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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	JACKMAN RESERVOIR	Lake Area (ha):	210.44
Town:	HILLSBOROUGH	Maximum depth (m):	9.2
County:	Hillsborough	Mean depth (m):	4.7
River Basin:	Merrimack	Volume (m^3):	9895000
Latitude:	43°06'00" N	Relative depth:	0.6
Longitude:	71°57'00" W	Shore configuration:	2.20
Elevation (ft):	770	Areal water load (m/yr):	45.40
Shore length (m):	11300	Flushing rate (yr^{-1}):	9.60
Watershed area (ha):	17896.8	P retention coeff.:	0.37
% watershed ponded:	2.8	Lake type:	artificial

BIOLOGICAL:	12 January 1989	29 June 1988
DOM. PHYTOPLANKTON (% TOTAL) #1	DINOBRYON 40%	ASTERIONELLA 65%
#2	ASTERIONELLA 40%	TABELLARIA 25%
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		625.0
CHLOROPHYLL-A (ug/L)		3.83
DOM. ZOOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	KELLICOTTIA 42%
#2		NAUPLIUS LARVA 23%
#3		VORTICELLA 14%
ROTIFERS/LITER	9	65
MICROCRUSTACEA/LITER	2	41
ZOOPLANKTON ABUNDANCE (#/L)	13	124
VASCULAR PLANT ABUNDANCE		Sparse
SECCHI DISK TRANSPARENCY (m)		3.0
BOTTOM DISSOLVED OXYGEN (mg/L)	14.4	4.0
BACTERIA (fecal col., #/100 ml) #1		< 1
#2		< 1
#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3): None

CHEMICAL:

Lake: JACKMAN RESERVOIR
Town: HILLSBOROUGH

	12 January 1989		29 June 1988		
DEPTH (m)	2.0	4.0	2.0	5.0	7.5
pH (units)	5.9	6.0	6.1	6.3	5.8
A.N.C. (Alkalinity)	1.9	1.9	2.1	2.2	2.6
NITRATE NITROGEN	0.06	0.05	0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.30	0.27	0.16	0.25	0.25
TOTAL PHOSPHORUS	0.015	0.012		0.019	0.006
CONDUCTIVITY (µ mhos/cm)	42.1	40.0	35.2	35.1	35.0
APPARENT COLOR (cpu)	36	34	30	31	39
MAGNESIUM			0.40		
CALCIUM			1.7		
SODIUM			4.0		
POTASSIUM			0.50		
CHLORIDE	5	5	4		4
SULFATE	7	6	4		4
TN : TP	24	27			42
CALCITE SATURATION INDEX			4.7		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1988

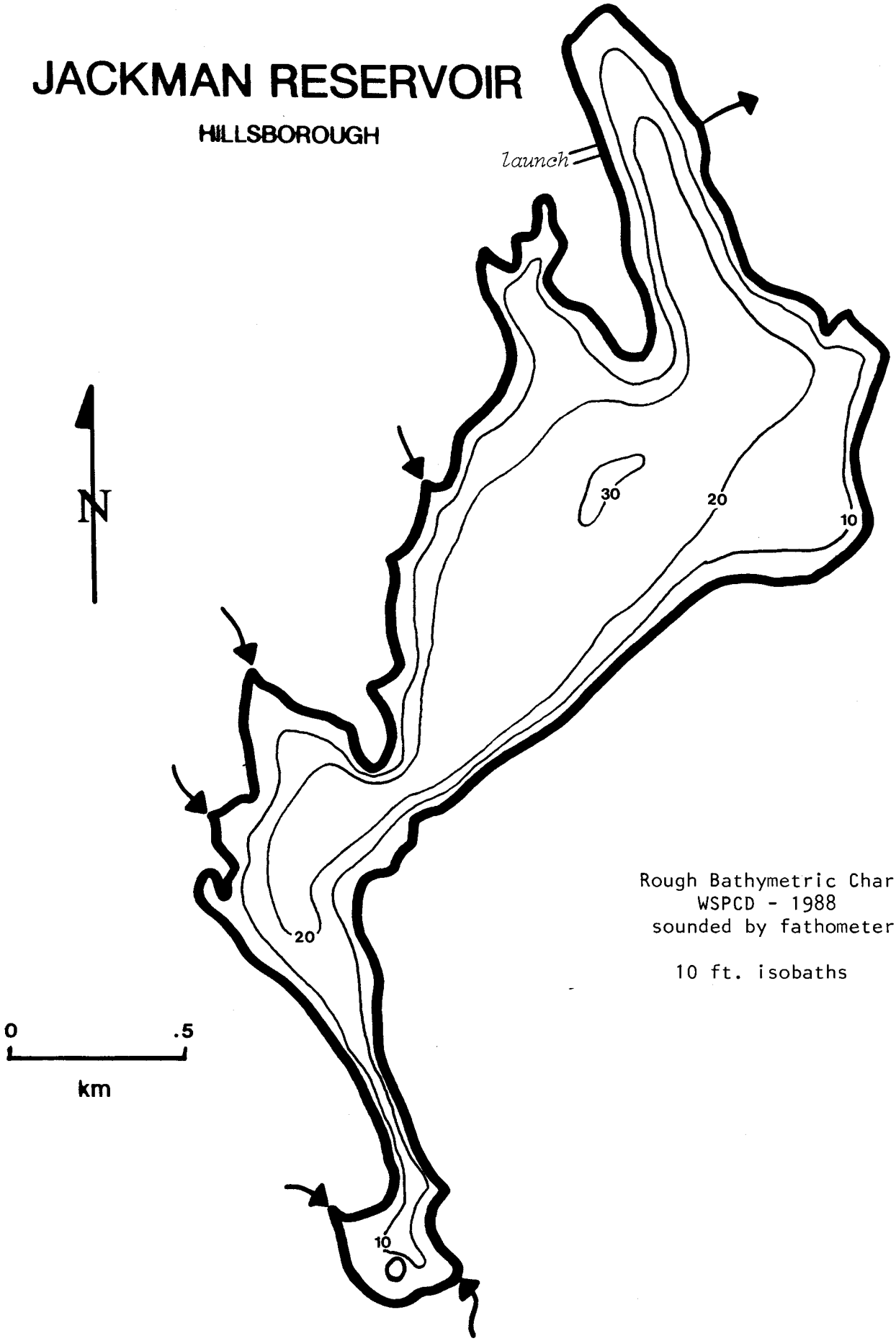
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	3	0	0	3	Oligo.

COMMENTS:

1. Also known as Pierce Lake and Franklin Pierce Lake.
2. This is an artificial impoundment created behind a Public Service Company hydro-electric dam. Water levels are maintained during the summer but are frequently drawn down in the winter.
3. Good boat launch and parking off Rt. 9 (near the dam).
4. The whole-water phytoplankton was dominated by green algae (55%) with tiny green flagellates (50%) the dominant genus.

JACKMAN RESERVOIR

HILLSBOROUGH



Rough Bathymetric Chart
WSPCD - 1988
sounded by fathometer

10 ft. isobaths

FIELD DATA SHEET

LAKE: JACKMAN RESERVOIR TOWN: HILLSBOROUGH
DATE: 06/29/88 WEATHER: PARTLY CLOUDY

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	26.8	8.2	101 %
	1.0	26.0	8.2	101 %
	2.0	25.0	8.2	99 %
	3.0	25.0	8.2	99 %
	4.0	24.0	7.6	89 %
	5.0	22.5	6.8	77 %
	6.0	21.2	6.2	69 %
	7.0	19.8	6.0	65 %
	8.0	17.2	4.0	41 %

SECCHI DISK (m): 3.0 COMMENTS:

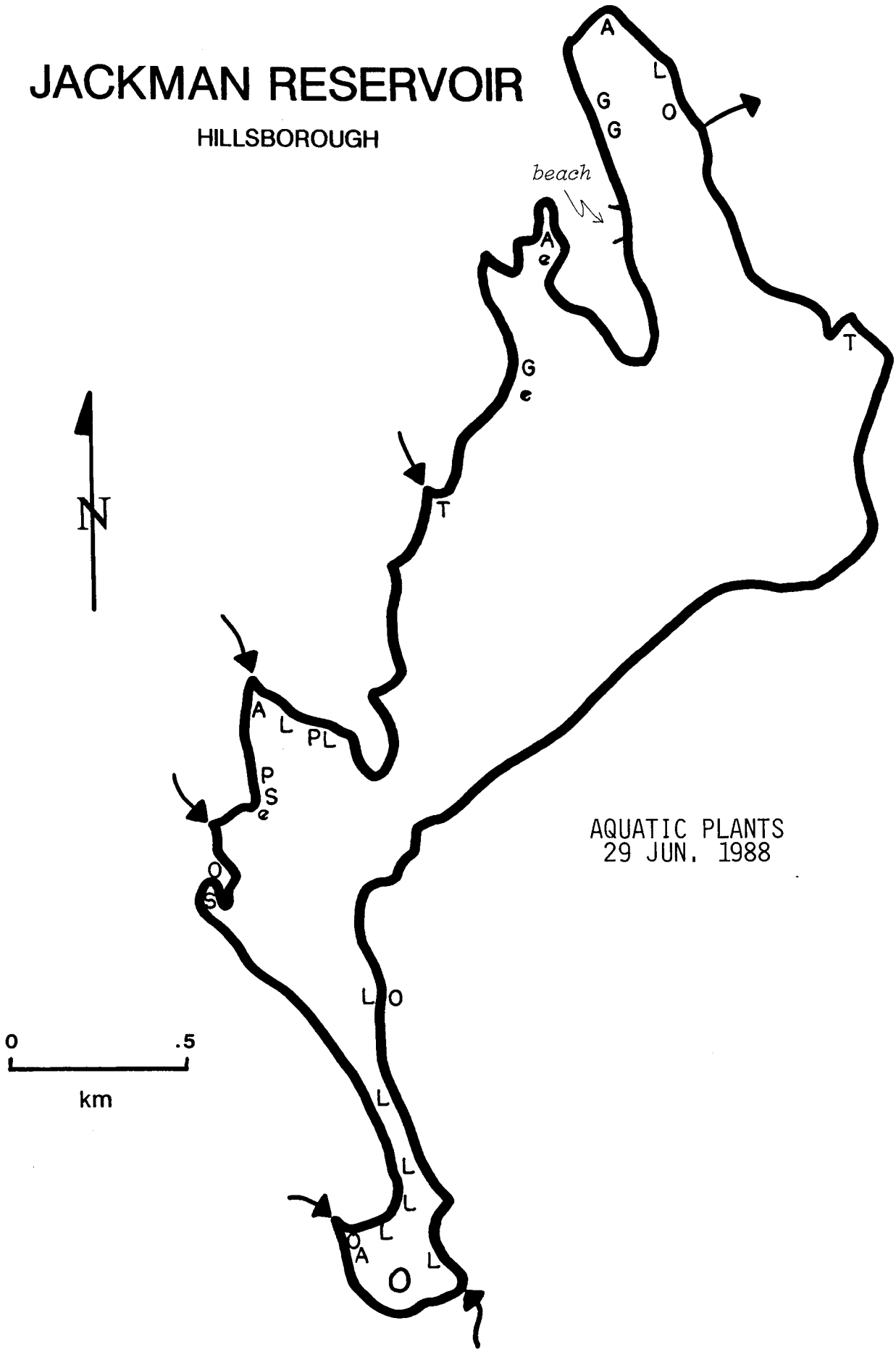
BOTTOM DEPTH (m): 8.5

TIME: 1415

*Dissolved oxygen values are in mg/L

JACKMAN RESERVOIR

HILLSBOROUGH



AQUATIC PLANT SURVEY

LAKE: JACKMAN RESERVOIR TOWN: HILLSBOROUGH DATE: 06/29/88

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
G	Gramineae	Grass family	Sparse
L	Polygonum	Smartweed	Sparse
T	Typha	Cattail	Sparse
O	Cephalanthus occidentalis	Buttonbush	Sparse
A	Sagittaria	Arrowhead	Sparse
S	Sparganium	Bur reed	Sparse
e	Eleocharis	Spike rush	Sparse
P	Pontederia cordata	Pickerelweed	Sparse

OVERALL ABUNDANCE: Sparse

GENERAL OBSERVATIONS:

1. Plants are all sparse, probably due to fluctuating water levels during the winter.