ECOLOGY AND ENVIRONMENTAL SCIENCE

Poster presentation

Relationship between fish biomass and eDNA in central Kentucky streams.

RAMON A. GUIVAS, KYLE T. LAUFENBURGER, BEN F. BRAMMELL

Department of Natural Sciences, Asbury University, Wilmore, KY 40390.

**Abstract**

Estimating fish abundance holds great importance for freshwater ecology and fisheries management, but current techniques can be expensive, time consuming, and potentially harmful. Environmental DNA (eDNA) has proven an effective and efficient technique for presence/absence detection of freshwater vertebrates. Additionally, recent studies report correlations between total fish biomass and eDNA levels although few studies have examined this relationship in small, lotic systems. The present study examines the relationship between biomass and eDNA concentrations of smallmouth bass (*Micropterus* *dolomieu*) and greenside darters (*Etheostoma* *blennioides*) in central Kentucky streams. Population estimates were completed in the lower Kentucky River watershed in streams of varying size through the utilization of electrofishing and three pass depletions. eDNA samples were collected concomitantly, and DNA levels were quantified using primer/probe assays and real-time PCR. This data should be useful in determining the effectiveness of eDNA in lotic systems.