Michigan Department of Natural Resources
Status of the Fishery Resource Report 94-2, 1994.
Renumbered in 2024, Status of the Fishery Resource Report 0044

SAND LAKE #3

Grand Traverse County (T27N, R9W, Section 26)
Surveyed June 4-5, 1992

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Environment

Sand Lake #3 is a small lake located in northeast Grand Traverse County within the Pere Marquette State Forest, Traverse City Area (see map of Sand Lake). The lake is within a state designated "quiet area" called the Sand Lakes Quiet Area. This area was designated in the early 1970s as a place where all motorized traffic is prohibited but camping is allowed. The lake is located about 5 miles southeast of Williamsburg.

Rolling hills characterize the geography of the area. The watershed is predominantly covered by a mixture of medium quality jack pine, oak, and aspen. Jack pine are found along the north and west shoreline and oak and aspen along the south shoreline. A marsh occurs along the east shore that extends to Sand Lake #2. The sandy soils (Rubicon and Kalkaska sand) are well drained. There are no inlets or outlets. The lake lies within the Boardman River Watershed.

Sand Lake #3 is 14.9 acres in area with a maximum depth of 17.1 feet. Shoals, comprised mostly of sand and marl, have a very gradual slope. Mean depth is only 5.2 feet. Vegetation is sparse, consisting of pond lilies, rushes, and submergent rooted aquatic vegetation.

Detailed information on water quality is lacking. However, over the years there have been notes about the clear water (Secchi disk visible at 13 feet in the 1950s) and summer surface water temperatures in the upper 60s to lower 70s (°F). In the 1970s the surface alkalinity was measured at 55 ppm, which is less than most lakes in this area. Oxygen levels must be adequate since there were no reported winterkills of fish.

There are no dwellings around Sand Lake #3 since it is entirely within state ownership. There are no developed campgrounds or boat launches on the lake but camping is permitted around the shoreline.

Fishery Resource

Very little information about the fishery exists prior to the 1950s. The table below gives a brief chronology of fisheries management activities for the lake from 1956 through 1992.

The most recent fish survey occurred on June 4-5, 1992. The netting effort entailed an overnight set of three large-mesh fyke nets and one small-mesh fyke net.

The present fish community is similar to that of the last 20 years (Table 1). The only species present are hybrid sunfish (bluegill x green sunfish) and largemouth bass. However largemouth bass now dominate the population and less than 10% of the bass were of legal size (³12 inches). Nearly all of the hybrid sunfish are of an acceptable size to anglers (6 inches or larger).

Growth of the hybrid sunfish has remained fast, significantly above the state average for bluegills (Table 2). On the other hand, the largemouth bass are growing significantly slower than the state average.

Year	Activity	Results
1956/57	Chemical reclamation (Hooper and Fukano 1960)	Removed all species (centrarchids and golden shiners)
1957	Plant 2,370 sublegal bluegill.	
1964	Plant 500 legal rainbow trout.	
1966	Netting survey.	Collected bluegill and perch.
1969	Chemical reclamation. Plant 7,450 fingerling hybrid sunfish.	Removed all species.
1972	Chemical reclamation. Study hybrid sunfish and largemouth bass. Plant 7,450 fingerling hybrid sunfish. Plant 745 fingerling largemouth bass.	Removed all species.
1977	Research study ended (Laarman 1978)	Good growth, survival & limited reproduction of hybrid sunfish.
1981	Netting survey.	Hybrid sunfish dominated population and excellent growth
1983	Plant 5,700 fingerling hybrid sunfish.	
1985	Plant 2,500 fingerling hybrid sunfish.	
1987	Plant 11,250 fingerling hybrid sunfish.	
1989	Plant 7,125 fingerling hybrid sunfish.	

Despite the abundance of small, slow growing largemouth bass, there are several age groups present (Table 3). Age 3 and 4 fish dominate the population. For hybrid sunfish the age composition is not normal. Only age 3 fish (1989 plant) were collected. Earlier plants did not survive or were not vulnerable to the gear. Natural recruitment for hybrid sunfish again appears minimal.

For the last 20 years Sand Lake #3 has been successfully managed for hybrid sunfish and largemouth bass. The lake produces large sunfish. They exhibit above average growth, primarily due to limited reproduction. On a scale 1 to 7 (Schneider 1990), the quality of the sunfish population ranked 7.0, "superior".

Fishing on Sand Lake #3 is an enjoyable experience. Motorized vehicles are prohibited, thereby limiting access. Consequently, the lake receives only light fishing pressure and those who fish it speak highly of the good fishing. Sunfish caught from this lake have been entered in the state's

Master Angler Award program (minimum length of 10 inches). Bass in excess of 20 inches are reported to be caught. The lack of buildings and man-made structures along the shoreline add to the quality fishing experience.

Management Direction

Sand Lake #3 is currently managed as a two-species, warmwater lake. The largemouth bass are reproducing but showing poor growth. The hybrid sunfish exhibit minimal reproduction and are growing rapidly. Largemouth bass and hybrid sunfish have not been planted since 1972 and 1989, respectively. Water quality and biological condition of the lake are monitored every few years in conjunction with fisheries surveys.

The goal for the next 10 years is to continue managing the lake for largemouth bass and hybrid sunfish. Specific goals are to: (1) create a healthy bass population in which growth equals or exceeds the state average and at least 10% of the individuals exceed 14 inches in length; (2) create a sunfish population with a normal age distribution and above average growth rate; (3) protect and maintain suitable habitat and water quality for these species; and (4) continue to provide a unique and aesthetically pleasing environment for the angler.

Their are no major problems in achieving goals #3 and #4 since the lake and its watershed are in state ownership and part of the state-designated Sand Lakes Quiet Area. The major difficulty in achieving goal #2 is obtaining hybrid sunfish to plant every 2 years. Since their reproduction is minimal it is necessary that regular plantings be made. Regular plantings of hybrid sunfish also should help achieve goal #1. The young sunfish will be forage for bass, thus improving bass growth rates and reducing the risk of a stunted bass population.

Reports from anglers and fisheries surveys will help determine whether these long-range goals are being achieved.

References

Hooper, F. F. and K. G. Fukano. 1960. Summary of experimental lake treatments with toxaphene. Michigan Department of Natural Resources Fisheries Research Report 1584, Ann Arbor.

Laarman, P. W. 1978. Growth, survival and reproduction by bluegill x green F_1 hybrid sunfish and largemouth bass stocked in three small lakes. Michigan Department of Natural Resources, Fisheries Research Report 1858, Ann Arbor.

Schneider, J. C. 1990. Classifying bluegill populations from lake survey data. Michigan Department of Natural Resources, Fisheries Technical Report 90-10, Ann Arbor.

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Table 1.-Number, weight, and length indices of fish collected from Sand Lake #3 with large- and small-mesh fyke nets, June 4-5, 1992.

Species	Number	Percent by number	Weight (pounds)	Percent by weight	Length range (inches)[1]	Average length	Percent legal size[2]

Hybrid sunfish	73	41.9	26.0	32.5	5.9-9.1	7.8	99
Largemouth bass	101	58.1	54.1	67.5	7.8-21.6	9.9	6

[1]Note some fish were measured to 0.1 inch, others to inch group: eg., "5"=5.0 to 5.9 inches; "12" = 12.0 to 12.9 inches; etc.
[2]Percent legal size or acceptable size for angling.

Table 2.-Average total length (inches) at age, and growth relative to the state average, for two species of fish sampled from Sand Lake #3 with large-and small-mesh fyke nets, June 4-5, 1992. Number of fish aged is given in parentheses.

	Age								
Species	I	II	III	IV	V	VI	VII	VIII	Mean growth index[1]
Hybrid sunfish	--	--	7.3	--	--	--	--	--	+2.0
	--	--	(32)	--	--	--	--	--	
Largemouth bass	--	--	8.7	9.8	11.5	--	15.6	--	-2.1
	--	--	(14)	(20)	(8)	--	(2)	--	

[1]The mean growth index for bass is the average deviation from the state average length at age. The index for hybrid sunfish is based on the state average for bluegill.

Table 3.-Estimated age frequency (percent) of two species of fish caught from Sand Lake #3 with large-and small-mesh fyke nets, June 4-5, 1992.

	Age								Number
Species	I	II	III	IV	V	VI	VII	VIII	caught
Hybrid sunfish	--	--	100	--	--	--	--	--	73
Largemouth bass	--	--	37	52	8	--	2	--	101

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Questions, comments and suggestions are always welcome! Send them to
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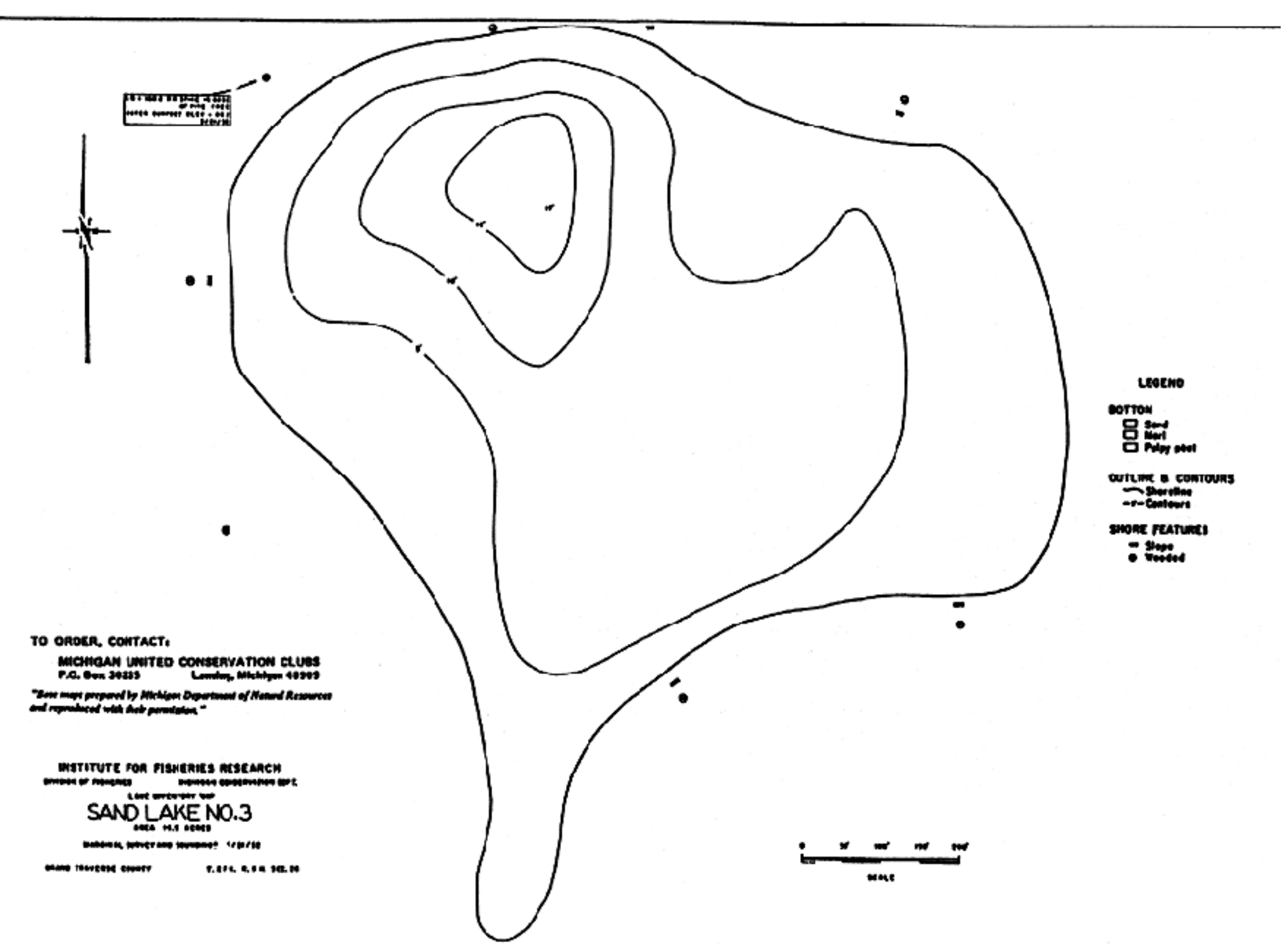

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