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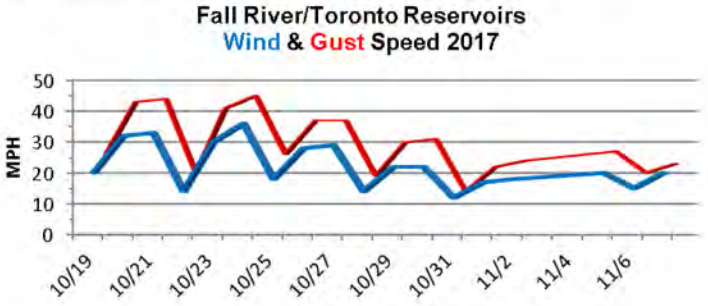
Fall River/Toronto Fisheries District Newsletter

Fall River and Toronto Reservoir Crappie Spring 2018 Fishing Forecast

Fall 2017 was a difficult time to sample crappie at Fall River and Toronto reservoirs. The average wind speed was 22 mph during sampling and the maximum was 45 mph! The calmest day was Halloween when it only blew 12-14 mph. The lake white caps at 17 mph. The jon boat I net out of is 18 feet long and has 20 inch side walls, and when loaded heavy with nets and live well, it doesn't take the waves well. Such are the perils of a Fisheries Biologist in Kansas.



I set all 32 trap nets over the three week sample period and never missed a day despite the wind. However the samples were likely biased low due to the wind and cold fronts. During these extreme weather conditions, crappie move off shore into deeper water. Trap nets only sample from the shoreline out 50 feet. Crappie were schooled on deep channel breaks and points, the typical winter pattern.

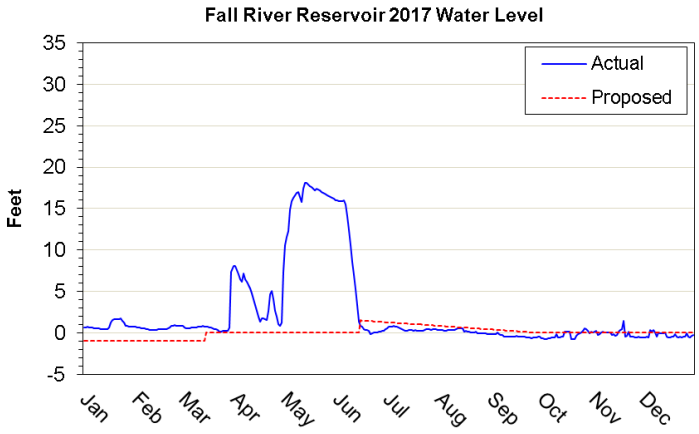
Toronto Point cedar tree habitat installation

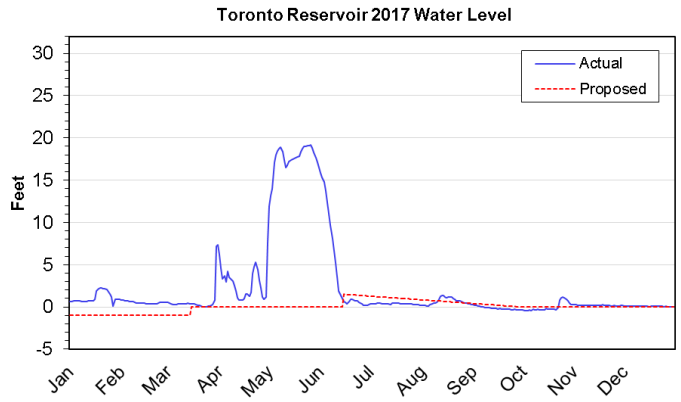
I was disappointed by the lack luster crappie catch rates at both reservoirs. I was optimistic that crappie would be attracted to near shore areas where I had constructed cedar tree brush piles. However, that was not the case. I installed 24 new brush piles in Toronto Reservoir in February, bringing the total number to 37. I built 31 in Fall River Reservoir. You can view the GPS locations and map in Google Earth by downloading the .kmz file located on the KDWPT web page under the reservoir's fishing report.

Toronto Reservoir brush pile locations

As anyone who's thrown a cast net or seine for bait fish can tell you, 2017 was a stellar year for crappie reproduction. I caught 4,320 young of the year crappie at Toronto, which broke the old record set in 2015. I sampled 1,952 young of the year at Fall River, which was the second highest catch since 2015. Just because there was high density reproduction that resulted from prolonged flooding of terrestrial vegetation, doesn't mean that they will survive the winter and make a dominate year class next year. Often there are so many mouths to feed that they eat all the zooplankton resulting in poor body condition. Fish don't survive the winter. However, Toronto and Fall River Reservoirs are extremely fertile and have some of the fastest growth

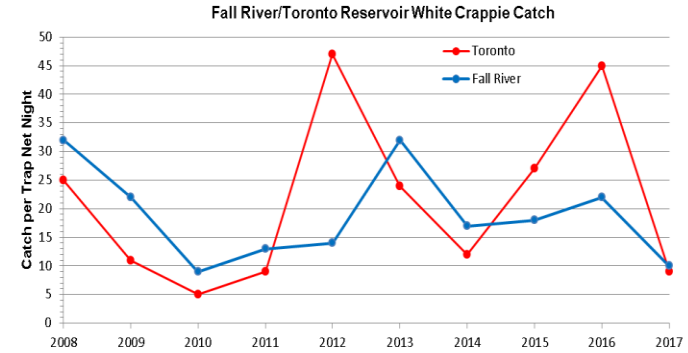
rates in Kansas. With big floods come lots of nutrients. There may just be enough to feed the hungry masses and produce a dominate year class.





The proposed water level management plan was submitted to the USACE but rejected with the notice that the USACE would no longer allow water level manipulations for the purpose of fish and wildlife enhancement at Fall River or Toronto Reservoirs.

The spring floods persisted through June when the gizzard shad spawn. Fast crappie growth occurs when there are abundant young of the year gizzard shad, small enough for crappie to eat. Some years, gizzard shad grow too fast and get too big for small crappie to eat. This was not the case this year or the last three years at either reservoir. The nets were full of small shad, 2-3 inches long. Shad stay small in years when there are too many mouths to feed. Over-reproduction of shad results in high numbers of stunted little fish, just right for growing crappie to eat. Gizzard shad is one species where stunting is desirable.



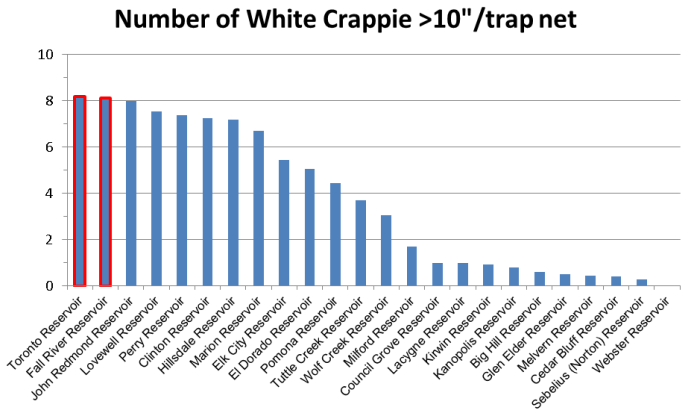
White Crappie Stats	Fall River	Toronto
Total Catch	2,109	4,464
Stock Catch (>5 inches)	161	151
Units of Effort (#nets)	16	16
Stock CPUE	10	9
Sub-Stock CPUE	122	270
Percent of catch (5-8 inches)	1	5
Percent of catch (8-10 inches)	18	8
Percent of catch (10-12 inches)	64	66
Percent of catch (12-15 inches)	16	20
Percent of catch (>15 inches)	1	1

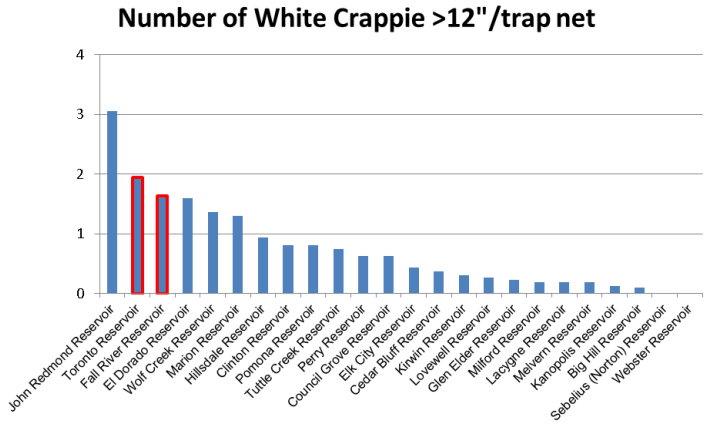
Fall River Reservoir had a moderate density white crappie population. I caught 2,109 fish; 161 were stock size (over five inches) and will likely survive the winter. I averaged ten crappie per trap net, which was below the objective density range of 20-25. This was the lowest density since 2010. Crappie were not overpopulated and should grow rapidly. Additionally, I sampled 122 sub-stock crappie per net, showing abundant reproduction, which may lead to a strong year class. One percent of fish were 5-8 inches, 18 percent were 8-10 inches, 64 percent were 10-12 inches, 16 percent were 12-15 inches, and 1 percent was greater than 15 inches.

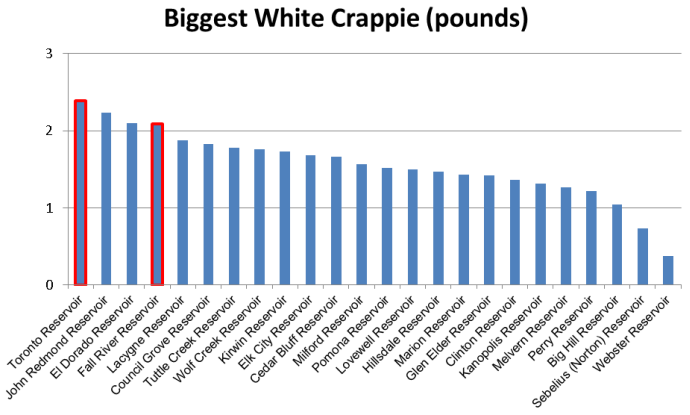
Fish were in excellent condition. Typically, fish condition increased with size. Larger crappie gape size resulted in more prey availability. However, that was not the case this year because young gizzard shad were small and abundant. Mean fish condition ranged from 102-117 percent and exceeded the objective range of 80 to 100. High water levels in June resulted in a high density gizzard shad spawn which resulted in fat crappie.

Toronto Reservoir 2.39 lb. crappie

Compared to the 24 Kansas reservoirs, Fall River ranked second for crappie over 10 inches. It ranked third in the state for fish over 12 inches. The fourth largest crappie sampled by biologists came from Fall River. Despite the unexpected low numbers, I think there are large numbers of big crappie available for anglers. They should be schooled on deep channel breaks near the outlet and in deep holes in the river, like the one at Ladd Bridge.





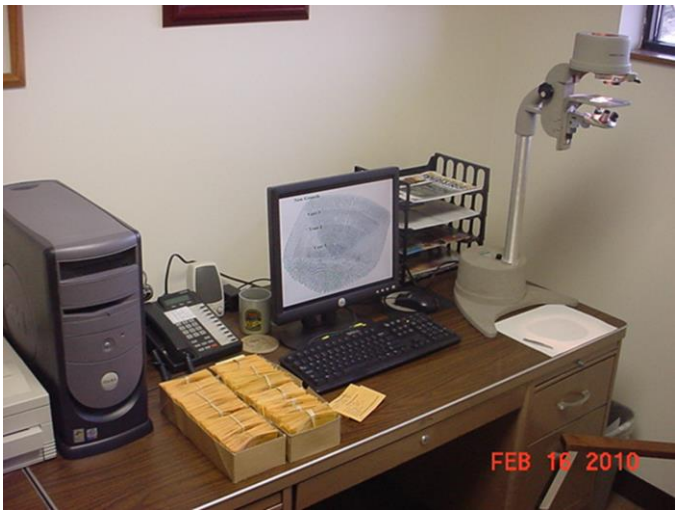


Toronto Reservoir had a moderate density white crappie population. I caught 4,464 fish, of which 151 were over 5 inches, which is the minimum reproductive size. I averaged nine adult crappie per trap net, and 270 juveniles. It will require a large year class of gizzard shad young to feed this large crappie population. This was the third year that extended spring floods resulted in just such abundant gizzard shad forage base of the correct small size. One percent of crappie were 5-8 inches. Eighteen percent were 8-10 inches. Sixty-four percent were 10-12 inches. Sixteen percent was 12-15 inches, and one percent was longer than 15 inches.

Toronto Reservoir white crappie population is one of the best in Kansas. It was ranked first for fish over ten inches. It had the second highest density of crappie over 12 inches. It had the largest crappie sampled by biologists in 2017 (pictured on page 2). John Redmond Reservoir, with its 2-foot increase in conservation elevation, will likely provide the best crappie population for some time to come. But, considering that Toronto is the seventh oldest reservoir in Kansas and still consistently produces crappie in the top five, shows the quality of habitat still available and the productivity of the reservoir.

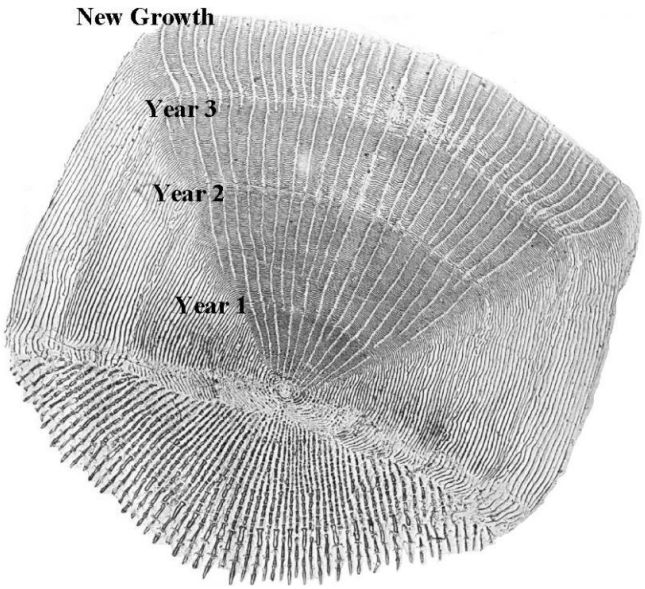
District Wide Largemouth Bass Growth Improvement

I have been aging largemouth bass by collecting and analyzing scales in the Fall River/Toronto Fisheries District since 1993. I began aging fish for the Emporia Research and Survey Office in 1985. I use a projection microscope to magnify the scales. This is basically an upside-down microscope. It has to be done in the dark to see the scale pattern projected on a white piece of paper on the desk. I've improved my original microscope by modifying the light bulb fixture to accept a more powerful, bright white, quartz halogen bulb.



I don't collect scales on bass every year. This year, I looked back 11 years to the 2006 sample and compared growth rates. To my astonishment, there was improved growth at every lake. Historically, these lakes had a 15 inch minimum length limit with five fish per day creel limit. Now, they either have an 18 inch minimum or a 13-18 inch slot limit. As I wrote about in an earlier newsletter, the four year drought from 2010 to 2013 was responsible for some increase in growth. But, that was

four years ago. The length limit change also increased growth by reducing the density of small bass, and increasing the size and number of large spawning fish.



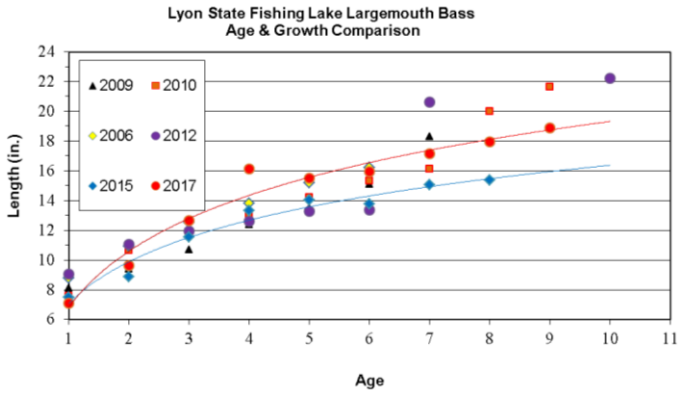
Another factor that increased bass growth was establishing saugeye populations. Low density saugeye populations are maintained through supplemental stocking. Saugeye reduced gizzard shad density which was beneficial to bass. Even though saugeye compete with bass for forage, their numbers are low and high density gizzard shad reduce zooplankton. Zooplankton drives the food chain. Small bluegills, primary bass prey, rely on abundant zooplankton. I remember picking hundreds of gizzard shad out of the gill nets before the saugeye population was established.

At Lyon State Fishing Lake in 2017, bass age analysis from scale samples showed that mean lengths at ages one through nine were 7.1, 9.6,12.6, 16.1, 15.5, 15.9, 17.2, 18.0, and 18.9 inches, respectively. Notice that four year old bass grew faster than five and six year olds. Most bass died by age nine and reached a maximum length of 18.9 inches. Average bass growth increased 1.6 inches (11.3 percent). Based on the accelerated growth rate of young bass, you should expect to see bass larger than 19 inches in coming years.

Lake	Max Age	Max Length	Growth
Lyon SFL	9	18.9”	+11%
Madison	10	20.5”	+15%
Eureka	8	18.2”	+ 2%
Severy	12	21.2”	+16%
Howard	7	18.8”	+ 1%
Moline New	7	17.0”	+ 8%
Moline Old	8	17.4”	+ 9%

Bass growth rates in <u>all</u> lakes in the district increased. In speaking with anglers, I know there are bigger bass in these lakes than what I was able to sample with the electrofishing boat. I also hear that a lot of dedicated bass anglers release big bass even though they are legal harvestable length. Even faster growth rates are possible through water level management. But most people don’t want to see the lake level lowered and the shoreline grown up to weeds throughout the summer. They like stable water levels and the lake full.

Severy City Lake had the biggest bass and the most improved growth rate. I conducted a Peterson style population estimate in 2017. A total of 196 bass were captured. Ninety-two bass were marked. Twelve bass were recaptured. This gave a population estimate of 1,503 bass in Severy City Lake, 150 bass per acre. The same type of population estimate was conducted in 1998 showed 473 largemouth bass or 47 per acre. The bass population tripled since 1998. The length limit in 1998 was 15 inches and was changed to 13 to 18 inch slot in 2016. The lake now has more recreational value in the form of catch and release fishing than it did when the length limit was 15 inches. Anglers can catch more and bigger bass.



To document this enhanced bass fishery at Severy City Lake, a creel census was conducted for 150 days from May 25 through October 21, 2017. All anglers were counted during this period and data extrapolated to estimate usage for traditional creel census period of March 1 through October 31, 245 days for comparison. A total of 510 (449 shore and 61 boat) anglers used the lake during the survey period. The average number of anglers that used the lake was 3.40 per day. They spent a total of 532 (110 boat and 422 shore) hours fishing. The average trip length was 91 minutes. The average boat angler trip was 178 minutes (2.97 hours). The average shore angler trip was 81 minutes (1.35 hours). The maximum boat trip length was 8.25 hours. The maximum shore trip length was 5.67 hours. The estimated angler hours per acre were 83 which would be considered low usage. The statewide average was 180 angler hours per acre. The estimated anglers per acre per year was 83.

Severy City Lake contributed to the state and local economy. A 2010 Kansas Department of Commerce report showed that tourism brought in 5.46 billion dollars to the state's economy; tourism was the third largest industry in Kansas; and it generated 27.4 percent of all state and local tax revenue. The economic impact of the 830 fishing trips at $69.65 per trip (U.S. Fish & Wildlife Service 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation) was $57,810 per year.

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Select Fall River/Toronto Fisheries District Projects

Below are before and after photos of select Fall River/Toronto Fisheries District projects I've completed. Many of them I have written about in detail in previous newsletters which are available at http://ksoutdoors.com/KDWPT-Info/News/Past-Newsletters/.


Constructed 96 feet of lunker structure overhanging bank habitat in three areas at Fall River Reservoir and evaluated bass usage through radio telemetry tracking.


Renovated Emporia Jones Park Pond through Community Fisheries Assistance Program including ADA fishing dock and sidewalk.


Implemented fish feeding programs at Lyon State Fishing Lake and Community Fisheries Assistance Program lakes which resulted in trophy size channel catfish.


Improved muddy water at Fall River State Park Kid's Pond by rocking shoreline and gravel path.



Constructed boat ramp, boat loading dock, fish cleaning station, heated fishing dock and installed fish habitat cubes below heated fishing dock at Eureka City Lake through Community Fisheries Assistance Program.

Deepened and rocked shoreline by pushing up piers at Olpe City Lake through Community Fisheries Assistance Program and Reservoir Fisheries Habitat Partnership.

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