

## WEB NOTE

[WWW.HARVEYSLAKE.ORG](http://WWW.HARVEYSLAKE.ORG)

In 2019 this site published an extensive article titled The Lake with No Bottom. The article explored the life of Dr. Charles B. Reif (1912-2006), the founder and chair of the Department of Biology at Wilkes College (now University).

Reif as born in Minnesota, the “Land of Lakes.” He came to Wilkes in 1942 and spent much of his professional lifetime studying the life and depths of regional lakes, especially Harvey's Lake. Many of his students participated in these studies. This web-author, a Wilkes graduate, shared information with Reif for the publication of this web-author's 1983 history of Harvey's Lake, with revised editions published as late as 2024 on this website.

Reif designed the earliest professional depth study of Harvey's Lake. He also studied the depths of 29 other regional lakes. In 1975 he prepared the attached paper which mapped the depth of Harvey's Lake and the depths of other 29 lakes along with scientific data about other regional lakes.

Reif's paper “Thirty Lakes In The Vicinity Of Wyoming Valley, PA.” was privately printed by the Wyoming Historical and Geological Society, now the Luzerne County Historical Society, which copyrighted the paper. It appears the Society did not publish an intended public edition.

In 2019 this web-author received permission from the executive director of the Society to publish Reif's paper on this website.

November 2024

**THIRTY LAKES IN THE VICINITY  
OF WYOMING VALLEY, PA.**

By CHARLES B. REIF

*Department of Biology, Wilkes College*

This paper, which will form part of *Proceedings and Collections of the Wyoming Historical and Geological Society*, volume XXIV, is issued as a separate print in advance of publication of that volume for the convenience of the author and Wilkes College.

WILKES-BARRE, PA.  
Printed for the Society  
1975

Copyright 1975  
by  
Wyoming Historical and Geological Society

# THIRTY LAKES IN THE VICINITY OF WYOMING VALLEY, PA.

By CHARLES B. REIF\*

Limnological studies were begun at Wilkes College in January 1943 when the charting of Harveys Lake was undertaken. Lines were surveyed on the ice with a transit and soundings made at intervals with a steel surveyor's tape. World War II stopped the effort for several years, but in 1947 charting was resumed, and by February 1970 charts of 28 lakes were in hand. While the charting of the lakes was moving forward in the winters, chemical analyses of the lakes' waters were being made in the summers. Although some studies have been made of the plankton of the lakes, this paper is intended only to present the bathymetric information for 28 lakes and the chemical data for the same 28 lakes plus two others that have not been charted because they are part of Wyoming Valley's water supply. None of the lakes included in this paper lies within Wyoming Valley, but all are within 30 miles of Wilkes-Barre, are important natural resources of the Wyoming Valley Region, and are properly of interest to the Wyoming Historical and Geological Society.

All the lakes are directly related to the geology and topography of the region. The 17 natural lakes are all of glacial origin, and the 13 artificial lakes are located where the contours of the land permitted good impoundments.

---

\* Dr. Reif received his Ph.D. degree from the University of Minnesota in 1941. Joining the faculty of Bucknell University Junior College, now Wilkes College, in 1942, he has been Professor of Biology there since 1947. He has served also as a member of the Board of Directors of the Wyoming Historical and Geological Society. His more recent published writings include "Vertical Migration of *Daphnia dubia* and Hours of Sunshine in Previous Diel Photoperiod" (1968), with Donald Tappa, in *Transactions of the American Microscopical Society* (1878—); and "A Comparison of Limnetic and Vadose Water" (1967), with Thurman Grove and Joseph Crane; "Temperature Profiles and Heat Flow in Sediments of Nuangola" (1969); and "Chemical Profile of Nuangola Bog" (1974), with Nancy Rodda, the last three in *Proceedings of the Pennsylvania Academy of Science* (Philadelphia, 1924/26—).

Table I contains the locations of the lakes. Table II contains the chemical data which were worked out by twelve students at Wilkes College under the careful direction of Assoc. Prof. Francis J. Salley (1954-1969), using standard methods of classic quantitative chemical analysis. Table III contains additional chemical data worked out by two students during the summer of 1971 under the guidance of Prof. Howard Swain, using the methods of atomic absorption. Although slight geological differences may be noted, the lakes do not differ markedly in their chemical natures. Thus for convenience in presentation the lakes have been grouped geographically. The geographical locations of the 30 lakes also reflect the geological differences. The rocks exposed in the several geographic divisions of the Wyoming Valley Region, as presented in this paper, belong to different geological formations, and the slight chemical differences may reflect the differences of the rock types in which the lakes' basins are located. In general, the rocks of Wyoming Valley and vicinity are Devonian, Mississippian, or Pennsylvanian. Wyoming Valley itself occupies the southern portion of a partially exposed crescent-shaped syncline, the northern portion of which is the Lackawanna Valley. The Susquehanna River takes a generally southeasterly course before it enters the middle of the syncline, at its confluence with the Lackawanna River, and then takes a southwesterly course through Wyoming Valley. The Pottsville Conglomerate (a resistant bed of quartzite pebbles in a generally white matrix) forms the inner ridge surrounding Wyoming Valley. The Mauch Chunk Shale, which is stratigraphically just below the Pottsville Conglomerate, has been eroded to form a valley between the conglomerate and the Pocono Sandstone. The Pocono Formation includes a series of gray and tan sandstones which have been sufficiently resistant to form an outer ridge around Wyoming Valley. The Coal Measures lie within the syncline above the conglomerate, and the Catskill Formation of red and gray shales is

stratigraphically just below the Pocono Formation. Immediately outside Wyoming Valley the beds of the Catskill Formation are steeply dipped toward the northwest, but farther to the south of the Valley the Pocono Sandstone is exposed horizontally as the Pocono Plateau. To the north of Wyoming Valley all the beds are nearly horizontal, so that the Pocono Rocks and Catskill Rocks are exposed as dissected peneplain with a few caps of Pottsville Conglomerate on the hilltops. The entire region within which the 30 lakes are located was overridden by Illinoian Ice as well as Wisconsinan Ice during the Pleistocene Epoch. To the north of Wyoming Valley are many kames and bedded terraces, and although the basins of all the natural lakes are of glacial origin, none is a typical glacial kettle.

Natural lakes Carey, Oxbow, and Winola are the most distant from Wilkes-Barre and lie to the northwest of the Susquehanna River in rolling terrain. Each has associated kames. Natural lakes Cummings, Grassy, Harveys, Moon, North, Silkworth, and Sylvan are to the southwest of the Susquehanna River, between the river and Wyoming Valley. Pleistocene deposits are common in that region. Each of the lakes in this region has a rock ledge to the north of it, which suggests that each of the lakes lies in a glacial gouge. Four of the natural lakes, Cranberry, Liberty, Lily, and Nuangola, occupy basins cut by the glacial ice in the steeply dipping Catskill rocks as the ice overrode the ridge of Pocono rocks now known as Penobscot Mountain. All four of these lakes lie in a line at the foot of the ridge, and in the line with them are several former basins that have been filled by limnetic and bog deposits. Each of the four lakes has some portion of its shore occupied by a typical bog mat. The natural lakes of the Pocono Plateau, Bear, Indian, and Mud, lie in relatively shallow basins, at the highest elevations of all the 30 lakes, and closest to the line of the greatest advance of

the glacial ice. Chemically the three Pocono lakes are the most barren of the 30.

The hydrogen-ion concentration of the 30 lakes ranges from a pH of 4.5 to a pH of 7.5 and varies seasonally for each lake, thus no table of hydrogen-ion concentrations has been presented. The lakes to the south of Wyoming Valley generally have a lower pH than do the lakes to the north.

The artificial lakes have been grouped in the three tables on the same basis as have been the natural lakes. The artificial lakes were originally impounded to serve as sources of ice or water, and none was created before 1890. All tend to be chemically similar to the natural lakes in the same geographic territories. Huntsville Reservoir and Pike's Creek Reservoir are water supplies and thus have not been charted (their bottom contours can be deduced from Geodetic Survey maps), although they are among the largest bodies of water in the region. One may note that from a biological point of view Huntsville Reservoir and Pike's Creek Reservoir have not been subjected to suburbanization as have most of the other lakes and have thus been spared the cultural contributions which promote eutrophication.

The assembling of the information presented in this brief paper has been an ongoing, although nebulous, project of the Department of Biology for a quarter of a century. In this project have been involved many of the faculty of the Department of Biology as well as more than a hundred students at Wilkes College, past, present, and future, and the author is deeply grateful for what each of these individuals has contributed. The publication of this information at this time is made with the hope it will be useful to anyone interested in lakes and will stimulate limnological research in northeastern Pennsylvania.

TABLE I. — GEOGRAPHIC LOCATIONS OF THE LAKES

Lakes	Latitude north	Longitude west	Altitude M.S.L.
Natural lakes:			
Northeast of the Susquehanna River:			
Lake Carey .....	41° 35' 30''	76° 55' 40''	847'
Oxbow Lake .....	41° 36' 30''	76° 53' 48''	1029'
Lake Winola .....	41° 30' 40''	75° 50' 52''	997'
Southwest of the Susquehanna River:			
Cummings Pond .....	41° 23' 24''	75° 54' 50''	1191'
Grassy Pond .....	41° 16' 40''	76° 09' 40''	1270'
Harveys Lake .....	41° 21' 50''	76° 02' 30''	1255'
Moon Lake .....	41° 15' 05''	76° 02' 56''	1136'
North Lake .....	41° 17' 22''	76° 08' 37''	1335'
Lake Silkworth .....	41° 16' 30''	76° 05' 10''	1193'
Sylvan Lake .....	41° 15' 40''	76° 09' 30''	1205'
Foot of Penobscot Mountain:			
Cranberry Lake .....	41° 08' 50''	76° 03' 26''	1019'
Lily Lake .....	41° 08' 32''	76° 05' 15''	1018'
Lake Liberty .....	41° 08' 12''	76° 00' 34''	1080'
Lake Nuangola .....	41° 09' 34''	75° 58' 30''	1165'
Pocono Plateau:			
Bear Lake .....	41° 12' 36''	75° 38' 15''	1889'
Indian Lake .....	41° 11' 15''	75° 40' 10''	1866'
Mud Pond .....	41° 13' 30''	75° 40' 55''	2030'
Artificial lakes:			
Southwest of the Susquehanna River and northwest of Wyoming Valley:			
Lake Catalpa .....	41° 23' 30''	75° 51' 30''	1270'
Harris Pond .....	41° 18' 20''	76° 07' 58''	1270'
Huntsville Lake .....	41° 19' 10''	75° 58' 48''	1133'
Lake Louise .....	41° 22' 55''	75° 55' 04''	1093'
Pike's Creek Lake .....	41° 16' 50''	76° 04' 41''	1059'
Shady Side Lake .....	41° 22' 25''	75° 58' 12''	1182'
Southeast of Penobscot Mountain:			
Blytheburn Lake .....	41° 07' 40''	75° 57' 20''	1113'
Fenners Ponds .....	41° 08' 24''	75° 50' 18''	1145'
Valley between Wilkes-Barre Mountain and Penobscot Mountain:			
Fairchilds Pond .....	41° 10' 15''	76° 00' 20''	995'
Pocono Plateau:			
Bear Creek Lake .....	41° 11' 18''	75° 45' 12''	1675'
Meadow Run Lake .....	41° 13' 23''	75° 40' 02''	1996'
Mountain Lake .....	41° 13' 40''	75° 40' 30''	1984'
Penn Lake .....	41° 05' 30''	75° 47' 10''	1230'



TABLE II. — CHEMICALS OF THE LAKES <sup>1</sup>↓

Lakes	SiO <sub>2</sub>	Fe	Ca	Mg	SO <sub>4</sub>	PO <sub>4</sub>	NO <sub>3</sub>
Natural lakes:							
Northeast of the							
Susquehanna River:							
Lake Carey .....	1.78	0.075	11.27	2.29	15.50	0.020	0.930
Oxbow Lake .....	1.80	0.077	8.49	1.40	16.90	0.031	0.870
Lake Winola .....	0.51	0.117	13.82	2.01	16.30	0.091	0.988
Southwest of the							
Susquehanna River:							
Cummings Pond .....	6.20	0.161	7.43	1.30	3.54	0.137	0.451
Grassy Pond .....	1.66	0.123	6.51	1.51	10.32	0.035	0.321
Harveys Lake .....	0.40	0.149	9.00	1.89	13.37	0.028	0.421
Moon Lake .....	2.30	0.189	3.11	1.39	10.40	0.051	0.780
North Lake .....	1.70	0.173	7.74	1.28	9.76	0.039	0.335
Lake Silkworth .....	1.72	0.291	7.75	3.32	8.75	0.057	0.848
Sylvan Lake .....	1.64	0.091	4.15	1.59	10.60	0.034	0.301
Foot of							
Penobscot Mountain:							
Cranberry Lake .....	0.60	0.256	5.55	1.36	13.35	0.080	0.390
Lily Lake .....	0.55	0.108	7.28	1.38	7.72	0.035	0.367
Lake Liberty .....	0.92	0.092	6.63	2.05	12.90	0.058	0.510
Lake Nuangola .....	2.60	0.312	6.62	2.16	12.03	0.034	0.381
Pocono Plateau:							
Bear Lake .....	0.25	0.040	1.23	0.98	5.10	0.020	0.460
Indian Lake .....	0.49	0.129	2.91	0.88	6.77	0.078	0.478
Mud Pond .....	0.38	0.110	1.75	0.87	6.35	0.066	0.470
Artificial lakes:							
Southwest of the							
Susquehanna River and							
northwest of							
Wyoming Valley:							
Lake Catalpa .....	3.19	0.076	6.60	1.14	4.76	0.037	0.469
Harris Pond .....	1.71	0.586	4.22	1.39	13.10	0.081	0.408
Huntsville Lake .....	2.05	0.071	6.50	1.99	17.62	0.026	0.306
Lake Louise .....	3.01	0.543	8.83	2.13	14.72	0.042	0.451
Pike's Creek Lake .....	2.10	0.107	5.33	1.30	15.83	0.056	0.383
Shady Side Lake .....	0.41	0.253	8.72	2.21	12.64	0.038	0.473
Southeast of							
Penobscot Mountain:							
Blytheburn Lake .....	2.31	0.552	4.32	1.61	8.37	0.048	0.434
Fenners Ponds .....	3.69	0.034	4.13	1.63	5.64	0.052	0.425
Valley between Wilkes-							
Barre Mountain and							
Penobscot Mountain:							
Fairchilds Pond .....	3.01	0.213	5.41	1.99	9.87	0.042	0.369
Pocono Plateau:							
Bear Creek Lake .....	0.31	0.342	3.15	0.58	5.35	0.036	0.315
Meadow Run Lake .....	0.31	0.361	2.83	0.66	8.61	0.383	0.414
Mountain Lake .....	0.30	0.661	2.15	0.68	6.67	0.039	0.405
Penn Lake .....	0.85	0.105	2.17	0.97	5.64	0.026	0.293

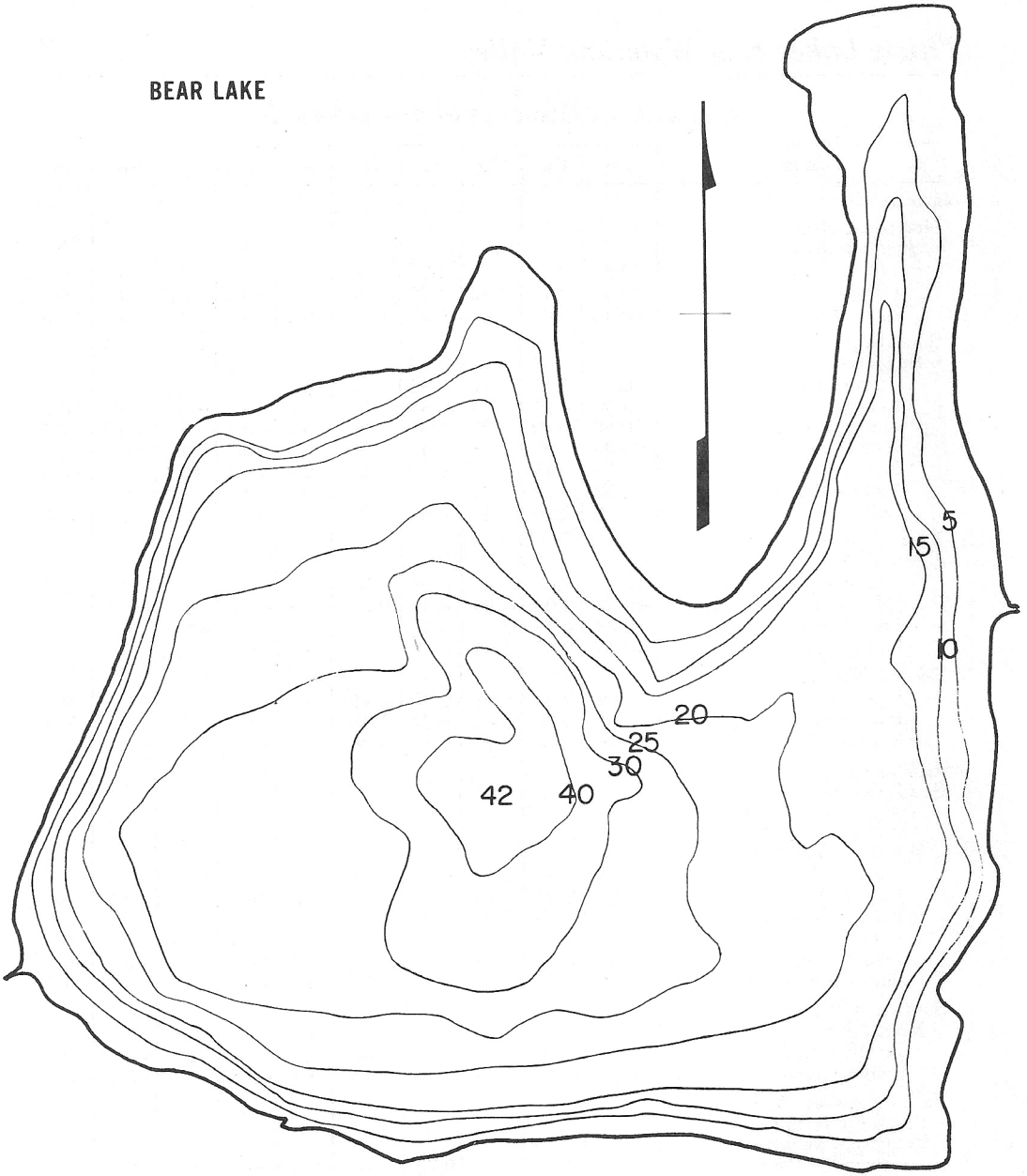
<sup>1</sup>↓ In parts per million or milligrams per liter.

TABLE III. — CHEMICALS OF THE LAKES  $\frac{1}{2}$

Lakes	Fe	Ca	Mg	K	Na	Co	Cr	Cu	Mn	Ni
Natural lakes:										
Northeast of the Susquehanna River:										
Lake Carey .....	0.33	0.23	1.74	1.77	5.46	0.3	<0.1	<0.1	<0.1	<0.5
Oxbow Lake .....	<0.33	0.18	1.46	1.20	3.54	0.3	<0.1	0.2	<0.1	<0.5
Lake Winola .....	<0.33	0.09	1.94	1.90	6.16	0.4	<0.1	<0.1	<0.1	<0.5
Southwest of the Susquehanna River:										
Cummings Pond .....	0.50	0.15	1.31	0.92	8.20	0.3	<0.1	<0.1	<0.1	<0.5
Grassy Pond .....	0.66	0.14	1.30	0.80	4.70	0.3	<0.1	<0.1	<0.1	<0.5
Harveys Lake .....	0.66	0.19	1.30	0.94	5.06	0.4	<0.1	0.1	<0.1	<0.5
Moon Lake .....	<0.33	0.07	1.38	0.46	1.39	0.4	<0.1	<0.1	<0.1	<0.5
North Lake .....	0.66	0.15	1.31	0.77	4.50	0.4	<0.1	<0.1	<0.1	<0.5
Lake Silkworth .....	<0.33	0.13	1.91	0.94	5.10	0.3	<0.1	0.1	<0.1	<0.5
Sylvan Lake .....	<0.33	0.20	1.22	0.67	1.92	0.4	<0.1	0.1	<0.1	<0.5
Foot of Penobscot Mountain:										
Cranberry Lake .....	0.33	0.07	1.11	0.51	0.94	0.3	<0.1	0.1	<0.1	<0.5
Lily Lake .....	<0.33	0.08	1.20	0.55	0.85	0.3	<0.1	<0.1	<0.1	<0.5
Lake Liberty .....	<0.33	0.13	1.44	0.45	4.60	0.3	<0.1	<0.1	<0.1	<0.5
Lake Nuangola .....	<0.33	0.11	1.62	0.82	3.30	0.8	<0.1	<0.1	<0.1	<0.5
Pocono Plateau:										
Bear Lake .....	0.66	0.03	0.53	0.37	0.75	0.3	<0.1	<0.1	0.3	<0.5
Indian Lake .....	0.66	0.04	0.61	0.72	1.56	0.3	<0.1	0.1	<0.1	<0.5
Mud Pond .....	0.66	0.03	0.56	0.40	0.98	0.3	<0.1	0.1	<0.1	<0.5
Artificial lakes:										
Southwest of the Susquehanna River and northwest of Wyoming Valley:										
Lake Catalpa .....	0.33	0.12	1.74	0.37	1.75	0.3	<0.1	<0.1	<0.1	<0.5
Harris Pond .....	0.66	0.11	1.26	0.90	4.20	0.4	<0.1	0.1	<0.1	<0.5
Huntsville Lake .....	<0.33	0.10	1.91	1.07	6.00	0.4	<0.1	0.2	<0.1	1.0
Lake Louise .....	<0.33	0.18	1.91	1.26	4.54	0.3	<0.1	<0.1	<0.1	<0.5
Pike's Creek Lake .....	<0.33	0.11	1.25	0.65	3.42	0.3	<0.1	0.1	<0.1	<0.5
Shady Side Lake .....	<0.33	0.18	1.67	0.60	4.02	0.3	<0.1	0.1	<0.1	<0.5
Southeast of Penobscot Mountain:										
Blytheburn Lake .....	<0.33	0.09	2.14	0.80	3.54	0.3	<0.1	<0.1	<0.1	0.5
Fenners Pond .....	<0.33	0.07	1.26	0.50	2.14	0.3	<0.1	0.1	<0.1	0.5
Valley between Wilkes-Barre Mountain and Penobscot Mountain:										
Fairchilds Pond .....	0.33	0.20	2.01	0.70	7.44	0.4	<0.1	<0.1	<0.1	0.5
Pocono Plateau:										
Bear Creek Lake .....	<0.33	0.04	0.98	0.42	6.84	0.3	<0.1	<0.1	0.2	0.5
Meadow Run Lake .....	0.66	0.02	0.65	0.42	0.45	0.3	<0.1	0.1	0.2	0.5
Mountain Lake .....	<0.33	0.02	0.60	0.37	0.85	0.3	<0.1	0.1	0.2	0.5
Penn Lake .....	<0.33	0.05	1.03	0.67	18.00	0.3	<0.1	<0.1	0.2	0.5

$\frac{1}{2}$  In parts per million or milligrams per liter.

**BEAR LAKE**



SCALE  
EACH INTERVAL EQUALS ONE HUNDRED FEET

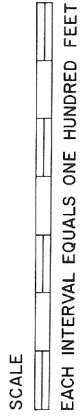
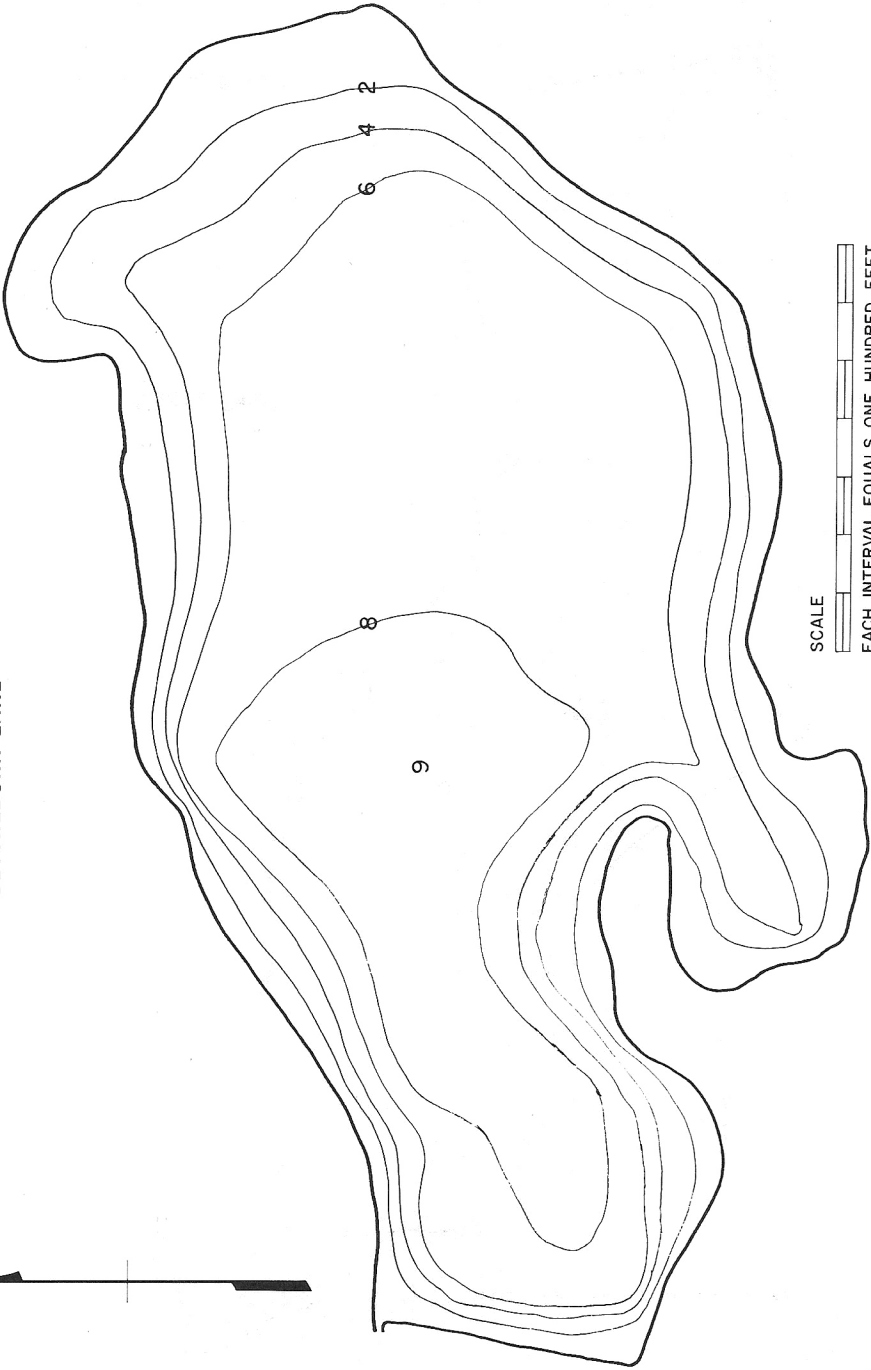
**BEAR CREEK LAKE**



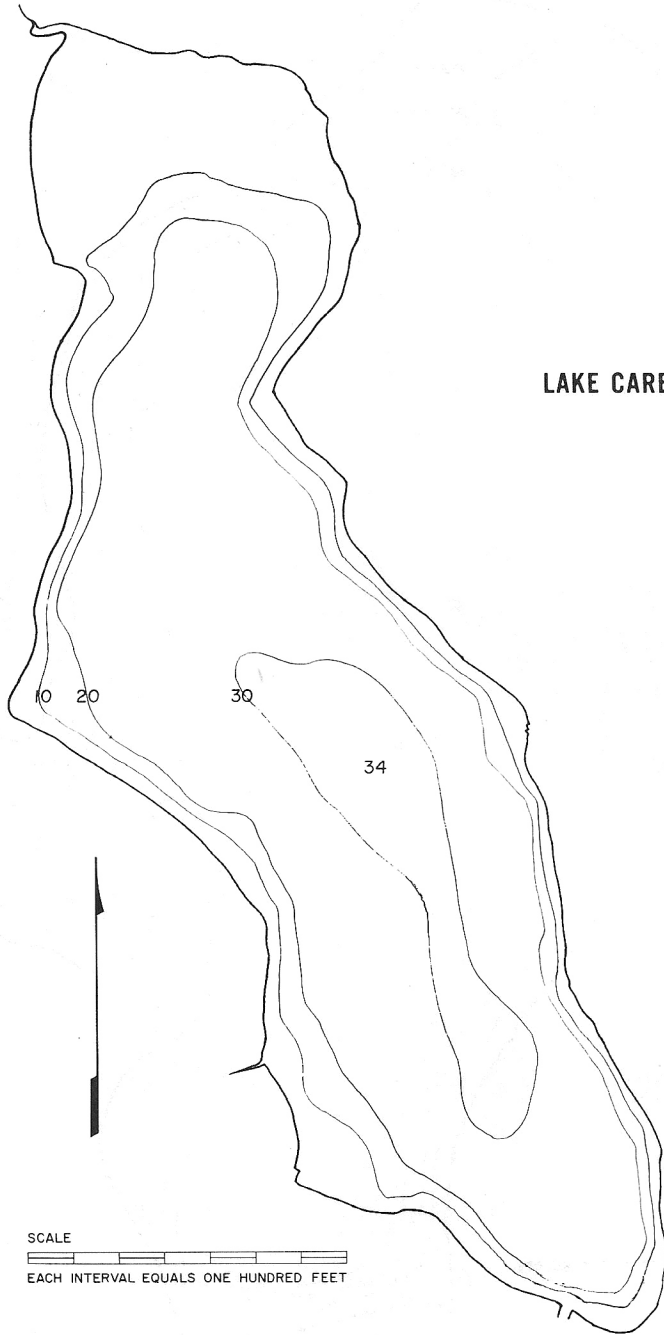
# BEHRENS POND



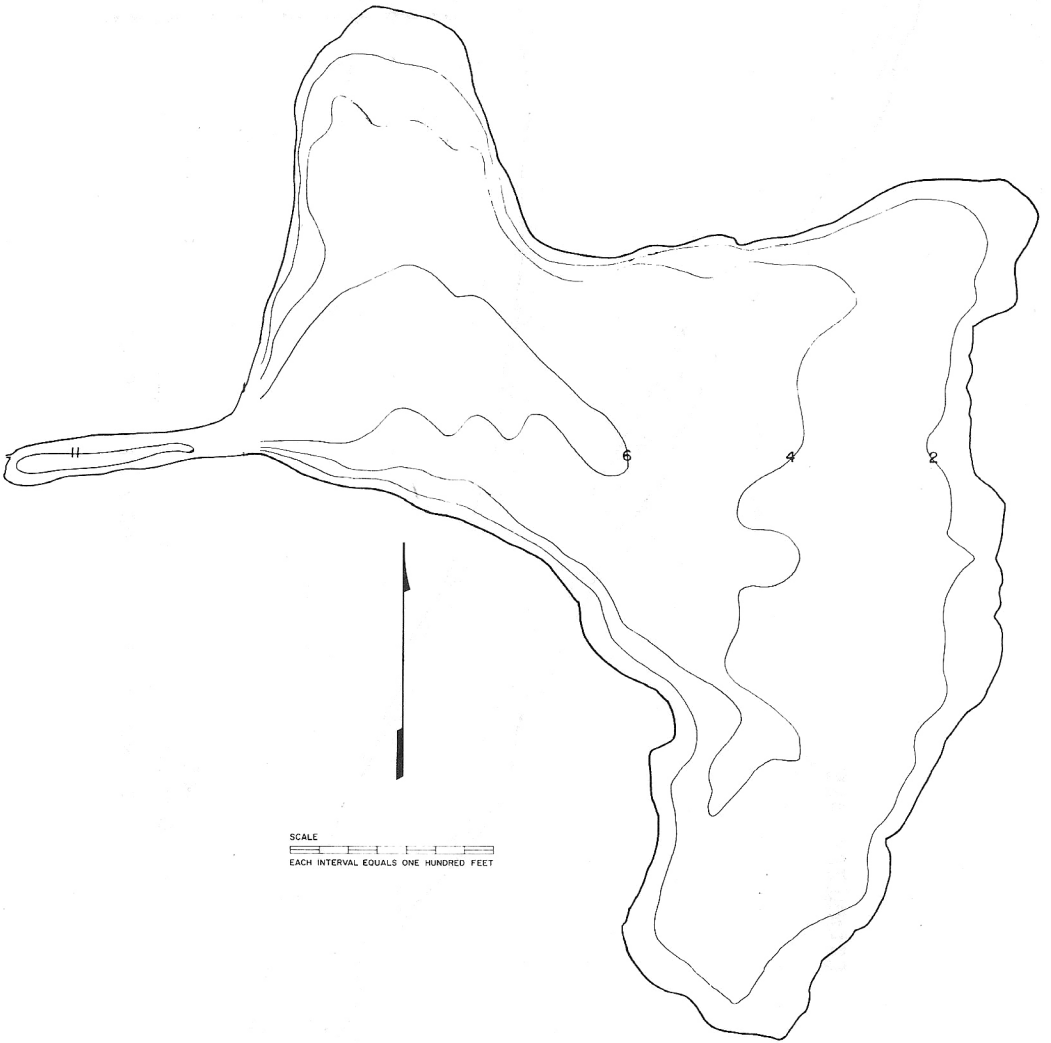
**BLYTHEBURN LAKE**



**LAKE CAREY**

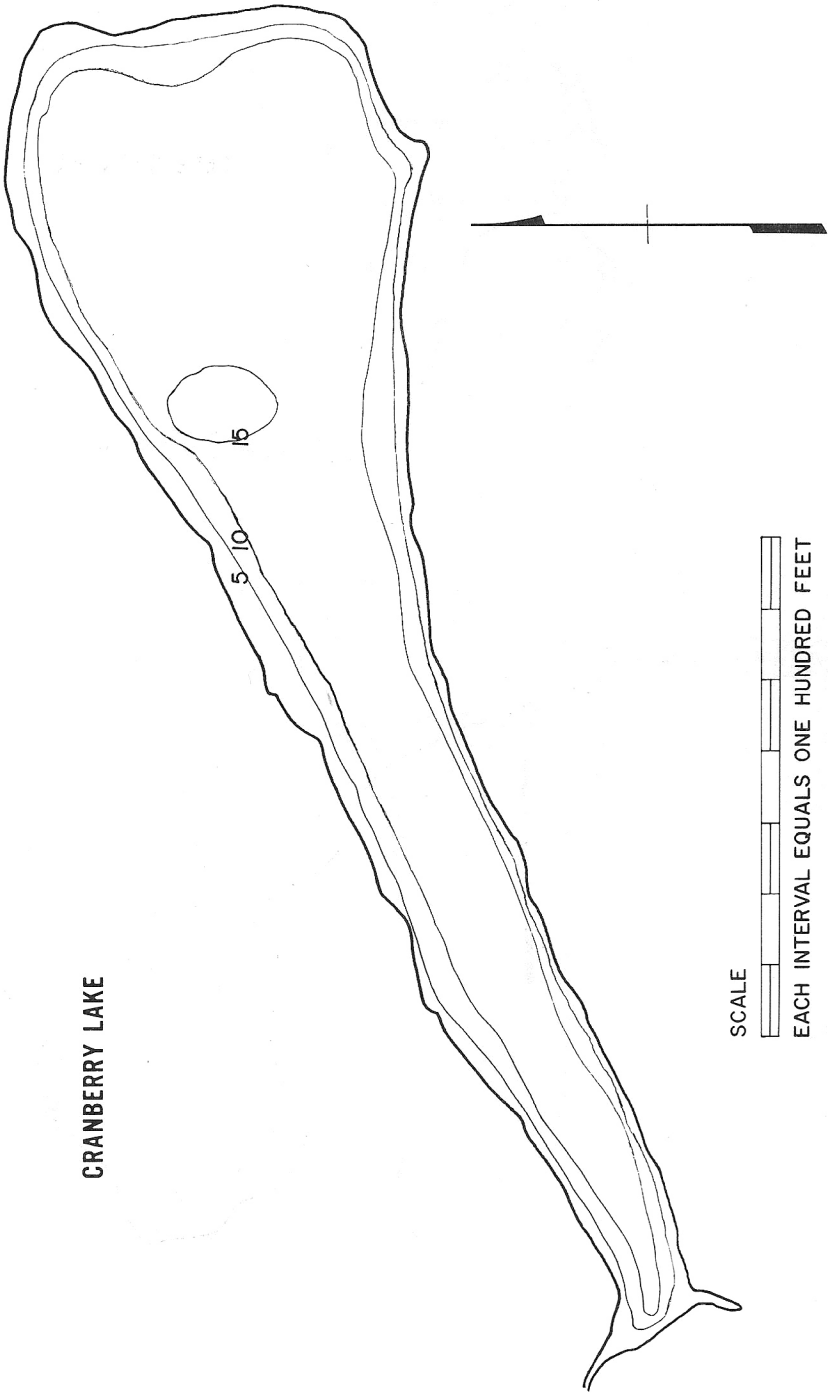


# LAKE CATALPA

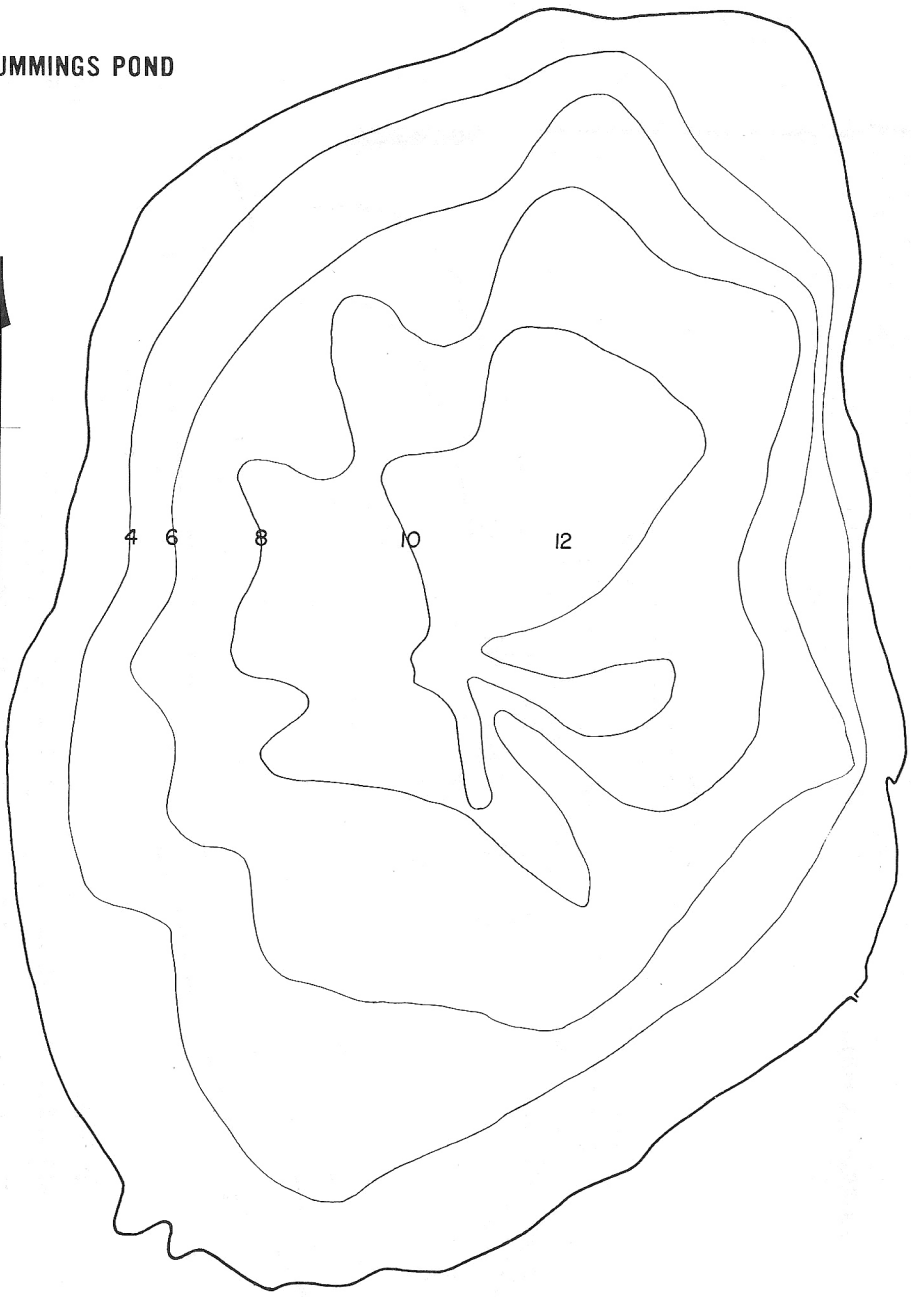




CRANBERRY LAKE



CUMMINGS POND

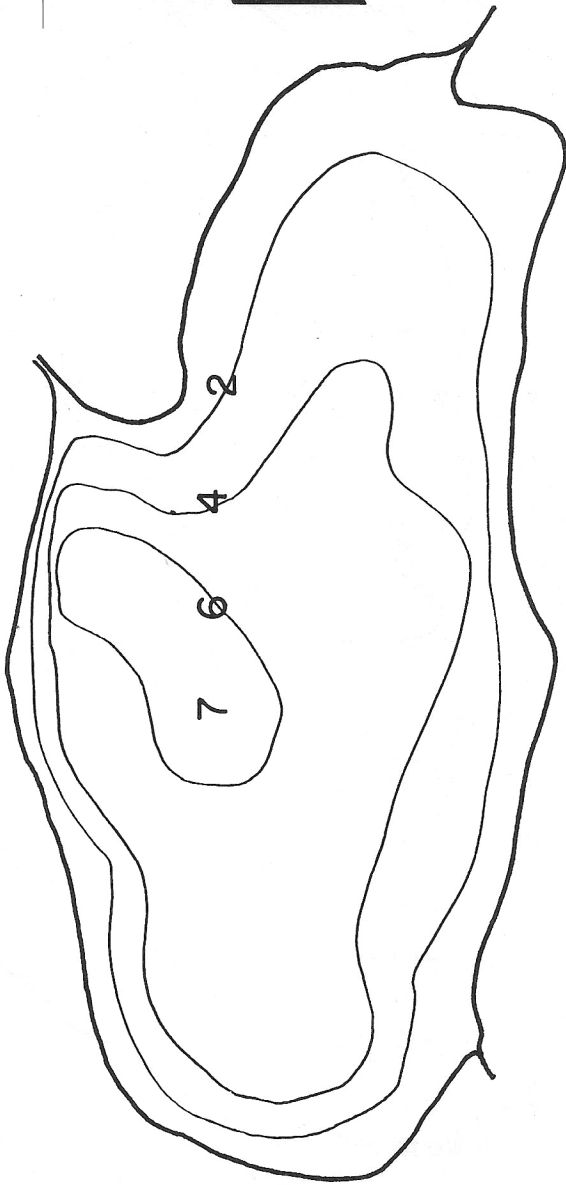


SCALE



EACH INTERVAL EQUALS ONE HUNDRED FEET

FAIRCHILD'S POND

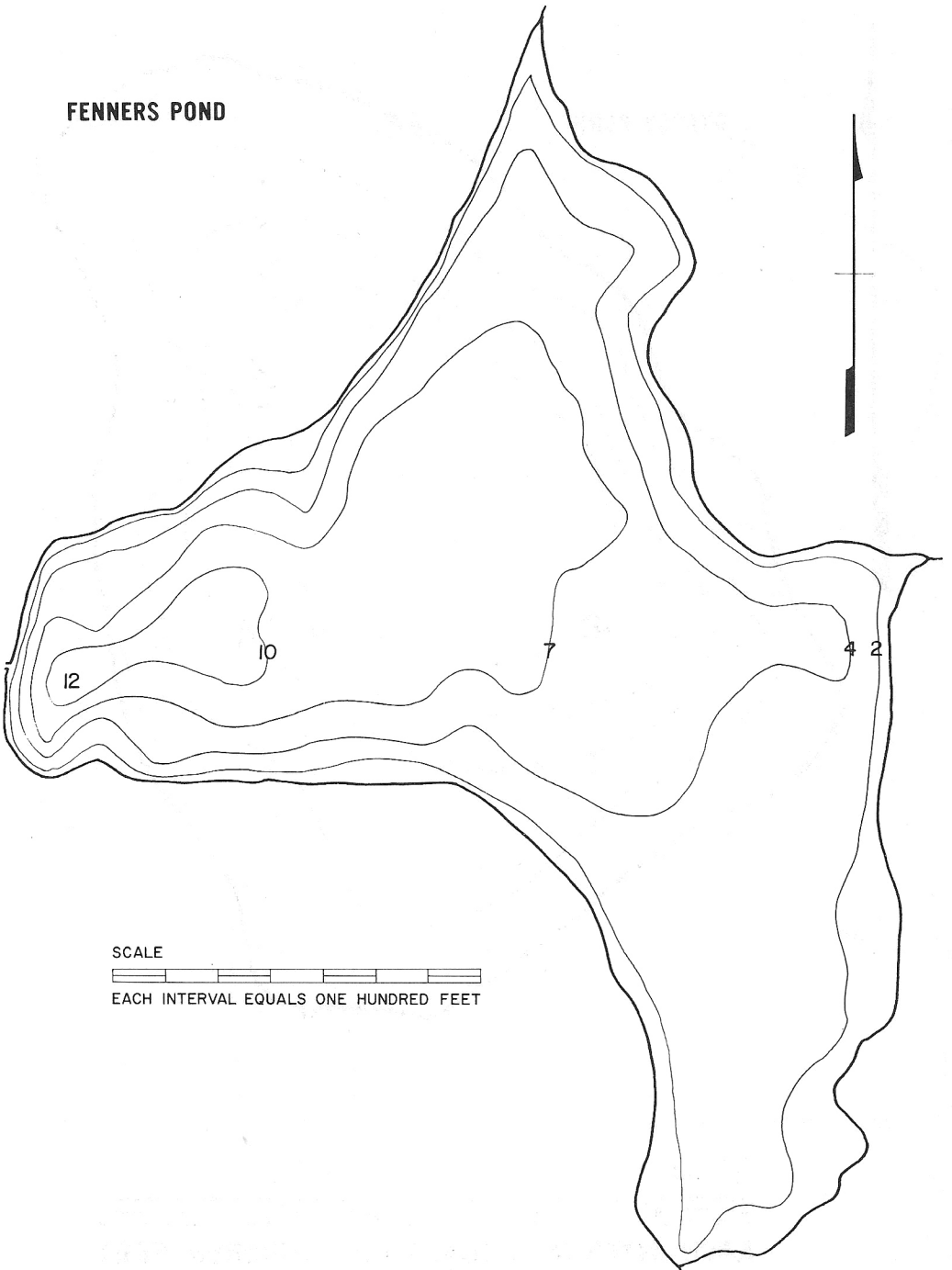


SCALE

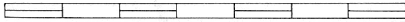


EACH INTERVAL EQUALS ONE HUNDRED FEET

**FENNERS POND**

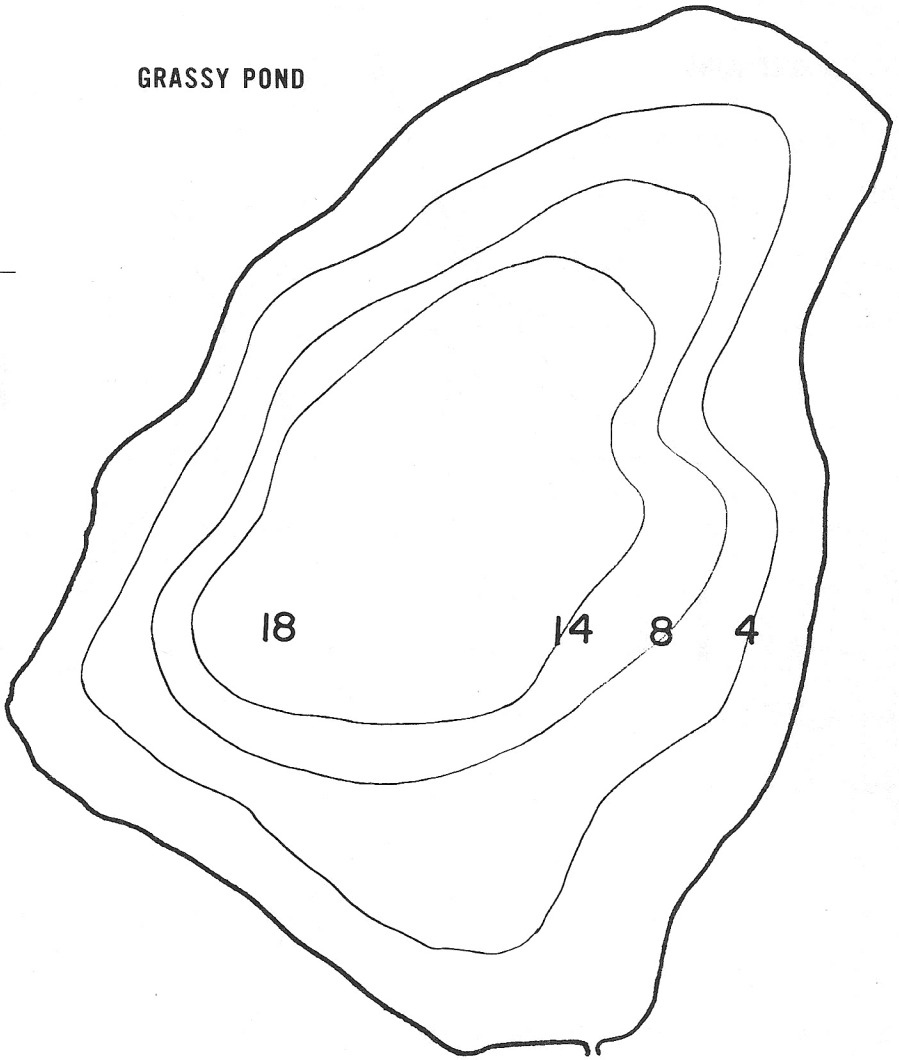


SCALE

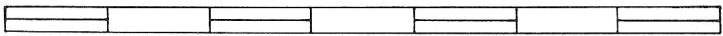


EACH INTERVAL EQUALS ONE HUNDRED FEET

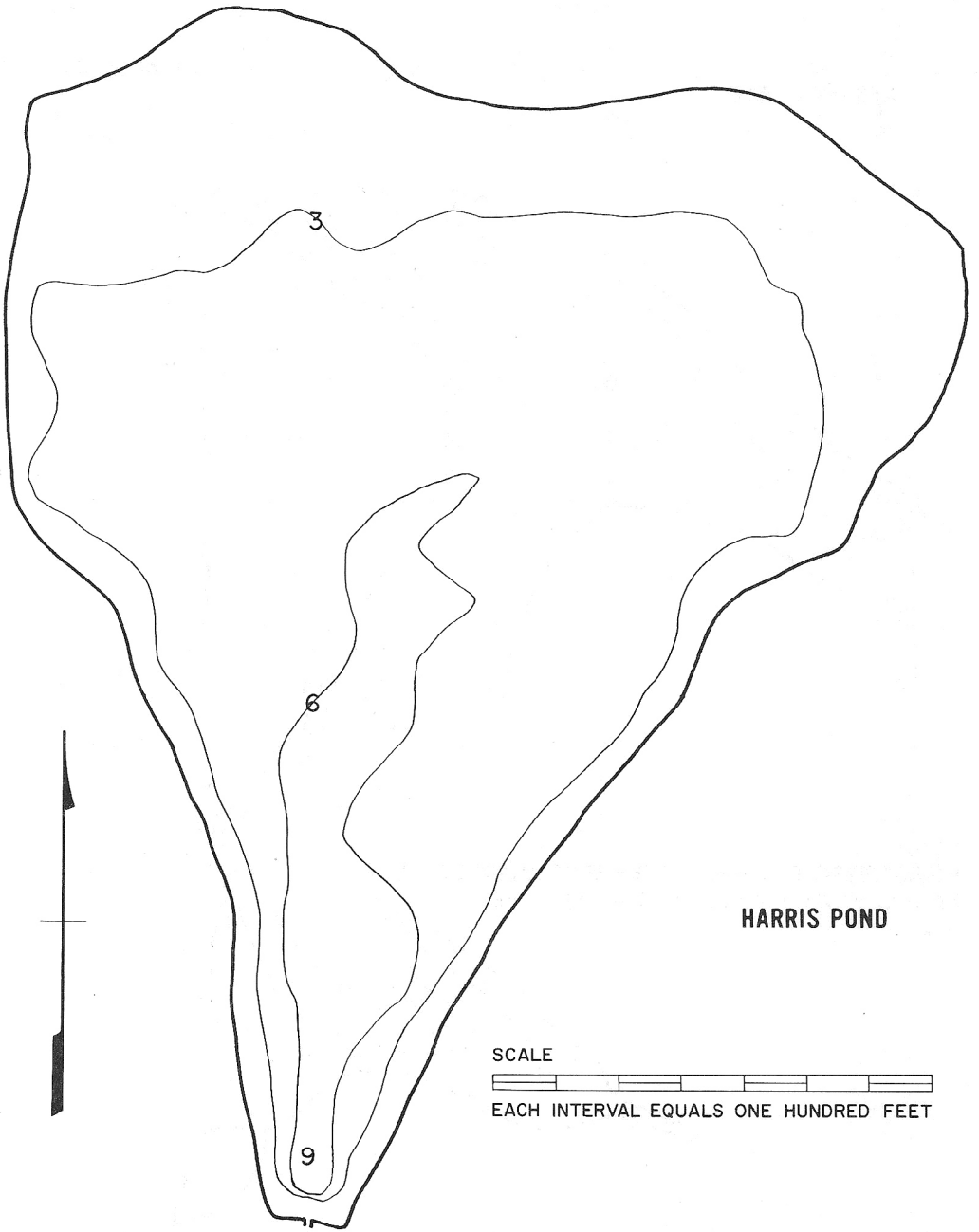
GRASSY POND



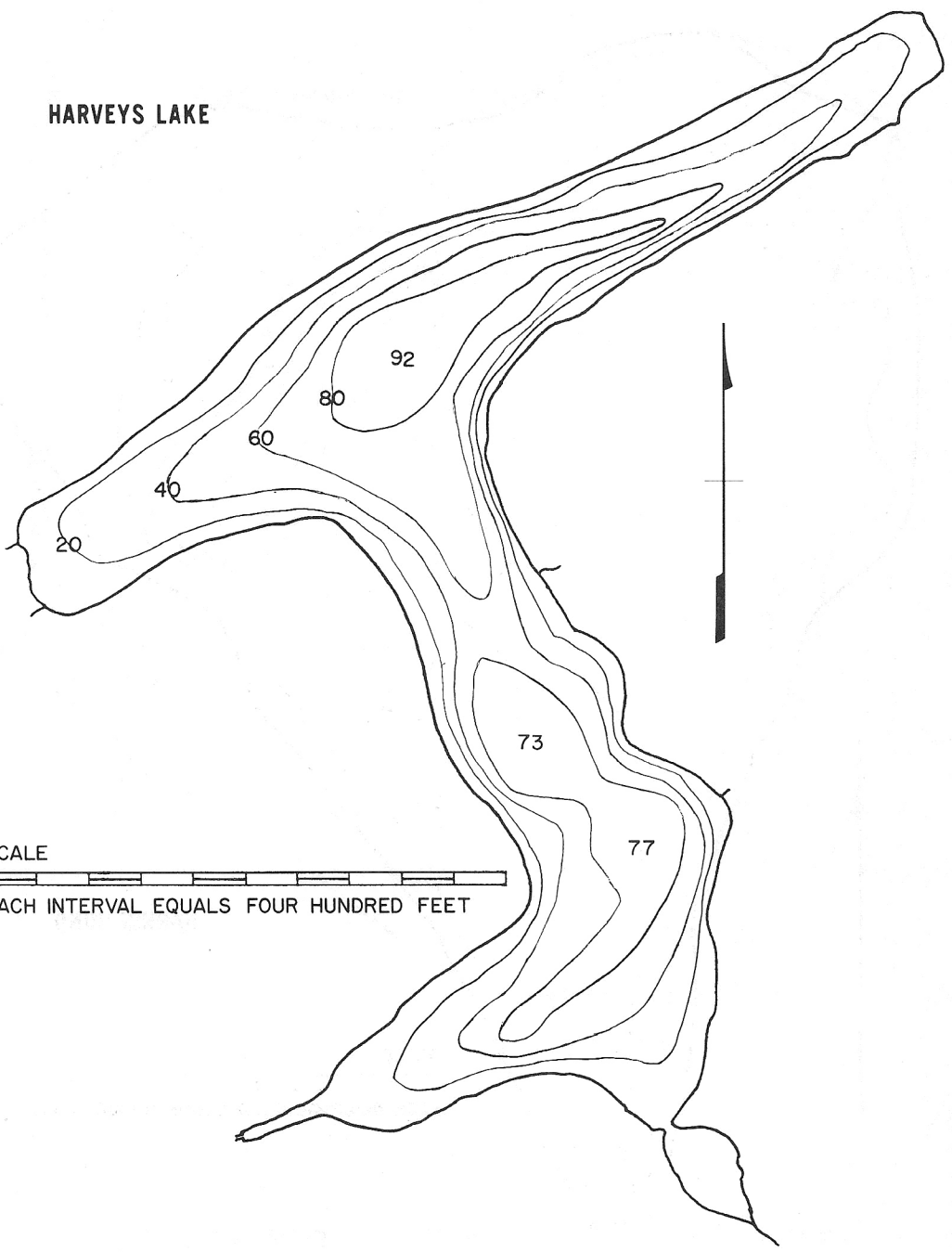
SCALE



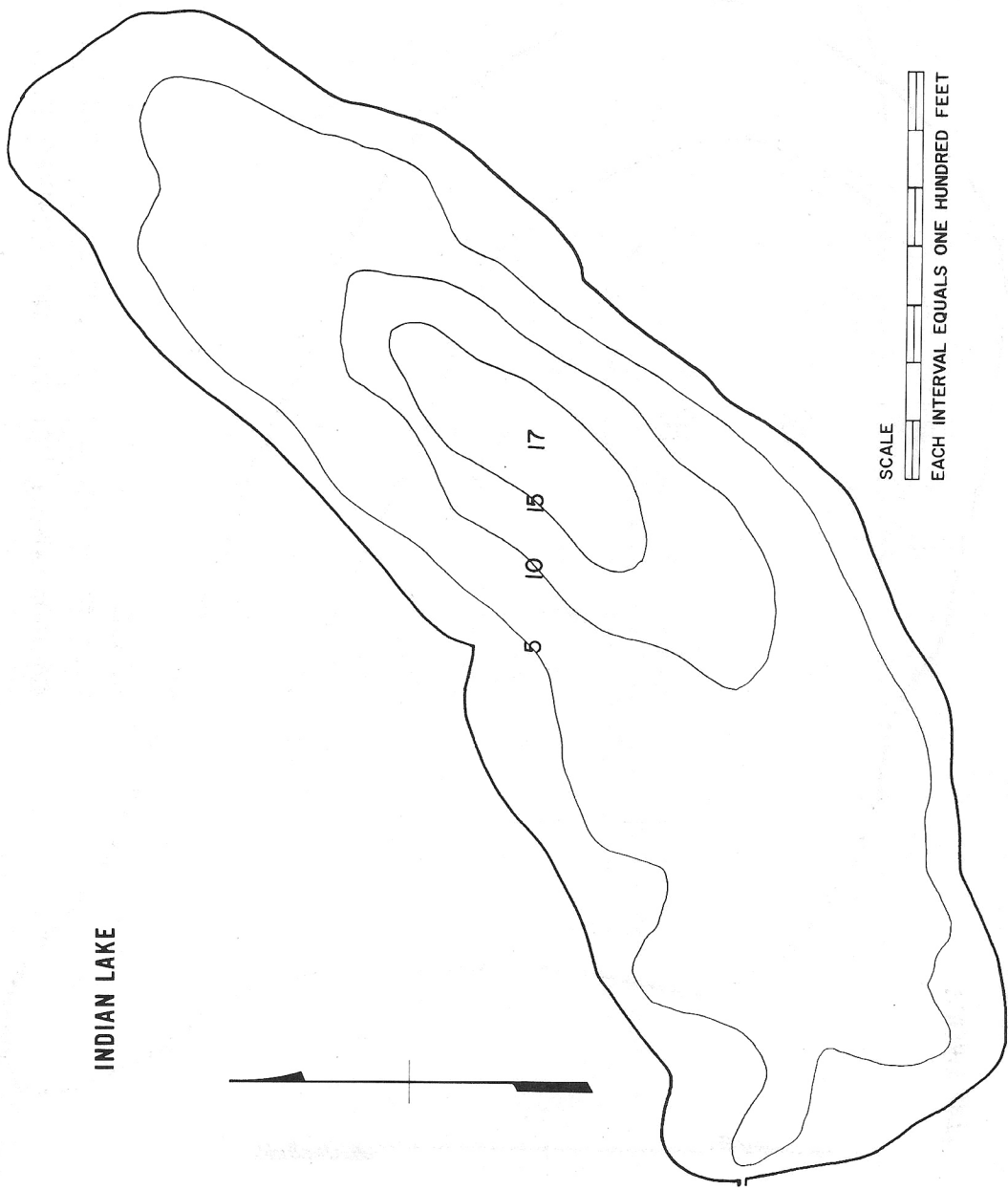
EACH INTERVAL EQUALS ONE HUNDRED FEET



HARVEYS LAKE

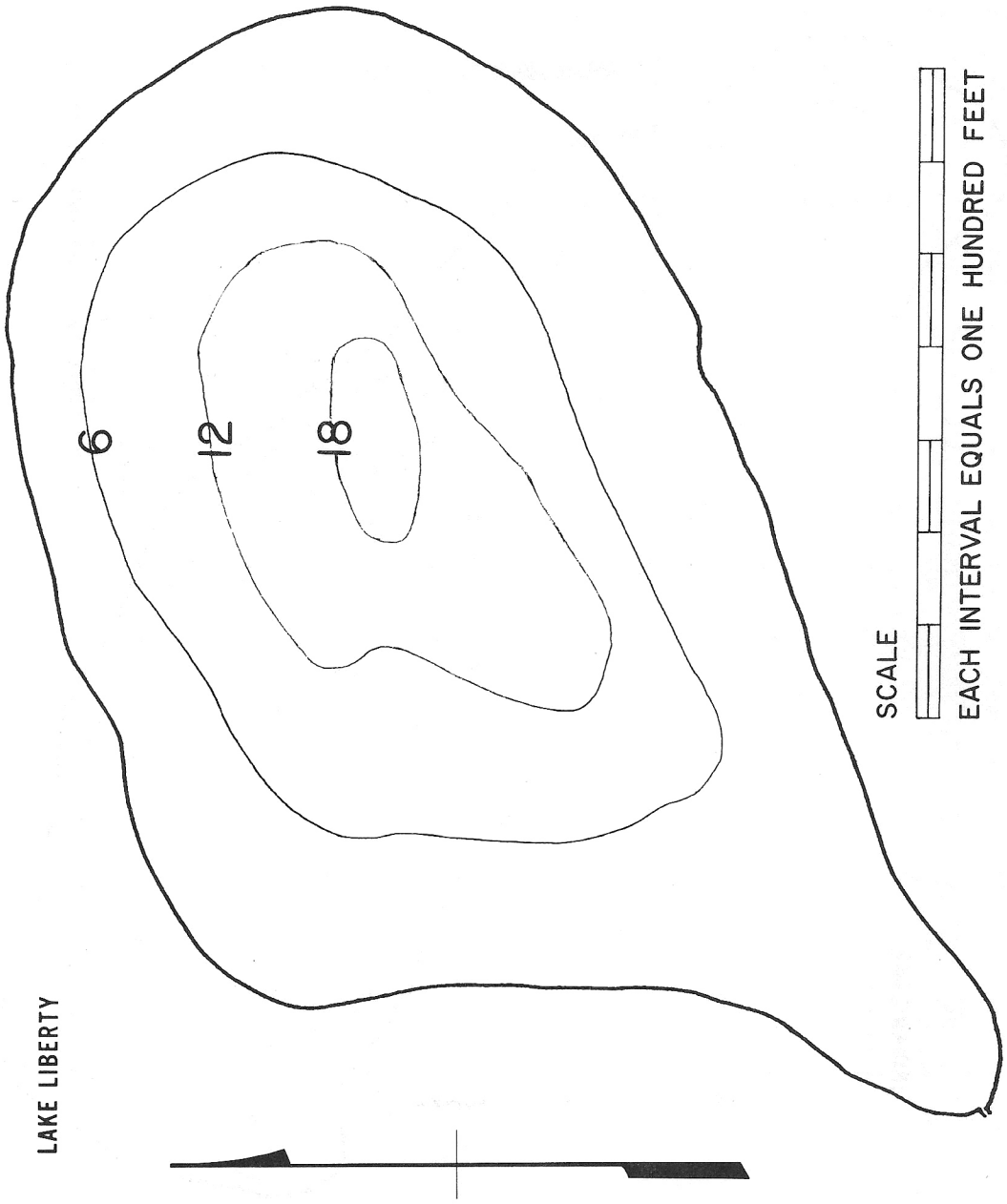


**INDIAN LAKE**

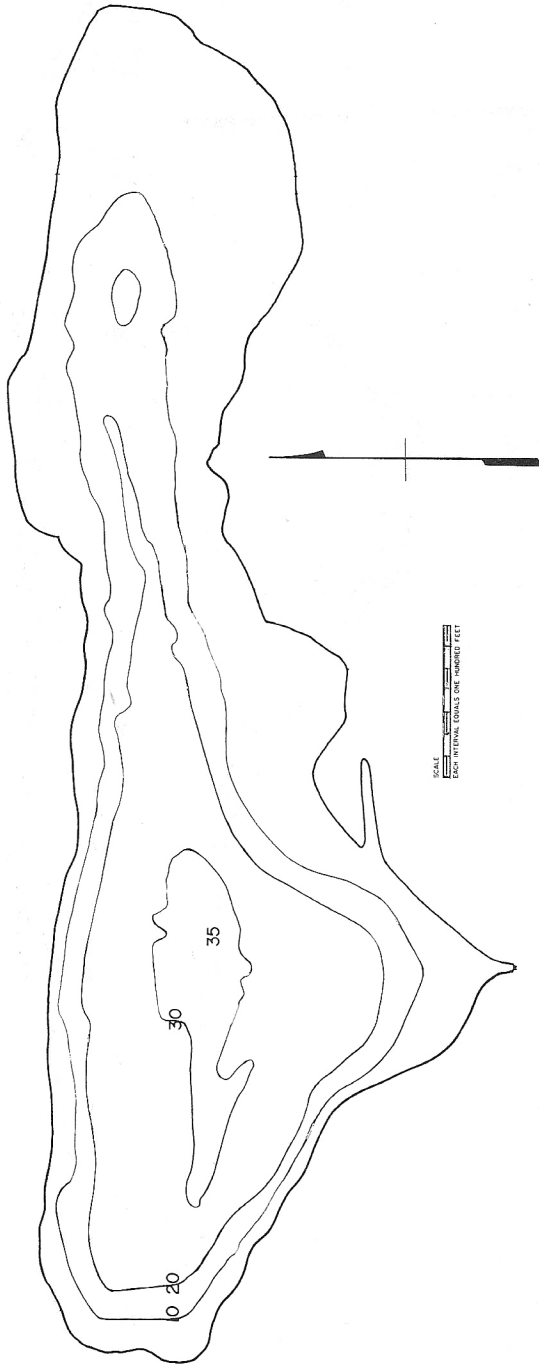




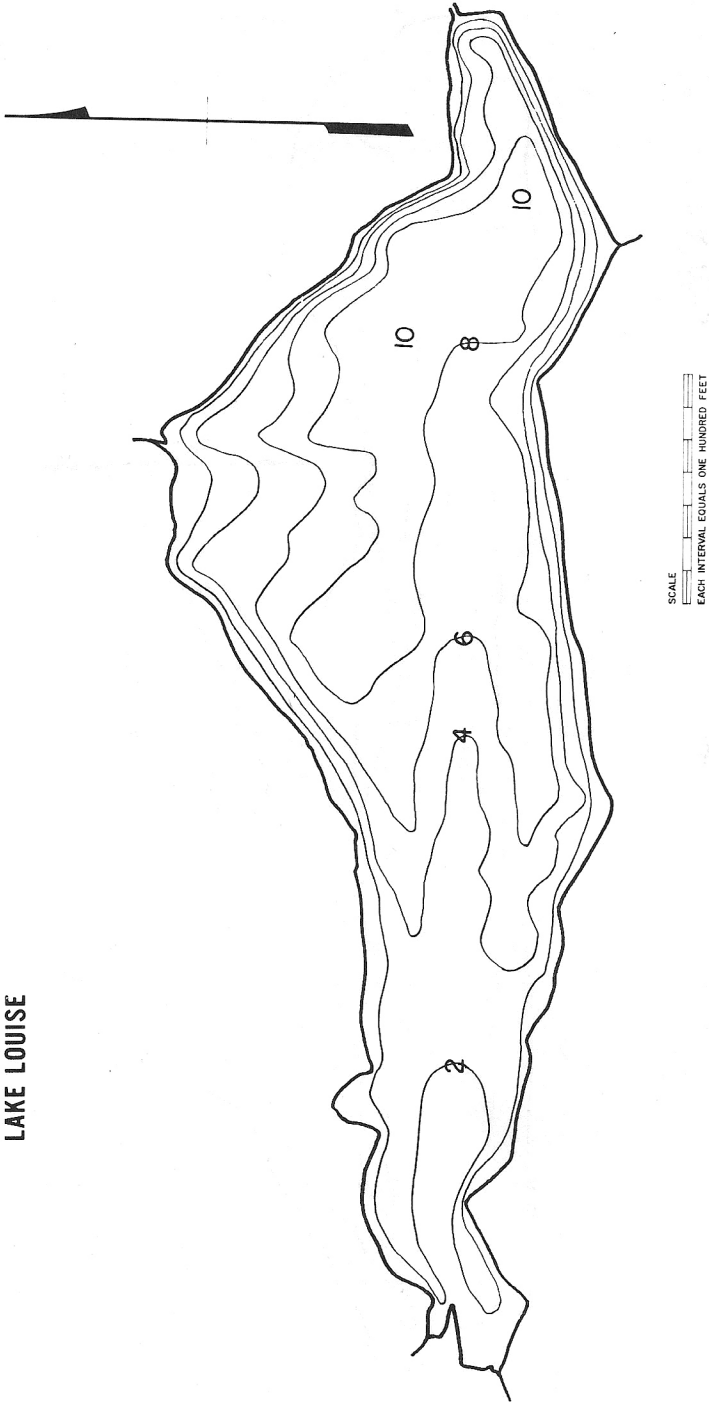
LAKE LIBERTY



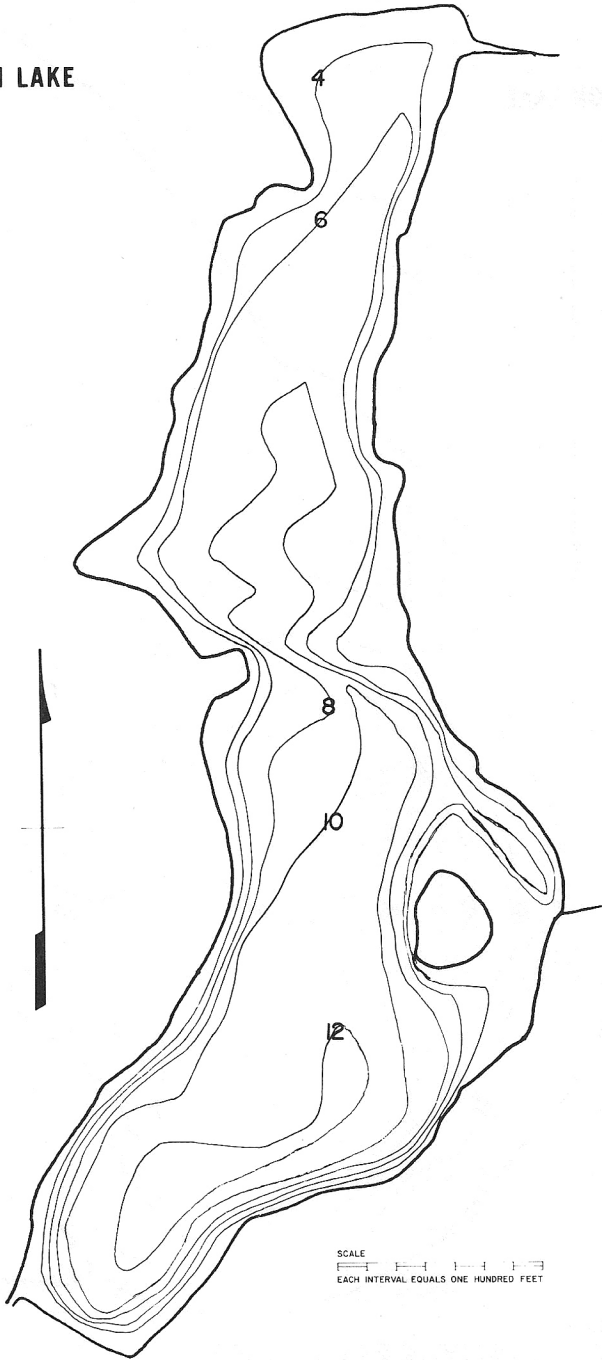
LILY LAKE



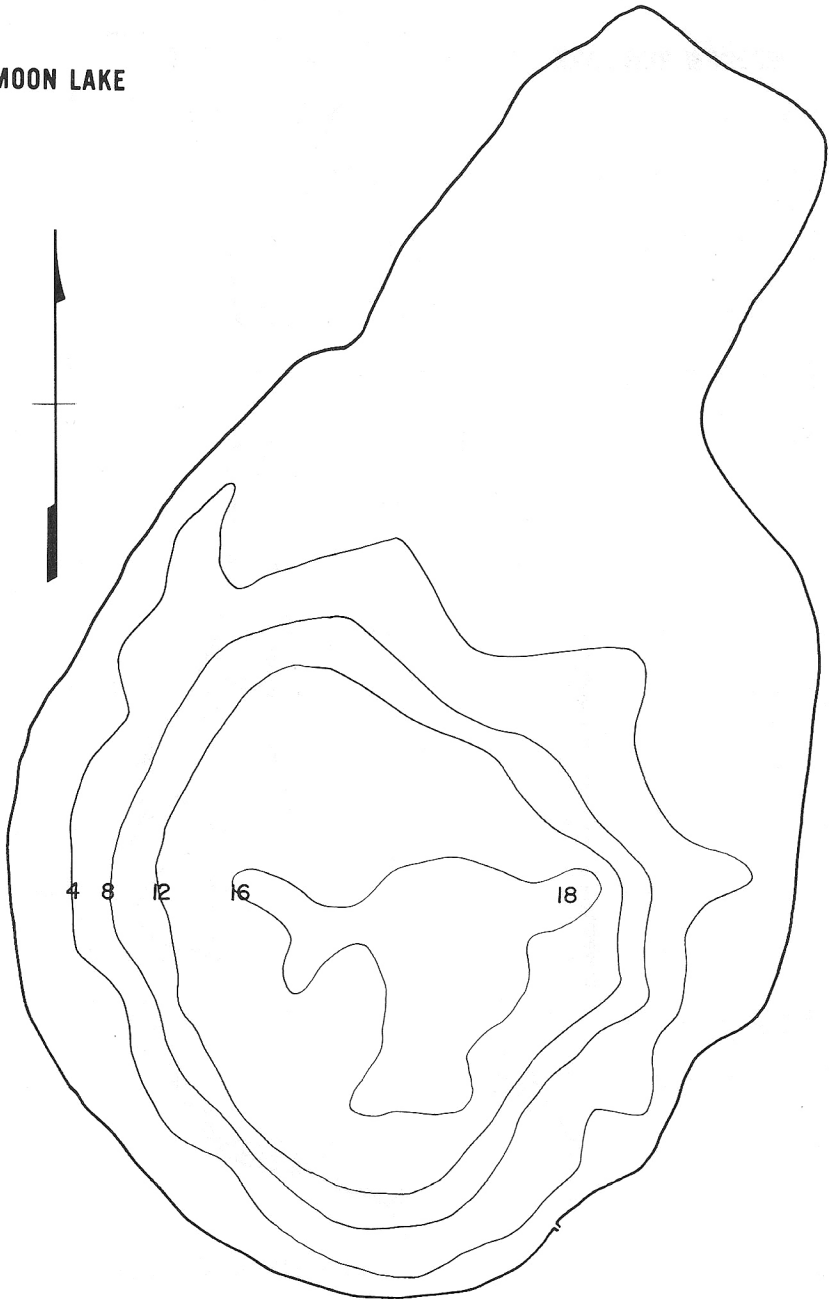
LAKE LOUISE



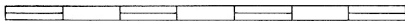
**MEADOW RUN LAKE**



# MOON LAKE

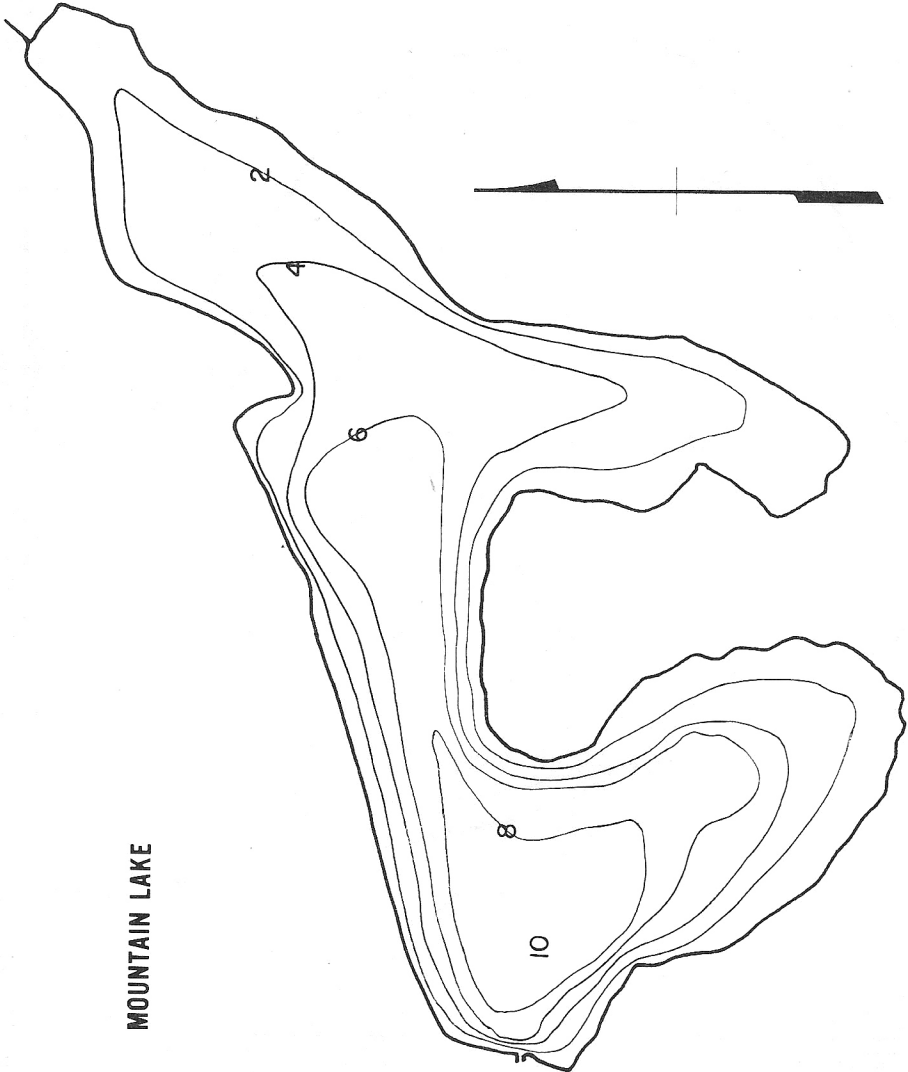


SCALE

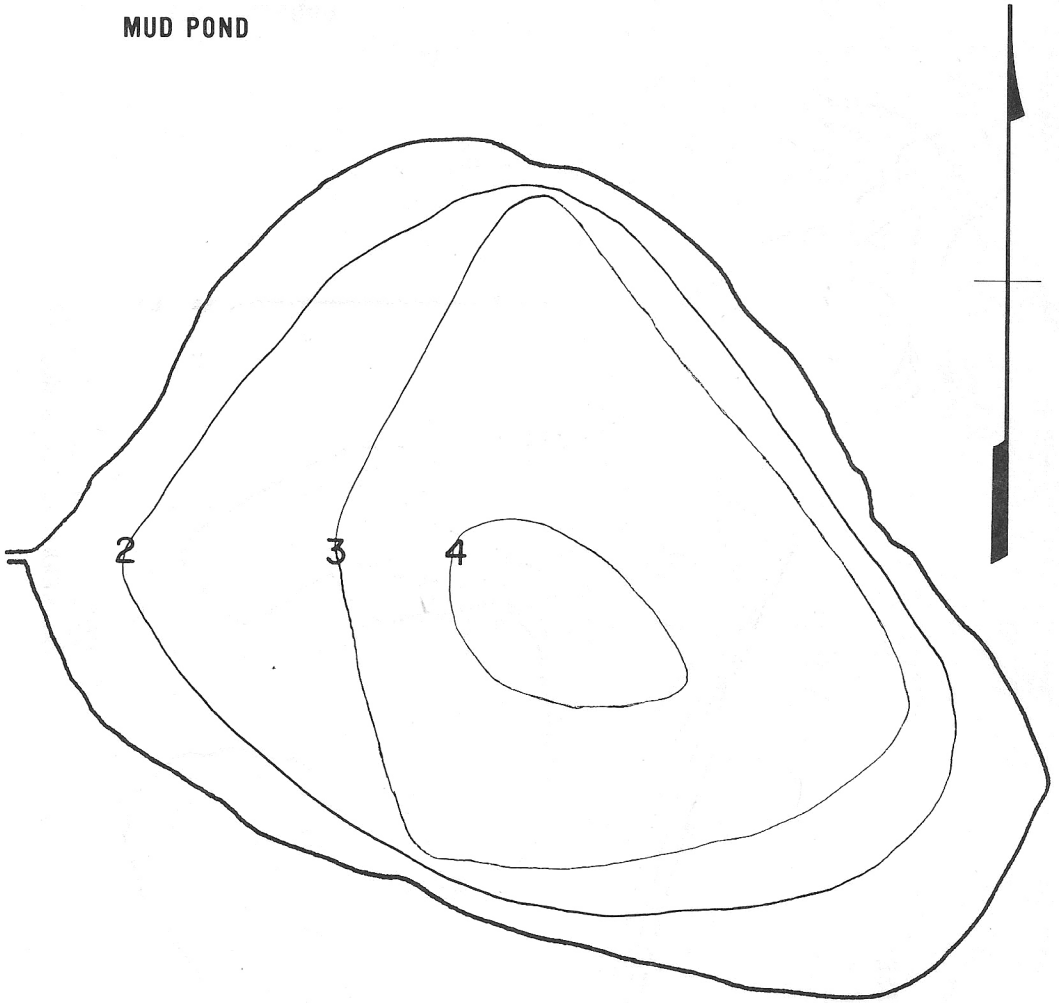


EACH INTERVAL EQUALS ONE HUNDRED FEET

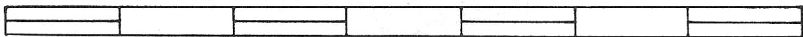
**MOUNTAIN LAKE**



MUD POND

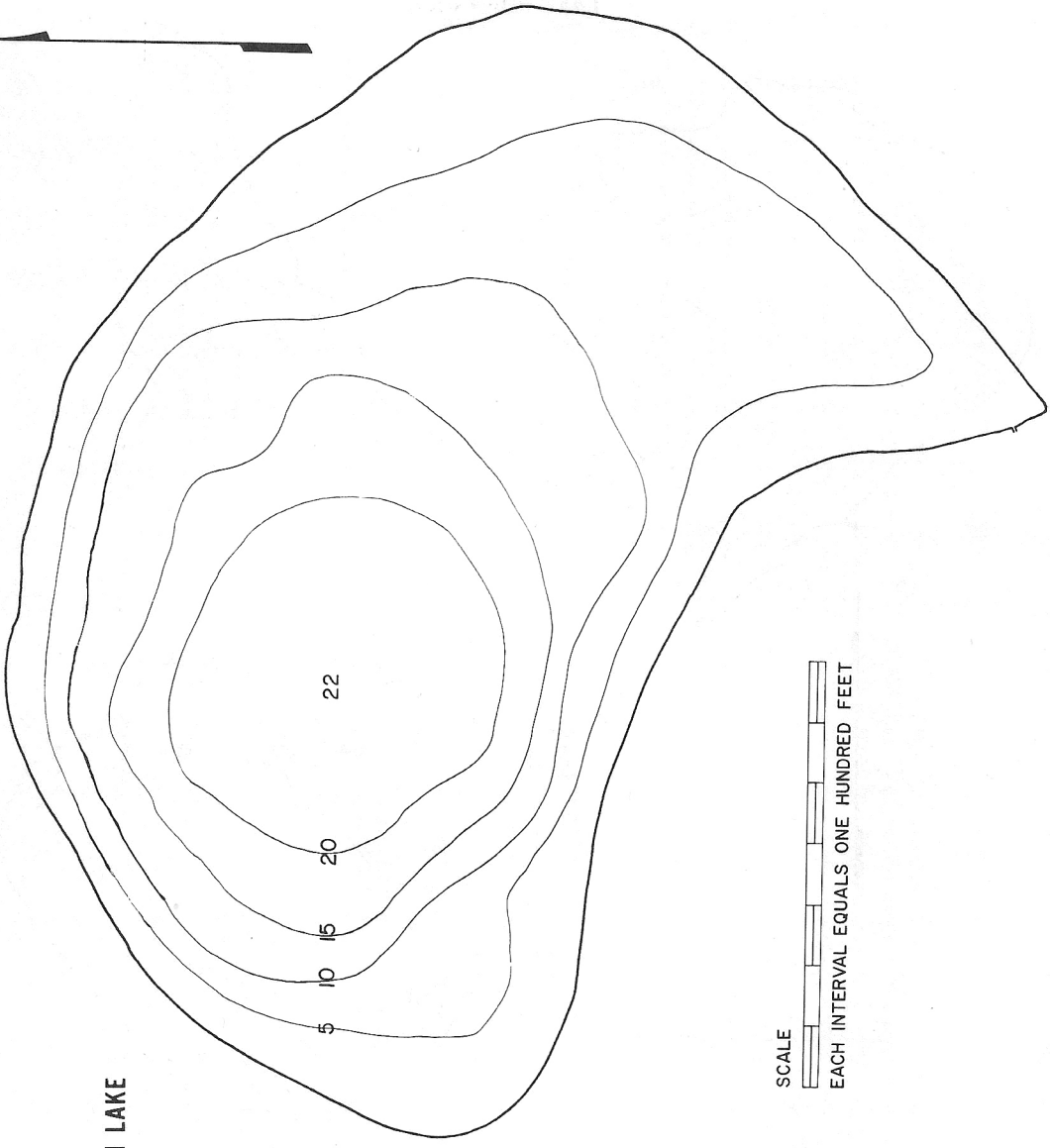


SCALE



EACH INTERVAL EQUALS ONE HUNDRED FEET

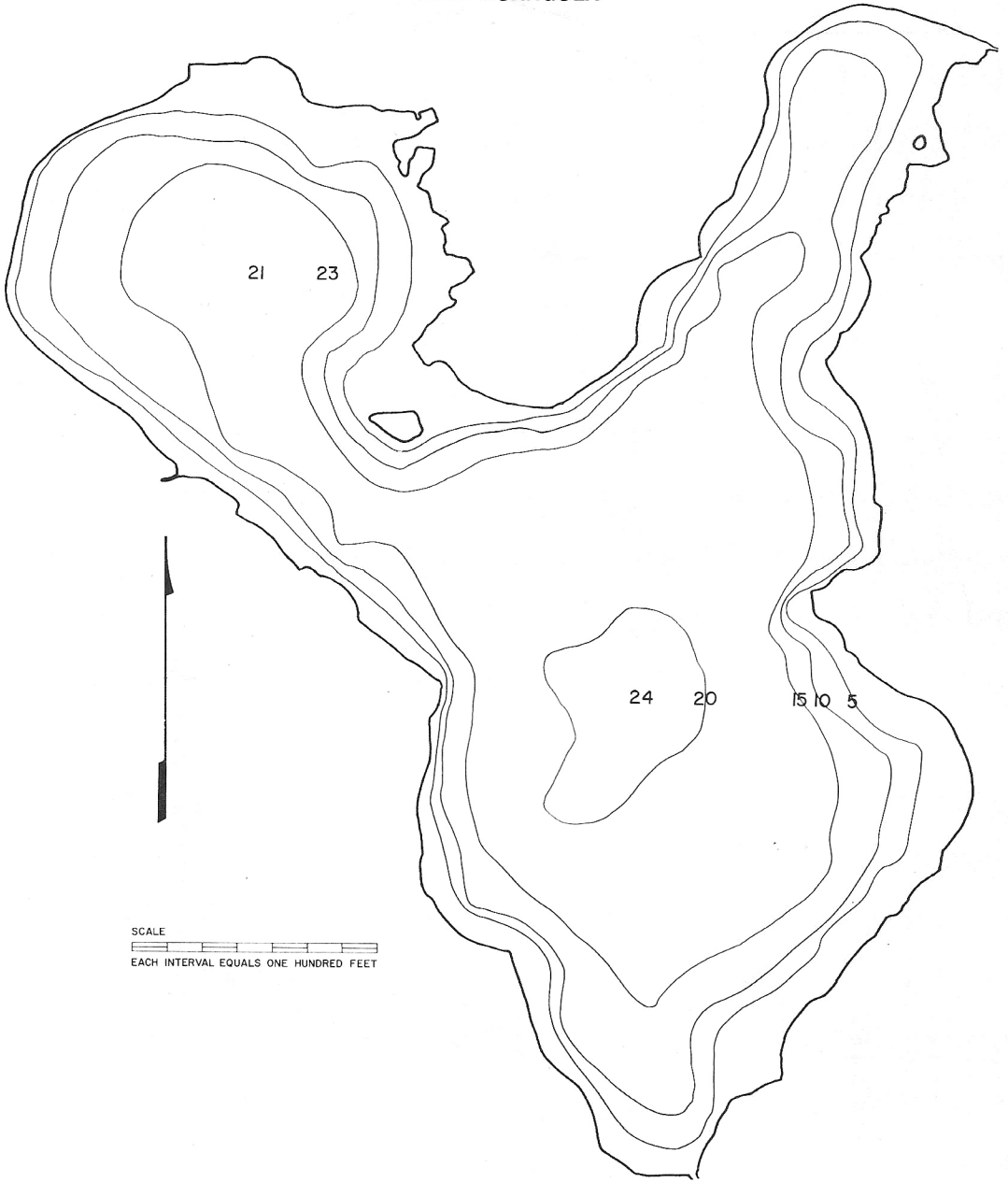
**NORTH LAKE**



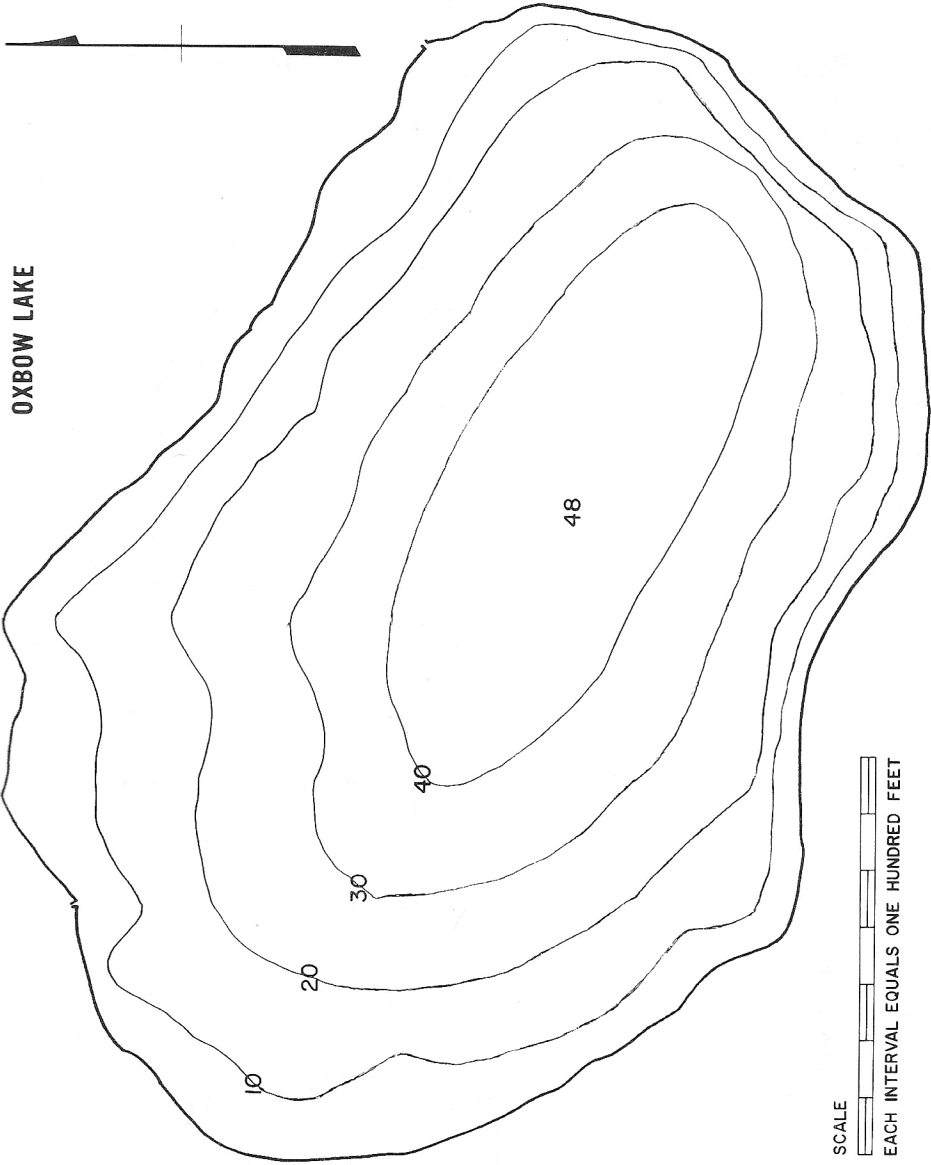
SCALE  
EACH INTERVAL EQUALS ONE HUNDRED FEET



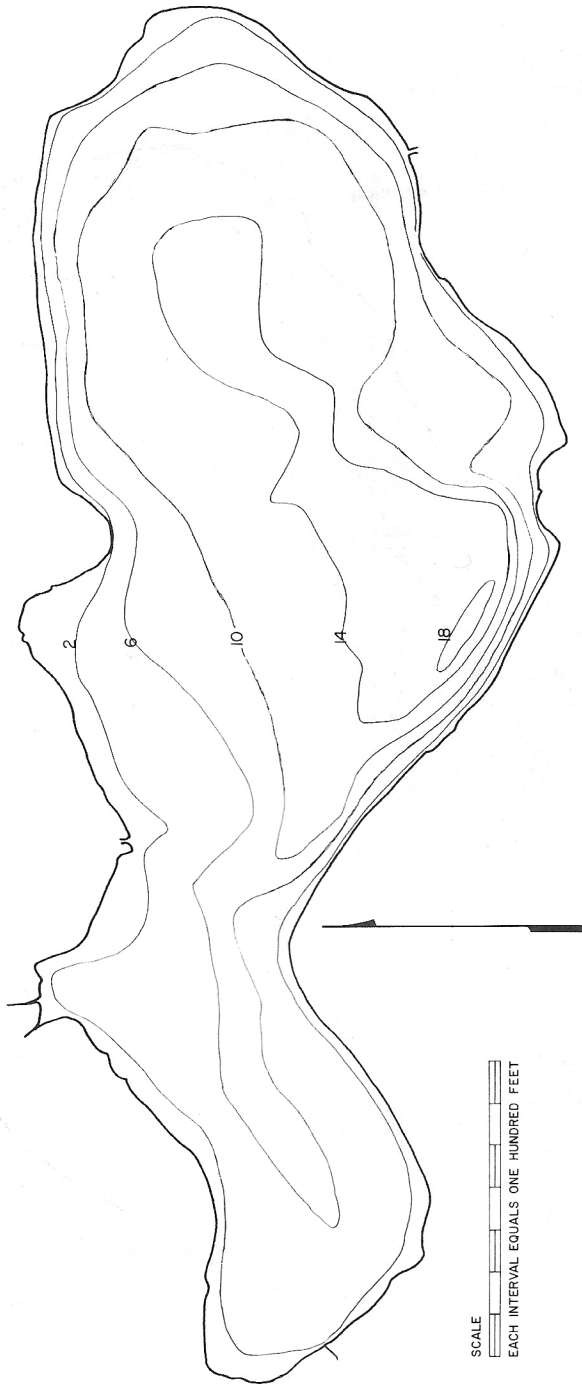
# LAKE NUANGOLA



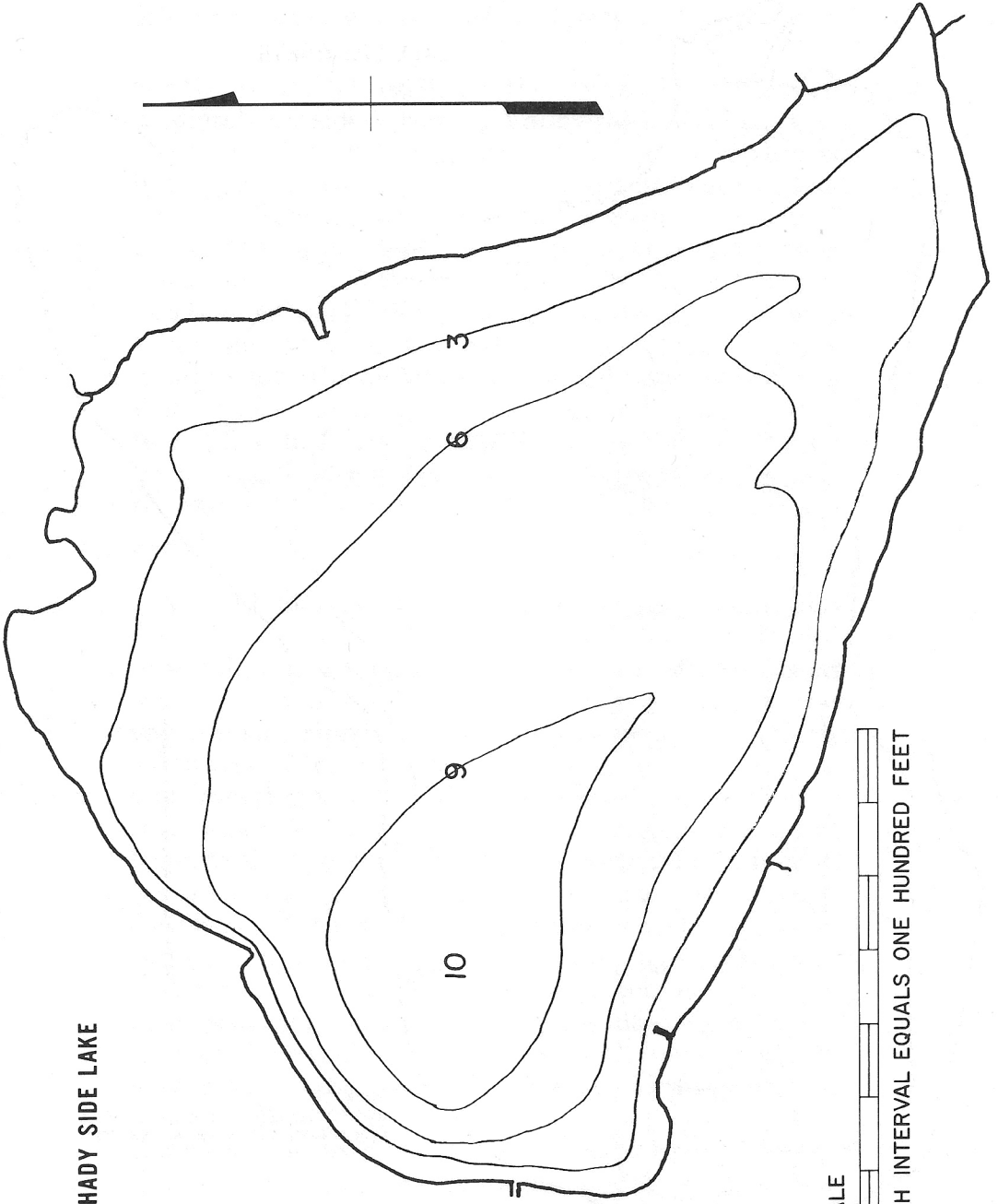
**OXBOW LAKE**



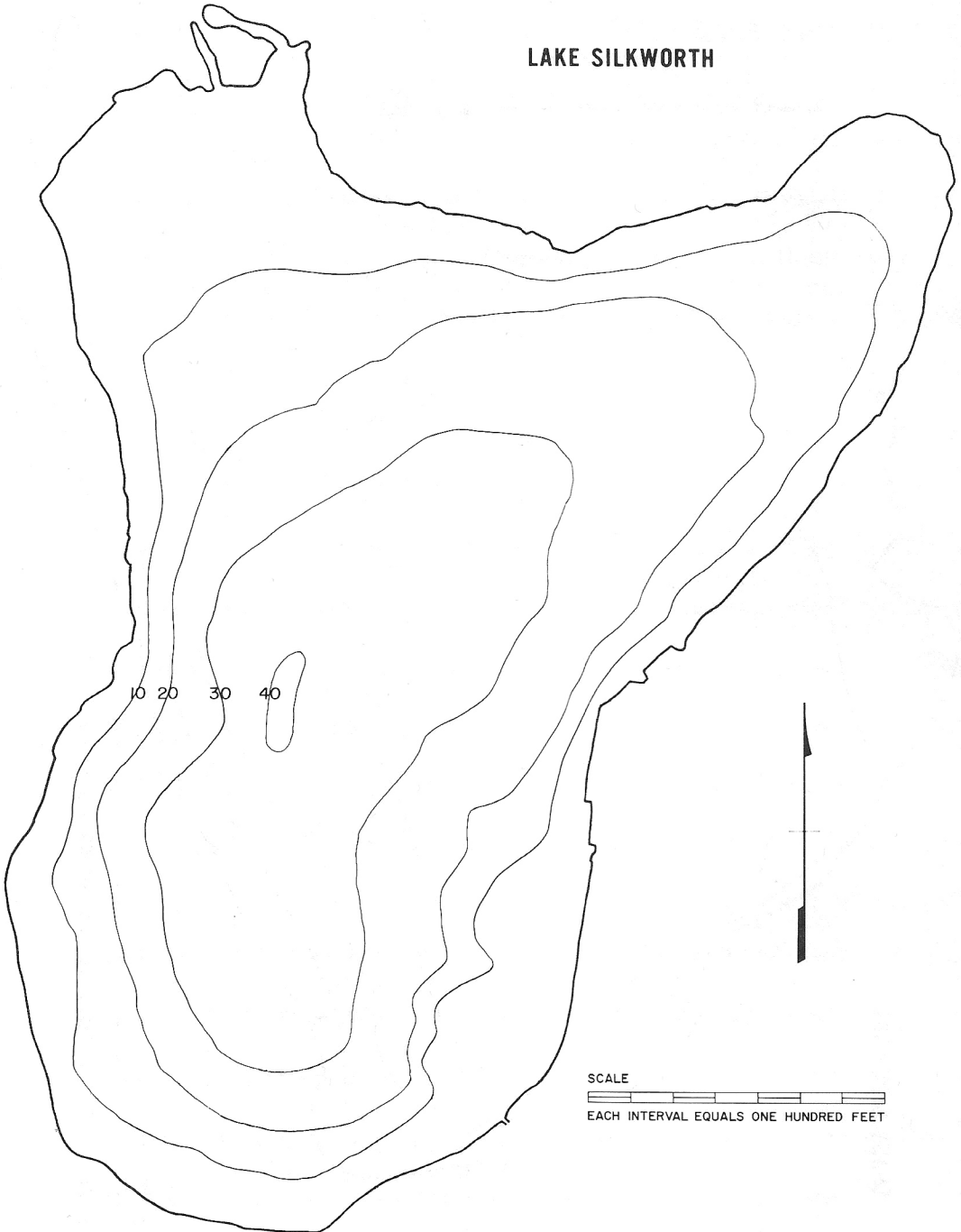
**PENN LAKE**



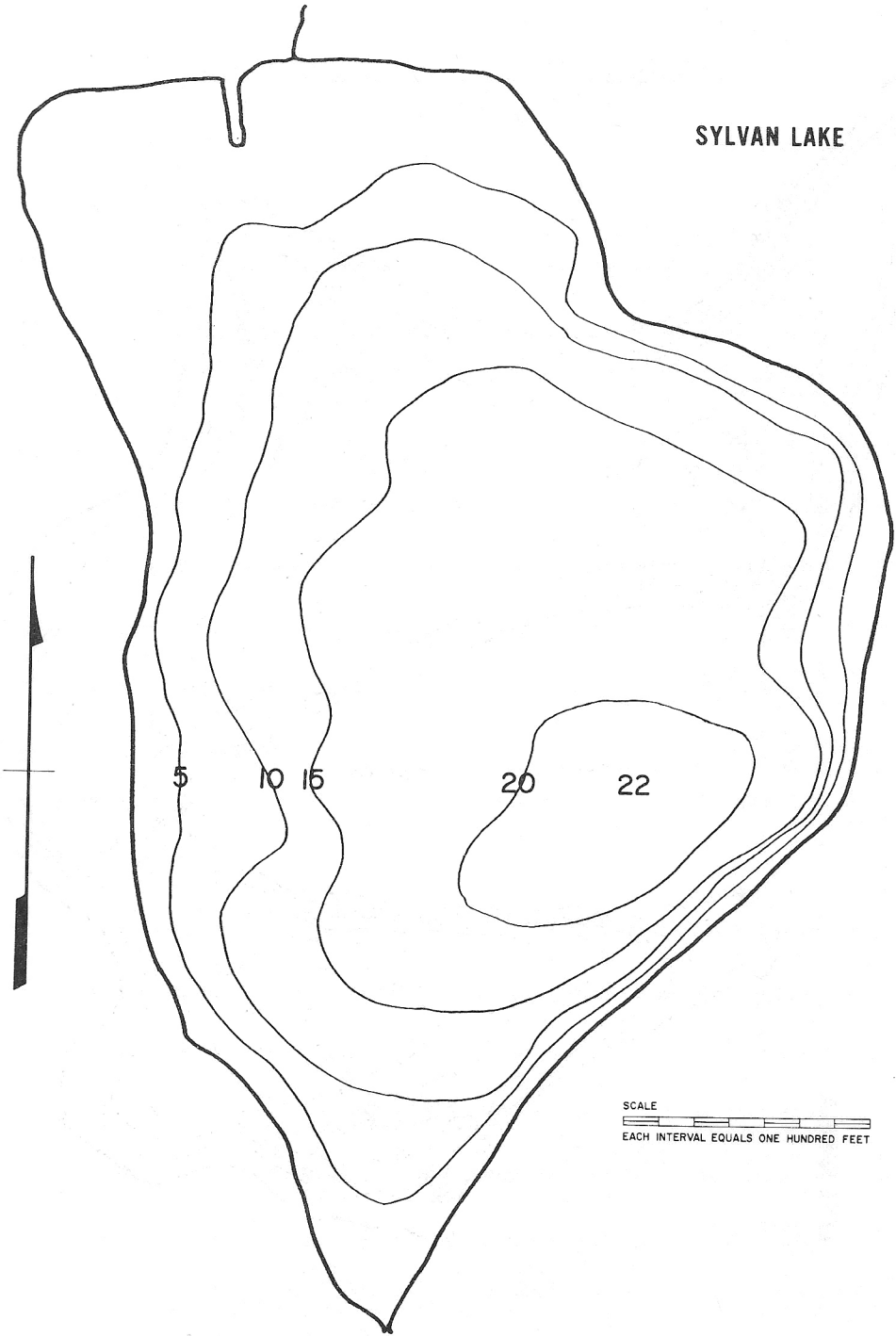
SHADY SIDE LAKE



# LAKE SILKWORTH



**SYLVAN LAKE**



SCALE  
EACH INTERVAL EQUALS ONE HUNDRED FEET

**LAKE WINOLA**

