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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	HALFMOON LAKE	Lake Area (ha):	102.38
Town:	ALTON	Maximum depth (m):	8.2
County:	Belknap	Mean depth (m):	4.4
River Basin:	Merrimack	Volume (m^3):	4545000
Latitude:	43°23'29" N	Relative depth:	0.7
Longitude:	71°13'37" W	Shore configuration:	1.67
Elevation (ft):	640	Areal water load (m/yr):	8.73
Shore length (m):	6000	Flushing rate (yr^{-1}):	2.00
Watershed area (ha):	1761.2	P retention coeff.:	0.57
% watershed ponded:	0.0	Lake type:	natural w/dam

BIOLOGICAL:		4 January 1993	20 July 1992
DOM. PHYTOPLANKTON (% TOTAL)	#1	TABELLARIA 30%	CHRYSOSPHAERELLA 35%
	#2	ASTERIONELLA 15%	CERATIUM 35%
	#3	SYNEDRA 15%	ASTERIONELLA 15%
PHYTOPLANKTON ABUNDANCE (cells/mL)			795
CHLOROPHYLL-A (μg/L)			4.20
DOM. ZOOPLANKTON (% TOTAL)	#1	ACTINOPHRYS 46%	NAUPLIUS LARVA 34%
	#2	KERATELLA 24%	CILIATE SPP. 24%
	#3		KELLICOTTIA 16%
ROTIFERS/LITER		94	59
MICROCRUSTACEA/LITER		6	83
ZOOPLANKTON ABUNDANCE (#/L)		218	190
VASCULAR PLANT ABUNDANCE			Scat/Common
SECCHI DISK TRANSPARENCY (m)			5.4
BOTTOM DISSOLVED OXYGEN (mg/L)		8.3	0.3
BACTERIA (E. coli, #/100 ml)	#1		10
	#2		< 10
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	6.0
Hypolimnion volume (m^3) :	101500
Anoxic volume (m^3) :	140000

CHEMICAL:

Lake: HALFMOON LAKE
Town: ALTON

	4 January 1993		20 July 1992		
DEPTH (m)	3.0	6.0	2.5		5.0
pH (units)	6.4	6.4	6.7		6.7
A.N.C. (Alkalinity)	5.1	5.3	4.6		4.8
NITRATE NITROGEN	< 0.02	< 0.02	< 0.02		< 0.02
TOTAL KJELDAHL NITROGEN	0.15	0.17	0.20		0.20
TOTAL PHOSPHORUS	0.010	0.014	0.010		0.013
CONDUCTIVITY (μmhos/cm)	44.8	45.2	42.7		43.7
APPARENT COLOR (cpu)	17	19	18		18
MAGNESIUM			0.58		
CALCIUM			2.0		
SODIUM			4.5		
POTASSIUM			0.54		
CHLORIDE	6	6	6		6
SULFATE	4	5	4		4
TN : TP	15	12	20		15
CALCITE SATURATION INDEX			3.6		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1992

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
4	1	2	1	8	Meso.

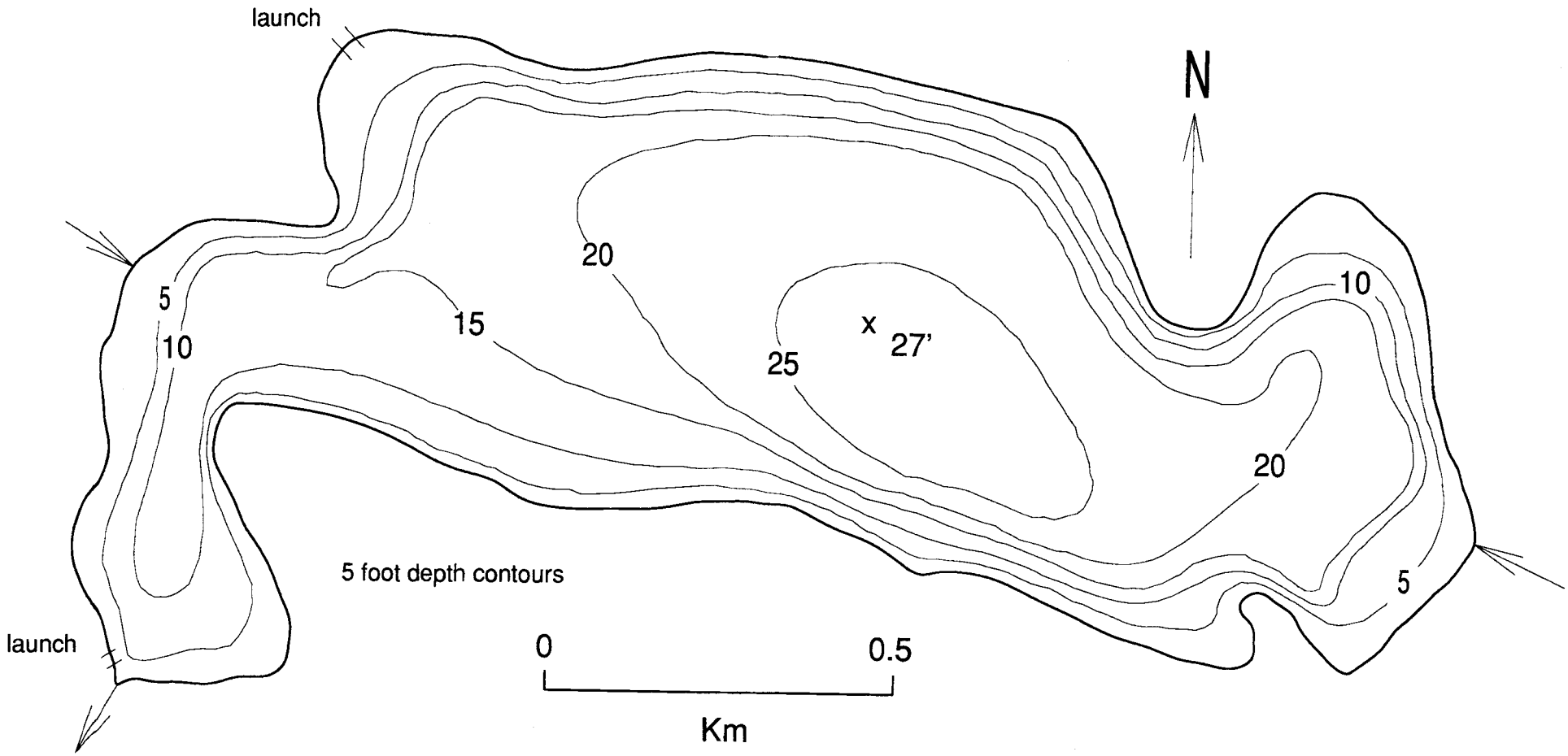
COMMENTS:

1. Juvenile summer camp (YMCA) located adjacent to the pond.

2. The lake was previously surveyed and classified in 1978. The lake went from oligotrophic in 1978 to mesotrophic in 1992. The major change in the lake was a greater depletion of bottom dissolved oxygen in 1992.

3. The dominant wholewater phytoplankton genera were Chroomonas (35%), a centric diatom (Cyclotella or Stephanodiscus) (20%) and Merismopedia (15%).

Halfmoon Lake
Alton



FIELD DATA SHEET

LAKE: HALFMOON LAKE
DATE: 07/20/92

TOWN: ALTON
WEATHER: PARTLY CLOUDY, WARM

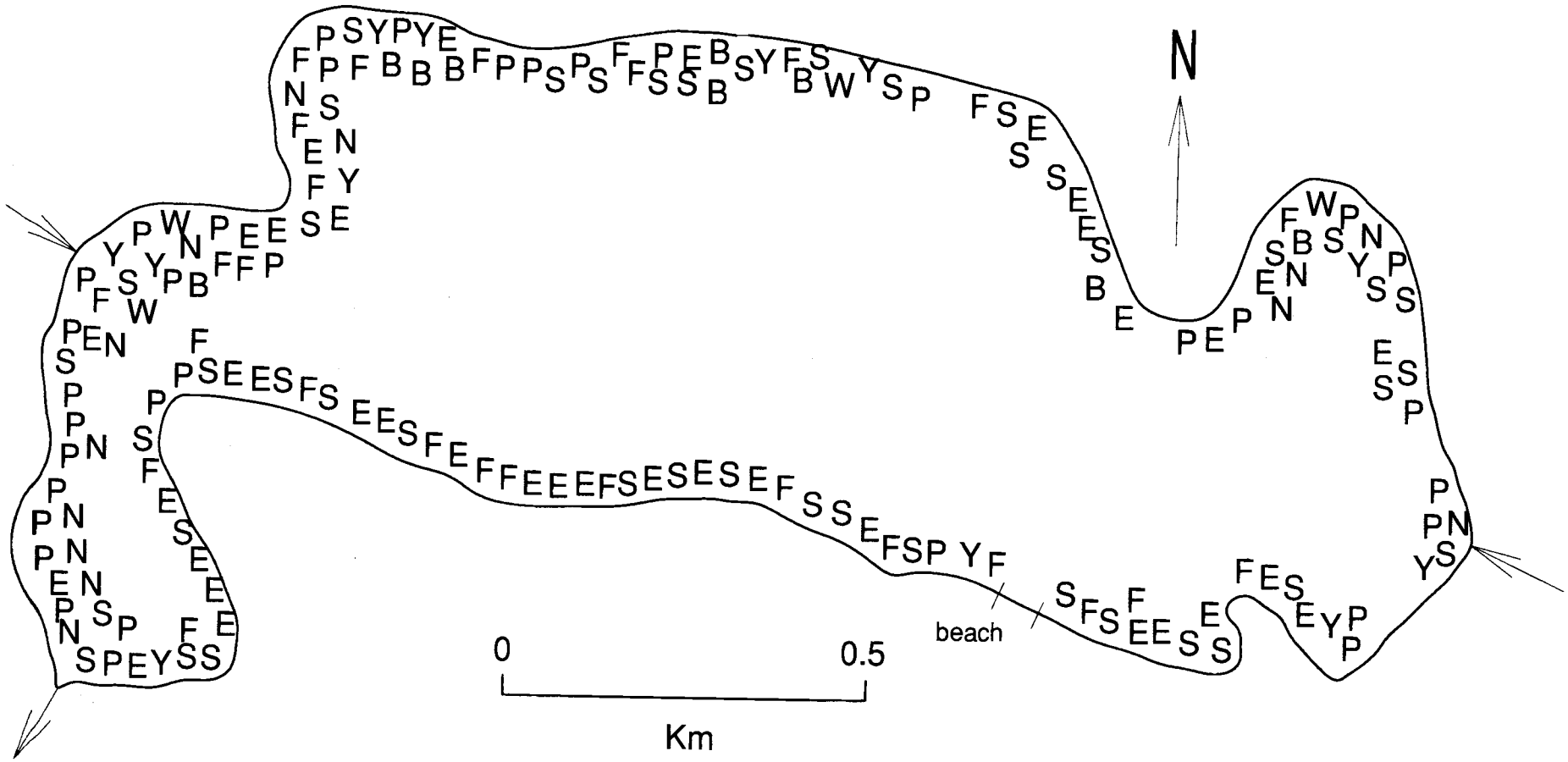
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	24.0	9.2	109 %
	1.0	23.9	9.2	107 %
	2.0	23.5	9.1	106 %
	3.0	23.0	9.0	105 %
	4.0	22.0	8.7	98 %
	5.0	21.0	6.6	73 %
	6.0	17.0	2.1	22 %
	7.0	13.0	0.2	2 %
	8.0	12.0	0.3	3 %

SECCHI DISK (m): 5.4
BOTTOM DEPTH (m): 8.2
TIME: 1200

COMMENTS:

*Dissolved oxygen values are in mg/L

Halfmoon Lake
Alton



AQUATIC PLANT SURVEY

LAKE: HALFMOON LAKE TOWN: ALTON DATE: 07/20/92

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Scattered
S	Sparganium	Bur reed	Scattered
E	Eriocaulon septangulare	Pipewort	Scat/Common
N	Nymphaea	White water lily	Sparse
Y	Nuphar	Yellow water lily	Sparse
F	Nymphoides cordatum	Floating heart	Sparse
W	Potamogeton	Pondweed	Sparse
B	Brasenia schreberi	Water shield	Sparse

OVERALL ABUNDANCE: Scat/Common

GENERAL OBSERVATIONS:

1. Plants were scattered along most of the shoreline, but were not really a nuisance.

2. The lake does have nuisance bottom filamentous algae that periodically wash up on shore and result in citizen complaints.