



Thursday, October 20, 2022

C41523 LAKE ROAMING ROCK
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Thank you for choosing Jones Fish and Lake Management for your lake needs. The following is a review of our population sample and water samples collected during our electrofishing survey conducted on 9/12/2022 at Lake Roaming Rock. Also, we will offer recommendations to develop and maintain your fishery moving forward.

Initial Observations

1700 acres +

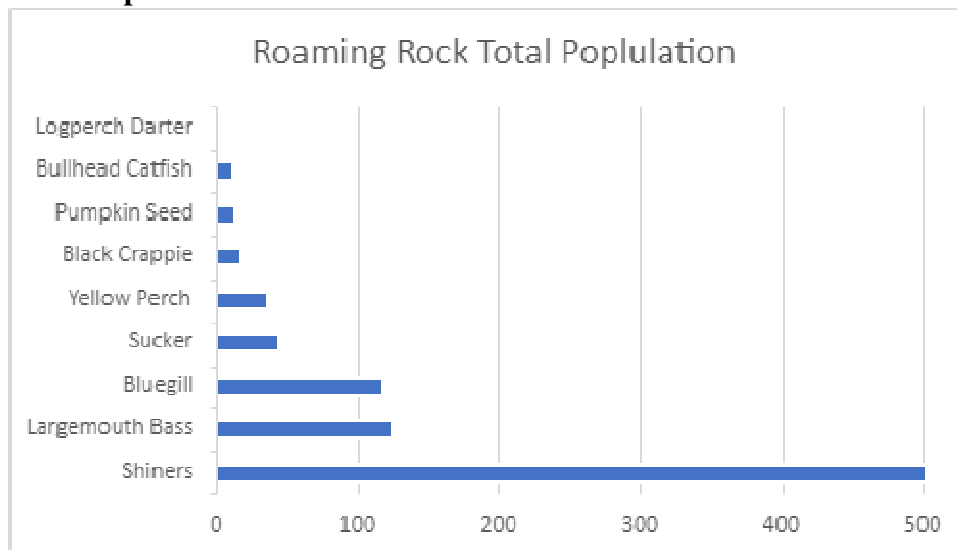
Secchi disk reading: 4'3"

Water Temperature: 76.3 F

DO: surface - 8.8 // subsurface - 7.1

Vegetation present: Cattails, Iris, Arrowhead, Lizard's Tail, Lily Pads, Small Pond Weed, American Pond Weed, Brittle Naiad, Coontail, and Eurasian Water Milfoil.

Total Population



Our sample size when electrofishing is only a small portion of the lake's population but using the data, we can paint a bigger picture. As seen above, shiners, largemouth bass, and bluegill are the dominant species in the lake right now. Bluegill and shiners are primary forage sources for adult bass, catfish, and other apex predators. We like to see a target ratio in our sample of 10 or more bluegill/shiner to every bass in our sample. The ratio in Lake Roaming Rock was a little off with the bluegill, but that is acceptable because there were other species present that will contribute to that portion of the food web. These bluegill have to compete with yellow perch, pumpkin seed, but added together it helps to balance the ratio. The yellow perch and pumpkin seed offspring

will also contribute to the food web. In addition, there was a large number of bluegill fry and minnows that were too small to be captured and counted.

Largemouth Bass Population

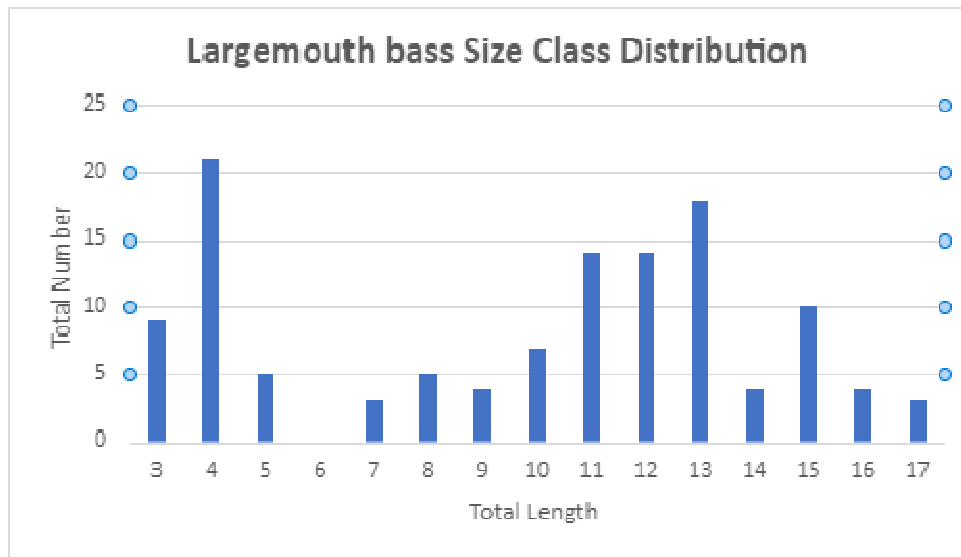
Condition of adult largemouth can be quantified using a measure called Relative Weight. This is a length to weight ratio that calculates how proportionate the weight of a fish is to its body length. The condition of the largemouth bass in an aquatic ecosystem can be used as an indicator of the overall health of the water body. Relative weight values over 100 are indicative of fish that are in excellent condition. Relative weights under 80 are a sign of malnourished fish that are often in poor condition. Typically, these fish have heads that are disproportionately large for their body. We expect most bass to be in the 85 – 100 range, but ideally the majority of fish would be close to, or over 100. The average relative weight of all fish over 10" was 97.5%, the breakdown can be seen in the table below. 97.5 is a healthy score.

Relative Weight

L	RW %	L	RW %
10	100	13.75	99
10.5	96	14	98
10.75	88	14.5	92
11.25	90	14.75	101
11.5	90	15	99
11.75	97	15.5	93
12	93	15.75	105
12.25	99	16	100
12.5	108	16.25	97
12.75	114	16.5	94
13	94	17	93
13.25	94	17.75	107
13.5	95	AVG	97.5

Another factor we weigh heavily in our evaluation of the fishery is the size distribution of the largemouth bass. This shows that different classes of fish are surviving. Bass will end up eating their own fry in a lake where the forage populations are too low. The population becomes stunted, because new generations are unable to survive. The good news is that we did not see any signs of malnourishment in the bass population. One red flag was the lack of 2nd to 3rd year class fish. This is usually a very common size class to capture while electrofishing. Usually the 5-10" length bars of the graph below are a lot higher compared to the smaller and bigger (older/younger) sizes. It does look like the bass had a good spawn this year, but maybe the last two years the spawn was impacted due to high water or a late cold front.

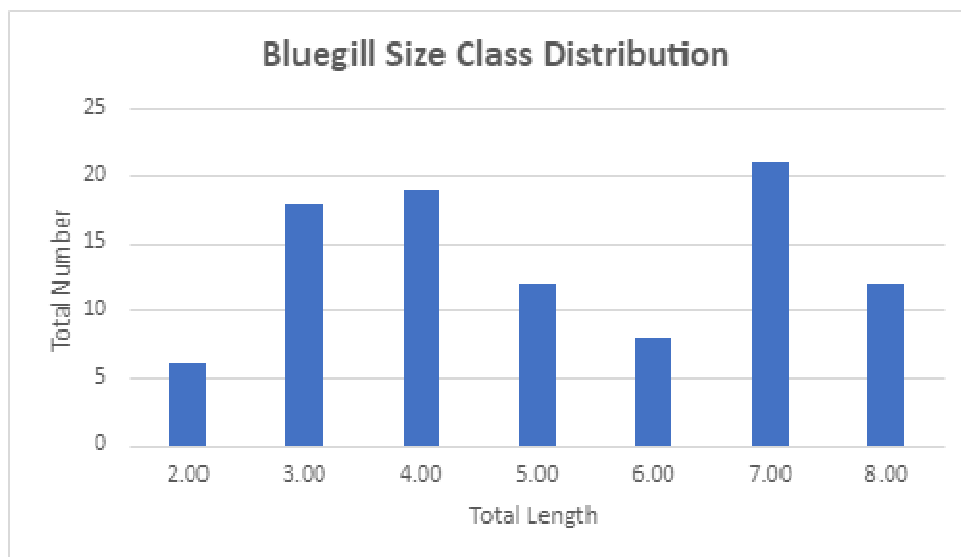
Size Distribution



The largest largemouth bass that we caught weighed in at 3 lbs. 6 oz, but there was a good amount of solid 2-3 lb. fish. We observed others in this 3 lb. + size class that we were not able to capture. Given that we only sample a very small portion of the population, and the relative weight average was so favorable I would guess that there are several quality bass in the lake.

Bluegill

A healthy bluegill population is very important. The size class distribution was good, and we observed a very healthy number of fish that hatched this year that are not represented in the graph below. On this sunfish note, we also sampled a good amount of very healthy pumpkinseed sunfish.



Black Crappie

This is another species that is popular among anglers. We only sampled a small amount of crappie, mostly from the main lake flats. The amount is not very alarming for this time of the year, there is a good chance that a lot of the bigger crappie were in deeper water out of range of our electrical current.

Yellow Perch

We sampled yellow perch in the 5 to 10.5" range. I would say that this population is doing pretty well, but we only sampled a very small amount.

Other fish

There were several species of fish caught including native suckers, black/brown/yellow bullhead catfish, a common carp, 2 logperch darters (darters are a sign of good water quality) and a very large white amur (grass carp).

Weed Control

Plant life plays a very important role in any aquatic ecosystem, but some plants tend to be more invasive than others. There were areas on the lake that were inundated with coontail and Eurasian water milfoil, two species of plants that can make recreational boat travel a challenge. These two plants spread very rapidly by fragmentation. A boat prop can fragment these plants and they will float and potentially re-root in another area. If any submerged plants were to be controlled these two would be high on the priority list.

We also did observe a good number of filamentous algae in the areas where these two plants were located. The weeds had topped out creating a bio surface or a table for the algae to grow on.

I would not recommend controlling the other plants at present unless they become a nuisance in individual areas. Again, they do play an important part in the ecosystem.

Structure

Lake Roaming Rock has a healthy amount of shallow water structure in the form of wood, brush, submerged, emergent, and floating emergent vegetation. Submerged habitat is one of the most commonly overlooked components of a healthy fishery. Submerged structure plays a vital role in the pond ecosystem. Forage species, such as fathead minnows and juvenile bluegill sunfish, utilize structure to escape from hungry predators. Additionally, many baitfish species, such as fathead minnows and golden shiners utilize submerged structures for reproduction. Predators, such as largemouth bass, use structure for shade and as an ambush zone. Structure provides largemouth bass juveniles with a nursery so they can make it to adult sizes. Fishermen know the best fishing is generally found near submerged structure.

You can purchase plastic structures that will not break down over time, and you that you will not get hung up in while fishing. I would recommend some of these structures in the deeper water areas, 6-12' zone, of the creeks or near main lake flats/spawning areas. This will give your bass a refuge for pre and post spawn in addition to summer retreat to deeper water. These areas can be marked on the map so the novice anglers can locate them without the use of fancy electronics.

Structure additions should be reviewed and controlled by the association and its rules and bylaws.

Water Samples

The water samples analyzed provided data typical of lakes sharing similar physical characteristics and are within acceptable limits required for optimal recreation and angling opportunities. Water chemistry analysis should be completed at least once per year and ideally once per month from April to October. Once several years of data have been collected assumptions can be made about the progression of water quality over time and throughout the season to determine the overall health of the lake during the progression of the season and as the system continues to mature.

Zooplankton Sample

Organisms Per Liter		
	River	Dam
Copepod	29	58
Diatom	101	101
Cladocera	259	115
Monogononta	1,339	749
Filinia	72,632	124,489

Zooplankton community has shown to be dominated by Filina rotifers, while Monogonota rotifers were the second most abundant. Differences in organism density between the River sample and the Dam sample could be a result of currents, nutrients, water temperature variability, and/or localized water volume at each site location. Collection and analysis of zooplankton should be completed at least once per year and ideally once each month from April to October. After several years of data have been collected assumptions can be made about zooplankton community composition over time and throughout the season. When compared to other lakes of similar physical characteristics the zooplankton community composition during this time of year is relatively uniform. However, the domination of Filinia could be considered an outlier, this is likely due to characteristics unique to Roaming Rock such as stream flow, localized nitrification, land use, and/or historical management of aquatic vegetation and algae. With multiple years of monthly data, it would be possible to make assumptions about the seasonal progression of each zooplankton variety and determine if the proportions of zooplankton varieties remain stable throughout the year.

Assessment

I believe that based on my electrofishing experience, and the data compiled here that the overall condition of the lake is very good. The largemouth bass are very healthy, and there is a very diverse food web in the lake. The one concern would be the lack of largemouth bass in the 5-9" range. This is usually a size that is very commonly captured in the areas where we can effectively fish with our electrofishing boat, 6' or less of depth. This could lead to a lull in future fishing when this generation becomes the most prominent generation.

Closing Thoughts

The lake overall seems very healthy for a lake in Ohio. To preserve this good health into the future, and even take it to the next level, I would make it a high priority to address the hole in the bass population and continue to stock as many fathead minnows and golden shiners as your budget allows. You can never have too much forage in a lake. If you are going to allow bass harvest, I would keep it to a slot limit of 12-14" fish but catch and release would also not be a bad thing on the Largemouth. They are by no means in need of harvest at this point. I would put a 30 fish per day 9" size limit on the crappie. Their population can easily withstand the pressure, and this will only allow more of those missing bass, 5-9", a better chance to make it to the adult size. This size class of largemouth bass is directly competing for the same forage as the crappie.

Again, thank you for choosing Jones Fish and Lake Management for your pond needs. If you have any questions concerning this proposal or would like to place an order, please feel free to contact me.

Sincerely,

Mark Herring
Aquatic Biologist



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