



## SURVEY SUMMARY

NCWRC – Inland Fisheries Division – Coastal Region



### Roanoke River Striped Bass Creel Survey, 2025

#### NEED

The North Carolina Wildlife Resources Commission (NCWRC) is responsible for the annual reporting of the recreational harvest of anadromous Striped Bass in the Roanoke River Management Area (RRMA). Striped Bass harvest is allocated through a Total Allowable Landings (TAL) system within the Albemarle Sound Management Area and RRMA. Due to further reductions in the TAL necessitated by continued overfishing status and poor recruitment, the recreational harvest season in the RRMA was closed during 2025. Despite no legal harvest, the creel survey is still needed to estimate and monitor Striped Bass catch and effort in the RRMA. Additionally, the NCWRC is required to submit recreational fishing data for the RRMA in the North Carolina annual Striped Bass compliance report submitted to the Atlantic States Marine Fisheries Commission (ASMFC).

#### OBJECTIVES

1. Estimate recreational Striped Bass catch and angling effort in the RRMA.
2. Document bait use, demographics, and expenditures of Striped Bass anglers.

#### METHODS

**Personnel:** Jeremy McCargo, Anadromous Research Coordinator; Rob Jones, Temporary Technician (Creel Clerk).

**Waterbody:** Creel survey access points were located at public boating access areas in the Roanoke River basin and were assigned using sample unit probabilities for each sample period (Table 1).

**Survey Design:** The Roanoke River Striped Bass creel survey used a non-uniform probability, stratified access-access survey design. The creel survey was stratified by sample periods, area (upper and lower zones), time of day (early and late AM; early and late PM), and type of day (weekdays and weekend days). Most sample periods were approximately two weeks long (15 or 16 days), except the final sample period was only 10 days because the survey ended when fishing effort had substantially decreased. Two randomly selected weekdays and both weekend days were scheduled each week. One creel clerk worked one 6-hour session each day of the schedule. In March and April, one weekday and one weekend day were sampled in each zone each week, but in May, both weekday and both weekend sessions were in the upper zone. The fishing day was defined as 30 minutes before sunrise to one hour after sunset.

**Species of Primary Interest:** Striped Bass

**Sample Date(s):** March 1–May 25, 2025

**Funding Source:** Federal Aid in Sport Fish Restoration and agency license receipts. F-108

**Project Name in PAWS:** Roanoke Creel Survey

#### Citation:

McCargo, J. W. (2025). *Roanoke River Striped Bass Creel Survey, 2025*. North Carolina Wildlife Resources Commission, Federal Aid in Sport Fish Restoration, survey summary, Raleigh.

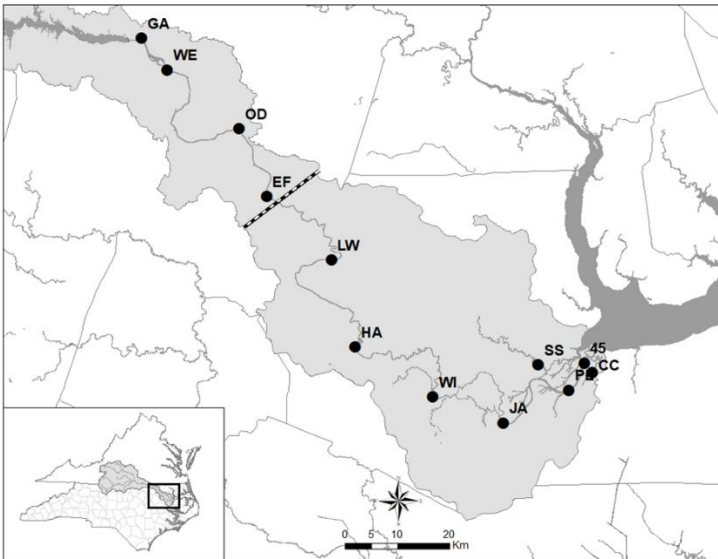


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### STUDY AREA



### OBSERVATIONS

*Interviews.* The creel clerk conducted 423 interviews of boat angling parties and intercepted 959 anglers during 49 creel sessions in 2025. Of the total, 159 (38%) interviewed parties consisting of 403 anglers specifically targeted Striped Bass, and 24 (15%) of the Striped Bass parties employed the services of a fishing guide. Most of the Striped Bass interviews ( $n = 150$ ; 94%) occurred in the upper zone, and all guided Striped Bass trips occurred in the upper zone. Nine angling parties in the lower zone and 32 parties in the upper zone either refused to be interviewed or were missed by the creel clerk due to busy conditions. The number of Striped Bass interviews in 2025 was slightly lower than 2024, when the harvest season also was closed, but was substantially lower than previous years when the harvest season was open. The mean party size for Striped Bass targeted trips was 2.5 anglers ( $SE = 0.1$ ) in the upper zone and 1.9 anglers ( $SE = 0.2$ ) in the lower zone. Mean trip length for targeted Striped Bass trips was 5.3 hours ( $SE = 0.1$ ) in the upper zone and 5.7 hours ( $SE = 0.6$ ) in the lower zone. Anglers fishing the Roanoke River by boat reported releasing 1,981 Striped Bass. All angling parties that caught striped bass ( $n = 151$ ) provided size range estimates for released striped bass; 26% were less than 18 inches, 51% were between 18 and 22 inches, 22% were between 22 and 27 inches, and 1% were greater than 27 inches. Anglers targeting Striped Bass caught an average of 12.1 fish per trip ( $SE = 1.9$ ) in the upper zone and 1.0 fish per trip ( $SE = 0.6$ ) in the lower zone. The mean catch rate for targeted trips was 1.1 fish/angler-h in the upper zone and 0.2 fish/angler-h in the lower zone.

*Estimates.* After expanding raw data with sample unit probabilities and combining strata, we estimated that 2,551 anglers ( $SE = 898$ ) expended 13,510 angler-hours ( $SE = 4,810$ ) of fishing effort targeting Striped Bass in the RRMA during 2025. Nearly all fishing effort occurred in the upper zone, and guided trips accounted for approximately 21% of the total effort in the upper



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zone. Anglers caught and released an estimated 14,682 fish (SE = 5,328). Nearly all catch occurred in the upper zone, as only 429 fish were estimated to be caught in the lower zone. Guided trips accounted for approximately 42% of the total estimated catch in the upper zone. There was no harvest estimate because the harvest season was closed; illegal harvest was not detected during the survey. After applying the established 6.4% mortality rate for released fish, 940 fish were estimated to have died from catch-and-release mortality during 2025.

*Bait Use.* All interviewed parties fishing for Striped Bass provided information on use of live bait, cut bait, and artificial lures. Of the nine Striped Bass interviews in the lower zone, 67% used artificial lures, 33% used cut bait, and 11% used live bait, and of the 150 interviews in the upper zone, 62% used artificial lures, 55% used live bait, and only 6% used cut bait to fish for Striped Bass. The sum of percentages is greater than 100% because some parties reported multiple bait types.

*Angler Origin.* Origin was recorded for 399 of the 403 (99%) anglers targeting Striped Bass. Of the five local counties that adjoin the Roanoke River, only three (Halifax, Martin, Northampton) were represented in the survey of Striped Bass anglers. Additionally, we surveyed Striped Bass anglers from 36 other North Carolina counties and 14 other states and Washington, D.C. The five highest represented counties included Wake (n = 90), Nash (n = 32), Halifax (n = 26), Johnston (n = 24), and Alamance (n = 15). In the lower zone, the majority of Striped Bass anglers (n = 9) were from local counties, while in the upper zone, the majority of Striped Bass anglers (n = 288) were from North Carolina counties not bordering the river. Interestingly, more out-of-state anglers (n = 57) were surveyed than local anglers (n = 37) in the upper zone.

*Expenditures.* Trip expenses were collected from all Striped Bass angling parties interviewed. The total expenditure estimate in 2025 was \$263,081 for all trip types and all zones combined and was much lower than previous years. On average, private trip anglers spent \$140.25 (SE = 9.73) per trip to fish for Striped Bass in the upper zone, while guided trip anglers spent an average of \$959.83 (SE = 178.02) per trip in the upper zone. In the lower zone, private trip anglers spent an average of \$84.67 (SE = 39.28) per trip. Mean expenditures per angler-hour in the upper zone were \$60.68 for guided trips and \$10.59 for private trips. For private trips in the upper zone, vehicle fuel was the largest single expenditure per trip (mean = \$55.01; SE = 4.31) followed by food and drink purchases (mean = \$33.33; SE = 2.94), bait (mean = \$17.94; SE = 2.53), lodging (mean = \$16.86; SE = 4.39), and boat fuel (mean = \$14.90; SE = 1.49). For guided trips, the largest single expenditure was the guide fee (mean = \$758.33; SE = 148.62), followed by angler vehicle fuel (mean = \$57.42; SE = 13.16), lodging (mean = \$47.00; SE = 16.91), and food (mean = \$42.50 SE = 16.91). Costs recorded for bait and boat fuel for some guided trips should not have been included in the guide fee, but some parties provided estimates of all costs for the guided trip when asked about guide fee costs.



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**NEXT STEPS**

1. Report effort and catch estimates in ASMFC compliance report.
2. Share results with anglers and fishing guides.
3. Conduct creel survey in 2026.
4. Instruct creel clerks to record only expenditures incurred by anglers for guided trips. The expenses for bait or boat fuel paid by the guide should not be included.

Table 1. Access area locations and probabilities for the Roanoke River Striped Bass creel survey, 2025. The low probability sites were combined into a selection “wheel” such that one site was randomly chosen if the low probability wheel was selected during scheduling.

Creel Site	Latitude	Longitude	Site Probabilities					
			Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-15	May 16-25
<i>Upper Zone</i>								
Gaston	36.48269	-77.64450	0.05	0.05	0.05	0.05	0.05	0.05
Weldon	36.42783	-77.59101	0.85	0.85	0.75	0.75	0.85	0.85
Odom	36.32500	-77.44056	0.05	0.05	0.05	0.05	0.05	0.05
Edwards Ferry	36.20800	-77.38381	0.05	0.05	0.15	0.15	0.05	0.05
<i>Lower Zone</i>								
Lewiston- Woodville	36.09750	-77.24944	0.05	0.05	0.05	0.05	0.00	0.00
Hamilton	35.94781	-77.20269	0.05	0.05	0.10	0.15	0.00	0.00
Williamston	35.86019	-77.04031	0.15	0.25	0.30	0.40	0.00	0.00
Astoria Landing	35.81279	-76.89314	0.35	0.35	0.30	0.20	0.00	0.00
Plymouth-WRC	35.86672	-76.75336	0.10	0.10	0.10	0.15	0.00	0.00
HWY 45	35.91243	-76.72034	0.25	0.15	0.10	0.05	0.00	0.00
Low Probability			0.05	0.05	0.05	0.05	0.00	0.00
Conaby Creek	35.89625	-76.70436	-	-	-	-	-	-
Plymouth-City	35.86824	-76.74992	-	-	-	-	-	-
Sans Souci	35.91139	-76.81731	-	-	-	-	-	-