

DEPARTMENT of ENVIRONMENTAL SERVICES
 Water Supply & Pollution Control Division - Biology 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 (m ³):	11268500
Latitude: 43°42' N	Relative depth:	0.2
Longitude: 71°00' W	Shore configuration:	1.18
Elevation (ft): 480	Areal water load (m/yr):	2.75
Shore length (m): 8500	Flushing rate (yr ⁻¹):	1.00
Watershed area (ha): 1890.7	P retention coeff.:	0.77
% watershed ponded: 0.0	Lake type:	natural

BIOLOGICAL:

	9 March 1988	14 July 1987
DOM. PHYTOPLANKTON (% TOTAL) #1	DINOBYRON 55%	CHRYSOSPHAERELLA 60%
#2	MALLOMONAS 25%	DINOBYRON 20%
#3	UROGLENOPSIS 20%	ASTERIONELLA 15%
PHYTOPLANKTON ABUNDANCE (cells/mL)		770.0
CHLOROPHYLL-A (µg/L)		3.19
DOM. ZOOPLANKTON (% TOTAL) #1	NAUPLII LARVAE 28%	KERATELLA 50%
#2	CYCLOPOID COPEPOD 21%	POLYARTHRA 27%
#3		
ROTIFERS/LITER	19	238
MICROCRUSTACEA/LITER	49	20
ZOOPLANKTON ABUNDANCE (#/L)	68	270
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		3.8
BOTTOM DISSOLVED OXYGEN (mg/L)	11.9	5.7
BACTERIA (fecal col., #/100 ml) #1		50
#2		10
#3		

SUMMER THERMAL STRATIFICATION:

not stratified

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

CHEMICAL:

Lake: PROVINCE LAKE

Town: EFFINGHAM

	9 March 1988		14 July 1987		
DEPTH (m)	1.5	2.5	1.0		3.0
pH (units)	6.6	6.2	6.8		6.9
A.N.C. (Alkalinity)	5.5	5.9	5.4		4.9
NITRATE NITROGEN	0.05	0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.29	0.21	< 0.10		0.29
TOTAL PHOSPHORUS	0.009	0.013	0.016		0.018
CONDUCTIVITY (μ mhos/cm)	45.9	45.6	35.6		35.8
APPARENT COLOR (cpu)	19	19	22		23
MAGNESIUM					
CALCIUM			2.2		
SODIUM			3.6		
POTASSIUM			0.40		
CHLORIDE	6	5	4		3
SULFATE	5	4	4		3
TN : TP	38	20			16
CALCITE SATURATION INDEX			3.4		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1987

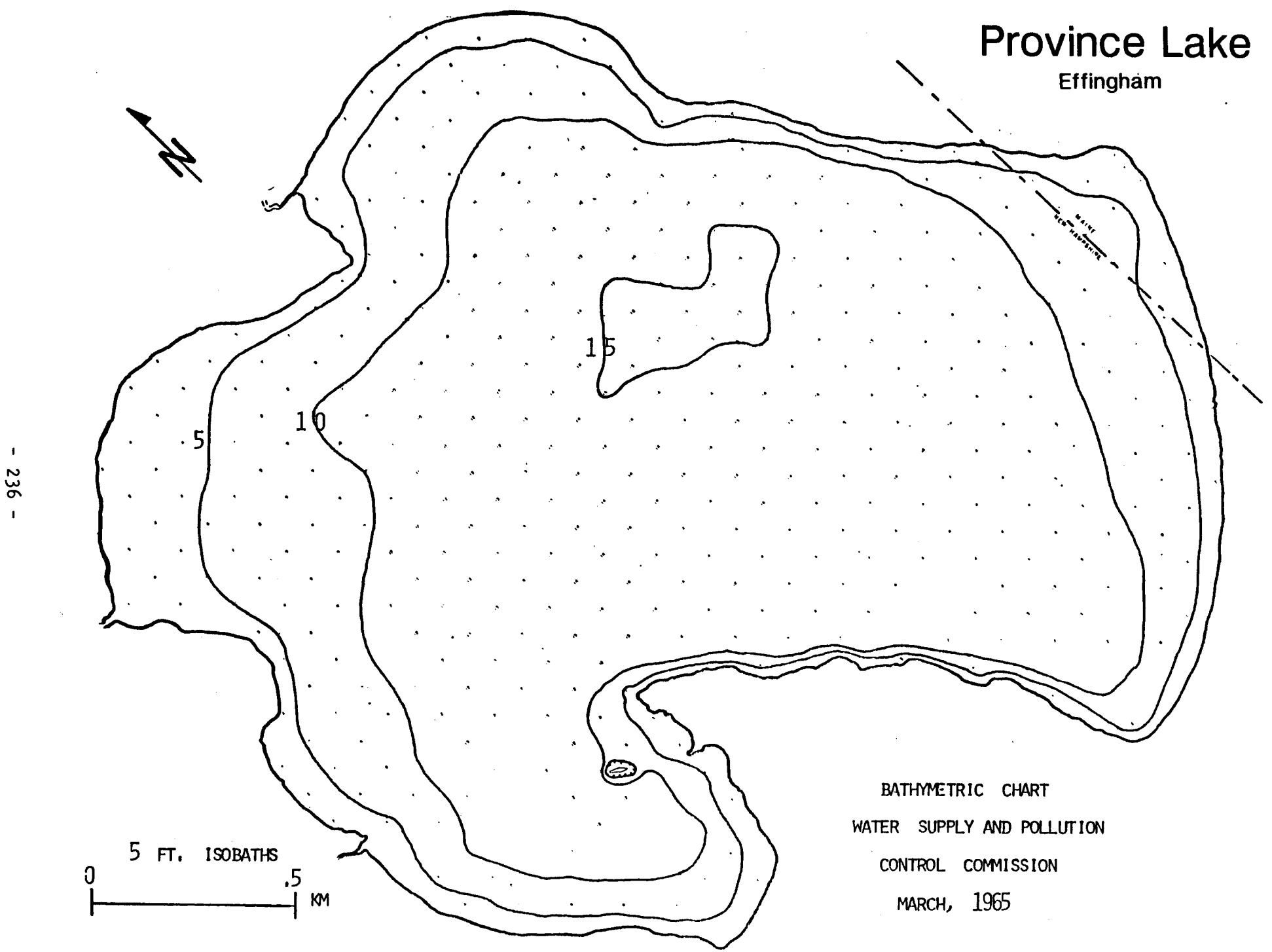
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
0	1	1	0	2	Oligo.

COMMENTS:

1. This lake was previously surveyed and classified in 1979. There was no change in trophic state.
2. A golf course is located across the road at the southeast end of the lake.
3. Province Lake had a history of algal blooms in the mid-1960's but has been clear since the mid-1970's.
4. The whole-water phytoplankton was dominated by greens (50%) and diatoms (30%). Tiny green flagellates (45%) and a centric diatom (20%) were the dominant genera.

Province Lake

Effingham



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5 FT. ISOBATHS
0 | .5 KM

BATHYMETRIC CHART
WATER SUPPLY AND POLLUTION
CONTROL COMMISSION
MARCH, 1965

FIELD DATA SHEET

LAKE: PROVINCE LAKE
DATE: 07/14/87

TOWN: EFFINGHAM
WEATHER: HUMID, OVERCAST, BREEZY...

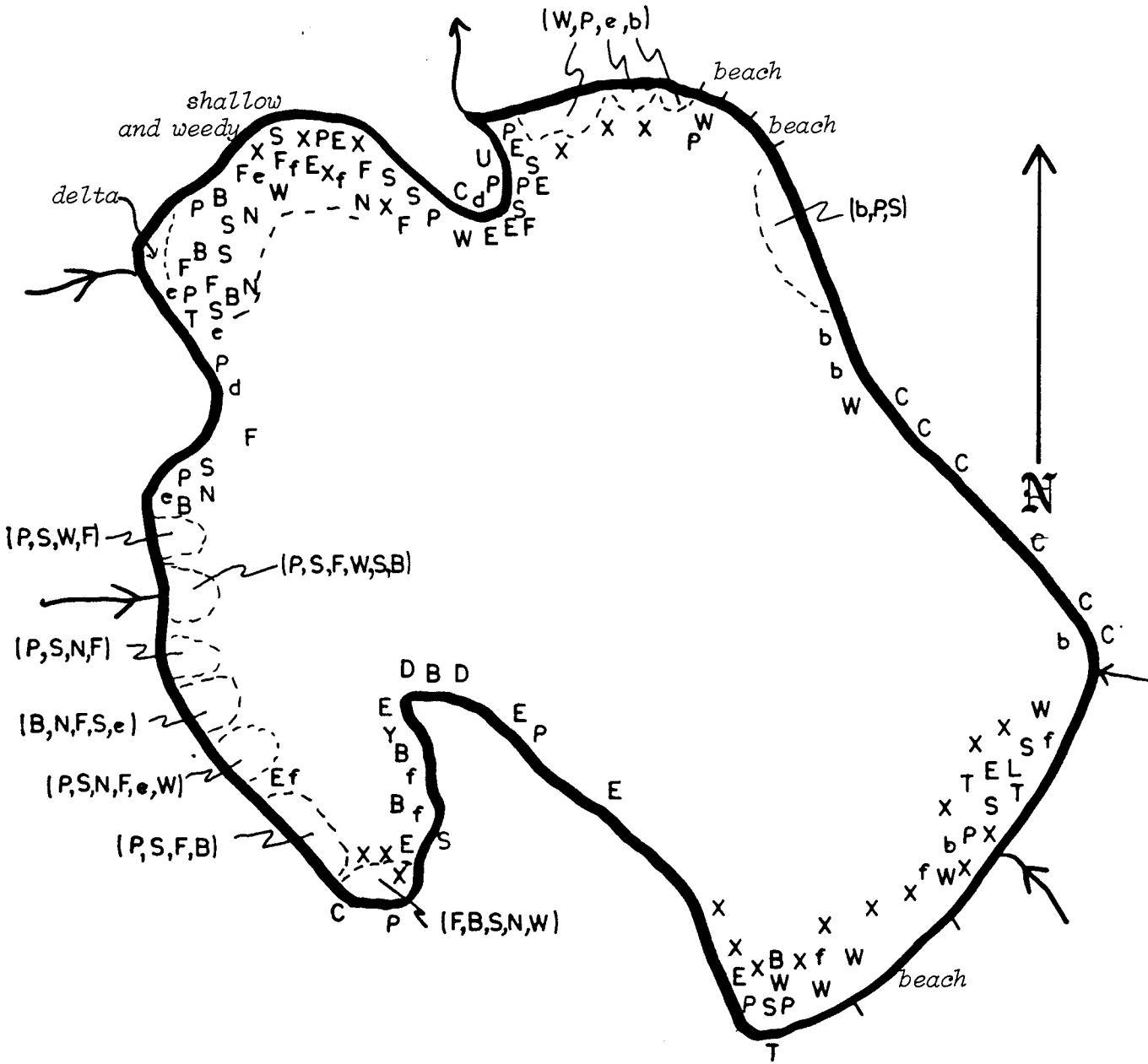
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	25.8	7.8	91 %
	1.0	25.8	7.8	91 %
	2.0	25.7	7.8	91 %
	3.0	25.2	7.7	90 %
	4.0	22.0	5.7	64 %

SECCHI DISK (m): 3.8 COMMENTS:
BOTTOM DEPTH (m): 4.5
TIME: 1200

*Dissolved oxygen values are in mg/L

Province Lake

Effingham



AQUATIC PLANTS
14 JUL. 1987



AQUATIC PLANT SURVEY

LAKE: PROVINCE LAKE

TOWN: EFFINGHAM

DATE: 07/14/87

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
b	Scirpus	Bulrush	Scattered
P	Pontederia cordata	Pickereelweed	Scattered
W	Potamogeton	Pondweed	Scattered
E	Eriocaulon septangulare	Pipewort	Sparse
L	Lobelia dortmanna	Water lobelia	Sparse
S	Sparganium	Bur reed	Scattered
F	Nymphoides cordatum	Floating heart	Scattered
f	Chlorophyceae	Filamentous green algae	Sparse
N	Nymphaea	White water lily	Scattered
X		Bottom growth	Scattered
B	Brasenia schreberi	Water shield	Scattered
T	Typha	Cattail	Sparse
D	Decodon verticillatus	Swamp loosestrife	Sparse
d	Dulichium arundinaceum	Three-way sedge	Sparse
Y	Nuphar	Yellow water lily	Sparse
C	Lysimachia terrestris	Swampcandle	Sparse
e	Eleocharis	Spike rush	Scattered

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

1. The cove at the northwest end is shallow and very weedy. A sediment delta was located at the inlet (Hobbs Brook) in this area.
2. Clusters of mixed plants were located along the southwestern shore.
3. Plants were very common in the northwest half of the lake, and relatively sparse in the southeast half of the lake, for an overall rating of scattered.