

McKinney Lake Sportfish Feeding Program

July 2023

The N.C. Wildlife Resources Commission recently completed a multi-year stock assessment of the Largemouth Bass and Bluegill populations at McKinney Lake to evaluate current management. McKinney Lake is a small, 65-acre reservoir located near Hoffman, NC that was impounded in January 1936 as a water supply for what is now McKinney Lake State Fish Hatchery (Figure 1). It was the keystone project of several small reservoirs that were constructed in the area by the Works Progress Administration in the 1930s. Many of these impoundments remain as part of the Sandhills Game Land and are open to the public.

Although anglers commonly fish the impoundments of the Sandhills, these waters are relatively unproductive. Fish species that are undesirable to anglers often predominate while catch rates of sportfish are low. Traditional liming and fertilization regimes are not practical because of high flow-through rates, tannic water, and extensive aquatic vegetation. However, these issues may be bypassed by directly feeding the fish.

In 2016, an applied fisheries management program was initiated at McKinney Lake that included the implementation of a feeding program and other established fisheries management techniques. The primary objective was to increase the average size and abundance of sportfish, particularly Bluegills, available to anglers. Evaluating population responses to management actions is important for proper sportfish management.

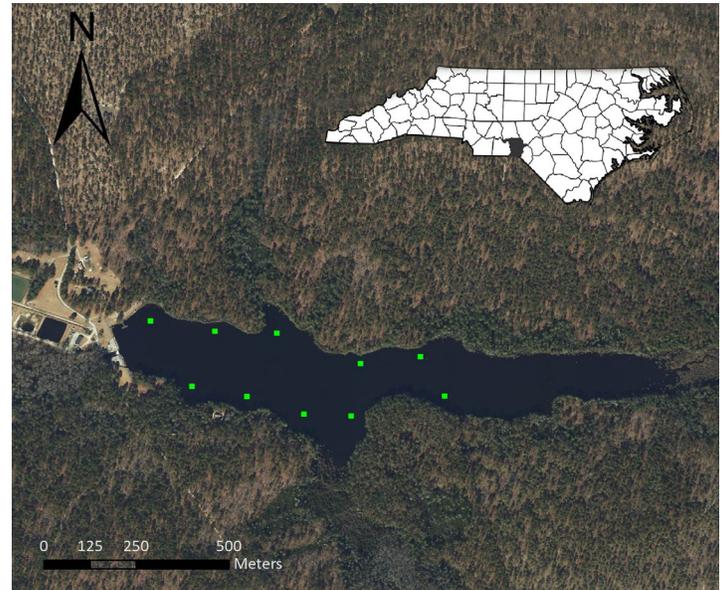


Figure 1: Fish feeder sites at McKinney Lake, Hoffman, NC



Boat launch and fishing piers at McKinney Lake

Project Objectives

- Determine the annual status of the Bluegill and Largemouth Bass populations by analyzing relative abundance, size distribution, and body condition after implementation of the management program.
- Compare these results over time to determine the effects, if any, of management activities on each population.

Methods

- Ten automatic fish feeders were deployed in 2016, dispensing commercial fish feed at a rate of 10 lb per feeder per day during March–October when fish are actively feeding.
- Approximately 11,400 2–6 in. Bluegills were stocked from 2016–2021 to offset poor recruitment and angler harvest.
- Largemouth Bass and Bluegill populations were surveyed by boat electrofishing (March–April 2016–2019, 2021) and trap-net sampling (October–November 2017–2021) to obtain stock assessment data.

Results

- The Bluegill population has seemingly responded well to management efforts, with multiple Bluegills larger than one pound observed since feeding began. Additionally, fisheries staff have noted an increase in angler usage, with many anglers specifically targeting larger Bluegills.
- Bluegill catch rates from electrofishing and trapnetting were low, with a total of 510 collected over 6 years. The largest Bluegill collected weighed 1.75 lb and over 5% were 0.75 lb or larger.
- Relative abundance and size distribution have fluctuated between gears and over time (Table 1). Electrofishing can be ineffective in Sandhills impoundments due to tannic water, which often has low conductivity and poor visibility. As a passive gear, trap nets are dependent upon fish movement for success, and this wasn't reliably the case for Bluegills at McKinney Lake. Because of this, drawing meaningful data-based conclusions has been difficult.
- Largemouth Bass catch rates were typically below average for a Piedmont reservoir. However, Largemouth Bass can reach impressive sizes in Sandhills impoundments and the largest fish collected weighed 8.5 lb.
- The Largemouth Bass population appears to be relatively unchanged since the feeding program began in 2016. This was not unexpected, since Largemouth Bass do not readily take feed.

Year	N	Mean length (in)	% > 0.5 lb	% > 0.75 lb	% > 1 lb
2016	56	5.5	1.8	1.8	0.0
2017	139	5.2	5.0	1.4	0.7
2018	152	7.1	21.1	9.2	3.3
2019	68	6.7	22.1	7.4	2.9
2020	14	8.1	35.7	35.7	7.1
2021	75	5.7	1.3	0.0	0.0

TABLE 1. Population parameters of Bluegills collected from McKinney Lake with electrofishing and trap nets, 2016–2021.



Large Bluegills collected at McKinney Lake

What's Next

- The feeding program at McKinney Lake will continue operating from March to October at a rate of 5 lb per feeder per day.
- Fisheries staff will continue to stock Bluegills into McKinney Lake when available to supplement natural recruitment and help offset harvest.
- Biologists will conduct surveys every few years to monitor the Bluegill and Largemouth Bass fisheries and assess current management.

Other Information

- McKinney Lake is open to the public during daylight hours. Boats with gas engines are allowed but should be operated at idle speeds. General statewide size and creel limits [apply](#).
- To find McKinney Lake and other places to fish, visit our interactive [fishing access map](#).
- For additional information, contact Fisheries Biologist Troy Thompson at 910-439-2006, or roy.thompson@ncwildlife.org