DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	KEZAR LAKE	**Lake Area (ha):**	73.49
Town:	SUTTON	**Maximum Depth (m):**	8.2
County:	MERRIMACK	**Mean Depth (m):**	2.7
River Basin:	MERRIMACK	**Volume (m^3):**	1975500
Latitude:	43°43'21" N	**Relative depth:**	0.8
Longititude:	71°71'56" W	**Shore Configuration:**	1.12
Elevation (ft) :	906	**Areal water load (m/yr):**	22.04
Shore length (m):	3400	**Flushing Rate (yr^{-1}):**	8.2
% Watershed Ponded:	1.5	**P retention coeff.:**	0.46
Watershed Area (ha)	2771.3	**Lake Type**	natural w/dam

BIOLOGICAL:		**13-Jan-04**	**25-Jun-03**
DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 95%	MALLOMONAS 40%
	#2		ASTERIONELLA 25%
	#3		MELOSIRA 20%
CHLOROPHYLL-A (ug/L)			5.29
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 42%	POLYARTHRA 48%
	#2	NAUPLIUS LARVA 27%	VORTICELLA 13%
	#3		KERATELLA 11%
ROTIFERS/LITER		11	204
MICROCRUSTACEA/LITER		15	58
ZOOPLANKTON ABUNDANCE (#/L)		26	314
VASCULAR PLANT ABUNDANCE			Scattered/Common
SECCHI DISK TRANSPARENCY (m)			3.1
BOTTOM DISSOLVED OXYGEN (mg/L)		4	0.1
BACTERIA (E. coli, #/100ml)	#1		<10
	#2		<5
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	1.5
Hypolimnion volume (m^3):	None
Anoxic Volume (m^3):	31000

CHEMICAL:

Lake: KEZAR LAKE
Town: SUTTON

	13-Jan-04		25-Jun-03		
DEPTH (M)	3.0	5.0	1.0	4.0	6.0
pH (units)	6.2	6.0	6.4	6.2	6.1
A.N.C. (Alkalinity)	4.4	3.3	4.1	5.6	7.4
NITRATE NITROGEN	0.11	0.08	< 0.05		< 0.05
TOTAL KJELDHAL NITROGEN	0.30	0.30	0.30	< 0.25	0.40
TOTAL PHOSPHORUS	0.008	0.007	0.011	0.015	0.018
CONDUCTIVITY (umhos/cm)	146.8	151.3	193.0	194.8	195.4
APPARENT COLOR (CPU)	50	35	30	35	38
MAGNESIUM			1.01		
CALCIUM			5.3		
SODIUM	19.5		26.4		
POTASSIUM			0.71		
CHLORIDE		34	47		47
SULFATE	4	4	4		4
TN : TP	51	54	30		24
CALCITE SATURATION INDEX					

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 2003

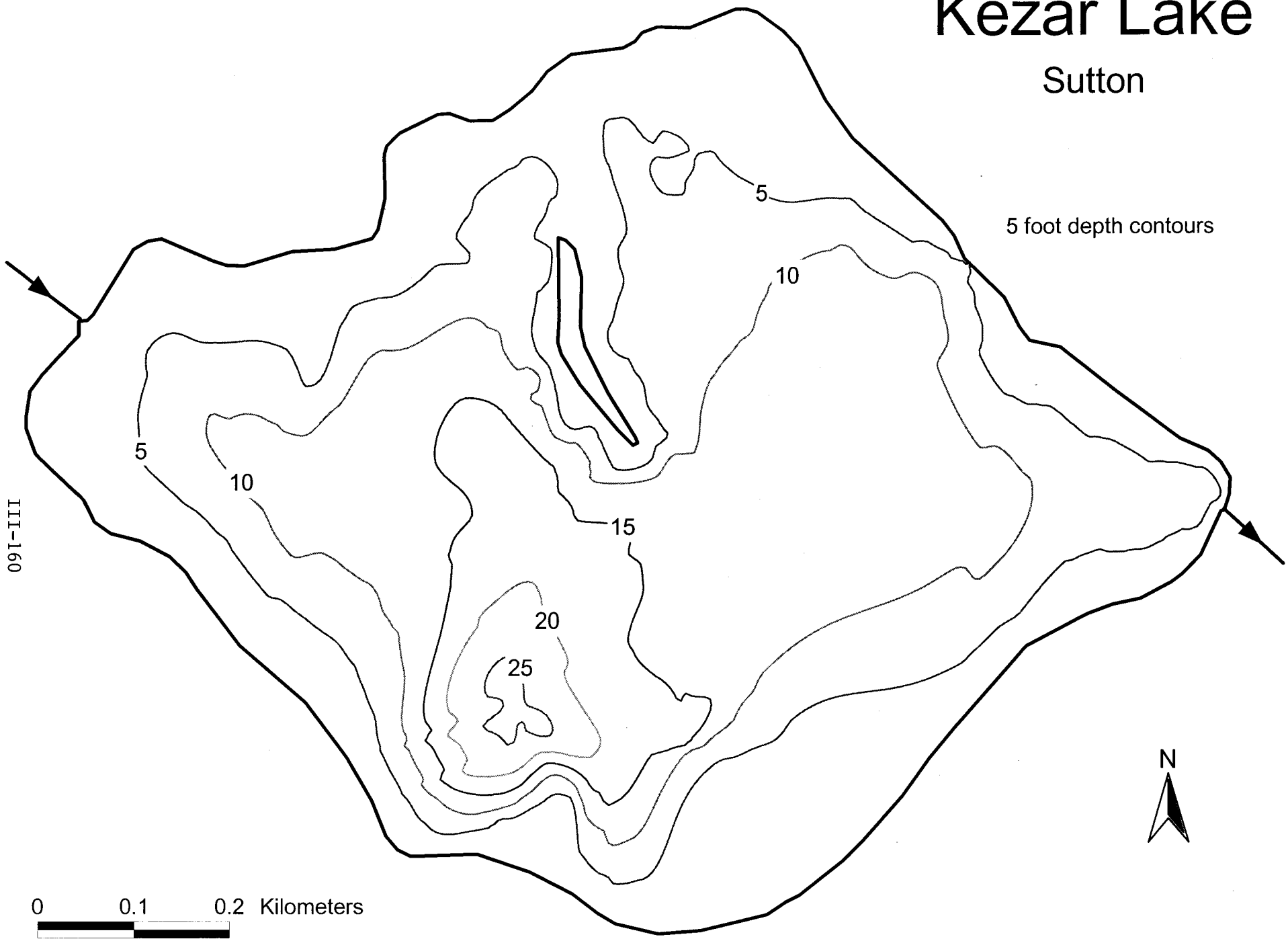
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	2	1	5	MESO

COMMENTS:

1. skicraft banned.
2. Previously surveyed in 1978 and 1984. Dramatic change in algal levels and trophic class between the 1978 and 1984 surveys due to the removal of the New London sewage discharge in 1981 and the hypolimnetic injection of aluminum salts in 1984 to seal the lake bottom. Trophic values between 1984 and 2003 were similar.
3. A participant in VLAP since 1983. Statistically significant trophic trends during that time show an improving trend for chlorophyll and phosphorus and a stable trend for Secchi transparency.
4. Shallow launch just north of the dam, with adequate parking.
5. The diatom *Asterionella* was a strong dominant during the winter.
6. Sodium, chloride and conductivity values were elevated.

Kezar Lake

Sutton



FIELD DATA SHEET

LAKE: KEZAR LAKE **TOWN:** SUTTON

DATE: 6/25/03 **WEATHER:** Sunny; very light breeze

	DEPTH (M)	TEMP (°C)	DISSOLVED OXYGEN (mg/L)	PERCENT SATURATED
	0.1	24.4	8.8	105.9
	1.0	23.8	8.8	104.7
	2.0	21.2	9.2	103.1
	3.0	19.3	7.1	77.0
	4.0	17.0	3.9	40.1
	5.0	15.4	2.3	22.8
	6.0	13.8	0.3	2.6
	6.5	13.1	0.1	1.3

SECCHI DEPTH (m) : 3.1

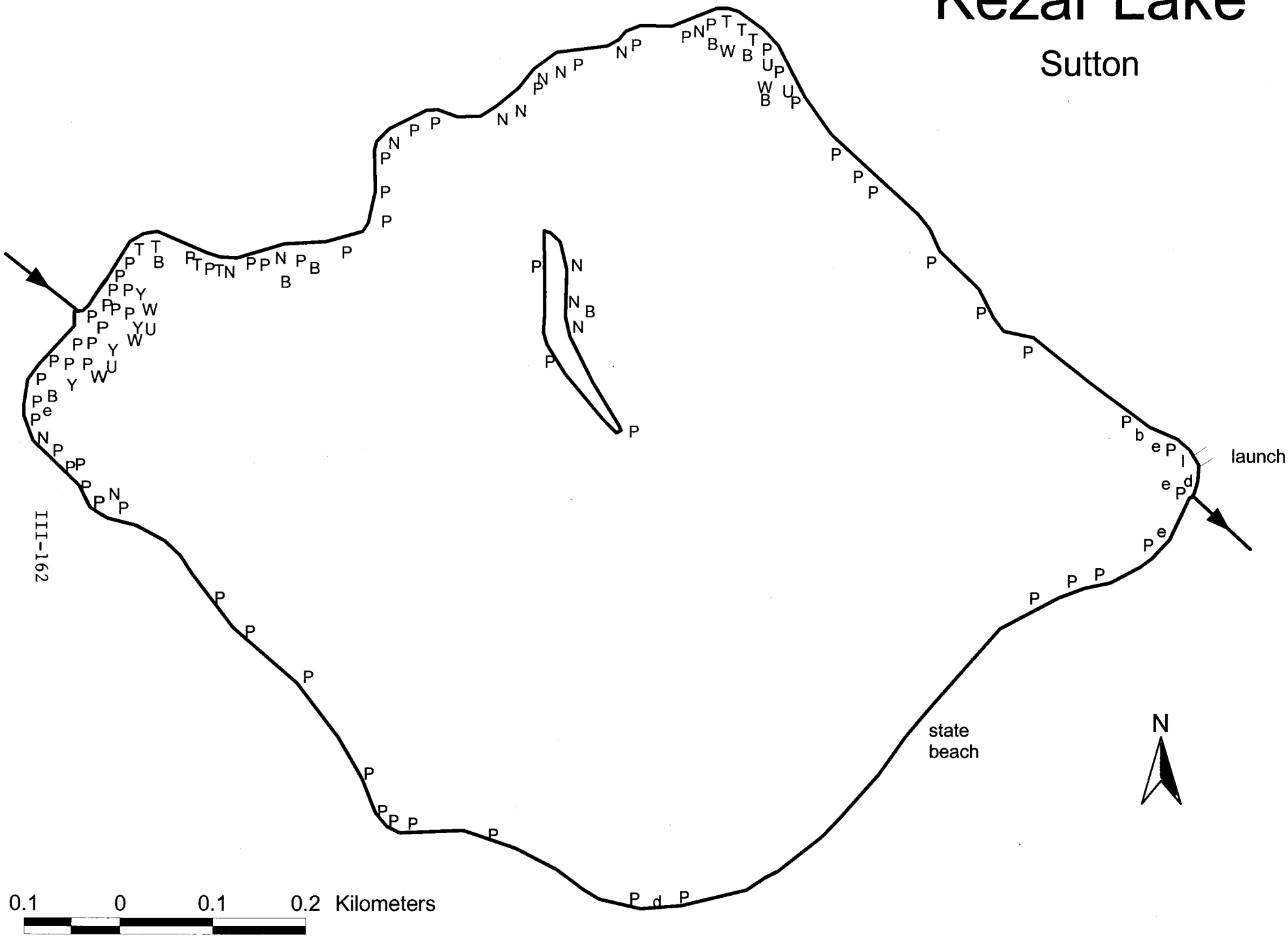
BOTTOM DEPTH (m) : 7.0

TIME: 1135

COMMENTS:

Kezar Lake

Sutton



AQUATIC PLANT SURVEY

LAKE: KEZAR LAKE **TOWN:** SUTTON **DATE:** 6/25/03

KEY	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Scat/Common
e	Eleocharis	Spike rush	Scattered
b	Scirpus	Bulrush	Scattered
U	Utricularia	Bladderwort	Scattered
N	Nymphaea	White water lily	Scat/Common
B	Brasenia schreberi	Water shield	Scattered
T	Typha	Cattail	Sparse
W	Potamogeton	Pondweed	Scattered
Y	Nuphar	Yellow water lily	Scattered
d	Dulichium arundinaceum	Three-way sedge	Sparse
I	Iris versicolor	Blue flag	Sparse
		OVERALL ABUNDANCE :	Scat/Common

GENERAL OBSERVATIONS :