

Deam Lake
Clark County
Supplemental Survey

Date of survey: May 13, 2008

Biologists: Larry Lehman, Clinton Kowalik, Daniel Carnahan

Survey objective: To monitor the largemouth bass and bluegill populations.

Methods: On May 13, 2008 there was a total of 0.50 h of pulsed DC night electrofishing conducted. Bluegill were only sampled during the first 0.25 h, while bass were sampled the entire 0.50 h. Weights were estimated from district averages and lengths were recorded to the nearest 0.1 in. Scales samples were taken on a subsample of bluegill and bass for age determination. No bluegill between 3.0 and 5.9 in were aged due to the scales being lost during the transfer of Fisheries District 8 to District 6. Proportional stock density index (PSD) and relative stock density index (RSD) were calculated (Anderson and Neumann 1996).

Summary: A total of 120 bluegill was sampled that ranged in length from 1.3 to 7.6 in. The estimated weight was 4 lbs. The electrofishing catch rate was 480.0/h which was much higher than the 280.0/h recorded in 2005. Since many of the bluegill were not aged, their growth is not reported because the averages will not be accurate. The PSD was 24, RSD-7 was 9, and the RSD-8 was 0. The bluegill size structure has deteriorated since 2005 as the PSD and RSD-7 then were 36 and 23, but these numbers still represent a decent bluegill fishing lake.

One hundred and six largemouth bass were sampled that ranged in length from 3.8 to 18.0 in. The estimated sample weight was 76 lbs. The electrofishing catch rate increased from 188.0/h in 2005 to 212.0/h. Bass grew slow. Bass less than age 5 were at least an inch below the district average, while older bass were about 2 in below the district average. This growth pattern appears to be consistent with surveys dating back to 2000. The PSD and RSD-14 index values were 48 and 2, while the 2005 index values were 36 and 3. The PSD improvement was due to the increased proportion of 12.0 to 14.0 in bass sampled. The population of bass greater than

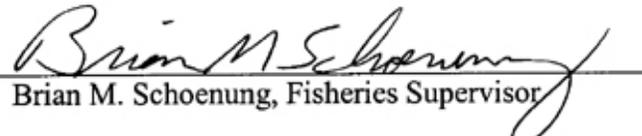
14.0 in has not changed since 2005 as their RSD-14 value and electrofishing catch rate are nearly identical. Most of the bass in the lake are less than 14.0 in due to the poor growth.

The overall fishery has not really changed since 2005. The lake still has decent to good bluegill fishing and poor bass fishing for bass greater than 14.0 in. Bass anglers can expect to catch a lot of bass with few exceeding 14.0 in. Aquatic vegetation abundance has decreased over the last few years due to herbicide applications. This should help provide better bluegill fishing because bluegill growth will improve with the increased predation.

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.

Submitted by: Daniel P. Carnahan, District 6 Fisheries Biologist
Date: December 11, 2009

Approved by: 
Brian M. Schoenung, Fisheries Supervisor

Date: January 14, 2010

LAKE SURVEY REPORT

Type of Survey	<input type="checkbox"/> Initial Survey	<input checked="" type="checkbox"/> Re-Survey
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Lake Name Deam Lake	County Clark	Date of survey (Month, day, year) May 13, 2008
Biologist's name Larry L. Lehman, Clinton Kowalik		Date of Approval (Month, day, year) January 14, 2010

LOCATION		
Quadrangle Name Speed, IND. 1963	Range 6E	Section 4, 5, 33
Township 1N, 1S	Nearest Town Carwood, Indiana	

ACCESSIBILITY					
State owned public access site Two-lane concrete boat ramp		Privately owned public access site none		Other access site none	
Surface acres 184	Maximum depth 35 feet	Average depth 14 feet	Acre feet 2,576	Water level (Feet MSL) 535	Extreme fluctuations 7 feet
Location of benchmark Along Broom Hill Road below dam					

INLETS		
Name Thomas Branch	Location North end of lake	Origin Watershed runoff
Stone Branch	West side of lake	Watershed runoff
Several unnamed inlets	West and north shore	Watershed runoff

OUTLETS																
Name Big Run (tributary of Muddy Fork)	Location Southeast corner of lake in dam															
Water level control: Principal spillway is a concrete tower. A drawdown tube is present. Emergency spillway is located west of causeway.																
POOL	ELEVATION (Feet MSL)	ACRES														
TOP OF DAM																
TOP OF FLOOD CONTROL POOL																
NORMAL POOL	535.0	184														
TOP OF MINIMUM POOL																
STREAMBED																
<table border="0"> <tr> <td></td> <td>Bottom type</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Boulder</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Gravel</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Sand</td> </tr> <tr> <td><input 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> </table>				Bottom type	<input type="checkbox"/>	Boulder	<input type="checkbox"/>	Gravel	<input type="checkbox"/>	Sand	<input type="checkbox"/>	Muck	<input checked="" type="checkbox"/>	Clay	<input type="checkbox"/>	Marl
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<input type="checkbox"/>	Marl															

Watershed use: Watershed, which covers 3.74 square miles (2,394 acres), is covered with forest. Camping and hunting are allowed in designated areas. Hiking trails are present. Small amounts of logging occur periodically.

Development of shoreline
Handicap fishing pier, concrete boat ramp, parking lot, boat dock with rental row boats, beach and bathhouse, class A campsites, picnic areas, shelter houses.

Previous surveys and investigations
Population study 1966. Fall drawdowns 1973 and 1974. General fishery surveys 1968, 1972, 1975, 1978, 1983, 1988, 2000. Creel survey 1985. Vertical evergreen fish attractors added 1990. Supplemental largemouth bass and bluegill survey 2005. Aquatic vegetation survey 2005.

SAMPLING EFFORT					
ELECTROFISHING	Day hours		Night hours: 0.50 for largemouth bass, 0.25 for bluegill		Total hours
					0.50
TRAP NETS	Number of traps		Number of Lifts		Total effort
GILL NETS	Number of nets		Number of Lifts		Total effort
ROTENONE	Gallons	ppm	Acre Feet Treated	SHORELINE SEINING	Number of 100 Foot Seine Hauls

PHYSICAL AND CHEMICAL CHARACTERISTICS					
Color			Turbidity		
			2 Feet		6 Inches (SECCHI DISK)
Alkalinity (ppm)*			pH		
Surface:		Bottom:	Surface:		Bottom:
Conductivity:			Air temperature:		
100 micromhos			°F		
Water chemistry GPS coordinates:					
N			W		

TEMPERATURE AND DISSOLVED OXYGEN (D.O.)								
DEPTH (Feet)	Degrees (°F)	D.O. (ppm)	DEPTH (Feet)	DEGREES (°F)	D.O. (ppm)	DEPTH (Feet)	DEGREES (°F)	D.O. (ppm)
SURFACE	66.2		36			72		
2			38			74		
4			40			76		
6			42			78		
8			44			80		
10			46			82		
12			48			84		
14			50			86		
16			52			88		
18			54			90		
20			56			92		
22			58			94		
24			60			96		
26			62			98		
28			64			100		
30			66					
32			68					
34			70					

COMMENTS

*ppm-parts per million

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF BLUEGILL									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0	4	3.3	<0.01	1	19.0				
1.5	32	26.7	<0.01	1	19.5				
2.0	30	25.0	<0.01	1, 2	20.0				
2.5	21	17.5	0.01	2, 3	20.5				
3.0	9	7.5	0.02	not aged	21.0				
3.5	4	3.3	0.03	not aged	21.5				
4.0	4	3.3	0.05	not aged	22.0				
4.5	4	3.3	0.06	not aged	22.5				
5.0	2	1.7	0.10	not aged	23.0				
5.5	2	1.7	0.15	not aged	23.5				
6.0	3	2.5	0.15	3, 4	24.0				
6.5	2	1.7	0.22	3, 6	24.5				
7.0	1	0.8	0.24	5	25.0				
7.5	2	1.7	0.30	6	25.5				
8.0					26.0				
8.5					TOTAL	120			
9.0									
9.5									
10.0									
10.5									
11.0									
11.5									
12.0									
12.5									
13.0									
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	480.0/h	GILL NET CATCH	N/A	TRAP NET CATCH	N/A
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NUMBER, PERCENTAGE, WEIGHT, AND AGE OF LARGEMOUTH BASS

TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5				
2.0					20.0				
2.5					20.5				
3.0					21.0				
3.5	1	0.9	0.03	1	21.5				
4.0					22.0				
4.5					22.5				
5.0					23.0				
5.5	4	3.8	0.09	1, 2	23.5				
6.0	5	4.7	0.11	2	24.0				
6.5	2	1.9	0.12	2	24.5				
7.0	3	2.8	0.17	2	25.0				
7.5					25.5				
8.0	1	0.9	0.28	3	26.0				
8.5					TOTAL	106			
9.0	4	3.8	0.36	3					
9.5	5	4.7	0.44	2, 3					
10.0	8	7.5	0.49	3, 4					
10.5	12	11.3	0.61	4, 5					
11.0	9	8.5	0.70	3, 4					
11.5	8	7.5	0.80	4, 5					
12.0	18	17.0	0.88	4, 5					
12.5	10	9.4	1.01	4, 5					
13.0	10	9.4	1.11	5, 6					
13.5	4	3.8	1.35	5, 6, 7					
14.0									
14.5									
15.0	1	0.9	1.93	7					
15.5									
16.0									
16.5									
17.0									
17.5									
18.0	1	0.9	3.20	not aged					
18.5									

ELECTROFISHING CATCH	212.0/h	GILL NET CATCH	N/A	TRAP NET CATCH	N/A
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LARGEMOUTH BASS AGE-LENGTH KEY

Length group (in)	Total number	Sub-sample	Ages							
			1	2	3	4	5	6	7	
3.5	1	1	1							
4.0										
4.5										
5.0										
5.5	4	4	1	3						
6.0	5	5		5						
6.5	2	2		2						
7.0	3	3		3						
7.5										
8.0	1	1			1					
8.5										
9.0	4	4			4					
9.5	5	5		2	3					
10.0	8	5			3	5				
10.5	12	8				11	2			
11.0	9	4			2	7				
11.5	8	5				5	3			
12.0	18	6				12	6			
12.5	10	7				7	3			
13.0	10	6					7	3		
13.5	4	4					2	1	1	
14.0										
14.5										
15.0	1	1								1
15.5										
16.0										
16.5										
17.0										
17.5										
18.0	1	0								
Totals	106	71	2	15	13	46	22	4		2

AGE-LENGTH KEY SUMMARY						
Age	Number	Mean			Lower 95%CI	Upper 95%CI
		TL	Var	SE		
1	2	4.8	2.00	1.00	2.8	6.8
2	15	6.9	1.62	0.33	6.2	7.5
3	13	9.9	0.72	0.23	9.4	10.3
4	46	11.6	0.71	0.12	11.3	11.8
5	22	12.6	0.65	0.17	12.2	12.9
6	4	13.4	0.06	0.12	13.1	13.6
7	2	14.5	1.13	0.75	13.0	16.0

GPS LOCATION OF SAMPLING EQUIPMENT

GILL NETS			TRAP NETS			ELECTROFISHING		
1	N	W	1	N	W	1	N 38.47343	W -85.85790
	N	W	2	N	W		N 38.47187	W -85.86001
2	N	W	3	N	W	2	N 38.47180	W -85.85983
	N	W	4	N	W		N 38.47029	W -85.86101
3	N	W	5	N	W	3	N	W
	N	W	6	N	W		N	W
4	N	W	7	N	W	4	N	W
	N	W	8	N	W		N	W
5	N	W	9	N	W	5	N	W
	N	W	10	N	W		N	W
6	N	W	11	N	W	6	N	W
	N	W	12	N	W		N	W
7	N	W	13	N	W	7	N	W
	N	W	14	N	W		N	W
8	N	W	15	N	W	8	N	W
	N	W	16	N	W		N	W
9	N	W	17	N	W	9	N	W
	N	W	18	N	W		N	W
10	N	W	19	N	W	10	N	W
	N	W	20	N	W		N	W
11	N	W				11	N	W
	N	W					N	W
12	N	W				12	N	W
	N	W					N	W
13	N	W				13	N	W
	N	W					N	W
14	N	W				14	N	W
	N	W					N	W
15	N	W				15	N	W
	N	W					N	W
16	N	W				16	N	W
	N	W					N	W
17	N	W				17	N	W
	N	W					N	W
18	N	W				18	N	W
	N	W					N	W
19	N	W				19	N	W
	N	W					N	W
20	N	W				20	N	W
	N	W					N	W