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Special Equipment: Projector, projection screen, microphone, board for poster viewing

Space: Presentation space

Time of Day: Any

Population Genetics of Bowfins (*Amiidae*) across the Laurentian Great Lakes

The Bowfin, *Amia calva* (Linnaeus, 1766), is a common Eastern North American fish and the last extant member of the order Amiiformes. By 1870, thirteen species of bowfin had been described across North America. These species included *Amia ocellicauda* from Georgian Bay in Lake Huron (Todd, in Richardson, 1836), *A. occidentalis* from St. Mary's River in Lake Huron (Dekay, 1842), *A. canina* from Lake Erie (Cuvier and Valenciennes, 1847) and the first-described bowfin, *A. calva*, from Charleston, South Carolina. This diversity was condensed down to a single species, *A. calva*, by Jordan and Evermann in 1896. Since then, this monotypy hypothesis has been generally accepted, but never scientifically validated. In 2014, this hypothesis was challenged when specimens from the Savannah River and Lake Ontario basins were compared morphometrically (Clifford, 2014). Results from this study concluded that there were in fact 2 distinct species. Fish from the Savannah River basin should be referred to as *Amia calva* and those from Lake Ontario as *Amia species incertae sedis*. Our study continues the testing of the monotypy hypothesis using molecular biology. Analysis of the barcoding gene Cytochrome Oxidase I is being used to phylogenetically compare specimens collected from Lake Huron, Lake Erie, and the Carolinas. Sanger sequencing of this gene has allowed us to properly align and genetically classify fish from each locality. As a result, we can then begin to delineate potential species and improve taxonomic classification. Data collected from our study is also being used to accompany morphometric data and eventually shed light on a subject which has been untouched for almost 120 years.

Key Words: Bowfin Phylogenetics, *Amiiformes*, Bowfin Taxonomy, Amiide population genetics, Laurentian Great Lakes,