Electrofishing Survey Report

Lake Oakdale

Florence, SC

May 15, 2011

Prepared For:

Mr. Fritz Pinkerman

QUALITY LAKES

Your Professional Lake Management Partner.

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Summary of Survey Methods:

On May 4,2011, an electrofishing survey was conducted on Lake Oakdale. The goal was to assess the fish populations, compare to sampling conducted in 2008, and make management recommendations. Using boat-mounted electrofishing gear, circuits were made in three regions of the lake (upper, mid-, and lower lake) and bass, bluegill, and other species were collected. Bass and bluegill were measured (total length), weighed, and released. Other species of interest were noted. Aquatic plants and percent coverage were noted and water quality parameters were tested.

Results

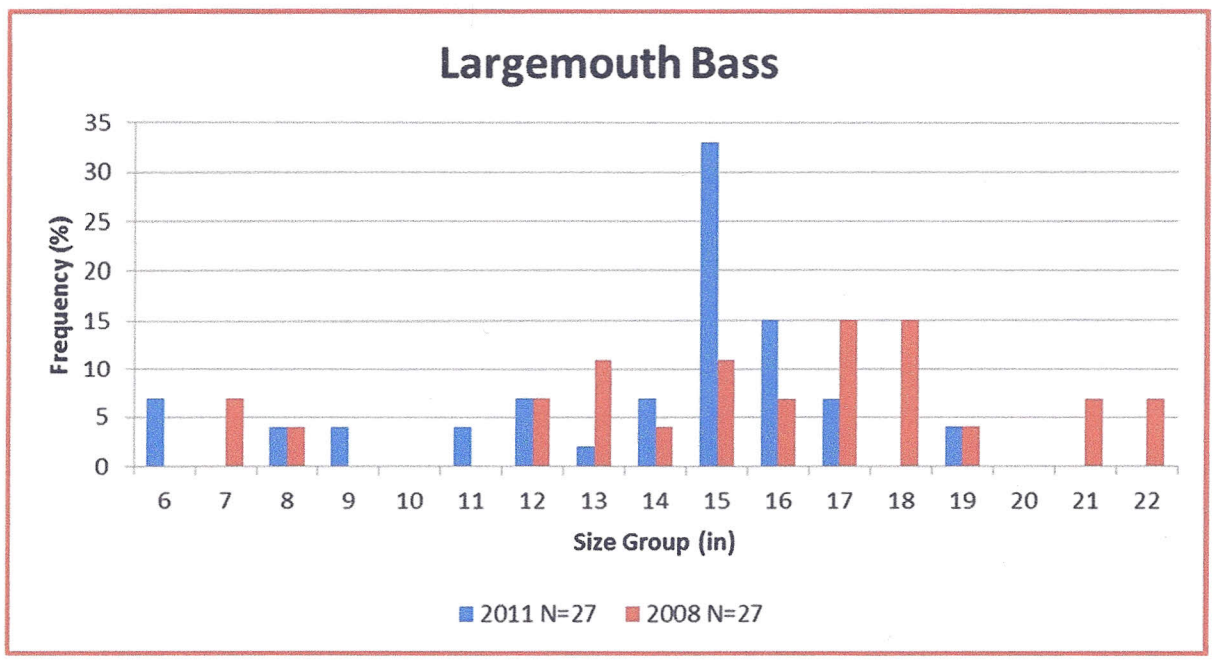

Figure 1. Frequency (%) of bass collected in each size group (inch) from Lake Oakdale in 2011 (N=27) and in 2008 (N=27).

A total of 27 largemouth bass were collected in 2011 ranging in size from 6 - 19 inches in length (Figure 1). The largest bass weighed 4.2 lbs. The relative condition (Kn), a measure of plumpness calculated by comparing observed fish weights to a

standard weight for bass of comparable sizes in SC, remained similar with decreasing condition factors as bass reached larger size groups (Figure 2). The average condition for all fish combined in 2011 was 0.97 vs. 0.92 for all bass collected in 2008.

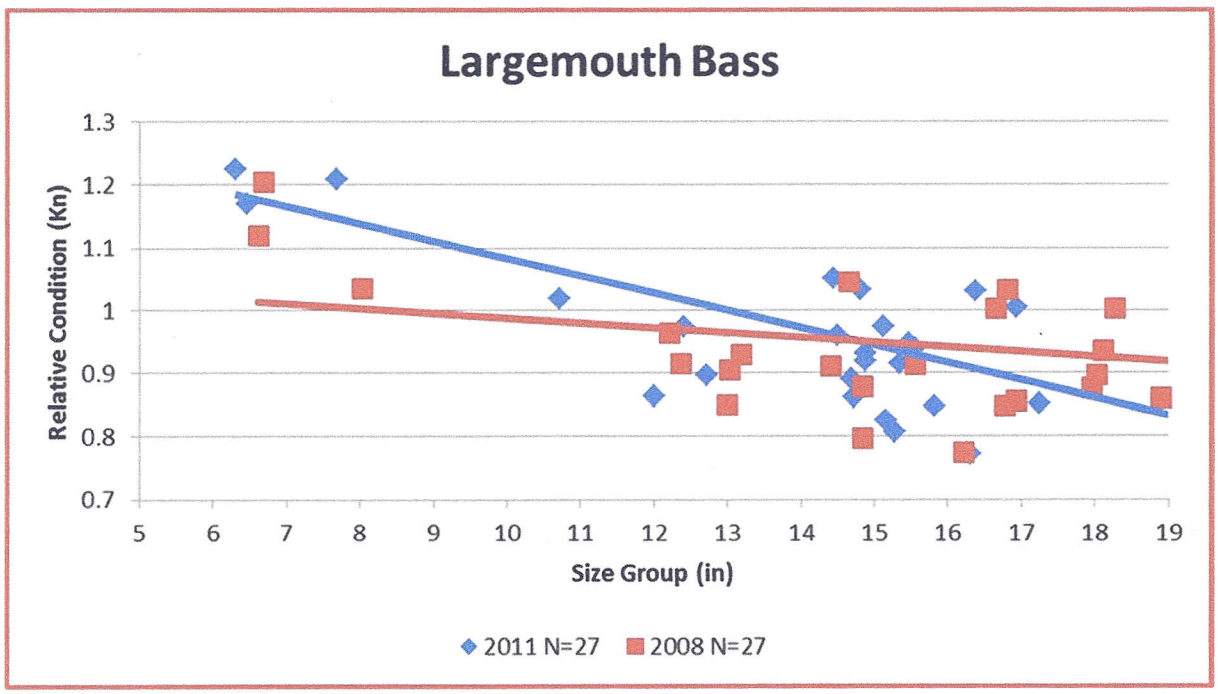

Figure 2. Relative condition (Kn) of largemouth bass collected from Lake Oakdale in 2011 and 2008.

Relative condition of bass in a healthy, balanced population is 0.90 - 1.0+. A low relative condition reflects a deficiency in prey. Nearly 50% of the bass collected were 15-16 inches and it was apparent that group of fish is short on prey species of appropriate size as nearly half of those groups had relative condition values below 0.90 (Figure 2).

Bluegill sunfish, redear sunfish (shellcrackers), and black crappie were also collected in significant numbers (Figures 3-5). Four redears were collected that weighed 1 lb each. Other fish species collected included gizzard shad, golden shiners, chubsuckers, chain pickerel, and bowfin (mudfish). Water quality tests indicated pH=7, alkalinity= 85 mg/l, and hardness= 68 mg/l. Alligator weed was prevelant around the lake margin.

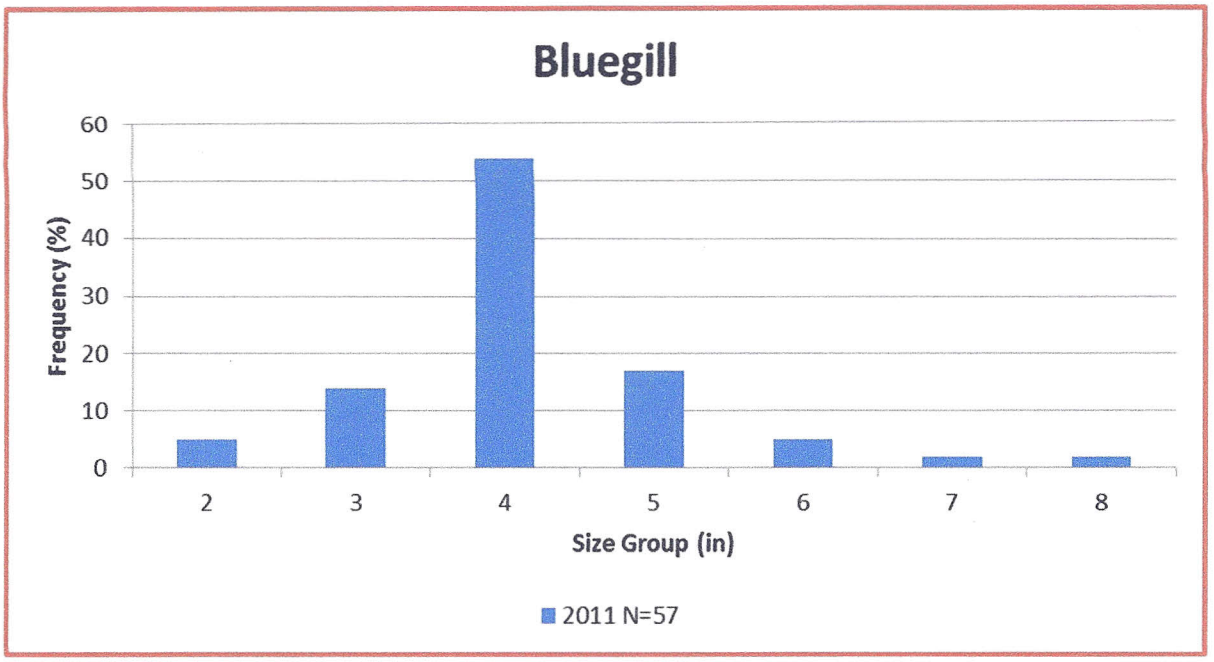

Figure 3. Frequency (%) of bluegill collected in each size group (inch) from Lake Oakdale in 2011 (N=57).

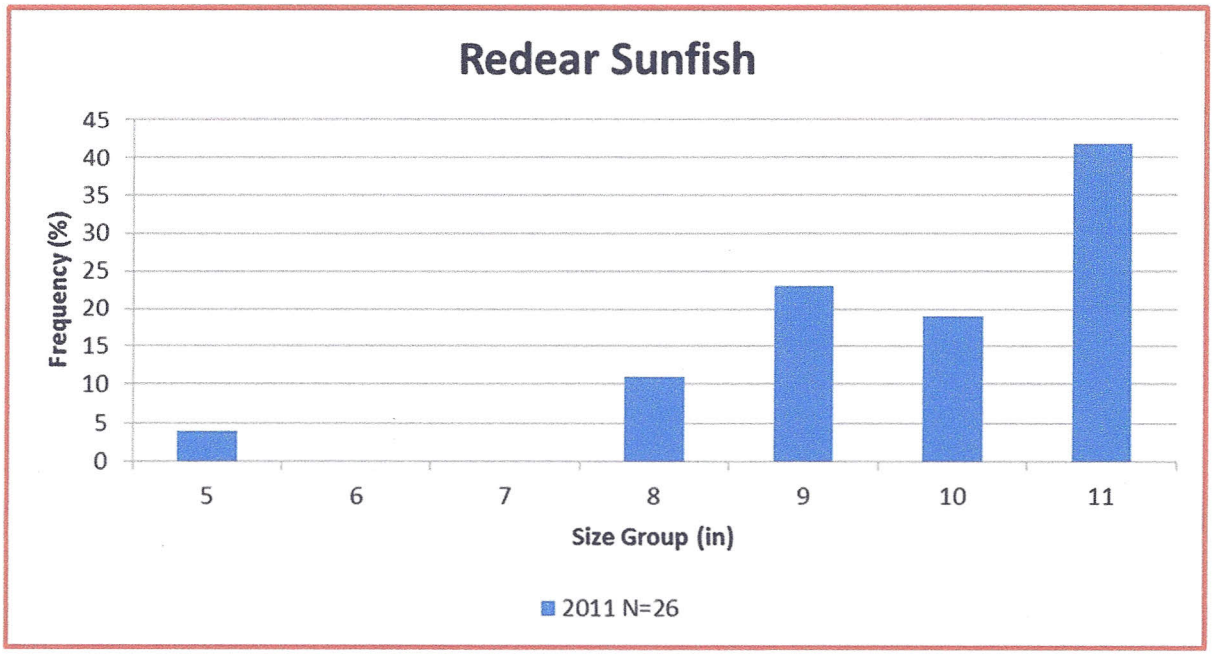

Figure 4. Frequency (%) of redear sunfish collected in each size group (inch) from Lake Oakdale in 2011 (N=26).

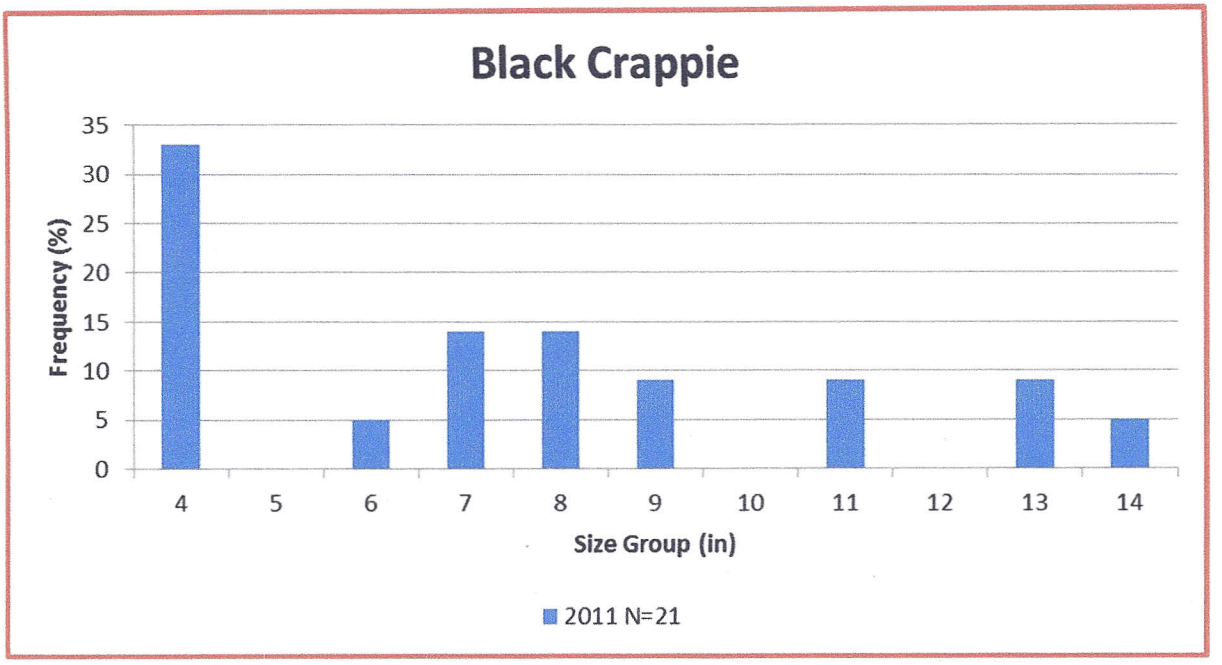

Figure 5. Frequency (%) of black crappie collected in each size group (inch) from Lake Oakdale in 2011 (N=21).

Discussion and Recommendations:

Results indicate little change in the bass population since 2008. Relative condition has improved somewhat but continues to remain below 1.0. Bass recruitment (survival of young fish to adult sizes) remains low due to competitive fish species such as golden shiners and bowfin. The abundant 15-inch bass should be in better condition considering the abundance of 4-inch bluegill present. This suggests a feeding efficiency issue such as lower feeding efficiency because of excessive aquatic plant growth.

The bluegill population appears to be limited to fish < 6 inches in length. More adults would be beneficial to the overall population. The redear population is doing very well, reflective of the abundance of marginal aquatic plants. As suggested in the 2008 report, having some aquatic plants is beneficial, and having a lot of aquatic plants can benefit some species such as redear. The crappie population appears to be recruiting well with a strong year class in the 6-9 inch size range that should offer great angling opportunities in 2012.

Based on these factors, we recommend the following management steps for Lake Oakdale:

1. Adopt an aggressive aquatic plant management plan via sterile grass carp stocking and herbicide treatments targeting the submersed aquatic plant species and cattails. Marginal species such as alligator weed should be kept in check but not totally removed. These benefit your bluegill and shellcracker populations when kept at low coverage (e.g. < 30% shoreline coverage).
2. Previously recommended catch and release for bass. Is this occurring? Assuming it is, consider a supplemental stocking of adult largemouth bass, 10" minimum, and use F1 northern x florida strain largemouth bass. Recruitment is very low and your lake is ageing- it is time to add new genetics and some aggressive, fast-growing bass. Only add 1-2/ac as you do not want to overload the system with bass and you want to maintain good growth rates. Continue catch and release.
3. Have lower bag limits for bluegill/redear been implemented? Keep them low, 10 fish/angler/day. Protect these populations, they are the lifeline of your bass population. The old habit of keeping every bream you catch is not a viable management tool. You have an excellent redear population as a result of your aquatic plant communities. Since they only spawn once per year, protect that resource with a low bag limit. If resources are available, stock 5-7" bluegill to increase the immediate bluegill spawning population, up to 500/acre.
4. Implement a feeding program for bluegill. Feeding will give your fish a significant boost in growth. Owners can certainly participate in this step via fish feeders installed on docks.
5. Consider a bathymetric map with sediment depth survey. Sediment input from a number of sites on Lake Oakdale is decreasing your overall depth and contributing to better habitat for submersed aquatic plants. This type of map will also provide a baseline for future reference when dredging will be necessary.

Quality Lakes Inc. is capable of this mapping step and would be happy to work with you on a proposal.

We hope you find these recommendations applicable to your goals. We can help accomplish all of these management steps. Please let us know if we can assist you.