

Public Abstract

First Name:Tabitha

Middle Name:Marie

Last Name:Finch

Adviser's First Name:Lori

Adviser's Last Name:Eggert

Co-Adviser's First Name:

Co-Adviser's Last Name:

Graduation Term:FS 2013

Department:Biological Sciences

Degree:PhD

Title:A Noninvasive Approach to Understanding Adaptation, Crop Raiding Behavior, and the Fecal Microbiota of the African Elephant

My dissertation focused on using noninvasive dung samples to study the ecology, evolution and behavior of the African elephant. First, I looked for genetic adaptations between the two African elephant species, the forest and savanna elephants, and found support for adaptations relating to the metabolic activity of these two species. In my second chapter I researched physiological factors that influence crop raiding behavior, which occurs when elephants enter farms and either consume or destroy the crops. My study is the first to confirm, using laboratory methods, that female elephants crop raid. In addition, my results suggest that crop raiders have fewer parasites than non-crop raiders and that there may be an evolutionary benefit to this behavior. Lastly, I compared the gut microbial communities of forest and savanna elephants and found significant differences in the types of bacteria found between the two species that might be related to their respective ecological and biological requirements. Overall, my research offers insight into important questions on a free-ranging wildlife species of conservation concern.