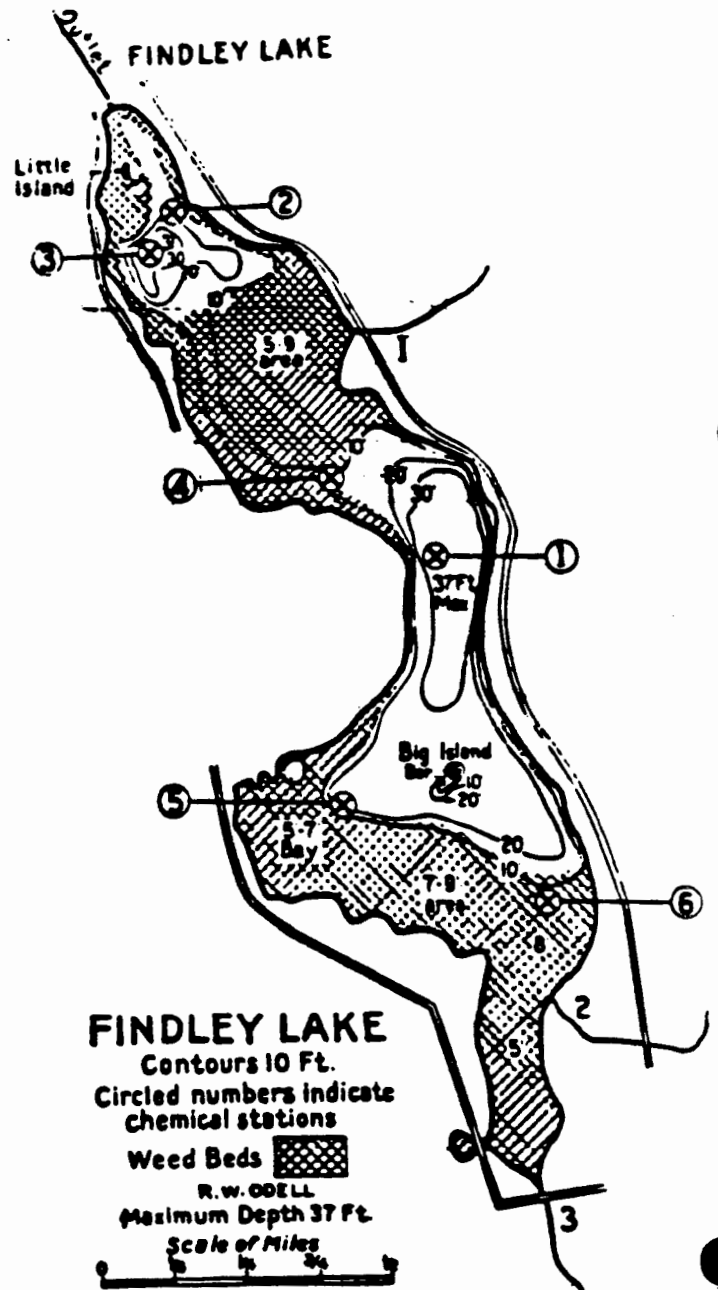


FINDLEY LAKE

Lake Surface Area: 124.3 hectares (307.0 acres)  
Watershed Area: 1240 hectares (3063 acres)  
Area Less Than 10 Feet: 59% (73.8 hectares or 182.3 acres)  
Shoreline Length: 8.85 km (5.50 miles)  
Elevation: 433 meters (1241 feet)  
Maximum Depth: 11.3 meters (37 feet)  
Mean Depth: 3.3 meters (11 feet)  
Hydraulic Retention Time: 0.5 years  
Outlet Dam?: Yes  
Controllable?: Unknown  
Height of Dam: 2.4 meters (8 feet)



Findley Lake

County: Chautauqua (Region 9)

Village/Town: Findley Lake

Latitude: 420709 Longitude: 794404

---

Association Name: Findley Lake Property Owners, Inc.

Association Contact: Mr. Donald Keppel  
2698 Shadyside Road  
Findley Lake, New York 14736

Association Members: unknown

Sampling Volunteers: Donald Keppel  
Onda Keppel  
Peggy Nasar  
Myra Bowers  
Louis J. Passmore  
James R. Rothenberger

---

Land Classification: Private

Accessibility: Informal Public Access: Marina, Roadside access

Shoreline: Approximately 90% gradual slope (<20° slope)

Development: Mostly year-round dwellings

Sewage Treatment Systems: unknown

Use Information: Recreational (Power Boating, Water Skiing, other)  
Possible Downstream Water Level Control:

Lake Classification: B

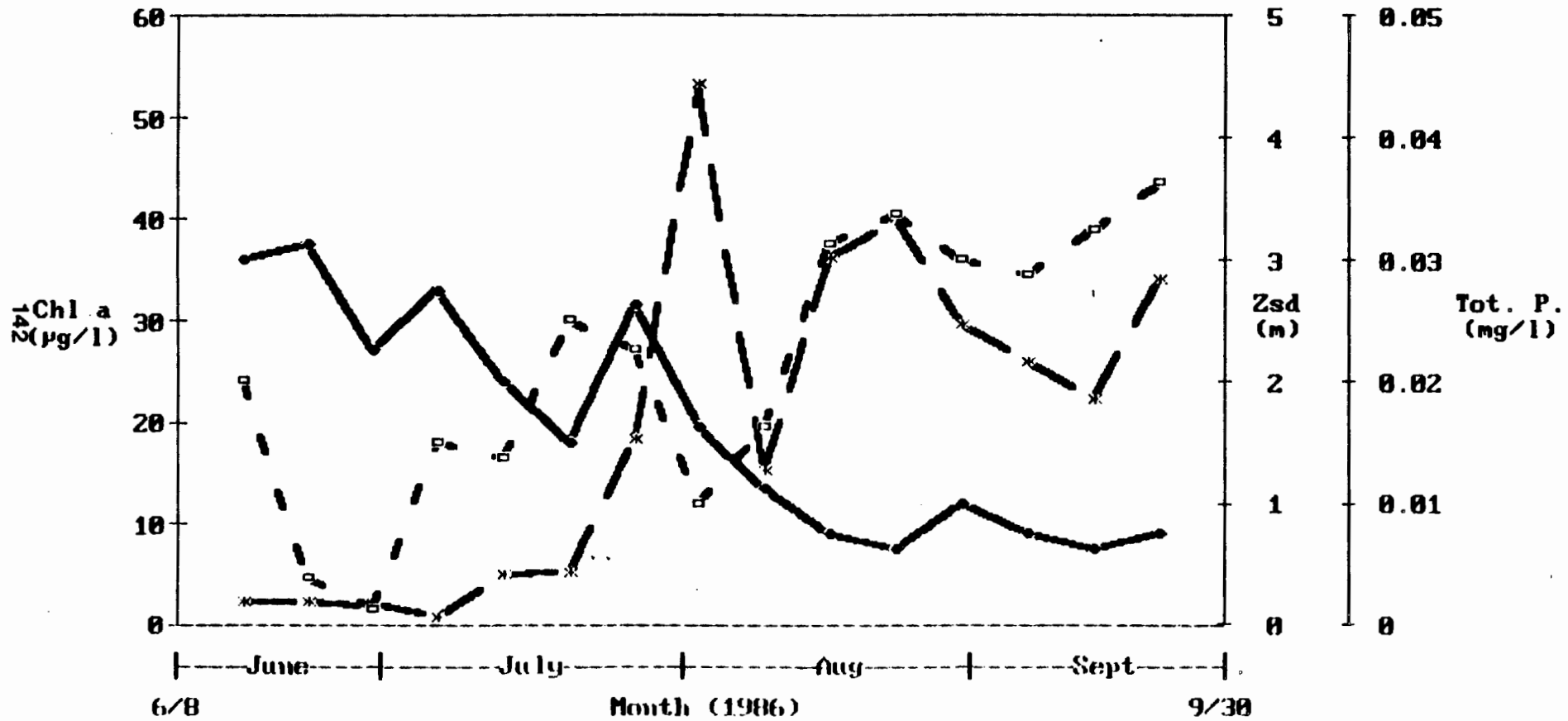
Lake Problems: Moderate: Excessive Aquatic Vegetation Growth, Nuisance  
Algal Growth  
Slight = Excessive Sediment Accumulation, Bacterial Contamination

Previous Corrective Treatments: unknown

Fisheries: unknown

# Findley Lake (1986)

\* Chlorophyll a    • Secchi Depth    □ Total Phosphorus



## Background Information:

Findley Lake, the westernmost lake in New York State, is a 307 acre relatively hardwater lake in the town of Findley in western Chautauqua County. It has a maximum depth of 37 feet, and the 3060 acre watershed varies in elevation from 1420 feet at the lake surface to 1740 feet at a point one mile east of the lake. There are three islands on the lake surface. Lake levels are determined by an 8 foot dam at the north end of the lake.

There are three major inlets to the lake, at the southern wetlands and on the southeast and northeast sides. The major outlet is below the dam.

There are more than 200 year-round homes surrounding the perimeter of the lake, mostly along the northwestern, north, and southeastern sides. Public access to the lake is available through a marina and roadside access. The lake is used primarily for recreational purposes. Historically, pollution problems have consisted of excessive aquatic vegetation and nuisance algal growth.

## 1986 CSLAP Results:

Water temperature increased from the first sampling date (June 15th) through mid-August, and then dropped rapidly through the end of the season (September 21st). Findley Lake is moderately colored, with 2 to 15 color units (mg. Pt./l) throughout the season. Conductivity increased slightly with time, eventually reaching 215  $\mu$ mho/cm. pH ranged from 6.9 and 9.0, and reached the highest values during the month of August. Nitrogen levels were at a maximum during the first sampling week, but decreased to less than the lower detection limit (0.05 mg/l) by early August.

Minimum, maximum, and average values for total phosphorus, chlorophyll a, and secchi disk transparency for the 15 week sampling season and the July-August recreational season are shown in Table X24. Phosphorus concentrations increased as the sampling season progressed. Chlorophyll a was at first very low, but after early August remained very high through the end of the season. There was only a weak correlation between total phosphorus and chlorophyll a (Figure Y24); however, if the chlorophyll a value from the August 5th sampling is excused as erroneously high, then the correlation between chlorophyll a and total phosphorus becomes very strong (for the recreational season,  $r = 0.94$ ; for the full sampling season,  $r = 0.77$ ). The maximum chlorophyll a readings were also concomitant with the maximum for pH and, to a lesser extent, values for color.

Clarity dropped steadily through the sampling season. There was a very strong correlation between clarity (secchi disk transparency) and algal populations (chlorophyll a concentrations), as shown in Figure Z24.

In the Carlson scheme of assigning trophic states to lakes, Findley Lake can tentatively be classified as eutrophic, or highly productive.

Table X24

Parameter	Minimum		Maximum		Average	
	15Week Sampl. Season	Jul/Au Rec. Season	15Week Sampl. Season	Jul/Au Rec. Season	15Week Sampl. Season	Jul/Au Rec. Season
Total P. ( $\mu\text{g}/\text{l}$ )	11	18	39	37	27	27
Chloro. a ( $\mu\text{g}/\text{l}$ )	0.80	0.80	40.0	40.0	20.3	25.0
Secchi Depth (m)	5/8	5/8	3 1/8	2 3/4	1.63	1.56

Previous Studies:

NYSDEC Fisheries information is available on Findley Lake for 1937 and 1975. The NYSDEC Division of Water conducted the Lake Classification and Inventory (LCI) Survey on Findley Lake in 1985.

FINDLEY LAKE

Date	Depth/Site (feet)	TEMP (°F)	D.O. (mg/l)	pH	Secchi (m)	Cond (µmho) cm	Alk (mg/l)	Chla (µg/l)	Color (F)	Tot. P (µg/l)	TSP (µg/l)	Comments
11-6-85	10f/33f site	49	9.5	7.2	2.0	200	110	5.8	10	31	10	LCI Data
8-28-85	7f/36f site	72	7	7.65	1.0	175	72	22.7	5	32	12	" "
	30f/36f site	51	<1	6.7	-	220	110	-	27	170	94	" "
7-17-85	10f/33f site	73	7.5	7.4	1.3	140	63	14.9	5	37	12	" "
	26f/33f site	52	<1	6.6	-	200	87	-	10	49	33	" "
6-5-85	7f/34f site	69	8	8.08	4	175	82	4.8	7	39	0	" "
4-17-85	3f/8f site	52	11	8.00	2.3	160	70	4.9	10	14	0	" "
1937	Surf/36f	76	8.5	8.7	-	-	35	-	-	-	-	Average of 3 Readings
	10f/36f site	75	7.1	8.4	-	-	40	-	-	-	-	" "
	20f/36f site	63	1.0	7.0	-	-	50	-	-	-	-	" "
	30f/36f site	50	0.3	7.0	-	-	80	-	-	-	-	" "

FINDLEY LAKE

Date	Depth/Site (feet)	MRP (µg/l)	SKN (mg/l)	TKN (mg/l)	NO3 (mg/l)	NH4 (µg/l)	TOC (mg/l)	SOC (mg/l)	SO4 (mg/l)	Cl (mg/l)	Comments
11-6-85 (cont)	10f/33f site	2	0.56	0.68	0.13	240	4.6	4.4	11.0	8.5	LCI Data
8-28-85 (cont)	7f/36f site	7	0.38	0.88	-	86	5.5	4.4	11.0	9.2	" "
	30f/36f site	62	3.00	3.00	-	2500	3.5	2.8	0.9	8.2	" "
7-17-85 (cont)	10f/33f site	6	0.32	0.66	0.02	23	2.2	3.2	12.0	9.1	" "
	26f/33f site	33	5.00	5.90	-	820	6.8	8.6	8.1	8.1	" "
6-5-85 (cont)	7f/34f site	7	0.34	0.40	0.04	26	2.8	2.6	22.0	9.2	" "
4-17-85	3f/8f site	-	-	-	-	-	-	-	-	-	" "

CITIZENS STATEWIDE LAKE ASSESSMENT PROGRAM  
1984 PROGRAM RESULTS

SAMPLING DATE	SAMPLING DEPTH (METERS)	NAME OF STATION SAMPLER	NAME OF WATER CHEMISTRY SAMPLER	TIME OF DAY (MILITARY HOURS)	AIR TEMPERATURE (°C)	WATER TEMPERATURE (°F)	WATER SAMPLE DEPTH (METERS)
88 FINLEY LAKE							
06/15/86	11.5	SAK	SAK	0405	18	19	1.5
06/21/86	11.5	ROTHENBERGER	KEPPEL	0930	22	20	1.5
06/29/86	11.5	PEGGY NASON	ONDA KEPPEL	1200	22	21	1.5
07/03/86	11.5	DONALD KEPPEL	ONDA KEPPEL	2000	19	20	1.5
07/11/86	11.5	RYRA BOWERS	ONDA KEPPEL	1220	19	20	1.5
07/18/86	11.5	PEGGY NASON	PEGGY NASON	1220	20	24	1.5
07/24/86	11.5	ONDA KEPPEL	PEGGY NASON	1120	20	25	1.5
08/01/86	11.5	ONDA KEPPEL	DON KEPPEL	1645	24	24	1.5
08/05/86	11.5	ONDA KEPPEL	ONDA KEPPEL (SAK)	1030	24	25	1.5
08/12/86	0.0	SAK	SAK	1000	0	0	1.5
08/16/86	11.5	DON KEPPEL	DON KEPPEL	1045	24	24	1.5
08/21/86	11.5	DON KEPPEL	ONDA KEPPEL	1645	24	25	1.5
08/30/86	11.5	ONDA KEPPEL	DON KEPPEL	1045	20	19	1.5
09/05/86	11.5	ONDA KEPPEL	DON KEPPEL	1630	21	20	1.5
09/14/86	11.5	ONDA KEPPEL	DON KEPPEL	1130	14	19	1.5
09/21/86	11.5	DON KEPPEL	ONDA KEPPEL	1430	17	18	1.5

CITIZENS STATEWIDE LAKE ASSESSMENT PROGRAM  
1986 PROGRAM RESULTS

SAMPLING DATE	WIND CONDITIONS DAY OF SAMPLING	WIND CONDITIONS TWO OR MORE DAYS PREVIOUS WEEK	SKY CONDITIONS DAY OF SAMPLING	SKY CONDITIONS TWO OR MORE DAYS PREVIOUS WEEK	COMMENTS RECORDED ON SAMPLING RECORD
88 FINLEY LAKE					
06/15/86	CALM	MODERATE, WINDY	OVERCAST	RAINY	SIGNIFICANT RAINFALL LAST WEEK
06/21/86	MODERATE	CALM, MODERATE	PT. CLOUDY	CLEAR, PT. CLOUDY, RAINY	
06/29/86	MODERATE	MODERATE	CLEAR	PT. CLOUDY	
07/03/86	CALM	(SAK-WINDY)	CLEAR	(SAK-RAINY)	RAIN DURING WEEK, TOO WINDY TODAY READING TONIGHT BEFORE BIG TRAFFIC ON 7/4
07/11/86	CALM	WINDY	OVERCAST	CLEAR	
07/18/86	MODERATE	MODERATE	CLEAR	OVERCAST, WINDY	SAK-CHLOROPHYLL A VIAL/SAMPLING RECORD NOT RECEIVED
07/24/86	CALM	MODERATE	CLEAR	CLEAR, RAINY	
08/01/86	CALM	CALM	CLEAR	CLEAR	RAINED EARLY IN THE DAY (8/1) BROKE THERMOMETER (SAK-USED FARENHEIT THERM) SAK-NO CHL A VIAL
08/05/86	MODERATE	CALM, WINDY	PT. CLOUDY	CLEAR, RAINY	SAK-POSSIBLE SUSPICIOUS CHL A RESULT
08/12/86					SAK-CHECK SAMPLING RECORDS TO SEE IF THE DATE WAS RECORDED CORRECTLY
08/16/86	CALM	CALM, MODERATE	OVERCAST	CLEAR, PT. CLOUDY	VERY HARD RAIN AND WIND FOR SHORT PERIOD LAST EVENING (8/15)
08/21/86	MODERATE	CALM, WINDY	CLEAR	CLEAR, PT. CLOUDY	
08/30/86	MODERATE	MODERATE, WINDY (TODAY)	CLEAR	CLEAR, RAINY	
09/05/86	WINDY	MODERATE	PT. CLOUDY	PT. CLOUDY, OVERCAST	
09/14/86	WINDY	MODERATE, WINDY	CLEAR	OVERCAST, RAINY	
09/21/86	MODERATE	CALM, MODERATE	OVERCAST	PT. CLOUDY, OVERCAST	



CITIZENS STATEWIDE LAKE ASSESSMENT PROGRAM  
1986 PROGRAM RESULTS

SAMPLING DATE	AVERAGE ON SECCHI DEPTH (METERS)	ON BOTTOM? (T.=YES)	TOTAL PHOSPHORUS (MG/L)	NITRATE+ NITRITE NITROGEN (MG/L)	FILTERED COLOR	pH	SPECIFIC CONDUCTANCE (µMHO/CM)	CHLOROPHYLL a (µG/L)
** FINDLEY LAKE								
06/15/86	3.000	.F.	0.026	0.12	5	6.92	190	2.22
06/21/86	3.125	.F.	0.013	0.11	5	7.50	180	2.29
06/27/86	2.250	.F.	0.011	0.09	10	7.62	185	2.00
07/03/86	2.750	.F.	0.022	0.11	15	7.82	194	0.80
07/11/86	2.000	.F.	0.021	0.04	2	7.84	185	5.03
07/18/86	1.500	.F.	0.030	0.06	5	8.38	194	0.00
07/24/86	2.625	.F.	0.000	0.00	0	0.00	0	0.00
08/01/86	1.625	.F.	0.028	0.04	14	8.05	197	0.00
08/05/86	1.125	.F.	0.018	0.04	11	7.75	191	53.30
08/12/86	0.000	.F.	0.023	0.04	13	8.15	199	15.30
08/16/86	0.750	.F.	0.035	0.04	12	8.98	195	36.30
08/21/86	0.625	.F.	0.037	0.04	15	8.12	198	40.00
08/30/86	1.000	.F.	0.034	0.04	3	7.60	205	29.60
09/05/86	0.750	.F.	0.033	0.04	3	8.17	206	25.90
09/14/86	0.625	.F.	0.036	0.04	13	7.55	215	22.20
09/21/86	0.750	.F.	0.039	0.04	8	7.29	214	34.00

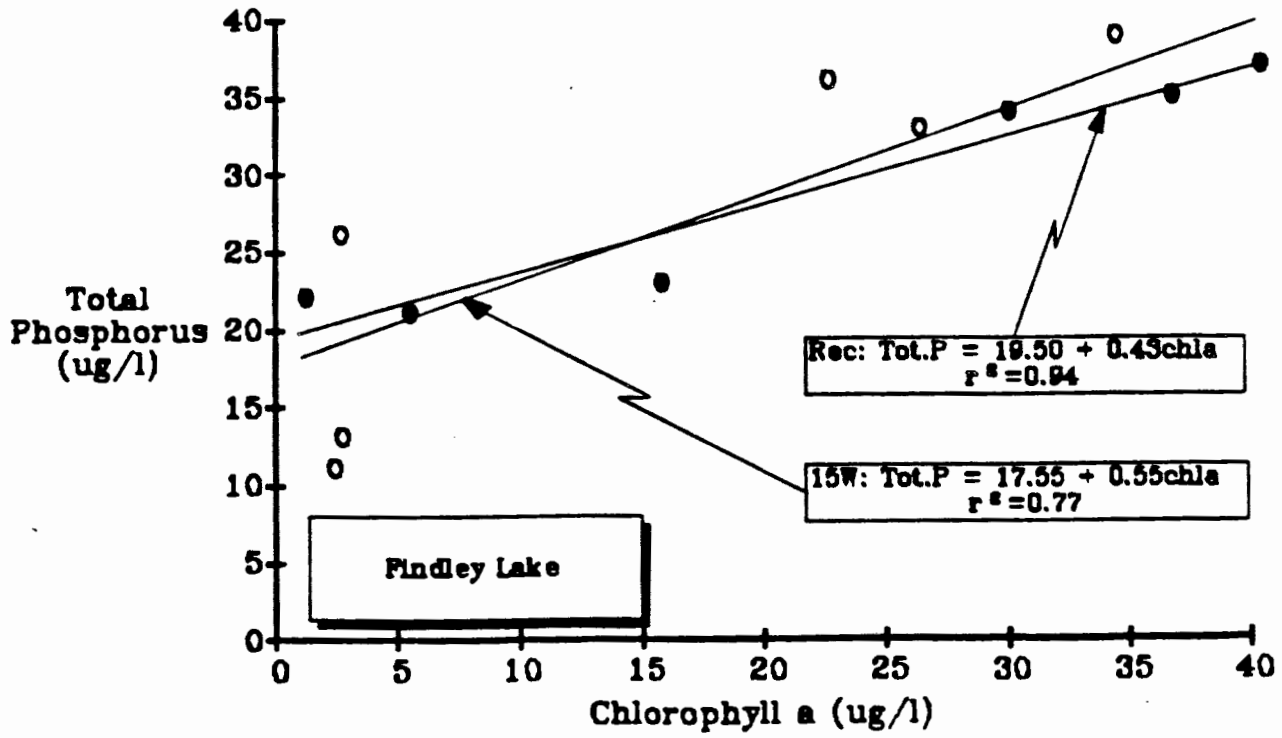


Figure Y24

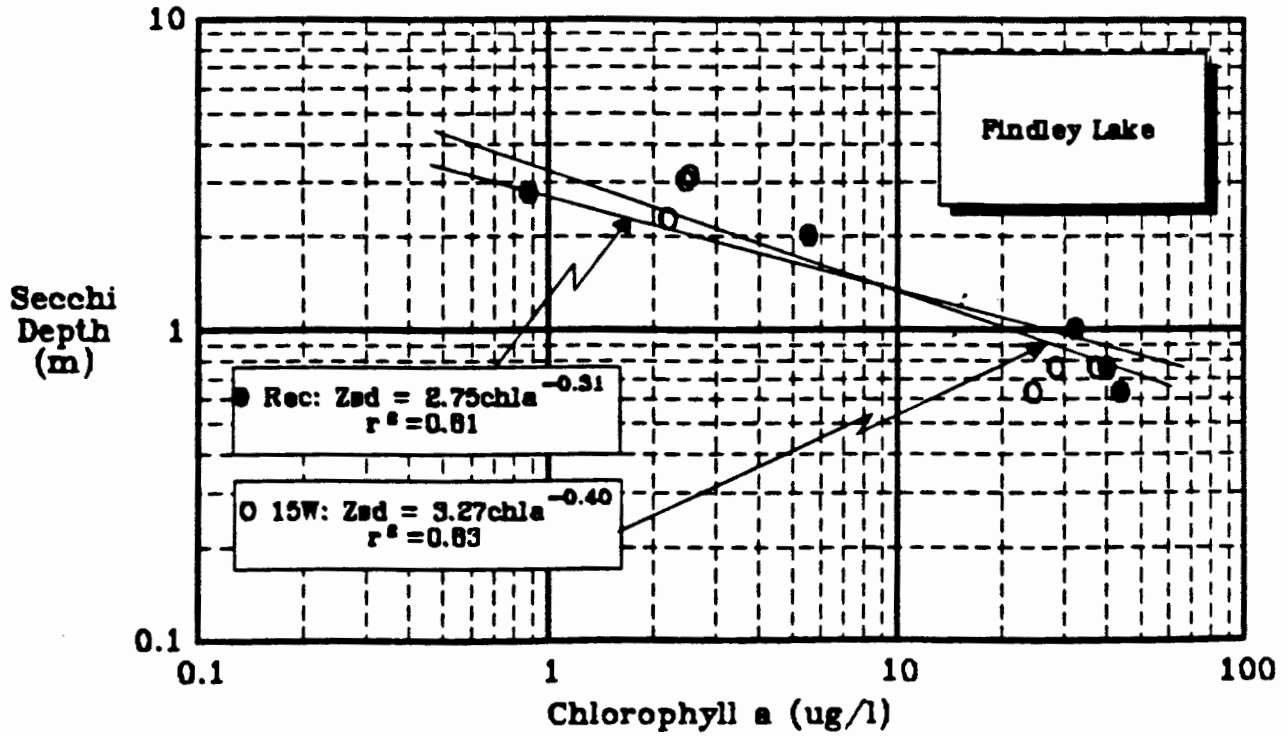


Figure Z24