DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	BEARD POND	Lake Area (ha):	4.82
Town:	NEW BOSTON	Maximum depth (m):	3.6
County:	Hillsborough	Mean depth (m):	1.9
River Basin:	Merrimack	Volume (m^3):	92750
Latitude:	43°00'17" N	Relative depth:	1.5
Longitude:	71°40'47" W	Shore configuration:	1.27
Elevation (ft):	465	Areal water load (m/yr):	39.23
Shore length (m):	990	Flushing rate (yr^{-1}):	20.40
Watershed area (ha):	413.9	P retention coeff.:	0.40
% watershed ponded:	0.0	Lake type:	natural

BIOLOGICAL:		31 January 2000	30 August 1999
DOM. PHYTOPLANKTON (% TOTAL)	#1	CHLAMYDOMONAS 98%	LYNGBYA 30%
	#2		APHANIZOMENON 15%
	#3		PENNATE DIATOM SPP. 13%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (μg/L)			35.22
DOM. ZOOPLANKTON (% TOTAL)	#1	CHROMOGASTER 50%	NAUPLIUS LARVA 49%
	#2	KERATELLA 42%	CYCLOPOID COPEPOD 13%
	#3		POLYARTHRA 6%
ROTIFERS/LITER		192	476
MICROCRUSTACEA/LITER		8	1384
ZOOPLANKTON ABUNDANCE (#/L)		199	1939
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			1.1
BOTTOM DISSOLVED OXYGEN (mg/L)		6.6	0.4
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : 6850

CHEMICAL:

Lake: BEARD POND
Town: NEW BOSTON

	31 January 2000		30 August 1999		
DEPTH (m)	1.5	2.5	1.0		3.0
pH (units)	6.0	6.0	6.5		6.4
A.N.C. (Alkalinity)	10.4	11.3	10.3		11.0
NITRATE NITROGEN	0.08	< 0.05	0.08		< 0.05
TOTAL KJELDAHL NITROGEN	0.47	0.45	0.90		0.90
TOTAL PHOSPHORUS	0.028	0.028	0.050		0.051
CONDUCTIVITY (µmhos/cm)	135.7	136.1	126.6		126.4
APPARENT COLOR (cpu)	55	65	65		70
MAGNESIUM			1.44		
CALCIUM			5.1		
SODIUM			16.8		
POTASSIUM			1.38		
CHLORIDE	31	31	30		30
SULFATE	6	5	2		2
TN : TP	20	16	20		18
CALCITE SATURATION INDEX			3.1		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1999

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	3	6	13	Eutro.

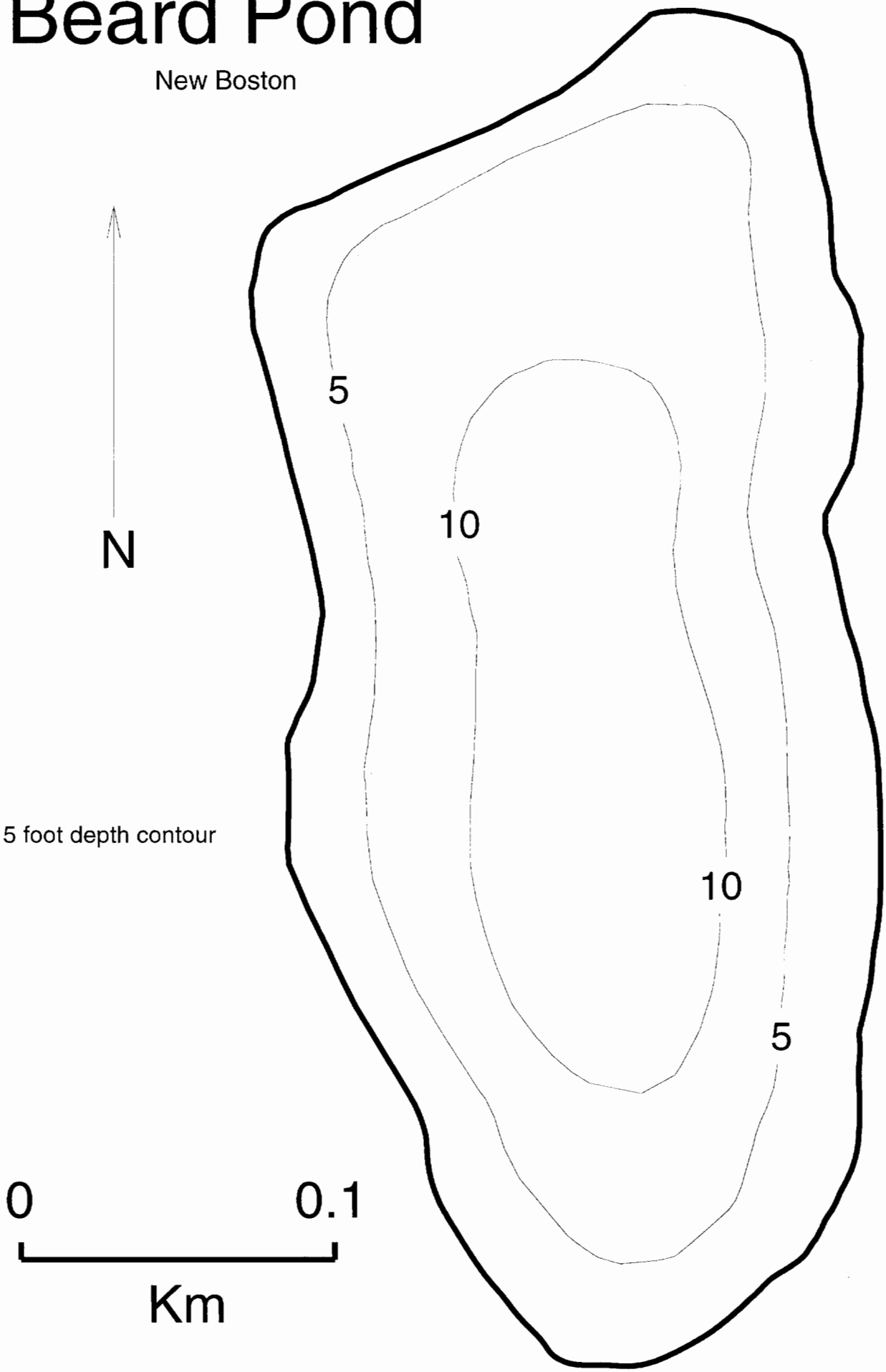
COMMENTS:

1. This is a very productive, eutrophic, tea-colored pond with high nutrient and conductivity levels. Sodium and chloride levels suggest road salt runoff.

2. Blue-green algae dominated the summer net phytoplankton.

Beard Pond

New Boston



FIELD DATA SHEET

LAKE: BEARD POND
DATE: 08/30/1999

TOWN: NEW BOSTON
WEATHER: Partly Cloudy, Windy

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	22.1	6.2	71 %
	1.0	21.4	6.1	69 %
	2.0	21.3	5.3	60 %
	3.0	18.9	0.4	4 %
	3.5	17.3	0.4	4 %

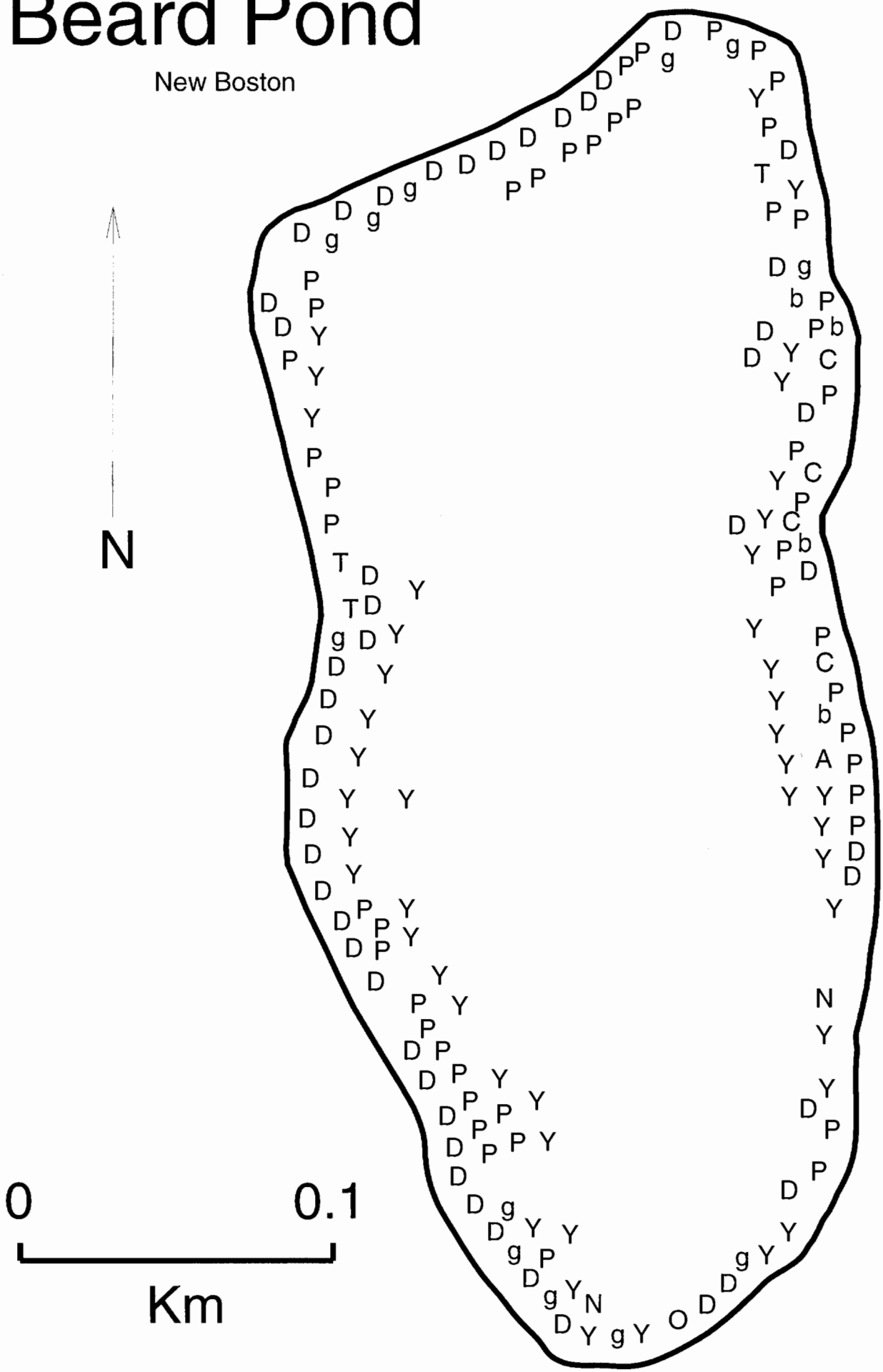
SECCHI DISK (m): 1.1
BOTTOM DEPTH (m): 3.6
TIME: 1034

COMMENTS:

*Dissolved oxygen values are in mg/L

Beard Pond

New Boston



AQUATIC PLANT SURVEY

LAKE: BEARD POND TOWN: NEW BOSTON DATE: 08/30/1999

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Common
Y	Nuphar	Yellow water lily	Common
D	Decodon verticillatus	Swamp loosestrife	Common
r	Ceratophyllum demersum	Coontail	Sparse
N	Nymphaea	White water lily	Sparse
A	Sagittaria	Arrowhead	Sparse
C	Cyperaceae	Non-flowering sedge	Sparse
b	Scirpus	Bulrush	Sparse
g	Myrica gale	Sweet gale	Scattered
T	Typha	Cattail	Sparse
O	Cephalanthus occidentalis	Buttonbush	Sparse

OVERALL ABUNDANCE: Common

GENERAL OBSERVATIONS:

1. Wetlands were present around the north, west and south sides of the pond.
2. Plant growth was dense around the entire shoreline but essentially no plants were observed in water greater than four feet deep.