

Harden Reservoir
Parke County
2008 Supplemental Striped Bass Stocking Evaluation

Dates of Survey: October 20 to 23, 2008

Biologist: Jamie L. Smyth

Survey Objectives: Evaluate the stocking success of striped bass at Harden Reservoir.

Methods: Fish collection effort consisted of night DC electrofishing for 6 h (24, 15-min stations) and 16 large experimental gill net lifts. All fish were measured to the nearest 0.1 in TL and weighed to the nearest 0.01 lb for fish up to 5.00 lbs, and to the nearest 0.25 lb for fish over 5.00 lbs. Scale samples were collected for age and growth determination. Also, walleye were collected to note the occurrence of natural reproduction.

Summary: A total of 65 striped bass was collected that weighed 242.12 lbs. Striped bass CPUE was 5.2/h of electrofishing and 2.1/gill net lift. Striped bass ranged in length from 3.4 to 38.5 in and averaged 14.4 in.

There were 31 YOY striped bass collected that ranged in length from 3.4 to 4.1 in. The 2008 YOY striped bass average length was 3.8 in, the same as in 2006 (Long 2007). The average size for YOY striped bass in Harden Reservoir from 1994 to 2008 has varied from 3.8 to 6.0 in (Table 1). Striped bass YOY electrofishing CPUE was 5.2/h, the lowest YOY CPUE on record at Harden Reservoir during fall evaluations.

There were 21 age-2 striped bass collected that ranged in length from 17.3 to 21.1 in and averaged 19.4 in. Age-2 striped bass accounted for 32% of the collection, which was no surprise since the reservoir was stocked with twice the number of requested fingerlings in 2006. The catch rate for age-2 striped bass was 1.3/gill net lift. Three age-3 striped bass were collected, of which the largest was 27.6 in. There were four age-5 striped bass collected that ranged in length from 30.0 to 32.0 in. Three additional striped bass collected were age 6, with the largest being 34.6 in. The largest striped bass

collected was a 38.5 in fish that weighed nearly 22 lbs, but could not be aged. Since a fall evaluation was not conducted in 2007 and no age-1 striped bass were found, there is some concern for this year class. There were no age-4 striped bass collected since they were not stocked at Harden Reservoir in 2004.

Additionally, four walleye were collected during the fall evaluation. Walleye ranged in length from 19.7 to 24.0 in. The largest walleye collected weighed 6.00 lbs. Harden Reservoir has not received a walleye stocking since 1996. All the walleye collected were a result of natural reproduction.

In 2008, Harden Reservoir was stocked with 12,457 fingerlings (60% of the recommended stocking) in early July from an Indiana Division of Fish and Wildlife state fish hatchery. The remaining 8,171 fingerlings were surplus fish attained from a Tennessee state fish hatchery and were stocked into Harden Reservoir in mid August (Table 1).

As mentioned earlier, the 2008 YOY CPUE (5.2/h) was the lowest on record and the YOY striped bass had a small average size (3.8 in). The lower striped bass YOY CPUE and small average size could be attributed to a couple different factors. The reservoir was approximately nine ft higher than summer pool at the time of the July stocking (US Army Corps of Engineers 2009). Shortly afterwards, the reservoir rose approximately 5 more ft and then fell more than 14 ft back to summer pool by early August. High outflows and muddy water conditions (associated with the reservoir fluctuations) during mid to late July could have made it difficult for the young striped bass to find food and/or pushed some young striped bass through the dam. Although the 2008 year class of striped bass had the lowest catch rate on record and could have been negatively impacted by reservoir conditions, there was still decent survival and a good chance for the year class to contribute to the fishery.

Harden Reservoir continues to produce some truly impressive striped bass. Striped bass are still exhibiting excellent average sizes throughout the year classes. In order to maintain a quality striped bass fishery, annual stockings of striped bass fingerlings should continue at a rate of 10/acre (20,600 total). The next fall evaluation is scheduled for 2010.

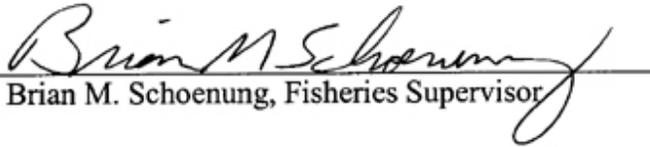
LITERATURE CITED

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Table 1. Striped bass stockings and YOY collection data at Harden Reservoir 1994 to 2008.

Year	Number	Avg. size at stocking (in)	YOY CPUE (f/h)	Avg. YOY size (in)
1994	20,600	1.40	69.3	5.2
1995	:***** No Stocking *****			
1996	41,200	1.34	No fall evaluation	
1997	20,600	1.28	6.2	4.9
1998	20,606	1.34	9.5	6.0
1999	20,700	1.96	37.3	4.5
2000	:***** No Stocking *****			
2001	20,600	1.40	No fall evaluation	
2002	20,600	1.60	46.7	4.9
2003	17,683	1.25		
2004	:***** No Stocking *****			
2005	20,600	1.85	No fall evaluation	
2006	41,240	1.08	24.3	3.8
2007	20,600	1.00	No fall evaluation	
2008	12,457	1.70	5.2	3.8
	8,171	3.00		

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF STRIPED 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
3.0	1	1.5	0.02	YOY	21.0	1	1.5	4.46	2
3.5	22	33.8	0.02	YOY	21.5				
4.0	8	12.3	0.03	YOY	22.0				
4.5					22.5				
5.0					23.0				
5.5					23.5				
6.0					24.0				
6.5					24.5				
7.0					25.0				
7.5					25.5	1	1.5	7.25	3
8.0					26.0				
8.5					26.5	1	1.5	8.00	3
9.0					27.0				
9.5					27.5	1	1.5	9.50	3
10.0					28.0				
10.5					28.5				
11.0					29.0				
11.5					29.5				
12.0					30.0	2	3.1	11.00	5,6
12.5					30.5				
13.0					31.0	1	1.5	12.75	6
13.5					31.5	2	3.1	15.25	5
14.0					32.0	1	1.5	13.00	5
14.5					32.5				
15.0					33.0				
15.5					33.5	1	1.5	18.00	not aged
16.0					34.0	1	1.5	17.15	not aged
16.5					34.5	1	1.5	16.00	6
17.0	1	1.5	2.19	2	35.0				
17.5	1	1.5	2.21	2	35.5				
18.0	3	4.6	2.33	2	36.0				
18.5	1	1.5	2.72	2	36.5				
19.0	5	7.7	3.11	2					
19.5	2	3.1	3.24	2	38.5	1	1.5	21.50	not aged
20.0	4	6.2	3.46	2					
20.5	3	4.6	3.76	2	TOTAL	65			
ELECTROFISHING CATCH	5.2 / h			GILL NET CATCH	2.1 / lift		TRAP NET CATCH	NA	

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF WALLEYE

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	1	25.0	2.80	not aged
2.0					20.0				
2.5					20.5				
3.0					21.0	1	25.0	3.36	not aged
3.5					21.5				
4.0					22.0				
4.5					22.5	1	25.0	4.62	not aged
5.0					23.0				
5.5					23.5				
6.0					24.0	1	25.0	6.00	not aged
6.5					24.5				
7.0					25.0				
7.5					25.5				
8.0					26.0				
8.5					TOTAL	4			
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	0.2 / h	GILL NET CATCH	0.2 / lift	TRAP NET CATCH	NA
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Striped bass Age-length Key

Length group (in)	Total #	Sub-sample	Age													
			1	2	3	4	5	6	7	8	9	10	11	12	13	
3.0	1	0														
3.5	22	0														
4.0	8	0														
16.5																
17.0	1	1		1												
17.5	1	1		1												
18.0	3	3		3												
18.5	1	1		1												
19.0	5	5		5												
19.5	2	2		2												
20.0	4	4		4												
20.5	3	3		3												
21.0	1	1		1												
21.5																
22.0																
22.5																
23.0																
23.5																
24.0																
24.5																
25.0																
25.5	1	1			1											
26.0																
26.5	1	1			1											
27.0																
27.5	1	1			1											
28.0																
28.5																
29.0																
29.5																
30.0	2	2						1	1							
30.5																
31.0	1	1							1							
31.5	2	2						2								
32.0	1	1						1								
32.5																
33.0																
33.5	1	0														
34.0	1	0														
34.5	1	1							1							
35.0																
35.5																
36.0																
36.5																
37.0																
37.5																
38.0																
38.5	1	0														
Total	65	31	0	21	3	0	4	3	0	0	0	0	0	0	0	0

Mean Length at Capture

Striped bass

Age	Number	Mean TL	Var	SE	Lo 95%CI	Up 95%CI
1	0	0.0	0.00	0.00	0.0	0.0
2	21	19.5	1.19	0.24	19.0	19.9
3	3	26.8	1.00	0.58	25.6	27.9
4	0	0.0	0.00	0.00	0.0	0.0
5	4	31.5	0.75	0.43	30.6	32.4
6	3	32.1	5.58	1.36	29.4	34.8