



SURVEY SUMMARY

NCWRC – Inland Fisheries Division – Coastal Region



New River Inland Game Fish Community Survey, 2021

NEED

The New River is a biologically important coastal river system in eastern North Carolina that supports a variety of inland game fish such as Bluegill, Redear Sunfish, and Largemouth Bass. Routine surveys are required to effectively monitor and manage inland game fish populations.

OBJECTIVE

Assess the inland game fish community in the New River.

METHODS

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

Waterbody: New River - 5 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 ($\mu\text{S}/\text{cm}$), salinity (ppt).

Species of Primary Interest: Bluegill, Redear Sunfish, Largemouth Bass.

Sample Date(s): October 6 and 25, 2021.

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

Project Name in BIODIVERSITY Fish: New River Game Fish Community Survey.

Citation:

VanMiddlesworth, T. D. and B. R. Ricks. 2022. New River Game Fish Community Survey, 2021. North Carolina Wildlife Resources Commission, Federal Aid in Sport Fish Restoration, survey summary, Raleigh.

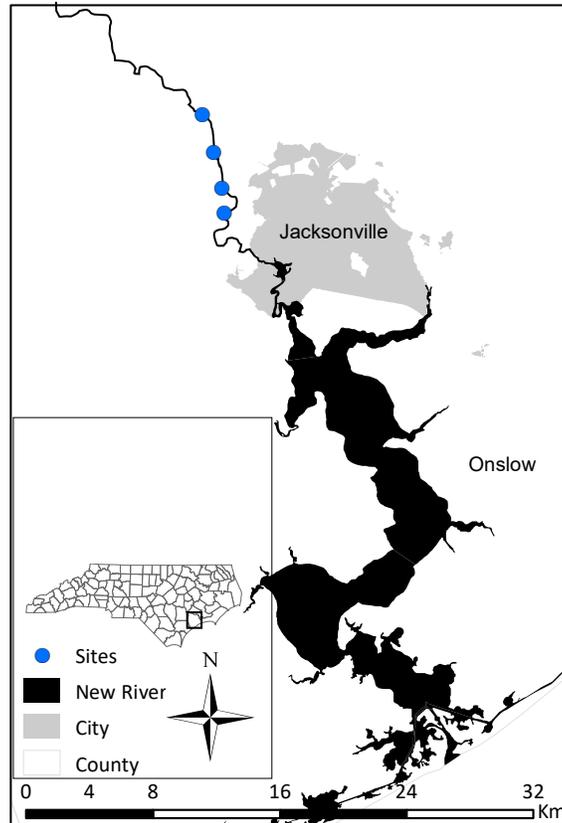


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STUDY AREA



BIOLOGICAL OBSERVATIONS

The survey was conducted at five sampling sites in October 2021 (Table 1). Due to high salinities in the New River at the time of this survey, the sampling area was limited to upriver locations and the survey was shortened compared to previous years. The most abundant species collected included Bluegill ($n = 47$), Redear Sunfish ($n = 36$), and Largemouth Bass ($n = 30$; Table 2). Bluegill ranged 65–217 mm with a mean total length of 138 mm, while Redear Sunfish ranged 69–232 mm with a mean total length of 161 mm (Table 2, Figure 1, 2). Largemouth Bass ranged 82–462 mm with a mean total length of 276 mm (Table 2, Figure 3). The mean relative weight for Bluegill (87.3), Redear Sunfish (81.6), and Largemouth Bass (93.5) suggested adequate body condition (Table 3). Inland game fish species that were collected but not in sufficient abundances to warrant analysis included Redbreast Sunfish, Pumpkinseed, Warmouth, Chain Pickerel, Black Crappie, Southern Flounder, and White Catfish (Table 2). Mangrove Snapper was the only nongame fish species collected (Table 2).



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MANAGEMENT RECOMMENDATION

1. Maintain existing regulations for inland game fish and nongame fish in the New River.
2. Survey the New River every five years during the fall with boat electrofishing gear to examine trends in population and recruitment variability and evaluate regulations.

TABLE 1. Sample site information for the New River Game Fish Community Survey, 2021. Discharge data were recorded on the USGS Gum Branch, NC, New River gauge number 02093000.

Sample date	Boating access area	Discharge (cfs)	Site name	Latitude	Longitude
October 6	Jacksonville Landing	6.4	NEW42	34.7950	-77.4688
			NEW44	34.8114	-77.4737
			NEW46	34.8289	-77.4775
October 25	Jacksonville Landing	16.2	NEW40	34.7834	-77.4678
			NEW42	34.7950	-77.4688



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TABLE 2. Total number, percent of total number, minimum total length (mm), maximum total length (mm), and mean total length (mm) of all inland game fish and nongame fish (*) collected during the New River Game Fish Community Survey, 2021.

Species	Number collected	Percent collected (%)	Minimum total length (mm)	Maximum total length (mm)	Mean total length (mm)
Bluegill	47	34.6	65	217	138
Redear Sunfish	36	26.5	69	232	161
Largemouth Bass	30	22.1	82	462	276
Redbreast Sunfish	11	8.1	102	140	147
Pumpkinseed	3	2.2	110	160	131
Warmouth	2	1.5	172	189	181
Chain Pickerel	2	1.5	453	467	461
Black Crappie	2	1.5	207	287	247
Southern Flounder	1	0.7	0	0	0
White Catfish	1	0.7	484	489	484
*Mangrove Snapper	1	0.7	132	132	132
Total	136	100.0			

TABLE 3. Catch per unit effort (CPUE) and mean relative weight (Wr) of Bluegill, Largemouth Bass, and Redear Sunfish collected during the New River Game Fish Community Survey, 2021.

Species	CPUE (fish/h)	Mean Wr
Bluegill	18.6	87.3
Redear Sunfish	14.2	81.6
Largemouth Bass	11.9	93.5



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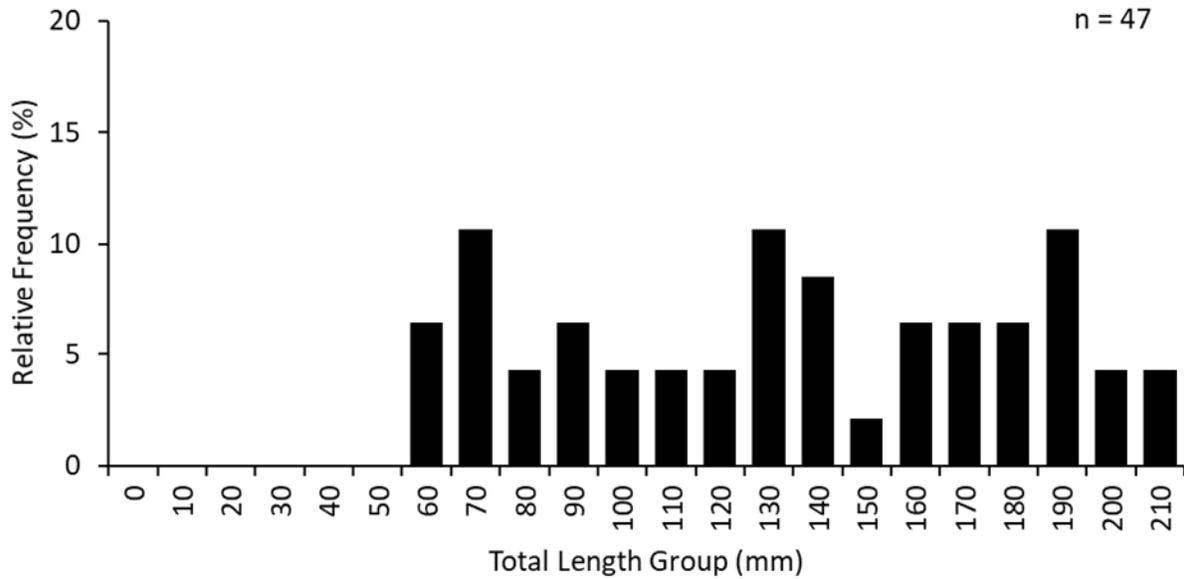


FIGURE 1. Length frequency distribution of Bluegill collected in the New River, 2021.

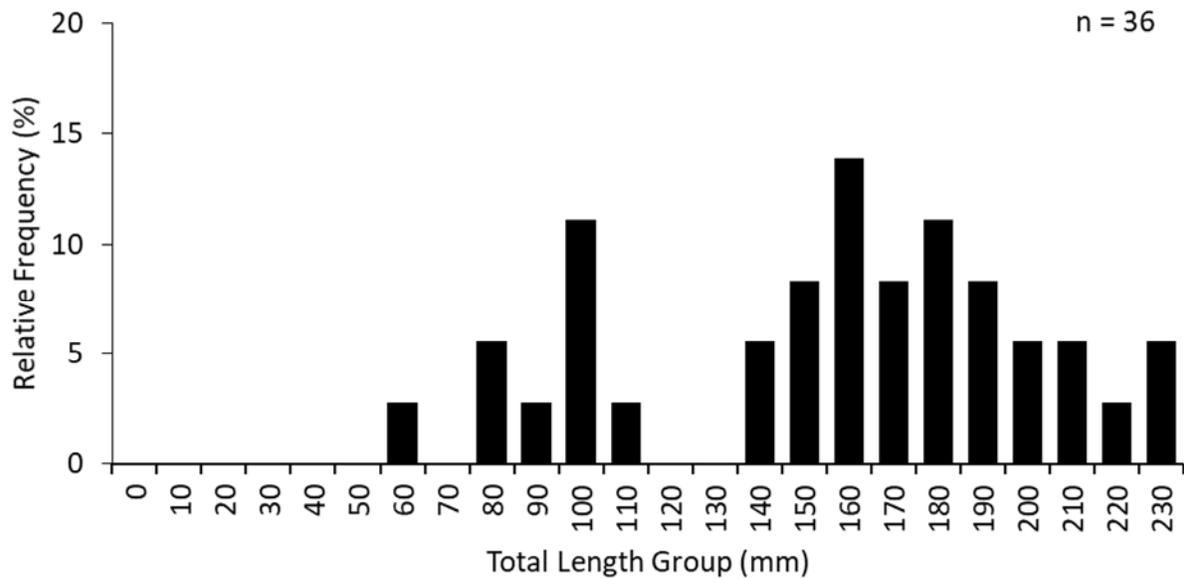


FIGURE 2. Length frequency distribution of Redear Sunfish collected in the New River, 2021.



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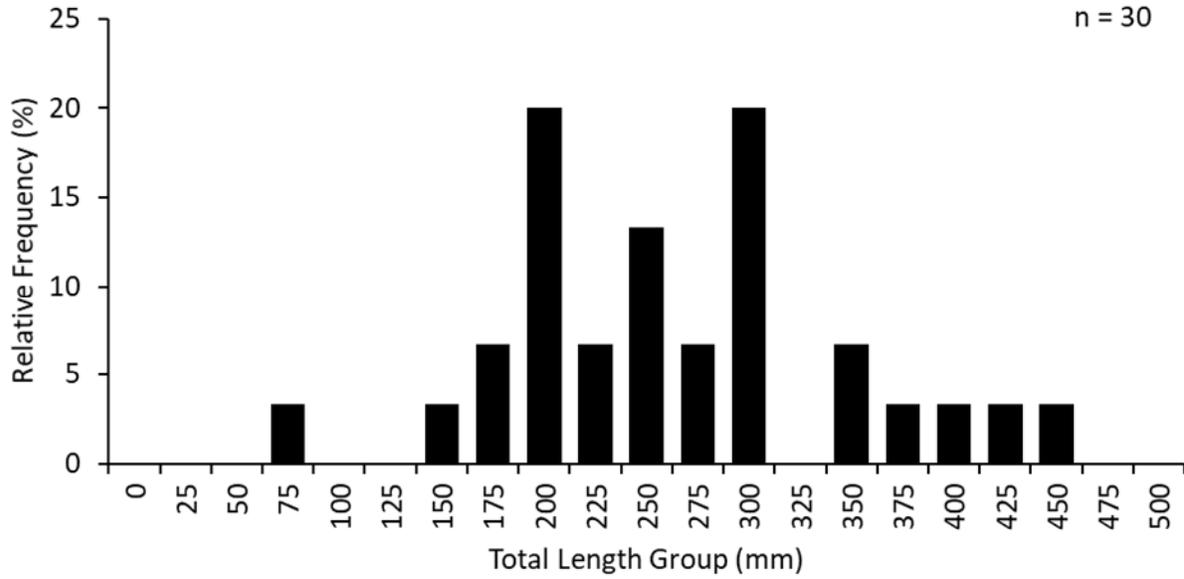


FIGURE 3. Length frequency distribution of Largemouth Bass collected in the New River, 2021.