

# **Distribution and abundance of the bluemask darter (*Etheostoma akatulo*) in the Collins River during summer 2018 (with an introduction to endangered species)**

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*Etheostoma akatulo* is a federally protected stream fish endemic to the Caney Fork River (CFR) system in Tennessee. The species inhabits several CFR streams, with the Collins River representing the most robust population. We studied the distribution and abundance of *E. akatulo* in relation to stream habitat in the Collins River to inform reintroduction efforts in the Calfkiller River, another CFR stream where the species has been extirpated. The Collins River was divided into 46 segments using GIS and 21 of those segments were sampled by snorkeling during July-September 2018. Two 160-m<sup>2</sup> plots per segment were selected using criteria related to stream habitat features. A total of 144 *E. akatulo* individuals (124 adults and 20 juveniles) were observed during our survey, with 64% of plots being occupied by at least one individual. According to a Fisher's Exact Analysis, adults and juveniles have the same habitat requirements with the exception of temperature. We also observed the species further downstream in the Collins River than previously documented. Our results suggest that *E. akatulo* continues to maintain a strong presence in the Collins River. Next steps include identifying segments of the Calfkiller River that contain habitat features most likely to support reintroduction of the species.

I will set the stage for my study by giving an introduction to endangered species and the Endangered Species Act, and then will describe my work involving these tiny federally listed endangered fish commonly called Bluemask Darters.