



## SURVEY SUMMARY

NCWRC – Inland Fisheries Division – Coastal Region



# Newport River Sportfish Community Survey, 2020

## NEED

The Newport River is a biologically and economically important coastal river system in eastern North Carolina which supports a variety of sportfish such as Bluegill and Largemouth Bass. The project purpose is to determine the status of the sportfish community in the Newport River.

## OBJECTIVES

1. Assess the status of the sportfish community in the Newport River.
2. Collect Largemouth Bass fin clips for genetic analysis.

## METHODS

**Personnel:** Todd VanMiddlesworth, Ben Ricks - District 2 Fisheries Biologists.

**Waterbody:** Newport River - five sampling sites.

**Fish Sampling Gear:** Boat-Mounted Electrofishing, High Frequency, 7.5 GPP, 120 PPS, 6 A.

**Other Gear Utilized:** YSI water quality meter for water temperature (°C), dissolved oxygen (mg/L), % saturation, conductivity (µS/cm), salinity (ppt).

**Species of Primary Interest:** Bluegill, Largemouth Bass.

**Sample Date(s):** May 12, 2020.

**Funding Source:** Federal Aid in Sport Fish Restoration and agency license receipts.

**Project Name in BIODIE Fish:** Newport River Sportfish Community Survey.

**Citation:**

VanMiddlesworth, T., and B. Ricks. 2020. Newport River sportfish community survey. North Carolina Wildlife Resources Commission, Federal Aid in Sport Fish Restoration, survey summary, Raleigh.

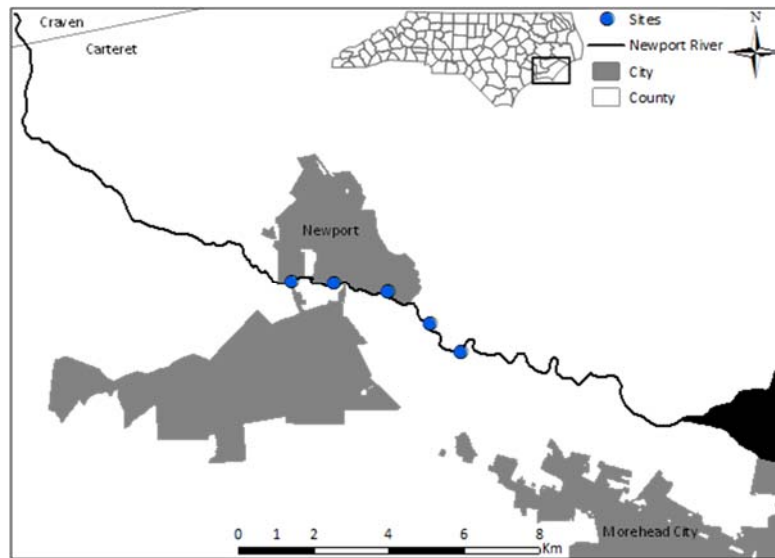


## SURVEY SUMMARY

NCWRC – Inland Fisheries Division – Coastal Region



### STUDY AREA



### BIOLOGICAL OBSERVATIONS

A Newport River sportfish community survey was conducted on May 12, 2020 (Table 1). A variety of sportfish were collected with some of the most abundant species being Bluegill (N = 222) followed by Largemouth Bass (N = 51; Table 2). Thirty-three percent (N = 73) of the Bluegill collected were quality length with 2% (N = 4) in the preferred length range. No memorable or trophy length Bluegill were observed. The mean relative weight (96) for Bluegill is indicative of sufficient population health and growth. Twelve percent (N = 3) of the Largemouth Bass collected were quality length. No preferred, memorable, or trophy length Largemouth Bass were observed though the sample size was low. The lack of larger Largemouth Bass and relatively low abundance is likely attributed to isolated fish kills that occurred as a result of hypoxic conditions caused by Hurricane Florence in 2018. The mean relative weight for Largemouth Bass (101) indicated good body condition and is indicative of adequate forage (Table 3, Figures 1–4). Other species that were collected but not in sufficient abundances to warrant analysis included Black Crappie (N = 5), Pumpkinseed (N = 4), Striped Bass (N = 4), Warmouth (N = 4), Redear Sunfish (N = 2), and American Shad (N = 1; Table 2). Evidence of fish population recovery is present, but it will take several more years for the sportfish community to rebuild. Fin clip samples were collected from 50 Largemouth Bass for determination of genetic strain.

### MANAGEMENT RECOMMENDATIONS

1. Survey in three years during the spring with electrofishing gear to: 1) monitor Largemouth Bass population recovery from Hurricane Florence related fish kills, 2) examine temporal trends in population and recruitment variability, and 3) to evaluate current regulations.
2. Analyze the genetic testing results on Largemouth Bass for further population assessment.



SURVEY SUMMARY  
NCWRC – Inland Fisheries Division – Coastal Region



TABLE 1. Sample site information for the May 2020 Newport River Sportfish Community Survey.  
Note: Discharge data are not available for the Newport River.

Sample Date	Site name	Latitude	Longitude	Boat access area	Discharge (CFS)
May 12	NPR22	34.767040	-76.832340	Newport River Park	N/A
May 12	NPR24	34.772510	-76.839810	Newport River Park	N/A
May 12	NPR25	34.778800	-76.850080	Newport River Park	N/A
May 12	NPR27	34.780690	-76.862820	Newport River Park	N/A
May 12	NPR28	34.780860	-76.872910	Newport River Park	N/A

TABLE 2. Summary information of all fish collected.

Species	Number collected	Percent collected	Minimum total length (mm)	Maximum total length (mm)	Mean total length (mm)
Bluegill	222	76	12	221	138
Largemouth Bass	51	17	104	360	212
Black Crappie	5	2	219	286	253
Pumpkinseed	4	1	112	152	132
Striped Bass	4	1	216	256	240
Warmouth	4	1	89	172	124
Redear Sunfish	2	1	174	214	194
American Shad	1	<1	515	515	
Total	293	100			

TABLE 3. Relative abundance, stock composition and mean relative weight.

Species	CPUE (fish/h)	PSD-Q	PSD-P	Mean Wr
Bluegill	74	33	2	96
Largemouth Bass	17	12		101



SURVEY SUMMARY  
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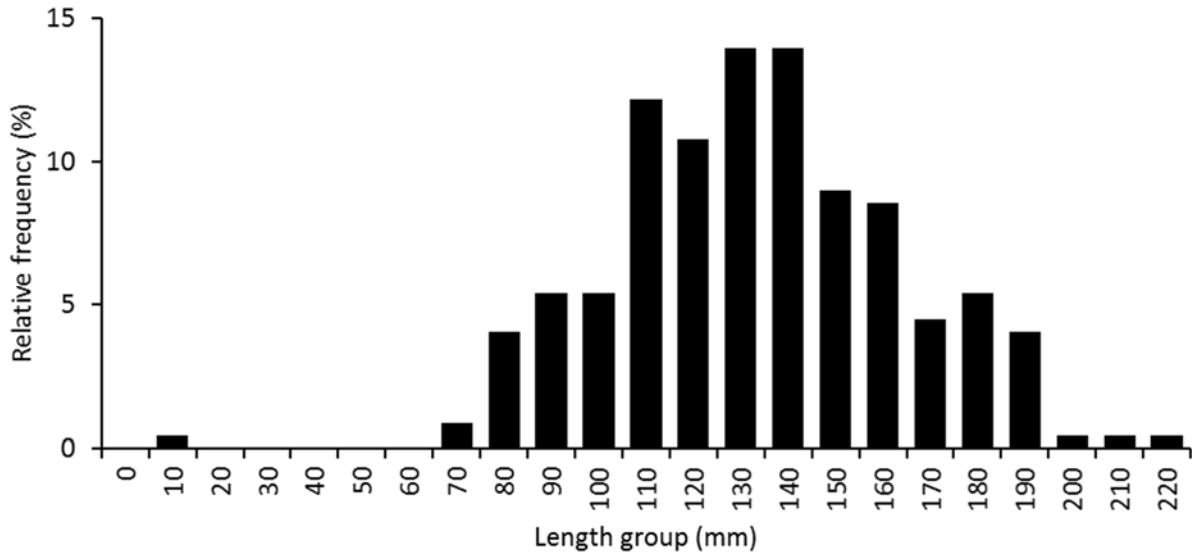


FIGURE 1. Length frequency distribution of Bluegill.

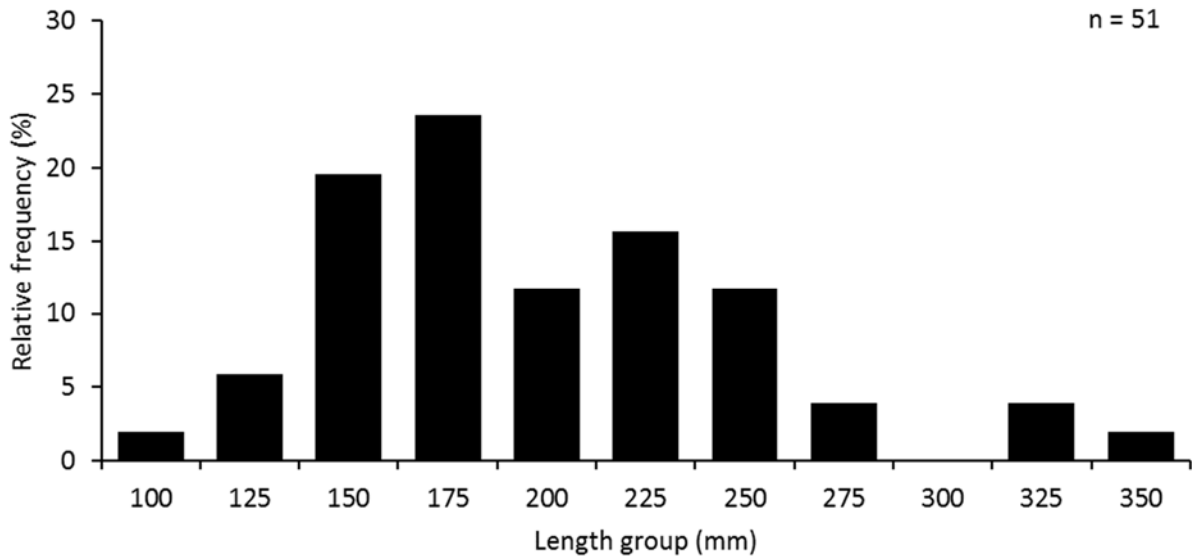


FIGURE 2. Length frequency distribution of Largemouth Bass.



SURVEY SUMMARY  
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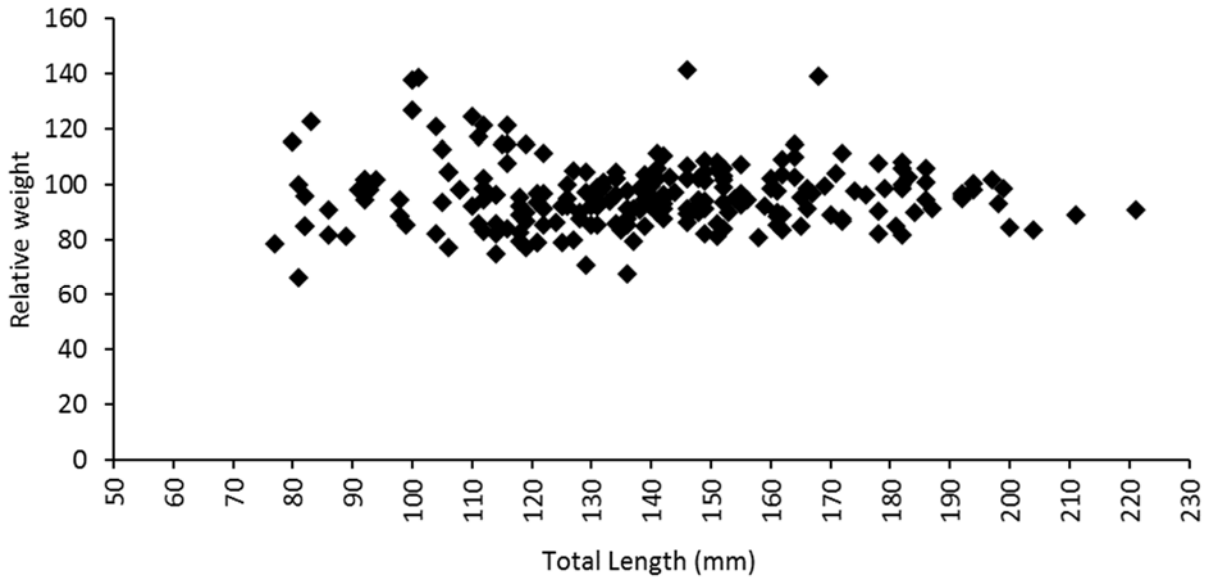


FIGURE 3. Relationship between total length and relative weight of Bluegill. The dashed line represents the 75<sup>th</sup> percentile of relative weight for Bluegill across their geographical distribution.

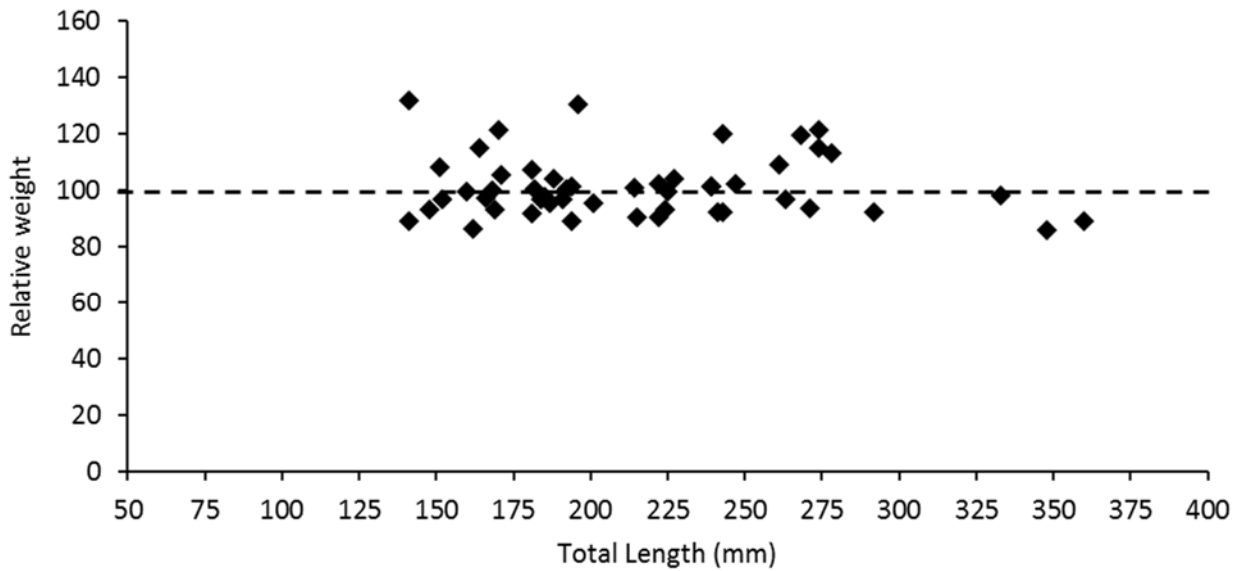


FIGURE 4. Relationship between total length and relative weight of Largemouth Bass.