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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	SQUAM LAKE, LITTLE	Lake Area (ha):	165.16
Town:	HOLDERNESS	Maximum depth (m):	22.0
County:	Grafton	Mean depth (m):	9.9
River Basin:	Merrimack	Volume (m^3):	16282000
Latitude:	43°43'20" N	Relative depth:	1.5
Longitude:	71°35'59" W	Shore configuration:	1.51
Elevation (ft):	562	Areal water load (m/yr):	27.32
Shore length (m):	6900	Flushing rate (yr^{-1}):	2.80
Watershed area (ha):	9324.0	P retention coeff.:	0.44
% watershed ponded:	31.8	Lake type:	natural w/dam

BIOLOGICAL:		8 February 1995	12 July 1994
DOM. PHYTOPLANKTON (% TOTAL)	#1	RHIZOSOLENIA 45%	DINOBRYON 45%
	#2	ASTERIONELLA 30%	CHRYSOSPHAERELLA 30%
	#3	TABELLARIA 10%	RHIZOSOLENIA 10%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (μg/L)			3.65
DOM. ZOOPLANKTON (% TOTAL)	#1	ROTIFER SPP. 51%	KERATELLA 30%
	#2	KERATELLA 16%	NAUPLIUS LARVA 18%
	#3	POLYARTHRA 8%	CYCLOPOID COPEPOD 11%
ROTIFERS/LITER		50	73
MICROCRUSTACEA/LITER		6	52
ZOOPLANKTON ABUNDANCE (#/L)		61	147
VASCULAR PLANT ABUNDANCE			Sparse
SECCHI DISK TRANSPARENCY (m)			
BOTTOM DISSOLVED OXYGEN (mg/L)		6.3	2.5
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 5.5
Hypolimnion volume (m^3) : 4389500
Anoxic volume (m^3) : None

CHEMICAL:

Lake: SQUAM LAKE, LITTLE
Town: HOLDERNESS

	8 February 1995		12 July 1994		
DEPTH (m)	7.0	14.0	4.0	13.0	21.0
pH (units)	6.6	6.8	6.9	6.4	6.2
A.N.C. (Alkalinity)	5.1	5.3	5.4	5.2	6.8
NITRATE NITROGEN	< 0.10	< 0.10	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.17	0.18	0.13	< 0.10	0.16
TOTAL PHOSPHORUS	0.009	0.008	0.006	0.021	0.015
CONDUCTIVITY (µmhos/cm)	42.2	42.5	42.9	43.8	47.8
APPARENT COLOR (cpu)	13	13			
MAGNESIUM			0.50		
CALCIUM			2.9		
SODIUM			3.7		
POTASSIUM			0.51		
CHLORIDE	5	6	5		5
SULFATE	5	5	5		4
TN : TP	19	23	22		11
CALCITE SATURATION INDEX			3.2		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1994

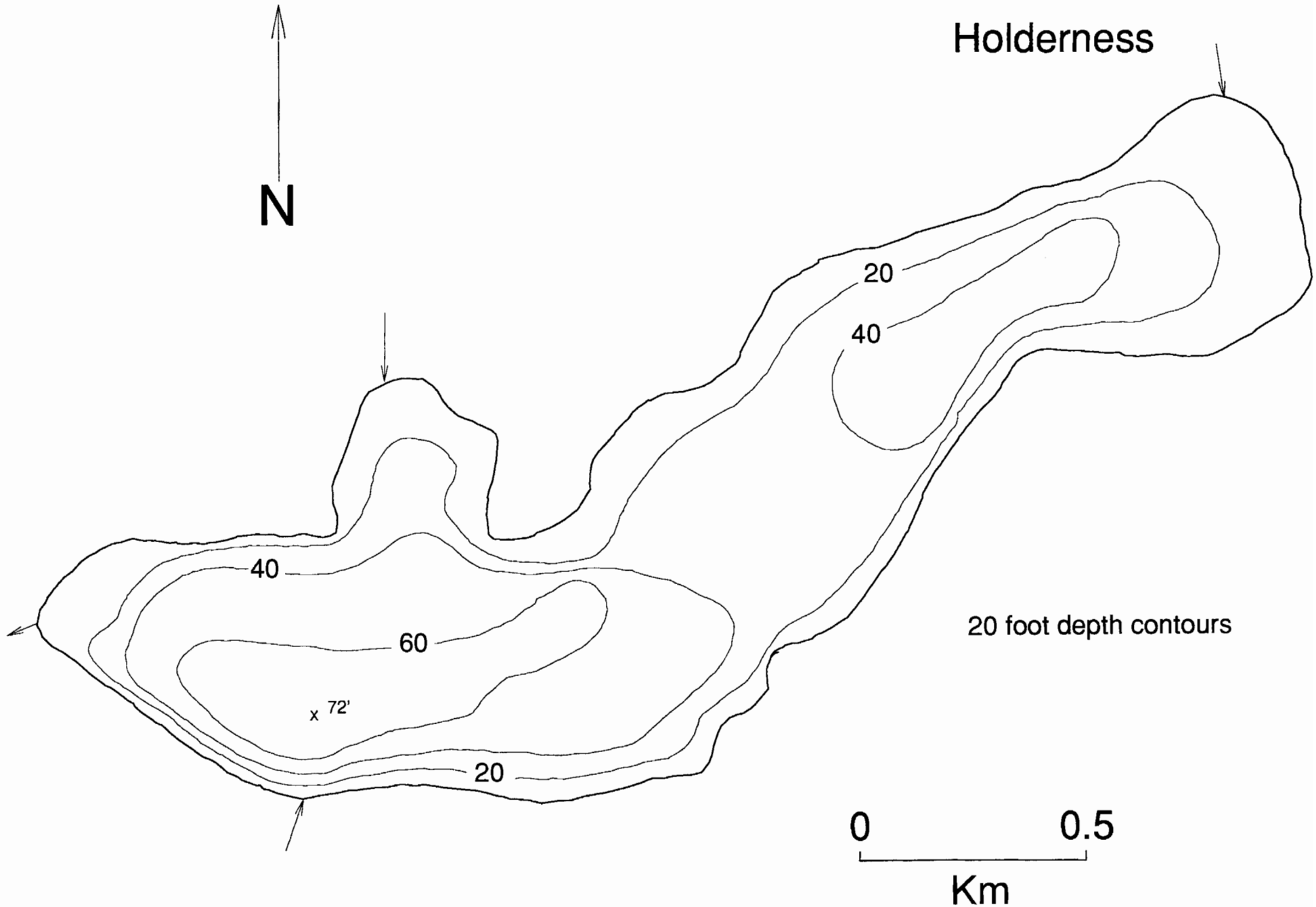
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
2	1	0	0	3	Oligo.

COMMENTS:

1. This lake was previously surveyed and classified in 1979. There was no change in trophic points or classification between the two years, and little change in water quality.

2. No Secchi disk transparency was recorded in 1994. Historical values were used for classification purposes.

Little Squam Lake



FIELD DATA SHEET

LAKE: SQUAM LAKE, LITTLE TOWN: HOLDERNESS
DATE: 07/12/94 WEATHER: SUNNY & CLEAR

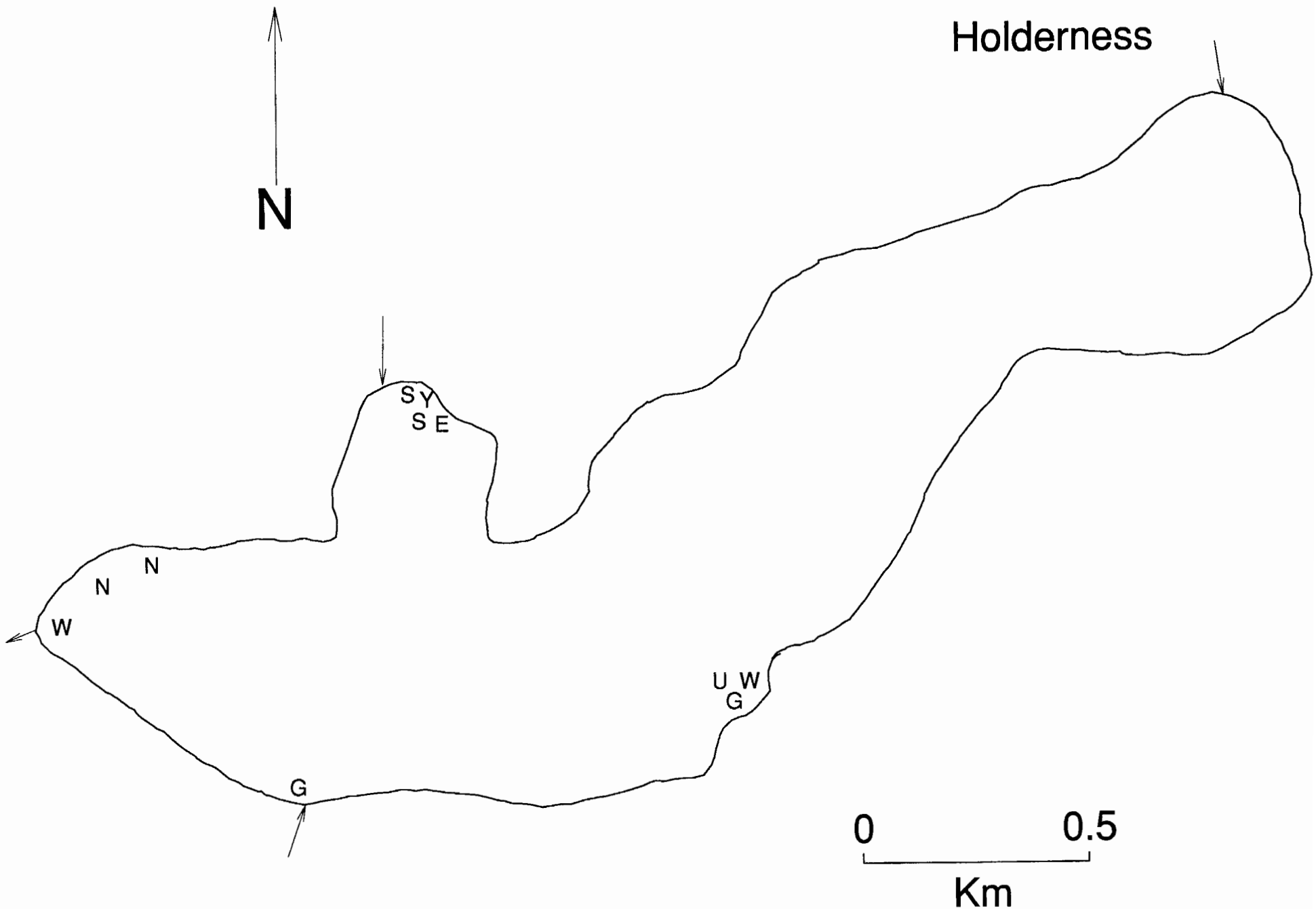
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	24.5	8.9	104 %
	2.0	24.0	8.7	102 %
	4.0	23.5	9.0	105 %
	6.0	17.0	11.8	120 %
	8.0	12.0	12.2	113 %
	10.0	9.0	10.6	90 %
	12.0	8.0	8.8	73 %
	14.0	7.5	9.0	74 %
	16.0	7.0	7.9	64 %
	18.0	6.5	5.9	46 %
	20.0	6.0	4.0	32 %
	22.0	6.0	2.5	20 %

COMMENTS:

BOTTOM DEPTH (m): 22.0
TIME: 1330

*Dissolved oxygen values are in mg/L

Little Squam Lake



AQUATIC PLANT SURVEY

LAKE: SQUAM LAKE, LITTLE TOWN: HOLDERNESS DATE: 07/12/94

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
W	Potamogeton	Pondweed	Sparse
N	Nymphaea	White water lily	Sparse
Y	Nuphar	Yellow water lily	Sparse
S	Sparganium	Bur reed	Sparse
E	Eriocaulon septangulare	Pipewort	Sparse
G	Gratiola lutea f. pusilla	Dwarf hyssop	Sparse
U		Unknown plant	Sparse

OVERALL ABUNDANCE: Sparse

GENERAL OBSERVATIONS:

1. The unknown plant was a small, emergent plant similar to Callitriche.