

ESTABLISHMENT AND USE OF NATURE COAST SPRINGS SYSTEMS BY COMMON SNOOK (*CENTROPOMUS UNDECIMALIS*)

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The Weeki Wachee River, Chassahowitzka River, Homosassa River, and Kings Bay/Crystal River Systems are located on Florida's Nature Coast and serve as winter thermal refugia for fish and wildlife. These springs systems face numerous complex threats, including climate change. Recent distribution shifts of species have occurred in the Gulf of Mexico as a result of rising temperatures, including the northward range expansion of Common Snook (*Centropomus undecimalis*). Because of this, we evaluated whether Common Snook are utilizing the Nature Coast springs systems and if their abundance and distribution varied temporally, seasonally, and spatially.

Almost 3,700 Common Snook were captured in the springs systems from Winter 2013 through Winter 2019. Only 21 fish were captured in the Weeki Wachee River System, while almost 1,800 Common Snook were captured in the Kings Bay/Crystal River System. Temporal trends suggested increasing Common Snook across years for the Kings Bay/Crystal River System. In the Homosassa River System, the average number of fish caught during the winter was higher than the average summer catch. Temporal and spatial patterns in the juvenile and adult Common Snook catch were found in all Nature Coast springs systems, and low numbers of young-of-the-year fish were found in two systems.

The results of our investigation demonstrate the establishment of year-round populations of Common Snook in the Nature Coast springs systems and their importance as winter thermal refugia. The continued availability of winter thermal refugia in these springs systems is a critical factor affecting the sustainability of Common Snook populations along the Nature Coast. Research is needed to obtain detailed information regarding the movement, behavior, and habitat use of Common Snook in the Nature Coast springs systems, as well as the effects of their establishment on other fish species.

PRESENTER BIO: Jordan David Miller is, foremost, a lifelong resident of the Nature Coast. With a Masters-level education, and as an Environmental Scientist, he works to design and implement meaningful environmental studies in the region's many freshwater systems. He is a naturalist, a well-traveled adventurer, and a proud father.