

THOUSAND ISLAND LAKE

*Gogebic County (T44N, R41W, Sec. 1,2,3,10,11,12)
Surveyed May, 1990 and June, 1992*

William L. Deephouse

Environment

Thousand Island Lake is part of the Cisco Chain of Lakes located approximately 13 miles southwest of Watersmeet in Gogebic County. The lake is 1,078 acres in size and has a maximum depth of 81 feet ([see map of Thousand Island Lake](#)). Aquatic vegetation is abundant and is composed mainly of submergent and floating species. Additional fish cover in the lake includes logs and sunken islands. The shoals are steep and are composed mainly of sand, gravel, and fibrous peat. There is ample spawning grounds for all of the lakes' various fish species.

The state maintains a public access site on the east shore. There are many homes and camps around the lake. There are inlets from Big African and Lindsley lakes. The lake outlets through Cisco Lake over the Cisco Lake water level control dam to the Cisco Branch of the Ontonagon River.

Chemical-physical parameters of the lake include a pH of 7.5, a Secchi disk reading of 12 feet and an methyl orange alkalinity of 50 ppm. The mid-summer thermocline is at approximately 17 to 26 feet. Dissolved oxygen levels are too low to support fish below 50 feet during this period.

Fishery Resource

Thousand Island Lake has a history of fish management dating back to the early 1930s. Several species of fish, including yellow perch, walleye, and lake trout, have been stocked through the years.

Being a part of the Cisco Lake Chain, the water level is held artificially high by a dam on the outlet of Cisco Lake. The dam was constructed sometime prior to the 1930s and probably originated as a logging dam. In 1937 the Copper District Power Company purchased the dam and subsequently, in 1948, the Upper Peninsula Power Company purchased it. The purpose of the dam to this day is to provide water for power generation at Victoria Dam many miles downstream on the Ontonagon River. The elevated water level also permits the passage of boat traffic through several lakes in the Chain which would not be otherwise possible.

Several fishery surveys have been conducted over the years and all have resulted in finding quite good populations of walleye, smallmouth bass, cisco, bluegill, yellow perch, and rock bass. Northern pike also inhabit the lake but complaints have occurred over the years of numerous small pike and presently there is no size limit for that species. Muskys have been reported occasionally.

In recent years, the MDNR has stocked both fry and fingerling walleye in the Cisco Chain. Additionally, the local lake owners association has stocked walleye fingerlings. Specifically, 5,000 walleye were stocked in Thousand Island Lake in 1986 and 15,416 in 1991. In general, fishing on Thousand Island Lake, as well as the rest of the lakes in the Chain, has been quite good.

Shifts in the fish community have been documented with periodic surveys of the fish population. In July 1988, fyke nets were used for 3 days to sample fish. Results can be compared to a similar fish survey conducted in 1975. Relative to the 1975 survey, the average length of bluegill had declined somewhat (5.6 inches compared to 7.1 inches) but the average length of all other species remained about the same. The percent of catchable walleye and bluegill declined, but the numbers of catchable perch increased. The primary predator, walleyes, experienced a major decline in relative abundance, from 39.6% of the fish biomass in 1975 to 16.8% in 1988. The abundance of bluegill, rock bass, and smallmouth bass increased significantly. Largemouth bass and black crappie were taken in the 1988 survey. Their numbers were not high but neither species had been captured in surveys in 1969 or 1975. No cisco were captured in the 1988 survey, but this was not surprising as no gill nets were used. This species is usually pelagic and is not very vulnerable to fyke nets. Two large northern muskys were observed in 1988 but neither were measured; one was in the 25 lb range.

A follow-up survey in late May, 1990, found the high bluegill abundance of 1988 much reduced. They represented only 5% of the total weight of all fish caught in the survey in 1990 compared to 16.9% in 1988. Average size had increased to 6.8 inches. Results of the entire 1990 survey are shown in Table 1.

Most other species taken in the 1990 survey were present in just about the same numbers as 1988 with the exception of rock bass. They appeared to have made a significant increase in biomass, going from 10.2% in 1975 to 29.2% in 1988 to 38.1% in 1990. No cisco or largemouth bass were taken.

Overall, the fish community looked to be in good shape and additional walleye stocking was not recommended. But in the spring of 1991, members of the Lac Vieux Desert Indian tribe began spearing this lake. A total of 217 adult walleyes were taken which averaged 16.5 inches long. For this reason walleye fingerlings were stocked in 1991. The lake was again speared in 1992 and 215 walleyes were harvested which averaged 16.0 inches. A safe spearing quota of 224 fish has been set for 1993.

We were interested to see what effect, if any, this tribal walleye harvest had on the fish community here. A fyke net survey was conducted in mid-June 1992. Results are shown in Table 2.

Although the relative biomass of walleye collected in the survey did not decline much from 1990 to 1992 (20.4% to 18.4%), walleye numerical abundance dropped by a factor of three. CPE (catch-per-unit-of-effort) declined from 4.2 walleye per net-night in 1990 to 1.4 in 1992. The average size of fish taken increased from 15.4 inches in 1990 to 19.4 inches in 1992. Evidently, the harvest of smaller-sized walleye helped skew the average size upwards while lowering their overall abundance. Additionally, it appeared that reproduction has either been limited for the past 2 or 3 years or that the smaller-size classes are being cropped off. Almost no young-of-the-year or age I walleyes were observed in the October 1991 electrosurvey done by the Great Lakes Indian Fish & Wildlife Commission.

Coincidentally, smallmouth bass numbers also have declined sharply, from a CPE of 12.2 in 1988 to 5.6 in 1990 to 0.8 in 1992. Combined with the historically low population of small northern pike, the total biomass of predators in this lake is declining at an alarming rate. Total biomass contribution of pike, walleye, and smallmouth bass has declined from 51.4% in 1975 to 41.9% in 1988 to 39.4% in 1990 to the present low level of 27.2%. This could result in an increase in panfish numbers but of smaller and smaller average size.

Bluegills, the most abundant panfish, showed only a slight decline in average size from 1990 to 1992, going from 6.8 inches to 6.2 inches. Their relative abundance reached an all-time high in 1992, 24.8% by weight. Black crappie also appear to be increasing at a rapid rate. Their biomass

contribution increased from 2-3% in 1988-92 to 14.2% in 1992. Rock bass biomass declined by 50% compared to the 1990 survey (from 38.1% to 19.0%). We have no explanation for this. The perch population remained quite stable from 1975 to 1992.

Management Direction

A. Current management.

In general, Thousand Island Lake still has a nice fish community and should continue to provide decent angling opportunities. However, if future surveys show the predator biomass continuing to decline, fingerling walleye stocking should be again undertaken. The walleye, the primary predator, should be closely watched to assure their population is reproducing and is well-balanced. If walleye abundance goes lower, the fish community of the entire lake will be adversely effected. Surveys should be conducted at least every 3 years.

B. Goals and expectations.

The management goal for Thousand Island Lake is the same as for the entire Cisco Chain, namely to maintain well-balanced and diverse species complexes in these lakes to provide good fishing for all user groups. To accomplish that goal, it may be necessary to stock fish (notably walleye) and to periodically manipulate the populations of species which may become overabundant or stunt (bluegill, perch, rock bass, etc.). Specific goals include:

1. Maintain the predator biomass at 30% or higher to provide an attractive sport fishery and control undesirable species while maintaining a balanced panfish community. Predators include northern pike, smallmouth bass, and walleye.
2. Maintain high average size of panfish. Minimum targets are 7.0 inches for bluegill, 10.0 inches for black crappie, and 8.0 inches for yellow perch.
3. Determine if the walleye population is sustaining itself through natural reproduction.

C. Obstacles to attainment of goals.

Keeping a healthy population of walleyes in this lake is essential to maintaining the fish community in a well-balanced condition. If excessive numbers of this predator are withdrawn from the lake, for whatever reason, panfish species may become overabundant. Natural reproduction also appears to have declined over the last several years. This may be due to normal year-to-year variation but might be an indication of some other problem.

Report completed: February 5, 1993.

Table 1.-Number, weight and length indices of fish collected from Thousand Island Lake with 3/4-inch fyke nets, May 29-31, 1990.

Species	Number	CPE	Percent by number	Weight (pounds)	Percent by weight	Length range (inches) ¹	Average length	Percent legal size ²
Walleye	34	4.2	7.2	48.7	20.4	9-22	15.4	53
Northern pike	10	1.2	2.1	11.0	4.6	15-22	17.4	100 ³
Smallmouth bass	44	5.5	9.4	34.3	14.4	8-17	11.4	36
Bluegill	44	5.5	9.4	11.9	5.0	4-9	6.8	82

Pumpkinseed	5	0.6	1.1	1.9	0.8	5-7	6.7	80
Yellow perch	45	5.6	9.6	20.2	8.5	6-13	9.7	98
Black crappie	11	1.4	2.3	4.1	1.7	7-9	8.1	100
Rock bass	258	32.2	54.9	91.0	38.0	4-10	7.4	58
Brown bullhead	16	2.0	3.4	7.2	3.0	7-11	9.9	100
White sucker	3	0.4	0.6	8.5	3.6	18-20	19.5	---
Total	470		100.0	238.8	100.0			

¹ Note some fish were measured to 0.1 inch, others to inch group: e.g., "5" - 5.0 to 5.9 inches; "12"= 12.0 to 12.9 inches; etc.

² Percent legal size or acceptable size for angling.

³ No size limit on pike in this lake.

Table 2.-Number, weight and length indices of fish collected from Thousand Island Lake with 3/4-inch fyke nets, June 16-18, 1992.

Species	Number	CPE	Percent by number	Weight (pounds)	Percent by weight	Length range (inches) ¹	Average length	Percent legal size ²
Walleye	23	1.4	2.1	67.3	18.4	12-26	19.4	83
Northern pike	10	0.6	0.9	21.0	5.7	14-27	19.9	100 ³
Smallmouth bass	12	0.8	1.1	11.4	3.1	8-18	12.3	58
Bluegill	525	32.8	47.3	91.0	24.9	4-8	6.2	61
Pumpkinseed	67	4.2	6.0	9.9	2.7	4-7	5.6	25
Yellow perch	100	6.3	9.0	21.3	5.8	5-10	7.6	70
Black crappie	95	5.9	8.6	51.9	14.2	5-12	9.3	87
Rock bass	237	14.8	21.3	69.6	19.0	4-9	6.7	73
Brown bullhead	40	2.5	3.6	16.6	4.5	6-11	8.8	92
White sucker	2	0.1	0.2	6.4	1.7	19-20	20.0	---
Total	1,111		100.1	366.4	100.0			

¹ Note some fish were measured to 0.1 inch, others to inch group: e.g., "5" - 5.0 to 5.9 inches; "12" = 12.0 to 12.9 inches; etc.

² Percent legal size or acceptable size for angling.

³ No size limit on pike in this lake.

Table 3.-Average total length (inches) at age, and growth relative to the state average, for three species of fish sampled from Thousand Island Lake with 3/4-inch mesh fyke nets, May 29-31, 1990. Number of fish aged is given in parentheses. All fish aged by spine analysis.

Mean

Species	Age										growth index ¹
	II	III	IV	V	VI	VII	VIII	IX	X	XII	
Walleye	10.3 (4)	13.7 (5)	15.1 (8)	15.1 (1)	16.8 (4)	18.6 (7)	20.5 (1)	18.2 (1)	22.5 (1)	--- ---	-1.1
State Average	10.4	13.9	15.8	17.6	19.2	20.6	21.6	22.4	23.1	---	
Smallmouth bass	8.4 (1)	10.7 (3)	--- ---	--- ---	14.9 (3)	--- ---	--- ---	--- ---	--- ---	--- ---	
State Average	7.5	10.8	---	---	15.3	---	---	---	---	---	
Yellow perch	--- ---	7.0 (2)	7.6 (4)	8.4 (5)	9.2 (2)	10.1 (5)	10.8 (3)	11.5 (3)	--- ---	13.1 (2)	-0.2
State Average	---	6.5	7.5	8.5	9.4	10.3	11.1	11.6	---	---	

¹Mean growth index is the average deviation from the state average length at age.

Table 4.-Estimated age frequency (percent) of three species of fish caught from Thousand Island Lake with 3/4-inch mesh fyke net, May 29-31, 1990.

Species	Age										Number caught
	II	III	IV	V	VI	VII	VIII	IX	X	XII	
Walleye	12	16	25	3	12	22	3	3	3	---	32
Smallmouth bass	14	43	43	---	---	---	---	---	---	---	7
Yellow perch	---	8	15	19	8	19	12	12	---	8	2

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Web Author: [Tina M. Tinchert, Librarian](#)

Questions, comments and suggestions are always welcome! Send them to
tinchert@michigan.gov

