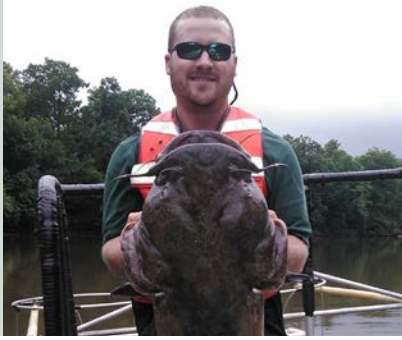
Fisheries Research Fact Sheet

Flathead Catfish Distribution in the Tar River

March 2018



Catfish are among the most targeted fish species for North Carolina recreational anglers. According to a recent survey, 30% of the total freshwater angling effort in North Carolina is expended in pursuit of various catfish species, second only to black bass.

In North Carolina, catfish are not classified as game fish, and may be taken using hook and line, grabbling, trotlines, set-hooks, jug-hooks, and a variety of county-specific special devices. Additionally, catfish are generally not managed with length limits, and the daily creel limit is 200 in aggregate with other nongame fish. Liberal harvest regulations cause concern among some catfish anglers, as 31% of anglers in a 2012 statewide survey believed current North Carolina catfish regulations are not restrictive enough.

The Tar River historically contained several native catfish species that are popular with anglers, including White Catfish, Brown Bullhead, and Yellow Bullhead. Channel Catfish were introduced into the Tar River in the early 1900's but this species has since been considered naturalized. Flathead Catfish became established in the Tar River in the 1990's and this population is now thriving. Blue Catfish were first observed in summer catfish surveys in 2010, and to date, abundances are still low although population expansion is occurring.

Since Flathead Catfish became established in the Tar River, observations of native catfishes such as the various bullhead species and White Catfish have become rare. In the food chain, Flathead Catfish are considered an apex piscivore (fish eater). Because their diet is comprised primarily of fish, there is concern that predation from Flathead Catfish negatively impacts native fish populations including species of conservation concern such as Carolina Madtom, river herring, Striped Bass, and American Shad. Channel Catfish and Blue Catfish are known to consume a variety of other food items besides fish, and their direct impact on the native fish community is considered less harmful than Flathead Catfish.

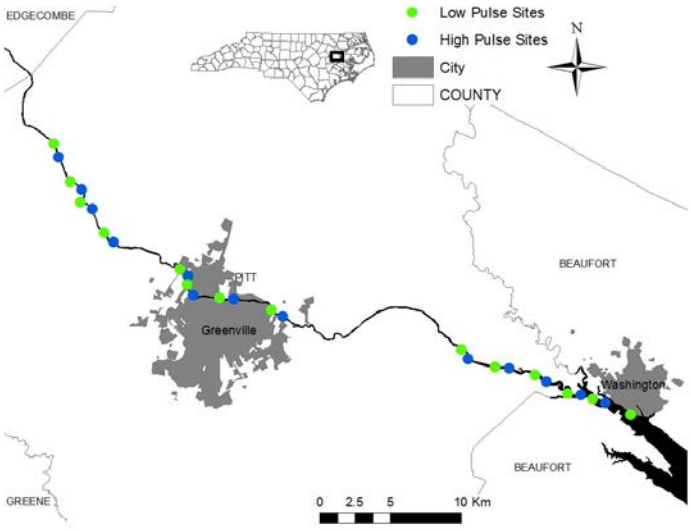
Despite these serious concerns regarding impacts to native species, fishing for Flathead Catfish has become popular on the Tar River. Many anglers are requesting protective regulations that would enhance or expand the Flathead Catfish population. Comprehensive management of catfish species in North Carolina is being discussed, and the existing management plan is in the process of revision. Angler opinions and biological findings will be blended to determine how best to promote recreational catfish angling while conserving native species, many of which are imperiled.

Project Objectives:

- Document the status of catfish populations in the Tar River with emphasis on the distribution of Flathead Catfish, and evaluate the need for regulation changes.

Methods:

- 27 sites on the Tar River from Tarboro to Washington were sampled for catfish.
- High pulse (120 pulses per second) and low pulse (15 pulses per second) boat electrofishing methods were employed.
- Catfish were collected, identified, measured for length and weight, and released.
- Catch rates measured as the number of catfish caught per hour of electrofishing (CPUE, fish/h) were calculated for each sampling method.



Map of the survey area of the Tar River in 2016 including: high pulse sites, low pulse cites, cities and counties.

Flathead Catfish Distribution in the Tar River

Results:

- Biological staff collected 208 Flathead Catfish during June and July of 2016. Water temperatures during sampling ranged 76–86°F. Flathead Catfish catch rates with boat electrofishing were 50.6 fish/h using low frequency methods and 3.3 fish/h using high frequency methods.
- Flathead Catfish ranged 3.5–44.5 inches TL with nearly equal numbers of fish present in each size group (Figure 1).
- Flathead Catfish weighing more than 46 pounds were observed.
- Flathead Catfish were observed in nearly every habitat type; however, deeper holes and woody debris were observed to be preferred habitats.
- The "flatness" of the size distribution did not allow for the calculation of a mortality rate. However, a length distribution such as the one observed for Flathead Catfish on the Tar River is indicative of an expanding population with very low mortality rates.
- 63 Channel Catfish, 19 White Catfish, and 1 Blue Catfish were also collected during the survey. No bullhead species were collected.

What's next?:

- Size-structure and catch rates calculated from our surveys indicate robust populations of Flathead Catfish in the Tar River. The high abundance and low mortality of Flathead Catfish suggests protective harvest regulations for this species are unnecessary. Furthermore, the significant impact of invasive Flathead Catfish on trophic dynamics of these rivers, and the resulting decline in native catfish and other fish populations, are serious management concerns.
- Consider actions that would provide additional protection to native bullhead species and Channel Catfish. Options might include assigning gamefish status to specific species, and/or proposing protective creel limits to enhance these native populations.
- Monitor catfish populations every few years to document changes in population characteristics.
- Conduct a new creel survey of Tar River anglers to document angling patterns and harvest practices.

For more information, please contact:

Ben Ricks, District 2 Fisheries Biologist
252-229-0170
E-mail: ben.ricks@ncwildlife.org

NCWRC Fisheries Biologist Ben Ricks with a Flathead Catfish from the Tar River, June 2016.

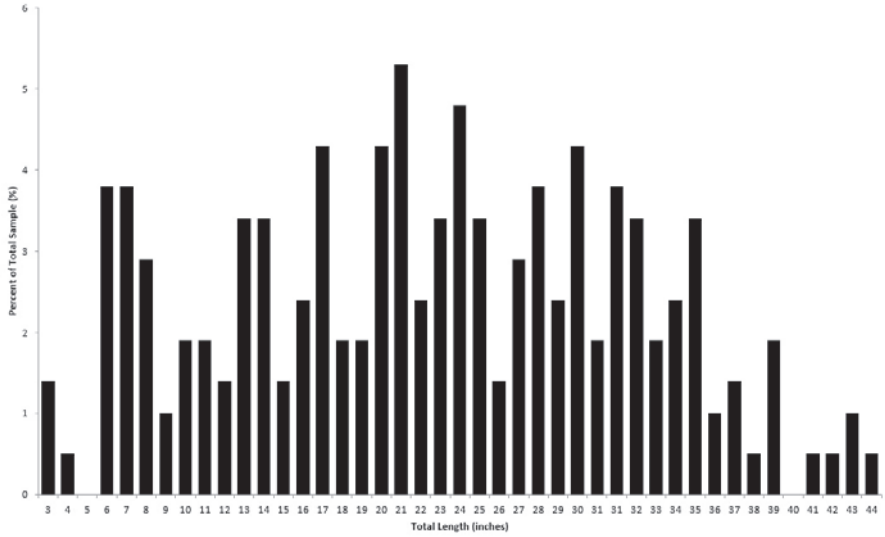


FIGURE 1. —Flathead Catfish length-frequency distribution (N = 208) collected in the Tar River, 2016.