NEW YORK STATE

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF FISH AND WILDLIFE

BUREAU OF FISHERIES

REGION 7, FISH MANAGEMENT UNIT

CORTLAND

1978 SONG LAKE (SP-72) INVENTORY SURVEY

Prepared by

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Survey Date: 6/12/78-6/16/78

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PURPOSE

Song Lake was last surveyed in the summer of 1954. In order to update existing resource inventory information in response to local residents' requests, the Region 7 Fisheries Unit conducted a standard inventory survey from June 12, 1978 to June 16, 1978.

Objectives of the survey included:

1. Gather current information on fish species composition.
2. Determine the status of existing game and panfish populations.
3. Acquire a more comprehensive physical, chemical and biological picture of the lake.
4. Evaluate the desirability and feasibility of an intensified fishery management program.

DESCRIPTION

Song Lake, a small (128 acres), shallow (30' maximum depth, 10' mean depth), warmwater lake is located in the Tully Valley, two miles north of Preble, New York. The lake's water level is maintained naturally, with little fluctuation throughout the year. The lake is surrounded by cottages, except for the southeast end. This undeveloped area is primarily wooded with a Girl Scout camp situated back from shore. Fishing access is available at the south end along Song Lake Crossing Road, where cartop and small trailered boats may be launched. However, this area is privately owned, and should be considered for future public access. The lake reportedly receives little use, except for summer months when boating and other recreational activities occur (Rathje, C., personal observations). There appears to be little fishing pressure on the lake. A small island (±1 acre) and a shoal area (±1 acre) are located towards the north end. The shoreline around these and other areas around the lake provide good habitat diversity for the fish species present due to the various depths, bottom compositions, and aquatic vegetation.

METHODS

Physical characteristics of Song Lake were recorded with the use of a Lowrance Fish Lo-K-Tor (model 300 LFG) for hydrographic mapping, and by visual inspection to document bottom composition and distribution of aquatic vegetation in the littoral zone. The hydrographic map (Map 1) was constructed by recording depths along transects between landmarks. Aquatic vegetation (Map 2) and bottom composition (Map 3) was mapped as observations were recorded from a boat, traveling along the shoreline. Water chemistry was collected using a Hach Kit and YSI temperature meter.

Various equipment was used to collect fish species present in Song Lake, in order to avoid bias in the data due to the selectivity of individual gear types. Experimental graded swedish gill nets were set in two locations (2 net nights, see Map 1 for locations). Net sites were chosen in deeper zones (7'-22'), where trap nets would not be effective in sampling all existing habitat.

Four trap nets were set in six locations around the lake at depths up to 15' (see Map 1 for locations). Two trap nets remained at the same sites for the four net nights, while the other two were relocated for more effective sampling. Both shallow (3-4' depth) and moderate (10-12' depth) locations were netted in order to sample asmuch diverse habitat as possible.

Seining was also conducted at the south end of the lake (see Map 1 for location). A representative sample of yearling game and pan fish were collected. Using a 40' x 4' nylon seine (1/4" stretch mesh), four hauls were made at the southern launch area.

All fish collected from the survey were measured (total length) to the nearest millimeter and weighed on platform or Chatillion hanging scales to the nearest gram. Scales were removed from game and pan fish for age determination. Sub-sampling was necessary on pan fish because of the large numbers being captured in each net. Sizes were grouped so that the aging would include all ranges present. Individual fish from which no scales removed were counted and a sample was measured. Scales were pressed on acetate sheets and read on a scale projector. Gill net, trap net and seining sampling locations and effort is summarized in Table 1.

RESULTS

The hydrographic map is shown in Map 1. Song Lake has a maximum depth of 30 feet, with a mean depth of approximately 10 feet (mean depth was calculated by averaging transect depths). As shown in the map, the shoreline at the south end has a very gradual slope. The east and west sides of the lake have a much steeper slope, particularly at various points. There is a shallow shoal area found near the northwest end of the lake with a depth of 2-5'. Several bay areas, located towards the north end all have maximum depths of less than 10'.

Aquatic vegetation in the littoral zone to a depth of 10' is shown in Map 2. Aquatic vegetation is broken down into three types; submerged, emergent and floating plants. The lake supports primarily moderate submerged aquatics with emerging and floating vegetation being found in the shallower bay areas. A listing of aquatic vegetation and their relative abundances are given in Figure 1 (the species listed are not necessarily all that are present, but include only those actually collected).

Bottom substrate in the littoral zone to a depth of 10' is shown in Map 3. Song Lake has a bottom composition primarily of muck interspersed with rubble at the north and south ends with gravel interspersed with rubble at the east and west shores. A gravel and rubble bottom is also found around the island. This area appears to be suitable spawning habitat for smallmouth bass and walleyes. The composition and diversity of the bottom provides adequate habitat for all the species present in the lake.

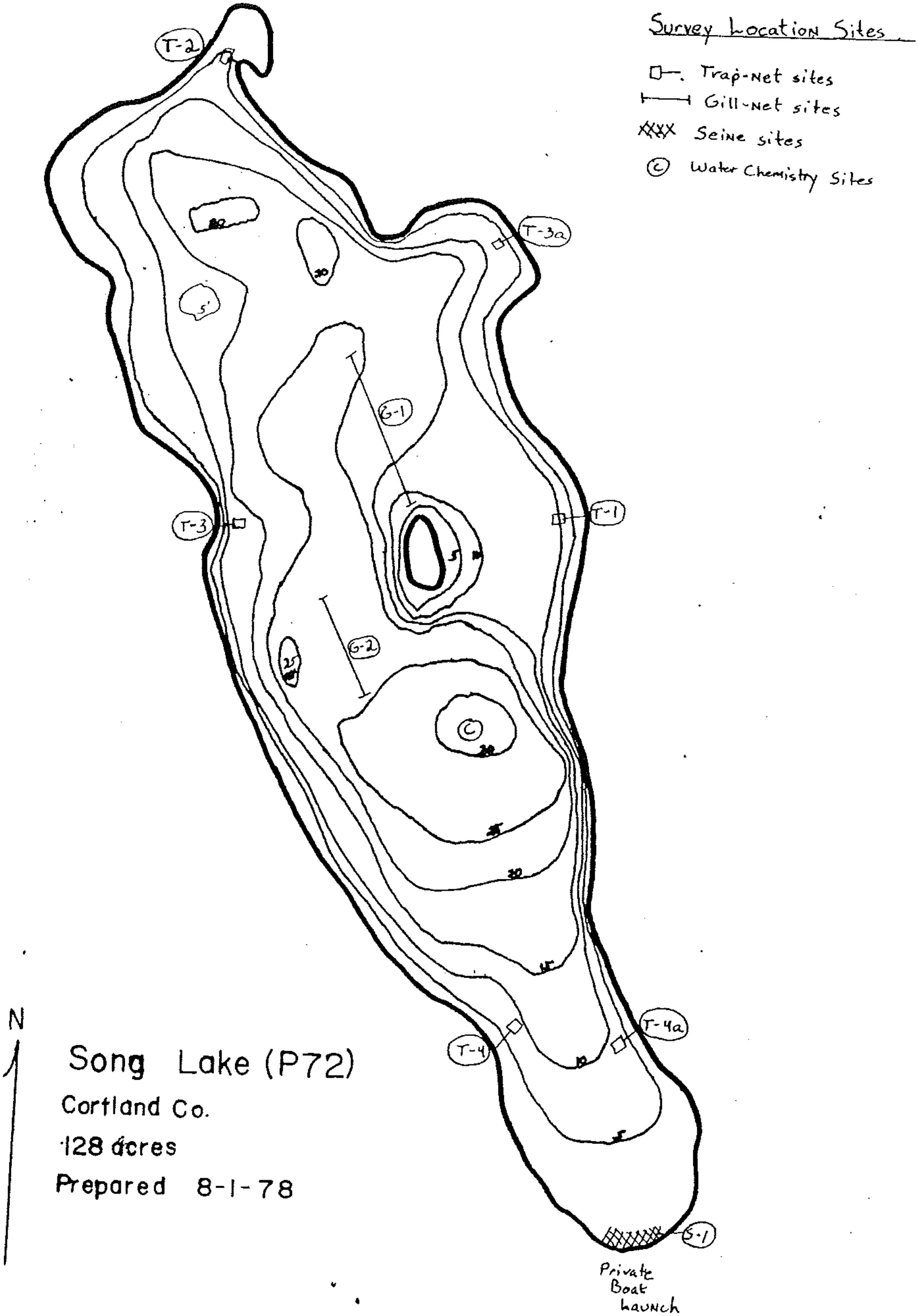
A fish collection list from the three sampling techniques is given in Figure 2. Relative abundances of each species is also recorded. Table 2 summarizes fish collected from each net, and includes dates, hours fished, number of each species collected, and their size. A total of 16 species were collected in the survey, consisting of the following: 61% bluegills, 9.1% pumpkinseed, 7.5% yellow perch, 4.1% rock bass, 2.9% largemouth bass, 2.9% chain pickerel, 2.9% brown bullhead, 2.0% black crappie, 0.8% redbreast sunfish, 0.4% smallmouth bass, 0.1% walleye, and 6.3% minnows, suckers, and miscellaneous.

It should be noted that trap-netting effort was far greater than gill netting (352.5 hours trap netting compared to 34.5 hours gill netting), but by using both methods a more accurate representation of fish present and their abundances was recorded. Seining was also valuable, for it captured several forage species and young pan and game fish which were not vulnerable to the trap or gill nets employed.

Size and age distribution of each game and pan fish species collected are shown in Figures 3 through 12. Sizes are grouped in 25 mm intervals with percentages of each group plotted on the graph. Age groups are given at the top of each graph for each size group.

Age and growth information, including mean lengths and weights and averages are summarized in Table 3 for each pan-fish and game-fish species collected.

Map 1


Survey Location Sites
Trap-net sites
Gill-net sites
Seine sites
Water Chemistry Sites
T-2
T-3a
G-1
T-3
T-1
G-2
T-4
T-4a
S-1
Private Boat Launch
N
Song Lake (P72)
Cortland Co.
128 acres
Prepared 8-1-78

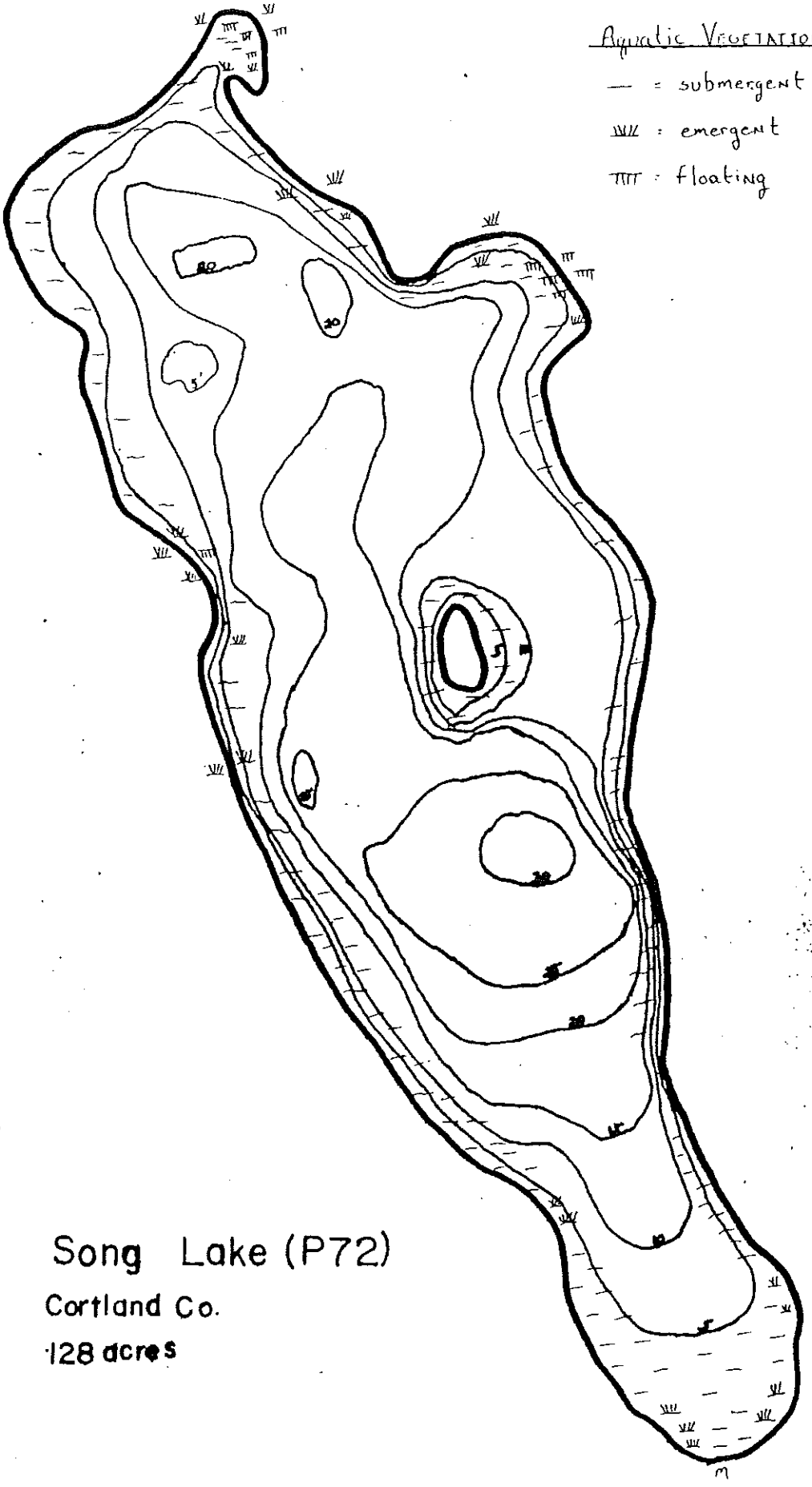
~~A-2~~
Map 2

Aquatic Vegetation Map

— = submergent

≈ = emergent

⊓⊓ = floating



N

Song Lake (P72)

Cortland Co.

128 acres

Substrate Map

R = Rubble
Gr = Gravel
M = Mud
Mk = Muck
S = Sand

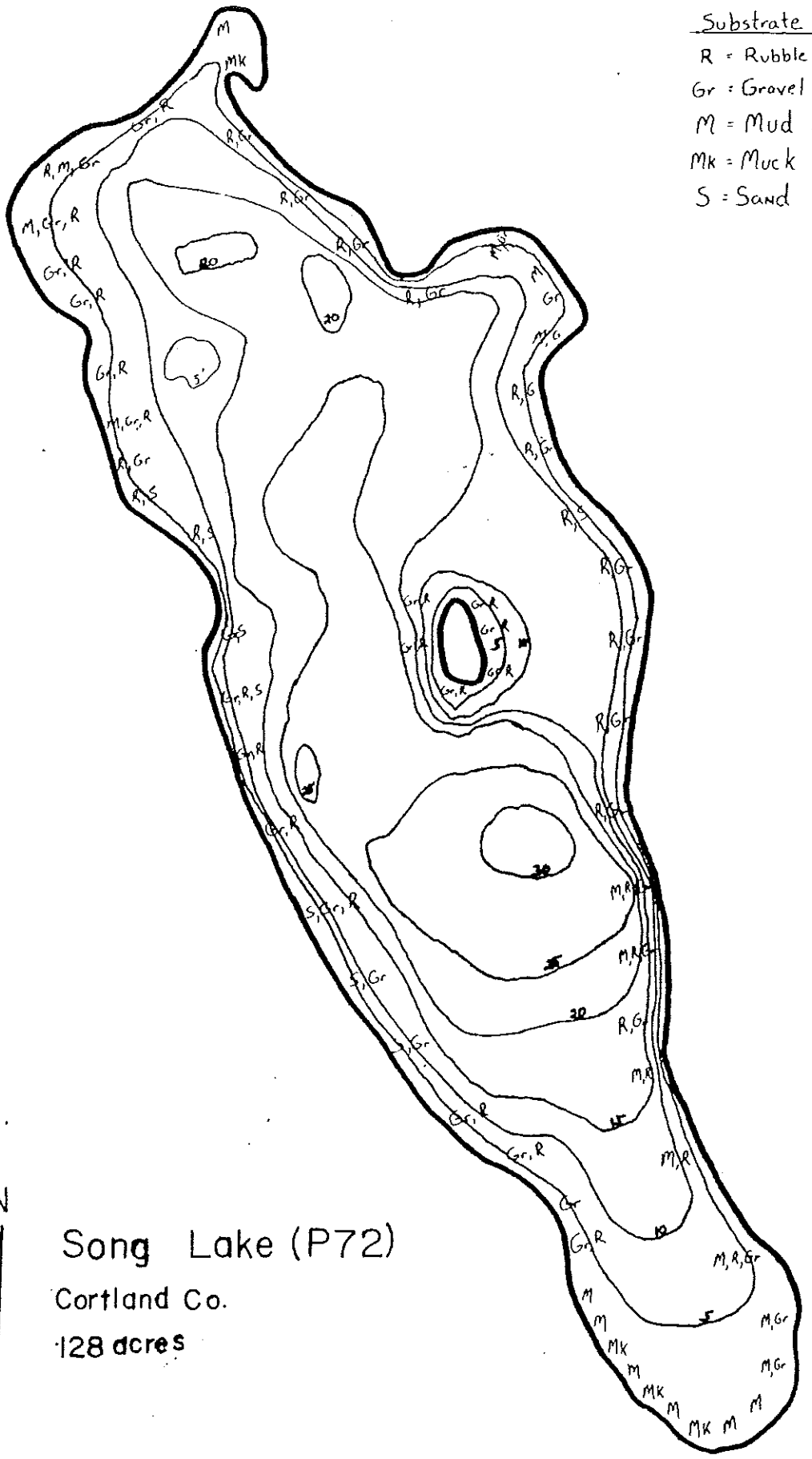


Figure 1

Song Lake Inventory Survey

Aquatic Vegetation List

Scientific Name	Common Name	Relative Abundances
Vallisneria americana	Wild Celery	C
Potamogeton amplifolius	Pondweed	C
Ceratophyllum demersun	Coontail	A
Myriophyllum exalbescens	Water Milfoil	A
Scirpus lineatus	Sedge	C
Nuphar species	Yellow Water Lily	R

Figure 2

Song Lake Inventory Survey
Fish Species List

List	Relative Abundance
Catastomidae (sucker family):	
C. commersoni - white sucker	R
E. sucetta - lake chubsucker	C
Centrarchidae (sunfish family):	
A. rupestris - rock bass	C+
L. auritus - redbreast sunfish	R
L. gibbosus - pumpkinseed	A
L. macrochirus - bluegill	A+
M. dolomieui - smallmouth bass	R
M. salmoides - largemouth bass	C
P. nigromaculatus - black crappie	C-
Cyprinidae (minnow family):	
N. crysoleucas - golden shiner	R
Cyprinodontidae (killifish family):	
F. diaphanus - banded killifish	C-
Esocidae (Pike family):	
E. niger - chain pickerel	C
Ictaluridae (catfish family):	
I. nebulosus - brown bullhead	C
Percidae (perch family):	
E. nigrum - johnny darter	R
P. flavescens - yellow perch	A-
S. vitreum vitreum - walleye	R-

Table 1

Site #	Collection Gear	Dates Fished	Hours Fished	Bottom Type	Vegetation Type	Depth (ft) Fished	Remarks
G-1	Experimental graded Swedish gill net, 150' x 5' (6-25' panels 1½", 2" 2½", 2-3/8", 3", 3½") 5 Net Gang (725' x 5')	6/12-6/13	16.75	mud-marl	none observed	7'-22'	too deep for vegetation observation
G-2	Same as above, 2 net gang (300' x 5')	6/13-6/14	17.75	mud-marl	none observed	15'-20'	too deep for vegetation observation
T-1	4' x 4' trap net, 75' x 4' lead	6/12-6/16	90.75	mud-rubble	sparse-submerged	8'-10' (at car)	
T-2	4' x 4' trap net, 75' x 4' lead	6/12-6/16	88.75	mud-marl	abundant-submerged sparse-emergents (lily pads, reeds)	3'-4' (at car)	
T-3	5' x 5' trap net, 75' x 5' lead	6/12-6/14	66.5	mud-marl	none observed	12-15' (at car)	too deep for vegetation observation
T-4	5' x 5' trap net 75' x 5' lead (no spreader, stick type)	6/12-6/14	42.75	mud-marl	moderate-submerged	10-12' (at car)	
T-3a	same net as T-3 site	6/15-6/16	22.5	mud-marl	abundant-submerged moderate-emergents (lily pads, reeds)	3-4' (at car)	
T-4a	Same net as T-4 site	6/14-6/16	41.25	mud-marl	moderate-submerged	4-6' (at car)	
S-1	40' x 4' cotton seine, no bag ¼" stretch mesh	6/16	nt	soft mud-marl	abundant-submerged abundant-emergent	5-4'	4 hauls (5-10 min. each haul)

Song Lake Inventory Survey

Table 2: Summarization of Fish Collected at Each Site

Net Site Number	Largemouth B. M. salmoides	Smallmouth B. M. dolomieui	Rock Bass A. rupestris	Black Crappie P. nigromaculatus	Bluegill L. macrochirus	Pumpkinseed L. gibbosus	Redbreast S. L. auritus	C. Pickerel E. niger
T-1	(7) 270-415 339mm	(1) 262mm	(5) 138-235 181.5mm	(1) 181mm	(337) 135-237 186.3mm	(22) 154-197 173mm	(3) 150-172 165.3mm	(4) 344-437 401.5mm
T-2	(17) 256-483 300.3mm		(21) 135-255 176mm	(12) 137-292 214.5mm	(324) 130-240 187.5mm	(29) 112-223 164mm	(2) 154-160 157mm	(5) 303-450 388.4mm
T-3	(6) 216-329 280mm		(3) 204-220 214.7mm	(4) 279-303 299.3mm	(17) 136-223 177.7mm	(11) 123-182 158.7mm	(2) 168-191 179.5mm	(3) 388-405 396mm
T-4			(2) 175-247 211mm	(1) 162mm	(3) 185-194 188.7mm	(8) 145-186 170.9mm	(1) 174mm	(1) 436mm
T-3a			(6) 150-250 209mm	(1) 276mm	(17) 129-198 172mm	(22) 140-217 166mm	(1) 160mm	(1) 350mm
T-4a			(3) 180-214 197mm	(2) 130-150 140mm	(15) 125-203 181.5mm	(1) 150mm		(7) 300-427 357mm
Trap Net Total	30	1	40	21	713	93	9	21
G-1	(4) 313-357 342mm	(4) 350-392 379mm	(8) 096-233 192mm	(2) 156-175 166mm	(4) 172-197 186mm	(4) 118-177 154mm		(2) 338-390 364mm
G-2					(4) 181-195 188mm	(3) 167-181 173mm		(3) 289-383 343mm
Gill Net Total	4	4	8	2	8	7		5
S-1			(1) 059mm	(1) 069mm	(5) 043-140 097mm	(8) 076-088 082mm		(8) 031-201 094mm
Seine Total			1	1	5	8		8
TOTAL CATCH	34	5	49	24	726	108	9	34

Song Lake Inventory Survey

Table 2: Summarization of Fish Collected at Each Site (cont'd)

Net Site Number	Y. Perch P. flavescens	Walleye S. vitreum vitreum	Br. Bullhead I. nebulosus	W. Sucker C. commersoni	L. Chubsucker E. suretta	G. Shiner N. crysoleucas	Killifish F. disphanus	J. Darter E. nigrum
T-1	(5) 257-298 274mm		(9) 220-301 (11.9") 274.5mm	(1) 545mm	(1) 295mm			
T-2			(19) 270-331 (13") 298.2mm	(1) 570mm	(22) 187-335 269.3mm	(1) 205mm		
T-3	(2) 280-296 288m		(3) 245-309 279mm		(1) 195mm			
T-4	(2) 268-268 268mm				(1) 322mm			
T-3a	(1) 287mm		(2) 303-305 304mm		(10) 205-330 268mm			
T-4a	(2) 269-292 281m		(1) 252mm	(2) 465-541 503mm	(2) 300-322 311mm			
Trap Net Total	12		34	4	37	1		
G-1	(38) 132-317 240mm			(1) 550mm				
G-2	(29) 145-303 241mm	(1) 476mm		(3) 470-510 486mm	(3) 224-327 274mm			
Gill Net Total	67	1		4	3			
S-1	(10) 071-189 117mm				(3) 069-087 075mm		(20) 036-090 054mm	(5) 050-062 056mm
Seine Total	10				3		20	5
TOTAL CATCH	89	1	34	8	43	1	20	5

Song Lake Inventory Survey
Age-Growth Summarization

Table 3

Date: 6/12-6/16/78
Gear: Trap-Nets, Swedish Gill, Seine

Species	Range Ave.	0+	1+	2+	3+	4+	5+	6+	7+	8+	9+
Smallmouth Bass (M. dolomieui)	Length (mm)			262			350	385-392 388.5	15.3" 388		
	Wt. (gm)			230			700	900-920 910	940 2#		
Largemouth Bass (M. salmoides)	Length (mm)			216	256-300 274.1	293-362 336.2	375-380 376.7	415		19" 483	
	Wt. (gm)			160	230-390 320	360-750 585.5	750-840 783.3	1160		1850 3.86#	
Rock Bass (A. rupestris)	Length (mm)		059	096-135 115.5	135-170 148.1	155-210 185.9	204-230 218.3	220-250 234.4	240	10" 255	
	Wt. (gm)		NT	010-050 030	050-090 078	060-200 138.3	180-250 217.5	210-310 267.1	280	320	
Black Crappie (P. nigromaculatus)	Length (mm)	069		137-181 158.9	240-243 241.3	279-292 283.3	276-300 288	303-315 309 ← 12.4"			
	Wt. (gm)	NT		040-110 063	220-270 243.3	240-340 300	400-460 430	340-540 440			
Bluegill (L. macrachirus)	Length (mm)		043-076 060	100	120-175 141.8	152-188 169.2	174-210 193	195-225 204.8	213-235 221.6	216-237 228 9.3"	
	Wt. (gm)		NT	020	030-120 065	080-140 117.5	110-240 177.5	150-250 202.2	210-300 246.4	260-330 302.5	
Pumpkinseed (L. gibbosus)	Length (mm)			076-088 081.8	112-132 122.5	136-181 150.5	144-205 159	166-188 178.7	180-217 189.8	223-223 223 8.8"	
	Wt. (gm)			010	030-050 040	050-190 078	050-230 093	100-150 125	110-190 146.7	290	
Redbreast Sunfish (L. auritus)	Length (mm)					150-154 152	160-174 168.7	160-191 173.3 7.5"			
	Wt. (gm)					070-110 090	080-180 130	090-170 135			
Yellow Perch (P. flavescens)	Length (mm)		071-077 075	100-117 110.7	132-175 147.3	166-199 181	214-229 221.5	235-256 246.3	235-298 265.4	269-312 292.9	12.5" 317
	Wt. (gm)		NT	010-020 017	010-080 037	060-100 071	140-160 150	200-230 207.1	180-320 251.9	260-430 344	420
Walleye (S. vitreum vitreum)	Length						476 18.7"				
	Wt.						1190 2.5#				
Chain Pickerel (E. niger)	Length (mm)		176-201 192	289-364 315.4	337-395 358.1	390-437 410.2	395-450 423.5	17.7"			
	Wt. (gm)		040-050 43.3	150-240 174	210-340 271.1	330-550 394	340-560 448.3	1#			