

Electrofishing Assessment



Bridle Brook Lake

April 29, 2010

May 5, 2010

Dear Bridle Brook Farms HOA,

On April 29, 2010, we completed an electrofishing assessment of your pond. The goal of our assessment was to evaluate the status of the fish population and identify any possible problems. In the following report, I have outlined our findings and recommendations. Our recommendations have been developed with your goal of producing good all around fishing and an aesthetically pleasing lake.

Please contact me if you have any questions about the report or the lake. We would be happy to discuss any of the following recommendations.

Sincerely,

A handwritten signature in blue ink that reads "Shawn McHugh". The signature is written in a cursive style with a large, stylized "S" and "M".

Shawn

Site Description

Bridle Brook Lake is approximately 12 acres in surface area. The lake is very shallow with average depth of 3.5 ft. Compounding this problem is the vast amount of sediment that flows into the lake. We added four piles of submerged structure to the lake this winter, which are identified with floating white buoys. Residents also staked multiple trees in the shallow areas around the lake.

Management Goals

The goal for the lake is to produce excellent fishing for bass, bluegill, and crappie. The aesthetics of the lake are important as well. In order to produce and maintain excellent fishing for the above species it is important to provide adequate food items for them. Also, it is important to harvest some of the predators from the population in order to control their numbers. The major programs that should make up your management strategy are fertilization of the lake (to maintain a phytoplankton bloom), supplemental feeding (to provide additional food items to your bluegill population), and your harvest program. In addition to these programs, you will need to monitor and control the vegetation in the lake as needed with grass carp and/or herbicide applications. The management strategy will be discussed in detail in the following sections.

Aquatic Vegetation

There were a few species of aquatic vegetation that can present problems. The first was water primrose. It was located along the banks of the pond and can restrict bank fishing access. There were also a few species of filamentous algae growing among the primrose and in the shallow areas. Two herbicide treatments have already occurred and a third one scheduled. We will continue to treat throughout the summer.

Sediment

The sediment that continues to collect in the lake is by far the largest concern. We removed the "Island" and multiple loads along the banks and stream last summer; however, the significant rain the lake has received has begun rebuilding the sediment deposits. The trees and limbs that wash down are compounding this problem.



The pictures above show how much sediment has accumulated in less than a year. These ditch banks were dug out to the bottom of the arrow. This is almost 2 linear ft of soil. Again above the bridge, all sediment was removed last year and you can see it creating another island. Sedimentation will always be a problem in this lake and so we recommend creating an annual maintenance dredging schedule. This will keep the sediment and costs at a manageable level.

Water Quality

The water visibility is a measure of the phytoplankton bloom. The bloom is the base of the food chain in the lake, so when a good bloom is maintained on the lake, there is more food available to the fish up the food chain. Currently, the lake is slightly green with a visibility of 30 inches. The total alkalinity of the lake water was 68 ppm. The minimum recommended value of alkalinity that allows a fertilization program to be effective is 20 ppm, so the lake will not require an application of lime at this time.

We normally recommend fertilizing a lake to produce a plankton bloom because it can increase the productivity of a lake by 300-400%. When fertilizing you are providing nutrients to the plankton which makes the plankton become more abundant. As the plankton becomes more abundant, the color of the water will become more of a green color. The visibility decreases as the plankton becomes more dense. A visibility of 18-24 inches is the goal when fertilizing. We are maintaining a low level fertilizing schedule until all aquatic weeds are controlled.

Supplemental Feeding

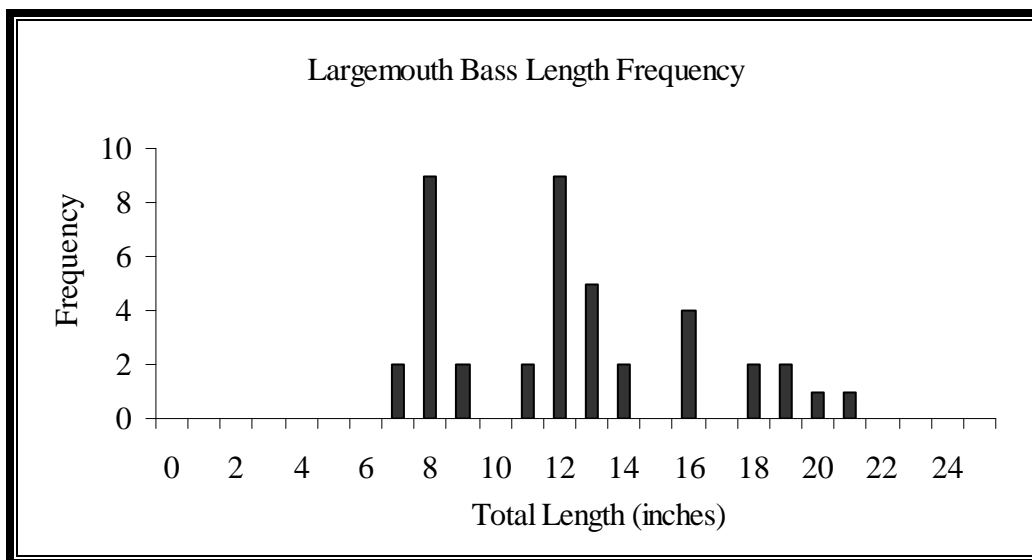
There are three active feeders on the lake at this time. We encourage you to continue this program. The feeders provide food to the bluegill which promotes the bluegill growth and reproduction. This translates to more food for your bass and crappie.

Fish Population

During our sampling, we collected largemouth bass, bluegill, shellcracker, crappie, grass carp, and bullhead catfish. Several of the fish that we captured were near brush or structure that was recently added. Note that both the largemouth bass and crappie are top predators. They compete for food even at a very young age. Controlling their numbers will be critical to maintaining population balance and good fishing.

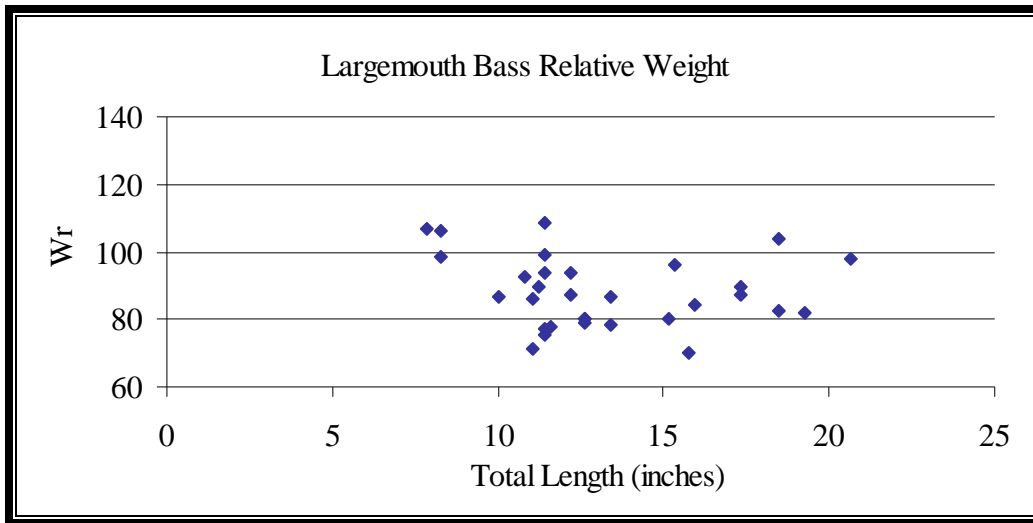


The first graph, which is Bass Length Frequency, illustrates the distribution of the various sizes of bass that we collected. We captured fish ranging from 7 to 21 inches in length. In a balanced fish population we would see individuals representing each size class with the most fish in any one size being over 14 inches. Here the most abundant sizes were the 8 and 12 inch groups. So the population is skewed to the smaller fish. Increasing the harvest of the smaller bass will help correct the imbalance. Taking more small bass out of the lake will reduce some of the competition for food, which will allow more food to be available to the remaining fish. This will improve their growth and allow them to reach larger sizes. We would like to see the major peak in the distribution (now at 8 and 12 inches) move up to 15 inches or larger.

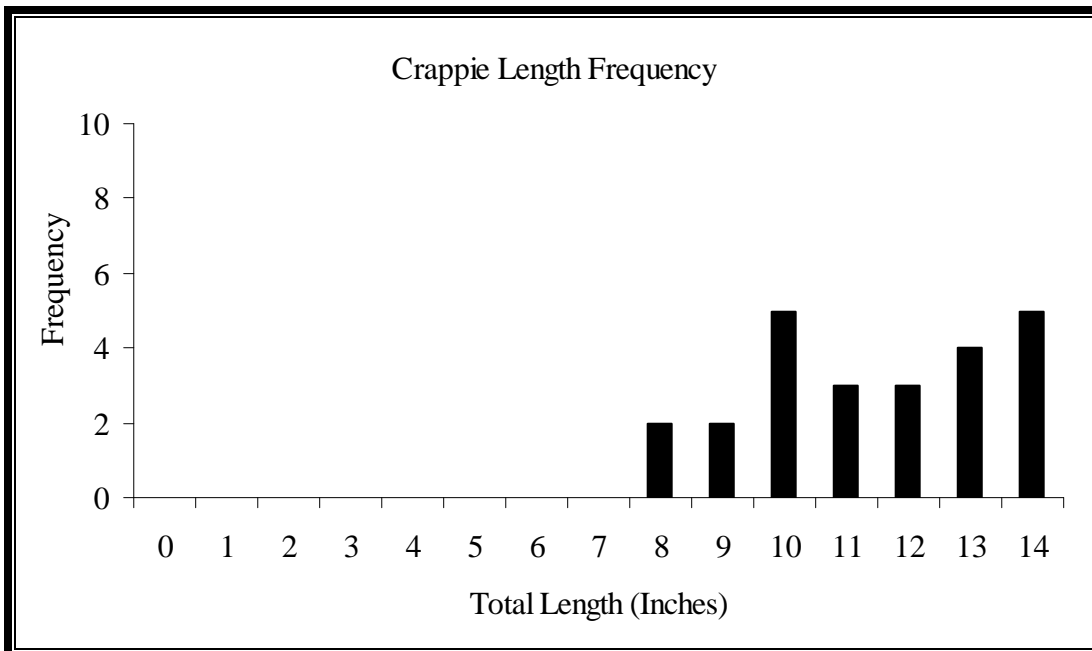


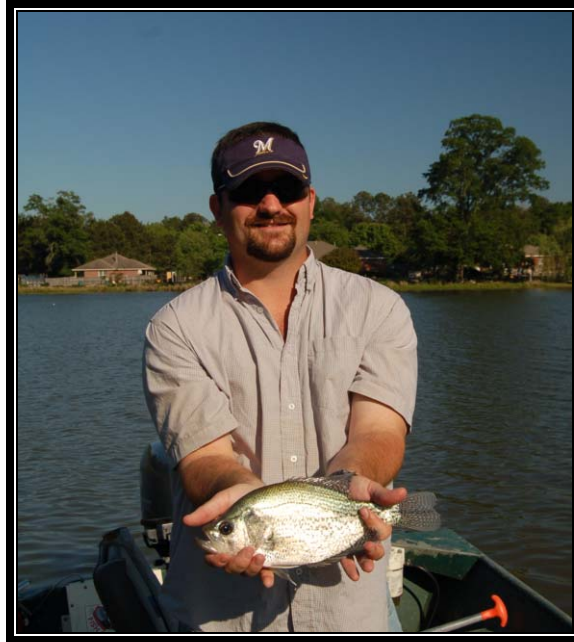


The second graph illustrates the relative weights of the bass in the lake. Relative weight (Wr) is a comparison of the bass in your lake to an ideal size bass of the same length. Wr 's of 100 or above indicate excellent condition. Wr 's less than 80 indicate thin or poor condition. The overall average relative weight across the sizes was 88, which is a little thin. But we should note that the bass have recently lost weight due to spawning activities. Below you can see how some of the smaller bass were extremely thin while others are healthy. When numbers of bass begin building up in the smaller sizes like this, it is time to remove more of them. Otherwise, their numbers continue to build through reproduction, and the forage base becomes depleted. Also, when the relative weights drop below 90, it is wise to stimulate the forage base. This past winter was very harsh, and almost all shallow lakes in our region lost their shad populations. Considering this and the condition of the bass, we recommend restocking a load of threadfin shad into the lake. The shad should reestablish a reproducing population and they should help to take some of the feeding pressure off of the bluegill population, by providing the bass and crappie an alternative food source.

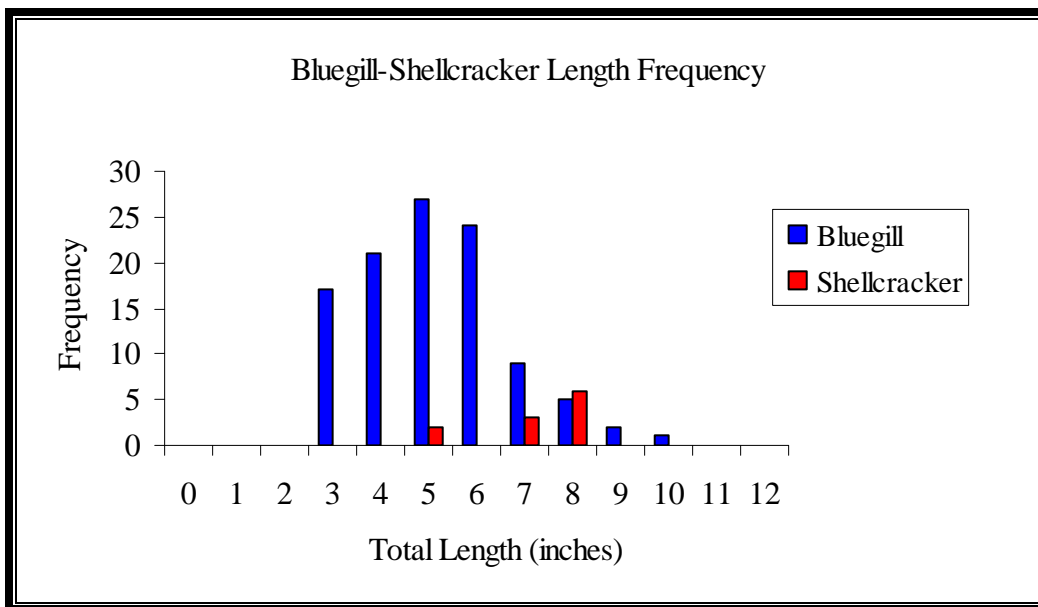


We captured several large crappie in our sample, which indicates that the fishing for them right now should be excellent. Crappie tend to follow a 5-year cycle where one year the adults have a heavy spawn. Small, young crappie then dominate the population for the next few years until they grow into the large adults that you want to catch. Then the process begins again when those adults have a heavy spawn. At this time larger adults are most abundant in the population, so enjoy it while they last. Continue to remove them without size or number restriction.





The size distribution of the bluegill and shellcracker is shown in the attached Bluegill-Shellcracker Length Frequency graph. We captured individuals from 2 to 10 inches in length. The distribution of sizes was good. We saw good numbers intermediate size and small adult fish. The intermediates are important food items for mid-size bass, and the small adults will grow into the larger sizes over time, improving the fishing for them as the lake progresses. We consider the bream population to be the primary forage or food for the bass and crappie. The bream population must be abundant enough to support the predator fish while also allowing enough adult fish to grow to provide good fishing for large bream. So continuing the fertilization and feeding programs will be important.



Recommendations

In summary, the lake is doing well but it is time to make some adjustments to the management strategy. There are signs that the bass are becoming a little too thin, so now is the time to focus on the harvest of some of the smaller bass. Continue to support and promote the expansion of the forage base through fertilization and feeding. Before fertilizing, be sure to monitor and control the algae and primrose as needed. In a fertile environment they can grow out of control. Restock threadfin shad because they were likely lost during the winter. The void left by not having them will stunt the growth of the bass and crappie. Below are our recommendations.

1. Harvest bass that are 14 inches or smaller at a rate of 20 fish per acre, per year. This is a quota that you should try to meet each year. Larger fish should be released. If possible, place a notebook somewhere convenient where homeowners can keep a record of what is removed. We have seen some people use a mailbox to keep the notebook in.
2. Remove crappie and bullhead catfish without size restriction.
3. Harvest only bluegill that will be eaten. Be sure not to harvest more than 25 lbs per acre, per year. There is no minimum amount that needs to be removed like there is for crappie and bass. Records of harvest should be kept if possible.
4. Stock one load of threadfin shad into the lake to provide an additional source of forage to the bass and crappie.
5. Electrofish the lake again next spring to see how the population has progressed.