

**SURVEY REPORT**  
**OKLAHOMA DEPARTMENT OF WILDLIFE**  
**CONSERVATION**



**FISH MANAGEMENT SURVEY AND**  
**RECOMMENDATIONS**  
**FOR**  
**WEBBERS FALLS LAKE**  
**2024-2025**

## **SURVEY REPORT**

**State:** Oklahoma

**Project Title:** Webbers Falls Lake Fish Management Survey Report

**Period Covered:** 2024-2025

**Prepared by:** Chris Whisenhunt

**Date Prepared:** December 2025

### **Webbers Falls Lake**

#### **ABSTRACT**

Webbers Falls Lake was surveyed via summer catfish electrofishing in 2025 to monitor trends in the Blue Catfish population. Eighteen sites were randomly selected within the upper 50% of the reservoir and sampled using 5-minute units of effort. A total of 234 Blue Catfish were sampled ( $C/f=156.0$ ). Survey results indicate a moderate abundance of Blue Catfish with most of the fish sampled were less than 12 inches, with a large portion of those being between five and seven inches. Otoliths were collected for age and growth information and showed moderate growth rates. Calculated von Bertalanffy growth curve shows growth rates were moderate for fish up to 10 years of age and then levels off for fish over 10 years old ( $k = 0.13$ ), with Length at infinity being 829.2 mm.

## INTRODUCTION

Webbers Falls is a 11,600-acre reservoir located in Muskogee county in northeast Oklahoma (Figure 1). This reservoir impounds the Arkansas, Verdigris and Grand rivers just below their confluence at the port of Muskogee. The dam is located at Latitude 35.55371° Longitude -95.16952° approximately 3.25 miles NW of the town of Gore, Ok. Webbers Falls Lake is owned and operated by the U.S. Army Corps of Engineers (USACE) and was authorized as part of the McClellan-Kerr Arkansas River Navigation System in the River and Harbor Act approved July 24, 1946. The lock and dam project became operational for navigation in December 1970, hydroelectric power was completed in November 1973. The watershed area is significant draining approximately 97,000 square miles as far reaching as Colorado, and into Kansas, Missouri and Oklahoma.

Webbers Falls is classified as Eutrophic with excessive primary productivity and nutrient conditions. Water quality data collected through the OWRB as part of their Beneficial Use Monitoring Program (BUMP) classifies Webbers Falls as supporting the outline Fish & Wildlife propagation (FWP) beneficial uses for pH, Dissolved Oxygen and Metals. However, Webbers Falls is classified as not supporting the FWP for Turbidity.

Shoreline habitat in Webbers Falls Lake consists of large woody debris, naturally rocky areas, emergent vegetation and man-made structures such as docks, brush piles and riprap along bridges and jetties. A stable water level allows floating and emergent aquatic vegetation to become established a rarity for a large Oklahoma reservoir. Some creek arms and backwaters can have standing timber and stumps present. The ODWC has placed brush piles in varying areas of the lake. Locations of ODWC habitat sites are shown in Appendix I.

The major sportfish species in Webbers Falls include largemouth bass, blue and channel catfish, black and white crappie, flathead catfish and paddlefish. The primary forage species include threadfin and gizzard shad. The fish stocking history for Webbers Falls is included in Appendix II. Special area fishing regulations which apply to Webbers Falls include a minimum size limit of 16" for all walleye, sauger and saugeye with a daily creel limit of 6 combined.

## RESULTS

### **Crappie**

1. Crappie were surveyed in the fall of 2022 by means of trap netting. Nets were set on 28 selected shoreline sites. Since non-random sites were chosen, abundance data may be skewed, however it will be provided in this report for the purposes of documentation.
2. The total Catch Per Unit Effort (CPUE) for the 2022 survey was 9.66, most of the fish captured being the stock or sub stock size classes (Table 1). Crappie catch was down from the 2019 survey in every category except the stock and quality size ranges.
3. Body condition of fish measured as relative weight ( $W_r$ ) was above acceptable levels for all size categories except the sub stock category (Table 1). Length Frequency histograms show that 79% of crappie captured were below the quality size category (Figure 1).
4. Crappie growth was moderate to good with fish taking between two and three years to reach ten inches (Table 2). Age frequencies show the 1-year-old class to be the dominant year class with fish over 1 year old dropping off dramatically (Figure 2). Crappie should be evaluated via trap netting in 2025 to monitor the progress of the 1-year-old class and look for subsequent spawning success.

### **Blue Catfish**

1. Blue catfish were surveyed in the summer of 2025 by summer catfish electrofishing to determine catch rates (CPUE, C/f) and body condition ( $W_r$ ), and otoliths were pulled to from a subsample of fish to determine age, growth rates, and mortality.
2. The total Catch Per Unit Effort (CPUE) for the 2025 survey was 156.0, slightly lower than the previous sample in 2018 (Table 3). Most of the fish sampled were less than 12 inches, with a large portion of those being between five and seven inches (Figure 4).
3. Relative weights ( $W_r$ ) for fish less than 12 inches and greater than 30 inches were excellent, but fish between those sizes were less than acceptable (Table 3). Forage size and availability may be a factor for condition. Competition from the abundance both Blue Catfish and a variety of other predator fish could be a factor as well.
4. Growth rates for Blue Catfish seemed good overall with most growth occurring the first four to five years and then slowing after reaching reproductive maturity. Growth slows dramatically after 10 years (Figure 6). The largest fish in the sample was 37.9 inches (963 mm) and weighed 29.54 pounds (13.4 kg).

## **RECOMMENDATIONS**

### **Fish Attractor Structures**

1. Since Webbers Falls is a high flow-through reservoir that is a part of the MKARNS, sites for future habitat structures will be evaluated for viability for use with Shelbyville Cubes.
2. Existing habitat structures will be checked for effectiveness since most have been in place since 2017.

### **Fish Stockings**

1. No new fish stockings are recommended currently.

### **Fish Surveys**

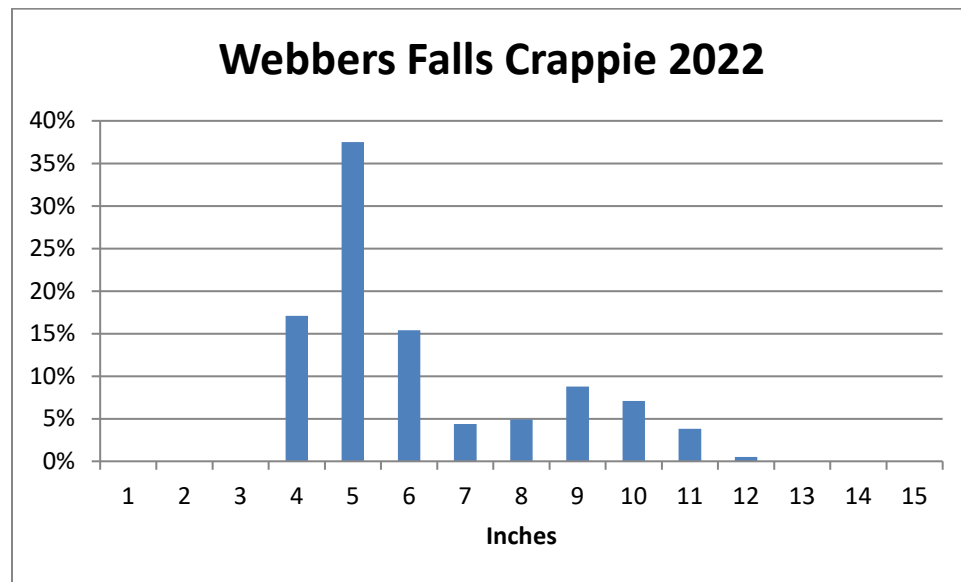
1. Spring boat electrofishing surveys should be conducted in 2026 or 2027 to continue monitoring changes in the overall black bass populations and to monitor impact of new statewide bass regulations that were passed in 2022.
2. Age data from Largemouth Bass should be taken to monitor growth rates within the lake.
3. Crappie should be sampled by trap netting in 2026 or 2027 to continue monitoring age and growth rates for both White and Black Crappie species and to establish trend data to inform future management decisions.
4. Blue Catfish should be sampled by catfish electrofishing again in 2029-2030 to continue monitoring population and growth and establish to establish trend data for making more informed management decisions.
5. No further gill netting surveys are planned to be conducted in the next five years.

### **Fishing Regulations**

1. Special fishing regulations which apply to Webbers Falls Lake include Walley, Sauger, and Saugeye: six (6) combined per day; 16-inch minimum length.
2. All other fish species fall under statewide regulations.
3. No new regulation changes are currently recommended.

**Table 1.** Total number (No.), catch per unit of effort (C/f), and relative weights ( $W_r$ ) by size groups of Crappie collected by fall trap netting from Webbers Falls Lake. Acceptable  $W_r$  values are  $\geq 90$ .

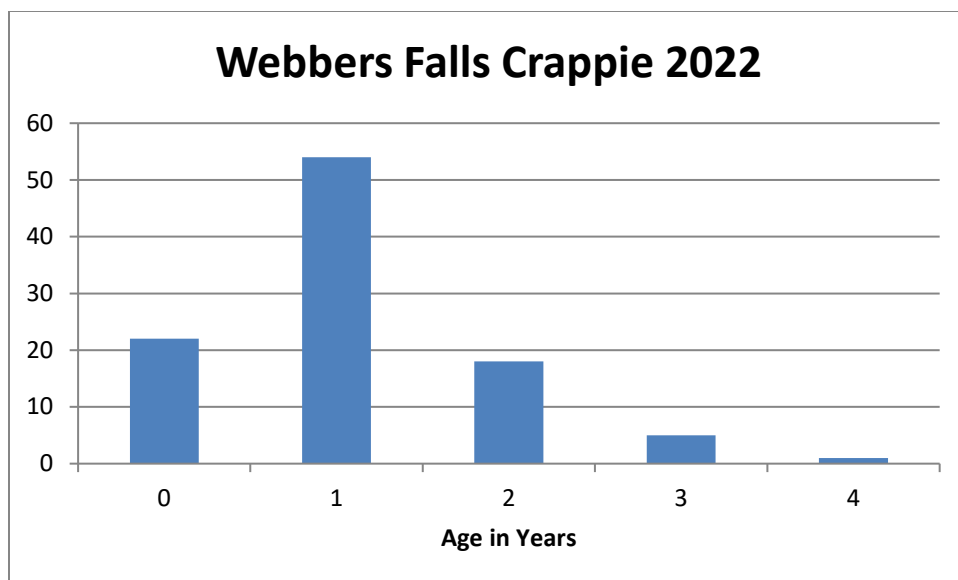
| Year | No. | Total<br>C/f | <u>Sub Stock</u><br>0-5 in |       | <u>Stock</u><br>5.1 in |       | <u>Quality</u><br>7.9 in |       | <u>Preferred</u><br>9.8 in |       | <u>Memorable</u><br>11.8 |       |
|------|-----|--------------|----------------------------|-------|------------------------|-------|--------------------------|-------|----------------------------|-------|--------------------------|-------|
|      |     |              | C/f                        | $W_r$ | C/f                    | $W_r$ | C/f                      | $W_r$ | C/f                        | $W_r$ | C/f                      | $W_r$ |
| 1996 | 148 | 14.33        | 9.21                       | 88    | 1.85                   | 88    | 0.96                     | 93    | 2                          | 104   | 0.31                     | 108   |
| 2022 | 363 | 9.66         | 5.95                       | 83    | 1.96                   | 93    | 1.39                     | 98    | 0.34                       | 101   | 0.03                     | 102   |



**Figure 1.** Crappie Length Frequencies for Webbers Falls Lake 2022

**Table 2.** Mean Total Length at age (inches) and L infinity (estimated mean maximum length) for Crappie from Webbers Falls Lake.

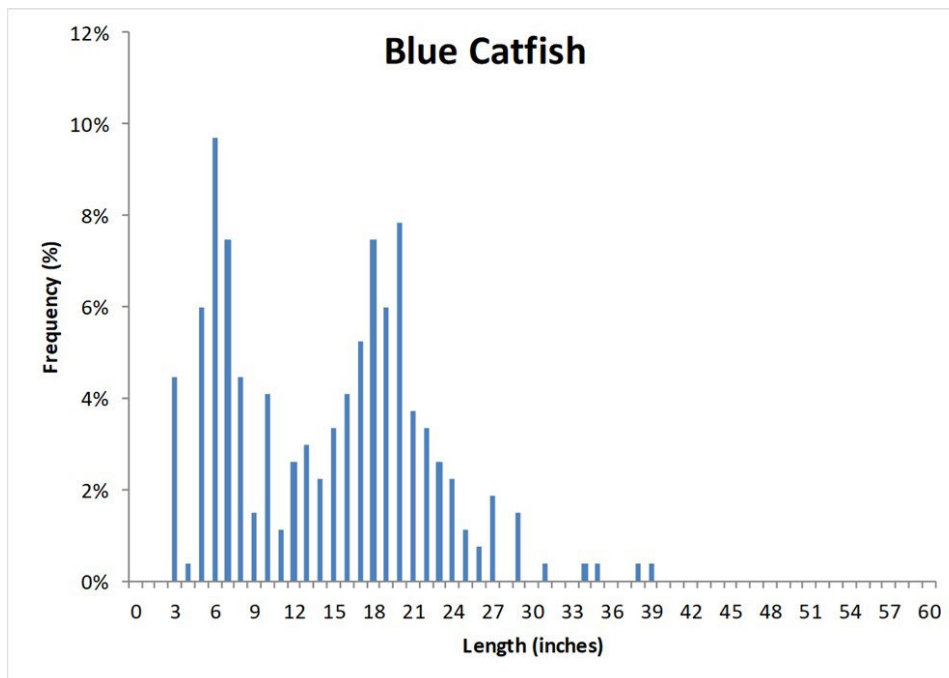
| Year | Age 0 | Age 1 | Age 2 | Age 3 | L infinity |
|------|-------|-------|-------|-------|------------|
| 2022 | 4.6   | 8.6   | 9.2   | 10.8  | 11.3       |



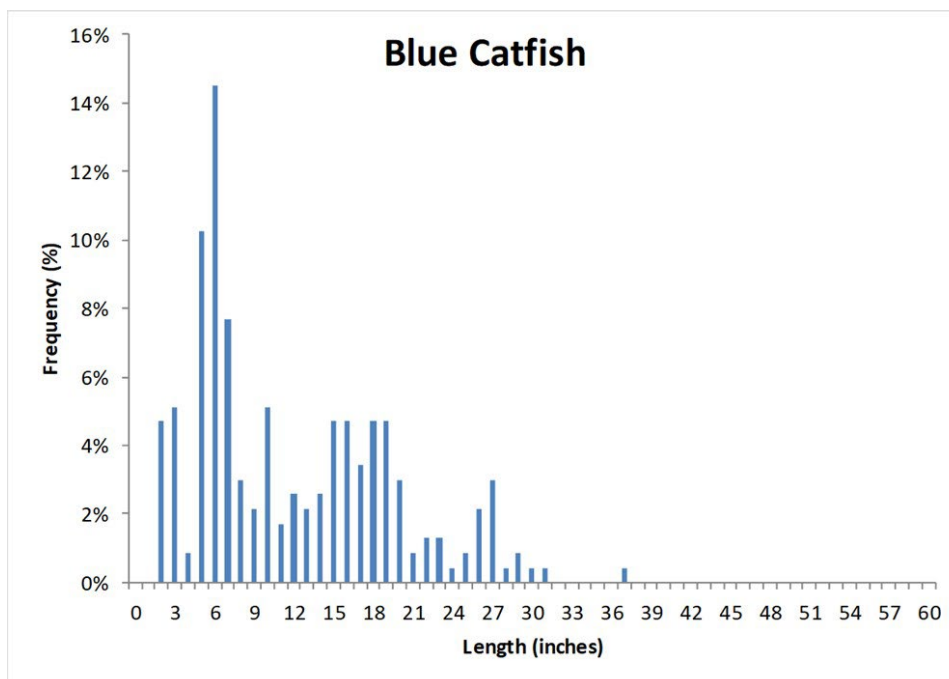
**Figure 2.** 2022 Age Frequency of Crappie

**Table 3.** Total number (No.), catch per unit of effort (C/f), and relative weights ( $W_r$ ) by size groups of Blue Catfish collected by summer catfish electrofishing from Webbers Falls Lake. Acceptable  $W_r$  values are  $\geq 90$ .

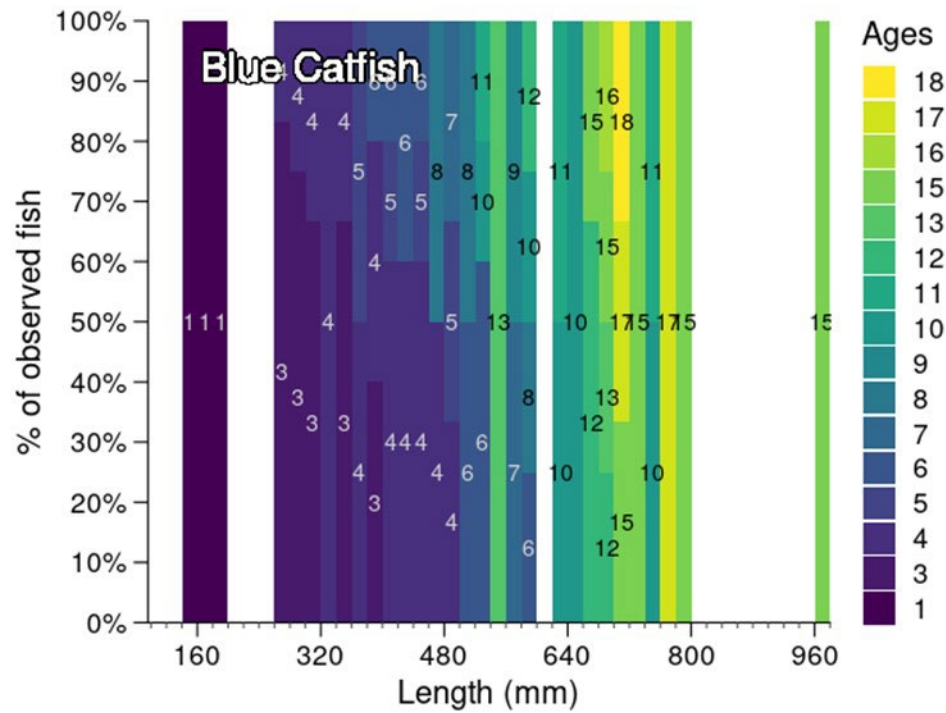
| Year | Total |       | <12 inches |       | $\geq 12$ inches |       | $\geq 16$ inches |       | $\geq 30$ inches |       |
|------|-------|-------|------------|-------|------------------|-------|------------------|-------|------------------|-------|
|      | No.   | C/f   | C/f        | $W_r$ | C/f              | $W_r$ | C/f              | $W_r$ | C/f              | $W_r$ |
| 2018 | 268   | 178.7 | 70.0       | 99    | 108.67           | 86    | 88.67            | 85    | 3.33             | 96    |
| 2025 | 234   | 156.0 | 86.0       | 102   | 70               | 88    | 51.33            | 87    | 2.0              | 105   |



**Figure 3.** Lenth frequencies for Blue Catfish sampled by summer catfish electrofishing in 2018.



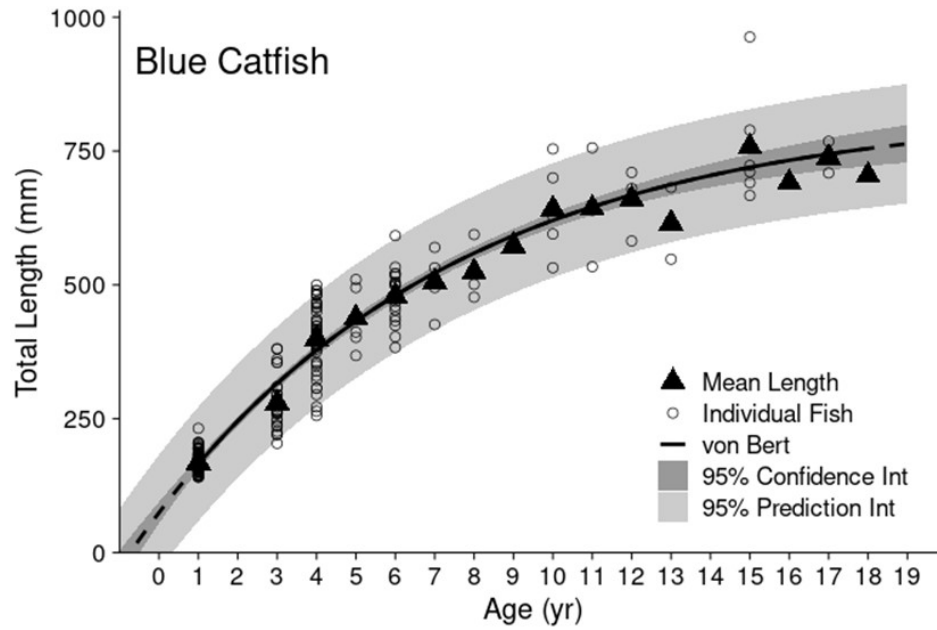
**Figure 4.** Lenth frequencies for Blue Catfish sampled by summer catfish electrofishing in 2025.



**Figure 5.** Age frequency plot for Blue Catfish sampled by summer catfish electrofishing in 2025 (OFAT analysis).

**Table 4.** Mean Total Length at age (mm) for Blue Catfish from Webbers Falls Lake (OFAT analysis).

| Age | Mean TL | Count | CV    | SE    | L 95% CI | U 95% CI |
|-----|---------|-------|-------|-------|----------|----------|
| 1   | 168.17  | 72    | 11.38 | 2.25  | 163.75   | 172.59   |
| 3   | 279.44  | 27    | 17.76 | 9.55  | 260.72   | 298.16   |
| 4   | 398.74  | 43    | 16.45 | 10.00 | 379.14   | 418.35   |
| 5   | 438.17  | 6     | 12.63 | 22.60 | 393.87   | 482.46   |
| 6   | 479.26  | 19    | 10.49 | 11.53 | 456.67   | 501.86   |
| 7   | 505.75  | 4     | 12.13 | 30.68 | 445.62   | 565.88   |
| 8   | 524.00  | 3     | 11.79 | 35.68 | 454.07   | 593.93   |
| 9   | 573.00  | 1     | NA    | NA    | NA       | NA       |
| 10  | 641.67  | 6     | 12.15 | 31.83 | 579.29   | 704.05   |
| 11  | 643.00  | 3     | 17.27 | 64.12 | 517.33   | 768.67   |
| 12  | 660.40  | 5     | 7.20  | 21.25 | 618.75   | 702.05   |
| 13  | 615.00  | 2     | 15.41 | 67.00 | 483.68   | 746.32   |
| 15  | 757.33  | 6     | 14.37 | 44.42 | 670.28   | 844.39   |
| 16  | 691.00  | 1     | NA    | NA    | NA       | NA       |
| 17  | 738.50  | 2     | 5.65  | 29.50 | 680.68   | 796.32   |
| 18  | 704.00  | 1     | NA    | NA    | NA       | NA       |



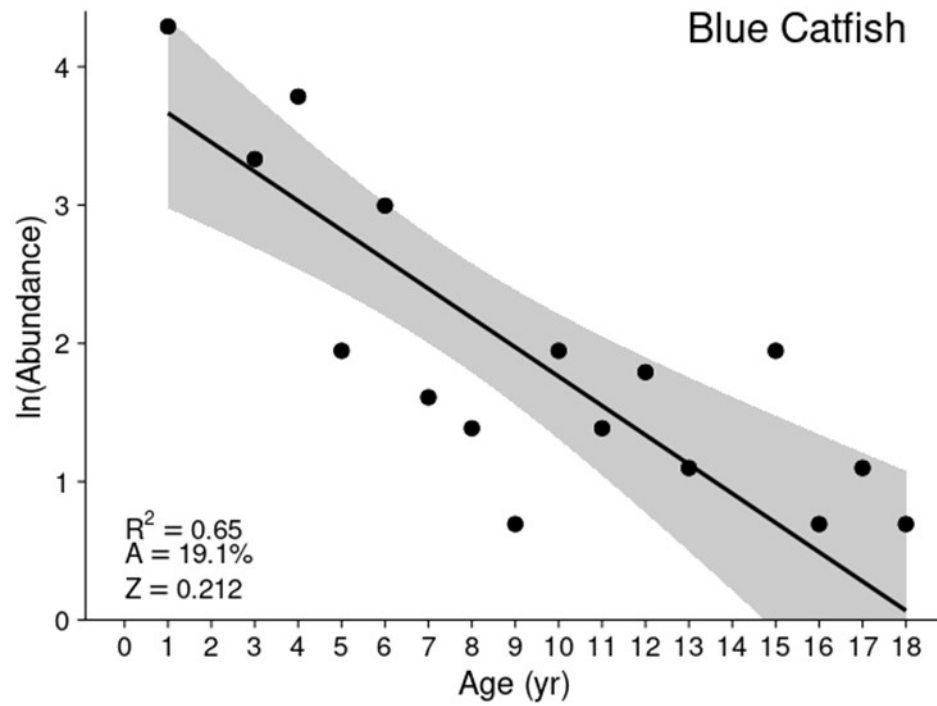
**Figure 6.** Von Bertalanffy mean length-at-age plot for Blue Catfish sampled from Webbers Falls Lake, 2025 (OFAT analysis).

**Table 5.** Von Bertalanffy Growth Equation for Blue Catfish sampled from Webbers Falls Lake, 2025 (OFAT analysis).

|             | Estimate | L 95% CI | U 95% CI |
|-------------|----------|----------|----------|
| <b>Linf</b> | 829.2156 | 771.2734 | 903.4695 |
| <b>K</b>    | 0.128525 | 0.106802 | 0.151514 |
| <b>t0</b>   | -0.73168 | -1.02654 | -0.48201 |

**Table 6.** Calculated mortality for Blue Catfish sampled from Webbers Falls Lake, 2025 (OFAT analysis).

|                  | Mortality Rate | Standard Error | L 95% CI | U 95% CI |
|------------------|----------------|----------------|----------|----------|
| Instantaneous Z  | 0.211586       | 0.041084       | 0.123469 | 0.299702 |
| Annualized A (%) | 19.07          | NA             | 11.61507 | 25.89613 |



**Figure 7.** Catch Curve (mortality) plot for Blue Catfish sampled from Webbers Falls Lake, 2025 (OFAT analysis).

**Table 7.** ODWC Habitat Enhancement Sites for Webbers Falls.

| <b>Area</b>      | <b>Type</b>         | <b>Latitude</b> | <b>Longitude</b> | <b>Date</b> |
|------------------|---------------------|-----------------|------------------|-------------|
| Little Greenleaf | 102 Spider blocks   | 35.62098        | -95.1823         | 10/13/2015  |
| Brewers Bend     | 30 good cedars      | 35.57224        | -95.18243        | 9/14/2017   |
| Brewers Bend     | 7 large cedar trees | 35.57339        | -95.18222        | 9/14/2017   |
| Brewers Bend     | 5 large trees       | 35.57276        | -95.18164        | 9/14/2017   |
| Brewers Bend     | 4 Large Cedars      | 35.57305        | -95.18099        | 9/14/2017   |
| Brewers Bend     | 2 Large Cedars      | 35.56919        | -95.17234        | 9/14/2017   |
| Brewers Bend     | 3 cedar trees       | 35.57352        | -95.18138        | 9/14/2017   |
| Brewers Bend     | 4 Cedar trees       | 35.57367        | -95.18067        | 9/14/2017   |

**Table 8.** Webbers Falls stocking history.

| <b>Year</b> | <b>Species</b>      | <b>Number</b> | <b>Size</b> |
|-------------|---------------------|---------------|-------------|
| 1981        | Largemouth Bass     | 66,504        | 2.1"        |
| 1983        | FL. Largemouth Bass | 50,190        | 2.5"        |
| 1983        | Channel Catfish     | 100,601       | 3.5"        |
| 1984        | FL. Largemouth Bass | 110,100       | 1.7"        |
| 1986        | Walleye             | 114,640       | 1.4"        |
| 1986        | Largemouth Bass     | 48,950        | 1.5"        |
| 1987        | Walleye             | 59,539        | 1.7"        |
| 1987        | Largemouth Bass     | 49,950        | 1.5"        |
| 1988        | Walleye             | 109,000       | 1.2"        |
| 1989        | Walleye             | 199,378       | 1.3"        |