

TROPHIC CLASSIFICATION OF N.H. LAKES AND PONDS

NAME Province Lake TOWN Effingham CO Carroll RIVER BASIN Saco

I. POTENTIAL FOR NUTRIENT ENRICHMENT

A. NATURAL PHYSICAL FACTORS

- | | |
|---|--|
| 1. Area (ha) <u>410.37</u> | 10. <u>Watershed area</u>
Volume <u>2</u> |
| 2. Max. depth (m) <u>4.9</u> | 11. Bottom slope <u>0.2</u> |
| 3. Mean depth (m) <u>2.8</u> | 12. Shore config. <u>1.18</u> |
| 4. Elevation (ft) <u>480</u> | 13. Flushing rate <u>1.0</u> |
| 5. Shore length (m) <u>8,500</u> | 14. Water renewal time <u>1.0</u> |
| 6. Volume (m ³) <u>11,268,500</u> | 15. Drainage density <u>-</u> |
| 7. Volume/shore length <u>1,325</u> | 16. % Watershed ponded <u>0</u> |
| 8. % Stratification <u>0%</u> | 17. Phos. retent. coeff. R <u>0.77</u> |
| 9. Watershed area (ha) <u>1,890.7</u> | |

B. CULTURAL FACTORS

- | | |
|--|---|
| 1. % Shore developed _____ | 5. Estimate of non-point Tot-P loading: |
| 2. Number nearshore homes _____ | a. Land Use _____ |
| 3. # nearshore homes/mile shore _____ | b. Precipitation _____ |
| 4. Volume lake/# nearshore homes _____ | c. Subsurface disposal _____ |
| | d. Other _____ |

II. INDICATORS OF TROPHIC CONDITION (mg/l unless indicated otherwise)

A. Winter Data:

Date March 1, 1979 Weather _____

Depth(m)	1.5	4.5
Alkalinity	-	-
PO ₄ -P	0.007	0.006
Total-P	0.014	0.016
NO ₂ +NO ₃ -N	0.11	0.08
Kjeld-N	-	-
Total-N	-	-
Tot-N/Tot-P	-	-
NO ₂ +NO ₃ -N/PO ₄ -P	16	30

Bottom: Depth 4.5m D.O. 8.3 % Sat. 63

% Organic matter sediment -

Dom. Phytopl. 1. Asterionella - 80%

2. Tabellaria - 20%

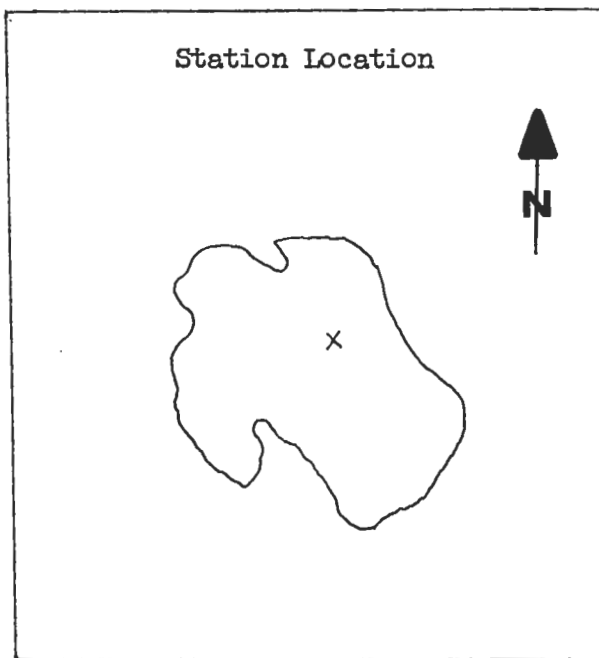
Dom. Zoopl. 1. Nauplius larva - 60%

2. Calanoid copepod - 30%

B. Summer Data:

Date August 8, 1979 Weather Sunny and warm

	Depth (m)	Mid-ep	Mid-therm	Mid-hyp
pH (units)		2.0	4.0	
Alkalinity		6.6	6.2	
PO ₄ -P		5.0	5.0	
Total-P		<0.001	<0.001	
NO ₂ +NO ₃ -N		0.005	0.007	
Kjeld-N		<0.05	<0.05	
Total Residue		0.28	0.26	
Color (units)		37	-	
Turb. (NTU)		25	30	
Spec. Conduct. (μMhos/cm)		1.2	1.5	
Tot. Org. Carbon		35.1	35.3	
Chloride		4	-	
Mg		0.49	-	
Ca		2.8	-	
Na		3.4	-	
K		0.5	-	
[Mg+Ca] / [Na+K]		0.84	-	
Tot-N/Tot-P		-	-	
NO ₂ +NO ₃ -N/PO ₄ -P		-	-	



Bottom: Depth 4.5 m D.O. 3.2 % Sat. 38
 Epilimnetic alkalinity decrease -1.0
 PO₄-P ratio: epi/hyp -
 Total-P ratio: epi/hyp -
 Secchi disk transparency (M) 2.5
 % organic Matter sediment -

Vascular Plants Scattered
 Dom. Vasc. Plants: 1. Scirpus
 2. Potamogeton
 3. Nymphaea
 Ash-Free Dry Weight
 Chlorophyll a 0.78 (mg/m³)
 Tot. Zoopl. Cnts. 72 (cells/liter)
 Dom. Phytopl. 1. Asterionella - 45%
 2.
 Dom. Zoopl. 1. Nauplius larva - 30%
 2.

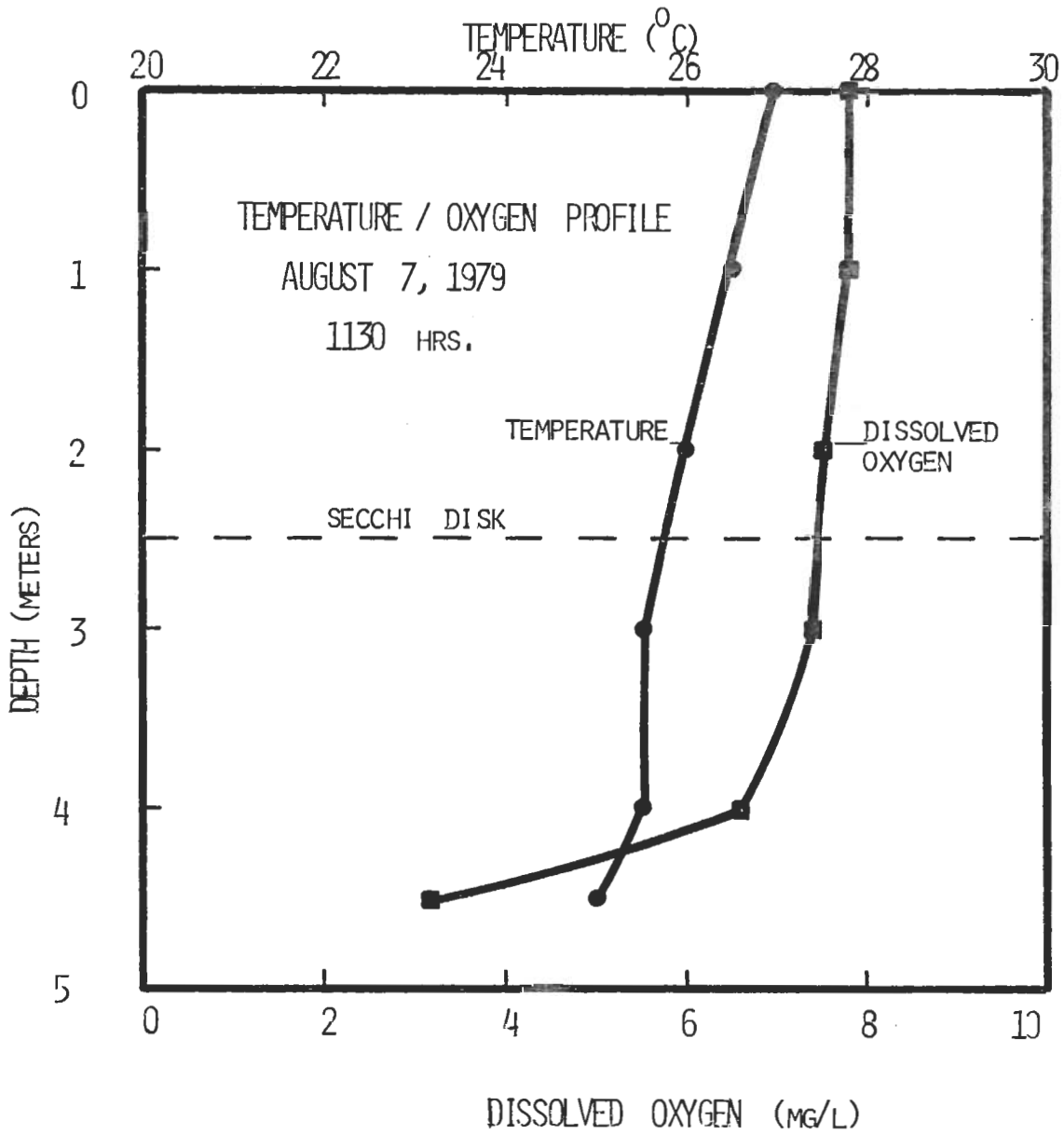
TROPHIC CLASSIFICATION 1979 : Vasc.

	D.O.	S.D.	Plants	Chl a	Total	Class.
Classification Points:	-	2	1	0	3	Oligo.

COMMENTS:

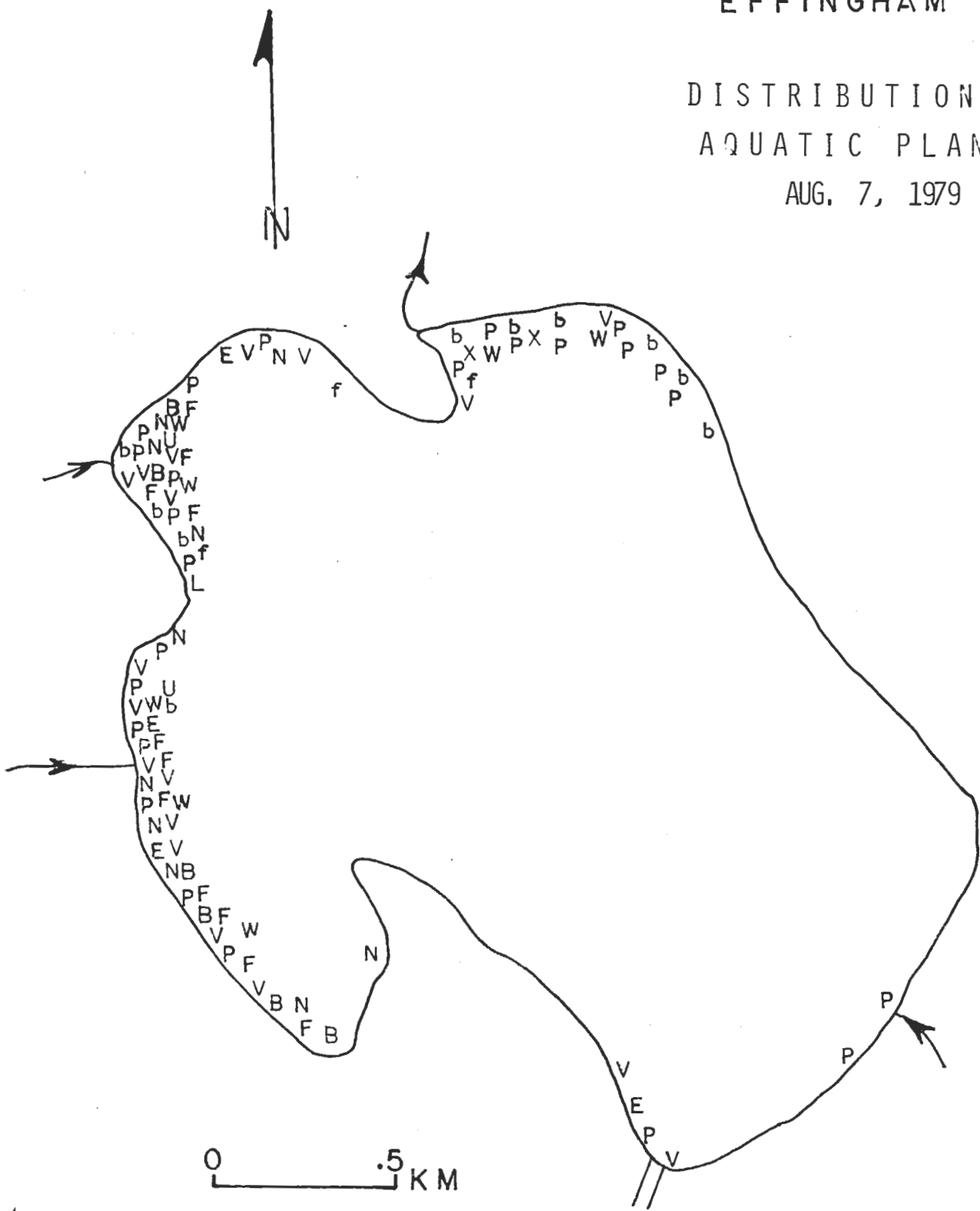
1. No summer temperature stratification was present when sampled.

PROVINCE LAKE, EFFINGHAM



PROVINCE LAKE
EFFINGHAM

DISTRIBUTION OF
AQUATIC PLANTS
AUG. 7, 1979



AQUATIC PLANT SURVEY

LAKE Province Lake TOWN Effingham DATE Aug. 7, 1979 BY WSPCC

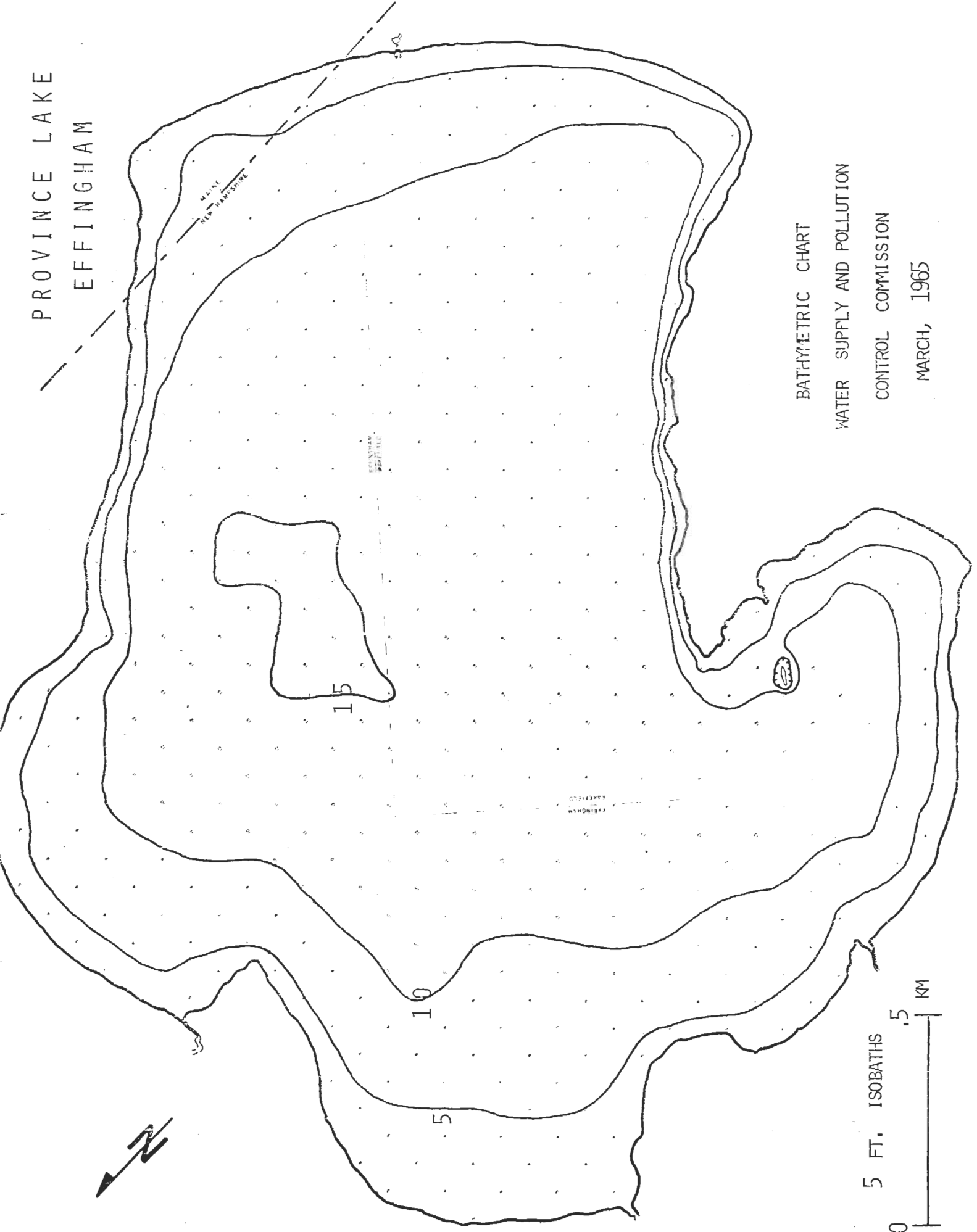
No.	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
b	Scirpus	Bulrush	Common
f	Mougeotia	Filamentous Green Algae	Scattered
P	Pontederia cordata	Pickereelweed	Common
V	Vallisneria americana	Tape Grass	Scattered
U	Utricularia	Bladderwort	Sparse
W	Potamogeton	Pondweed	Common
B	Brasenia schreberi	Water Shield	Scattered
L	Lobelia dortmanna	Water Lobelia	Sparse
E	Eriocaulon septangulare	Pipewort	Sparse
N	Nymphaea	Water Lily	Common
F	Nymphoides cordatum	Floating Heart	Common
f	Spirogyra	Filamentous Green Algae	Sparse

OVERALL ABUNDANCE Scattered

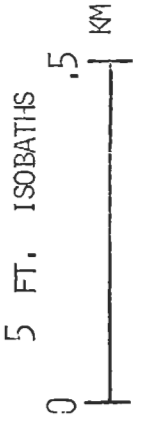
GENERAL OBSERVATIONS:

1. Plants were common along the entire western shore and in the outlet cove; but were sparse elsewhere. The overall lake abundance was scattered.

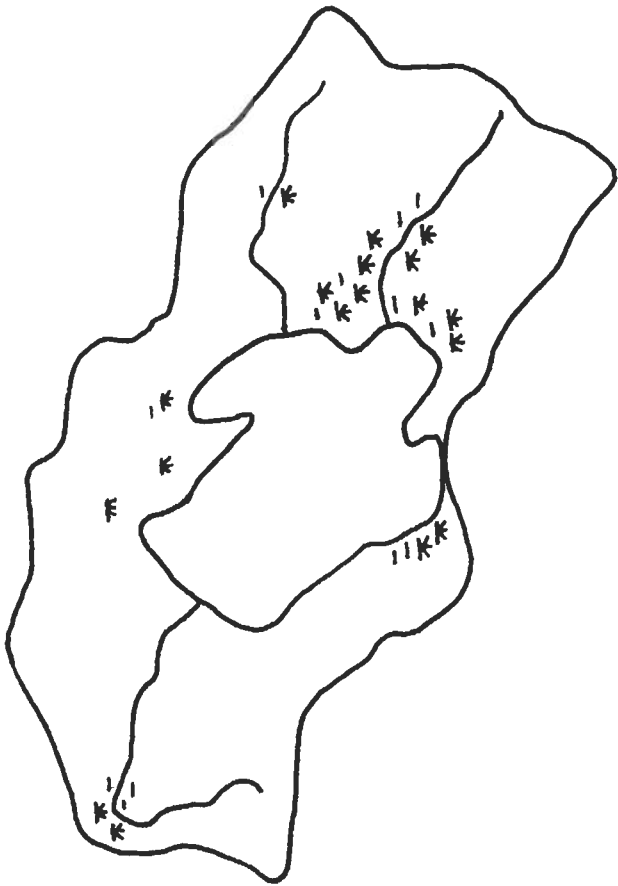
PROVINCE LAKE
EFFINGHAM



BATHYMETRIC CHART
WATER SUPPLY AND POLLUTION
CONTROL COMMISSION
MARCH, 1965



WATERSHED
PROVINCE LAKE
EFFINGHAM



0 .5 KM