PhD Dissertation
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ABSTRACT

The hoary fox (*Lycalopex vetulus*), crab-eating fox (*Cerdocyon thous*), and maned wolf (*Chrysocyon brachyurus*), are three canid species that are sympatric in the Brazilian Cerrado. In some areas in central Brazil, more than 80% of the Cerrado ecosystem has been converted into agricultural fields and pasturelands over the last 40 years. Wildlife species living in such a human-dominated landscape are exposed to several factors that can have a detrimental effect on their survival. The overall aim of this this research was to use the hoary fox as a model species to understand how canid species are coping, both behaviorally and physiologically, to a severely human-altered environment. More specifically, this dissertation: 1) investigated patterns in foraging, vigilance, and competition within a human-dominated landscape; 2) assessed the broader physiological condition of the study population through validating a fecal glucocorticoid (corticosterone) and thyroid (T3) enzyme immunoassays for this species; and 3) determined the physiological response to specific human disturbance variables by combining fecal hormone analyses with Geographical Information System (GIS). I also measured local attitudes, knowledge, and small livestock (domestic fowl) management practices to identify sources for human-canid conflicts. The results from this study revealed that hoary foxes were vigilant of their environment, responding to both natural and human-derived stimuli, and exchanged foraging opportunities for vigilance. Fecal enzyme immunoassays for the hoary fox were validated. Findings show that fecal thyroid metabolite output experience seasonal and reproductive state variation associated with food availability and foraging opportunities. Fecal glucocorticoid output, on the other hand, did not vary throughout the study period regardless of sex, season, reproductive state, and thyroid levels. The home range of Cerrado canids overlapped with ranch houses, railroads, and roads; however, glucocorticoid metabolite levels were not associated with proximity to these anthropogenic disturbance factors. Local ranchers' knowledge of Cerrado canid species was limited and predation of domestic fowl was a strong predictor of attitudes. Despite these predation events, the majority of the respondents agreed that Cerrado canids should be protected. An educational initiative focused on increasing local knowledge about wildlife and suggesting livestock management improvements will be fundamental in any attempt to reduce conflicts with Cerrado canids. Further, the resulting data will be used in establishing the most appropriate management strategies to ensure sustainable conservation of these species.