



Nebraska Game and Parks Commission

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Michael Wengert
9402 Milford Road
Plattsmouth, NE 68048

February 10, 2010

Hi Mike,

The age and growth analysis for the scales from 59 fish (32 white crappie, 25 largemouth bass, and 2 black crappie) that you mailed me has been completed. Presentation of findings and subsequent discussion will follow.

LARGEMOUTH BASS

Electrofishing is typically the standard sampling method used for collecting bass. It is difficult to determine how this fish population is doing with the limited information provided by rod and reel. When considering only the bass that scale samples were collected from, there were 2 bass (8%) over 12 inches but less than 15 inches, 22 bass (88%) over 15 inches but less than 20 inches, and 1 bass (4%) over 20 inches but less than 25 inches (Table 1). Largest bass was 20.5 inches.

Table 1. Largemouth bass length distribution, Beaver Lake, April/May, 2009.

Length Range (inches)	Number Sampled	Percent of Sample
12.0 to 14.9	2	8%
15.0 to 19.9	22	88%
20.0 to 24.9	1	4%
TOTAL	25	100%

Bass utilized for age and growth analysis were from 4 age groups (Table 2.). Since no weights were recorded, there is no way to calculate a relative body condition factor for them.

Table 2. Largemouth bass length and age groups sampled, Beaver Lake, April/May, 2009.

Age	Length Range (inches)	Mean Length (inches)	Number Sampled
4	14.1-17.5	15.4	5
5	14.2-16.5	15.7	8
6	16.5-19.5	17.8	11
7	20.5		1

Age and growth analysis indicates the bass growth rate for length-at-age 1 was similar to the statewide average for bass collected from sand/gravel pits and flood control reservoirs; whereas,

those for subsequent years were considerably better (Table 3.).

Table 3. Largemouth bass growth rate comparisons, Beaver Lake, April/May, 2009.

Waterbody	Mean Back-Calculated Length-at-Age (inches)						
	1	2	3	4	5	6	7
Sand/gravel pits	3.8	7.2	10.2	12.2	13.9	15.5	17.2
Flood Control Reservoirs	4.1	7.9	11.1	13.4	14.5	16.2	17.5
Beaver Lake	4.4	9.2	13.2	15.3	16.8	18.5	20.2

Catch information that was provided from three tournaments indicated 292 bass were caught with 32 of them removed (Table 4).

Table 4. Tournament information, Beaver Lake, 2009.

Tourney Date	Bass < 12"	Bass 12 - 15"	Bass > 15"	Bass Kept
4-18-09	26	74	41	22
4-25-09	7	2	1	
5-16-09	34	57	50	10
TOTAL	67	133	92	32

CRAPPIE

When considering only the white crappie that scale samples were collected from, there were 23 whites (72%) over 10 inches but less than 12 inches and 9 whites (28%) over 12 inches but less than 15 inches (Table 5.). Largest white crappie sampled was 14.2 inches. Scale samples were also collected from 2 black crappie - both were over 10 inches but less than 12 inches (Table 5.). Largest black crappie sampled was 11.2 inches.

Table 5. Crappie length distribution, Beaver Lake, April/May, 2009.

Length Range (inches)	Number Sampled White Crappie	Percent of Sample	Number Sampled Black Crappie	Percent of Sample
10.0 to 11.9	23	72%	2	100%
12.0 to 14.9	9	28%		
TOTAL	32	100%	2	100%

White crappie utilized for age and growth analysis were from 4 age groups; whereas, blacks were from 1 age group (Table 6.). Since no weights were recorded, there is no way to calculate a relative body condition factor for crappie.

Table 6. Crappie length and age groups sampled, Beaver Lake, April/May, 2009

WHITE CRAPPIE

Age	Length Range (inches)	Mean Length (inches)	Number Sampled
3	10.1-12.0	11.1	25

4	12.0-12.5	12.2	3
5	12.1-12.9	12.7	3
6	14.2		1

BLACK CRAPPIE

Age	Length Range (inches)	Mean Length (inches)	Number Sampled
4	10.9-11.2	11.1	2

Age and growth analysis indicates the growth rate for white crappie for length-at-age 1 was similar to the statewide averages for whites collected from sand/gravel pits and flood control reservoirs; whereas, growth rates for subsequent years were considerably better (Table 7.). Analysis of black crappie data indicates a growth rate similar to statewide averages at age 1 with values higher than statewide averages for subsequent years (Table 7.).

Table 7. Crappie growth rate comparisons, Beaver Lake, April/May, 2009.

	Mean Back-Calculated Length-at-Age (inches)					
	1	2	3	4	5	6
White Crappie						
Sand/gravel pits	3.3	6.1	8.7	10.1	11.2	11.9
Flood Control Reservoirs	3.4	6.3	8.6	10.2	11.3	12.1
Beaver Lake	3.3	7.4	10.7	12.1	13.1	14.1
Black Crappie						
Sand/gravel pits	3.3	5.8	7.6	9.3	9.9	10.5
Flood Control Reservoirs	3.4	5.9	7.8	9.1	9.9	10.8
Beaver Lake	3.3	6.6	9.8	10.9		

DISCUSSION

The primary basis for your PWMA application last year was the Lake/Fish Management Committee’s desire to manage for a trophy largemouth bass (LMB) fishery by removing 250 LMB less than 15 inches. Your tournament information indicated anglers caught 200 LMB less than 15 inches (68% of the total number caught) and subsequently removed 32 that were less than 15 inches. You will need to decide if there will be a better commitment to remove additional LMB < 15 inches because the 32 removed likely did not accomplish your goal of reducing LMB numbers sufficiently. Perhaps the lack of harvesting more of the targeted size LMB indicates the majority of participating anglers are happy with the bass fishery as is. Another objective that was expressed regarding the PWMA was the hope that the removal of LMB would allow the smallmouth bass (SMB) population to expand. The tournament information didn’t indicate if any SMB were caught - were there any caught? If not, the apparent remnant SMB population you have present may not be capable of expanding due to the likelihood of limited natural reproduction and/or recruitment. It is very difficult for a SMB population to expand naturally when an established LMB population is present. Stocking records that were provided last year indicated a stocking of 1,000 SMB (3") occurred during the fall of 2008. Did you subsequently ever see/catch any of these while fishing - perhaps they just get out competed, or even consumed, by LMB with limited survival, if any. What you will likely have to do in order to manage for a trophy LMB fishery is remove additional LMB in an attempt to try and create a sufficient void. Or, if you are still interested in establishing a viable SMB fishery, once LMB

have been removed, then stock smallmouth bass of a size that can effectively compete with remaining LMB. Otherwise, LMB will likely keep existing SMB from expanding naturally. You will likely need to stock large "holdover" SMB (10 inches - perhaps bigger). In other words, stock fewer, larger SMB in an attempt to obtain a high survival rate. You will have to decide if the cost of such an **experimental** stocking is justifiable. Keep in mind that any void created, the LMB will also try to fill.

It is difficult to determine the overall status of the various fish populations in the lake with the limited information provided. However, it would appear the largemouth bass, white crappie, and black crappie populations are in good condition as reflected by their excellent growth as indicated by age and growth analysis. Even though gizzard shad are present in the lake, it would appear the crappie fishery is not negatively affected by them. Since no scale samples were provided from crappie smaller than 10 inches, it would appear the bulk of the crappie fishery is comprised of primarily 10 to 14 inch crappie as indicated by the scale samples submitted for analysis. There is also the likelihood that larger crappie (especially white crappie) are utilizing the smaller gizzard shad as prey since white crappie rely more on small fish as part of their diet than do black crappie. Even with the presence of gizzard shad in the lake, the existing predators (LMB, walleye, wipers, etc.) are apparently effectively controlling crappie numbers as well - also resulting in good crappie growth. Lack of smaller crappie in large numbers can also be a reflection of limited natural reproduction and/or recruitment.

Enclosed is another PWMA request form that has to be filled out and returned to me if there is the desire to remove additional LMB < 15 inches this year. Please call me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Blaser". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Jeff Blaser
Private Waters Specialist