

FNC Lake Management

Comprehensive Lake Management Report

2019

Next survey will be done
Spring 2021

**Ponderosa Lake
Montezuma, IA**

170 S 1st St. PO Box 304 Springfield, NE 68059 tel. (402) 672-6191

Comprehensive Lake Management Report

Ponderosa Lake

Summary

Ponderosa Lake is a private, 440 surface acre lake located near Montezuma, IA. Water clarity ranged from 6 to 10 feet in 2019. This is the best water quality we have observed at Ponderosa in the past 10 years. It was harder to sample fish on the main lake because they were in 6 to 10 feet of water. Upper end of the lake and the backs of coves were stained. Most of the main lake had at least 8 feet of water clarity.

Game fish species sampled in Ponderosa Lake included largemouth bass, bluegill, green sunfish, crappie (black and white), walleye, yellow perch, smallmouth bass, flathead and channel catfish. Largemouth bass were sampled in good numbers and were in very good condition. Crappie (black and white) were sampled everywhere. I have been doing this for 22 years and this was the most crappie I have ever witnessed. A few walleye were sampled. Bluegill were sampled lakewide, with several bluegill over 8 inches in length sampled. A few channel catfish up to 10 pounds were observed and sampled. Two 14 inch smallmouth bass were sampled and two 8 inch yellow perch were also sampled.

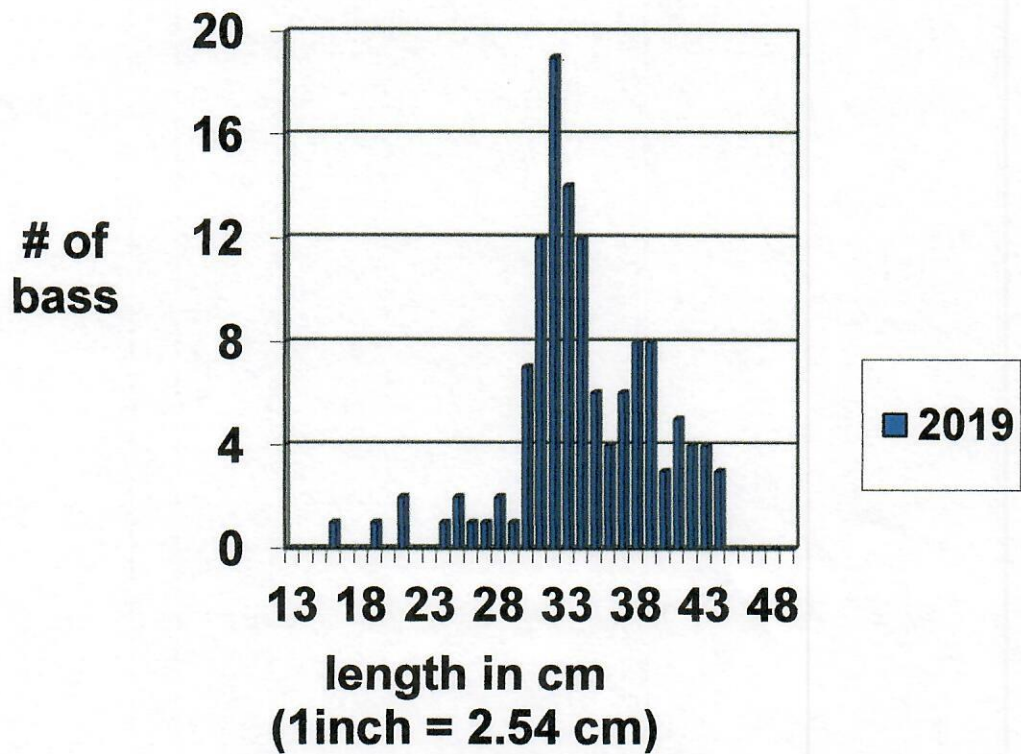
Non-gamefish species sampled included grass carp and common carp. All of the common carp sampled and observed were over 10 pounds. This is an indication that the common carp are not a major problem in the lake at this time. Growing common carp of this size indicates that the overall population of common carp is being kept in check by the abundant gamefish.

A few larger grass carp (greater than 30 pounds) were observed. The grass carp have done their job and there is very little submerged aquatic vegetation. Grass carp do not reproduce, so the lake manager can control how many grass carp are in the lake. Golden shiners were sampled in the backs of the coves. These are great forage and some of the bigger fish we sampled were with the shiners.

Largemouth Bass

FNC Lake management sampled 122 largemouth bass via electrofishing on May 16th, 2019. This is statistically the same from the 2014 sample. The histogram below shows the size distribution of bass in Ponderosa Lake.

Ponderosa Lake Bass Size Distribution 2019



The histogram shows good year classes of bass from 2016 and 2017. These fish are currently 12 to 14 inches in length. We sampled bass from 4 to 18 inches in length. We did not sample any bass over 4 pounds. I know there are bass greater than 4 pounds in the lake. The combination of clear water and colder than normal spring kept the female bass out of shallow water, making them hard to sample. Bass sampled were in very good condition with an average relative weight (WR) of 101. About 1/3 of the bass sampled either had a crawdad or a crappie or bluegill in its gullet. WR is a condition factor determined by comparing a national average of fish species' lengths and weights to individual fish found in a specific lake. The Midwest average WR for largemouth bass is 95. FNC would like to see the average WR in Ponderosa Lake stay above 95. It has been on every bass sample we have conducted.

Bass were sampled at an electrofishing catch rate of 88 per hour. This is the same from the last sample in 2014. FNC would like to see the bass catch rate in Ponderosa Lake stay between 60 and 80 bass per hour. I believe we had good conditions for our sample in the backs of coves and even though bass numbers are higher than I would like, I do not believe we need any bass harvest. The amount of prey species in the lake (crappie, bluegill, golden shiners) is tremendous.

Bluegill and Crappie

Bluegill were sampled and observed lakewide. Several bluegill over 8 inches in length were sampled. The bluegill were just starting to make spawning beds. Thousands of crappie were sampled and observed. Crappie ranged in size from 3 to 12 inches in length. Most of the crappie observed and sampled in the lake are between 8 and 11 inches in length. The average size of crappie is down slightly from the 2014 sample. There is a very large class of crappie from spring of 2016. Over the next 2 years most of these fish will grow into the 12 inch plus length category.

Walleye

8 walleye were sampled and a few more were observed, but not sampled. Electrofishing is not a preferred method of sample for walleye. To sample and observe this many walleye again in 2019 indicates a good population of walleye in Ponderosa Lake. These fish ranged from 13 to 27 inches in length. The 27 inch plus walleye was sampled in one foot of water. The walleye were in good condition with an average WR of 96. I do not believe the walleye have the ability to reproduce in Ponderosa Lake, so you have the ability to control the walleye population via stocking. This will be discussed at the end of this report.

Channel Catfish

Several channel catfish were sampled and observed. These fish ranged from 5 to 10 pounds. Electrofishing is also not a preferred method of sampling for channel catfish. To observe this many channel catfish indicates that the channel catfish population is currently doing well in Ponderosa Lake. Catfish surveyed was very similar to 2012 and 2014. A few flathead catfish were observed along the causeway ranging from 1 to 10 pounds. These are a neat addition to the fishery and provide a "trophy" fish.

Smallmouth Bass and Yellow Perch

Two smallmouth bass were sampled together and were attempting to spawn. Largemouth bass will out compete the smallmouth bass and I believe if you want to keep a viable population of smallmouth they will need to be periodically stocked. Two yellow perch were also observed. These fish do have the ability to reproduce so it will be interesting moving forward how their population grows?

Proportional Stock Densities and Relative Stock Densities

Proportional stock density (PSD) and relative stock density (RSD) are classifications used to quantify and qualify lengths of all fish in a single species (i.e. all largemouth bass sampled in a lake). RSD places size classes of fish into five categories: stock, quality, preferred, memorable, and trophy. Each of these categories has its own range of size according to the fish species being analyzed. Since RSD values are a percentage, they always add up to 100 for each species. These groups are created from percentages of world record fish.

Bass RSD Categories

<u>Category</u>	<u>Fish Length</u>
Stock (S)	greater than 8 inches
Quality (Q)	greater than 12 inches
Preferred (P)	greater than 15 inches
Memorable (M)	greater than 21 inches
Trophy (T)	greater than 24 inches

RSD calculations for bass in Ponderosa Lake are charted below:

RSD Category	RSD Value 2014	RSD Cell Mean WR 2014	RSD Value 2019	RSD Cell Mean WR 2019
S-Q (8-12 inches)	45	99	13	102
Q-P (12-15 inches)	31	101	60	103
P-M (15-21 inches)	20	102	27	102
M-T (21-24 inches)	4	104	0	0
T (over 24 inches)	0	0	0	0

The S-Q range (8-12 inches) RSD value is 13. This means that out of all the bass sampled in Ponderosa Lake over 8 inches in length, 13% were between 8-12 inches in length. Looking at the chart, one can see that this group of bass was in good condition with a RSD cell mean WR of 102. This means that the average relative weight (WR) of all bass sampled between 8-12 inches is 102. Remember, average WR for healthy robust bass in the Midwest should be at or above 95. 60% of the bass population is between 12-15 inches. 27% of the bass sampled were over 15 inches in length. The 2019 bass population had a better average size than 2014, even though no bass over 19 inches were sampled.

2019 Fishing Forecast

Largemouth Bass: Fishing should be very good. Bass numbers are good and I know there are some nicer bass in the lake.

Bluegill/Crappie: Fishing should be excellent. Bluegill numbers are good with some fish over 9 inches in length. Crappie numbers are at all time highs, with most fish sampled and observed between 8 and 12 inches in length.

Walleye: Fishing should be good. Most walleye sampled were between 15 and 20 inches in length.

Catfish: Fishing should be very good. Catfish numbers are good; with some fish over 10 pounds. Flatheads will be up spawning on the causeway and will be catchable with lures.

Management Recommendations

- Catch and release on all largemouth bass. Bass numbers currently match the amount of available forage.
- Catch and keep on the crappie. You need to get the 8-11 inch crappie out of the lake so the remaining crappie have a chance to grow. Thousands of 8-12 inch crappie could be removed and all it would do is help the overall fishery.
- Put a slot on the walleye. I would put a limit of five walleye a day between 16 and 19 inches in length. I would encourage this size of walleye to be harvested. Walleye greater than or less than this slot need to be released. Walleye over 19 inches have the potential to eat the larger crappie.
- Putting additional habitat in the form of fresh cedar trees in areas of the lake that are lacking habitat will provide places for the smaller fish to hide and the larger fish to forage. Shallow water areas that do not have houses, backs of coves and unbuildable lots are perfect places to put habitat in water less than 10 feet deep.
- Stock 1000, 6-8 inch walleye every fall. There is more walleye harvest going on at the lake than I previously thought.
- I would look at a spring walleye survey in 2021.

FNC Lake Management has enjoyed working with Ponderosa Lake. You have a lake full of gamefish. Bass numbers are on the high end, but with the abundance of crappie, I am not recommending any harvest. I believe the larger bass have unlimited forage. If future samples indicate bass numbers continuing to trend up, I will recommend some selective harvest. This was a very similar sample to the 2014 sample and most recommendations reflect this and are close to the same. That's not a bad thing as long as the fishing continues to stay good.

If anyone has additional questions or comments on this report, please do not hesitate to call or email. aklusmire@farmersnational.com, 402-672-6191.

Respectfully submitted, Aaron Klusmire, Fisheries Biologist