

# Loon Lake

## Fish and Wildlife Research and Management Notes

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**Title:** Loon Lake - Noble and Whitley Counties

## BACKGROUND

Loon Lake is a 222-acre natural lake located two miles west of SR 109 about sevenmiles north of Columbia City. Prior to drainage years ago it covered about 350 acres. Public access is available at a state-owned ramp in the southeast corner along Friskney Ditch, the main inlet. Loon Lake lies within the Tippecanoe River watershed and drains 7,104 acres. Hydraulic retention time is 289 days. Most of its shoreline is developed but some natural shoreline is present on the east side.

Maximum depth of Loon Lake is 92 feet and average depth is 26 feet. Oxygen levels are adequate for fish (>3ppm) only in the top 15 feet of water during summer ([Table 1](#)). Water clarity averages 5 feet, although secchi depths as great 16 feet were recorded in May 1988 during a drought year. Spatterdock, water lilies and cattails are the major emergent plants while coontail and eelgrass are the major submerged plants. Due to herbicide use, plants are sparse in several areas. The bottom is mainly sand, muck and marl.

Loon Lake's fish management history dates back to an initial survey in 1971. Surveys were also done in 1977, 1982, 1986 and 1988. Fishing effort and catches were surveyed in 1983 and water clarity was monitored in 1988. Muskellunge fingerlings have been stocked in the lake since 1978 ([Table 2](#)). To obtain current data on the status of the lake, another fish population survey was conducted on June 12-15, 2000. Effort consisted of 60 minutes of DC electrofishing, eight gill net lifts and four trap net lifts. The results and comparisons to previous surveys are presented in this report.

## SURVEY RESULTS

During the survey 2,039 fish weighing 554 pounds were collected. Nineteen species, including hybrid sunfish, were noted. Bluegills comprised over half the catch by number (61%), followed by largemouth bass (14%) and black crappies (8%). Bass also comprised most of the weight (29%). Carp made up 16% and bluegills 15%. Sport fish accounted for 97% of the total number and 72% of the weight.

Bluegills ranged from 1-9 inches long. Twelve were 8-inches or larger and 64 were 7-inches or larger. The number captured by electrofishing (188/15-min) was high compared to other lakes due to the catch of many 2-inch bluegills. Bluegill growth was normal with four-year-old fish reaching nearly 6 inches long.

Of the 288 largemouth bass caught in the survey, all but 10 were captured by electrofishing at a rate of 70/15-minutes, twice the typical rate at other lakes. Bass measured 3-20 inches long and

32 met or exceeded the current 14-inch minimum size limit. Their growth rate was normal compared to bass in other lakes with four-year-old bass reaching 12 inches long.

The 154 black crappies caught during the survey were 3-11 inches long. Twelve were 10-inches or larger. The largest group was 7-8 inches. Ninety were caught in gill nets at an average rate of 11/lift. Their growth rate was also average compared to other lakes in the area.

Eighty-two yellow perch were collected. All but nine were captured in gill nets (9/lift). They were 5-11 inches long and 13 were 10-inch or larger. Perch grew at normal rates compared to perch in other lakes, averaging nearly 8 inches by five-years-old.

Other sport fish included redear, pumpkinseeds, yellow and brown bullheads, warmouth, hybrid sunfish and two muskies. The muskies were 27-34 inches long. The remaining fish included spotted gar, 11 carp that were 22-30 inches long, golden shiners, bowfin, lake chubsuckers, bluntnose minnows and spotted suckers. Brook silversides were noted but not collected.

## **SURVEY COMPARISONS**

The number of fish collected at Loon Lake between 1971 and 2000 varied from 976 to 2,039 and averaged 1,367 ([Table 3](#)). The differences were most likely due to changes in sampling and do not reflect any major changes in species composition. Bluegills, largemouth bass and yellow perch comprised most of the catch each year. Brown and yellow bullheads, pumpkinseeds, redear and warmouth were common. However, some apparent differences included increases in largemouth bass, black crappies and carp and declines in lake chubsuckers and grass pickerel.

Bluegill and largemouth bass size have varied over the years ([Tables 4](#)) and ([Table 5](#)). More larger bluegills were caught in 1982 and 1988 and fewer were caught in 1986. The latest catch of 7-inch and larger bluegills was similar to the average of previous years, although more small bluegills were caught in 2000. Bass sizes were fairly constant from 1971-1988 and few 14-inch and larger bass were present. However, their number and size apparently improved significantly in recent years and may be attributed to imposition of a 12-inch size limit in 1991 and 14-inch size limit in 1998.

## **MANAGEMENT IMPLICATIONS**

Loon Lake continues to support ample numbers of catchable-size bluegills, yellow perch, crappies and other sunfish. Recruitment and growth of these sport fish remain good. In addition, more and larger bass are now present as well. Based on these results, there is no indication muskies have had any adverse effects on native fish. Although muskie numbers are relatively low, anglers routinely fish for them and reportedly catch several each year. Muskie stockings add diversity to fishing opportunities and should be continued.

No other immediate fish management programs are needed at Loon Lake, however, efforts should continue to focus on protecting fish habitat, enhancing the natural character of the lake, and reducing nutrient and sediment inputs. Water clarity at the time of the survey (<5 ft) was less

than clarity observed at other nearby lakes despite recent improvements in watershed management.

## TABLES

**Table 1. Oxygen levels (ppm) and water clarity (secchi depth) at Loon Lake from 1970-2000.**

Depth (ft)	7/70	7/71	7/77	7/82	7/86	7/87	7/88	6/00
0	9.2	8.3	10.0	8.0	11.0	10.0	12.0	10.5
5	9.7	9.3	10.0	7.5	10.0	9.0	13.0	10.0
10	7.7	8.6	10.0	7.0	8.0	8.0	9.0	8.5
15	-----	2.4	4.0	3.0	1.0	1.5	2.5	3.6
20	0.4	0.2	3.0	1.0	0.6	1.0	1.5	0.5
25	0.2	0.2	0.5	tr	0.6	tr	1.0	0.5
30	0.1	0.1	0.0	gtr	0.6	tr	1.6	0.4
35	0.1	0.1	0.0	tr	0.6	tr	-----	0.6
40	-----	-----	0.0	tr	0.6	tr	1.0	1.1
50	-----	-----	-----	tr	0.6	tr	0.6	0.2
60	-----	-----	-----	-----	tr	tr	0.8	0.2
70	-----	-----	-----	-----	tr	tr	0.6	0.2
80	-----	-----	-----	-----	tr	tr	-----	0.1
90	-----	0.0	-----	-----	0.0	tr	0.8	0.1
Secchi (ft)	5.5	6.0	5.0	8.5	5.0	5.0	4.0	4.85

**Table 2. Record of muskellunge stocking at Loon Lake from 1978-2000.**

<b>Year</b>	<b>Number</b>	<b>Inches</b>	<b>Diet</b>	<b>Source</b>
1978	1,110	3-5	pellet	Cikana
1979	1,400	3-5	pellet	Cikana
1980	1,143	5	pellet	Fawn River
1981	1,200	6-16	fish	Tri-County
1983	1,280	8-13	fish	Tri-County
1985	1,200	9-10	fish	East Fork
1986	1,000	4-5	pellet	East Fork
1987	1,647	7-17	mixed	TC and EF
1988	482	6-17	fish	TC and FR
1989	446	8-17	fish	Tri-County
1990	1,236	7-17	fish	Tri-County
1991	1,050	9-13	fish	Fawn River
1992	1,200	10-12	fish	Fawn River
1993	1,050	9-11	fish	Fawn River
1994	825	8-13	fish	Fawn River
1995	900	8-11	fish	Fawn River
1996	1,200	8-11	fish	Fawn River
1997	1,110	7-9	fish	Fawn River
1998	1,100	9-13	fish	East Fork
1999	1,100	10-14	fish	East Fork

**Table 3. Number of fish collected during fish population surveys at Loon Lake from 1971-2000.**

<b>Species</b>	<b>1971</b>	<b>1977</b>	<b>1982</b>	<b>1986</b>	<b>1988</b>	<b>2000</b>
Black bullhead	2	----	----	----	----	----
Black crappie	36	12	5	33	31	154
Bluegill	440	672	554	426	694	1,243
Bluntnose minnow	----	----	----	----	2	4
Bowfin	6	8	4	3	2	8
Brook silverside	57	*	----	2	3	*
Carp	----	•	2	1	2	11
Channel catfish	----	1	----	----	----	----
Grass pickerel	5	18	3	----	1	----
Green sunfish	----	13	2	1	----	----
Golden shiner	----	1	2	1	----	----
Hybrid sunfish	13	----	----	----	----	5
Lake chubsucker	68	62	82	64	37	5
Largemouth bass	132	100	47	100	154	288
Muskellunge	----	----	34	7	9	2
Pumpkinseed	40	91	42	114	58	41
Pugnose shiner	1	----	----	----	----	----
Redear	27	152	12	12	40	109
Smallmouth bass	----	----	----	----	1	----
Spotted gar	6	12	7	5	8	20
Spotted sucker	----	2	----	----	----	3
Warmouth	77	123	58	16	23	10
White sucker	----	5	4	----	----	----
Yellow bullhead	79	100	67	83	44	23
Yellow perch	235	160	146	73	134	82
<b>TOTAL</b>	<b>1,256</b>	<b>1,571</b>	<b>1,089</b>	<b>976</b>	<b>1,269</b>	<b>2,039</b>
<b>Sampling effort</b>						
Electrofishing hrs	4ac	3ac	1dc	1dc	dc	1dc
Gill net lifts	16	12	7	8	8	8
Trap net lifts	0	12	8	8	8	4
Seine hauls	0	12	8	8	8	4

\*denotes observed but not collected.

**Table 4. Size of bluegills collected at Loon Lake from 1971-2000.**

<b>Inches</b>	<b>1971</b>	<b>1977</b>	<b>1982</b>	<b>1986</b>	<b>1988</b>	<b>2000</b>
1-1	2	4	0	1	1	7
2-2	42	58	9	39	71	445
3-3	143	176	133	27	44	185
4-4	76	271	165	172	87	190
5-5	67	63	50	88	132	224
6-6	60	57	61	79	159	128
7-7	48	36	113	19	188	52
8-8	2	7	21	1	12	11
9-9	0	0	2	0	0	1

**Table 5. Size of largemouth bass collected during surveys at Loon Lake from 1971-2000.**

<b>Inches</b>	<b>1971</b>	<b>1977</b>	<b>1982</b>	<b>1986</b>	<b>1988</b>	<b>2000</b>
<8	84	42	12	43	46	108
8-11	39	49	29	49	97	107
12-13	5	5	4	3	5	41
14-17	3	1	1	4	5	27
18	1	3	1	1	1	5

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