

Kokomo Reservoir
Howard County
2008 Fish Management Report

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2008

EXECUTIVE SUMMARY

- Kokomo Reservoir is a 484 acre water supply located in Howard County, four miles east of the City of Kokomo.
- A general fish population survey was conducted from June 23 to June 25, 2008 to evaluate the overall condition of the fishery and survival of stocked walleye.
- Fish collection effort consisted of 1.25 h of pulsed D.C. night electrofishing with two dippers. A total of five trap net sets and nine experimental gill net sets were made over a two day period.
- A fall evaluation of walleye at Kokomo Reservoir was conducted on October 21, 2008. Fish collection effort consisted of 2.0 h of pulsed D.C. night electrofishing with two dippers.
- A total of 1,433 fish, representing 20 species, was collected during the general survey. Total weight of the fish sampled was approximately 662 lbs. Gizzard shad were the most abundant fish collected by number (30%), followed by bluegills (29%), and spotted suckers (9%). A total of 433 gizzard shad, ranging in total length from 7.9 to 13.9 in was collected during this survey.
- A total of 414 bluegills, ranging in total length from 2.0 to 7.5 in, was collected at Kokomo Reservoir. Bluegills of quality size (6 in or greater) comprised 44% of the sample.
- A total of 84 channel catfish, ranging in total length from 8.3 to 25.4 in was collected during this survey. Channel catfish of quality size (16 in or greater) comprised 45% of the sample.
- A total of 54 largemouth bass was collected at Kokomo Reservoir. The largemouth bass collected ranged in length from 4.4 to 18.7 in, and included seven fish over the 14 in minimum size limit.
- A total of 34 walleyes was collected at Kokomo Reservoir during the June survey. Total length of walleyes collected ranged from 8.2 to 18.1 in, and included seven fish over the 14 in minimum size limit. Sixteen age-0 walleyes were collected during the fall evaluation (8 fish/h).
- The Kokomo Reservoir fishery has changed very little since the last survey in 2003. Gizzard shad, common carp, and spotted suckers account for the majority of the reservoirs biomass.
- Abundance and size structure of largemouth bass, channel catfish, and white bass remain similar to previous surveys, and all are providing quality fishing opportunities. Bluegill relative abundance and electrofishing catch rates have increased in more recent surveys.

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INTRODUCTION

Kokomo Reservoir is a 484 acre water supply located in Howard County, four miles east of the City of Kokomo. The dam was completed on the Wildcat Creek in 1958 raising the water level 18 ft (Stunkard 1986). The deepest water however, approximately 20 ft, is located in inundated gravel pits near Greentown. Although the trees along the creek were cut prior to impoundment, the stumps were left in most areas and provide excellent fish habitat. Most of the steeper banks around the reservoir were rip-rapped to prevent erosion. Indiana American Water owns the reservoir property and leases a portion of the property to the Kokomo Parks and Recreation Department. Most of the park facilities are located near the western end of the reservoir including a boat ramp, fishing pier, picnic tables, pavilions, and rest rooms. Shore fishing access is readily available near the boat ramp and along the north shore.

Kokomo reservoir was stocked by the Indiana Department of Natural Resources with tiger muskie from 1983 through 1987, and with saugeye from 1989 through 1996. Tiger muskie stockings were discontinued due to production limitations and low survival (Braun 1988). Saugeye stockings were replaced by walleye stockings in 1997, and they continue to be stocked on an annual basis at 50 fish/acre (Table 1). The last general fish population survey on Kokomo Reservoir was conducted in July 2003. A general fish population survey and a fall evaluation were conducted in 2008 to evaluate the overall condition of the fishery and survival of stocked walleye.

METHODS

General Survey

The general survey of Kokomo Reservoir was conducted from June 23 to June 25, 2008. Temperature and oxygen profiles were collected at the deepest point near the dam and at an inundated gravel pit near Greentown using a Hydrolab Quanta®. Fish collection effort consisted of 1.25 h of pulsed D.C. night electrofishing with two dippers. A total of five trap net lifts and nine experimental gill net lifts were made over a two day period (Figure 1). A global positioning system device was used to record the location of all sampling locations. 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 bluegills, largemouth bass, white crappies, walleyes, and white bass for age determination and back-calculated lengths-at-age. Length frequency

distribution for reporting purposes were 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).

Fall Evaluation

The fall evaluation of walleye at Kokomo Reservoir was conducted on October 21, 2008. Fish collection effort consisted of 2.0 h of pulsed D.C. night electrofishing with two dippers. Total length was measured to the nearest 0.1 in. Five scales per half-inch group were collected for age determination and back-calculated lengths-at-age. An age-length key was also constructed to determine mean length at age.

RESULTS

General Survey

On June 23 the water temperature was 75.4°F at the surface and a dissolved oxygen concentration greater than 3.0 ppm was present down to a depth of 8 ft. Upstream near Greentown the water temperature was 73.4°F at the surface and a dissolved oxygen concentration greater than 3.0 ppm was present down to a depth of 14 ft. The lake was at normal pool and the secchi disk depth was recorded at 2.5 ft at both locations.

A total of 1,433 fish, representing 20 species, was collected during this survey (Table 2). Total weight of the fish sampled was approximately 656 lbs. Gizzard shad were the most abundant fish collected by number (30%), followed by bluegills (29%), and spotted suckers (9%). Gizzard shad were the most abundant collected by weight (23%), followed by channel catfish (19%), and common carp (16%).

A total of 433 gizzard shad, ranging in total length from 7.9 to 13.9 in was collected during this survey. The relative abundance of gizzard shad has remained constant over the last thirty-two years, and represents approximately one-fifth of the reservoirs fish biomass (Table 2).

A total of 414 bluegills, ranging in total length from 2.0 to 7.5 in, was collected at Kokomo Reservoir. The electrofishing, gill net, and trap net catch rates were 170 fish/h, 1 fish/lift, and 39 fish/lift, respectively. The PSD for bluegill was 27, and no preferred size (8 in) bluegills were collected. Bluegills of quality size (6 in or greater) comprised 44% of the sample.

Based on the age-length key and back-calculated lengths-at-age, the majority of bluegills reach 6 in between ages 3 - 4.

Eighty-four channel catfish, ranging in total length from 8.3 to 25.4 in were collected during this survey. Channel catfish of quality size (16 in or greater) comprised 45% of the sample. The electrofishing and gill net catch rates were 2 fish/h and 9 fish/lift, respectively. No channel catfish were caught in trap nets.

A total of 54 largemouth bass was collected at Kokomo Reservoir. The electrofishing catch rate was 42 fish/h. No largemouth bass were caught in gill nets or trap nets. Total length of largemouth bass collected ranged from 4.4 to 18.7 in and included seven fish over the 14 in minimum size limit. The PSD for largemouth bass during this survey was 72. Based on the age-length key and back-calculated lengths-at-age, the majority of largemouth bass reach 14 in between ages 4 and 5.

Of the 54 white bass collected during the survey the largest was 14.4 in. The electrofishing, gill net, and trap net catch rates were 15 fish/h, 3 fish/lift, and 2 fish/lift, respectively. White bass of quality size (9 in or greater) comprised 44% of the sample. Based on the age-length key and back-calculated lengths-at-age, the majority of white bass reach 9 in by age 1.

Thirty-four walleyes were collected at Kokomo Reservoir. The electrofishing and gill net catch rates were 2 fish/h and 4 fish/lift, respectively while trap nets failed to capture any walleye. The electrofishing and gill net catch rates during the 2003 survey were 7 fish/h and 1 fish/lift, respectively (Braun 2004). Total length of walleyes collected ranged from 8.2 to 18.1 in, and included seven fish over the 14 in minimum size limit. Based on the age-length key and back-calculated lengths-at-age, the majority of walleyes reach 14 in by age 2.

A total of 21 white crappies was collected at Kokomo Reservoir. The electrofishing and trap net catch rates were 1 fish/h and 4 fish/lift, respectively. No crappie were collected in gill nets. Catch rates of white crappies was much higher in the previous survey, the electrofishing, gill net, and trap net catch rates were 39 fish/h, 4 fish/lift, and 10 fish/lift, respectively (Braun 2004). White crappies of quality size (8 in or greater) comprised 81% of the sample. Based on the age-length key and back-calculated lengths-at-age, the majority of white crappies reach 8 in between ages 1 - 2.

Other species worth noting include spotted sucker and common carp. A total of 124 spotter suckers, ranging in total length from 5.5 to 16.2 in was collected. Of the 59 carp collected the largest was 21.6 in.

Fall Evaluation

During fall electrofishing 28 walleyes, ranging in total length from 9.4 to 20.8 in were collected. The overall electrofishing catch rate was 14 fish/h, and the electrofishing catch rate of age-0 walleye was 8 fish/h. Of the walleyes collected, 39% were equal to or greater than 14 in. Walleyes of harvestable size comprised 26% of the sample during the 2005 fall evaluation, and the electrofishing catch rate of age-0 walleye was 66 fish/h, with an overall catch rate of 77 (Braun 2006).

DISCUSSION

The Kokomo Reservoir fishery has changed very little since the last survey in 2003. Gizzard shad, common carp, and spotted suckers account for the majority of the reservoirs biomass. Gizzard shad and spotted suckers in particular, are likely providing forage for most predator species, and are contributing to the above average growth rates for these fish. Abundance and size structure of largemouth bass, channel catfish, and white bass remain similar to previous surveys, and all are providing quality fishing opportunities. Bluegill relative abundance and electrofishing catch rates have increased in more recent surveys (Table 2). Bluegill catch rates increased from 15 and 68 fish/h in 1983 and 1996 to 155 and 170 fish/h in 2003 and 2008 (Braun 1984, Braun 1997, Braun 2003). Size structure and growth have remained comparable over the years, and it is unclear why the population has apparently increased.

Relative abundance of white crappies appeared to decrease substantially from the 2003 survey, however this decline is likely the result of a combination of variable recruitment and sampling variation and not an actual decline in the population (Table 2). Crappies are the most targeted and harvested species in Kokomo Reservoir, and in order for proper management it is vital that representative data be collected (Braun 2004). Spring trap netting has proven to be effective for sampling crappies in other reservoirs (Braun 1996). In order to obtain more

representative data on crappies spring trap netting should be conducted prior to future general surveys at Kokomo Reservoir.

Kokomo Reservoir continues to offer a satisfactory walleye fishery. The catch rate of walleye during the fall evaluation was much lower than in previous years, but the catch rate of age-0 walleye was still greater than or equal to the Division of Fish and Wildlife criteria of 7 young of the year fish/h (Braun 2003, Braun 2006). The lower than expected catch rate may have been due to low water level at time of sampling which lead to a modification in the sampling scheme. Due to hazardous driving conditions effort was cut in half and traditional electrofishing transects were modified. Catch rates and size structure during June were similar to catch rates observed in the previous general survey (Braun 2004).

RECOMMENDATIONS

- The DFW should continue to stock walleye fingerlings at Kokomo Reservoir at a rate of 50 fish/acre.
- In order to collect more representative data on crappies, spring trap netting should be conducted prior to future general surveys at Kokomo Reservoir.
- The Kokomo Reservoir fishery should be promoted to the news media.
- Survival of stocked walleye should be evaluated at least once every five years following approved sampling guidelines.

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Date: 12/10/2008

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Date: 12/11/2008

Approved by: Stuart T. Shipman, Fisheries Supervisor
Date: 3/06/2009

Table 1. Year, number, and average length (in) of stocked walleye at Kokomo Reservoir.

Year	Number	Average Length
1997	25,000	1.3
1998	25,000	1.4
1999	25,000	1.6
2000	25,040	1.6
2001	25,398	1.7
2002	25,000	1.5
2003	25,000	1.5
2004	25,977	1.5
2005	25,000	1.5
2006	25,257	1.4
2007	25,122	1.9
2008	25,000	1.5



Figure 1. Sampling gear locations at Kokomo Reservoir, Howard County, Indiana in June 2008 (EF = Electrofishing Transect, GN = Gill Net, TN = Trap Net, and WC = Water Chemistry).

Table 2. Abundance of fish collected during general surveys at Kokomo Reservoir from 1964 through 2008.

Species	1964	1976	1983	1996	2003	2008
Gizzard shad	569	635	595	510	468	433
Bluegill	128	80	45	142	400	414
Spotted sucker	8	112	333	90	116	124
Channel Catfish	20	70	250	86	102	84
Green sunfish	8	75	11	29	85	83
Common carp	58	114	92	111	115	59
White Bass		39	50	54	129	54
Largemouth bass	1785	92	31	199	81	54
Walleye					24	34
Orangespotted Sunfish		77	11	3	30	30
White Crappie	94	48	167	34	191	21
Golden redbhorse	20	44	44	79	13	14
Black Crappie				3	37	7
Log perch				12	4	6
Golden shiner		24	observed	4	11	6
Quillback	1		12	2	8	4
Flathead Catfish			8		2	2
Bluntnose minnow	observed	observed		16		2
Yellow bullhead	2	11	46	5	5	1
Rock bass						1
Longear sunfish	22	10	4	3	7	
Hybrid Sunfish		1		2	2	
Shiner sp.		2	observed		2	
Darter sp.					1	
Madtom		1			1	
Saugeye				84		
Brook silverside	observed	observed	observed	2		
Spotted bass	1			1		
Northern hog sucker				1		
Smallmouth Bass	1	3		1		
White sucker	2	5	5			
Black bullhead	14	4	11			
Total		1447	1715	1473	1834	1433
Electrofishing Effort (h)	6.0*	3.0*	2.0	2.0	2.0	1.25
# of Gill Net Lifts	6	9	12	8	8	9
# of Trap Net Lifts	36**	2	0	8	8	5

*Effort included daytime and nighttime electrofishing.

**Wire fish 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 Kokomo Reservoir	County Howard	Date of survey (Month, day, year) 23-Jun-08
Biologist's name Rod Edgell		Date of survey (Month, day, year) 25-Jun-08

LOCATION		
Quadrangle Name Greentown	Range 4E & 5E	Section 25, 26 & 29, 30, 31, 32
Township Name 24N	Nearest Town Greentown	

ACCESSIBILITY					
State owned public access site		Privately owned public access site		Other access site Howard County Park Ramp	
Surface acres 484	Maximum depth 16	Average depth 7	Acre feet 3388	Water level 812 feet	Extreme fluctuations 6 feet
Location of benchmark A gauging station is located upstream on Wildcat Creek					

INLETS		
Name Wildcat Creek	Location southeast corner	Origin 23N;R6E;S19
Lawn Run	northeast corner	24N;R5E;S19
Green Run	northeast corner	24N;R5E;S29

OUTLETS																
Name Wildcat Creek	Location west end of lake															
Water level control concrete dam and spillway																
POOL	ELEVATION (Feet MSL)	ACRES														
TOP OF DAM	812															
TOP OF FLOOD CONTROL POOL	816															
TOP OF CONSERVATION POOL																
TOP OF MINIMUM POOL	810															
STREAMBED	796															
<table border="1"> <thead> <tr> <th colspan="2">Bottom type</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>Bolder</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Gravel</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Sand</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Muck</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Clay</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Marl</td> </tr> </tbody> </table>			Bottom type		<input type="checkbox"/>	Bolder	<input checked="" type="checkbox"/>	Gravel	<input checked="" type="checkbox"/>	Sand	<input checked="" type="checkbox"/>	Muck	<input checked="" type="checkbox"/>	Clay	<input type="checkbox"/>	Marl
Bottom type																
<input type="checkbox"/>	Bolder															
<input checked="" type="checkbox"/>	Gravel															
<input checked="" type="checkbox"/>	Sand															
<input checked="" type="checkbox"/>	Muck															
<input checked="" type="checkbox"/>	Clay															
<input type="checkbox"/>	Marl															

Watershed use Extensive agricultural row crops
Development of shoreline Several areas of the shoreline are lined with rip-rap. Howard County Park Department maintains small sections of the shoreline for access.
Previous surveys and investigations Fisheries surveys IDNR, 1964, 1976, 1983, 1996, 2003. Percid Evaluations IDNR, 1991-1994, 1996-2002, and 2005. Tiger Muskellunge Evaluations IDNR, 1984, 1985, 1986, and 1987. Creel Survey IDNR, 1996 and 2003

SAMPLING EFFORT					
ELECTROFISHING	Day hours		Night Hours		Total Hours
			1.25		1.25
TRAP NETS	Number of Traps		Number of Lifts		Total Lifts
	2 (1)		2 (1)		5
GILL NETS	Number of Nets		Number of Lifts		Total Lifts
	4 (1)		2 (1)		9*
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	78.0	F	
	Green	2	Feet	6	Inches	Water temperature	75.4
Water Chemistri GPS Coordinates		N	40.48904479		W	-86.04546913	

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	75.4	8.7	0.5	8.0	0.3	106.3		52							
2	75.4	8.1	0.5	8.0	0.3	99.7		54							
4	75.3	8.0	0.5	8.0	0.3	97.3		56							
6	75.1	7.9	0.5	7.9	0.3	96.2		58							
8	73.3	5.2	0.5	7.5	0.3	61.9		60							
10	72.4	2.8	0.5	7.2	0.3	33.2		62							
12	71.3	0.5	0.4	7.0	0.3	4.5		64							
13.2	71.0	0.5	0.1	7.0	0.3	0.8		66							
16								68							
18								70							
20								72							
22								74							
24								76							
26								78							
28								80							
30								82							
32								84							
34								86							
36								88							
38								90							
40								92							
42								94							
44								96							
46								98							
48								100							
50															
COMMENTS															
* Originally ten total gill net sets were made, however one net was vandalized reducing the total effort to nine.															

SAMPLING EFFORT					
ELECTROFISHING	Day hours		Night Hours		Total Hours
TRAP NETS	Number of Traps		Number of Lifts		Total Lifts
GILL NETS	Number of Nets		Number of Lifts		Total Lifts
ROTENONE	Gallons	ppm	Acre-feet Treated	SHORELINE SEINING	Number of 100 ft Seine Hauls

PHYSICAL AND CHEMICAL CHARACTERISTICS						
Color Green	Turbidity (Secchi Disk)			Air Temperature	78.0	F
	2	Feet	6	Inches	Water temperature	73.4
Water Chemistri GPS Coordinates		N	40.48038125	W	-85.98377832	

Water Quality - Greentown

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	73.4	11.6	0.6	8.2	0.3	139.9		52							
2	72.3	10.1	0.6	8.1	0.4	120.1		54							
4	71.7	9.7	0.6	8.0	0.4	114.2		56							
6	70.0	7.1	0.6	7.7	0.4	81.8		58							
8	68.6	5.0	0.6	7.5	0.4	56.7		60							
10	67.0	3.6	0.6	7.3	0.4	40.7		62							
12	66.5	3.6	0.6	7.2	0.4	39.6		64							
14	66.3	3.3	0.6	7.2	0.4	36.8		66							
16	66.1	2.7	0.6	7.1	0.4	29.8		68							
18	65.6	1.9	0.6	7.0	0.4	20.6		70							
20	64.9	0.0	0.6	6.9	0.4	0.0		72							
22								74							
24								76							
26								78							
28								80							
30								82							
32								84							
34								86							
36								88							
38								90							
40								92							
42								94							
44								96							
46								98							
48								100							
50															
COMMENTS															
C=(F-32)*0.5555															

SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER AND WEIGHT						
*COMMON NAME OF FISH	NUMBER	PERCENT	LENGTH (inches)		WEIGHT (pounds)	PERCENT
			minimum	maximum		
Gizzard shad	433	30.2	7.9	13.9	152.78	23.3
Bluegill	414	28.9	2.0	7.5	50.27	7.7
Spotted sucker	124	8.7	5.5	16.2	74.84	11.4
Channel catfish	84	5.9	8.3	25.4	122.10	18.6
Green sunfish	83	5.8	2.3	7.7	9.89	1.5
Common carp	59	4.1	9.8	21.6	104.17	15.9
Largemouth bass	54	3.8	4.4	18.7	55.06	8.4
White bass	54	3.8	4.3	14.4	20.54	3.1
Walleye	34	2.4	8.2	18.1	26.23	4.0
Orangespotted sunfish	30	2.1	2.2	3.8	0.55	0.1
White crappie	21	1.5	4.3	11.6	6.60	1.0
Golden redhorse	14	1.0	6.5	19.3	20.24	3.1
Black crappie	7	0.5	4.5	11.2	1.78	0.3
Logperch	6	0.4	3.9	4.4	0.13	0.0
Golden shiner	6	0.4	5.3	6.5	0.50	0.1
Quillback	4	0.3	9.5	18.3	6.16	0.9
Bluntnose minnow	2	0.1	2.3	2.3	0.00	0.0
Flathead catfish	2	0.1	12.3	18.7	3.38	0.5
Yellow bullhead	1	0.1	7.6	7.6	0.17	0.0
Rock bass	1	0.1	6.7	6.7	0.24	0.0
Total	1433				655.63	

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

Lake:	Kokomo Reservoir			TN	GN	EF	
Date:	6/23/2008	to	6/25/2008	Total #	0	308	125
Species:	Gizzard shad			Effort	5	9	1.25
Total number:	433			CPUE	0	34	346
Total weight:	152.78						
Length range:	7.9	to	13.9				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	7	0	308	125	433	-
Quality	11	0	98	40	138	32
Preferred	0	0	0	0	0	0
Memorable	0	0	0	0	0	0
Trophy	0	0	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	3	0.17	24.0			40.5		
8.0	31	0.20	24.5			41.0		
8.5	21	0.21	25.0			41.5		
9.0	10	0.25	25.5			42.0		
9.5	31	0.27	26.0			42.5		
10.0	107	0.32	26.5			43.0		
10.5	90	0.37	27.0			43.5		
11.0	73	0.41	27.5			44.0		
11.5	35	0.45	28.0			44.5		
12.0	17	0.50	28.5			45.0		
12.5	10	0.63	29.0			45.5		
13.0			29.5			46.0		
13.5	3	0.74	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:	Kokomo Reservoir			TN	GN	EF	
Date:	6/23/2008	to	6/25/2008	Total #	193	9	212
Species:	Bluegill			Effort	5	9	1.25
Total number:	414			CPUE	39	1	170
Total weight:	50.27						
Length range:	2.0	to	7.5				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	3	186	9	204	399	-
Quality	6	119	7	56	182	27
Preferred	8	0	0	0	0	
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	8	0.01	18.5			35.0		
2.5	7	0.01	19.0			35.5		
3.0	10	0.02	19.5			36.0		
3.5	43	0.03	20.0			36.5		
4.0	66	0.05	20.5			37.0		
4.5	37	0.06	21.0			37.5		
5.0	22	0.09	21.5			38.0		
5.5	39	0.13	22.0			38.5		
6.0	83	0.17	22.5			39.0		
6.5	73	0.20	23.0			39.5		
7.0	25	0.25	23.5			40.0		
7.5	1	0.30	24.0			40.5		
8.0			24.5			41.0		
8.5			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:	Kokomo Reservoir			TN	GN	EF	
Date:	6/23/2008	to	6/25/2008	Total #	0	81	3
Species:	Channel catfish			Effort	5	9	1.25
Total number:	84			CPUE	0	9	2
Total weight:	122.10						
Length range:	8.3	to	25.4				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	11	0	65	3	68	-
Quality	16	0	36	2	38	67
Preferred	24	0	2	1	3	33
Memorable	28	0	0	0	0	
Trophy	36	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	2	1.58	34.0		
1.5			18.0	1	2.28	34.5		
2.0			18.5	4	2.16	35.0		
2.5			19.0			35.5		
3.0			19.5	2	2.35	36.0		
3.5			20.0			36.5		
4.0			20.5			37.0		
4.5			21.0	2	3.05	37.5		
5.0			21.5	1	3.05	38.0		
5.5			22.0	3	3.74	38.5		
6.0			22.5	1	3.80	39.0		
6.5			23.0	2	4.22	39.5		
7.0			23.5			40.0		
7.5			24.0	1	5.01	40.5		
8.0	1	0.16	24.5			41.0		
8.5			25.0	2	6.51	41.5		
9.0	4	0.20	25.5			42.0		
9.5	6	0.23	26.0			42.5		
10.0	3	0.27	26.5			43.0		
10.5	2	0.35	27.0			43.5		
11.0			27.5			44.0		
11.5	1	0.48	28.0			44.5		
12.0	3	0.47	28.5			45.0		
12.5	1	0.62	29.0			45.5		
13.0			29.5			46.0		
13.5	1	0.78	30.0			46.5		
14.0	5	0.79	30.5			47.0		
14.5	4	0.95	31.0			47.5		
15.0	10	1.00	31.5			48.0		
15.5	5	1.09	32.0			48.5		
16.0	7	1.23	32.5			49.0		
16.5	6	1.27	33.0			49.5		
17.0	4	1.53	33.5			50.0		

Lake:	Kokomo Reservoir			TN	GN	EF	
Date:	6/23/2008	to	6/25/2008	Total #	0	1	53
Species:	Largemouth bass			Effort	5	9	1.25
Total number:	54			CPUE	0	0	42
Total weight:	55.06						
Length range:	4.4	to	18.7				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	8	0	1	47	48	-
Quality	12	0	0	34	34	72
Preferred	15	0	0	5	5	11
Memorable	20	0	0	0	0	
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	1	3.71	35.0		
2.5			19.0			35.5		
3.0			19.5			36.0		
3.5			20.0			36.5		
4.0	1	0.04	20.5			37.0		
4.5			21.0			37.5		
5.0	2	0.06	21.5			38.0		
5.5	1	0.08	22.0			38.5		
6.0			22.5			39.0		
6.5			23.0			39.5		
7.0	2	0.14	23.5			40.0		
7.5			24.0			40.5		
8.0	2	0.25	24.5			41.0		
8.5			25.0			41.5		
9.0	1	0.35	25.5			42.0		
9.5			26.0			42.5		
10.0	2	0.57	26.5			43.0		
10.5	4	0.58	27.0			43.5		
11.0	2	0.69	27.5			44.0		
11.5	3	0.76	28.0			44.5		
12.0	7	0.93	28.5			45.0		
12.5	5	1.06	29.0			45.5		
13.0	5	1.20	29.5			46.0		
13.5	10	1.28	30.0			46.5		
14.0			30.5			47.0		
14.5	2	1.57	31.0			47.5		
15.0	1	1.69	31.5			48.0		
15.5	1	1.74	32.0			48.5		
16.0			32.5			49.0		
16.5	1	2.47	33.0			49.5		
17.0	1	3.17	33.5			50.0		

Lake:	Kokomo Reservoir			TN	GN	EF	
Date:	6/23/2008	to	6/25/2008	Total #	10	25	19
Species:	White bass			Effort	5	9	1.25
Total number:	54			CPUE	2	3	15
Total weight:	20.54						
Length range:	4.3	to	14.4				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	6	10	25	10	45	-
Quality	9	7	16	1	24	10
Preferred	12	6	6	1	13	10
Memorable	15	0	0	0	0	
Trophy	18	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	2	0.03	21.0			37.5		
5.0	1	0.05	21.5			38.0		
5.5	5	0.07	22.0			38.5		
6.0	1	0.10	22.5			39.0		
6.5	3	0.12	23.0			39.5		
7.0	5	0.14	23.5			40.0		
7.5	7	0.17	24.0			40.5		
8.0	3	0.23	24.5			41.0		
8.5	2	0.25	25.0			41.5		
9.0	4	0.32	25.5			42.0		
9.5	2	0.32	26.0			42.5		
10.0			26.5			43.0		
10.5			27.0			43.5		
11.0			27.5			44.0		
11.5	5	0.62	28.0			44.5		
12.0	1	0.76	28.5			45.0		
12.5	3	0.76	29.0			45.5		
13.0	5	0.86	29.5			46.0		
13.5	3	0.97	30.0			46.5		
14.0	1	1.22	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:	Kokomo Reservoir			TN	GN	EF	
Date:	6/23/2008	to	6/25/2008	Total #	0	32	2
Species:	Walleye			Effort	5	9	1.25
Total number:	34			CPUE	0	4	2
Total weight:	26.23						
Length range:	8.2	to	18.1				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	10	0	32	1	33	-
Quality	15	0	6	1	7	100
Preferred	20	0	0	0	0	
Memorable	25	0	0	0	0	
Trophy	30	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	1	1.81	34.0		
1.5			18.0	1	2.11	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	1	0.12	24.5			41.0		
8.5			25.0			41.5		
9.0			25.5			42.0		
9.5			26.0			42.5		
10.0			26.5			43.0		
10.5	1	0.36	27.0			43.5		
11.0	3	0.45	27.5			44.0		
11.5	4	0.47	28.0			44.5		
12.0	8	0.55	28.5			45.0		
12.5	5	0.61	29.0			45.5		
13.0	3	0.69	29.5			46.0		
13.5	2	0.77	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	1	1.39	32.5			49.0		
16.5	2	1.44	33.0			49.5		
17.0	2	1.66	33.5			50.0		

Lake:	Kokomo Reservoir			TN	GN	EF	
Date:	6/23/2008	to	6/25/2008	Total #	18	2	1
Species:	White crappie			Effort	5	9	1.25
Total number:	21			CPUE	4	0	1
Total weight:	6.60						
Length range:	4.3	to	11.6				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	5	15	1	1	17	-
Quality	8	15	1	1	17	100
Preferred	10	3	1	1	5	100
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	3	0.02	20.5			37.0		
4.5	1	0.05	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	2	0.25	25.0			41.5		
9.0	5	0.29	25.5			42.0		
9.5	5	0.35	26.0			42.5		
10.0	1	0.40	26.5			43.0		
10.5			27.0			43.5		
11.0	3	0.58	27.5			44.0		
11.5	1	0.65	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:	Kokomo Reservoir			TN	GN	EF	
Date:	10/21/2008	to	10/21/2008	Total #	0	0	28
Species:	Walleye			Effort	0	0	2
Total number:	28			CPUE	0	0	14
Total weight:	0						
Length range:	9.4	to	20.8				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	10	0	0	19	19	-
Quality	15	0	0	10	10	53
Preferred	20	0	0	1	1	5
Memorable	25	0	0	0	0	
Trophy	30	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	1		34.0		
1.5			18.0	1		34.5		
2.0			18.5	1		35.0		
2.5			19.0			35.5		
3.0			19.5			36.0		
3.5			20.0			36.5		
4.0			20.5	1		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			25.0			41.5		
9.0	1		25.5			42.0		
9.5	8		26.0			42.5		
10.0	6		26.5			43.0		
10.5	2		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	1		31.0			47.5		
15.0	2		31.5			48.0		
15.5	2		32.0			48.5		
16.0	2		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 Kokomo Reservoir, Howard County, Indiana in June 2008.

Year Class	# Aged	Age				
		I	II	III	IV	V
2007	12	1.9				
	SD	0.4				
2006	17	1.7	3.4			
	SD	0.5	0.6			
2005	13	1.9	3.7	5.0		
	SD	0.3	0.3	0.5		
2004	13	1.9	3.8	5.4	6.5	
	SD	0.5	0.5	0.6	0.4	
2003	1	1.4	2.7	3.9	4.8	5.7
	SD	0.0	0.0	0.0	0.0	0.0
Mean*		1.9	3.6	5.2	6.5	
SD		0.4	0.4	0.5	0.4	

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

Age-length key for bluegills captured at Kokomo Reservoir, Howard County, Indiana in June 2008.

Length Group	# in sample	# (age) in subsample	Age					
			1	2	3	4	5	
2.0	8	5(1)	8					
2.5	7	5(1)	7					
3.0	10	2(1), 3(2)	4	6				
3.5	43	5(2)		43				
4.0	66	5(2)		66				
4.5	37	3(2), 3(2)		22	15			
5.0	22	1(2), 4(3)		4	18			
5.5	39	5(3)			39			
6.0	83	2(3), 2(4), 1(5)			33	33	17	
6.5	73	5(4)				73		
7.0	25	5(4)				25		
7.5	1	1(4)				1		
Mean TL			2.6	4.2	5.7	6.7	6.3	
SE			0.09	0.04	0.05	0.03		

Back-calculated lengths-at-age for largemouth bass captured at Kokomo Reservoir, Howard County, Indiana in June 2008.

Year Class	# Aged	Age					
		I	II	III	IV	V	VI
2007	2	4.4					
	SD	0.4					
2006	17	4.8	8.8				
	SD	0.9	1.2				
2005	14	4.7	8.8	10.9			
	SD	1.4	2.1	1.2			
2004	3	4.3	8.5	11.5	13.5		
	SD	1.2	2.4	0.4	1.2		
2003	3	5.8	9.2	10.3	12.9	14.1	
	SD	1.2	0.4	0.5	1.3	1.0	
2002	2	6.7	10.3	13.2	14.7	16.7	17.5
	SD	2.8	1.7	0.6	0.1	0.9	1.1
Mean*		4.9	8.8	10.9	13.2	14.1	
SD		1.2	1.5	0.7	1.2	1.0	

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

Age-length key for largemouth bass captured at Kokomo Reservoir, Howard County, Indiana in June 2008.

Length Group	# in sample	# (age) in subsample	Age						
			1	2	3	4	5	6	
4.0	1								
4.5									
5.0	2	2(1)	2						
5.5	1								
6.0									
6.5									
7.0	2	2(2)		2					
7.5									
8.0	2	2(2)		2					
8.5									
9.0	1	1(2)		1					
9.5									
10.0	2	2(2)		2					
10.5	4	3(2), 1(3)		3	1				
11.0	2	2(3)			2				
11.5	3	2(2)		3					
12.0	7	5(3)			7				
12.5	5	3(2), 2(3)		3	2				
13.0	5	1(2), 2(3), 1(4)		1	3	1			
13.5	10	1(2), 1(3), 1(4), 2(5)		2	2	2	4		
14.0									
14.5	2	1(3)			2				
15.0	1	1(4)				1			
15.5	1	1(5)						1	
16.0									
16.5	1								
17.0	1	1(6)							1
17.5									
18.0									
18.5	1	1(6)							1
Mean TL			5.3	10.9	12.7	14.0	14.2	18.0	
SE			0.0	0.5	0.3	0.4	0.4	0.8	

Back-calculated lengths-at-age for white bass captured at Kokomo Reservoir,
Howard County, Indiana in June 2008.

Year Class	# Aged	Age		
		I	II	III
2007	34	6.0		
	SD	1.8		
2006	9	7.9	11.6	
	SD	0.7	0.4	
2005	2	6.3	11.7	13.3
	SD	1.6	0.0	0.5
Mean*		7.0	11.6	
SD		1.2	0.4	

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

Age-length key for white bass captured at Kokomo Reservoir, Howard County,
Indiana in June 2008.

Length Group	# in sample	# (age) in subsample	Age		
			1	2	3
4.0	1	1(1)	1		
4.5	2	1(1)	2		
5.0	1	1(1)	1		
5.5	5	5(1)	5		
6.0	1	1(1)	1		
6.5	3	3(1)	3		
7.0	5	3(1)	5		
7.5	7	4(1)	7		
8.0	3	3(1)	3		
8.5	2	1(1)	2		
9.0	4	3(1)	4		
9.5	2	2(1)	2		
10.0					
10.5					
11.0					
11.5	5	5(1)	5		
12.0	1	1(1)	1		
12.5	3	3(2)		3	
13.0	5	4(2)		5	
13.5	3	2(2), 1(3)		2	1
14.0	1	1(3)			1
Mean TL			8.0	13.2	14.0
SE			0.3	0.1	0.3

Back-calculated lengths-at-age for walleyes captured at Kokomo Reservoir,
Howard County, Indiana in June and October 2008.

Year Class	# Aged	Age		
		I	II	III
2007	30	10.9		
	SD	1.3		
2006	8	10.3	16.0	
	SD	0.4	1.0	
2005	4	8.8	12.8	17.2
	SD	2.8	2.5	1.5
Mean*		10.0	14.4	17.2
SD		1.5	1.8	1.5

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

Age-length key for walleyes captured at Kokomo Reservoir, Howard County, Indiana in
June 2008.

Length Group	# in sample	# (age) in subsample	Age		
			1	2	3
8.0	1	1(1)	1		
8.5					
9.0					
9.5					
10.0					
10.5	1	1(1)	1		
11.0	3	3(1)	3		
11.5	4	4(1)	4		
12.0	8	5(1)	8		
12.5	5	5(1)	5		
13.0	3	2(1)	3		
13.5	2	2(1)	2		
14.0					
14.5					
15.0					
15.5					
16.0	1	1(2)		1	
16.5	2	2(2)		2	
17.0	2	1(2), 1(3)		1	1
17.5	1	1(2)		1	
18.0	1	1(3)			1
Mean TL			12.2	17.0	17.8
SE			0.2	0.3	0.5

Back-calculated lengths-at-age for white crappies captured at Kokomo Reservoir, Howard County, Indiana in June 2008.

Year Class	# Aged	Age			
		I	II	III	IV
2007	12	3.2			
	SD	0.6			
2006	2	2.8	7.2		
	SD	0.1	0.2		
2005	3	3.3	7.3	8.7	
	SD	0.3	0.4	0.2	
2004	4	3.3	7.5	9.3	10.2
	SD	0.4	1.1	1.0	0.6
Mean*		3.3	7.4	9.0	10.2
SD		0.4	0.8	0.6	0.6

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

Age-length key for white crappies captured at Kokomo Reservoir, Howard County, Indiana in June 2008.

Length Group	# in sample	# (age) in subsample	Age			
			1	2	3	4
4.0	3	3(1)	3			
4.5	1	1(1)	1			
5.0						
5.5						
6.0						
6.5						
7.0						
7.5						
8.0						
8.5	2	2(1)	2			
9.0	5	3(1), 2(2)	3	2		
9.5	5	2(1), 3(3)	2		3	
10.0	1	1(1)	1			
10.5						
11.0	3	3(4)				3
11.5	1	1(4)				1
Mean TL			7.7	9.3	9.8	11.4
SE			0.7	0.0	0.0	0.1

Age-length key for walleye captured at Kokomo Reservoir, Howard County, Indiana in October 2008.

Length Group	# in sample	# (age) in subsample	Age		
			1	2	3
9.0	1	1(0)			
9.5	8	5(0)			
10.0	6	4(0), 1(1)	1		
10.5	2	2(0)			
11.0					
11.5					
12.0					
12.5					
13.0					
13.5					
14.0					
14.5	1	1(1)	1		
15.0	2	2(1)	2		
15.5	2	1(1), 1(2)	1	1	
16.0	2	2(1)	2		
16.5					
17.0					
17.5	1	1(2)		1	
18.0	1	1(2)		1	
18.5	1	1(3)			1
19.0					
19.5					
20.0					
20.5	1	1(3)			1
Mean TL			14.7	17.3	19.8
SE			0.8	0.8	1.0

Locations of gill nets, trap nets, and electrofishing transects on Kokomo Reservoir, Howard County, Indiana in June 2008.

Gill Nets				
1	N	40.4882884	W	-86.02522918
2	N	40.48888385	W	-86.01233848
3	N	40.48879802	W	-85.99382051
4	N	40.48116446	W	-85.98406264
5	N	40.48771977	W	-86.00172766
6	N	40.49256921	W	-86.03152164
7	N	40.49438775	W	-86.03610822
8	N	40.49298227	W	-86.04732522
9	N	40.48902869	W	-86.04503998

Trap Nets				
1	N	40.48351407	W	-85.98815569
2	N	40.4902035	W	-85.99576243
3	N	40.49013913	W	-86.02253624
4	N	40.4900372	W	-86.02728912
5	N	40.49328804	W	-86.04326435

Electrofishing Transects				
Start	N	40.48571885	W	-85.99061259
End	N	40.48224807	W	-85.98625132
Start	N	40.49069703	W	-85.99974819
End	N	40.48883557	W	-86.00662001
Start	N	40.4887712	W	-86.01300904
End	N	40.48794508	W	-86.01867923
Start	N	40.49175918	W	-86.02762708
End	N	40.49207568	W	-86.03249797
Start	N	40.49047709	W	-86.0411776
End	N	40.49091697	W	-86.03742787