

LAKE FREEMAN
Carroll & White Counties
2010 Supplemental Hybrid Striped Bass Evaluation

Date of Survey: September 16 – 29, 2010

Biologists: Jeremy Price and Tom Bacula

Survey Objectives: Evaluate the stocking success of hybrid striped bass in Lake Freeman under work plan 300FW1F10D40609.

Methods: A total of six h of pulsed, DC night electrofishing (24, 15-min stations) and 10 gillnet lifts were conducted between September 16 and September 29, 2010. All hybrid striped bass and walleye were measured to the nearest 0.1 in total length (TL) and weight was estimated from standard weight-length regressions. Five scale samples were taken per half-inch group (X.0-X.4 for inch group and X.5-X.9 for half-inch group) for age and growth analysis. Catch per unit effort (CPUE) was calculated as catch divided by effort for each sampling gear.

Summary: There were 73 hybrid striped bass collected that weighed an estimated 144.1 lbs. Electrofishing CPUE was 2.7/h and all but one fish was age-0 (TL = 20.7 in). Gill net CPUE was 5.7/lift and two age-0 fish were collected in the gill nets. Hybrid striped bass length ranged from 5.0 to 25.7 in and ages 0, 1, 3, 4, and 5 were identified. Age-0 fish averaged 6.6 in, age-1 were 13.8 in, age-3 were 21.8 in, 25.1 in at age-4, and one age five was 24.3 in.

There were twenty walleyes collected during the hybrid striped bass evaluation that weighed an estimated 41.8 lbs. Electrofishing CPUE was 1.1/h, and gill net catch was 1.5/lift. Walleye ranged in length from 8.6 to 28.0 in. Legal walleye (TL \geq 14.0 in) accounted for 75% of the collected fish. Walleye ages were identified from 1 to 5 and an age-8 individual was also collected. An 8.6 in walleye was age-2, but this fish, likely from the advanced fingerlings stocked in 2008, clearly had a growth deformity. Age-1 walleye averaged 14.7 in, while ages 3, 4, and 5 averaged 20.0 in, 21.4 in, and 21.3 in respectively.

Hybrid striped bass provide good fishing opportunities and the walleye can provide an additional species to catch while fishing in Lake Freeman, the success of these fisheries remains

in question. Walleye stockings were discontinued in 1990 following minimal angler interest during a 1990 creel survey, probably due to low survival beyond age 1. Slightly more people were targeting hybrid striped bass than walleye and that stocking program has continued. Growth of hybrid striped bass is excellent and is indicative of abundant prey species. The largest individuals of both species are approaching trophy size. The hybrid striped bass stockings appear to be successful; however, no formal guidelines or criteria have been developed to evaluate success or failure. Utilization of electrofishing CPUE for age-0 hybrid striped bass has resulted in variable CPUE values of 3.3/h in 2005, 0/h in 2007, and 2.5/h in 2010. Despite low CPUE values in 2005 and 2007 these fish were subsequently collected with gill nets, indicating some survived. When examining fish it is difficult to distinguish age-0 hybrid striped bass from age-0 white bass as many of these fish exhibit characteristics of both white bass and hybrids. Age-1 and older fish are generally more easily distinguished as the characteristics are more clearly developed. Given the difficulties in identifying age-0 specimens, methods to determine stocking success should probably include gillnetting one to two years post stocking, especially in lakes with reproducing white bass populations.

Both hybrid striped bass and walleye populations should continue through stocking. In order to maintain the hybrid striped bass fishery, the Division of Fish and Wildlife should continue annual hybrid striped bass stockings at the rate of 10/acre (15,470 total). Walleye should be stocked but only when there surplus walleye production is available. Fall evaluations should continue to occur biennially for hybrid striped bass and any walleye observed should be collected.

Submitted by: Tom Bacula, Naturalist Aide
Date: December 16, 2010

Approved by: Jeremy Price, Fisheries Biologist

Approved by: Stuart Shipman, Regional Supervisor
Date: February 7, 2011

Table 1. Stocking history of hybrid striped bass and walleye in Lake Freeman.

Year	Hybrid striped bass		Walleye	
	Number	Mean Length	Number	Mean Length
1982			150,497	1.60
1983	100,000	Fry		
1984	15,487	2.10		
1985	15,470	1.95	110,854	1.84
1986	15,000	1.53		
1987			155,289	1.68
1988	15,476	1.83	170,760	1.88
1989	15,520	1.60	154,256	1.59
1990	15,470	1.22	155,189	1.54
1991	20,944	1.49	220,188	1.64
1992	23,897	1.39		
1993	15,470	1.22		
1994				
1995	15,470	1.11		
1996*	15,470	1.24		
1997	30,940	1.05		
1998	25,470	1.36		
1999	15,470	1.43		
2000				
2001	15,470	1.30		
2002	15,470	1.66		
2003			69,300	1.62
2004	9,034	3.50		
2005	15,470	1.43		
2006	23,205	1.31		
2007	15,470	1.20		
2008**			2,425	7.00
2009	17,557	1.25	30,645	1.57
2010	33,641	1.10		

*Purebreed striped bass

**Private walleye stocking split between Lakes Shafer and Freeman

APPENDIX

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF HYBRID 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
1.0					19.0				
1.5					19.5				
2.0					20.0	1	1.4	4.32	3
2.5					20.5	2	2.7	4.67	3
3.0					21.0				
3.5					21.5	2	2.7	5.43	3
4.0					22.0	3	4.1	5.83	3
4.5					22.5	2	2.7	6.26	3
5.0	1	1.4	0.06	0	23.0				
5.5	2	2.7	0.08	0	23.5				
6.0	6	8.2	0.10	0	24.0	1	1.4	7.66	5
6.5	2	2.7	0.13	0	24.5	2	2.7	8.18	4
7.0	3	4.1	0.16	0	25.0				
7.5	3	4.1	0.20	0	25.5	1	1.4	9.27	4
8.0					26.0				
8.5					TOTAL	73			
9.0									
9.5									
10.0									
10.5	1	1.4	0.57	1					
11.0									
11.5									
12.0									
12.5									
13.0	10	13.7	1.12	1					
13.5	15	20.5	1.26	1					
14.0	12	16.4	1.42	1					
14.5	3	4.1	1.58	1					
15.0	1	1.4	1.75	1					
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	2.7 /h	GILL NET CATCH	5.7 /lift		
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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	5.0	2.38	3
1.5					19.5				
2.0					20.0				
2.5					20.5	3	15.0	3.10	3, 4
3.0					21.0	2	10.0	3.36	4, 5
3.5					21.5				
4.0					22.0				
4.5					22.5	1	5.0	4.26	4
5.0					23.0				
5.5					23.5				
6.0					24.0				
6.5					24.5				
7.0					25.0				
7.5					25.5				
8.0					26.0				
8.5	1	5.0	0.15	2	26.5				
9.0					27.0				
9.5					27.5				
10.0					28.0	1	5.0	8.73	8
10.5					TOTAL	20			
11.0									
11.5									
12.0									
12.5									
13.0	1	5.0	0.65	1					
13.5	3	15.0	0.74	1, 2					
14.0	1	5.0	0.84	1					
14.5	2	10.0	0.94	1					
15.0	2	10.0	1.06	1					
15.5	1	5.0	1.19	1					
16.0	1	5.0	1.32	1					
16.5									
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	1.1 /h	GILL NET CATCH	1.5 /lift		
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AGE-LENGTH KEY FOR HYBRID STRIPED BASS

LENGTH GROUP (inches)	NUMBER COLLECTED	NUMBER AGED	AGE														
			0	1	2	3	4	5	6	7	8	9	10	11	12		
4.5																	
5.0	1	1	1														
5.5	2	2	2														
6.0	6	5	6														
6.5	2	2	2														
7.0	3	3	3														
7.5	3	3	3														
8.0																	
8.5																	
9.0																	
9.5																	
10.0																	
10.5	1	1		1													
11.0																	
11.5																	
12.0																	
12.5																	
13.0	10	5		10													
13.5	15	4		15													
14.0	12	5		12													
14.5	3	3		3													
15.0	1	1		1													
15.5																	
16.0																	
16.5																	
17.0																	
17.5																	
18.0																	
18.5																	
19.0																	
19.5																	
20.0	1	1				1											
20.5	2	2				2											
21.0																	
21.5	2	2				2											
22.0	3	3				3											
22.5	2	2				2											
23.0																	
23.5																	
24.0	1	1						1									
24.5	2	2					2										
25.0																	
25.5	1	1					1										
26.0																	
Total	73	49	17	42		10	3	1									
Mean TL			6.6	13.8		21.8	25.1	24.3									
SE			0.18	0.11		0.28	0.33										

AGE-LENGTH KEY FOR WALLEYE

LENGTH GROUP (inches)	NUMBER COLLECTED	NUMBER AGED	AGE													
			0	1	2	3	4	5	6	7	8	9	10	11	12	
7.5																
8.0																
8.5	1	1			1											
9.0																
9.5																
10.0																
10.5																
11.0																
11.5																
12.0																
12.5																
13.0	1	1		1												
13.5	3	3		2	1											
14.0	1	1		1												
14.5	2	2		2												
15.0	2	2		2												
15.5	1	1		1												
16.0	1	1		1												
16.5																
17.0																
17.5																
18.0																
18.5																
19.0	1	1				1										
19.5																
20.0																
20.5	3	3				1	2									
21.0	2	2					1	1								
21.5																
22.0																
22.5	1	1					1									
23.0																
23.5																
24.0																
24.5																
25.0																
25.5																
26.0																
26.5																
27.0																
27.5																
28.0	1	1										1				
28.5																
29.0																
29.5																
Total	20	20		10	2	2	4	1				1				
Mean TL				14.7	11.3	20.0	21.4	21.3				28.3				
SE				0.30	2.50	0.75	0.47									