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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	KIMBALL POND	Lake Area (ha):	15.05
Town:	DUNBARTON	Maximum depth (m):	4.9
County:	Merrimack	Mean depth (m):	2.2
River Basin:	Merrimack	Volume (m^3):	325000
Latitude:	43°05'00" N	Relative depth:	1.1
Longitude:	71°34'35" W	Shore configuration:	1.31
Elevation (ft):	485	Areal water load (m/yr):	47.69
Shore length (m):	1800	Flushing rate (yr^{-1}):	22.10
Watershed area (ha):	1662.9	P retention coeff.:	0.37
% watershed ponded:	0.0	Lake type:	natural w/dam

BIOLOGICAL:	24 January 1990	31 July 1989
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	PERIDINIUM 40%
#2		ASTERIONELLA 25%
#3		CERATIUM 20%
PHYTOPLANKTON ABUNDANCE (cells/mL)		2420.0
CHLOROPHYLL-A (µg/L)		5.49
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 48%	KERATELLA 59%
#2	CILIATE SPP 28%	KELLICOTTIA 13%
#3		
ROTIFERS/LITER	24	485
MICROCRUSTACEA/LITER	9	87
ZOOPLANKTON ABUNDANCE (#/L)	46	572
VASCULAR PLANT ABUNDANCE		Common/Abun
SECCHI DISK TRANSPARENCY (m)		2.4
BOTTOM DISSOLVED OXYGEN (mg/L)	1.4	0.3
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 3.0
Hypolimnion volume (m^3): 8500

CHEMICAL:

Lake: KIMBALL POND
Town: DUNBARTON

	24 January 1990		31 July 1989		
DEPTH (m)	1.5	3.5	1.0	2.5	4.5
pH (units)	5.7	5.7	6.3	6.2	5.9
A.N.C. (Alkalinity)	5.6	5.6	3.8	3.9	4.9
NITRATE NITROGEN	0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.43	0.30	0.44	0.35	0.39
TOTAL PHOSPHORUS	0.014	0.013	0.018	0.015	0.027
CONDUCTIVITY (μ mhos/cm)	84.8	82.4	51.8	51.2	54.2
APPARENT COLOR (cpu)	55	55	46	46	85
MAGNESIUM			0.49		
CALCIUM			3.0		
SODIUM			8.0		
POTASSIUM			0.40		
CHLORIDE	16	16	10		10
SULFATE	3	4	2		3
TN : TP	34	23	24		14
CALCITE SATURATION INDEX			3.9		

All results in mg/L unless indicated otherwise

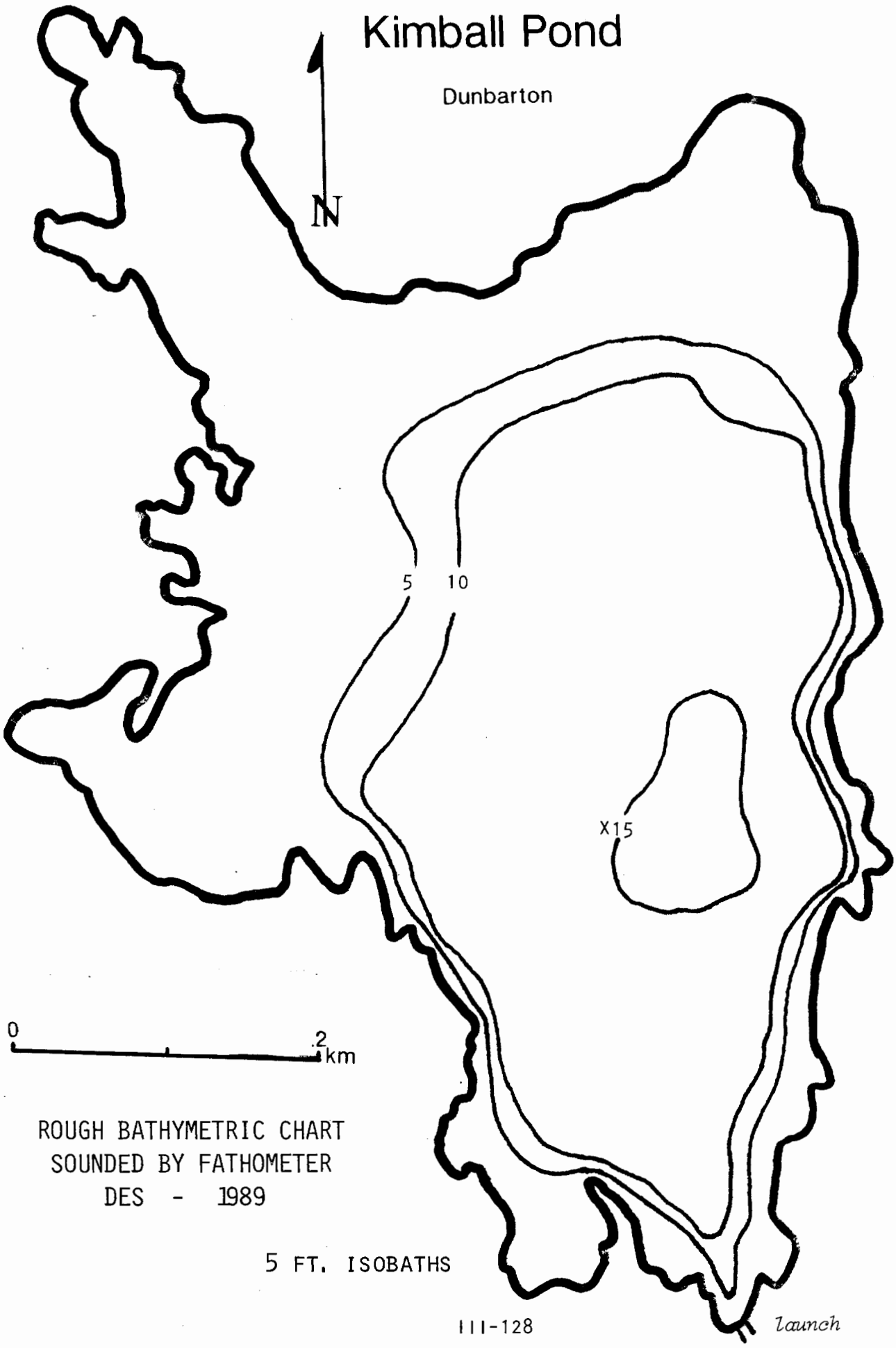
TROPHIC CLASSIFICATION: 1989

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
4	3	4	1	12	Meso.

COMMENTS:

1. Good public access - state owned boat launch.

2. Small flagellates (65%) and Chroococcus (10%) were the dominant genera of whole-water phytoplankton.



ROUGH BATHYMETRIC CHART
SOUNDED BY FATHOMETER
DES - 1989

5 FT. ISOBATHS

FIELD DATA SHEET

LAKE: KIMBALL POND
DATE: 07/31/89

TOWN: DUNBARTON
WEATHER: SUNNY & WARM

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	25.1	7.0	85 %
	1.0	24.5	6.9	81 %
	2.0	24.0	6.8	80 %
	3.0	19.5	0.4	4 %
	4.0	15.1	0.3	3 %
	4.5	14.5	0.3	3 %

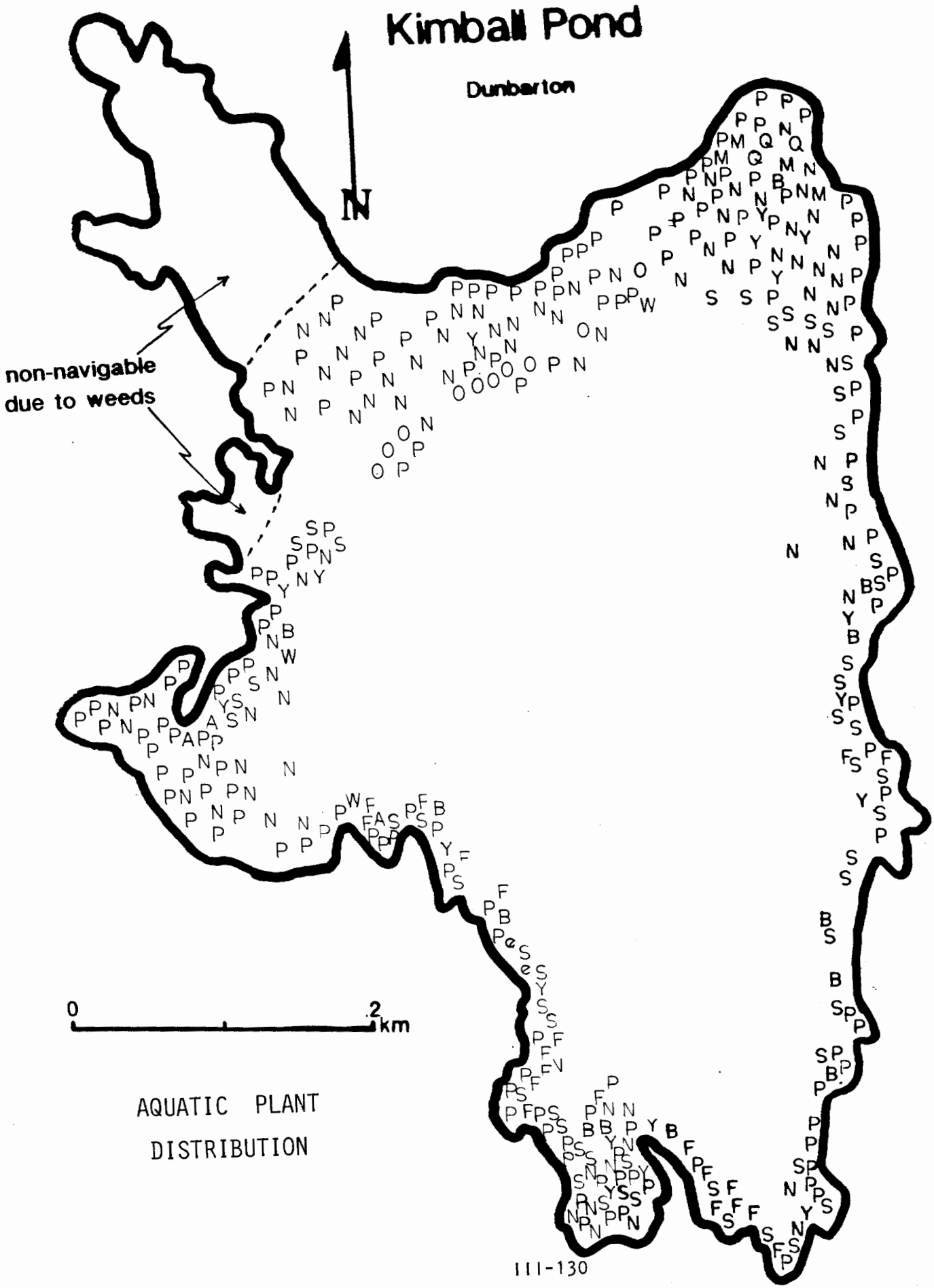
SECCHI DISK (m): 2.4

BOTTOM DEPTH (m): 4.9

TIME: 1211

COMMENTS:

*Dissolved oxygen values are in mg/L



AQUATIC PLANT
DISTRIBUTION

AQUATIC PLANT SURVEY

LAKE: KIMBALL POND TOWN: DUNBARTON DATE: 07/31/89

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Common
Y	Nuphar	Yellow water lily	Scattered
N	Nymphaea	White water lily	Common
S	Sparganium	Bur reed	Scattered
e	Eriocaulon septangulare	Pipewort	Sparse
B	Brasenia schreberi	Water shield	Scattered
F	Nymphoides cordatum	Floating heart	Sparse
A	Sagittaria	Arrowhead	Sparse
W	Potamogeton	Pondweed	Sparse
O	Cephalanthus occidentalis	Buttonbush	Scattered
Q	Lemna	Duckweed	Sparse
M	Polygonum	Smartweed	Sparse
d	Dulichium arundinaceum	Three-way sedge	Sparse

OVERALL ABUNDANCE: Common/Abund.

GENERAL OBSERVATIONS:

1. The main body of water had plants along the shoreline but was free of plants in the middle. The coves in the northwestern end were too dense with plant growth to navigate by boat. This area was essentially a wetland and not part of the pond. If this area were included in the overall abundance rating, the rating would be abundant to very abundant.