

Using vocal communication to explore the cognitive abilities of African elephants

Large-brained species are capable of processing complex social and ecological information that is central to reproductive fitness and survival. While a number of studies have focussed upon the value of acquired knowledge in the social realm, much less is known about how advanced cognitive abilities shape an individual's understanding of the environment in which it lives. Moreover, in long-lived social species information is accumulated over lifespans measured in decades, with ecological knowledge predicted to vary between individuals on the basis of age and experience. However, the challenge facing scientists has been how to test these predictions in wild, free-ranging populations. In this talk, I will discuss two field experiments that we conducted in Amboseli National Park, Kenya using playbacks of vocal communication (lion roars and human voices) to explore ecological knowledge handling and decision-making in family groups of African elephants. The results from these two studies are explored in terms of the biological characteristics of elephants and the adaptive advantages that drive advanced cognitive abilities in this species, as well as how these compare across other large-brained animals.