
Grevy's zebra (*Equus grevyi*) populations declined dramatically in the last decades of the 20th century. Though now stabilising, there has been an estimated 50-68% drop in numbers over the past 18 years (IUCN, 2012). While there are many threats facing the species, the role of parasite burdens in this decline is poorly understood. Lewa Wildlife Conservancy provides *ex situ* or marginal (transition zone to common zebra dominated habitats) habitat for a small but critical population of Grevy's zebra which, in one area, shares pasture with a small herd of horses used largely for tourist safaris. The most significant gastrointestinal equid parasites, the strongyles, are recognised as having low host specificity and this study sought to conduct a preliminary investigation into whether this pattern of co-grazing affects the parasite burdens of Grevy’s zebra, horses and plains zebra who also share the pasture. Faecal egg counts were used to estimate parasite burdens, assessed using the widely accepted modified McMasters method.

With the kind support of funders including the British Veterinary Association, data was collected on the parasite egg output of domestic horses, plains zebra and Grevy's zebra sharing the same pasture. Following a general association between egg output and parasite burden observed in previous studies (Mwamba et al., 2004), faecal egg counts were considered an approximation of the individual’s parasite population.

All zebras sampled from both Grevy’s and plains zebra populations were found to have significant parasite egg counts (greater than 500 eggs per gram), though there was no
evidence of associated overt clinical signs such as reduced body condition or loose faeces. Horse samples were found to have dramatically lower faecal egg counts, likely due to the recent administration of anthelmintic treatments.

This study does not clearly demonstrate a statistically significant effect of a domestic horse herd sharing pasture with zebra. However, a higher rate of parasite egg output is detectable among the co-grazing Grevy’s zebra compared to those grazing more remote areas, particularly among juveniles. This pattern may indicate that Grevy’s zebra bear a heavier parasite burden when sharing pasture with domestic horses while the opposite may be the case for plains zebra. By contrast, plains zebra were found to have lower egg counts in areas of shared pasture compared to a distant site. These differences, too, were not statistically significant, possibly in part due to a small sample size.

This pilot study has effectively highlighted a number of areas which would benefit from further investigation. Among these are accurate identification of parasite species present (such as through the use of molecular technology), clinical implications of parasite burdens, assessing pasture contamination, comparison to external zebra populations and interactions with other grazing herbivores. A larger sample size may present a more statistically powerful assessment of the situation and there remains a justifiable need for additional study in the field.

It is hoped that such research will further aid in the conservation of the endangered Grevy’s zebra and improve the welfare of both domestic horses and zebra within Lewa Wildlife Conservancy.

References: