3.9	5.3
ALKALINITY (F.E.P.)	6.3	7.8	5.0	5.4	6.9
NITRITE+NITRATE NITROGEN			< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN			0.76		0.61
TOTAL PHOSPHORUS	0.001	0.010	0.018	0.017	0.019
SPEC. CONDUCT. (μMhos/cm)	33.4	32.3	25.3	24.9	27.1
APPARENT COLOR (UNITS)	20	30	20	25	30
TRUE COLOR (440 nm)(UNITS)	16	18	19	20	23
MAGNESIUM			0.54		
CALCIUM			1.8		
SODIUM			<3		
POTASSIUM			< 0.5		
CHLORIDE			< 2		< 2
TN : TP			42		32
INORG-N : INORG-P					
[Mg+Ca] : [Na+K]					
CALCITE SATURATION INDEX			3.6		

* = NOT DEFENSIBLE NR = NO RESULT

TROPHIC CLASSIFICATION: 1985

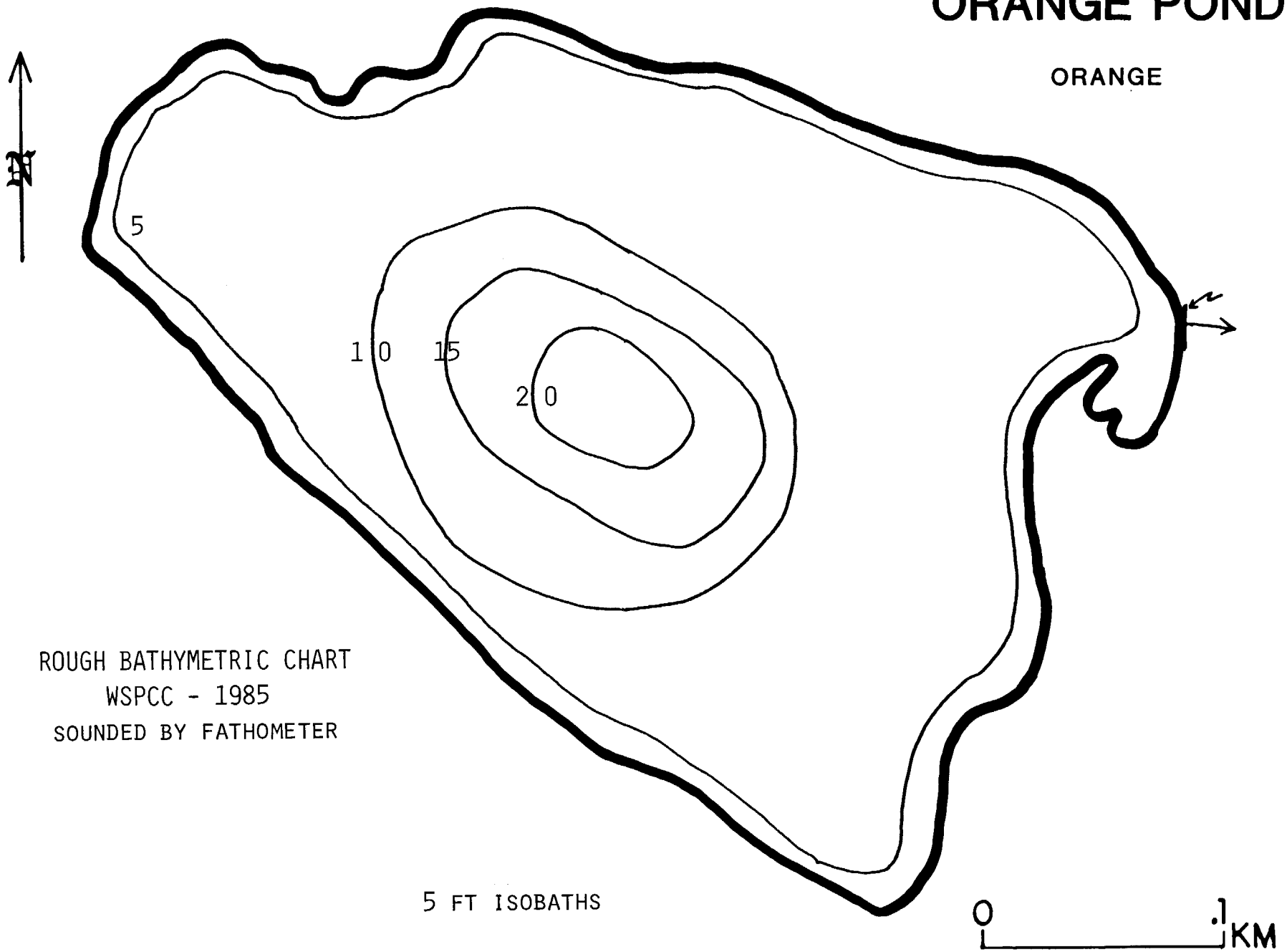
	D.O.	S.D.	PLANT ABUND.	CHL a	TOTAL PTS.	TROPHIC CLASS.
CLASSIFICATION POINTS:	5	3	0	3	11	Eutro.

COMMENTS:

1. Water was very cloudy - phytoplankton was abundant.
2. Only one camp along the shore.
3. Boat access was rough and steep; good parking at top of the hill.
4. Popular fishing area; saw many fish jumping.

ORANGE POND

ORANGE



ROUGH BATHYMETRIC CHART
WSPCC - 1985
SOUNDED BY FATHOMETER

5 FT ISOBATHS

FIELD DATA SHEET

WATER BODY Orange Pond TOWN Orange BY WSPCC

DATE COLLECTED 2 July 1985 WEATHER Partly cloudy; warm

STATION	DEPTH (M)	TEMP. (°C)	*DISSOLVED OXYGEN	OXYGEN: % SATURATION			
DEEP SPOT	0.1	21.7	9.2	106%			
	1.0	21.0	9.2	106%			
	2.0	18.1	9.3	101%			
	3.0	17.5	8.4	89%			
	4.0	17.0	6.4	68%			
	5.0	14.1	0.2	2%			

SECCHI DISK (M) 1.8

BOTTOM DEPTH (M) 5.4

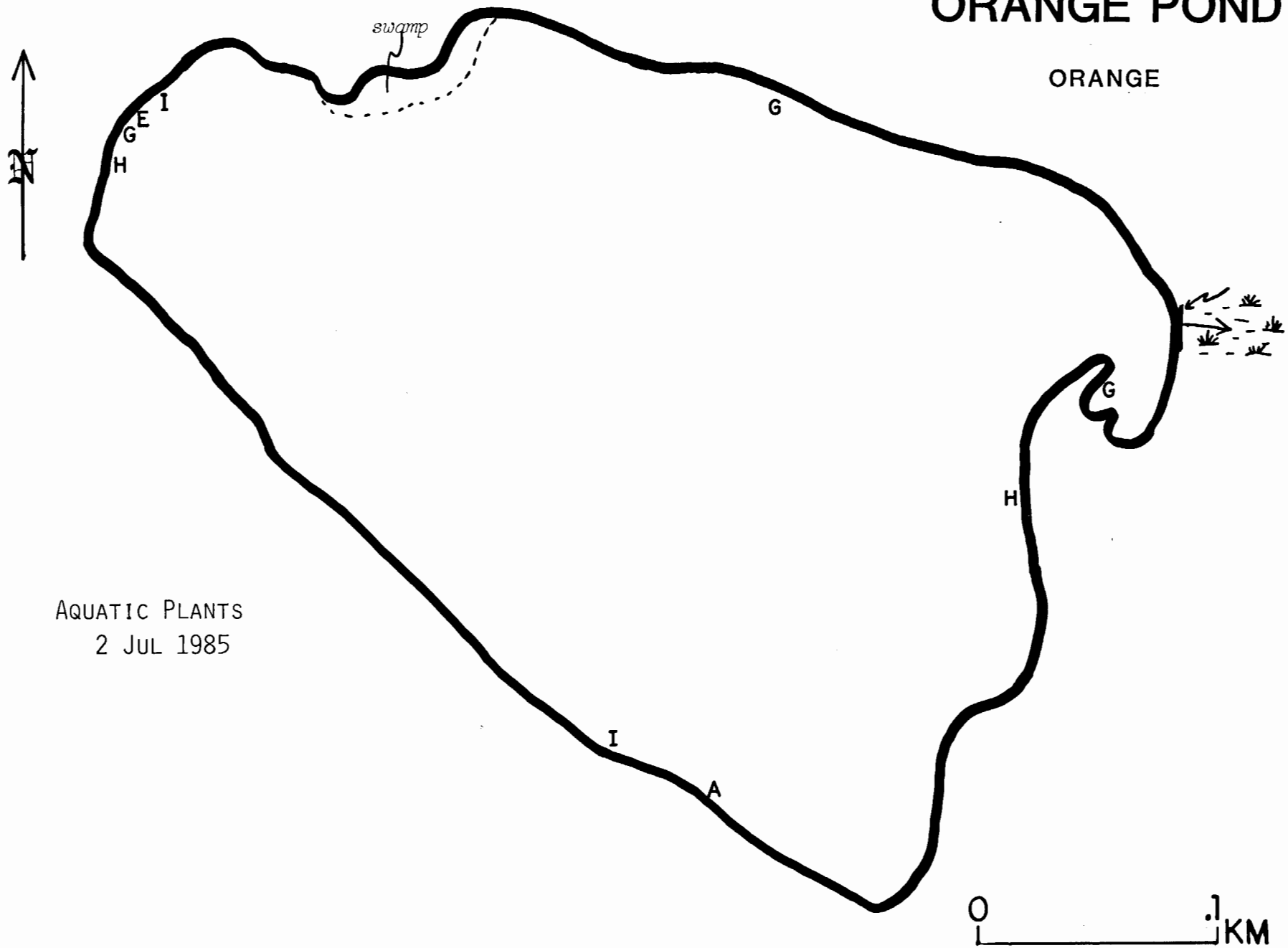
TIME 1130 hrs.

COMMENTS:

* Dissolved oxygen values in mg/L

ORANGE POND

ORANGE



AQUATIC PLANTS
2 JUL 1985

AQUATIC PLANT SURVEY

LAKE Orange Pond TOWN Orange DATE 2 JUL 85 BY WSPCC

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
I	Iris	Blue Flag	Sparse
A	Sagittaria	Arrowhead	Sparse
H	Equisetum	Horsetail	Sparse
G	Gramineae	Grass Family	Sparse
E	Eleocharis	Spikes Rush	Sparse

OVERALL ABUNDANCE Sparse

GENERAL OBSERVATIONS:

1. Emergent plants were common in a 1938 survey (F&G) ; they were sparse in this survey.
2. Observed turtles and salamanders.