

# GLEN ELDER DISTRICT FISHERIES NEWSLETTER

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Kansas Department of Wildlife, Parks & Tourism

Summer 2019

## Fish Movements Following the Rains

Fish are creatures of habit and experience both seasonal and daily movement patterns as part of their drive to feed, grow, survive, and reproduce throughout their lifetimes. Walleye, for instance, migrate downstream toward the dam during the annual spawn while white bass are generally driven to move upstream to the rivers in April when spawning time arrives. Most species will follow their food source to various parts of the water body depending on the time of year. The fishing motto of “Find the bait and you will find the fish” holds true most of the time. But one thing that causes fish to immediately change these patterns and move very long distances in a short period of time is high water and moving water. How fish react to heavy rains, floods, and moving water depends on the species, time of year, and water temperature.

One of the biggest negatives of high water in our local lakes and reservoirs is that the water must go somewhere as the water levels rise into flood stage. This is accomplished by opening the outlet gates and, in extreme cases, the flood gates to quickly drop the water level. Along with the water, thousands, or in some cases, millions of fish can be lost from an impoundment.



At Lovewell Reservoir, we estimated anywhere between 2.9 million and 6 million fish were lost between mid-May and September during the irrigation season. Most of these fish were young of the year gizzard shad, but thousands of young crappie, walleye, and white bass were also lost, in addition to hundreds of adult sportfish. More recently, high water at Glen Elder forced the Bureau of Reclamation to release as much as 2,500 cfs between mid-March and mid-April. Because this coincided with the walleye spawn on the dam, high numbers of walleye were flushed from the

reservoir, ranging in size from 9 to 28 inches. While this benefits anglers fishing the outlet area, it is harmful to walleye population in the reservoir which may lose a significant portion of its numbers in a short period of time.

Most species of fish will also react to high inflow events by migrating to the high inflows coming into a lake or reservoir following a rain event which leads to high runoff. Anglers know that catfish, in particular,

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are attracted to incoming water from creeks and rivers and can offer excellent angling opportunities when those situations arise. Several years ago Glen Elder annually hosted the annual Fish-a-Thon which involved tagging 300 fish and providing rewards for anglers catching those fish. Following a 2 inch rain event in the watershed above Glen Elder, one of the tagged channel catfish was caught in the North Fork River near Harlan, KS, a distance of approximately 25 river miles!

While working in North Carolina I studied striped bass movements on a 5,000 acre lake using radio telemetry. During one spring tracking session, I located over 50% of all the tagged fish concentrated at the mouth of a relatively small creek. The fish were drawn to the inflow and the high numbers of gizzard shad and threadfin shad that had first moved into the mouth of the creek to feed on the large amounts of plankton washing into the lake. Anglers that keep a close eye on changes in inflows and outflows can take advantage of these situations and use them to put more fish in their boat.

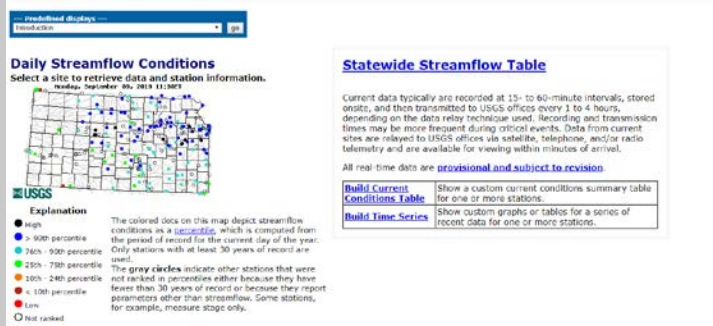
Another telemetry study I worked on in North Carolina studied flathead catfish movements in a feeder creek (Contentnea Creek) which flowed into a coastal river called the Neuse River. We tagged fish in the creek and tracked them most of the spring and summer before they migrated the 60 miles to the Atlantic coast where many of them resided between late summer and winter on the edge of estuarine waters. The exception to this behavior was migrations related to heavy rainfall events. One particular storm dumped several inches of rain into the watershed as a result of a nearby hurricane. We made sure to get out there and track within a couple of days of the rising water in both Contentnea Creek and the Neuse River. To our amazement, almost all of the flathead catfish which had been residing near the ocean had not just migrated back upstream over 60 miles in 2-3 days, but actually moved back into Contentnea Creek where they were first tagged and located during the spring. As the water levels receded over the next week, the fish began to make their way back down the Neuse River toward their fall/winter locations. The amount of movement some fish will make to take advantage of prime feeding or spawning opportunities is really amazing.



Back closer to home anglers should keep an eye on several factors when planning a fishing trip around their favorite lake or reservoir. Using Glen Elder as an example, there are two websites that I check almost daily in relation to inflow and water levels. Given that these are two of the most important factors affecting fish movement as it relates to rainfall, I make sure to keep tabs on exactly what is going on.

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The first website is the Kansas USGS map of gauging stations for the state's rivers and streams (<https://waterdata.usgs.gov/ks/nwis/rt>). This provides a list of all stations in the state and one click of the mouse will allow anyone to view the current and past discharge in cubic feet per second, river height and where it is in relation to flood stage, as well as water temperature in some cases. Users can also enter any

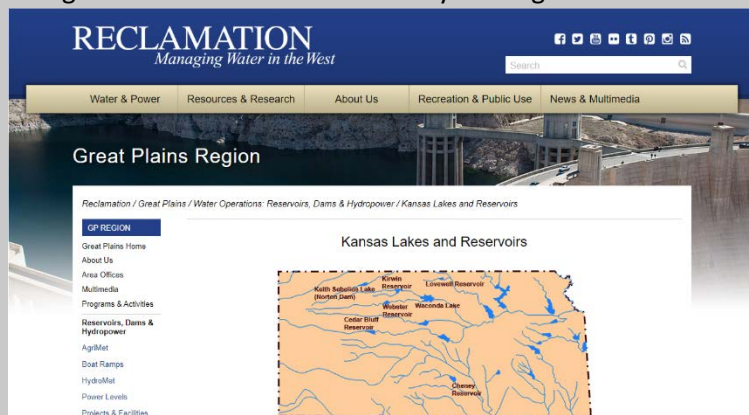


past dates they might be interested in to see what the rivers were doing in the past. The two upstream sites I click on most often are the North Fork of the Solomon at Portis and the South Fork of the Solomon at Osborne. These two rivers provide most of the incoming water and those sites tell anglers exactly what they can expect if wanting to the fish the rivers upstream of

the reservoir. To view release rates, there is a gauging station located several miles below the Glen Elder dam. This is very useful when trying to determine the current outflows and may aid in your decision making when planning to fish near the outlet on the reservoir side or down below.

The other website I check almost daily is the Bureau of Reclamation Kansas Lakes and Reservoirs information page ([https://www.usbr.gov/gp/lakes\\_reservoirs/kansas\\_lakes.html](https://www.usbr.gov/gp/lakes_reservoirs/kansas_lakes.html)). Users can click on the Reservoir of their choice to look at inflows, outflows, current water level, daily precipitation, and many other interesting variables. Tracking the rising water levels is the easiest way for anglers to know when it's time to go fishing.

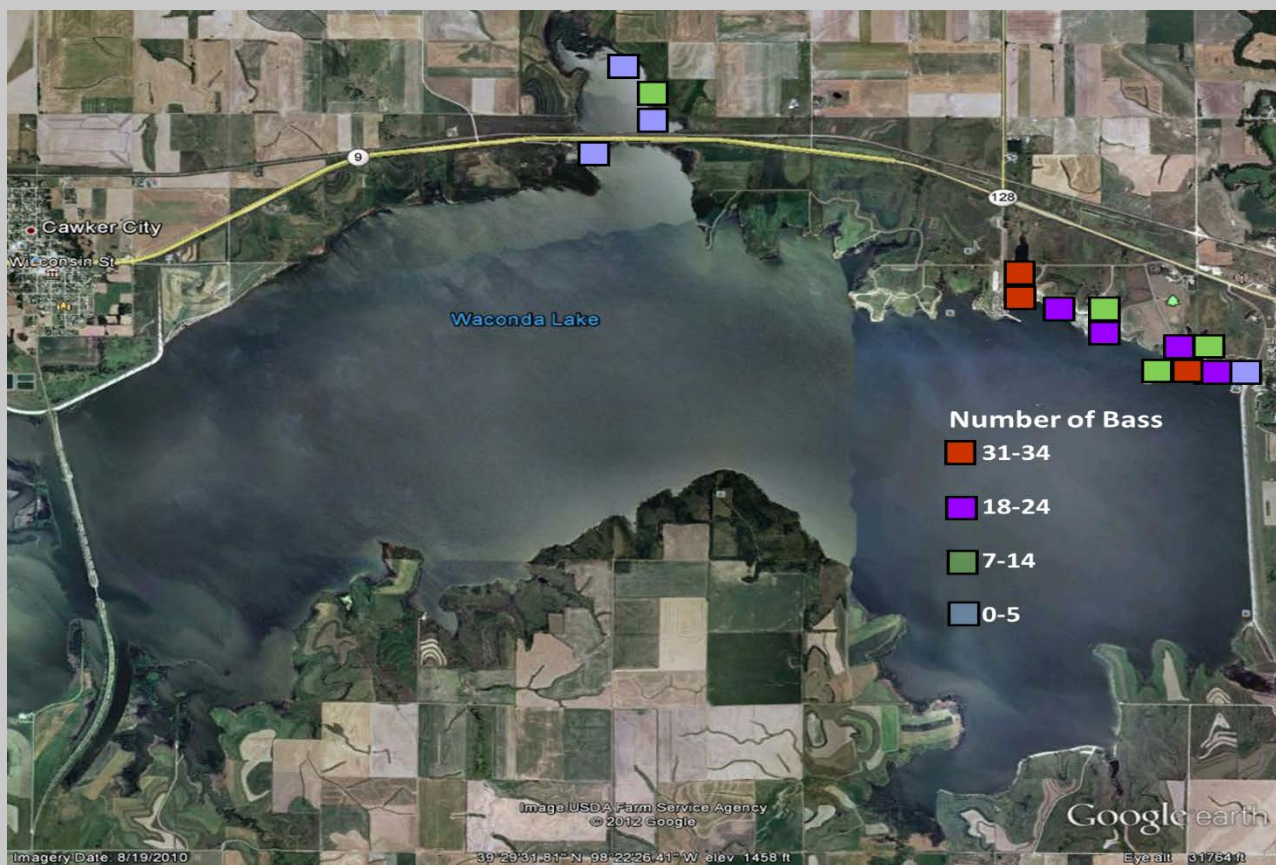
So keep any eye on the sky for rain, not just at your favorite lake or reservoir, but especially upstream in the watershed. As the creeks and rivers rise, the fishing will usually improve, especially for those who know how to use it. Learn the fish movement patterns in your area and you may reap the rewards during your fishing adventures.



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## High Water Limits Bass Sample at Glen Elder

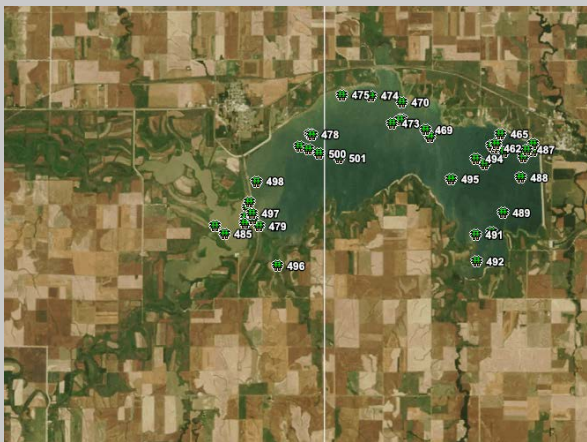
The 2018 spring Glen Elder bass consisted of 8.3 hours of sample time, but the 2019 sample was only 2.9 hours due to the early high water in May limiting the sample, especially for largemouth bass. The majority of sampling occurred in smallmouth bass areas with just a handful of largemouth bass collected. As a result, smallmouth bass catch rate increased from 25.2 fish greater than 8 inches per hour to 54.3 fish per hour. The density rating (11") increased from 17.8 to 41.2 while the preferred rating (14") climbed from 11.4 to 26.0 and the lunker rating (17") increased from 1.7 to 4.2. Size structure was similar to 2018 with 11% between 3 and 8 inches, 36% were 9 to 12 inches, 46% were 13 to 16 inches, and 7% were over 17 inches. The biggest smallmouth weighed 3.3 pounds. Bass anglers fishing Glen Elder should continue to notice a nice resurgence of the largemouth bass population in addition to the strong smallie numbers.



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## Walleye Telemetry Update at Glen Elder

In an effort to learn much more about the walleye population in Glen Elder Reservoir and be able to apply it to other reservoirs in the state, KDWPT is in the middle of a 3-year study evaluating several aspects of walleye life history. Sixty adult walleye were surgically implanted with ultrasonic transmitters in November and early April to study walleye mortality, movement patterns, habitat selection, and interaction with other species. Fish were also tagged with an external pink Floy tag which advised anglers to call the park office if they caught a tagged fish to claim their \$100 reward. One fish was caught during the spawn along the dam, seven were caught during May including one fish caught up the North Fork River near Downs on May 17<sup>th</sup>. Three fish were caught in June and one fish was caught in July for a total of 12 fish caught (20%) thus far. This fishing mortality rate is most likely below normal due to the



high water which greatly decreased the amount of fishing pressure on the reservoir



this year and made angling much tougher for the anglers who did fish at Glen Elder. Through late August, no fish have been detected to have died from natural mortality due to the lack of movement between relocations. Approximately 12 walleye appear to have emigrated from the reservoir due to

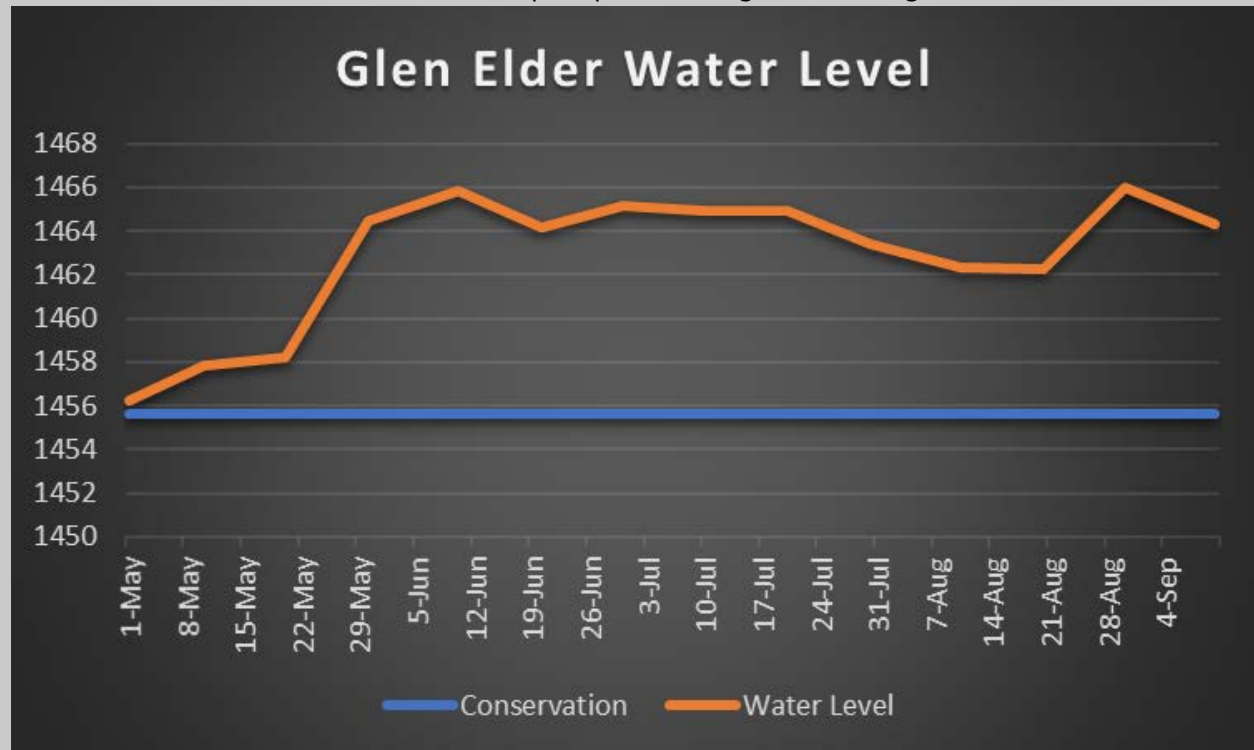
the high water releases this spring and summer which likely flushed many fish. These fish have not been relocated in several months despite extensive searching.

Fish movement has been highly variable with a handful of fish residing near the dam throughout the year and others being detected in a variety of locations throughout the summer. A couple of the fish migrated well upstream of the reservoir and returned once inflows decreased. Mean depth has generally decreased as the summer progressed with a mean of 12 feet when the fish were located in mid-August. Tracking will continue either monthly or bi-monthly until the batteries fail in two years. Anglers will be periodically updated on the status of the tagged walleye and the results of the study.

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## Glen Elder 2019 Water Level

Anglers fishing Glen Elder in 2019 noticed this was one of the wettest years in recent history going back to the floods of 1993 and 1995. Approximately 10 inches of rain fell around Glen Elder in May with even more falling upstream in the watershed. The water level climbed from 0.6 feet above conservation to 9.3 feet high by the end of the month. This led to the closure of the Marina and Osage boat ramps in the state park as well as the Boller Point boat ramp on the west end. Anglers shifted their use primarily to the Granite Creek and Walnut Creek boat ramps. Upon reaching 10.4 feet high on June 7<sup>th</sup>, releases were

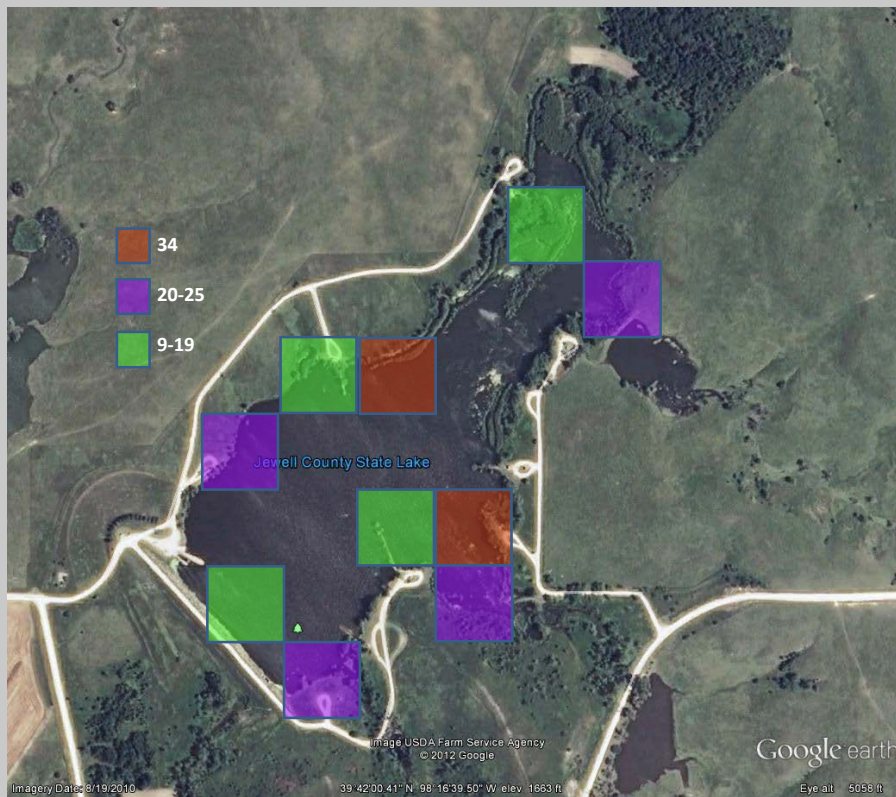


allowed to increase to drop the water level on June 30<sup>th</sup> to 9.5 feet high and dropped again to 7.3 feet on August 1<sup>st</sup>. Releases continued at a rate of 1,000 to 1,500 cfs through August 26<sup>th</sup> when nearly 5 inches of rain hit the watershed and forced releases to stop for a couple of days. At that time the water level was only 6.4 feet above conservation but the heavy rains raised the level back to 10.5 feet high. September releases of 2,000 have dropped the water level to 8.9 feet above conservation. The Bureau of Reclamation plans to continue releases until conservation pool is reached which may take a couple of months.

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## Jewell State Fishing Lake 2019 Bass Sample

At Jewell, 218 largemouth bass were collected during 1.7 hours of electrofishing for a catch rate of 111 fish over 8 inches per hour of sampling. This is an increase from the 2018 catch rate of 102 per hour. The density rating decreased from 84 in the 2018 sample to 72 in 2019. Preferred rating increased to 58 while



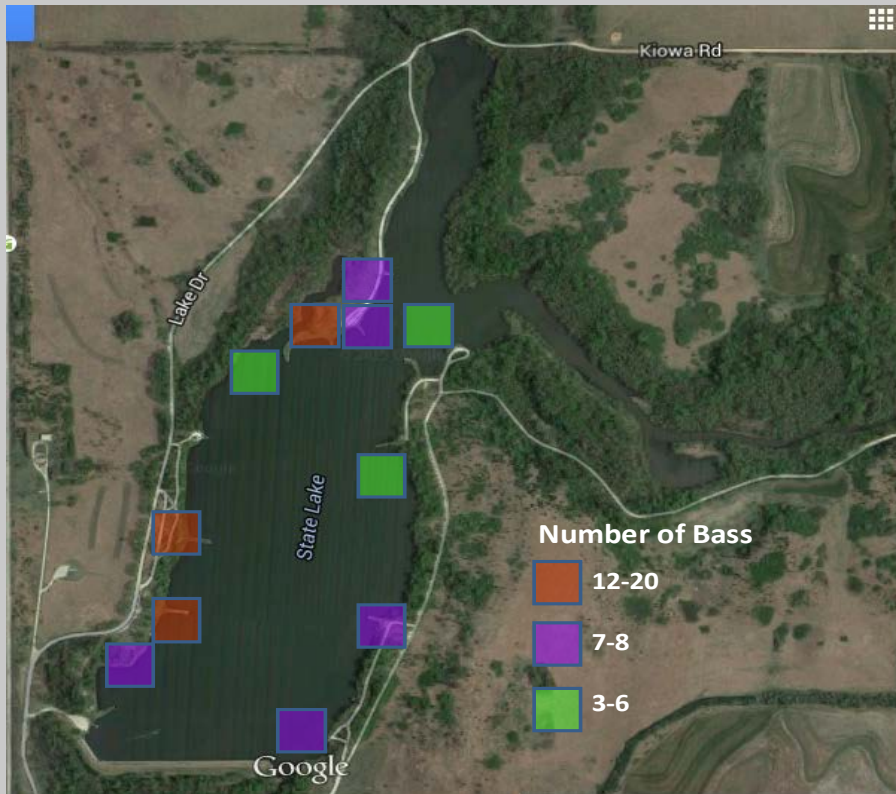
lunker rating more than doubled from 1.2 to 2.9. These fish continue to reproduce well with young fish less than 8 inches accounting for 13% of the catch. Fish between 8 and 12 inches accounted for 34% of the catch while fish in the former protected 13 to 18 inch slot length limit represented 47% of the population. Fourteen fish between 19 and 21 inches were collected, up from only five in the 2017 sample. The biggest fish weighed 5.7 pounds. Anglers have been very pleased with bass fishing this

summer and this population will continue to thrive as long as water levels remain high to provide abundant amounts of flooded vegetation. Reminder that the new regulation for largemouth bass is an **18 inch minimum length limit** which began in 2018.

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## Ottawa State Fishing Lake 2019 Bass Sample

The 2019 spring bass sample at Ottawa State Fishing Lake was much improved for the second consecutive year as the population appears to be rebounding nicely after reaching very low levels in 2017. Eleven 10-minute sites were sampled with 97 largemouth bass collected. The catch rate improved from 39.4 to 46.1



bass per hour while the density rating (12") dropped from 36.5 to 29.4 due to the high number of young bass in the population. The preferred rating dropped slightly from 14.1 to 12.2 with the biggest fish sampled at 3.2 pounds. Approximately 1,500 intermediate largemouth bass were stocked in September 2018 and many of them showed up in the spring sample. The fish are in excellent health with very high condition rates. While improved, these catch rates are still less than

the 2015 sample with a density rating of 49.0 and preferred rating of 24.8. The catch rate of young fish has improved in the last two years with the number of fish less than 8 inches only 0.5 per hour in 2017, but 7.8 fish per hour each of the past two years. Water willow plantings have begun to add important brood rearing and fingerling survival habitat for young bass and bluegill. These improved habitat conditions, combined with better largemouth bass numbers should yield improved bass angling in the near future.



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## Lovewell Water Level Dropped for Maintenance

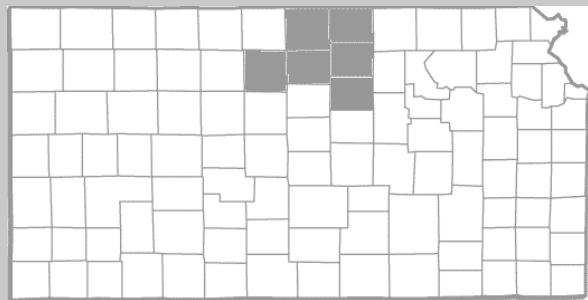
Despite very high water levels at Lovewell this past summer which reached the third highest elevation all time, the water level at Lovewell will be dropped to approximately 10.2 feet below conservation by September 23<sup>rd</sup>, 2019.

The Bureau of Reclamation is planning to conduct some needed maintenance on the gates and dredge out material that accumulates in front of them. Anglers will notice a dramatic decrease in the reservoir surface area and mean depth.



These low water levels will force a closure of all boat ramps with the exception of the Cedar Point ramp which should remain open during this time.

Plans are to begin refilling the reservoir via water from the Courtland Canal shortly after the scheduled work is complete in October.



I hope you enjoyed the latest edition of the Glen Elder district newsletter. I will continue to provide information for Glen Elder and Lovewell Reservoirs, Jewell State Fishing Lake, Ottawa State Fishing Lake, Rocky Pond in Belleville, and Jewell City Lake.

Don't forget to check out the many FISH properties in the area as well. They can offer some great fishing.

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