

Atlantic and Shortnose Sturgeon recruitment in the Savannah River, Georgia

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Atlantic and Shortnose sturgeon were once abundant along the Atlantic Coast of North America from the Saint John River, Canada to the St. Johns River, Florida. Severe overfishing, coupled with habitat losses during the 1900s, resulted in major population declines that eventually led to the species' listing under the US Endangered Species Act in 2012. Although Atlantic and Shortnose sturgeon are now considered endangered, quantified recruitment data are largely lacking for most systems, particularly for populations within the Southeastern United States. The objective of this study was to quantify annual recruitment of Atlantic and Shortnose sturgeon in the Savannah River, Georgia, by estimating annual abundance of age-1 Atlantic and Shortnose sturgeon. During the summers of 2013–2015, we used anchored gill nets and trammel nets to sample juveniles of both species throughout the Savannah River estuary. Ages of captured juvenile Atlantic and Shortnose sturgeon were determined using length-frequency histograms that were verified with fin ray cross sections from a subsample of the captured fish. Annual abundances were then estimated with Huggins closed-capture models in RMark. Our results showed that the Savannah River contained 528 age-1 Atlantic sturgeon juveniles in 2013, 616 in 2014, and 623 in 2015. Over this same period we estimated annual cohorts of age-1 shortnose sturgeon to be 81 in 2013, 270 in 2014, and 245 in 2015. These findings suggest that the Savannah River populations of both species are likely the 2nd largest within the Southern Atlantic. Future estimates of juvenile abundance for both species should help provide quantified information regarding population trends as well as identify key environmental variables affecting recruitment in the Savannah River system.