

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	PROVINCE LAKE	Lake Area (ha):	410.37
Town:	EFFINGHAM	Maximum Depth (m)	4.9
County:	CARROLL	Mean Depth (m):	2.8
River Basin:	SACO	Volume (m³):	11268500
Latitude:	43°41'24" N	Relative depth:	0.2
Longitude:	70°59'32" W	Shore Configuration:	1.18
Elevation (ft) :	480	Areal water load (m/yr):	2.75
Shore length (m):	8500	Flushing Rate (yr⁻¹):	1
% Watershed Ponded:	0	P retention coeff.:	0.77
Watershed Area (ha)	1890.7	Lake Type	natural

BIOLOGICAL:

		06-Feb-07	07-Aug-06
DOM. PHYTOPLANKTON (% TOTAL)	#1	DINOBRYON 90%	LYNGBYA 80%
	#2	RHIZOLENIA 6%	CHRYSOSPHAERELLA 7%
	#3		pennate diatom spp 6%
CHLOROPHYLL-A (ug/L)			4.67
DOM. ZOOPLANKTON (% TOTAL)	#1	rotifer spp 52%	KERATELLA 23%
	#2	ciliate spp 1 13%	CONOCHILUS 20%
	#3	ciliate spp 2 11%	ASPLANCHNA 14%
ROTIFERS/LITER		130	135
MICROCRUSTACEA/LITER		12	42
ZOOPLANKTON ABUNDANCE (#/L)		235	201
VASCULAR PLANT ABUNDANCE			Scattered/Common
SECCHI DISK TRANSPARENCY (m)			2.5
BOTTOM DISSOLVED OXYGEN (mg/L)		13.7	7.9
BACTERIA (E. coli, #/100ml)	#1		<10
	#2		<10
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None
Hypolimnion volume (m³): None
Anoxic Volume (m³): None

CHEMICAL:

Lake: PROVINCE LAKE

Town: EFFINGHAM

	06-Feb-07		07-Aug-06		
DEPTH (M)	1.5	3.0	1.0		3.0
pH (units)	6.5	6.5	6.7		6.9
A.N.C. (Alkalinity)	5.3	7.2	4.2		5.6
NITRATE NITROGEN	< 0.10	< 0.10	< 0.10		< 0.10
TOTAL KJELDHAL NITROGEN	0.34	< 0.25	0.30		0.30
TOTAL PHOSPHORUS	0.012	0.015	0.015		0.014
CONDUCTIVITY (umhos/cm)	38.7	39.3	46.0		46.3
APPARENT COLOR (CPU)	29	28	38		35
MAGNESIUM			0.54		
CALCIUM			2.6		
SODIUM			4.4		
POTASSIUM			0.41		
CHLORIDE	6	6	6		6
SULFATE	3	3	2		2
TN : TP	33	12	23		25
CALCITE SATURATION INDEX			3.6		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 2006

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
	3	2	1	6	MESO

COMMENTS:

1. Launch site with little or no parking was located along the northern shore near the South River inlet; can also access the pond along the sandy shore along Rt. 153 (unimproved site - no parking).
2. Previously surveyed in 1979 and 1987, a participant in VLAP since 1991 and subject of an "algae control by artificial mixing" study in 1975-78.
3. Statistical analysis of the VLAP data shows a worsening trend in water clarity and stable trends for chlorophyll and phosphorus.
4. Total phytoplankton biomass (chlorophyll) was relatively low during the summer but was dominated by Cyanobacteria (80%).
5. Sodium, chloride and conductivity values remained relatively low in the lake but increased 29% (3.4 to 4.4 mg/L), 100% (3 to 6 mg/L) and 31% (35 to 46 umhos/cm) respectively between 1979 and 2006 (based on one sample in each year).

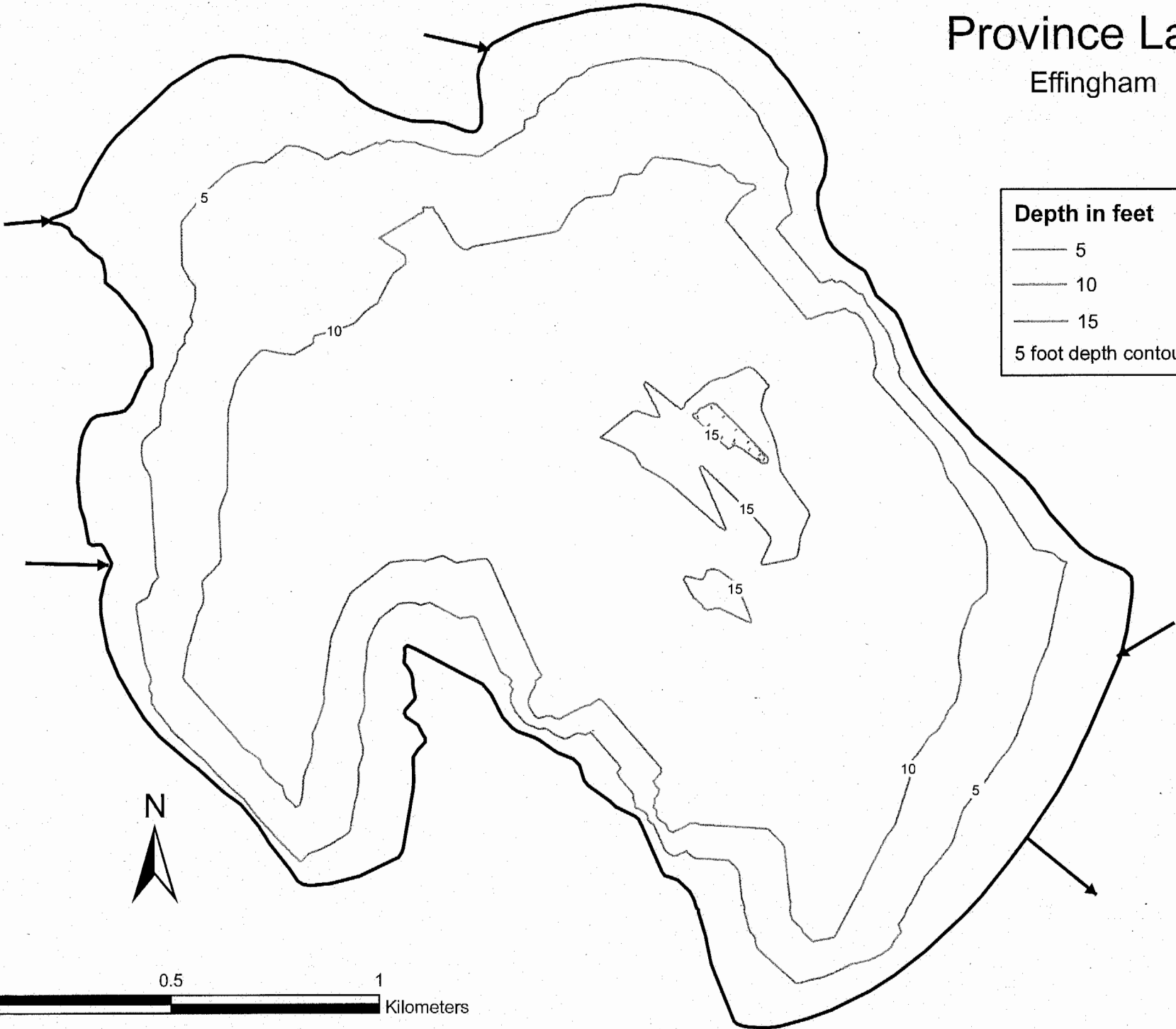
Province Lake

Effingham

Depth in feet

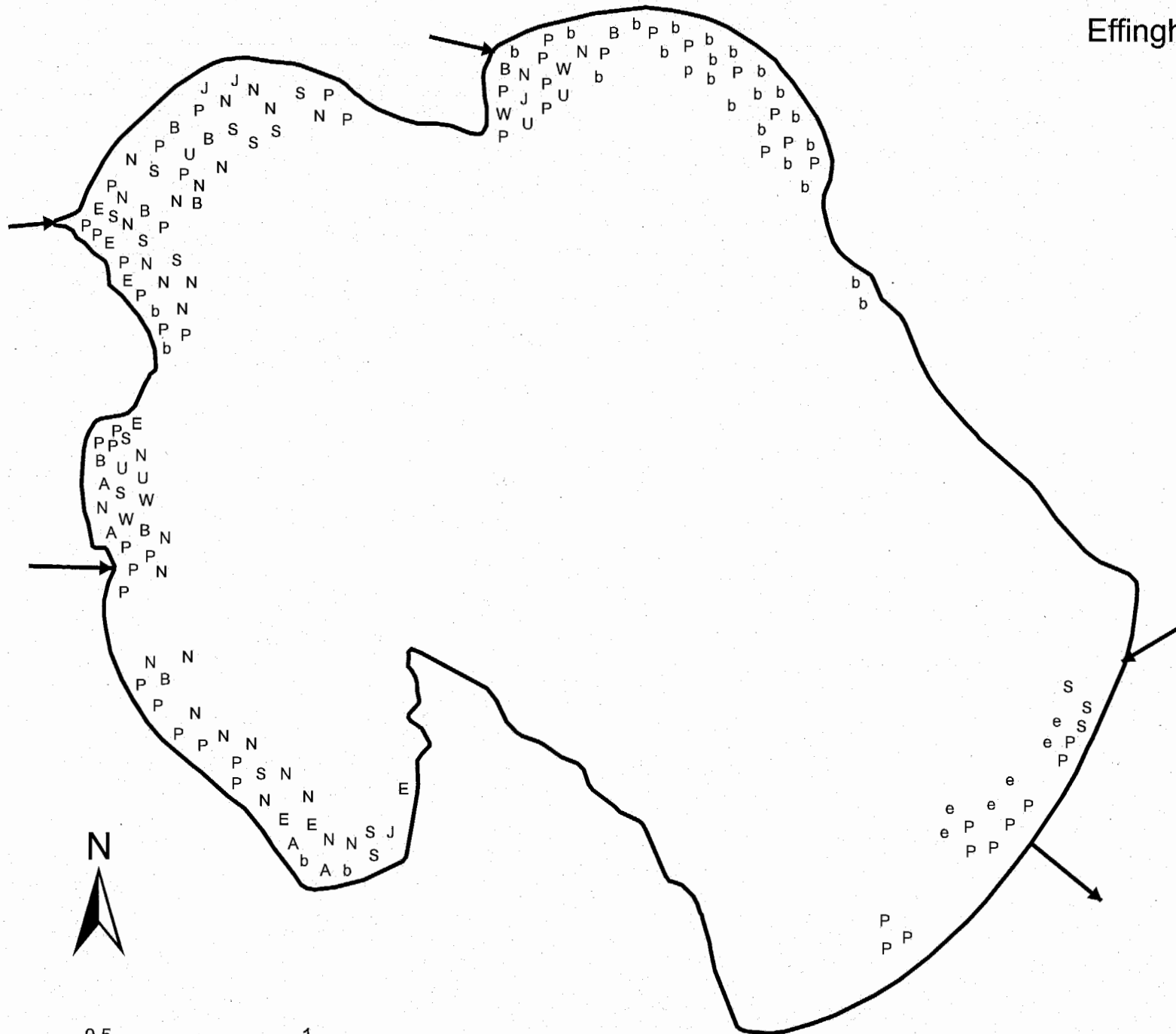
- 5
- 10
- 15

5 foot depth contours



Province Lake

Effingham



AQUATIC PLANT SURVEY

LAKE: PROVINCE LAKE

TOWN: EFFINGHAM

DATE: 8/7/2006

KEY	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Scat/Common
e	Eleocharis	Spike rush	Scattered
S	Sparganium	Bur reed	Scat/Common
b	Scirpus	Bulrush	Scattered
B	Brasenia schreberi	Water shield	Scattered
W	Potamogeton	Pondweed	Sparse
N	Nymphaea	White water lily	Scat/Common
J	Juncus militaris	Bayonet rush	Scattered
A	Sagittaria	Arrowhead	Sparse
E	Eriocaulon septangulare	Pipewort	Sparse

OVERALL ABUNDANCE : Scat/Common

GENERAL OBSERVATIONS :

1. Much of the southeast half of the lake is a sandy shore with sparse plant growth. Plants were locally abundant in coves of the northern and western shores.