





*Lake Roland 2011*



# INSTITUTE FOR FISHERIES RESEARCH

DIVISION OF FISHERIES

MICHIGAN CONSERVATION DEPT.

LAKE INVENTORY MAP

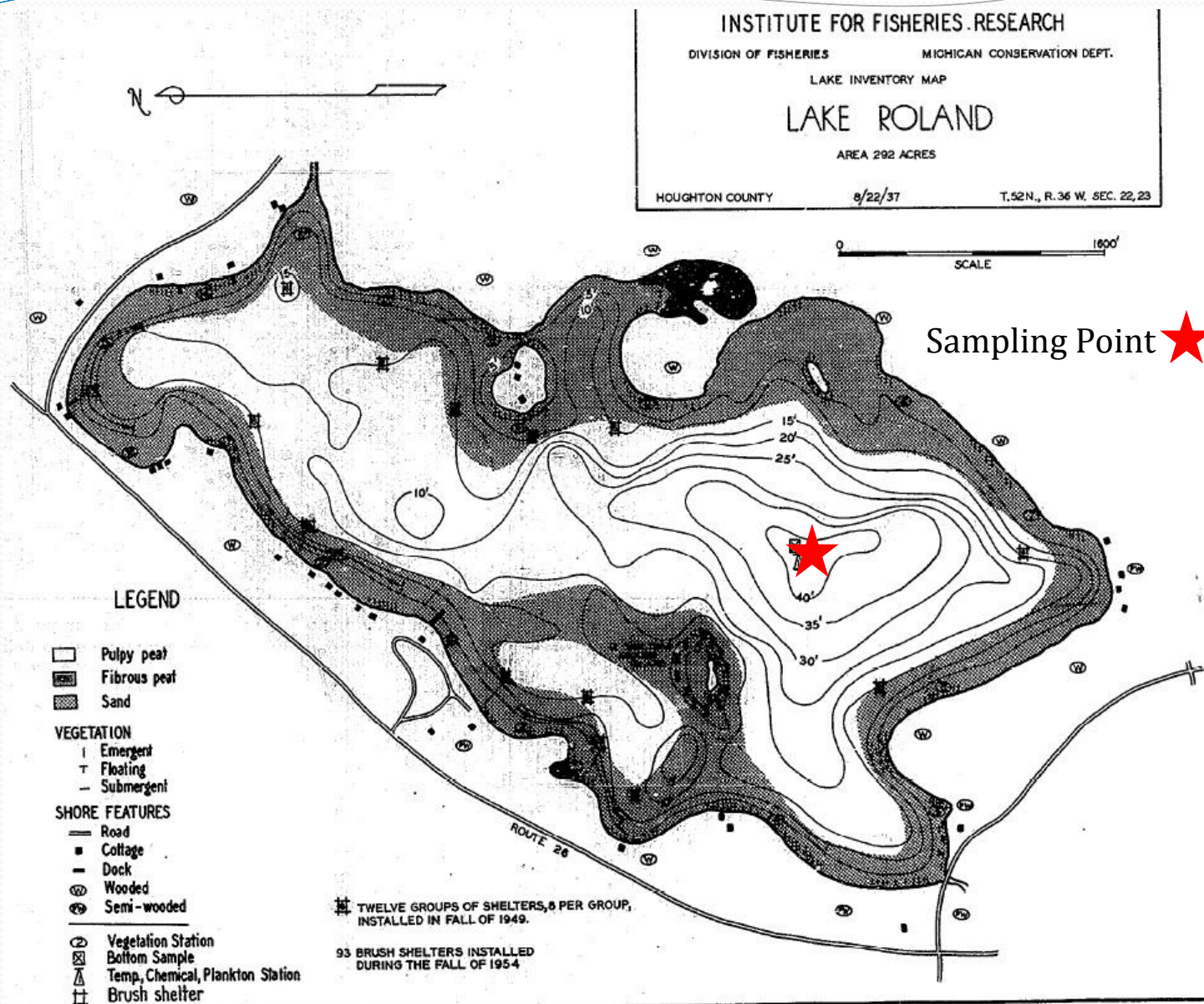
## LAKE ROLAND

AREA 292 ACRES

HOUGHTON COUNTY

8/22/37

T. 52 N., R. 36 W. SEC. 22, 23



# Temperature & Oxygen Profile: Lake Roland

DEPTH (m)	TEMPERATURE (°F)	D.O. (mg/L)
Surface	78	8.31
1.0	77	8.30
2.0	77	8.30
3.0	77	8.30
4.0	69	6.31
5.0	62	1.56
6.0	62	2.00
7.0	59	0.60
8.0	55	0.09
9.0	54	0.12

# Review of Findings: Lake Roland

PARAMETER	FINDING	INTERPRETATION
Lake Type	Drainage	Inlet and outlet
pH	6.69	Neutral
Alkalinity	10 ppm	Mod. sensitivity to acid rain
Hardness	12.0 ppm	Soft water (ZM susceptible)
Secchi (clarity)	11.4 feet	Good to very good
Chlorophyll 'a'	0.7 ppb	Very little planktonic algae
Tot. Phosphorus	Non detect (ppm)	Very good/excellent quality
Total Nitrogen	0.60 ppm	Ratio N:P indicates P-limited
Trophic Status	TSI (chlorophyll) =27.1	Mesotrophic - Oligotrophic
Conductivity	47.4 $\mu$ S/cm	Moderate dissolved material
<i>Escherichia coli</i>	1 (MPM/100ml)	Low fecal contamination

*Historic comparison: In 1937 Secchi=8.5, pH=5.8; In 1975 Secchi=6.0; pH=7.2*

# Lake Roland: Habitat & Observations

- Fairly built-out with lawns to water's edge
- Riparian areas in few places undeveloped
- Sand-gravel substrate; little large woody material; aquatic vegetation principal cover
- Aquatic plant community dominated by *Potamogeton gramineus* (contrast to 1937)
- Watershield is dense in some areas
- Purple loosestrife present in small numbers on west shore