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

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	BAKER POND, UPPER	Lake Area (ha):	75.07
Town:	ORFORD	Maximum depth (m):	5.5
County:	Grafton	Mean depth (m):	3.0
River Basin:	Merrimack	Volume (m^3):	2248500
Latitude:	43°54'30" N	Relative depth:	0.6
Longitude:	71°59'31" W	Shore configuration:	1.14
Elevation (ft):	901	Areal water load (m/yr):	23.49
Shore length (m):	3500	Flushing rate (yr^{-1}):	7.80
Watershed area (ha):	2486.4	P retention coeff.:	0.46
% watershed ponded:	0.0	Lake type:	natural

BIOLOGICAL:		15 January 1997	31 July 1996
DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 50%	SYNURA 55%
	#2	RHIZOSOLENIA 25%	ASTERIONELLA 25%
	#3	TABELLARIA 15%	TABELLARIA 12%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			5.71
DOM. ZOOPLANKTON (% TOTAL)	#1	SPARSE - NO DOMINANT	KELLICOTTIA 21%
	#2		KERATELLA 18%
	#3		ASPLANCHNA 12%
ROTIFERS/LITER		5	187
MICROCRUSTACEA/LITER		7	80
ZOOPLANKTON ABUNDANCE (#/L)		12	312
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			2.5
BOTTOM DISSOLVED OXYGEN (mg/L)		10.1	1.8
BACTERIA (E. coli, #/100 ml)	#1		< 1
	#2		1
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

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

CHEMICAL:

Lake: BAKER POND, UPPER
Town: ORFORD

	15 January 1997		31 July 1996		
DEPTH (m)	2.0	4.0	1.0		3.0
pH (units)	6.4	5.8	6.8		6.7
A.N.C. (Alkalinity)	5.2	4.7	5.6		5.3
NITRATE NITROGEN	0.05	0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.28	0.23	0.26		0.31
TOTAL PHOSPHORUS	0.011	0.011	0.014		0.014
CONDUCTIVITY (μmhos/cm)	31.5	34.1	30.2		30.3
APPARENT COLOR (cpu)	32	33	75		80
MAGNESIUM			0.51		
CALCIUM			2.9		
SODIUM			1.7		
POTASSIUM			0.64		
CHLORIDE	< 2	2	2		2
SULFATE	5	5	4		4
TN : TP	30	25	19		22
CALCITE SATURATION INDEX			3.3		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1996

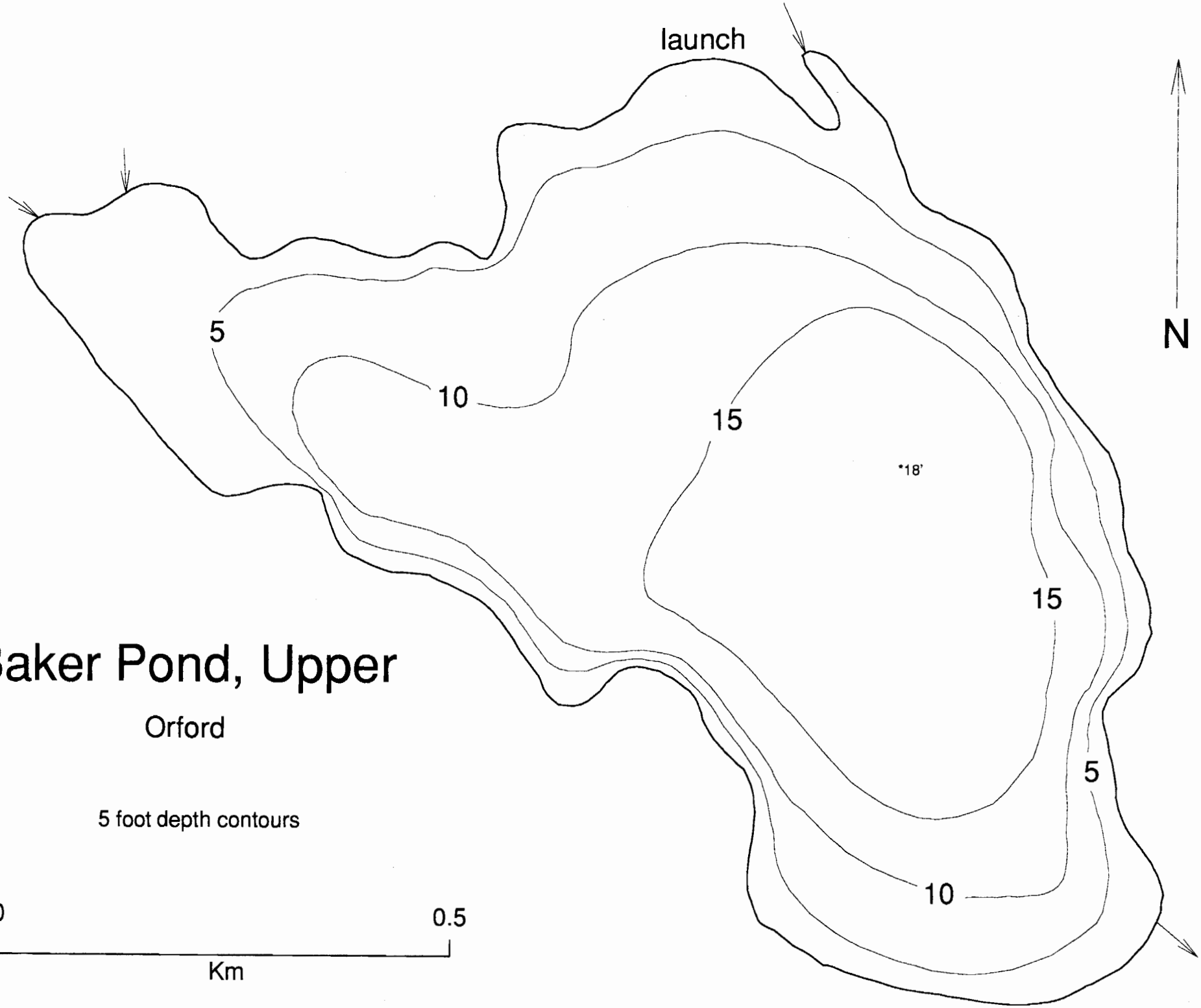
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	3	3	1	7	Meso.

COMMENTS:

1. This pond was previously surveyed and classified in 1980. There was no change in the trophic classification. The rooted plants appeared to be more abundant in 1996.

2. A juvenile camp was located at the southern end of the pond.

3. A boat launch into shallow water was located at the northern end of the pond.



Baker Pond, Upper

Orford

5 foot depth contours

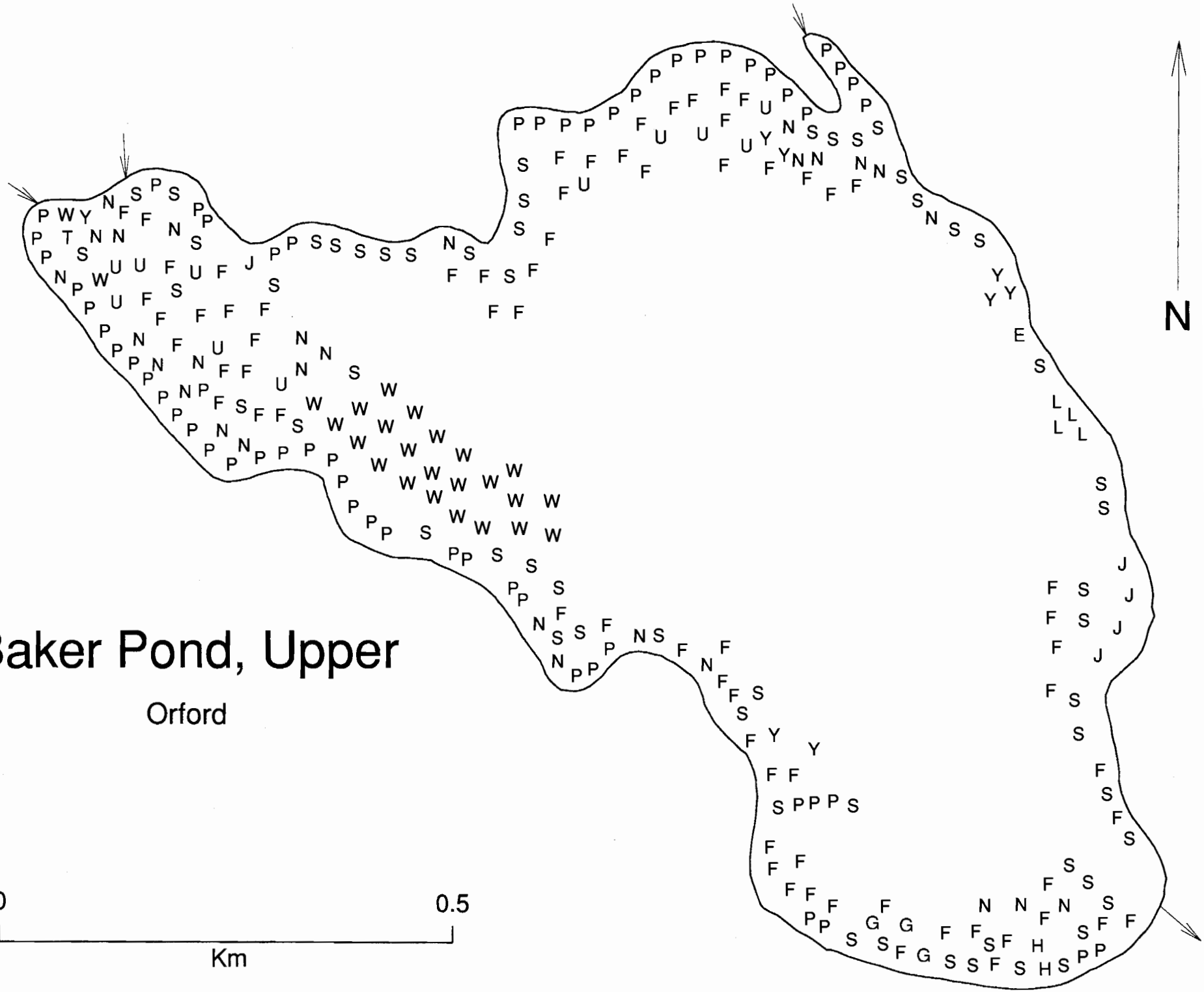
FIELD DATA SHEET

LAKE: BAKER POND, UPPER TOWN: ORFORD
DATE: 07/31/96 WEATHER: CLOUDY, WINDY, 60'S, RAIN

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	21.3	8.6	95 %
	1.0	21.2	8.6	95 %
	2.0	21.2	8.6	95 %
	3.0	21.0	8.6	95 %
	4.0	19.0	5.4	58 %
	5.0	18.0	1.8	19 %

SECCHI DISK (m): 2.5 COMMENTS:
BOTTOM DEPTH (m): 5.5
TIME: 1140

*Dissolved oxygen values are in mg/L


Baker Pond, Upper
Orford
N
0
0.5
Km

AQUATIC PLANT SURVEY

LAKE: BAKER POND, UPPER TOWN: ORFORD DATE: 07/31/96

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Scat/Common
F	Nymphoides cordatum	Floating heart	Scat/Common
S	Sparganium	Bur reed	Scattered
N	Nymphaea	White water lily	Scattered
J	Juncus	Rush	Sparse
Y	Nuphar	Yellow water lily	Scattered
W	Potamogeton	Pondweed	Scattered
T	Typha	Cattail	Sparse
U	Utricularia	Bladderwort	Scattered
H	Equisetum	Horsetail	Sparse
G	Gramineae	Grass family	Sparse
L	Lobelia dortmanna	Water lobelia	Sparse
E	Eriocaulon septangulare	Pipewort	Sparse

OVERALL ABUNDANCE: Common

GENERAL OBSERVATIONS:

1. Plants were scattered along the eastern shore, but common to abundant in much of the rest of the lake - particularly the northwest cove, for an overall rating of common.