Fisheries Research Fact Sheet

Lake Mattamuskeet Largemouth Bass Stocking Evaluation

August 2017

Lake Mattamuskeet (Thomas Harvey)

The N.C. Wildlife Resources Commission (NCWRC) is conducting a stocking evaluation for Largemouth Bass at Lake Mattamuskeet. Since 2013, annual surveys at Lake Mattamuskeet revealed a relative absence of young-of-year Largemouth Bass in the presence of abundant 12–15-inch fish. The lack of fish less than 8 inches was hypothesized to be a result of reduced reproductive success or poor recruitment and was at least partially attributed to drought conditions in certain years that restricted access to shoreline habitats necessary for successful spawning and rearing for sport fish. Due to concerns regarding unsuccessful spawning, NCWRC stocked Largemouth Bass fingerlings from 2003 to 2007. These stocking events were not formally evaluated, as hatchery origin fish could not be discerned from Largemouth Bass of wild origin. To address the lack of young-of-year fish in more recent surveys at Lake Mattamuskeet, staff initiated a three-year stocking program in 2014, with a goal of stocking 20,000 fingerlings (1-2 inches) per year. To evaluate efficacy of the stocking program, biologists genotyped broodfish fin clips and used parentage-based tagging (PBT) analysis techniques to match stocked individuals with broodfish. Thus, all bass captured from the lake can be genetically compared with hatchery parents to determine which fish originated from stocking and which ones were born in the lake.

A net full of Largemouth Bass fingerlings being released into Lake Mattamuskeet.

Largemouth Bass fingerlings being released into suitable habitat at Lake Mattamuskeet.

Lake Mattamuskeet Largemouth Bass Stocking Evaluation

Project Objectives:

- Determine if stocking Largemouth Bass fingerlings is a successful management technique for supplementing weak year classes.

Methods:

- Largemouth Bass fingerlings were stocked in May 2014, 2015 and 2016 at two locations on the east side and two locations on the west side of the lake (Figure 1).
- Largemouth Bass were collected using boat mounted electrofishing at shoreline sites in 2014, 2015 and 2016.
- Largemouth Bass fin clips were obtained during electrofishing and sent to the University of Florida where hatchery contribution was evaluated using PBT methods.

Results so Far:

- Roughly 150,000 Largemouth Bass fingerlings were stocked over the three years.
- In 2014, five out of 65 juvenile Largemouth Bass (< 8 inches) collected in the fall were determined to be of hatchery origin; hatchery contribution was 8%.
- In 2015, three out of 55 Largemouth Bass (< 12 inches) were determined to be of hatchery origin. One stocked fish was from the 2014 stocking, and two were from the 2015 stocking. In 2015, hatchery contribution was 5%.

What's next?:

- In 2016, 167 fin clips were collected from Largemouth Bass (ranging in length from 4 to 20 inches) and will be analyzed using PBT methods in 2017.
- A final report that includes specific management strategies will be completed in 2019.

For more information, contact:

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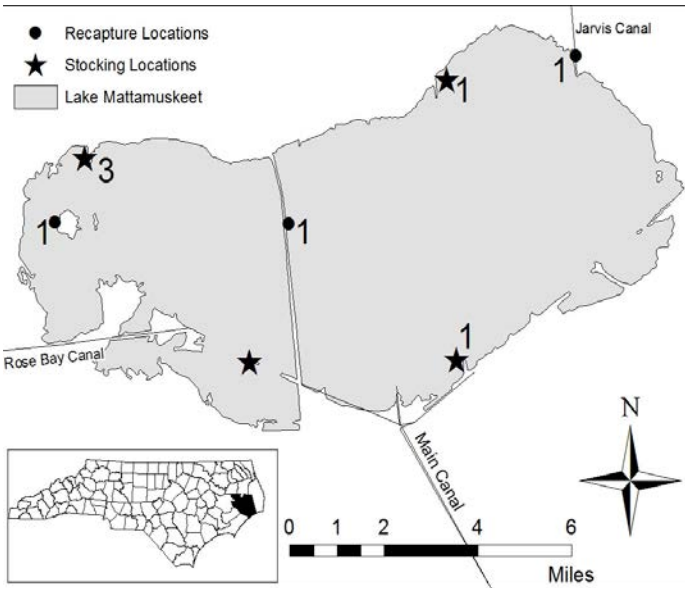

Fig. 1: Map of Lake Mattamuskeet including: stocking locations, recapture locations, and number of hatchery origin Largemouth Bass collected at each site. The star with no number indicates a stocking location where no hatchery fish were collected.

Matt Turpin, Fish Culturist at the Watha State Fish Hatchery, acclimates Largemouth Bass fingerlings in a hatchery truck before stocking.

How You Can Help

Your purchase of fishing tackle, fishing licenses and motorboat fuel helps support fisheries work conducted by N.C. Wildlife Resources Commission fisheries biologists through the Sport Fish Restoration Program, which is administered by the U.S. Fish and Wildlife Service.