SURVEY SUMMARY
NCWRC – Inland Fisheries Division – Coastal Region

Tar River Sportfish Community Survey, 2019

NEED

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

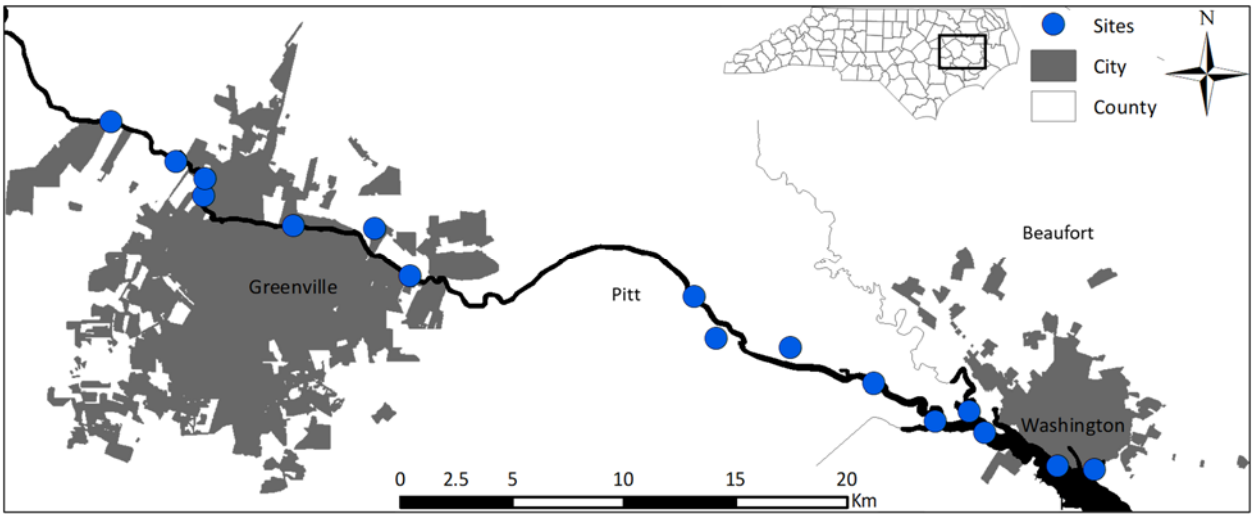
OBJECTIVES

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

METHODS

Personnel: Todd VanMiddlesworth and Ben Ricks - District 2 Fisheries Biologists.
Waterbody: Tar River - 16 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, Redear Sunfish.
Sample Date(s): October 2, 10, 17, and 24, 2019.
Funding Source: Federal Aid in Sport Fish Restoration and agency license receipts.
Project Name in BIODE Fish: Tar River Sportfish Community Survey.
Citation:
VanMiddlesworth, T., and B. Ricks. 2020. Tar River sportfish community survey. North Carolina Wildlife Resources Commission, Federal Aid in Sport Fish Restoration, survey summary, Raleigh.

STUDY AREA



BIOLOGICAL OBSERVATIONS

The October 2019 Tar River Sportfish Community Survey was conducted at 16 sampling sites (Table 1). The most abundant species collected included Bluegill (n = 181) followed by Largemouth Bass (n = 98) and Redear Sunfish (n = 96; Table 2). Forty-six percent (n = 82) of the Bluegill collected were quality length with 6% (n = 10) in the preferred length range; no memorable or trophy length Bluegill were observed (Table 3, Figure 1). The mean relative weight (86) for Bluegill indicated adequate body condition (Figure 2). Fifty-seven percent of the Largemouth Bass and 68% of Redear Sunfish collected were quality length with fewer in the preferred length range (32% and 35%, respectively). Largemouth Bass of the memorable length range were low in abundance (4%) and no trophy length fish were observed (Figure 3). Also, no memorable or trophy size Redear Sunfish were collected (Figure 4). The mean relative weight for Largemouth Bass (90) and Redear Sunfish (86) suggested adequate body condition (Figures 5 and 6). Sportfish species that were collected but not in sufficient abundances to warrant analysis included Pumpkinseed (n = 19), Redbreast Sunfish (n = 18), Yellow Perch (n = 15), and Black Crappie (n = 10).

MANAGEMENT RECOMMENDATIONS

1. Survey the Tar River every three years during the fall with boat electrofishing gear to examine trends in population and recruitment variability and evaluate regulations.
2. Evaluate the Largemouth Bass fin clips (n = 50) for further assessment of the population in the Tar River.

TABLE 1. Sample site information for the October 2019 Tar River Sportfish Community Survey. Note: All discharge data provided below was recorded on the USGS Greenville, NC, Tar River gauge number 02084000 located near the Greenville Town Commons Boating Access Area.

Sample date	Site name	Latitude	Longitude	Boating access area	Discharge (CFS)
October 2	PAM1	35.5377310	-77.0526570	Masons Landing	197
October 2	TAR-RUNYON1	35.5364240	-77.0378940	Masons Landing	197
October 2	TAR-TRANTERS1	35.5553910	-77.0880890	Masons Landing	197
October 2	TAR2	35.5485992	-77.0818024	Masons Landing	197
October 10	TAR-CHICOD1	35.5790880	-77.1899490	Masons Landing	128
October 10	TAR-STREAMTAR11	35.5762090	-77.1601120	Masons Landing	128
October 10	TAR4	35.5522003	-77.1016006	Masons Landing	128
October 10	TAR7	35.5643997	-77.1266022	Masons Landing	128
October 17	TAR15	35.5927010	-77.1989975	Masons Landing	279
October 24	TAR-SANDPIT1	35.6152000	-77.3273000	Greenville Town Commons	464
October 24	TAR28	35.5993996	-77.3131027	Greenville Town Commons	464
October 24	TAR33	35.6160011	-77.3601990	Greenville Town Commons	464
October 24	TAR37	35.6257019	-77.3963013	Greenville Town Commons	464
October 24	TAR38	35.6310997	-77.3955994	Greenville Town Commons	464
October 24	TAR40	35.6369019	-77.4075012	Greenville Town Commons	464
October 24	TAR43	35.6493988	-77.4335022	Greenville Town Commons	464

TABLE 2. Total number, percent of total number, minimum total length (mm), maximum total length (mm), and mean total length (mm) of all sportfish.

Species	Number collected	Percent collected (%)	Minimum total length (mm)	Maximum total length (mm)	Mean total length (mm)
Bluegill	181	41	55	238	142
Largemouth Bass	98	22	100	550	276
Redear Sunfish	96	22	31	268	198
Pumpkinseed	19	4	107	251	138
Redbreast Sunfish	18	4	67	139	103
Yellow Perch	15	3	96	295	192
Black Crappie	10	2	216	293	253
Total	437	100			

TABLE 3. Catch per unit effort (CPUE), proportional size distribution-quality (PSD-Q), proportional size distribution-preferred (PSD-P), proportional size distribution-memorable (PSD-M), and mean relative weight (Wr) of Bluegill, Largemouth Bass, and Redear Sunfish.

Species	CPUE (fish/h)	PSD-Q	PSD-P	PSD-M	Mean Wr
Bluegill	43	46	6		86
Largemouth Bass	13	57	32	4	90
Redear Sunfish	23	68	35		86

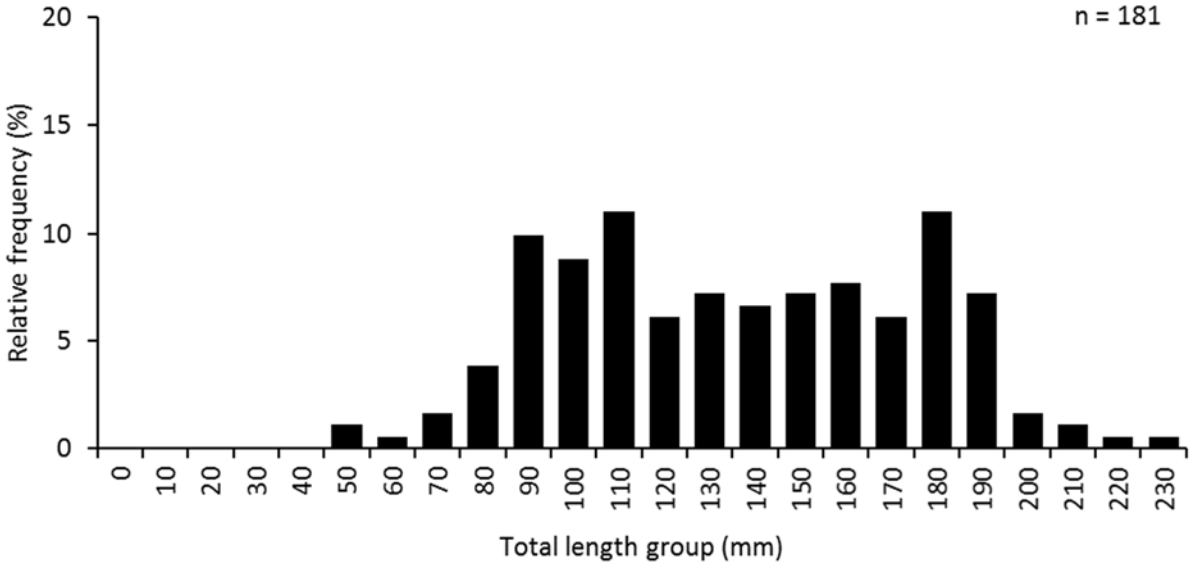


FIGURE 1. Length frequency distribution of Bluegill collected during the Tar River Sportfish Community Survey during October 2019.

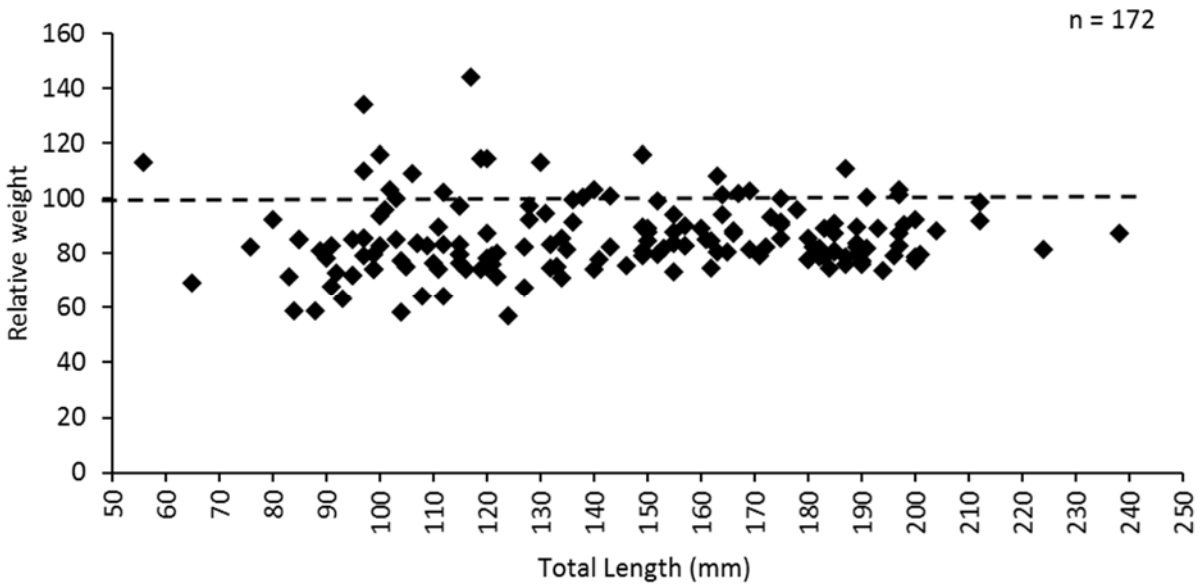


FIGURE 2. Relationship between total length and relative weight of Bluegill. The dashed line represents the 75th percentile of relative weight for Bluegill across their geographical distribution.

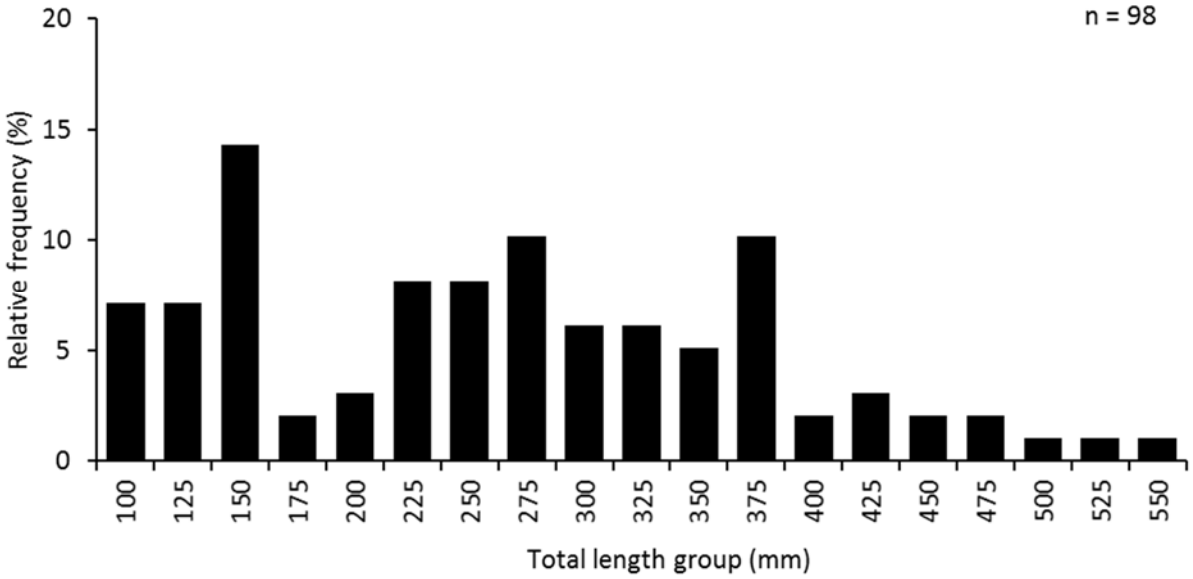


FIGURE 3. Length frequency distribution of Largemouth Bass.

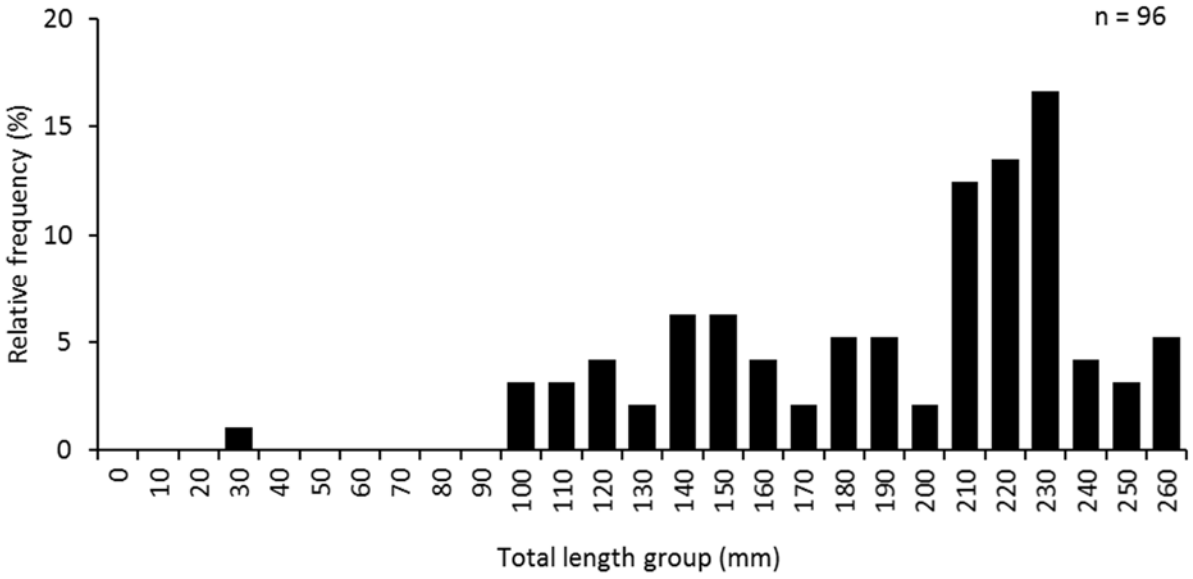


FIGURE 4. Length frequency distribution of Redear Sunfish.

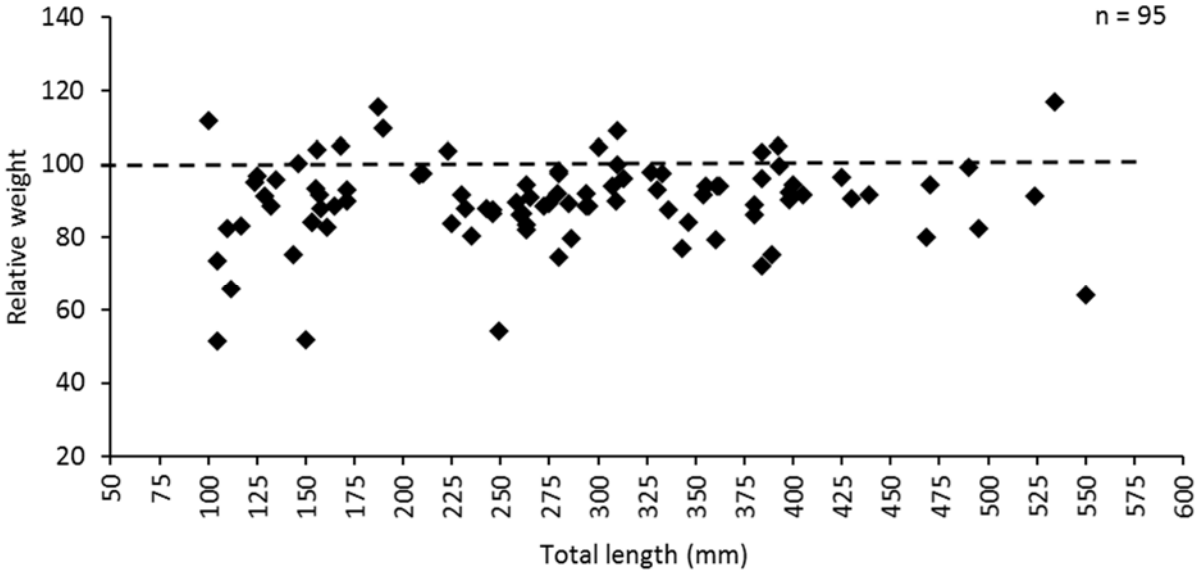


FIGURE 5. Relationship between total length and relative weight of Largemouth Bass.

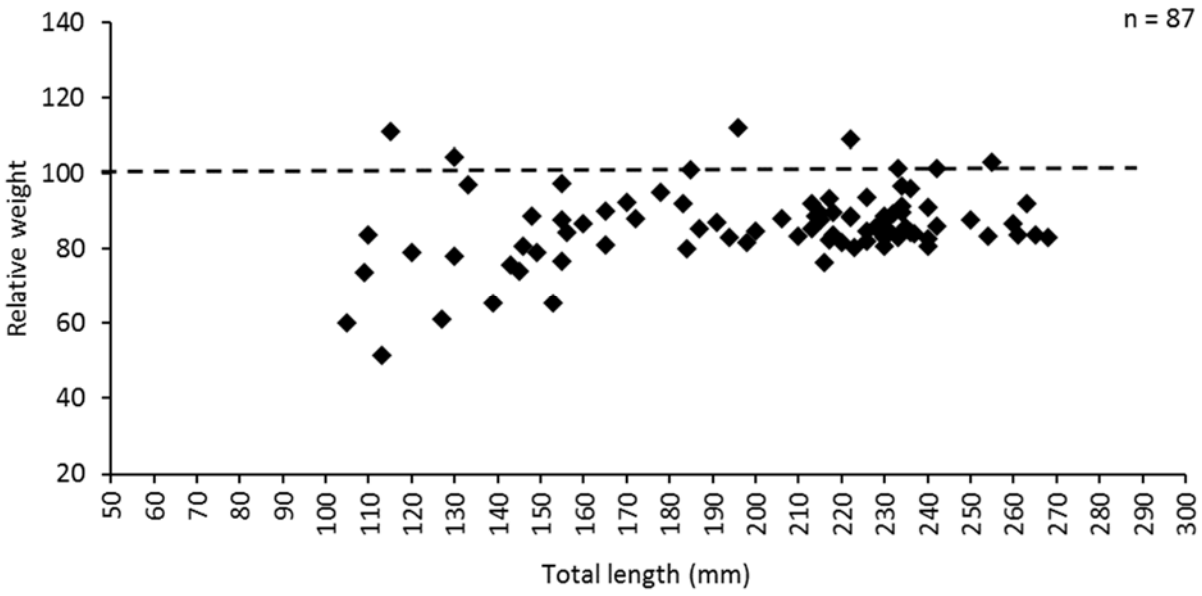


FIGURE 6. Relationship between total length and relative weight of Redear Sunfish.