Using sex identification to help determine demographics and life history parameters of Gulf sturgeon (*Acipenser oxyrinchus desotoi*) from the Suwannee River, Florida

Wetzel, D.L.[1], M.T. Randall[2], J.E. Reynolds[1], and K.J. Sulak[2]

[1] Mote Marine Laboratory, Sarasota, FL
[2] Wetland and Aquatic Research Center, U.S. Geological Survey, Gainesville, FL

The IUCN indicates that 24 species of sturgeon are classified as either vulnerable or endangered. In theory, the development and implementation of protective statutes and regulations for threatened species should result in improved conservation status. However, persistent threats and stressors, including habitat destruction/degradation, pollution, and commercial exploitation, have limited the effects of such improvements. Emerging scientific technologies have the potential to greatly enhance field studies to inform conservation and management decisions for wild sturgeon. One such technology involves determination of the sex of sturgeon starting at a young age. Specifically, the ability to understand demography and life history parameters such as age and size at sexual maturation will permit better understanding of stock structure and conservation status for species of concern such as Gulf, Atlantic, and shortnose sturgeon. To date, approximately 500 Gulf sturgeon serum samples, collected from fish in the Suwannee River, Florida, have been analyzed for sex identification using a proprietary biomarker. Results suggest or support novel perspectives regarding Gulf sturgeon life history, demography, and reproductive biology which have implications for the conservation status and recovery of the species. A newly funded study of Atlantic and shortnose sturgeon may create similar insights for those species.