

Lukens Lake
Wabash County
2008 Fish Management Report

Rod A. Edgell
Assistant Biologist



Fisheries Section
Indiana Department of Natural Resources
Division of Fish and Wildlife
I.G.C.-South, Room W273
402 W. Washington Street
Indianapolis, IN 46204

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EXECUTIVE SUMMARY

- Lukens Lake is a 46-acre natural lake located near Roann, in northwest Wabash County. The lake has a maximum depth of 42 ft, and an average depth of 22 ft.
- Submersed aquatic plants were sampled on July 16, 2008 according to the Tier II Aquatic Vegetation Survey Protocol (IDNR 2007).
- A total of two native species and one non-native species were collected. Coontail was most common (frequency = 63%), followed by Eurasian watermilfoil, and elodea (frequencies = 53%, and 3%, respectively). Curly-leaf pondweed along with two other unidentified Potamogeton species were observed but not collected.
- The general survey of Lukens Lake was conducted from June 10 to June 11, 2008.
- Fish collection effort consisted of 0.5 h of pulsed D.C. night electrofishing with two dippers. Two trap nets and two experimental gill nets were set overnight.
- A total of 182 fish, weighing 140.85 lbs was collected during this survey. Bluegills were the most abundant fish collected by number (30%), followed by largemouth bass (25%), and black crappie (15%).
- A total of 54 bluegills, ranging in total length from 2.2 to 8.5 in was collected at Lukens Lake. Bluegills of quality size (≥ 6 in) and preferred size (≥ 8 in) comprised 46% and 7% of the sample, respectively.
- A total of 46 largemouth bass, ranging in total length from 4.0 to 21.2 in was collected at Lukens Lake. Of the largemouth bass collected 11% were greater than or equal to the minimum size limit of 14 in.
- The species composition and relative abundance of fish at Lukens Lake has changed very little since the last survey in 1979. Bluegills, largemouth bass, and black crappie are still the most abundant species and are currently providing the best angling opportunities.

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INTRODUCTION

Lukens Lake is a 46-acre natural lake located near Roann, in northwest Wabash County. The lake has a maximum depth of 42 ft, and an average depth of 22 ft. The inlet, which flows from McColley Lake, enters along the north shore, while the outlet is located along the west shore and flows into Bolley Ditch. While only 40% of the shoreline remains undeveloped and considered natural, extensive beds of emergent vegetation are located in developed areas. There is currently no state owned access site on Lukens Lake; however anglers can gain access from a resort located along the west shore. A boat ramp and rental boats are available for a small fee. Past management includes stocking bluegill, largemouth bass, redear sunfish, black crappie, and rock bass from 1954 to 1961 and stocking rainbow trout from 1958 to 1964. Due to limited access a general fish survey has not been conducted on Lukens Lake since 1979.

METHODS

The general survey of Lukens Lake was conducted from June 10 to June 11, 2008. Temperature and oxygen profiles were collected at the deepest point using a Hydrolab Quanta®. Submersed aquatic plants were sampled on July 16, 2008 according to the Tier II Aquatic Vegetation Survey Protocol (IDNR 2007). A global positioning system device was used to record the location of submersed aquatic vegetation sampling locations.

Fish collection effort consisted of 0.5 h of pulsed D.C. night electrofishing with two dippers. Two trap nets and two experimental gill nets were set overnight (Figure 1). Total length of all fish was measured to the nearest 0.1 in and weight was measured to the nearest 0.01 lbs. Five scales per half-inch group were collected from bluegill, largemouth bass, and black crappie for age determination and back-calculated lengths-at-age. Length frequency distribution for reporting purposes will be grouped in half-inch increments which are defined as X.0 – X.4 and X.5 – X.9. Age length keys were also constructed to determine mean length at age. Proportional stock density (PSD) was calculated for bluegills and largemouth bass using electrofishing catch only (Anderson and Neumann 1996).

RESULTS

On June 10 the water temperature was 79.1°F at the surface and a dissolved oxygen concentration greater than 3.0 ppm was present down to a depth of 12 ft. Submersed plants were recorded at a maximum depth of 13 ft, in July of 2008. A total of two native species and one non-native species were collected. Coontail was most common (frequency = 63%), followed by

Eurasian watermilfoil, and elodea (frequencies = 53%, and 3%, respectively). Curly-leaf pondweed along with two other unidentified Potamogeton species were observed but not collected.

A total of 182 fish, weighing 140.85 lbs was collected during this survey. Bluegills were the most abundant fish collected by number (30%), followed by largemouth bass (25%), and black crappie (15%). Spotted sucker was the most abundant species collected by weight (33%), followed by largemouth bass (29%), and common carp (15%).

A total of 54 bluegills, ranging in total length from 2.2 to 8.5, in was collected at Lukens Lake. The electrofishing, gill net, and trap net catch rates were 72 fish/h, 4 fish/lift, and 6 fish/lift, respectively. The PSD for bluegill was 37, and the RSD-P was 9. Bluegills of quality size (≥ 6 in) and preferred size (≥ 8 in) comprised 46% and 7% of the sample, respectively. Based on the age length key and back calculated lengths at age the majority of bluegills reach 6 in between ages 3 - 4.

A total of 46 largemouth bass, ranging in total length from 4.0 to 21.2 in was collected at Lukens Lake. The electrofishing, gill net, and trap net catch rates were 90 fish/h, 1 fish/lift, and 0 fish/lift, respectively. The PSD for largemouth bass during this survey was 55, and the RSD-P was 7. Of the largemouth bass collected 11% were greater than or equal to the minimum size limit of 14 in. Based on the age length key and back calculated lengths at age the majority of largemouth bass reach 12 in between ages 3 - 4.

A total of 28 black crappies was collected at Lukens Lake. The electrofishing, gill net, and trap net catch rates were 0 fish/h, 9 fish/lift, and 5 fish/lift, respectively. Total length of black crappie collected ranged from 8.7 to 10.2 in. All black crappie collected were from the 2002 year class.

Other species worth noting include yellow perch, common carp, and gizzard shad. Six yellow perch, ranging in total length from 6.1 to 9.9 in were collected. Two common carp were collected, with the largest measuring 31.4 in. Twelve gizzard shad, ranging in length from 12.2 to 13.5 in were collected.

DISCUSSION

The diversity of plants has declined at Lukens Lake since the mid-1960's. This decline could be due to several causes including; expansion of Eurasian watermilfoil, removal of vegetation by lake residents, and decline in water quality. Due to the steep morphology of

Lukens Lake the area available for plants to grow is lacking and is located right along the shoreline in most areas. These areas of vegetation are valuable to fish production, but because of their proximity to the shoreline can also be susceptible to destruction by lake residents and users.

Water quality has also declined at Lukens Lake compared to previous surveys. Dissolved oxygen concentrations necessary for fish survival (3 ppm) extended beyond a depth of 20 ft in 1979 (Braun), compared to a depth of 12 ft in 2008. Land use practices within the watershed are likely responsible for this decline. Potential funding is available through Indiana's Lake and River Enhancement Program (LARE) to restore and prevent further declines in fish habitat. LARE provides technical and financial assistance to address non-point source pollution and exotic species within watersheds. One of the goals of this program is to protect or enhance aquatic habitat and recreational opportunities on Indiana's lakes and streams.

The species composition and relative abundance of fish at Lukens Lake has changed very little since the last survey in 1979 (Braun 1979) (Table 1). Bluegills, largemouth bass, and black crappies are still the most abundant species and are currently providing the best angling opportunities. The current bluegill and largemouth bass populations have similar size structure and growth rates as compared to 1979, and both statistics are typical for area lakes.

Gizzard shad were collected for the first time at Lukens Lake during the 2008 survey. Gizzard shad are highly vulnerable to the survey gear, suggesting that they were not present during earlier surveys. Although gizzard shad are native to the Eel River drainage it is unclear how these fish entered Lukens Lake. Abundant populations of gizzard shad can be detrimental to fishing and water quality. Other notable differences between surveys include a decline in the catch of yellow perch and lake chubsucker, and an increase in spotted suckers. However, these minor changes may be due to sampling variation and changes in sampling methodology and gear used since 1979.

RECOMMENDATIONS

- Due to the lack of unrestricted public access at Lukens Lake no fish management actions are warranted at this time. The lake is currently providing adequate angling opportunities.
- Currently there is no state public access site available on any natural lake in Wabash County. The DFW should continue efforts to obtain a public access site on Lukens Lake.

- The DFW and Lukens Lake residents should continue efforts to protect and conserve all remaining natural shoreline and vegetation at Lukens Lake. State law requires that residents of a public lake who want to chemically control or physically remove aquatic plants along more than 25 ft of their shoreline, a total surface area of more than 625 square feet, or at water depths greater than 6 feet must obtain a written permit. Residents who treat less than the specified amount do not need a permit.
- A lake association should be formed by Lukens Lake residents to utilize the LARE program for enhancement of water quality within the Lukens Lake watershed.

LITERATURE CITED

- Anderson, R. O., and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-481 *in* B. R. Murphy and D. W. Willis, editors. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.
- Braun, E. R. 1979. Lukens Lake, Wabash County, Lake Survey Report. Indianapolis, Indiana.
- Indiana Department of Natural Resources. 2007. Tier II Aquatic Vegetation Survey Protocol. Indianapolis, Indiana.

Submitted by: Rod A. Edgell, Assistant Fisheries Biologist
Date: 9/29/2008

Approved by: Edward R. Braun, Biologist
Date: 10/8/08

Approved by: Stuart T. Shipman, Fisheries Supervisor
Date: 1/23/2009

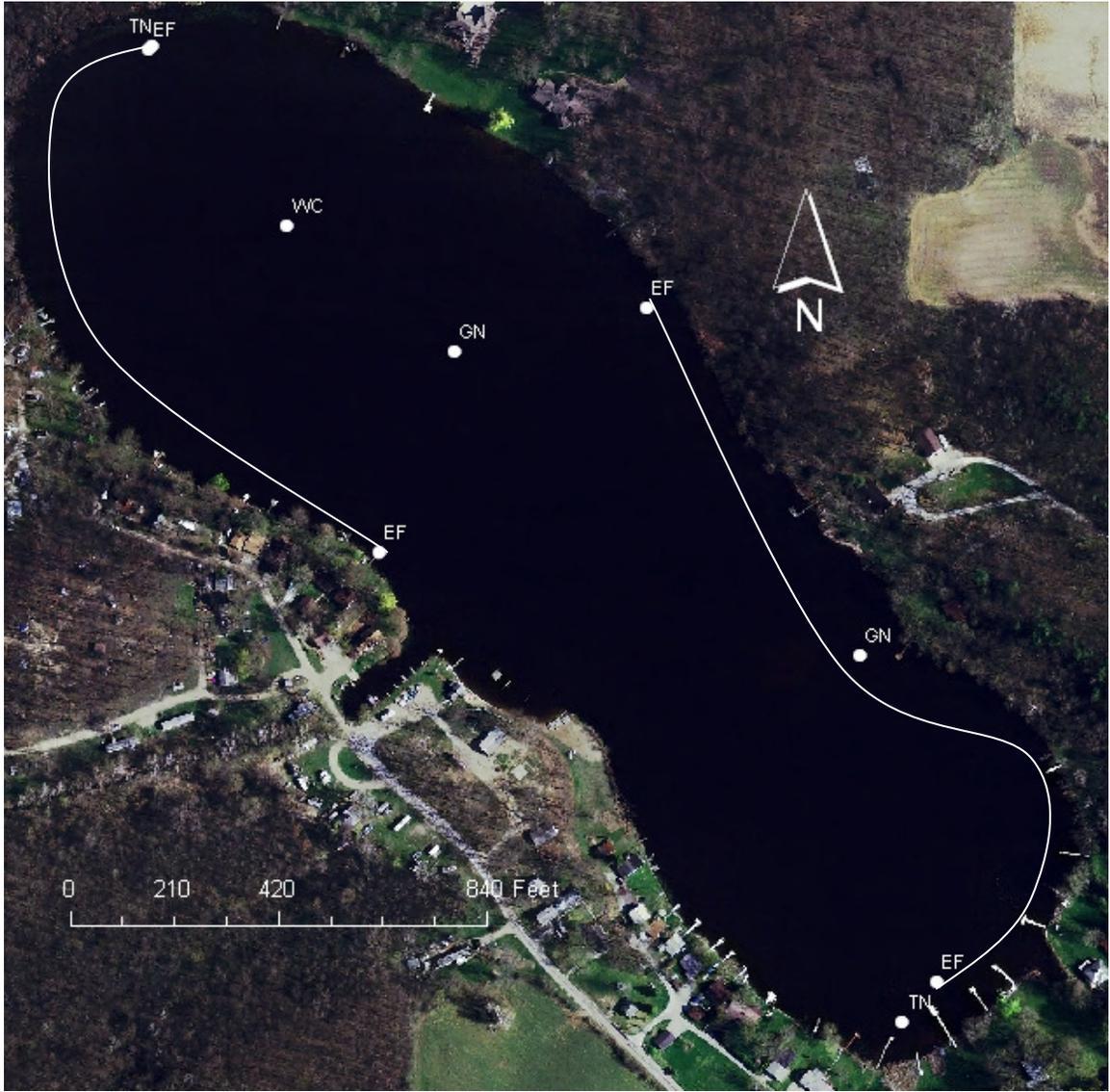


Figure 1. Sampling gear locations at Lukens Lake, Wabash County, Indiana in June 2008.

Table 1. Abundance of fish collected during general surveys at Lukens Lake from 1964 through 2008.

Species	1964	1974	1979	2008
Bluegill	751	25	72	54
Largemouth bass	180	15	50	46
Crappie	5	1	32	28
Spotted sucker	5		6	25
Gizzard shad				12
Yellow perch	10	4	25	6
Pumpkinseed	75	3	4	3
Warmouth	108	1	16	2
Yellow bullhead	5		3	2
Common carp	4	Present	2	2
Redear sunfish	11	2	10	1
Black bullhead			2	1
Brook silverside			Present	
Lake chubsucker	5	8	24	
White sucker	15		1	
Green sunfish	31			
Orangespotted Sunfish	14			
Redfin pickerel	4	1		
Rainbow Trout	4			
Rock bass	2			
Shiner sp.	1			
Total	1230	60	247	182
Electrofishing Effort (h)	6*	1*	0.5*	0.5
# of Gill Net Lifts	4	0	2	2
# of Trap Net Lifts	20**	0	2	2

* Completed with AC electrofishing gear.

** Wire Traps

Appendix
Lake Pages

LAKE SURVEY REPORT

Type of Survey	<input type="checkbox"/> Initial Survey	<input checked="" type="checkbox"/> Re-Survey
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Lake Name	County	Date of survey (Month, day, year)
Lukens Lake	Wabash County	10-Jun-08
Biologist's name		Date of survey (Month, day, year)
Rod Edgell		11-Jun-08

LOCATION		
Quadrangle Name	Range	Section
Roann	5E	11,14
Township Name	Nearest Town	
29N	Roann	

ACCESSIBILITY					
State owned public access site		Privately owned public access site		Other access site	
None		Pay ramp, boat rental			
Surface acres	Maximum depth	Average depth	Acre feet	Water level	Extreme fluctuations
46	42	22	1,010	763.65	None
Location of benchmark					
South Side of Outlet Channel					

INLETS		
Name	Location	Origin
Underground tile	North Side	McColley Lake

OUTLETS			
Name	Location		
Unnamed ditch	West side		
Water level control			
15 inch corrugated tube under road			
POOL	ELEVATION (Feet MSL)	ACRES	Bottom type <input type="checkbox"/> Bolder <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Muck <input type="checkbox"/> Clay <input checked="" type="checkbox"/> Marl
TOP OF DAM			
TOP OF FLOOD CONTROL POOL			
TOP OF CONSERVATION POOL			
TOP OF MINIMUM POOL			
STREAMBED			

Watershed use
General farming and woodlots
Development of shoreline
60% developed for residential and beach.
Previous surveys and investigations
Fisheries survey (IDNR), 1964, 1974, 1979. Hydrographic mapping (U.S.G.S.) 1951.

SAMPLING EFFORT					
ELECTROFISHING	Day hours		Night Hours		Total Hours
			0.5		0.5
TRAP NETS	Number of Traps		Number of Lifts		Total Lifts
	2		1		2
GILL NETS	Number of Nets		Number of Lifts		Total Lifts
	2		1		2
ROTENONE	Gallons	ppm	Acre-feet Treated	SHORELINE SEINING	Number of 100 ft Seine Hauls
	None				

PHYSICAL AND CHEMICAL CHARACTERISTICS						
Color		Turbidity (Secchi Disk)			Air Temperature	69.1 F
Brownish stain		6 Feet	6 Inches	Water temperature		79.1 F
Water Chemistry GPS Coordinates		N	40.97189069	W	-85.93552538	

WATER QUALITY PARAMETERS																
DEPTH (Feet)	Degrees (F)	D.O.	SpC	pH	TDS	D.O.%	Turb.	DEPTH	Degrees (F)	D.O.	SpC	pH	TDS	D.O.%	Turb.	
SURFACE	79.1	8.1	0.3	8.5	0.2	103.1	81.8	52								
2	79.1	7.8	0.3	8.4	0.2	99.0	74.0	54								
4	78.9	7.8	0.3	8.4	0.2	98.7	68.9	56								
6	76.7	8.3	0.4	8.3	0.2	102.7	81.6	58								
8	70.6	6.6	0.4	7.8	0.2	76.9	96.6	60								
10	66.2	4.7	0.4	7.4	0.2	51.7	92.8	62								
12	61.7	3.1	0.4	7.1	0.2	32.9	89.5	64								
14	57.5	2.0	0.4	6.9	0.2	19.7	86.6	66								
16	51.9	1.2	0.4	6.7	0.2	10.9	83.3	68								
18	48.3	0.9	0.4	6.7	0.2	8.3	78.6	70								
20	46.4	0.8	0.4	6.6	0.2	6.7	74.3	72								
22	44.9	2.1	0.4	6.7	0.2	18.2	65.8	74								
24	44.0	0.3	0.4	6.6	0.2	2.3	61.5	76								
26	43.7	0.0	0.4	6.6	0.2	0.0	58.9	78								
28	43.4	0.0	0.4	6.6	0.2	0.0	58.0	80								
30	43.1	0.0	0.4	6.5	0.2	0.0	59.4	82								
32	42.8	0.0	0.4	6.6	0.2	0.0	59.5	84								
34	42.6	0.0	0.4	6.5	0.3	0.0	57.1	86								
36	42.4	0.0	0.4	6.5	0.3	0.0	55.6	88								
38	42.3	0.0	0.4	6.4	0.3	0.0	55.2	90								
40	42.2	0.0	0.4	6.3	0.3	0.0	56.4	92								
42								94								
44								96								
46								98								
48								100								
50																
COMMENTS																
C=(F-32)*0.5555																

Occurrence and Abundance of Submersed Aquatic Plants - Overall

Lake: Lukens Lake	Secchi(ft): 6.0	SE Mean species / site: 0.15
Date: 7/16/2008	Littoral sites with plants: 23	Mean natives / site: 0.67
Littoral Depth (ft): 13.0	Number of species: 3	SE Mean natives / site: 0.10
Littoral Sites: 29	Maximum species / site: 3	Species diversity: 0.52
Total Sites: 30	Mean species / site: 1.20	Native diversity: 0.10

Species	Frequency of	Score Frequency				Dominance
	Occurrence	0	1	3	5	
Coontail	63.3	36.7	40.0	16.7	6.7	24.7
Eurasian Watermilfoil	53.3	46.7	23.3	23.3	6.7	25.3
Elodea	3.3	96.7	3.3	0.0	0.0	0.7
Filamentous Algae	16.7					

Other species noted: Curly-leaf pondweed and two other unidentified Potamogeton sp.

Occurrence and Abundance of Submersed Aquatic Plants - 0 to 5 ft.

Lake: Lukens Lake	Secchi(ft): 6.0	SE Mean species / site: 0.21
Date: 7/16/2008	Littoral sites with plants: 11	Mean natives / site: 0.69
Littoral Depth (ft): 13.0	Number of species: 2	SE Mean natives / site: 0.13
Littoral Sites: 13	Maximum species / site: 2	Species diversity: 0.50
Total Sites: 13	Mean species / site: 1.31	Native diversity: 0.00

Species	Frequency of	Score Frequency				Dominance
	Occurrence	0	1	3	5	
Coontail	69.2	30.8	46.2	15.4	7.7	26.2
Eurasian Watermilfoil	61.5	38.5	30.8	23.1	7.7	27.7
Elodea	0.0	100.0	0.0	0.0	0.0	0.0
Filamentous Algae	30.8					

Other species noted:

Occurrence and Abundance of Submersed Aquatic Plants - 5 to 10 ft.

Lake: Lukens Lake	Secchi(ft): 6.0	SE Mean species / site: 0.28
Date: 7/16/2008	Littoral sites with plants: 9	Mean natives / site: 0.67
Littoral Depth (ft): 13.0	Number of species: 3	SE Mean natives / site: 0.19
Littoral Sites: 12	Maximum species / site: 3	Species diversity: 0.56
Total Sites: 12	Mean species / site: 1.25	Native diversity: 0.22

Species	Frequency of	Score Frequency				Dominance
	Occurrence	0	1	3	5	
Eurasian Watermilfoil	58.3	41.7	25.0	25.0	8.3	28.3
Coontail	58.3	41.7	33.3	16.7	8.3	25.0
Elodea	8.3	91.7	8.3	0.0	0.0	1.7
Filamentous Algae	8.3					

Other species noted:

Occurrence and Abundance of Submersed Aquatic Plants - 10 to 15 ft.

Lake: Lukens Lake	Secchi(ft): 6.0	SE Mean species / site: 0.37
Date: 7/16/2008	Littoral sites with plants: 3	Mean natives / site: 0.60
Littoral Depth (ft): 13.0	Number of species: 2	SE Mean natives / site: 0.24
Littoral Sites: 4	Maximum species / site: 2	Species diversity: 0.38
Total Sites: 5	Mean species / site: 0.80	Native diversity: 0.00

Species	Frequency of	Score Frequency				Dominance
	Occurrence	0	1	3	5	
Coontail	60.0	40.0	40.0	20.0	0.0	20.0
Eurasian Watermilfoil	20.0	80.0	0.0	20.0	0.0	12.0
Elodea	0.0	100.0	0.0	0.0	0.0	0.0
Filamentous Algae	0.0					

Other species noted:

SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER AND WEIGHT						
*COMMON NAME OF FISH	NUMBER	PERCENT	LENGTH RANGE (inches)		WEIGHT (pounds)	PERCENT
			minimum	maximum		
Bluegill	54	29.7	2.2	8.5	8.42	6.0
Largemouth bass	46	25.3	4.0	21.2	41.38	29.4
Black crappie	28	15.4	8.7	10.2	11.61	8.2
Spotted sucker	25	13.7	12.0	17.6	46.94	33.3
Gizzard shad	12	6.6	12.2	13.5	7.82	5.6
Yellow perch	6	3.3	6.1	9.9	1.68	1.2
Pumpkinseed	3	1.6	4.9	6.1	0.44	0.3
Warmouth	2	1.1	5.1	6.4	0.30	0.2
Yellow bullhead	2	1.1	7.0	10.3	0.68	0.5
Common carp	2	1.1	24.7	31.4	20.41	14.5
Redear sunfish	1	0.5	7.6	7.6	0.33	0.2
Black bullhead	1	0.5	12.6	12.6	0.84	0.6
Total	182	100.0			140.85	100.0

*Common names of fishes recognized by the American Fisheries Society.

Lake:	Lukens Lake				TN	GN	EF
Date:	6/10/2008	to	6/11/2008	Total #	11	7	36
Species:	Bluegill			Effort	2	2	0.5
Total number:	54			CPUE	6	4	72
Total weight:	8.42						
Length range:	2.2	to	8.5				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	3	10	7	35	52	-
Quality	6	6	6	13	25	37
Preferred	8	1	0	3	4	9
Memorable	10	0	0	0	0	
Trophy	12	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0	1	0.01	18.5			35.0		
2.5	1	0.01	19.0			35.5		
3.0	1	0.02	19.5			36.0		
3.5	2	0.03	20.0			36.5		
4.0	6	0.05	20.5			37.0		
4.5	8	0.07	21.0			37.5		
5.0	5	0.09	21.5			38.0		
5.5	5	0.12	22.0			38.5		
6.0	4	0.16	22.5			39.0		
6.5	4	0.20	23.0			39.5		
7.0	4	0.26	23.5			40.0		
7.5	9	0.29	24.0			40.5		
8.0	3	0.32	24.5			41.0		
8.5	1	0.42	25.0			41.5		
9.0			25.5			42.0		
9.5			26.0			42.5		
10.0			26.5			43.0		
10.5			27.0			43.5		
11.0			27.5			44.0		
11.5			28.0			44.5		
12.0			28.5			45.0		
12.5			29.0			45.5		
13.0			29.5			46.0		
13.5			30.0			46.5		
14.0			30.5			47.0		
14.5			31.0			47.5		
15.0			31.5			48.0		
15.5			32.0			48.5		
16.0			32.5			49.0		
16.5			33.0			49.5		
17.0			33.5			50.0		

Lake:	Lukens Lake			TN	GN	EF	
Date:	6/10/2008	to	6/11/2008	Total #	0	1	45
Species:	Largemouth bass			Effort	2	2	0.5
Total number:	46			CPUE	0	1	90
Total weight:	41.38						
Length range:	4.0	to	21.2				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	8	0	1	44	45	-
Quality	12	0	0	24	24	55
Preferred	15	0	0	3	3	7
Memorable	20	0	0	1	1	2
Trophy	25	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0			18.5			35.0		
2.5			19.0			35.5		
3.0			19.5			36.0		
3.5			20.0			36.5		
4.0	1	0.03	20.5			37.0		
4.5			21.0	1	4.89	37.5		
5.0			21.5			38.0		
5.5			22.0			38.5		
6.0			22.5			39.0		
6.5			23.0			39.5		
7.0			23.5			40.0		
7.5			24.0			40.5		
8.0	1	0.22	24.5			41.0		
8.5	2	0.29	25.0			41.5		
9.0			25.5			42.0		
9.5	2	0.41	26.0			42.5		
10.0			26.5			43.0		
10.5			27.0			43.5		
11.0	9	0.61	27.5			44.0		
11.5	7	0.67	28.0			44.5		
12.0	6	0.76	28.5			45.0		
12.5	5	0.88	29.0			45.5		
13.0	3	1.00	29.5			46.0		
13.5	4	1.17	30.0			46.5		
14.0			30.5			47.0		
14.5	3	1.37	31.0			47.5		
15.0			31.5			48.0		
15.5	1	1.51	32.0			48.5		
16.0			32.5			49.0		
16.5			33.0			49.5		
17.0	1	2.43	33.5			50.0		

Lake:	Lukens Lake			TN	GN	EF	
Date:	6/10/2008	to	6/11/2008	Total #	10	18	0
Species:	Black crappie			Effort	2	2	0.5
Total number:	28			CPUE	5	9	0
Total weight:	11.61						
Length range:	8.7	to	10.2				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	5	10	18	0	28	-
Quality	8	10	18	0	28	
Preferred	10	0	1	0	1	
Memorable	12	0	0	0	0	
Trophy	15	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0			18.5			35.0		
2.5			19.0			35.5		
3.0			19.5			36.0		
3.5			20.0			36.5		
4.0			20.5			37.0		
4.5			21.0			37.5		
5.0			21.5			38.0		
5.5			22.0			38.5		
6.0			22.5			39.0		
6.5			23.0			39.5		
7.0			23.5			40.0		
7.5			24.0			40.5		
8.0			24.5			41.0		
8.5	3	0.37	25.0			41.5		
9.0	14	0.39	25.5			42.0		
9.5	10	0.45	26.0			42.5		
10.0	1	0.49	26.5			43.0		
10.5			27.0			43.5		
11.0			27.5			44.0		
11.5			28.0			44.5		
12.0			28.5			45.0		
12.5			29.0			45.5		
13.0			29.5			46.0		
13.5			30.0			46.5		
14.0			30.5			47.0		
14.5			31.0			47.5		
15.0			31.5			48.0		
15.5			32.0			48.5		
16.0			32.5			49.0		
16.5			33.0			49.5		
17.0			33.5			50.0		

Back-calculated lengths-at-age for bluegills captured at Lukens Lake, Wabash County, Indiana in June 2008.

Year Class	# Aged	Age						
		I	II	III	IV	V	VI	VII
2007	3	2.0						
	SD	0.6						
2006	8	1.8	3.4					
	SD	0.4	0.2					
2005	20	1.6	3.0	4.6				
	SD	0.2	0.5	0.7				
2004	3	1.9	3.0	5.1	6.3			
	SD	0.2	0.2	0.2	0.5			
2003	6	1.6	3.3	4.7	6.2	7.3		
	SD	0.2	0.3	0.5	0.5	0.4		
2002	5	1.7	3.2	5.1	6.2	7.0	7.7	
	SD	0.6	0.9	0.5	0.3	0.3	0.3	
2001	1	2.1	3.8	6.0	6.6	7.0	7.3	7.7
	SD	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean*		1.8	3.2	4.8	6.2	7.1	7.7	0.0
SD		0.4	0.4	0.5	0.4	0.4	0.3	0.0

*Does not include age groups with less than three samples.

Age-length key for bluegills captured at Lukens Lake, Wabash County, Indiana in June 2008.

Length Group	# in sample	# (age) in subsample	Age							
			1	2	3	4	5	6	7	
2.0	1	1(1)	1							
2.5	1	1(1)	1							
3.0	1	1(1)	1							
3.5	2	2(2)		2						
4.0	6	5(2)		6						
4.5	8	2(2), 3(3)		2	6					
5.0	5	5(3)			5					
5.5	5	5(3)			5					
6.0	4	4(3)			4					
6.5	4	2(3), 2(4)			2	2				
7.0	4	1(4), 3(5)				1	3			
7.5	9	1(5), 3(6), 1(7)					2	5	2	
8.0	3	2(5), 1(6)					2	1		
8.5	1	1(6)						1		
Mean TL			2.8	4.2	5.5	6.9	7.7	8.0	7.8	
SE			0.3	0.1	0.1	0.2	0.2	0.1		

Back-calculated lengths-at-age for largemouth bass captured at Lukens Lake, Wabash County, Indiana in June 2008.

Year Class	# Aged	Age							
		I	II	III	IV	V	VI	VII	VIII
2007	1	2.7							
	SD	0.0							
2006	10	4.0	8.6						
	SD	1.1	1.3						
2005	11	4.6	8.3	11.2					
	SD	0.7	0.9	0.7					
2004	4	5.0	9.3	10.7	11.9				
	SD	0.5	0.6	0.1	0.3				
2003	8	4.2	7.8	11.5	13.2	13.0			
	SD	0.5	0.9	3.8	3.5	1.2			
2002	2	4.2	8.3	10.4	12.2	13.2	14.6		
	SD	1.4	1.9	1.3	0.4	1.2	1.0		
2001	1	4.3	9.6	13.0	14.2	15.0	15.7	16.8	
	SD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2000	1	4.1	6.7	11.3	16.6	18.3	19.2	19.9	20.7
	SD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean*		4.5	8.5	11.1	12.6	13.0	0.0	0.0	0.0
SD		0.7	0.9	1.5	1.9	1.2	0.0	0.0	0.0

*Does not include age groups with less than three samples.

Age-length key for largemouth bass captured at Lukens Lake, Wabash County, Indiana in June 2008.

Length Group	# in sample	# (age) in subsample	Age							
			1	2	3	4	5	6	7	8
4.0	1	1(1)	1							
4.5										
5.0										
5.5										
6.0										
6.5										
7.0										
7.5										
8.0	1	1(2)		1						
8.5	2	2(2)		2						
9.0										
9.5	2	2(2)		2						
10.0										
10.5										
11.0	9	3(2), 2(3)		5	4					
11.5	7	1(2), 3(3), 1(4)		1	4	1				
12.0	6	1(2), 4(3)		1	5					
12.5	5	2(3), 3(4)			2	3				
13.0	3	2(5)					3			
13.5	4	3(5)					4			
14.0										
14.5	3	2(5), 1(6)					2	1		
15.0										
15.5	1	1(6)						1		
16.0										
16.5										
17.0	1	1(7)							1	
17.5										
18.0										
18.5										
19.0										
19.5										
20.0										
20.5										
21.0	1	1(8)								1
Mean TL			4.3	10.6	11.9	12.4	13.8	15.3	17.3	21.3
SE				0.4	0.1	0.3	0.2	0.5		

Back-calculated lengths-at-age for black crappie captured at Lukens Lake, Wabash County, Indiana in June 2008.

Year Class	# Aged	Age					
		I	II	III	IV	V	VI
2007	0	0.0					
	SD	0.0					
2006	0	0.0	0.0				
	SD	0.0	0.0				
2005	0	0.0	0.0	0.0			
	SD	0.0	0.0	0.0			
2004	0	0.0	0.0	0.0	0.0		
	SD	0.0	0.0	0.0	0.0		
2003	0	0.0	0.0	0.0	0.0	0.0	
	SD	0.0	0.0	0.0	0.0	0.0	
2002	14	3.0	5.3	6.7	7.5	8.3	9.1
	SD	0.5	0.9	0.8	0.5	0.4	0.4
Mean*		3.0	5.3	6.7	7.5	8.3	9.1
SD		0.5	0.9	0.8	0.5	0.4	0.4

Age-length key for black crappie captured at Lukens Lake, Wabash County, Indiana in June 2008.

Length Group	# in sample	# (age) in subsample	Age						
			1	2	3	4	5	6	
8.5	3	3(6)							3
9.0	14	5(6)							14
9.5	10	5(6)							10
10.0	1	1(6)							1
Mean TL									9.4
SE									0.07

Sampling gear locations at Lukens Lake, Wabash County, Indiana in June 2008.

Gill Nets				
1	N	40.97120404	W	-85.93430766
2	N	40.96953034	W	-85.93135186

Trap Nets				
1	N	40.96750259	W	-85.93103
2	N	40.97288311	W	-85.93651243

Electrofishing Transects				
1	N	40.97286701	W	-85.93654462
2	N	40.97009361	W	-85.93485483
3	N	40.96772254	W	-85.93078324
4	N	40.97144008	W	-85.93290755