

Abstract

Grevy's zebra (*Equus grevyi*) populations have declined from 15,000 in the 1970s to less than 2,000 today. Their last stronghold is the savannahs of Kenya's Laikipia-Samburu ecosystem. This landscape is a mosaic of protected areas, commercial cattle ranches and community held rangelands. The main hypothesized causes of Grevy's zebra population declines are lion predation and competition with livestock for water and grass. We aim to examine how variation in lion density and human land use intensity drives Grevy's zebra movements and population dynamics. We will study how individual movements and population vital rates vary depending on lion and livestock density. We will repeatedly survey each study property, recording zebra sightings and uniquely identify individuals based on their stripes. We will analyze the sighting histories of individuals in a capture-recapture framework, to provide robust estimates of survival and birth rates. Using locations of individual observations, we will track zebra movements. We have recruited local community members as "scouts" in our data gathering efforts and we further involve stakeholders by discussing our research in community meetings. We intend these programs to encourage friendly attitudes towards Grevy's zebra while also building local capacity to monitor wildlife. Our results will be essential for Grevy's zebra conservation.