MISSOURI DEPARTMENT OF CONSERVATION

Headquarters

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SARA PARKER PAULEY, Director

REPLY TO: Missouri Department of Conservation
108 Ray Garlick Lane
Villa Ridge, MO 63089
Telephone: 314-577-9555

August 15, 2022

Joshua Brower
1 Stonegate
DeSoto, MO 63020

Dear Mr. Brower:

On June 2, we completed an electrofishing survey of Briarwood Estates Lake in Jefferson County. The purpose of the survey was to assess the fish population and overall lake conditions. I have enclosed the survey results as well as specific recommendations to improve the lake's fishery. Please share the following results at an appropriate meeting or in a newsletter.

It is not uncommon to have our "contact person" change over the years. As a result, much of the literature and management recommendations for the lake may be lost. This kind of historical information is invaluable to you and to us when making management recommendations. I strongly recommend that you try to maintain a permanent file of the lake's records (for example, management recommendations, stocking records, when and where brushpiles were added) which can be passed along to the next person in charge of lake matters. I suspect that you already have such a file, and if so, I applaud your organization.

If you have questions regarding Briarwood Estates Lake, the survey results, or the management recommendations, please feel free to contact me.

Sincerely,

Rob Pulliam

Rob Pulliam
Fisheries Management Biologist

C: Jeff Esely, District Supervisor – Community and Private Land Conservation Unit

BRIARWOOD ESTATES LAKE
FISHERIES MANAGEMENT PLAN - 2022

MANAGEMENT GOAL: Produce a balanced bass, bluegill, and channel catfish fishery by implementing the following strategies:

1. **Observe a 12 to 15-inch protected slot length limit for bass.**
2. **Observe a 6-inch minimum length limit for bluegill.**
3. **Maintain proper coverage of brushpiles and aquatic plants in the lake.**
4. **Remove crappie regardless of size, up to 30 fish per day, statewide creel limit.**
5. **Restock channel catfish every year or two.**
6. **Post current fisheries management recommendations at access points around the lake.**

BASS

Current Conditions:

The largemouth bass population sampled had a good size distribution of small, medium, and larger sized fish; however, having more bass larger than 12 inches would be desirable. Largemouth body condition could be described as fair to good.

Recommendations:

Observe a 12 to 15-inch protected slot length limit for bass. Release all bass between 12 and 15 inches. Harvest bass less than 12 inches. Bass larger than 15 inches may be harvested if so desired. Anglers may keep up to 6 bass per day. Harvest a maximum of 10 bass per acre per year from the lake, or 690 total bass (69-acre impoundment X 10 fish per acre = 690 bass total). The recommended harvest rate is conservative which may need to be adjusted up to 15 fish per acre per year.

BLUEGILL

Current Conditions:

The bluegill population sampled also had a good size distribution of small, medium, and larger sized fish. The bluegill body condition was good particularly for individuals 6 inches and larger.

Recommendations:

Observe a 6-inch minimum length limit for bluegill. Return bluegill less than 6 inches to the water. Anglers may keep up to 20 bluegills per day. Harvest a maximum of 50 bluegills per acre per year from the lake, or approximately at total of 3,500.

OTHER FISHERY CONSIDERATIONS AND MANAGEMENT RECOMMENDATIONS

1. **Electrofishing survey sampling conditions may have reduced our typical catch-rates of fish.** Typical catch-rates for largemouth bass are between 120-140 fish per hour. Bluegill catch-rates are between 300-350 per hour. Our catch-rates at Briarwood

Estates for bass and bluegill were 60/hour and 36/hour, respectively. Possible reasons for poor catch-rates are as follows:

a. Excessive water clarity. We measured water clarity at 8.5 feet. Appropriate water clarity for a fishing impoundment should be about 2-4 feet. When the water is very clear, fish see us coming and avoid capture. High water clarity is also an indication of lower fertility which can reduce growth rates of fish.
b. Very warm water temperatures. We measured the water temperature of 75 degrees. Water temperature is one of the spawning triggers for fish. When fish spawn along the shoreline, they are more vulnerable to our gear and capture. Unfortunately, with the unseasonably warm year, we missed the bass spawn and most of the bluegill spawn. In fact, bluegill nests were observed, but the bluegill has already left the nests.

2. **Keep fishing records.** Electrofishing surveys can provide a snapshot in time of current fish population characteristics; however, they are not full proof in capturing a representative sample. I strongly suggest that lake members and guests keep track of the fish you are capturing. I have enclosed a record keeping system for your review and use. Fishing records can be valuable by adding more data and sometimes providing better information to assess fish populations.

3. **Continue adding trees to your existing brushpiles in the lake.** Larger but fewer brushpiles are more effective at attracting fish compared to brushpiles with one or two trees. Lake members have been doing a very good job of adding brushpiles and it's paying off. During the survey, most of fish captured were located next to or within brushpiles. Enclosed is a guide concerning brushpile placement and construction. Please refer to this guide if further details are needed.

4. **Continue monitoring and managing your aquatic vegetation to maintain a density of 10-20% coverage during the peak of the growing season (typically June-August).** At the time of our survey, I would estimate that 5% or less of your impoundment had aquatic vegetation. Aquatic vegetation is a natural and necessary component of any healthy pond or lake. Aquatic plants, whether they be microscopic-sized, single-celled algae, or more complex rooted plants, serve as an important link between sunlight and production of fish. These plants, like pasture grass or trees, use the energy of the sun to produce food and oxygen. Few fish eat aquatic plants; instead, they eat other organisms - microscopic zooplankton, various aquatic insects, crayfish, and frogs - that either eat plants themselves or hide in the vegetation. This is an example of a food web of which aquatic plants are the critical first link.

5. **Remove crappie regardless of size, up to 30 fish per day, statewide creel limit.** Crappie are typically not recommended in smaller impoundments if the goals are to manage for quality bass and other sunfish species such as bluegill and redear sunfish. Crappie spawn earlier than most fish and often have high reproduction rates. Smaller

impoundments stocked with crappie can become overpopulated with small, slow growing fish which compete with the other fish species.

6. **If channel catfishing is important to Briarwood Estate anglers, restock catfish periodically on a put-and-take basis to replace those harvested by anglers.** Channel catfish, which can be purchased commercially, should be a minimum of 8" long to reduce losses due to bass predation. It is better to restock lightly on a regular basis (every year or two) than to stock heavily on an infrequent basis. If harvest records are impractical and fishing pressure for catfish is light, stock 10 to 20 channel catfish per acre every 2 years.

   Observe a 15-inch minimum length limit for channel catfish with a daily limit of 10 fish. Return catfish less than 15 inches in length to the water. These recommendations should improve the catch-rate and size quality of channel catfish.

7. **Post current fisheries management recommendations at access points around the lake.** I drafted a poster (enclosed) that could be used at the lake. This poster could be displayed with all other community lake rules. Plastic laminating sheets may be used to protect copies of the poster.

8. **Please keep in mind that fish populations do change over time.** Consequently, fisheries management recommendations used to manage fish populations may also need to be changed.

PRIVATE LAKE SURVEY STATISTICS

Missouri Department of Conservation

Lake: Briarwood Estates Lake
Date: 5/14/19
Secchi: 8.5 feet (rain during week)
Gear Type: electrofishing
Bass PSD = 29%
Bass RSD_{15} = 9%
Bass Catch-Rate: 60/hr.
Bluegill PSD = 21%
Bluegill RSD_8 = 0%
Bluegill Cate-Rate: 36/hr.

County: Jefferson
Size: about 69 acres
Surface Temp: 75 degrees
Netters: 1
Volts: 190-200
Amps:
Conductivity:
Total Time: 0.67 hours (41 min.)
Biologist: Pulliam

DEFINITIONS

SECCHI - Measure of water clarity with two to four feet being good for fish growth in this part of the state.

LARGEMOUTH BASS

PSD - The percentage of the bass > 8" long which are > 12" long. (Example: 50 fish over 8" are sampled and 10 of those fish are over 12". 10/50 = 20% PSD). A good bass PSD has a range from 40 to 60%.

RSD_{15} - The percentage of the bass > 8" long which are > 15" long. (Example: 50 fish over 8" are sampled and 2 of those fish are over 15". 2/50 = 4% RSD_{15})

BLUEGILL

PSD - The percentage of bluegill > 3" long which are > 6" long. (Example: 200 bluegill over 3" are sampled and 100 of those are over 6". 100/200 = 50% PSD). A good bluegill PSD has a range from 20 to 40%.

RSD_8 - The percentage of bluegill > 3" long which are > 8" long. (Example: 200 bluegill over 3" are sampled and 20 of those are over 8". 20/200 = 10% RSD_8)

CATCH-RATE - The number of stock sized fish captured by species per hour of electro-fishing. Bass are considered stock-size at $\geq$ 8". Bluegill are considered stock-size at $\geq$ 3".

ATTENTION ANGLERS

Species	Length Limit	Daily Limit
Bass	12 to 15 inches protected	6
Bluegill	6 inches	20
Crappie	no size limit	30
Channel Catfish	15 inches	10

Bass between 12 to 15 inches must be returned to the water unharmed immediately after being caught in this lake.

Bluegill less than 6 inches must be returned to the water unharmed immediately after being caught in this lake.

Please remove crappie, regardless of size, up to 30 per day. Small impoundments tend to become overpopulated with small, slow growing fish that are of an unacceptable size.

Channel catfish less than 15 inches must be returned to the water unharmed immediately after being caught in this lake.

Thank you
Briarwood Estates Lake

Recommendations provided by
Missouri Dept. of Conservation

08/22