

Sacarider Lake

Fish and Wildlife Research and Management Notes

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BACKGROUND

Sacarider Lake is a 33-acre natural lake located 3 miles west of Kendallville along county road 600N. A state-owned public access site is present on the north shore at the east end of the lake. The entire shoreline, except for a small portion on the north side is treelined and undeveloped. Many of the trees have died recently due to high water caused by beaver activity.

Maximum depth of Sacarider Lake is listed at 60 feet, although water deeper than 55 feet may no longer be present. Average depth is 22 feet. Lake elevation has normally been at 956.7 feet, although a legal level has not been established. Historically the lake was much deeper and covered 344 acres. The drainage area is 951 acres and average retention time is 278 days. The outlet (Gretzinger Ditch) flows to Tamarack Lake and the bottom is mostly muck.

Water quality is typical of most area lakes. Clarity varies from 5 to 9 feet and has averaged 7 feet over the past 30 years ([Table 1](#)). Oxygen levels are sufficient for fish only in the top 5-10 feet of water. Below 20 feet oxygen levels are at or less than 1 ppm. Coontail is the dominant aquatic plant but curly-leaf pondweed is dense at times. Spatterdock and lilies grow in scattered clumps.

Sacarider Lake's fish management history dates back to an initial survey in 1976. Surveys were also conducted in 1982 and 1992. Ownership of the access site was transferred to the state in 1985 and a 14 inch minimum size limit was imposed on largemouth bass in 1986. Based on mark-recapture sampling on six occasions from 1982-1992, the lake contained an average of 447 adult bass (8 inches) each year. The population doubled after two years of the size limit and nearly tripled after five years. By 1992 bass density (37/ac) was well above average and the number of 12- to 14-inch bass increased six-fold. Anglers removed 60 legal bass in 1992, half of the estimated population.

Fishing activity at Sacarider Lake is moderate. Summer fishing effort averaged 23 angler-hours per day, based on surveys conducted about 20 years ago before improvements were made to the access site. No recent data are available. Anglers fished primarily for bluegills and bluegills comprised most of the catch. Large bluegills (8 inches) made up 24 percent of the bluegill catch, while 7-inch bluegills made up 32 percent.

SURVEY RESULTS

During the survey, 249 fish weighing 165 pounds were collected. Eleven species were noted. Bluegills comprised 39 percent of the catch by number, followed by largemouth bass (29 percent) and yellow bullheads (7 percent). Bass ranked first by weight (38 percent) ahead of

bowfin (18 percent), bluegills (13 percent) and spotted gar (12 percent). Sport fish accounted for 92 percent of the total number and 70 percent of the weight.

Bluegills varied from 2 to 9 inches long. Nearly half (43 percent) were 7 inches and larger and 22 percent were 8 inches or larger. The numbers captured by electrofishing (27/15-min) and in traps (13/lift) were low compared to other lakes in the area. Bluegill growth rates however were well above normal. Four-year-old bluegills averaged 7 inches long. Bluegills usually reach 6 inches by 4-years-old in most lakes.

Seventy-one largemouth bass were caught, ranging in length from 2-19 inches. Fifteen were 14-inch or larger. Most bass (77 percent) were 8-12 inches and were 3- or 4-years-old. The number of bass captured by electrofishing (32/15-min) was low compared to other lakes in the area but their growth rate was faster than bass in most lakes. Four-year-old fish averaged nearly 13 inches long. Four-year-old bass are typically 11 inches.

Eighteen yellow bullheads were captured. They were 8-13 inches long. Sixteen black crappies up to 7 inches and 16 redear up to 10 inches were also captured. Other sport fish included five warmouth, three pumpkinseeds, a brown bullhead and a 10-inch yellow perch. Nonsport fish consisted of 13 spotted gar that were 17 -26 inches long and seven bowfin up to 27 inches long.

SURVEY COMPARISONS

Fewer fish were collected in the latest survey at Sacarider Lake compared to previous surveys ([Table 2](#)), reflecting a shift from a forage-rich fish community to a predator-dominated one. Although less sampling effort can account for some of the decline, the number of species decreased from 17 in 1976 to 11 in 1992 and 2001. Notable decreases occurred among small fish, chubsuckers and suckers, while predator fish (bass, bowfin and gar) increased from earlier levels.

The most recent survey also indicated the number of smaller bluegills decreased while larger bluegills increased ([Table 3](#)). Average length of bluegills varied from 3 inches to 5 inches from 1976 through 1992 and increased to nearly 7 inches in 2001. The number of 8-inch and larger bluegills in each survey increased from 14 to 22, despite declines in other catches and less sampling effort.

Likewise, more larger bass have been captured since imposition of the 14-inch size limit while the number of small bass has declined ([Table 4](#)). No 14-inch and larger bass were captured in 1976 or 1982. The number increased to 10 in 1992 and 15 in 2001.

MANAGEMENT IMPLICATIONS

Sacarider Lake continues to provide satisfactory fishing for large bluegills and has an ample number of large bass, despite apparent decreases in the number of small individuals of both species. Their growth rates are fast and should allow both species to adequately replenish those taken by anglers. Fast bluegill growth is likely due to increases in predator density and decreases

in competition with other species coupled with increases in habitat associated with the higher water level. The lake also provides additional sport fishing opportunities for crappies and redear.

Although no immediate fish management programs are needed at Sacarider Lake, efforts should continue to protect fish habitat, maintain the natural character of the shoreline, and reduce inputs of nutrients and sediments to the lake. These steps will help maintain water quality. Developers have built a large golf course and residential area within the watershed to the north. Additional development can be expected around the lake. Any encroachment along the shoreline or off the road leading to the access site should be prohibited. In addition, a legal lake level should be established to serve as a reference point for future management and to resolve any drainage disputes. Restoring the lake to its recent average water level would allow regrowth of a more natural visual buffer around the shoreline.

Tables

Table 1. Oxygen levels (ppm) and water clarity (secchi depth) at Sacarider Lake from 1976-2001.

Depth (ft)	8/72	8/76	7/82	6/92	7/01
0	9.0	9.6	9.0	9.0	8.0
5	9.0	8.4	10.0	10.0	7.0
10	9.0	8.2	2.0	7.0	1.1
15	2.6	7.6	0.4	1.5	0.1
20	0.4	0.8	0.1	1.0	0.1
25	---	0.0	0.1	0.8	0.1
30	0.0	0.0	0.1	0.6	0.1
35	---	0.0	0.1	0.4	0.1
40	0.0	0.0	0.1	0.6	0.1
50	0.0	0.0	0.1	0.8	0.1
Secchi	7.5	9.0	5.0	5.3	8.5

To obtain current information of the status of the lake, another fish population survey was conducted on July 23-25, 2001. Sampling consisted of hour of electrofishing, four gill net lifts and two trap net lifts. The results and comparisons to previous surveys are presented in this report.

Table 2. Number of fish collected during fish population surveys at Sacarider Lake from 1976-2001.

Species	8/76	7/82	6/92	7/01
Black crappie	7	22	12	16
Bluegill	379	389	484	98

Bowfin	0	2	4	7
Brown Bullhead	6	0	2	4
Carp	1	1	0	0
Grass pickerel	4	0	0	0
Green sunfish	2	2	0	0
Golden shiner	3	2	0	0
Lake Chubsucker	26	1	0	0
Largemouth bass	53	34	217	71
Logperch	1	0	0	0
Pumpkinseed	22	5	6	3
Redear	4	5	0	16
Spotted Gar	5	4	6	13
Warmouth	20	0	15	5
White sucker	16	32	26	0
Yellow bullhead	7	16	9	18
Yellow perch	4	10	10	1
TOTAL	560	525	791	249

Sampling effort

Electrofishing hrs	2 AC	1 AC	D	DC
Gill net lifts	4	3	4	4
Trap net lifts	0	4	8	2

Table 3. Size of bluegills collected at Sacarider Lake from 1976-2001.

Inches	1976	1982	1992	2001
1-1	82	0	35	0
2-2	106	3	106	5
3-3	22	17	109	5
4-4	63	136	83	19
5-5	48	141	63	7
6-6	28	45	55	20
7-7	16	29	13	20
8-8	14	18	12	16
9-9	0	0	8	6

Table 4. Number of largemouth bass collected during surveys at Sacarider Lake from 1976-2001.

Inches	1972	1979	1992	2001
<8	15	15	46	1
8-9	8	18	93	19
10-11	24	0	21	32
12-13	6	1	47	4
14-17	0	0	10	14
18	0	0	0	1