Michigan Department of Natural Resources
Status of the Fishery Resource Report 93-12, 1993.

DEVILS LAKE

Lenawee County (T5-6, R1E, Sec. many)
Surveyed June 17 and 18 and July 1, 1992

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Environment

Devils Lake is a natural lake located in northwest Lenawee County approximately 13 miles north and west of the community of Adrian (see map of Devils Lake). It is part of the Bean Creek watershed which lies within the St. Joe of the Maumee River Basin. Covering a surface area of approximately 1300 acres, Devils Lake is the largest lake in Lenawee County. It has a maximum depth of 63 feet. Inlets to Devils Lake include Horton Creek and two small unnamed streams which enter the lake at its northwest end. Bean Creek outlets Devils Lake at its southwest end and flows to Addison Mill Pond, the Tiffin River, and the Maumee River to the south. A small concrete dam at the origin of the outlet maintains the lake level at approximately 12 inches above Bean Creek. Round Lake, located immediately south and east of Devils Lake, is connected to it by a small channel which is too shallow for boating.

Sand and gravel are the predominant substrate types from shore to approximately the 5-foot contour. Marl is the most common substrate type from the 5-foot contour to a depth of approximately 20 feet. The deeper sections of the lake consist mainly of pulpy peat. Although*Chara* or muskgrass is common in the shallow water areas in Devils Lake, aquatic plant growth is quite limited. The most common aquatic plants in Devils Lake include white and yellow water lily, bulrush, bladderwort, *Myriophyllum*, and several species of pondweed. All are relatively sparse.

The terrain surrounding Devils Lake is gently rolling and is mainly farm fields with scattered woodland areas. The shoreline of this lake is nearly completely developed with both summer and permanent residences. There is a DNR public boat launch with parking for approximately 60 cars located on the lake's southwest end, just off Devils Lake Highway. This lake receives such intense use during the open water months that most anglers are forced to concentrate their angling efforts during the very early morning hours. Because of the lake's popularity, and to avoid illegal parking of vehicles and boat trailers on adjacent roads, the DNR charges an entry fee and limits the number of boats that are launched on weekends to the number of available parking sites.

History

Bluegills, largemouth bass, and yellow perch were stocked intermittently in Devils Lake from the late 1930s through the mid-1940s. The practice of stocking these species was

popular in many area lakes during this period but was discontinued after research showed that stocking these species was not necessary. The Devils Lake public access site was purchased by the state in 1951.

Tiger muskellunge fingerlings were first stocked in Devils Lake in 1961. An electrofishing survey in 1964 resulted in the capture of no muskies. "Tigers" were stocked again in 1976 and a subsequent survey in 1978 resulted in the capture of no muskies. Tiger muskellunge were stocked on an alternate year basis from 1978 through 1990 with limited success and few reports from anglers have been received. This stocking program was discontinued in 1992.

Walleye fingerlings were stocked in Devils Lake in 1982, 1983, 1985, 1987, and 1992. So far, a walleye fishery has not been established. Although past fish surveys captured several walleyes, anglers are not reporting their catch if they are indeed, successful. An intensive creel survey conducted on this lake in 1987 showed very few walleyes were caught by anglers. A post card creel survey was conducted in 1992 and no anglers returned cards. Current walleye stocking research suggests that stocking smaller fingerlings in early summer, as opposed to stocking slightly larger ones in the fall, may result in higher survival of stocked fish. Consequently, the stocking program was modified. Large numbers of small walleye fingerlings were stocked in Devils Lake in the early summer of 1992 and similar numbers are planned for 1993 and 1994. Evaluations of these introductions will follow. If a significant walleye fishery does not develop, this stocking program will be discontinued.

Fisheries personnel from the Jackson District have successfully raised redear sunfish since 1984 and have stocked nearly two million fingerlings in over 30 area lakes. This fast-growing panfish, originally native to the southeastern United States, has become increasingly popular among anglers since their first introduction to a few southern Michigan lakes in the early 1950s. Preliminary evaluations have generally shown good survival of stocked redears, and their natural reproduction has been confirmed in several lakes. Devils Lake appears to have ideal substrate and habitat for the growth and survival of the redear sunfish. But, a one-time plant of redears in Devils Lake in 1985 failed to produce a significant fishery and few redears were caught in subsequent routine surveys.

An intensive creel survey of Devils Lake was conducted from April 24 to September 7, 1987 (Herman 1989). Major fish species caught listed in descending order of numbers of fish creeled included bluegills, rock bass, pumpkinseed, yellow perch, largemouth bass, smallmouth bass, white bass, walleye, and northern pike. The creel clerk interviewed 738 anglers during this survey. The total harvest was an estimated 19,038 fish, comprising 11 species. Fishing success for bluegill was excellent. They were targeted by 34% of all anglers and accounted for 62% of the total catch. A sample of nearly 700 bluegills was measured by the creel clerk throughout the summer and they averaged an impressive 8.25 inches in length. Other major species harvested were rock bass (12%), pumpkinseed (10%), and yellow perch (8%).

A creel survey of the Devils Lake fishery was also conducted from the spring of 1950 through the winter of 1953-54 (Schneider and Lockwood 1979). For purposes of comparison with the 1987 creel survey, only the spring and summer data from the 1950s survey were used. Anglers in 1987 made only about half as many trips to Devils Lake as in the 1950s. Fishermen spent more hours per trip in 1987, but fished fewer total hours than anglers in the 1950s. Fewer fish (less than half as many) were harvested per hour in 1987 although anglers harvested similar numbers of fish per trip. Statistics for total number of fish harvested by 1987 anglers were much lower than those reported in the 1950s.

Historically, Devils Lake has received intense fishing pressure throughout the spring and summer months, mainly for bluegills, perch, and largemouth bass. Anglers are quite successful, despite intensive use of the lake by power boats and jet skis. There is a steady winter fishery for bluegills and yellow perch. Unique to this lake is the self-sustaining white bass population which was noted as early as 1948. The 1987 creel survey estimated that only 119 white bass were harvested, but the creeled fish averaged nearly 15 inches long and one fish weighed over 2 pounds.

Devils Lake has the reputation as one of the better fishing lakes in Michigan and is included in the latest edition of "Michigan's 50 Best Fishing Lakes" published by the Michigan United Conservation Clubs. This lake contains good populations of largemouth and smallmouth bass, bluegill, yellow perch, and pumpkinseed sunfish, and has a fair population of walleye.

Fishery Resource

Devils Lake was last surveyed in the summer of 1992 with five standard 8 x 5 x 3-foot trap nets and two 125-foot experimental gill nets.

In addition, an electrofishing sample was taken. The trap nets were fished for 2 nights and the gill nets were fished for 1 night. Gamefish species captured during this survey in descending order of abundance included bluegill, pumpkinseed, rock bass, bullhead, yellow perch, black crappie, largemouth bass, white bass, smallmouth bass, walleye, northern pike, and tiger muskellunge (Tables 1a and 1b).

Bluegills comprised nearly 30% of all fish caught in trap nets and they averaged 7 inches long. Seventy percent of the bluegills caught in trap nets were at least 6-inches long, an acceptable size to anglers (Table 1a). Based on growth analysis using fish scales, bluegills caught in trap and gill nets during the 1992 survey exhibited growth rates that were one-half inch above the state average (Table 2a).

Bluegills are targeted for sampling in inland lakes because of their role in determining fish community structure and overall sportfishing quality (Schneider 1981). Even though the goal of lake surveys is to sample all fish species and all sizes present, many times the bluegill population is the only one adequately sampled because bluegills are typically the most abundant. Recently a ranking system has been developed that allows

fish managers to get an idea of the relative quality of a lake's fish population. On a scale of 1 to 7 (Schneider 1990), the quality of the bluegill population in Devils Lake based on the trap net catch was calculated as 5.25 or "very good".

Pumpkinseed sunfish caught in trap and gill nets averaged nearly 7 inches and approximately 75% of them were of acceptable size to anglers. Fish scale analysis indicated these fish were growing nearly one-inch above the state average rate.

Yellow perch comprised over 40% of the total gill net catch by number and they averaged over 9 inches long. Scale analysis showed they were growing well above the state average growth rate. Seventy-five percent of them were over 7-inches long, the size anglers consider large enough to keep.

Black crappie caught in trap nets averaged 8.4 inches in length and exhibited growth rates over one inch above the state average rate. Nearly all of the crappies were over 7 inches long, or "keeper" size.

In general, few largemouth or smallmouth bass are caught with trap and gill nets and this survey was no exception. Only 10 largemouth bass and six smallmouth bass were captured. However, both species exhibited above average growth trends, although not enough fish per age group were captured to be statistically significant.

Even though relatively few stocked walleyes have survived in Devils Lake, those caught during the present survey exhibited growth rates that were 1.4 inches above the state average. A total of seven walleyes were caught with trap and gill nets and they averaged over 20 inches in length.

Devils Lake was surveyed with a 240-Volt boomshocker on July 1, 1992 for a period of one hour. Since boomshocker surveys tend to result in a sample of more small fish, these data are presented separately (Table 1c). Gamefish species captured in descending order of abundance included bluegill, pumpkinseed, yellow perch, rock bass, largemouth bass, smallmouth bass, and bullhead.

Of particular interest is the growth differential between the smaller bluegills and yellow perch caught during the electrofishing survey and the larger bluegills and perch caught during the trap-and gill net survey. Bluegills that are age I, II, and III exhibit relatively slow growth. However, age IV, V, and VI bluegills exhibit growth rates that are significantly above the state average. Likewise, age I yellow perch exhibit just "average" growth but all other age groups exhibit very good growth rates (Table 2a and 2b). Devils Lake is large and relatively deep. Most of the lake bottom consists of sand and marl and is lacking vegetation. These features, coupled with an intensely developed shoreline, has resulted in very few nursery and associated food production areas necessary for good growth of small fish.

Anglers interviewed during the fish survey reported consistent angling success during the open water months for bluegill, yellow perch, largemouth, and smallmouth bass.

Analysis and Discussion

Survey records show that species composition has remained relatively unchanged since this lake was first surveyed in May 1927, with the notable exception of the addition of white bass. However, since seines were the predominant gear type used during these early surveys, white bass may have evaded capture. Growth trends for bluegill, yellow perch, largemouth bass, smallmouth bass, pumpkinseeds, and crappie are comparable to those from past fishery surveys of Devils Lake.

Age composition and survival characteristics of all species listed in Table 2a and 2b appear to be normal based on scale sample frequencies. The longevity of yellow perch appears to be above average.

Redear sunfish seem ideally suited for Devils Lake. Although they were stocked once in 1985, very few redears were observed during subsequent surveys and few were reported caught. The Redear Sunfish Management Plan, written in January of 1991, recommends stocking redears for three years in succession, if possible, in order to give this species a fair chance at establishing itself. Redear sunfish fingerlings were stocked in Devils Lake in 1991 and two more introductions are planned in 1993 and 1995.

Devils Lake supports a varied and fast-growing fish community. Historically, fish growth has been consistently above the state average for most species. It is hoped that the current walleye stocking program will result in a significant fishery. A modest but viable walleye fishery has developed as a result of past introductions. Continued stocking and evaluation of this species is recommended. Devils Lake presently supports very good populations of bluegill, pumpkinseed, yellow perch, rock bass, largemouth bass, and smallmouth bass for angling and anglers are very satisfied with the existing fishery.

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References

Herman, M. P. 1989. Results of the 1987 creel survey of Devils Lake, Vineyard Lake, Lake Lansing, and two sites on the Grand River.

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Table 1a. Number, weight, and length indices of fish collected from Devils Lake with trap nets, June 17 and 18, 1992.

Species	Number	Percent by number	Weight (pounds)	Percent by weight	Length range (inches)[1]	Average length	Percent legal size[2]
Bluegill	79	28.8	21.7	11.0	4-9	7.0	70
Bullhead	47	17.2	43.4	22.0	8-13	11.5	100
Rock bass	37	13.6	8.6	4.4	4-9	6.8	70
Pumpkinseed	33	12.1	9.3	4.7	5-9	6.8	79
Black crappie	29	10.6	10.6	5.4	4-11	8.4	97
White bass	16	5.9	14.8	7.5	6-16	12.1	63
Walleye	4	1.5	14.2	7.2	20-25	22.8	100
Largemouth bass	5	1.8	7.9	4.0	10-17	14.3	60
Smallmouth bass	4	1.5	3.8	1.9	6-18	11.3	50
Longnose gar	10	3.7	12.3	6.2	22-31	26.3	---
Bowfin	4	1.5	14.1	7.2	24-31	22.0	---
Carp	5	1.8	36.4	18.5	24-32	28.1	---
Total	273	100.0	197.1	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.

Table 1b. Number, weight, and length indices of fish collected from Devils Lake with gill nets, June 17, 1992.

Species	Number	Percent by number	Weight (pounds)	Percent by weight	Length range (inches)[1]	Average length	Percent legal size[2]
Bluegill	9	13.3	3.0	6.0	5-9	7.5	89
Largemouth bass	53	7.5	2.7	5.4	7-12	10.1	20
Pumpkinseed	4	6.0	0.6	1.2	5-7	6.0	25
Yellow perch	28	41.7	10.8	21.5	5-12	9.1	75
Northern pike	3	4.5	10.1	20.1	24-24	24.5	100
Walleye	3	4.5	7.1	14.1	18-20	19.2	100

Smallmouth bass	2	3.0	2.0	4.0	12-13	12.5	100
Rock bass	5	7.5	1.5	3.0	6-7	7.1	100
Tiger musky	1	1.5	2.5	5.0	23	23.3	0
White bass	2	3.0	1.7	3.4	11-11	11.5	100
Bullhead	3	4.5	2.5	5.0	11-12	11.8	100
Longnose gar	2	3.0	5.8	11.5	32-36	34.5	---
Total	67	100.0	50.3	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.

Table 1c. Number, weight, and length indices of fish collected from Devils Lake with a boomshocker, July 1, 1992.

Species	**Number**	**Percent by number**	**Weight (pounds)**	**Percent by weight**	**Length range (inches)[1]**	**Average length**	**Percent legal size[2]**
Bluegill	137	47.2	2.4	15.1	1-8	3.0	1
Pumpkinseed	74	25.5	1.6	10.1	1-8	3.1	1
Yellow perch	25	8.6	1.8	11.3	2-12	4.6	8
Bullhead	5	1.7	2.0	12.6	5-10	9.3	80
Largemouth bass	15	5.2	5.1	32.1	3-15	7.6	20
Smallmouth bass	5	1.7	0.6	3.8	4-9	6.5	0
Rock bass	16	5.5	0.6	3.8	2-7	3.8	6
Warmouth	5	1.7	0.6	3.8	4-7	5.7	40
Lake chubsucker	6	2.1	0.7	4.4	4-7	5.3	---
Grass pike	1	3.1	0.2	1.3	8	8.5	---
White sucker	1	0.3	0.3	1.9	8	8.5	---
Total	290	100.0	15.9	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.

Table 2a. Average total length (inches) at age, and growth relative to the state average, for five species of fish sampled from Devils Lake with trap nets and gill nets, June 17 and 18, 1992. Number of fish aged is given in parentheses.

	Age								Mean growth
Species	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**index[1]**
Bluegill	---	4.2	4.8	6.2	8.0	8.9	9.0	---	+0.5
	---	(1)	(11)	(22)	(19)	(7)	(3)	---	
Black crappie	4.6	7.6	10.4	10.5	11.5	---	---	---	+1.1
	(1)	(14)	(4)	(3)	(1)	---	---	---	
Walleye	---	---	---	---	18.8	21.0	22.3	---	+1.4
	---	---	---	---	(1)	(5)	(1)	---	
Yellow perch	---	6.0	7.9	8.8	10.9	11.4	11.0	12.1	+0.7
	---	(8)	(3)	(9)	(2)	(2)	(2)	(5)	
Pumpkinseed	---	---	5.7	6.6	7.6	---	9.2	---	+0.9
	---	---	(10)	(11)	(10)	--	(1)	---	

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

Table 2b Average total length (inches) at age, and growth relative to the state average, for three species of fish sampled from Devils Lake with a boomshocker July 1, 1992. Number of fish aged is given in parentheses.

	Age							Mean growth
Species	**I**	**II**	**III**	**IV**	**V**	**VI**	**IX**	**index[1]**
Bluegill	2.6	3.8	4.8	---	---	8.5	---	-0.4
	(14)	(8)	(1)	---	---	(1)	---	
Largemouth bass	4.6	7.8	10.0	12.0	14.0	15.8	---	-0.8
	(9)	(1)	(1)	(2)	(1)	(1)	---	
Yellow perch	4.0	6.0	---	9.5	---	---	12.5	0.0
	(13)	(3)	---	(1)	---	---	(1)	

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

Table 3a Estimated age frequency (percent) of fish caught from Devils Lake with trap and gill nets, June 17 and 18, 1992.

	Age								Number
Species	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**caught**
Bluegill	---	1.1	15.1	37.1	32.7	11.0	3.0	---	88
Yellow perch	---	25.1	11.9	23.9	7.1	7.0	7.0	18.0	28
Black crappie	3.4	69.1	13.8	10.3	3.4	---	---	---	29
Pumpkinseed	---	---	32.7	35.2	29.1	---	3.0	---	37
Walleye	---	---	---	---	16.7	50.2	33.1	---	7

Table 3b Estimated age frequency (percent) of fish caught from Devils Lake with a 240-V boomshocker, July 1, 1992.

	Age								Number
Species	**0**	**I**	**II**	**III**	**IV**	**V**	**VI**	**IX**	**caught**
Bluegill	5.1	67.2	23.5	3.2	---	---	1.0	---	137
Yellow perch	---	80.0	12.0	---	4.0	---	---	4.0	25

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