

Broadford Lake Summary Report - Spring 2021

During the months of May and June 2021, Freshwater Fisheries and Hatcheries Division (FFHD) staff completed a mark and recapture black bass electrofishing survey at seven randomly selected locations on Broadford Lake. The following is a brief summary of the various gamefish and panfish data collected. This report is being generated to present basic size distribution and abundance information for the fishery in order to help anglers plan their fishing trip on Broadford Lake. More specific questions about the fishery or the management of individual fish species should be directed to the regional manager by emailing him at matt.sell@maryland.gov.

Key Terms:

Proportional Size Distribution (PSD) - A measure of the proportion of quality size and larger fish to the total fish in a population. Generally speaking, a higher PSD means that larger fish make up a higher percentage of the population and a lower PSD means that the fishery is dominated by smaller fish. Each species has a range of values that represent a balanced size structure.

Catch per Unit Effort (CPUE) - A measure of relative abundance that is reported as the number of fish caught per sampling effort. In this case, numbers are reported as a CPUE₆₀, which represents the number of fish per 60 minutes (1 hour) of electrofishing effort. It is important to understand that this is a measure of relative abundance, not actual abundance and is used to track population trends through time.

Mark-Recapture Population Estimation - A technique used to estimate the abundance adult fish by marking fish with a fin clip or visible mark (eg. tag) and comparing the proportion of marked to un-nmarked fish on subsequent sampling efforts in the same locations.

| <i>Species</i> | <i>PSD</i> | <i>CPUE₆₀</i> |
|-------------------------|-------------|--------------------------|
| <i>Largemouth Bass</i> | 95 (89-102) | 18 (+/- 0.8) |
| <i>Smallmouth Bass*</i> | 86 (74-99) | - |
| <i>Bluegill*</i> | 46 (33-60) | - |
| <i>Yellow Perch*</i> | 17 (9-24) | - |
| <i>Black Crappie*</i> | 66 (50-81) | - |
| <i>Pumpkinseed*</i> | 21 (10-32) | - |

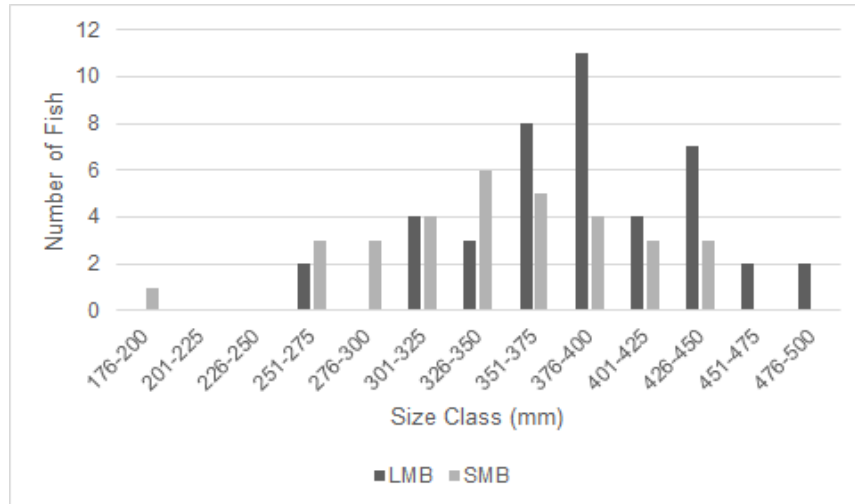
**CPUE not calculated due to sampling methods*

Black Bass

Broadford Lake continues to provide anglers with a quality black bass fishery, although the population has become unbalanced toward larger, older fish with limited recruitment. The population estimate for black bass (largemouth and smallmouth bass combined) was 578 (324 - 1194) bass. The largemouth bass population for Broadford Lake as derived from the mark and recapture effort was estimated to be 268 (211-325) bass and the contribution of smallmouth bass to the bass fishery is equal to or greater than largemouth bass.



Given the length frequency distribution and PSD for both largemouth and smallmouth bass in Broadford Lake, corrective management action was taken during 2022 by stocking 144 adult largemouth bass in an effort to balance the fishery and increase recruitment. Subsequent monitoring of the bass fishery will be conducted to determine the success of those efforts.



Length frequency distribution of largemouth and smallmouth bass collected by electrofishing from Broadford Lake, 2021.



Panfish

Broadford Lake is regarded by anglers as a top destination for panfish in western Maryland. The balanced bluegill population has remained stable, providing great angling opportunities and a desirable size distribution. Pumpkinseeds PSD values have declined compared to previous years but still fall within the accepted range of a balanced size structure. Black crappie were common in 2021 and had a more balanced size structure as compared to previous surveys with quality-size fish making up a much larger proportion of the population. Yellow perch were abundant in the 2021 survey but PSD values were very

low with the majority of the population being comprised of smaller fish.

Striped Bass/Tiger Muskellunge

Broadford Lake provides anglers with two unique fisheries; striped bass and tiger muskellunge are stocked to help balance panfish populations as well as provide anglers with an opportunity to catch a large gamefish species. Striped bass were encountered during the 2021 survey in low numbers but all fish collected were of legal size for harvest. Tiger muskellunge are periodically stocked when available, but were not encountered during the 2021 survey.

