



# MISSOURI DEPARTMENT OF CONSERVATION

## Headquarters

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SARA PARKER PAULEY, Director

**REPLY TO:** Southeast Regional Office  
2302 County Park Dr.  
Cape Girardeau, MO 63701  
Telephone: 573-290-5730  
Fax: 573-290-5736

June 6, 2018

Tom Martin  
6456 La Rose Lane  
French Village, MO 63036-1385

Dear Mr. Martin:

On May 7, 2018, we completed an electrofishing survey of the main lake at Goose Creek (~304 acres). The purpose of the survey was to assess the fish populations and overall lake conditions. The information obtained from the survey enables me to make specific recommendations concerning the lakes and their future management.

### LAKE CONDITIONS AND FISH POPULATION CHARACTERISTICS

This lake has been surveyed in 1972, 1984, 1987, 1992, 1997, 1999, and 2002. The clarity of the lake at that time was around 5-10 feet of visibility. It was stated at that time the lake needed structure in the form of brushpiles. Additionally, it was suggested to ask the anglers, bass clubs, and fishing organizations to maintain fishing logs of the fish caught to aid Conservation Department biologists the ability to better diagnose this community lake. During our 2018 survey, the clarity of the lake was 6 feet. If a future survey is needed, it should be conducted at night to improve survey results and catch rates. In this survey largemouth bass, bluegill, longear sunfish, green sunfish, gizzard shad, flathead catfish, and hybrid bluegill were sampled. For comparison purposes I am only looking at the 1999 and 2002 surveys along with the present survey to determine changes to your fishery and management recommendations.

Although the numbers of fish and species of fish collected during this survey were low, I see no change from the surveys in 1999 and 2002. It is likely that this lake, since it is spring fed, has a lower fertility; which means fish will grow but at slower rates. Largemouth bass are predominately 9.0 to 11.0 inches with some reaching 18 inches in length. This is indicative of a high-density bass population. If you want larger bass then harvesting fish below the protective slot limit (12- to 15-inches) will reduce competition allowing for improved growth. The practice of catch-and-release so that these fish will grow to larger sizes only compounds the problem. The solution to this issue is to harvest more of the smaller bass from the lake.

COMMISSION

DON C. BEDELL  
Sikeston

MARILYNN J. BRADFORD  
Jefferson City

DAVID W. MURPHY  
Columbia

The bluegill population appears the same as during past surveys. Bluegills predominately prey on aquatic insects which are linked to aquatic vegetation. Additionally, it appears the bluegill population is suffering some growth potential due to the abundance of gizzard shad. Gizzard shad are planktivores and feed on the same food source as bluegill during their early life stages. Due to this fact, it may be difficult to get bluegill over 8-inches in size but there are some options that might work to achieve better growth in the population.

### Management Recommendations

Encourage anglers to remove green sunfish, longear sunfish, and hybrid bluegill as caught. They create problems as they compete with bass for food and drive bluegill from preferred feeding and spawning areas.

Young water willow plants were observed in parts of the lake and near the levee. I recommend allowing it to spread to other shoreline locations around the lake. The addition of habitat in the form of brushpiles and aquatic vegetation could help promote growth within the bluegill fishery.

From a fisheries standpoint, a healthy lake will have 10 to 20 percent of the surface area covered in aquatic vegetation. Most insects, an important food for fish, live and feed on aquatic plants or woody structures. Aquatic plants also serve as escape cover for young fish, and thus maintains sufficient food supply for predator fish. Goose Creek Lake is lacking in aquatic vegetation and hard cover. Again, we noticed young sprouts of water willow along the levee. I would also recommend allowing additional aquatic plants to grow to help improve the lakes overall fishery. Plants such as pickerel weed, arrowhead, soft rush can be planted in a few places around the edges of the lake. These plants will grow only in the shallow water. I would also plant spatterdock, a floating leaf plant, in the upper end of the lake. These plants will need to be planted and placed inside a flexible coated wire cage to protect from predation by herbivores such as grass carp, muskrats, turtles, and deer. It might take several years before these cages can be removed. I have enclosed "How to Establish Native Aquatic Plants" pamphlet for your review.

Brushpiles should be constructed and placed around the lake. It has been suggested over the past 3 decades and is still suggested presently to add hard cover around the lake in the form of brushpiles. In a lake this size, establishing hard cover can seem overwhelming but if done in a targeted approach can be relatively easily accomplished. Cedar trees with the trunks weighted and weighted bundles of tree limbs are very effective. Place the cover bundle or cedar tree so that it achieves the highest vertical height possible. In other words, stand the cover up rather than lay them down. Placing three or more structures within a few yards of each other will attract more fish than the same number of structures all spread out. Depth of placement is important; structures should not be placed in the deepest part of the lake. Dissolved oxygen levels, in the deep part, can be too low to support fish life. Try to place the structures in water that is 4-6 feet deep. If the top of the structure is near the water surface, it has been placed at the proper depth. Markers can be tied to these piles to help locate them for fishing. Live or



dead trees around the shoreline can be felled into the water with the base of the tree left attached to the stump to hold the tree in position. This provides excellent overhead cover. Brushpiles will need to be replaced every 4 - 7 years as the wood breaks down over time. I would suggest breaking the lake up into zones. For example, this could be upper, middle, and lower lake or creek arms and coves as management zones. Each year work in a management zone to add brush and aquatic vegetation. Placement of brush could be around docks, off channels, and near points. I realize this lake is a highly recreational lake for boating; however, the placement of brushpiles should not affect boats as placement will be near shore in shallow water.

In our discussions on-site, you mentioned your past stocking efforts and wanted to know about future stocking needs. I see no need to stock bluegill, largemouth bass, or channel catfish at this time. However, you could try to promote additional fisheries to this lake.

Redear sunfish can be added to your fishery. These fish prey mostly on snails and aquatic insects which is why they are referred to as "shellcrackers". They will bed similarly to bluegill and can grow larger than bluegill in most situations. They also should be sexually reproductive in 2 years. Since you have a largemouth bass population already existing, stocking small juvenile fish might be difficult as they will be preyed upon by the predatory fish. I would suggest stocking these fish in various locations around the lake where you have constructed brush piles and have shoreline vegetation to give them protection from bass predation. Stock fish 4-inches or larger at a rate of 20-25 per acre (n=6,080 - 7,600).

Over the years white crappie and black crappie have been surveyed in small numbers. It is likely you still have a small population in the lake but our electrofishing methods are not the preferred method for surveying crappie. Continue monitoring this population through angling and fish logs. If your constituents are not happy with the population, you could stock 30 fish per acre 4-inches or larger in length of black crappie or white crappie (n=9,120). Black crappie tend to have better success in clear vegetated lakes as they predominately feed on aquatic insects where as white crappie tend to do better in more turbid lakes as they predominately feed on small fish. Due to the size and depth of the lake, you also might be able to add some additional predators to the fishery.

In the past, you have stocked walleye (1990) and they did show up in the 1992 survey. It is likely that this stocking effort is a put, grow, and take fishery as walleye prefer flowing water to spawn. If you want to stock these fish you will need to boat stock them in the middle of the lake away from the shoreline to reduce predation from largemouth bass. Stock at a rate of 30 per acre 4-inches or greater in length (n=9,120).

A second predatory fish that could be introduced to your lake is hybrid stripe bass. These fish are a cross between white bass and striped bass and can grow to large sizes. They are a pelagic fish that school in the lake and primarily feed on gizzard shad and other small fishes. Stock these fish in the fall at a rate of 10 per acre 4-inches in length or greater (n=3,040).

I understand the difficulties of managing a multi-ownership lake such as Goose Creek. It is not uncommon to have a "contact person" change over time and as a result lose stocking records and management recommendations. This information is invaluable to your community and to us for making management decisions and recommendations. I would strongly encourage you to maintain a permanent file of all stocking records, fish logs, and management recommendations which can be passed on to the next "contact person" in charge of lake matters. I suspect that you might already have such a file, and if so, I applaud your community's organization.

There needs to be a concerted effort to place sufficient hard structures (i.e., brushpiles), the collection of fish logs, as well as stocking records. This information will help you make management decisions in the future.

If you have any questions regarding your lake, the survey results, or the management recommendations, please don't hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. W. Crites', written in a cursive style.

Jason W. Crites

Fisheries Management Biologist





FISH POPULATION SURVEY  
Missouri Department of Conservation

2700-3500

County St. Francois Lake Goose Creek Date 5-7-18  
 Gear type EF No. Hauls/Time 58 min Amps 12 Volts 290 Acres \_\_\_\_\_  
 Surface Temp 19.80C Turbidity 6ft O<sub>2</sub> \_\_\_\_\_ Cond 191 Max Depth \_\_\_\_\_

Length (inches)	Length Frequency		Condition of fish population
	<i>Largemouth bass</i>	<i>Bluegill</i>	
1.0-1.4			<i>water willow</i>
1.5-1.9			
2.0-2.4			
2.5-2.9			
3.0-3.4			
3.5-3.9		///	
4.0-4.4	/	///	
4.5-4.9		/	
5.0-5.4		/	
5.5-5.9		/	
6.0-6.4	/	///	
6.5-6.9		///	
7.0-7.4	/	///	
7.5-7.9		///	
8.0-8.4			
8.5-8.9			
9.0-9.4	//		
9.5-9.9	/		
10.0-10.4	//		
10.5-10.9	//		
11.0-11.4	//		
11.5-11.9			
12.0-12.4			
12.5-12.9	/		
13.0-13.4	/		
13.5-13.9			
14.0-14.4	/		
14.5-14.9	//		
15.0-15.4			
15.5-15.9			
16.0-16.4	/		
16.5-16.9	/		
17.0-17.4	/		
17.5-17.9			
18.0-18.4	/		
18.5-18.9			
19.0-19.4			
19.5-19.9			
20.0-20.4			
20.5-20.9			
21.0-21.4			
21.5-21.9			
22.0-22.4			
22.5-22.9			
23.0-23.4			
23.5-23.9			
24.0-24.4			
24.5-24.9			
25.0-25.4			
25.5-25.9			
26.0-26.4			
26.5-26.9			

*Get data sheet for creek survey*

Management Recommendations:

incidental catch:

*LESF: 4.5, 4.5, 5.0, 4.0, 5.0, 5.0  
 4.0, 5.0, 3.5, 5.5, 4.0, 5.5, 5.5  
 GWSF: 6.5, 4.0, 8.0, 8.0, 5.0  
 4.0, 7.0, 7.5, 6.0, 7.5, 7.0, 7.0  
 G2SD: 8.5, 9.0, 8.0, 9.0, 11.5  
 FHF 12.5  
 Hybrid SF: 5.5*

Sign. of Biologist *[Signature]*

Sign. of Owner/Rep. ~~\_\_\_\_\_~~ ~~\_\_\_\_\_~~

# DAILY FISHING REPORT

**DIRECTIONS:** Please record information about each fish caught (including species, fishing method and length) by making a hash mark in the appropriate box. **Circle the hash mark of each fish you keep.** Please fill in all blanks at the top of the sheet. This information is vital for interpreting your angling results. A separate sheet should be kept by each angler. Return all material to box at end of each trip.

Angler Name: \_\_\_\_\_  
 Landowner Name: \_\_\_\_\_  
 Date: \_\_\_\_\_ Start Time: \_\_\_\_\_  
 End Time: \_\_\_\_\_  
 Total Time: \_\_\_\_\_

Please circle the number which best represents your fishing ability:  
 1 2 3 4 5 6 7 8 9 10  
 Beginner -----> Expert

Species	Bass		Bluegill		Green Sunfish	Channel Catfish	Other Fish
	Method	Bait	Artificial	Bait	Artificial		
3.0 - 3.4							
3.5 - 3.9							
4.0 - 4.4							
4.5 - 4.9							
5.0 - 5.4							
5.5 - 5.9							
6.0 - 6.4							
6.5 - 6.9							
7.0 - 7.4							
7.5 - 7.9							
8.0 - 8.4							
8.5 - 8.9							
9.0 - 9.4							
9.5 - 9.9							
10.0 - 10.4							
10.5 - 10.9							
11.0 - 11.4							
11.5 - 11.9							
12.0 - 12.4							
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15.0 - 15.4							
15.5 - 15.9							
16.0 - 16.4							
16.5 - 16.9							
17.0 - 17.4							
17.5 - 17.9							
18.0 - 18.4							
18.5 - 18.9							
19.0 - 19.4							
19.5 - 19.9							
20.0 - 20.4							
20.5 - 20.9							
21.0 - 21.9							
22.0 - 23.9							
24.0 - plus							

LENGTH IN INCHES

**MAKE COPIES OF THIS FORM TO USE.**