Title: Hide and sneak: mapping distributions of elusive mustelids in Ohio

Authors: Tanner Hammond[1*], Madison Cole[1*], Chase Hetrick[1], Nathan Byer[2], Jonathon Cepek[2], Catherine Dennison[3], B. Kohli[1], Eileen Wyza[3], Marketa Zimova[1]

* Presenting authors

Affiliations:
[1] Department of Biological Sciences, Ohio University, 57 Oxbow Trail Irvine 423, Athens, OH USA 45701
[2] Cleveland Metroparks, Cleveland Metroparks, Parma, OH, 44134
[3] Ohio Division of Wildlife, 2045 Morse Road G-3, Columbus, OH USA 43229

Abstract:

North American weasels (subfamily *Mustilinidae*) are elusive, understudied carnivores that may be undergoing population declines and distribution shifts across the midwestern United States. The factors driving these changes are not fully understood, but are likely a combination of climatic shifts and land use changes. However, limited historical records and a lack of focused research has made it difficult to assess distributional changes over time across regional spatial scales. In this study, we characterize the current distribution of three historically understudied species of weasels across the state of Ohio (*Mustela nivalis*, *Neogale frenata,* and *Mustela richardsonii*) using integrated species distribution models. This modeling approach allows us to leverage heterogeneous datasets including images from remote camera traps, recent museum specimens, field studies, and community sciences records. With a better understanding of potential distributions for these three species, we aim to better understand the environmental and climatic factors impacting the species' distributions and increase the efficacy of future survey efforts within the state.