

## Exploring the Influence of Farmers' Attitudes and Livestock Husbandry Practices on Human-lion Interactions Around Meru National Park (MNP), Kenya

Effective human-carnivore conflict mitigation requires exhaustive understanding of the complex drivers of conflict and their relative importance. We conducted 120 semi-structured interviews from members of 5 different ethnic groups living across 9 different villages spread around the semi-fenced Meru National Park, Kenya. We fit a Bayesian Linear Mixed Effects regression model with an index of measuring attitude as the outcome variable to assess different factors influencing attitude towards lions around the MCA. Total number of livestock owned (as an index of wealth status), reported livestock depredated from 2008-2018, distance to park boundary, height of boma fence, carnivore knowledge and education level of respondents as well as their respective interactions were considered as fixed effects. Respondent's ethnic group was considered as a random effect. We applied a ground-up approach to modeling, whereby we combined Exploratory Data Analysis (EDA) with iterative modeling to guide our modeling process. We first built a simple linear regression model and built up based on how the model performed. 95% of farmers perceived a problem with carnivores, and respondents viewed Lions (*Panthera leo*), Spotted Hyenas (*Crocuta crocuta*) and Leopards (*Panthera pardus*) as significantly more problematic than other species due to the threats they posed to livestock and humans. Despite this, only 15% of people admitted to having killed any large carnivores. Depredation was widespread, having affected 95% of households, and was also the most abundant form of stock loss – survey data revealed 61.4% of stock were predated, compared to 20.2% lost to disease and 18.2% to theft. An increase in livestock depredation significantly predicted negative attitudes towards carnivores as the most important factor. Other socio-economic factors such as the respondent's ethnic group, age, education/literacy level, knowledge on carnivores, and distance from park boundary also had some influence on how problematic the local people viewed carnivores to be, albeit not significantly. The study raises the complexity of human-lion interactions in a multicultural context, whereby perceived problems could vary or potentially be exacerbated in relation to cultural differences. Furthermore, livestock husbandry practices have also been recorded to be useful in mitigating human-lion conflict in the area.