

COLD BLOOD IN WARMING WATERS: CONSERVING GULF STURGEON USING PRECIPITATION AND GROUNDWATER MODELS

Bethany M. Gaffey¹ and ***Andrew K. Carlson***²

¹Florida Cooperative Fish and Wildlife Research Unit, School of Forest, Fisheries, and Geomatics Sciences, University of Florida, Gainesville, FL USA

²U.S. Geological Survey, Florida Cooperative Fish and Wildlife Research Unit, School of Forest, Fisheries, and Geomatics Sciences, University of Florida, Gainesville, FL USA

Understanding the impacts of changing climate and weather patterns on cold-blooded species is crucial for informing and advancing conservation efforts. Lotic ecosystems are particularly important to study because they link land and sea, and they contain thermal refuge habitats for species affected by ongoing changes in water temperature and precipitation regimes. As a Federally threatened anadromous species, Gulf Sturgeon (*Acipenser oxyrinchus desotoi*) are considered “canaries in the coal mine” of rivers, estuaries, and nearshore habitats within the Gulf of Mexico. Documenting, modeling, and predicting the availability and distribution of suitable thermal habitats for Gulf Sturgeon across their life history will not only inform conservation efforts for this species, but also protect key environments for many other species. Current data and models of Gulf Sturgeon habitat use do not address linkages between air temperature, water temperature, precipitation, and groundwater dynamics as variables for predicting thermal habitat suitability in a changing climate. In this talk, we will discuss ongoing thermal habitat research in the Choctawhatchee River and describe insights for developing common metrics for assessing landscape-level threats to Gulf Sturgeon populations, with emphasis on the understudied juvenile life stage.

PRESENTER BIO: Bethany graduated from UF in 2017 with a B.S. in Interdisciplinary Studies and Mass Communication. Now an M.S. student in SFFGS, Bethany is simultaneously working in aquatic sciences and communications. By studying the art of science and the science of art, Bethany is pursuing a career in Science Communication.