MISSOURI DEPARTMENT OF CONSERVATION

Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180

Telephone: 573-751-4115 • Missouri Relay Center: 1-800-735-2966 (TDD)

JERRY M. CONLEY, Director

August A. Busch Memorial
Conservation Area
2360 Highway D
St. Charles, Missouri 63304
(636) 441-4554, ext. 312

Mr. Jeff Strand
Lake St. Louis Anglers Club

Dear Jeff:

I've completed fish collections and data analysis for Lake St. Louise. The following are the summary of the fish/habitat surveys we conducted and management recommendations. We conducted 1.0 hour of electrofishing on September 15 for information on bass, sunfish and shad. We set 6 trap nets for 24 hrs on November 8 and 9 for information crappie. The data obtained is the basis for the fish management recommendations.

Habitat

Water clarity was 48" on September 15.

We found no aquatic plants in the lake during either survey. We located few brush fish attractors. The shoreline has large rip-rap rock in several places but it does not extend far into the water. Aside from boat docks, we found no other fish habitat. Generally, the lake has very little fish habitat, especially nursery habitat useful for young fish.

Fish Population

Channel/Flathead catfish

We did not collect any channel catfish during either survey. This is not surprising as they are typically difficult to collect. Do the LSL Anglers have any thoughts on the catfish populations based on catfish caught the last few years? I noted from the stocking records that LSLA stocked 2,000 channel catfish in 1998. An

unspecified number of flathead catfish have also been stocked in the past 10 years.

Crappie

We collected both white crappie and black crappie. Although catch-rates were low, size distribution was good. White crappie ranged in size from 7.5 to 13.5 inches. Black crappie were fewer in number but were 9 -10 inches in length. I did not collect any small (young) crappie. This may have been due to selection of netting locations that missed small fish or it may have been a result of low crappie recruitment. Lower recruitment of crappie allows for increased growth of surviving fish resulting in larger average size of fish, possibly explaining the proportion of quality-size fish we collected.

Hybrid Striped Bass

We collected 12 hybrid striped bass from both surveys. Fish ranged in length from 11 to 14 inches. Records indicate 100 hybrid striped bass were stocked in 1997; 500 in 1998 and 300 in 1999. The hybrid striped bass we collected were in average condition (i.e. they were not thin). However, I sacrificed 6 fish to examine their stomach contents and collect otoliths (ear bones) for ageing. All fish had crayfish in their guts but no fish. Growth analysis indicated they are growing very slowly. These fish appeared to be from the 1997 stocking. Under good growth conditions these fish probably should be over 16-inches in length. Although shad are present in the lake, I suspect they may not be producing large spawns every year. In addition, the large number of small largemouth bass feed heavily upon the young shad, competing with the hybrids. Largemouth bass prey upon sunfish but hybrids seem hesitant to do so. The result may be that when small shad are unavailable hybrids shift their diet to crayfish and other invertebrates that do not allow them to maximize their growth.

Gizzard Shad

We collected abundant gizzard shad during the electrofishing survey. Fish ranged in size from 7.5 to 10.5 inches. As I mentioned, the shad seem to have produced a weak year-class. No small shad of the sizes utilized by largemouth bass and hybrid stripers were collected.

Bluegill/Green Sunfish

We collected very low numbers of bluegill and few quality-size fish. Most were small young-of-year fish. We collected large numbers of green sunfish, nearly double the number of bluegill. These sunfish compete with bluegill and largemouth bass for food and are not utilized as prey by largemouth bass as frequently as bluegill. Low bluegill abundance and lack of quality-size fish are

probably due to lack of habitat and competition with green sunfish and gizzard shad.

Largemouth Bass

We collected numerous largemouth bass, ranging in size from 2-18 inches. However, only 4 of 128 fish collected were longer than 12 inches in length. A large proportion of the sample was composed of young-of-year bass. Most fish were in only average condition (thin). These data are indicative of a "bass crowded" scenario. Bass are over-abundant, they do not have adequate prey. The result is a bass population composed primarily of small, slow-growing fish in average to poor condition.

Habitat

The lake is in need of habitat for bluegill and crappie. I suggest the LSLA place a large number of brush fish attractors in the lake, especially in shallow water (<4') useful for nursery habitat for bluegill. I suggest placing cedar/Christmas trees in groups of 10-15 in at least 6 sites along the lake or island shorelines. These must be weighted and placed horizontally (flat) on the lake bottom. In addition, place 6-10 deep water (>4') brush attractors composed of 10-15 trees as habitat for larger fish, especially crappie. These should be weighted and placed vertically (upright) on the lake bottom. Plan to replace these trees every 2-3 years.

I believe there are a few sites suitable for planting emergent aquatic plants. If you believe lakeside property owners would be amenable, we can design an aquatic plant introduction project utilizing slow-growing, visually appealing plants such as pickerel weed or sweetflag. I suggest choosing two sites along suitable shorelines, building exclosure fences and planting several dozen emergent plants as a demonstration project in the spring. If successful, emergent plants will provide quality nursery habitat for sunfish, bass and their food organisms.

Channel Catfish/Hathead Catfish

In small lakes channel catfish generally do not "recruit" well since largemouth bass prey heavily on catfish fry. It is then necessary to periodically restock channel catfish to replace these harvested. In the last 10 years, only 2,000 channel catfish were stocked in Lake St. Louise. I suggest you develop a regular channel catfish stocking program to maintain adequate numbers of "quality-size" channel catfish. To do so, stock 10 channel catfish per acre every 2 years. Fish must be at least 8-inches in length to minimize bass predation.

I do not recommend stocking additional flathead catfish. If previous stockings have been successful, anglers should occasionally catch both large and small flatheads. To assist in determining survival and possible reproduction of flathead catfish in Lake Louise I suggest the LSLA begin a flathead catfish survey of

anglers fishing the lake. By simply requesting reports on the number and size of flathead catfish anglers catch you can begin to collect information necessary to determine success of the stocking program. If you've any questions regarding setting up such a survey, please contact me.

Crappie

At present, both the white crappie and black crappie populations seem in good shape. I suggest you encourage anglers to keep all crappie they catch. Additional brush fish attractors should increase crappie catch during pre-spawn and post-spawn periods.

Hybrid Striped Bass

The hybrid striped bass are not growing as fast as they should and consequently are not able to utilize the large shad. However, they seem to be surviving adequately. Any fish that reach 16-18 inches will be large enough to utilize large shad and should grow large.

I suggest you suspend further stockings of hybrid striped bass until we can determine success of past stockings. Encourage anglers to practice catch-and-release on all hybrid striped bass caught. I suggest you request angler catch data for hybrid striped bass just as for flathead catfish. This can be done at the same time and will aid you in determining success of both stocking programs.

Bluegill/Green Sunfish

Providing habitat for bluegill is intended to increase their abundance, providing more prey for largemouth bass. I doubt that quality-size bluegill will be abundant as long as gizzard shad and green sunfish are present. I suggest anglers be allowed to harvest bluegill of any size as caught.

Largemouth Bass

You must dramatically reduce the number of small largemouth bass to increase the number of quality-size bass. This can be done by increasing harvest of bass as well as transporting fish to Lake St. Louis, as you mentioned. By removing small fish, the remaining fish will have more food and should grow more quickly, reaching larger size.

Regardless of the method, anglers should adhere to a 12-15 inch slot length limit, removing fish less than 12 inches and larger than 15 inches. Anglers should especially concentrate on removing the small fish. I suggest you begin by removing 20 fish per acre each year. This equates to 1,500 fish (20 fish X 75 acres). Most of these fish should be less than 12 inches for the limit to be

effective. After a few years the bass population should begin to demonstrate improvement.

If you've any questions, please call or e-mail. I would be happy to meet with you or the LSLA members to discuss the report and recommendations.

Sincerely

Mike Reed

Fisheries Management Biologist