Lake Use Report No. FX-39

LULU LAKE

WALWORTH COUNTY WISCONSIN

Department of Natural Resources
Madison, Wisconsin

1969

LULU LAKE
Walworth County

An Inventory With Planning Recommendations

This report is a product of the lake and stream classification activity pursued in accordance with Section 23.09 (7)(m), Wisconsin Statutes, and preparation of this report was financed in part through a planning grant to the Southeastern Wisconsin Regional Planning Commission from the U. S. Department of Housing and Urban Development under the provisions of Section 701 of the Housing Act of 1954 as amended.

Lake Use Report No. FX-39

Prepared by
Wisconsin Department of Natural Resources

For the

Southeastern Wisconsin Regional Planning Commission

1969

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(This report is No. 22 in the Department of Natural Resources series of Lake Use Reports.)

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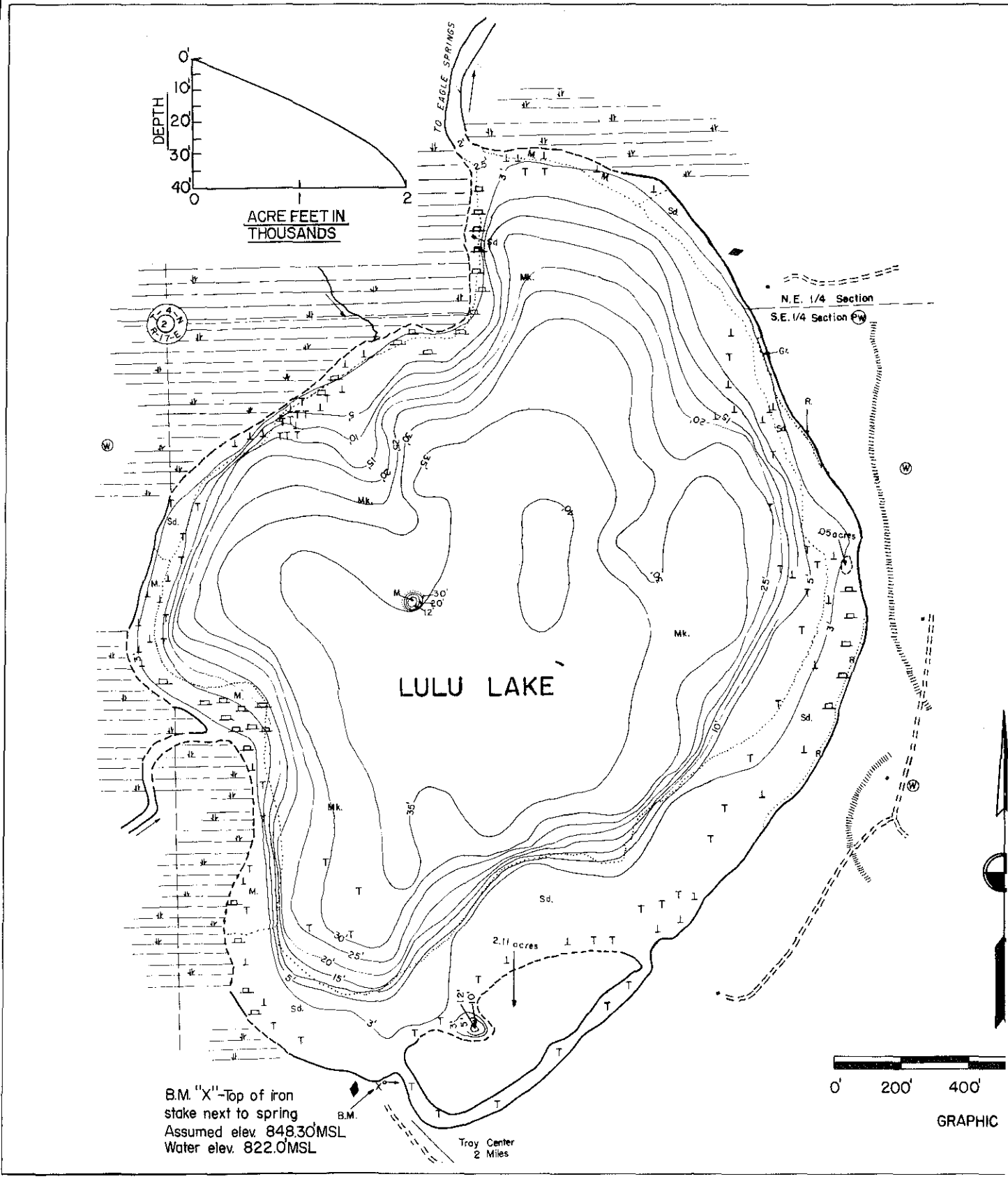


MAP 1

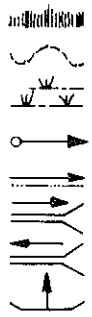
HYDRO(

LULU LAKE, WALW(

LEGEND

TOPOGRAPHIC SYMBOLS

B	BRUSH
PW	PARTIALLY WOODED
W	WOODED
C	CLEARED
P	PASTURED
A	AGRICULTURAL
BM	BENCH MARK
■	DWELLING
▣	RESORT



STEEP SLOPE
INDEFINITE SHORELINE
MARSH
SPRING
INTERMITTENT STREAM
PERMANENT INLET
PERMANENT OUTLET
DAM

LAKE BOTTOM SYMBOLS

P	PEAT
Mk	MUCK
C	CLAY
M	MARL
Sd	SAND
St	SILT
Gr	GRAVEL

R	RUBBLE
BR	BEDROCK
T	SUBMERGENT VEGETATION
⊥	EMERGENT VEGETATION
	FLOATING VEGETATION
	STUMPS & SNAGS

◇ ACCESS ONLY ◈ ACCESS WITH PARKING ◆ BOAT LIVERY

SPECIES OF FISH	ABUNDANT	COMMON	RARE
MUSKIE			
N. PIKE		X	
WALLEYE			
L.M. BASS		X	
S.M. BASS			
PANFISH	X		
TROUT			

WATER AREA 84.26 ACRES
UNDER 3 FT. DEPTH 10.1%
OVER 20 FT. DEPTH 63.1%
VOLUME 2008.94 ACRE FT.
TOTAL ALK. 227 P.P.M.
SHORELINE 2.4 MILES
MAXIMUM DEPTH 40 FT.

MAPPED: JULY 1967
REVISED:
EQUIPMENT: SONAR, POLE
SURFACE WATER
ELEVATION: 822.0' MSL

600' 800' 1000'
SCALE

GRAPHIC MAP

ORTH COUNTY, WISCONSIN

T.-4-N. R.-17-E.

D.N.R., JUNE 1969

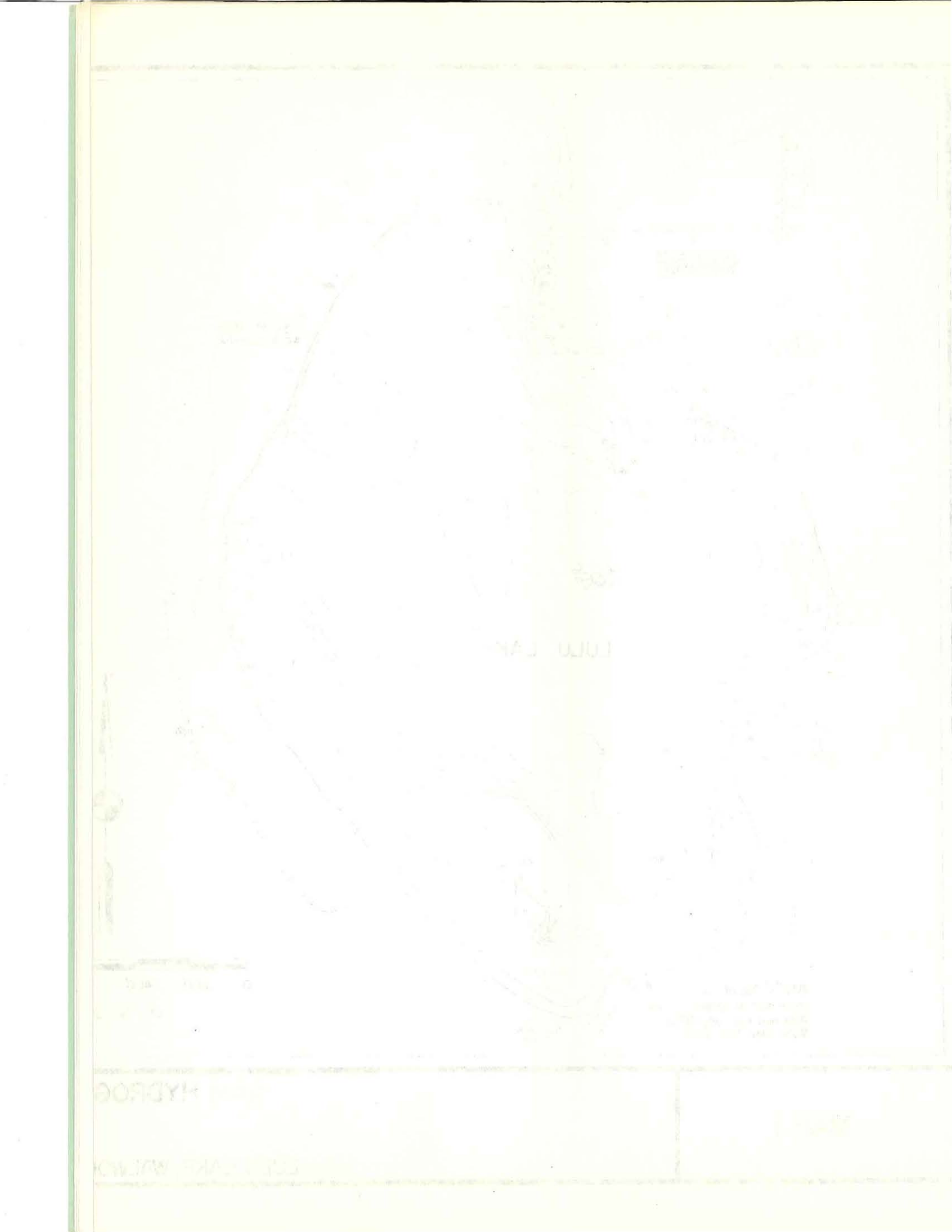


TABLE 1

Hydrography and Morphology of Lulu Lake, Walworth County, Wisconsin, 1967

Area = 0.13 sq. miles; 84.26 acres
Shore length = 2.4 miles; 12,672 feet
Shore development factor* = 1.86
Ratio of area (sq. miles) to shore length = 0.054:1
Maximum depth = 40 feet
Mean depth = 24 feet
Volume = 2,008.94 acre feet
Percent of area less than 3 feet deep = 10.1%
Percent of area more than 20 feet deep = 63.1%
Maximum length = 2,920 feet
Maximum width = 2,200 feet
Watershed area = 6,387.2 acres (includes lake)
Ratio of watershed area to lake area = 75.8:1
Exchange time = 0.55 yrs. (based on runoff)
Public frontage
   Intensive use (beach, boat launching) = 0 feet
   Wild frontage = 0 feet
   Open space frontage = 0 feet

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* Shore development factor is defined as the ratio of shoreline to the circumference of a circle with the same area as the lake.

Source: Wis. Dept. of Natural Resources

Drainage Characteristics

The lake drains a watershed of 6,387.2 acres (including the lake surface) by way of a narrow channel in marshland to Eagle Spring Lake, in Waukesha County. Relief in the watershed is moderate with the headwaters of its inlet stream lying about 60 feet above the lake surface. Surrounding hills rise to about 50 feet above the lake surface. Lulu Lake is considered to have effluent groundwater conditions, in that water enters the lake from the groundwater table, but is not discharged to the groundwater table. The lake, therefore, represents a discharge point at which groundwater is expressed at the surface as a stream draining the lake. Several spring seeps may be seen along the south shore.

Climate and Hydrology

Climatological data for the cities of Lake Geneva and Waukesha reporting stations approximate conditions at Lulu Lake. These data are presented in Table 2, along with other pertinent data from regional stations. About 55 percent of the average annual precipitation falls from May through September when vegetative growth occurs. About 30 percent falls as snow in winter or rain in early spring and is expressed as spring runoff. Streams in this region have been observed to discharge at above normal rates about 30 percent of the time, mostly during the spring runoff period.

Each year the watershed receives 16,792 acre feet of water. About seven inches (3,675 acre feet) leave the watershed as surface runoff at the lake outlet. Lake surfaces in the watershed total 120 acres and will lose about 29.4 inches (294 acre feet) to the atmosphere by evaporation. Wetlands also have high evapotranspiration rates. The 942 acres of wetland in the watershed might lose 2,308 acre feet of water in this way. The remaining 10,515 acre feet either are lost on the land surface by evapotranspiration or represent groundwater recharge within the watershed. Hydrologists estimate that about 25 inches (in this case over 10,000 acre feet) will be lost overall by evapotranspiration in the watershed. About 7,500 acre feet of water is presumed to be lost by this means from upland soils in the watershed.

Soils

Soils with development potential are generally restricted to the east shore and back a short distance from the south shore. The soils in these areas are generally Rodman-Casco loams and gravelly loams. These soils have moderate limitations for recreational development on flat areas but severe limitations on steep slopes. A flat area of loamy sand on the west shore has been developed as a playing field and beach site by a boys' club. This is an effective use of the area. Other bordering soils are mucky peat and marsh, totally unsuited to development. In general the prevailing soils insure continuance of wild undeveloped shores on Lulu Lake. The general distribution of major soil areas is depicted on the Fish and Wildlife resource map (Map 2).

TABLE 2

Climatological Data for the Lulu Lake Area
Walworth County, Wisconsin

Lake Geneva

	Ja	Fe	Mr	Ap	My	Jn	Jl	Au	Se	Oc	No	De	Yr
Temperature (F) Mean Monthly	21.6	24.8	33.5	47.6	58.1	68.4	73.2	72.1	63.3	53.5	36.8	24.3	48.1
Precipitation (inches) Mean Monthly	1.7	1.3	2.6	3.2	3.4	4.3	4.4	3.5	2.0	2.2	2.1	2.2	32.9
Days with rain*	4	4	6	6	7	7	6	6	4	4	5	6	65

Waukesha

	Ja	Fe	Mr	Ap	My	Jn	Jl	Au	Se	Oc	No	De	Yr
Temperature (F) Mean Monthly	20.7	23.1	32.1	45.4	56.5	66.9	72.1	70.8	62.4	51.3	36.4	24.9	46.9
Precipitation (inches) Mean Monthly	1.7	1.3	2.2	2.5	3.5	3.7	3.3	3.1	2.9	2.1	2.3	1.6	30.2
Days with rain*	4	4	5	6	7	7	5	6	5	4	5	4	62

Racine

	Ja	Fe	Mr	Ap	My	Jn	Jl	Au	Se	Oc	No	De	Yr
Temperature (F) Mean Monthly	24.2	26.2	34.5	45.9	56.1	67.0	73.1	72.3	64.7	53.4	39.0	27.9	48.7
Precipitation (inches) Mean Monthly	2.0	1.5	2.7	2.8	3.8	3.5	3.1	3.2	3.0	2.0	2.4	2.0	31.9
Days with rain*	5	4	6	6	7	7	5	6	5	4	6	5	66

* precip. 0.10 inch or more

Source: **Wis. Climatological Data. U. S. Weather Bureau, 1961**

TABLE 2 (Cont.)

Monthly Average Runoff in Inches

Station	Ja	Fe	Mr	Ap	My	Jn	Jl	Au	Se	Oc	No	De	Totals
Fox River, Wilmot	0.52	0.48	1.43	1.10	0.74	0.58	0.39	0.33	0.27	0.40	0.51	0.44	7.19

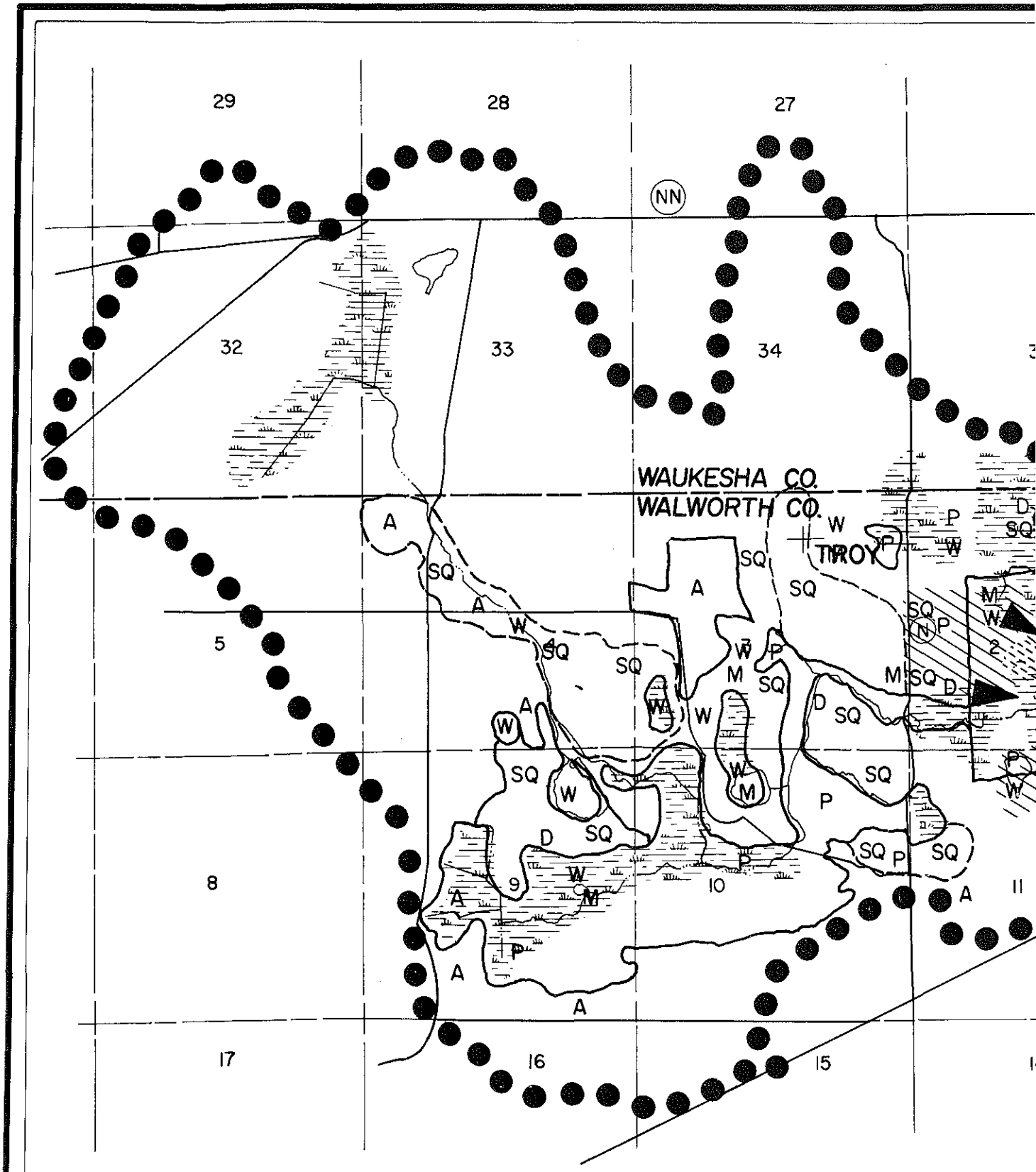
Ratio of Runoff to Rainfall -- Fox River - Waukesha

Ja	Fe	Mr	Ap	My	Jn	Jl	Au	Se	Oc	No	De	Annual
.35	.38	.66	.43	.21	.16	.12	.11	.09	.19	.22	.28	.24

Lake Evaporation in Inches -- Rockford - Illinois

Ja	Fe	Mr	Ap	My	Jn	Jl	Au	Se	Oc	No	De	Total
.31	.57	1.75	2.90	4.03	4.37	5.09	4.05	2.95	2.15	.89	.34	29.40

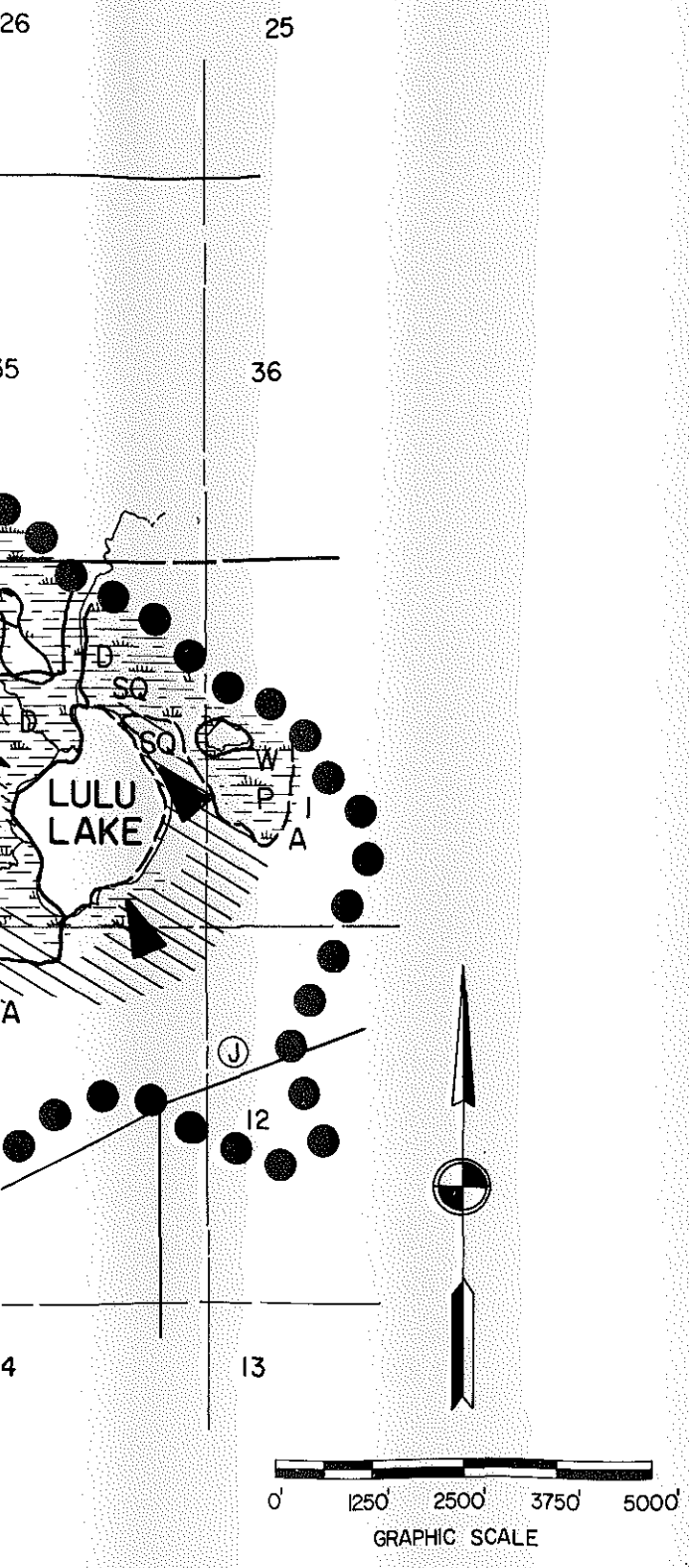
Source: Roberts, W. J. and J. B. Stall. 1967, Lake evaporation in Illinois. Report of investigation No. 57, State of Illinois.



MAP 2

FISH, WILDLIFE AND WOODLA

LULU LAKE, WALW



LEGEND

FISH AND WILDLIFE VALUES

- PRIME IMPORTANCE
- LESSER IMPORTANCE
- **W** WATERFOWL
- **M** MUSKRAT
- **P** PHEASANT
- **SQ** SQUIRREL
- **D** DEER

SPAWNING AREAS

- **LMB** LARGEMOUTH BASS
- **NP** NORTHERN PIKE
- **PF** PANFISH
- **WE** WALLEYE

WOODLAND VALUES

- WELL STOCKED
- MEDIUM-POORLY STOCKED
- **A** AESTHETIC
- **C-A** COMMERCIAL-AESTHETIC

GENERAL SOIL TYPES

- LOAM
- SILT LOAM
- SANDY LOAM
- SAND
- MARSH
- MUCK
- MARL
- ALLUVIAL SOIL

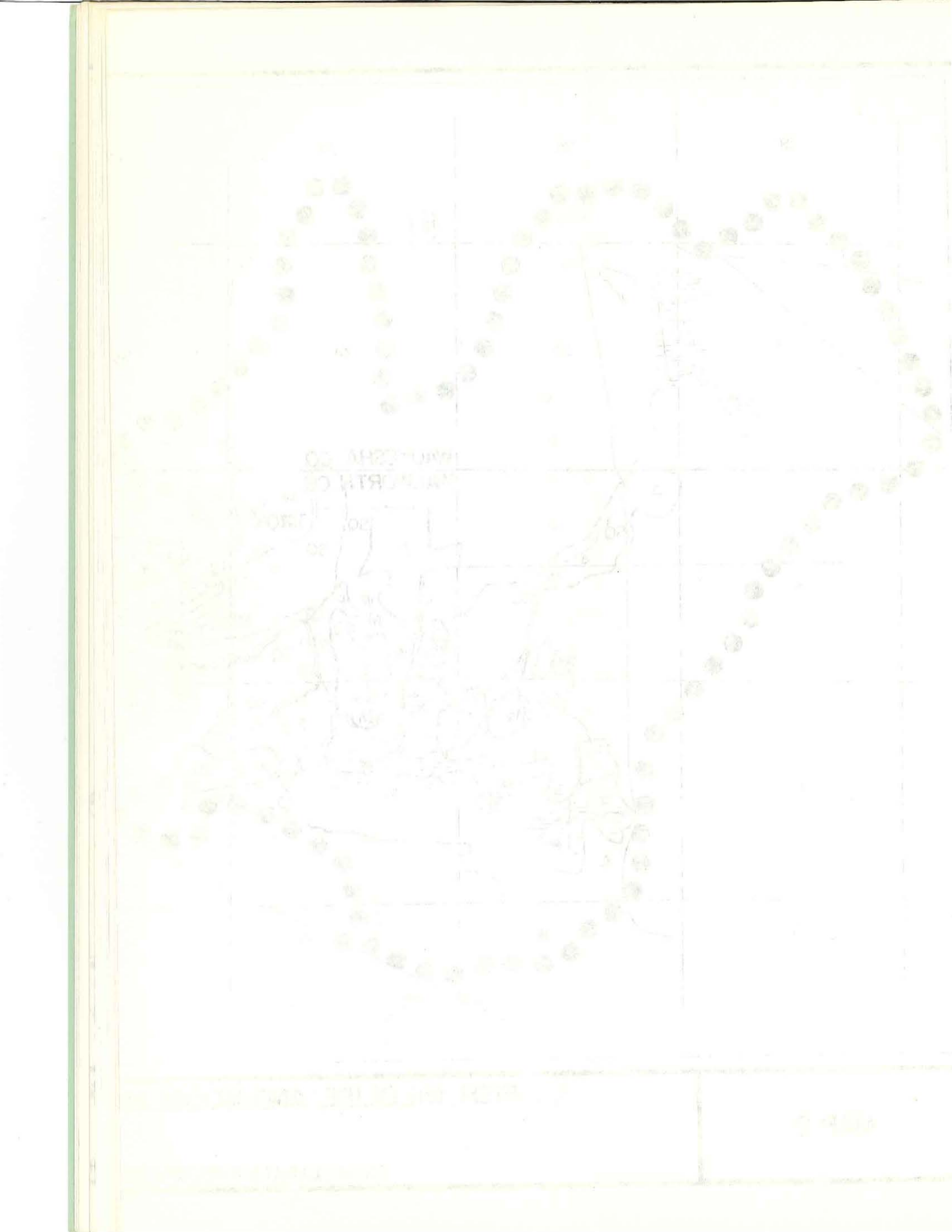
- OPEN VISTAS
- WATERSHED BOUNDARY

ND VALUES AND BASIC SOIL TYPES

ORTH COUNTY, WISCONSIN

T.-4.-N. R.-17-E.

D.N.R., JUNE 1969



WATER QUALITY

Selected chemical analyses for spring and midsummer of 1966 are a basis for evaluation of the present water quality of Lulu Lake as are temperature and oxygen profiles and bacteriological samples from summer sampling periods. These data are presented in Figure 1 and Table 3. The lake is fairly alkaline, being about average for this region in alkalinity and is less fertile than most lakes in the region in that it has below average concentrations of phosphates. The lake has a low aquatic nuisance hazard index as based on mean chloride content (a reflection of agricultural drainage and external nutrient sources), medium fertility as based on spring phosphate levels, but would be considered very fertile on the basis of alkalinity alone. In this case high alkalinity may reflect the importance of spring water versus runoff. Those ions indicative of pollution (chloride, sulphate, sodium, potassium) are present in less than average concentrations and therefore testify to good water quality.

With little wind fetch the lake develops a fairly shallow mixed layer in summer. The thermocline develops at about nine feet and temperatures decrease rapidly to about 27 feet. Sufficient oxygen to support even tolerant fishes exists only to a depth of about 20 feet in midsummer. About 62 percent of the total lake volume can support fish in midsummer.

The effect of wind and wave action on shores is much diminished here, since the greatest length over which the wind can blow unobstructed is only 2,920 feet, which would produce waves of less than one foot maximum height. Active sorting of the sediments would normally take place only to a water depth of 2.5-3 feet. As a result, vegetation is easily maintained on even the wind-swept shores.

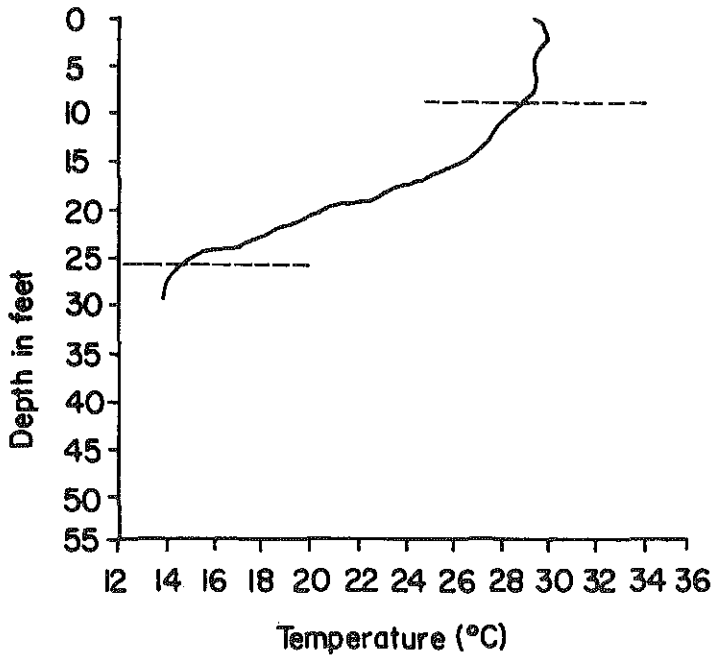
Bacteriological sampling, though limited, suggests that this is clean water, not presently influenced by the limited development of its shores.

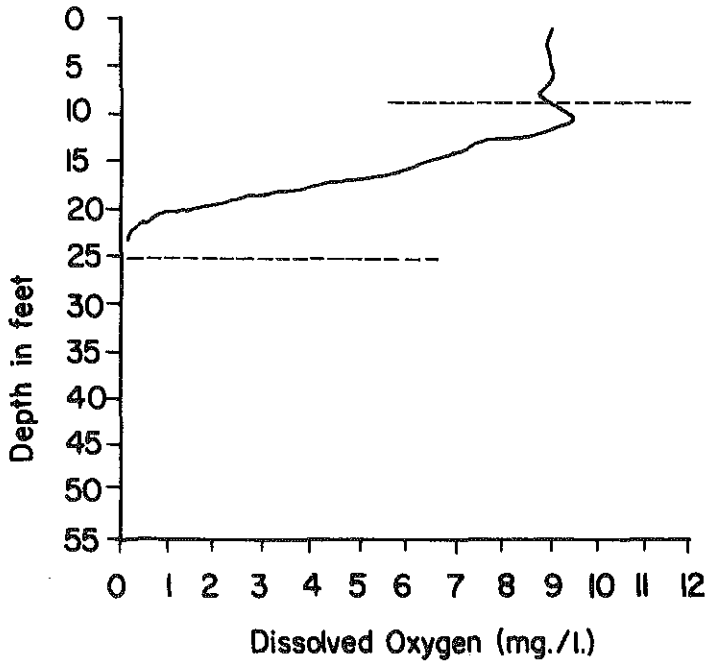
RESOURCES

Aquatic Plants

Aerial surveys and ground reconnaissance revealed the extent of rooted aquatic vegetation growth. The general distribution of submergent, emergent, and floating leaved vegetation is illustrated in the hydrographic map (Map 1). Chara was the predominant plant and covered the bottom in most areas under five feet deep with the exclusion of the southern shore. It is one of the top ranging foods of ducks and is an excellent producer of fish food. Although abundant, it has not prompted vegetation control measures. Sedges (Cyperaceae) were abundant along the shoreline. The remaining aquatic plants were scattered, with Myriophyllum (milfoil) dominating the west central shoreline, while the southern shore had some scattered patches of Najas flexilis (bushy pondweed). Plant life was found to a depth of 19 feet with small to moderate amounts of Nitella, Ceratophyllum (coontail), Vallisneria (wild celery), and P. pectinatus (sago pondweed). Species present and the extent of their growth in the basin is presented in Table 4.

Algae blooms are extremely rare.





July 28, 1966—3:30p.m.
Wis. Dept. of Natural Resources

FIGURE 1. Temperature and Oxygen Profiles

TABLE 3

Selected Water Quality Parameters of Lulu Lake,
Walworth County, Wisconsin, 1966

Parameter*	Depth: / Date:	3 ft. Apr. 6, '66	10 ft. Sept. 13, '66	24 ft. Sept. 13, '66
pH (units)		8.3	8.3	7.9
Tot. Alk.		224	201	219
Sp. Cond. (micromhos/cm)		436	370	408
Ca		47.8	17.0	22.9
Mg		26.7	27.4	25.9
Na		1.0	2.0	1.6
K		1.1	0.9	1.0
Fe(T)		0.02	0.01	0.02
PO_4(T)			0.04	0.02
PO_4(D)		0.09	0.04	
Cl		2.0	2.5	2.9
SO_4		20.0	27.3	26.3

* All parameters expressed in milligrams per liter unless specified otherwise.

Bacteriological Analyses

Location	MPN (mean probable number)	Coliform Bacteria
20 ft. off west shore, clear water	MPN - 220	on 8-1-67
15 ft. off east shore, clear water	MPN - 510	on 8-1-67

Source: Wis. Dept. of Natural Resources

TABLE 4

Dominant Species of Aquatic Vegetation in Lulu Lake,
Walworth County, Wisconsin, 1967*

Scientific Name	Common Name	Growth Character	Extent in Basin
Ceratophyllum spp.	Coontail	Submergent	6-19 ft. depth.
Chara spp.	Cura	Submersed mats	Entire basin 5 ft.
Cyperaceae spp.	Sedges	Emergent	West shoreline
Myriophyllum spp.	Water milfoil	Submergent	West central shore
Nuphar spp.	Yellow water lily	Floating	West central and North shore
Nymphaea spp.	White water lily	Floating	West central and North shore
P. richardsonii	Richardson pondweed	Submergent	* South shoreline
Scirpus validus	Bulrush	Emergent	West shoreline
Typha spp.	Cattail	Emergent	West shoreline
Zizania spp.	Wild rice	Emergent	West shoreline

*Results of an intensive survey conducted August 8, 1967.

Source: Wis. Dept. of Natural Resources

Fish Resources

Lulu Lake has a typical largemouth bass, panfish fishery. Since much of the lake's shoreline is in a wilderness condition, the water quality of the lake has changed little through the years. This situation tends to favor the fishery and thus provide a stable renewable resource. Winterkill is not a problem in the lake because 61 percent of the area is greater than 20 feet deep.

The panfish fishery is dominated by bluegills which are in good condition and exhibit characteristics of better-than-average growth rates. Rock bass, pumpkinseed, and bullheads are common species and black crappies, green sunfish, and yellow perch are also present.

A fair population of largemouth bass are present and natural reproduction is good since they have not been stocked since 1952. Northern pike are present and are provided with adequate spawning marsh areas.

One of the unique features of this lake is the presence of brown trout although they have never been stocked. They may have been introduced by local people or by private fish hatcheries, which are located in the watershed, and managed to reproduce naturally in the spring feeder which enters the lake from the west.

Pleasure Boating

Pleasure boating is not one of the lake's primary activities. Ninety-three aerial observations from 1960-66 reveal that of the 535 boats counted only 4 percent were used for pleasure boating or water skiing. Over this period boating attributed to water skiing amounted to only two boats. The lake is only 84 acres and naturally cannot support many high powered boats. In addition road conditions provided by the two resorts are substandard for the transportation of large transient craft.

Game Resources

Game values for the watershed are shown on Map 2. The inlet and outlet stream corridors provide wetlands for waterfowl and marsh furbearer production as well as fall pheasant cover. The wooded ridges bounding the west corridor maintain a moderate number of small game animals and deer population. Since the lake has only four cottages, spring and fall migratory rates are high.

Aesthetic Features

The aesthetic rating of Lulu Lake is outstanding. Open vistas provide vantage points across the clear blue lake to other wooded and marsh areas. The marsh shoreline constitutes 46 percent of the total shoreline and enhances the retention of aesthetic values, since it insures that the area will not be altered by development. Several vantage points are marked on Map 2.

LAKE USE

Fishing

Lulu Lake offers some of the finest panfish angling in the Fox River Watershed. Fishing pressure is curtailed to some extent by the lack of a public access, however, aerial observations from 1960-66 disclose that 12 boats

are used per day on the average for fishing during the weekend, and anglers account for a 4-boat average per day during the week. Conflicts with other types of boating are not evident as 96 percent of boating activity is attributed to fishing.

Hunting, Trapping, Wildlife Observations

Wooded hills and wetlands account for 42 percent of the lake's watershed of 6,387.2 acres. This area possesses excellent hunting opportunities. The shoreline is encompassed by 5,800 ft. of adjoining marshland and could support 13 duck blinds with 150-yard spacing. A rural area comprises the remainder of the watershed and pheasant where other small game are present.

The north corridor to Eagle Spring Lake is bounded by 178 acres of adjoining wetlands and although trapping is not evident, muskrat homes are present and trapping could produce from 712 to 1,246 muskrats each season (4-7/acre).

The steep slopes and open vistas provide excellent terrain for wildlife observations. All types of small game and a moderate deer population can be observed from these areas as well as by boat along the shoreline and adjoining streams. Nature trails provide a natural classroom on the Milwaukee Boys' Club property and aquatic vegetation along the shoreline offers ideal conditions for the study of marsh flora.

Swimming

The lake's water quality is ideal for swimming, as the water is clear and there are no algae or weed problems. Facilities, however, constitute a limiting factor to swimming opportunities. Two resorts and a camp maintain 280 ft. of beach frontage, but this frontage is also used for boat launching. The remainder of the shoreline is not suited for swimming because of the marsh areas on the west and the high banks on the east. An additional inhibiting factor is that the bottom, other than the already established beach areas, is somewhat marly and swimming produces turbid water under these conditions.

Cottages and Homesites

There are only four homesites located on lake frontage. Camping facilities are provided by a resort on the south shore and a trailer court is maintained by the resort on the northeast shoreline. Additional homesites are possible above the east slope, but the remainder of the lake shoreline does not have suitable soil areas on which to build.

Boating

The nearest public road is 0.5 miles from the lake and obviously curtails the boating activity. The rental facilities provided by the two resorts are used mainly by fishermen. Aerial observations over a six-year period reveal that the lake has 5.3 boats in use per week day and 12 boats per day each weekend.

RECREATIONAL RATING

A desired element of knowledge is a rating of the lake's value for primary uses. This is provided in Table 5. The lake excels in its aesthetic environment, and is highly rated for its existing swimming and boating opportunities. The wild and varied landscape enhances the æsthetic values, but handicaps the swimming and boating operations because of the overcrowding of existing facilities. With 63 out of a possible 72 points, the lake can be described as having outstanding values in all aspects of recreation, with access and space being the only limiting factors.

EXISTING LAND USE

Land use in the watershed has been summarized for 1963 (Table 6). Open land constitutes 40.3 percent of the total watershed. Croplands also constitute 55.7 percent of the watershed. Only 0.7 percent can be considered residential. Roads constitute 2.8 percent, a similarly small area. The stream system tributary to Lulu Lake is well buffered from croplands by a border of wetland and other unused lands. Existing land use is illustrated on Map 3. The area encompassed in the land use summary is based on total quarter section area provided more than one-half the total was within the true watershed.

EXISTING PROTECTIVE MEASURES

Sewage Disposal

There are no public sewerage systems within the watershed, nor are any foreseen in the near future. Soils around the lake are generally inadequate for soil absorption systems and for development in general. Should homesite development occur south of the lake the threat of groundwater pollution would exist.

Zoning

The present zoning is that of the Township of Troy, which is presented in Table 7 as it affects lakes and streams. Walworth County is currently revising their zoning ordinance to provide comprehensive zoning and incorporate provisions of shoreland and floodplain zoning now required by law. The county has been active in assessing and correcting zoning problems around lakes. Most of the Lulu Lake Watershed is zoned agricultural. Those lands northwest of the lake owned by the Milwaukee Boys' Club are zoned residence "B" for camp use. Wetlands west of the lake on both sides of the inlet stream (about 100 acres) are zoned conservancy district, as are wetlands north of the lake on the east side of the outlet (about 80 acres). The surface of the lake is also considered conservancy district in Walworth County ordinances. Zoning is shown on Map 3A. Apparently the ordinance has been amended to permit a trailer court on the lake shore. Major areas of inadequacy are related to lot width and dwelling setback, and to protection of shores from destruction by grazing and cover removal.

TABLE 5

Recreational Rating of Lulu Lake, Walworth County, Wisconsin: 1967

Space: Total area - 84.26 acres Total shore length - 2.4 miles

Ratio of total area (square miles) to total shore length (miles): 0.054:1

Quality (18 points for each item)

Fish:	___ 9 High production	X 6 Medium production	___ 3 Low production
	X 9 No problems	___ 6 Modest problems such as infrequent winterkill, small rough fish problems	___ 3 Frequent and overbearing problems such as winterkill, carp, excessive fertility
Swimming:			
	___ 6 Sand or gravel (75% or more)	X 4 (Marly) Sand or gravel (25 - 50%)	___ 2 Sand or gravel (<25%)
	X 6 Clean water	___ 4 Moderately clean	___ 2 Turbid or darkly stained
	X 6 No algae or weed problems	___ 4 Moderate algae or weed problems	___ 2 Frequent algae or weed problems
Boating:			
	X 6 Adequate depths (75% of basin >5')	___ 4 Adequate depths (50-75% of basin >5' deep)	___ 2 Adequate depths (50% of basin)
	___ 6 Adequate size extended boating (>1,000 acres)	___ 4 Adequate size for some boating (200-1,000 acres)	X 2 Limit of boating challenge and space (<200 acres)
	X 6 Good water quality	___ 4 Some inhibiting factors (such as weedy bays, algae blooms, etc.)	___ 2 Overwhelming inhibiting factors (such as weed beds throughout)
Esthetics:			
	X 6 Existence of 25% or more wild shore	___ 4 Less than 25% wild shore	___ 2 No wild shore
	X 6 Varied landscape	___ 4 Moderately varied landscape	___ 2 Unvaried landscape
	X 6 Few nuisances (such as excessive algae, carp dumps, etc.)	___ 4 Moderate nuisance conditions	___ 2 High nuisance condition

Total quality rating: 63 out of a possible 72

Source: Wis. Dept. of Natural Resources

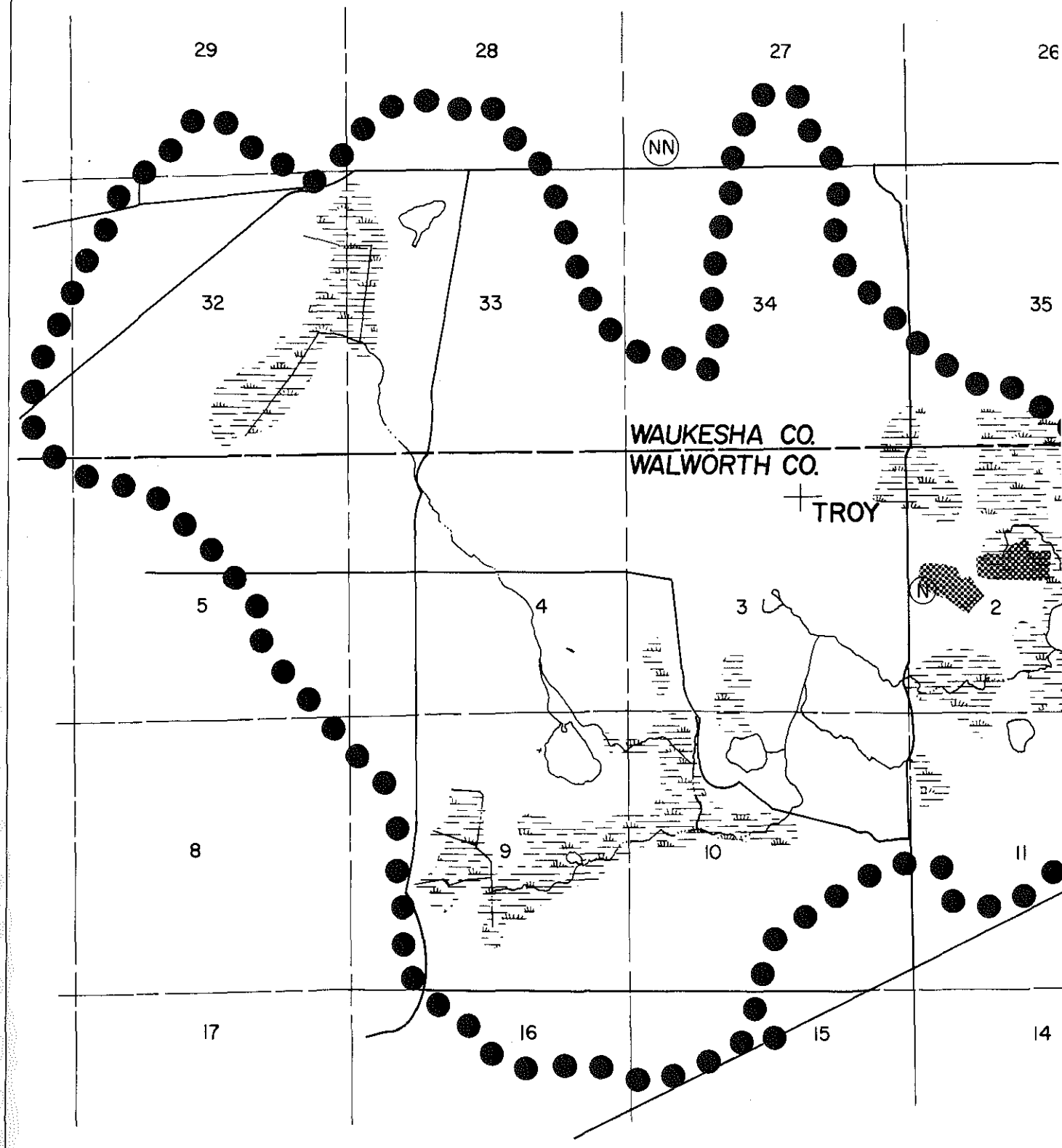
TABLE 6

Existing Land Use in the Lulu Lake Watershed,
Walworth County, Wisconsin, 1963*

Land Use Major Category	Detailed	Area in Acres	Total Acreage	Percent of Watershed
Residential		45.54	45.54	.69%
Commercial				
Industrial	Major			
	Other	.21		
	Mining	7.07	7.28	.11%
Transportation and Communication		187.59	187.59	2.85%
Government or Institutional		.37	.37	.01%
Recreation	Public			
	Private	20.36	20.36	.31%
Openland	Wet	1,264.04	2,649.89	40.34%
	Unused	55.29		
	Wooded	1,330.56		
Agriculture	Crops	3,658.50	3,658.50	55.69%
	Related			
Total Acreage for Watershed Including Lake		6,569.53	6,569.53	100.0%

* Summarized to nearest whole U.S. Public Land Survey quarter section.

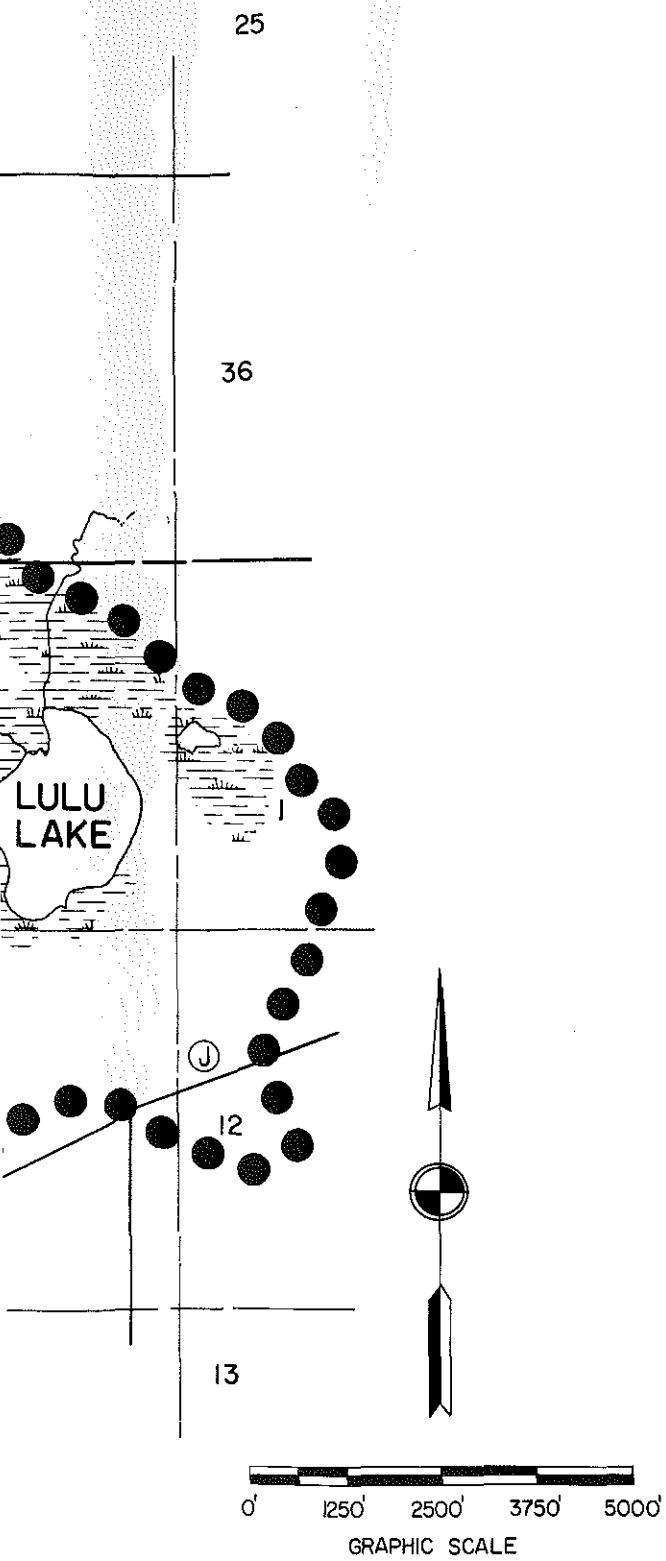
Source: SEWRPC Existing Land Use Inventory, March, 1963.



MAP 3

EXISTING L

LULU LAKE, WALWO



LEGEND

- LOW DENSITY RESIDENTIAL (0.5-7.2 PERSONS PER RESIDENTIAL ACRE)
- MEDIUM DENSITY RESIDENTIAL (7.3-22.8 PERSONS PER RESIDENTIAL ACRE)
- HIGH DENSITY RESIDENTIAL (22.9-59.2 PERSONS PER RESIDENTIAL ACRE)
- RETAIL AND SERVICES
- WHOLESALE AND STORAGE
- TRANSPORTATION, COMMUNICATION & UTILITY
- MANUFACTURING & QUARRYING
- GOVERNMENTAL & INSTITUTIONAL
- WOODLAND
- WETLAND
- PARK & RECREATIONAL
- WATER
- AGRICULTURE AND AGRICULTURE-RELATED
- WATERSHED BOUNDARY

.AND USE , 1963

RTH COUNTY, WISCONSIN

T.-4.-N. R.-17-E.

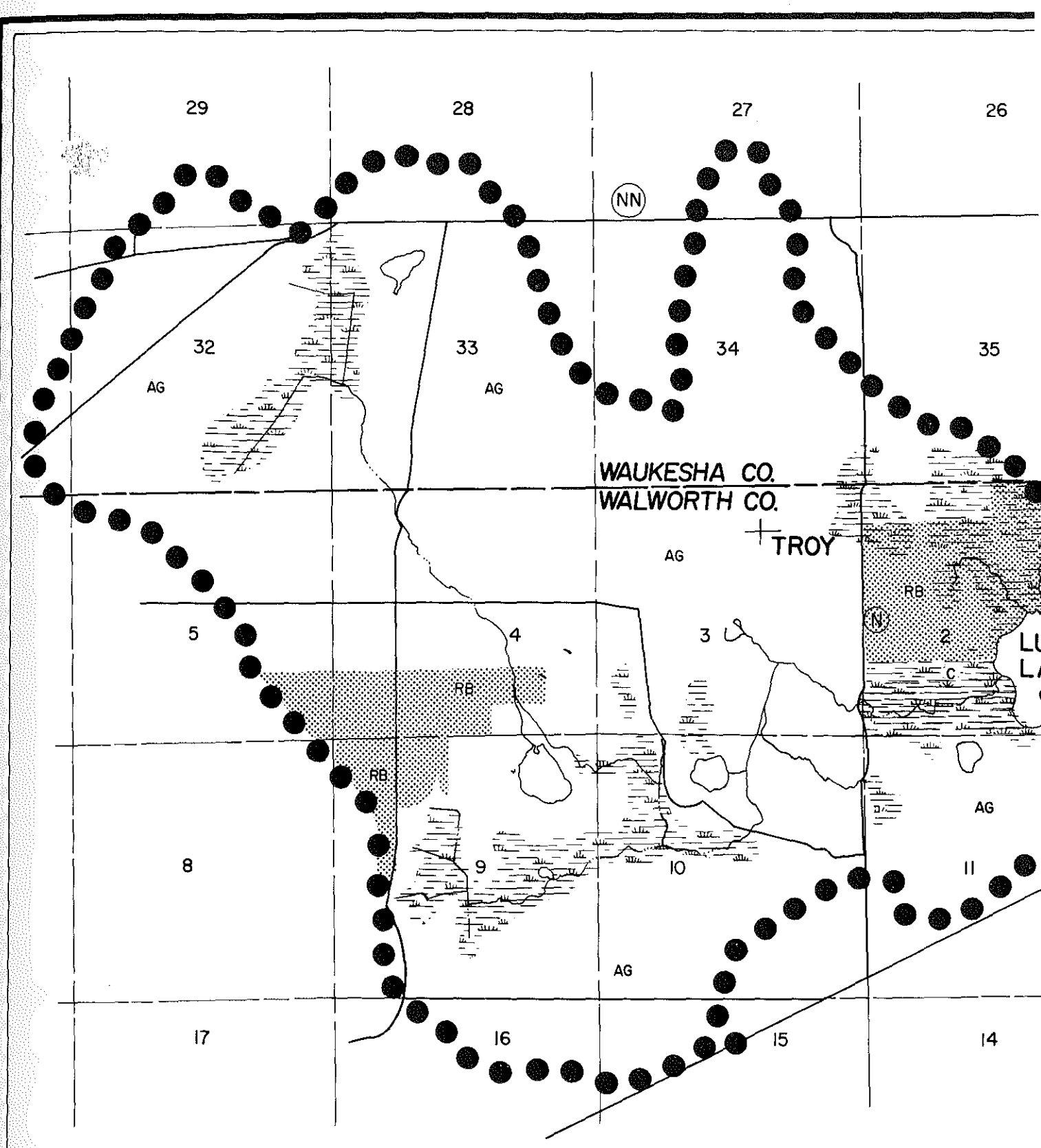
D.N.R., JUNE 1969

TABLE 7

Degree of Protection Afforded By Land Use Controls to Lulu Lake, Walworth County, Wisconsin, 1967

Criterion (Suggested Reservation)	Adequate	Inadequate	Remarks
1. Dwelling Setback (At least 75' from high water and 3' above water level)		X	40' minimum
2. Sewage Disposal Facilities (Adequate lot size to permit desired positioning of septic tanks)	X		New sanitary code
3. Boathouses (Not over water to extent they constitute a hazard - not used as dwellings)		X	Not considered
4. Refuse Disposal (Public or Private refuse disposal areas not contiguous with the water or adjoining wetlands)	X		New sanitary code
5. Lot Width (Minimum set to enhance shoreline values - 100' or more)		X	75' in ord.
6. Bank/Shore Cover (Discourage removal of cover where result is destruction of natural beauty)		X	Not considered
7. Grazing of Shores (Discourage indiscriminate grazing since it destroys spring areas and aids bank erosion - fencing is suggested)		X	Not considered
8. Conservancy District (Protect adjoining wetlands by a conservancy zoning program)	X	(But not all are protected)	
9. Commercial Facilities (Adequate space required to buffer from private development and be serviceable)	X		Waterfront business dist.
10. Slope Protection (Prohibit construction on slopes of 12% or more)		X	Zoning superv. can amend
11. Billboards (Restrict billboard placement and size to protect scenic shores)	X		Prohibited in conservancy dist.

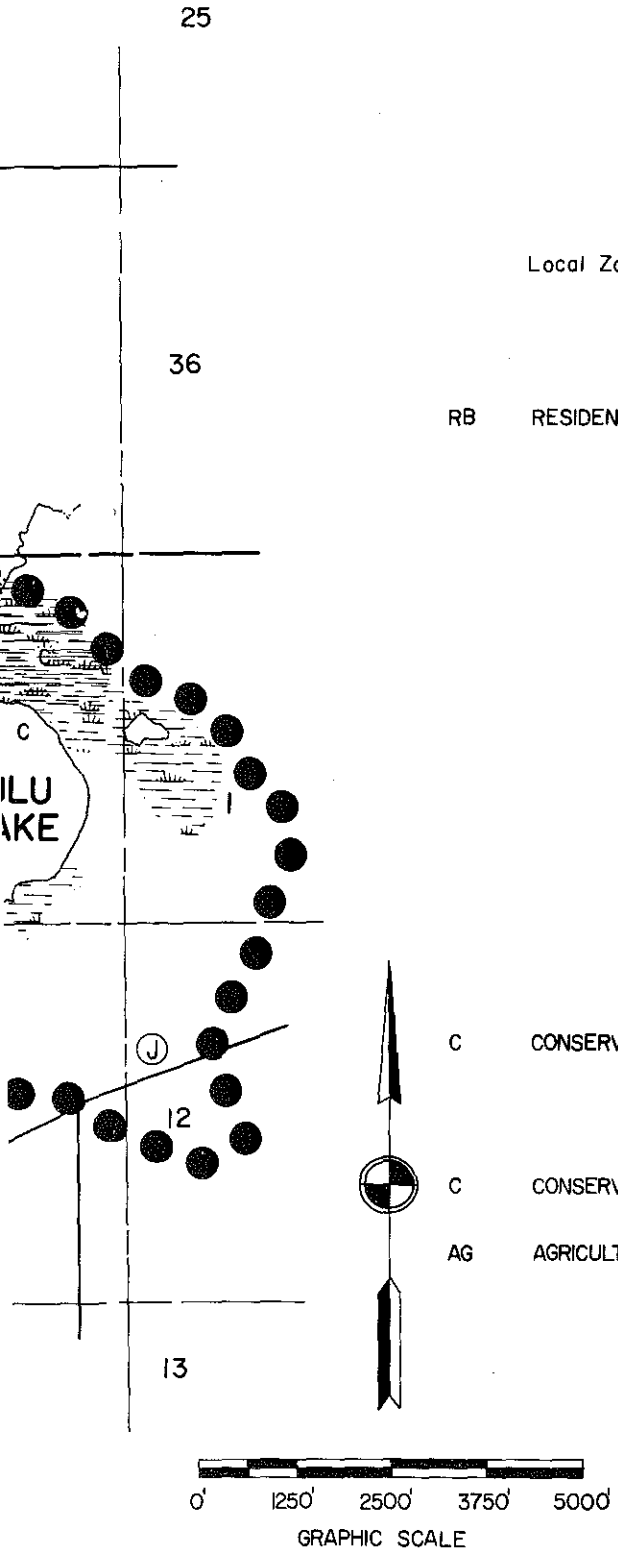
Source: Wis. Dept. of Natural Resources: SEWRPC.



MAP 3A

PRESENT ZO

LULU LAKE, WALWORTH



LEGEND

Local Zoning Classification

RB	RESIDENTIAL "B"
C	CONSERVANCY
C	CONSERVANCY
AG	AGRICULTURE

Regional Land Use Classification

- LOW DENSITY RESIDENTIAL (0.5-7.2 PERSONS PER RESIDENTIAL ACRE)
- MEDIUM DENSITY RESIDENTIAL (7.3-22.8 PERSONS PER RESIDENTIAL ACRE)
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- WOODLAND
- WETLAND
- PARK & RECREATIONAL
- WATER
- AGRICULTURE AND AGRICULTURE-RELATED
- WATERSHED BOUNDARY

0' 1250' 2500' 3750' 5000'

GRAPHIC SCALE

NING, 1967

T.-4.-N. R.-17-E.

COUNTY, WISCONSIN

D.N.R., JUNE 1969

Water Zoning

The present boat control ordinance is that of the Township of Troy as evaluated in Table 8. In general this small lake is inadequately protected from high speed boating, has little provision for protection of weed beds and wild shore, and has inadequate spatial separation of users. Water skiing is permitted; the space consumed by this activity would limit all other uses. The ordinance does little to create an awareness of the striking aesthetic values of Lulu Lake.

Civil Town of Troy Ordinance Applies:

General Restrictions: Shore zone 150' or 75' beyond pier extensions; 5 mph w/in shore zone; beaches to be marked; those in traffic zone have the right of way over those in the shore zone; stay 50' away from swimmers, piers, other boats, etc.; no swim beyond 150' unless w/boat, and no swim at all beyond 150 from 7:00 p.m. to sunrise.

Water Skiing: Two in towboat - one 16 and attendant at least 14; two skiers maximum during week day and one skier during weekend; skier must wear Coast Guard Approved floatation device when skiing, no ski jumping; no skiing over weed beds.

Speed Limits: 25 mph maximum 10:00 a.m. to 7:00 p.m.; 7:00 p.m. to 10:00 a.m. 5 mph maximum and no skiing.

Commercial rental boats must have capacity stencilled on aft most seat and no commercial rental boats on lake until one hour after sunrise.

Rafts: White light if in T-Zone at night; not be anchored more than 50' from shore; 6" freeboard; cannot move more than 10 feet from a position directly above its anchor.

No skin diving in weeds or spawning areas.

No vehicles on ice.

RECREATION AND RESOURCE RELATED PROBLEMS

Threatened Water Quality

Deteriorating water quality cannot be documented at present. A threat does exist, however, as a trailer court occupies part of the shoreline and two cottages occupy part of the low terrace contiguous with the south shore.

Deteriorating Wildlife Habitat

Although most of the immediate shore area is nondrainable wetland, inroads are being made in this community by dredging and control of headwaters springs with impoundments. As uplands bordering the wetland are developed pressures will appear for further dredging in the wetlands to provide water access to Lulu and Eagle Spring Lakes. While wildlife habitat above Lulu Lake is currently well managed privately, the area between Lulu and Eagle Spring Lake and the border of this large wetland complex has already accommodated filling for roads, homesites, and dump sites.

TABLE 8

Degree of Protection Afforded by Boat Control Ordinance
to Lulu Lake, Walworth County, Wisconsin, 1967

Criterion (Suggested Reservations)	Adequate	Inadequate	Remarks
1. Motors (Lakes less than 50 acres be limited to boats without motors L.C. #1)	X		
2. Shore Zone (Speed be restricted to less than 5 mph within 200' of shore L.C.#2)	X-?-X		5 mph - 150'
3. Cabin Craft Mooring (Boats on which persons are living, sleeping, camping are prohibited from mooring, drifting, or overnight anchoring L.C. #3)		X	
4. Mooring at Landings (Prohibited at public landings for more than 24 hrs., except in designated areas L.C. #4)		X	
5. Speed Limits (On lakes 50-200 acres speed limited to 5 mph or less L.C. #5)		X	
6. Passing (Within 200' of another object speed is limited to 5 mph or less L.C. #6)		X	50'
7. Shore Preservation (25% of shore must remain in wild state L.C. #8)		X	
8. Weed Preservation (Vital aquatic vegetation beds should be marked and boating therein prohibited)		X	No ski over weed beds.

Source: Wis. Dept. of Natural Resources

Limited Use Opportunities

Lulu Lake lacks public access, but has good boat launching and recreation facilities of a commercial nature. In effect commercial operation of conventional launching facilities is adequate as long as reasonable access is assured. The only way of guaranteeing access is through public ownership. There exists difficult access via the inlet and outlet, both traversible by light boat.

RECOMMENDED RESOURCE PROTECTION AND ENHANCEMENT MEASURES

Lulu Lake occupies a somewhat unique position as an undeveloped lake in an environmental corridor. Few such lakes exist in southeastern Wisconsin. A concept is required in use planning that will capitalize on these attributes yet not deteriorate the resource. Such lakes demand more stringent shoreline control with emphasis placed on recreational rather than residential use.

The following specific recommendations have been formulated for the protection and enhancement of the Lulu Lake resource. Recommendations accommodate the adjoining wetlands and uplands as well.

1. It is recommended that conservancy district zoning be employed on all wetlands in the watershed as well as uplands of an undeveloped recreational nature in the area northwest of the lake.

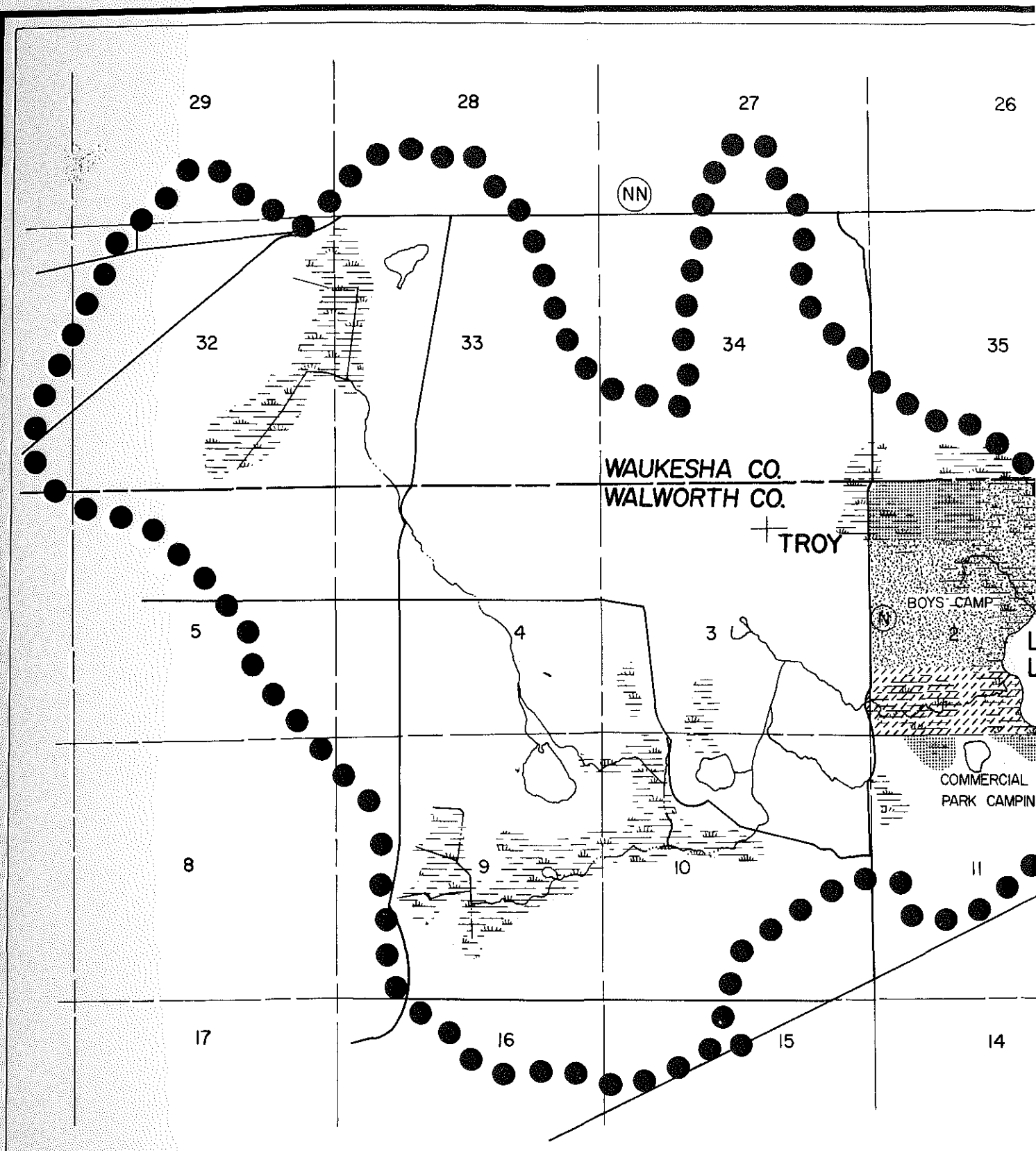
2. In order to assure future water quality, it is recommended that dwellings east of the lake on a narrow strip of firm soil be removed to land more distant from the water's edge. These are trailers mostly and little inconvenience should be felt in such a relocation.

3. The land east of the lake could more appropriately serve as an intensive use community park with swimming on the wave-washed beach.

4. Dwellings south of the lake on the low terrace bordering the water also appear out of place in this setting and may constitute a source of pollution in the future. It is therefore recommended that the lowland terrace on the south side of the lake be zoned to accommodate extensive recreational uses, and that as redevelopment occurs permanent dwellings should be restricted from the low terrace bordering the lake.

5. Lulu Lake is a prime asset in the Mukwonago River environmental corridor. It is therefore recommended that these recreational plans be part of a comprehensive planning effort encompassing the entire corridor.

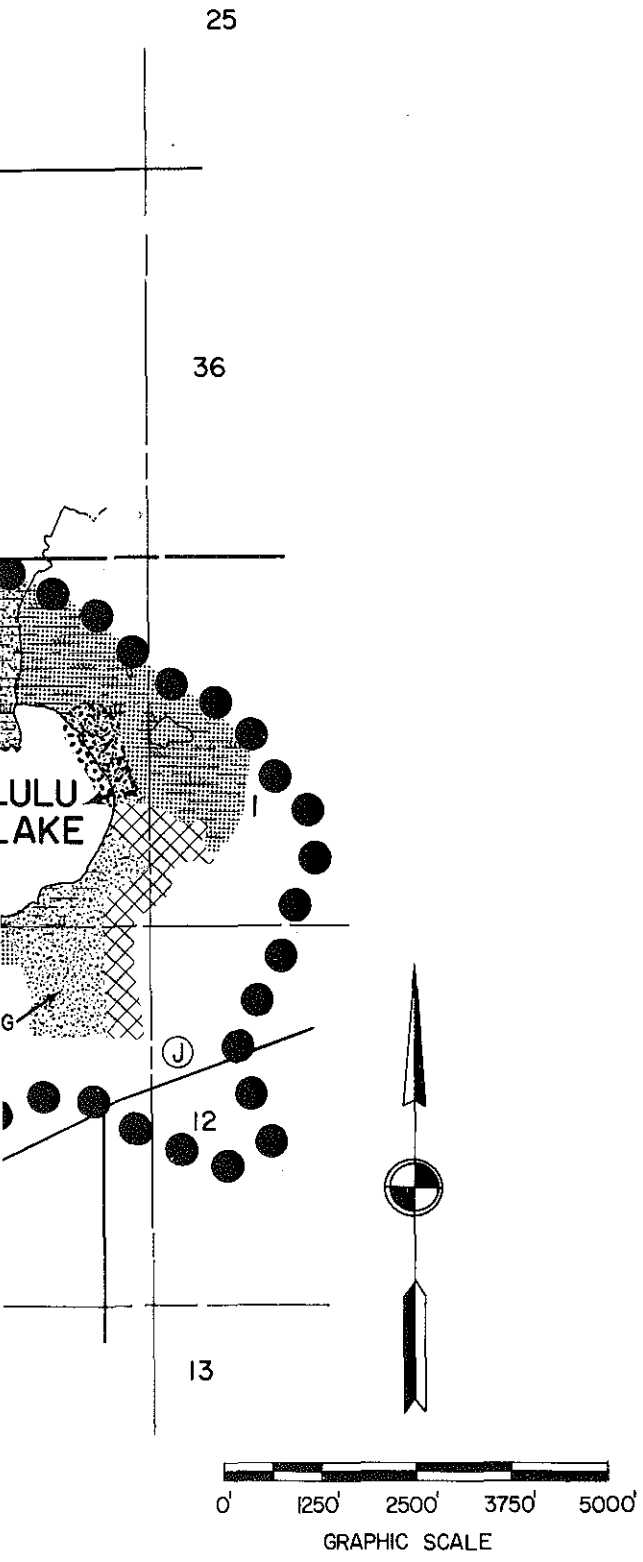
6. A detailed study involving local interests to formulate land use objectives and develop an ultimate land use plan for the Lulu Lake basin will be necessary and is recommended. Although such master plan development is beyond the scope of this lake plan, recreation-related plans have been formulated and are recommended. The resource conservation plans are presented in Map 4, representing intermediate objectives and in Map 5, representing ultimate objectives.



MAP 4

INTERMEDIATE REC

LULU LAKE, WALWORT



LEGEND

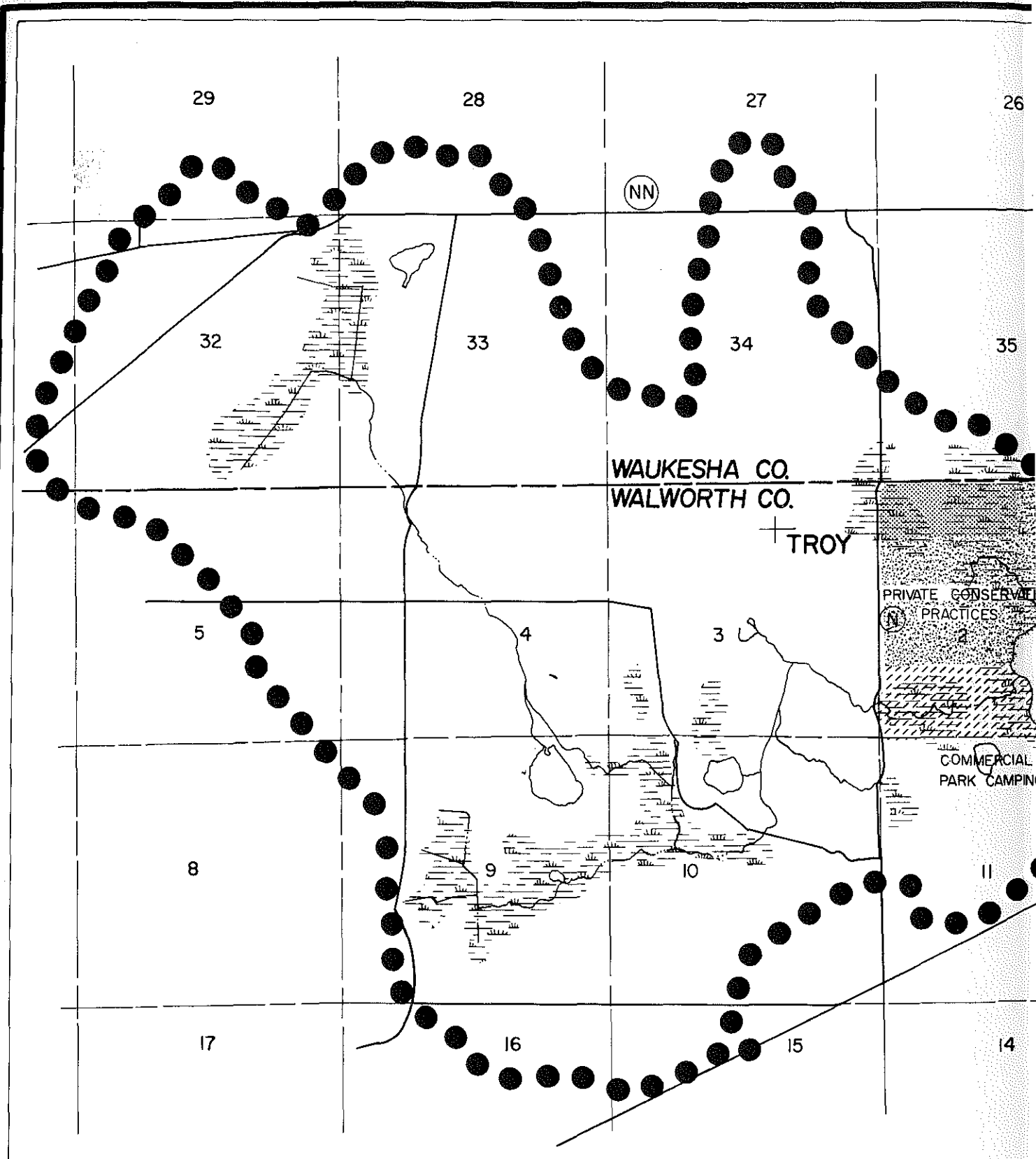
- CONSERVANCY DISTRICT
- INTENSIVELY DEVELOPED PARK LAND (BEACH & FACILITIES)
- EXTENSIVE PARK LANDS
- COMMERCIAL FACILITIES
- RESIDENTIAL
- BEACH IMPROVEMENTS
- PUBLIC WILDLIFE AREA
- AGRICULTURE AND AGRICULTURE-RELATED
- WATERSHED BOUNDARY
- LAUNCHING

REATIONAL USE PLAN

TH COUNTY, WISCONSIN

T.-4.-N. R.-17-E.

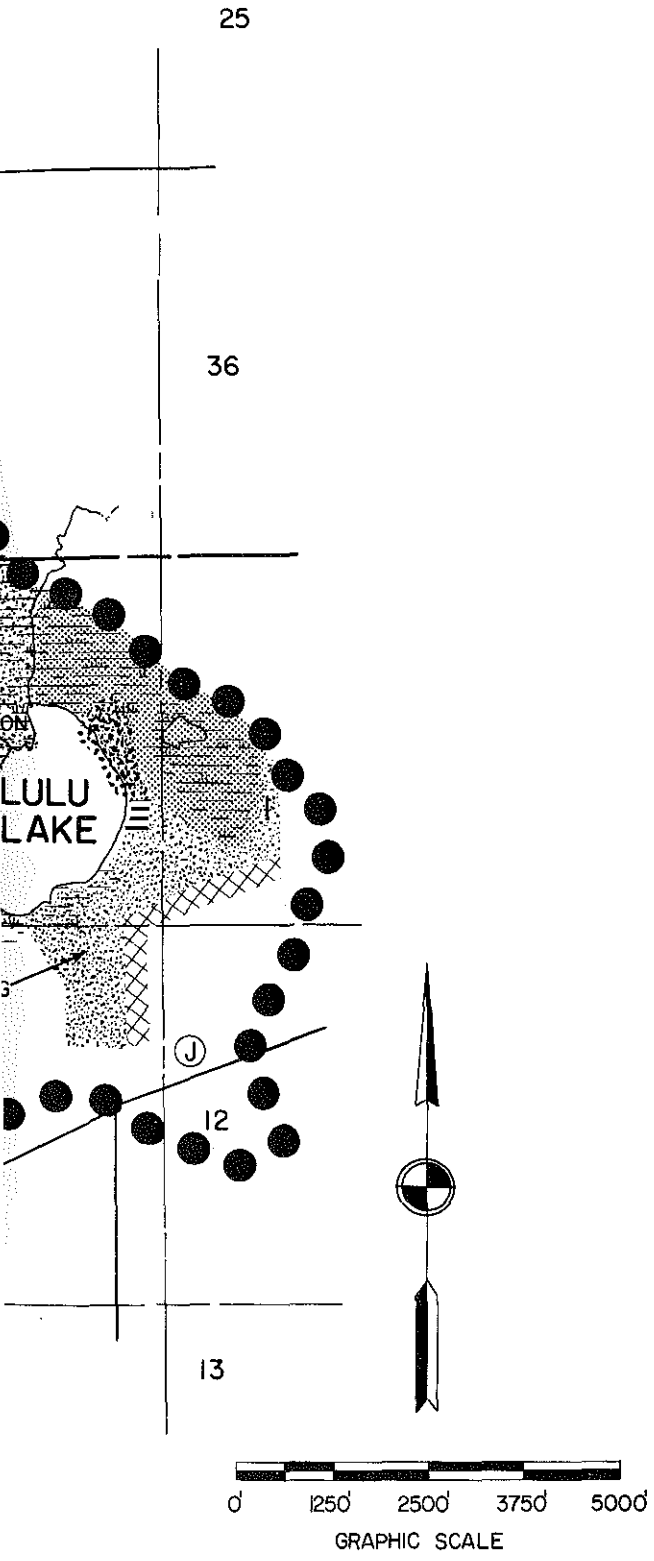
D.N.R., JUNE 1969



MAP 5

ULTIMATE RECR

LULU LAKE, WALWOR



LEGEND

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- INTENSIVELY DEVELOPED PARK LAND (BEACH & FACILITIES)
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EATIONAL USE PLAN

TH COUNTY, WISCONSIN

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