

**Farmers National
Company**

Comprehensive Lake Management Report

Ponderosa Lake
Montezuma, IA

13811 L St. Box 5 Omaha, NE 68137 tel. (402) 672-6191 fax (402) 898-2298

Comprehensive Lake Management Report

Ponderosa Lake

Summary

Ponderosa Lake is a private, 440 surface acre lake located near Montezuma, IA. Water clarity ranged from 1 to 3 feet, which is fair water clarity for lakes in central Iowa. There was a pretty heavy algae bloom in spots and there had been excess rain in the area that reduced typical water clarity.

Game fish species sampled in Ponderosa Lake included largemouth bass, bluegill, green sunfish, crappie (black and white), walleye, and channel catfish. Bass were sampled in fair-good numbers and were in excellent condition. Walleye were sampled in high numbers and were in fair condition. Bluegill were sampled lakewide, most bluegill sampled and observed were less than 7 inches in length. 38 Crappie were sampled, and hundreds more were observed. Several channel catfish up to 15 pounds were observed and sampled.

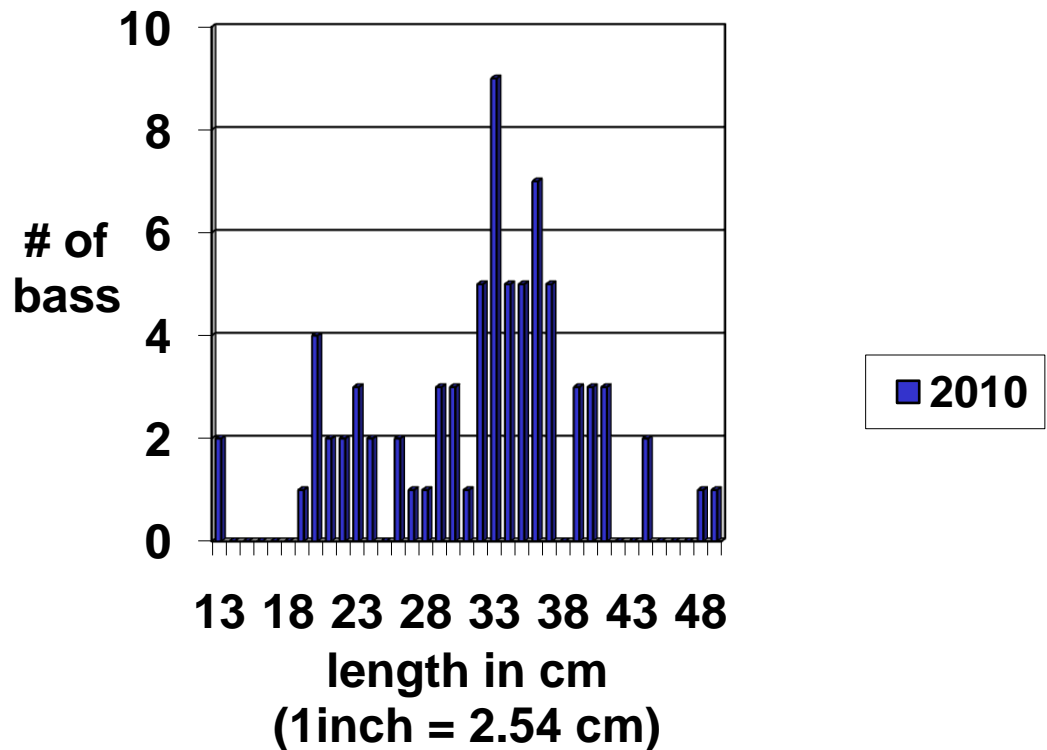
Non-gamefish species sampled included grass carp and common carp. All of the common carp sampled and observed were over 10 pounds. This is an indication that the common carp are not a major problem in the lake at this time. Growing common carp of this size indicates that the overall population of common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

Several larger grass carp (greater than 15 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.

Largemouth Bass

FNC sampled 73 largemouth bass via electrofishing on September 29th, 2010. The histogram below shows the size distribution of bass in Ponderosa Lake.

Ponderosa Lake Bass Size Distribution 2010



The histogram shows a “balanced” population of bass, with good recruitment in 2008 and 2009. Bass sampled were in very good condition with an average relative weight (WR) of 99. 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.

Bass were sampled at an electrofishing catch rate of 50 per hour. If bass are the only major predator this number would be low, but with large populations of walleye and crappie competing for limited resources, this number is about right for the health of the fishery. FNC would like to see the bass catch rate in Ponderosa Lake stay between 50 and 70 bass per hour.

Bluegill and Crappie

Bluegill were sampled and observed lakewide. A few bluegill up to 8 inches in length were sampled. 24 Black and 14 White crappie were sampled and observed. Crappie ranged in size from 5 to 12 inches in length. The crappie were in fair condition with an average WR of 88. Most of the crappie observed and sampled in the lake (approximately 80%) are between 8 and 10 inches in length. This indicates a strong year class or two that is currently slowing the growth of these crappie, keeping them below their potential growth and size. There are currently too many crappie in Ponderosa Lake. This is affecting both the health and growth rates of the crappie. This problem will be discussed at the end of this report.

Walleye

33 walleye were sampled and several more were observed, but not sampled. Electrofishing is not a preferred method of sample for walleye. To sample and observe this many walleye indicates a high density of walleye in Ponderosa Lake. These fish ranged from 11 to 26 inches in length. The walleye were in fair-poor condition with an average WR of 86. 26 of the 33 walleye sampled were less than 15 inches in length. These are fish from 2008 and 2009 stockings. 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 2 to 15 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.

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 2010	RSD Cell Mean WR 2010
S-Q (8-12 inches)	28	99
Q-P (12-15 inches)	54	100
P-M (15-21 inches)	18	97
M-T (21-24 inches)	0	0
T (over 24 inches)	0	0

The S-Q range (8-12 inches) RSD value is 28. This means that out of all the bass sampled in Ponderosa Lake over 8 inches in length, 28% were between 8-12 inches in length. Looking at the chart, one can see that this group of bass was in very good condition with a RSD cell mean WR of 99. This means that the average relative weight (WR) of all bass sampled between 8-12 inches is 99. Remember, average WR for healthy robust bass in the Midwest should be at or above 95. 54% of the bass population is between 12-15 inches. 18% of the bass sampled were over 15 inches in length. All of these length categories have good WR's.

The bass fishery at Ponderosa Lake is dominated by bass greater than 12 inches in length (72% of bass sampled over 8 inches in length are over 12 inches in length). We did sample and observe several bass from spring of 2010. These fish measured from 2-4 inches in length and will be 8 inch plus bass next summer.

Forage

The current forage base in Ponderosa Lake consists mostly of smaller forage (less than 3 inches) and larger forage (greater than 7 inches). There is current void of mid-sized forage. With all the mid-sized gamefish (10 to 15 inch largemouth bass, 10 to 20 inch walleye, and 8 to 12 inch crappie, this forage void makes sense. I believe the biggest sage on the forage base is the abundant crappie. The walleye and the bass will eat the crappie, but it typically takes a 20 inch walleye and an 18 inch bass to eat a 8 inch

crappie. We did not sample many crappie below 8 inches in length. I believe that if the mid-sized crappie are brought under control, the forage base will start to balance out. This will increase the growth rates and condition of all the gamefish.

2011 Fishing Forecast

Largemouth Bass: Fishing should be good. Bass numbers are fair, but most bass caught will be over 13 inches in length.

Bluegill/Crappie: Fishing should be excellent. Bluegill numbers are good, but size is lacking. Crappie numbers are excellent, with most fish between 8 and 10 inches in length.

Walleye: Fishing should be good. Most walleye sampled were between 10 and 20 inches in length. The walleye should be hungry.

Channel Catfish: Fishing should be good. Both catfish size and numbers are good.

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 8-10 inch crappie out of the lake so the remaining crappie have a chance to grow. I would consider a spring crappiethon/fishing derby. You could tag some crappie in the spring and give out prizes. 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 20 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 20 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.
- Any aquatic vegetation that can be left alone, should be left alone. Aquatic vegetation converts nutrients into aquatic insects, which is converted into more and healthier fish. The aquatic vegetation also helps with water clarity. **I would not stock additional grass carp over the next two years.**
- A 2012 spring electrofishing survey is highly recommended. This will give us additional data and make sure the lake is progressing in the right direction.
- No additional gamefish stocking in 2011. You currently have too many gamefish to feed. This can be reevaluated in 2012.

Farmers National Company has enjoyed working with Ponderosa Lake. The lake has some really nice game fish and if recommendations are followed you will start to see larger and healthier fish. I would be happy to discuss ideas to get more crappie removed from the lake. 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