

Continental Shelf Habitat of Atlantic Sturgeon Based on the Annual Cooperative Winter Tagging Cruises, 1988-2013

Osborne, J.H.¹, R.W. Laney², R.A. Rulifson³

¹East Carolina University, Department of Biology, Greenville; presently NC Wildlife Resources Commission, Marion, NC

²U.S. Fish and Wildlife Service, Ecological Services, Raleigh, NC and Division of Environmental Review, Atlanta, GA

³East Carolina University, ICSP/Biology, Greenville, NC

Throughout 25 years of winter trawling off of the North Carolina and Virginia coasts, the Cooperative Winter Tagging Cruise record encountered 252 Atlantic sturgeon in 179 tows. Habitat variables of depth, sediment grain size, percent organic carbon content, salinity, water temperature, bottom type, and time of day were modelled by tow location to determine the range of habitat variables utilized, and compared between two time periods (early and late years) of the Cruise. Taxa co-occurring with Atlantic sturgeon were also examined to determine if overlap in habitat could be affecting resource competition and predatory interactions. From the early to late period, sturgeon showed an increase in depth (3-6 m), increased use of areas with sediment of larger grain sizes (.01-1.1 phi), utilization of a slightly broader temperature range, an increase in utilization of sand bottom types (6%), and a shift in the time of day when most frequently captured (day/evening to night/morning). Atlantic sturgeon were most frequently captured with spiny dogfish (57.5%), though not in high abundances. We also looked at latitudinal variation, but found no significant trends, likely because this area hosts at least 2 of the DPS of Atlantic sturgeon: Chesapeake Bay and Carolina population segments.