

Estimating Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) Spawning Runs in the Delaware and Hudson Rivers.

Fox, D.A.¹, A.M. Comer², B.D. Jenkins¹, M.W. Breece³, L.M. Brown¹, D.C. Kazyak⁴, A.L. Higgs⁵, J. Madsen³, and K.W. Wark⁶

¹Department of Agriculture and Natural Resources, Delaware State University

²North Carolina Division of Marine Fisheries

³College of Earth, Ocean, & Environment, University of Delaware

⁴Integrated Statistics

⁵New York State Department of Environmental Conservation

⁶Endeavor Fisheries, LLC

Although the vast majority of Atlantic Sturgeon fisheries collapsed in the early 20th century, harvest continued sporadically until a coast-wide moratorium was enacted prior to their 2012 ESA listing. Remarkably, river specific run size estimates are lacking and will likely prove to be pivotal benchmarks for gaging conservation and recovery actions. We employed a combination of acoustic telemetry and side-scan sonar surveys to estimate run sizes for the Delaware (2010-2015) and Hudson (2014) Rivers. We estimated the relative run size of Delaware Atlantic Sturgeon using a published Hudson run size estimate (Kahle et al. 2007) via a population of 392 telemetered individuals ranging from 79 (2009) to 276 (2015). Relative run size estimates for the Delaware River ranged from 100(2012) to 216 (2011), with a mean of 158 for the 2010-2015 period. In the Hudson River, we used towed side-scan sonar to census the largest presumed spawning aggregation in 2014. Our daily estimates of spawning individuals ranged from 27 to 183 with a mean of 101 over the peak of the 2014 spawning season. We are currently working to expand Hyde Park Reach estimates to develop a river-wide assessment which incorporates our telemetry results.