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Biodiversity Conservation in Zimbabwe

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Guest Editors for this issue

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Introduction to the Special Issue: Biodiversity Conservation in Zimbabwe

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This special issue of *Annals of Social and Behavioral Sciences* contains seven articles. These articles focus on diverse issues concerning biodiversity and wildlife conservation of the Zimbabwean savanna ecosystem. Biodiversity is important to human livelihoods (Persha *et al*., 2011), and in particular, protected areas play an important role in conserving such biodiversity and also sustaining livelihoods (Olff *et al*., 2002, Naughton-Treves *et al*., 2005), especially in tropical savanna ecosystems. Although savanna ecosystems harbor high diversity of large mammals (Prins and Olff, 1998, Du Toit and Cumming, 1999), there are increasing pressures, e.g., illegal resource harvesting, climate change, and habitat encroachment on these ecosystems which have implications on biodiversity conservation. The articles in this special issue bring together original research findings on behavioural animal ecology, human-wildlife interactions, conservation relationships, remote sensing applications in biodiversity conservation and resource utilisation. The studies reported were conducted by researchers from Zimbabwe and South Africa. Below are the brief accounts of articles in the current issue.

The article by Kupika *et al*. assesses livestock depredation by large carnivores using a mixed- methods approach of rural communities in resettlement areas adjacent to hunting areas. This study highlights the importance of barriers (e.g., fences) in managing large carnivores in human-dominated landscapes as a way of mitigating human-carnivore conflicts. Mabika *et al*. presents a detailed analysis of elephant trophy quality trends in a hunting area. This study provides important findings which have implications for the adaptive management systems for elephant utilisation and conservation at the ecosystem level and beyond. Muboko *et al*. documents the extent and nature of human-elephant (*Loxodonta africana*) interactions in rural communities living adjacent to a large protected area. This study shows the importance of integrated land-use planning as a way of ensuring harmonious human and elephant co-existence in human-dominated ecosystems. Muposhi *et al*. assesses the vigilance of a large herbivore species in an urban protected area using systematic scan sampling approach. The study shows the differential influence of human presence on animal behaviour related to animal herd composition.

Mutanga *et al*. provides a detailed assessment of conservation relationship from the local community perspective's and give insights on the important factors that need to be given attention as a way of promoting wildlife conservation and livelihoods in savanna ecosystems. Mutunga and Madhlamoto assesses the distribution and social organisation of nyala (*Tragelaphus angasii*) in a large semi-arid savanna protected area and the study highlights interesting insights on herd composition, behavioural variations in sightings and also the species distribution across habitats. Nyatondo *et al*. assesses inter- and intra-annual variation in vegetation at selected sites in a savanna protected area using the Normalized

Difference Vegetation Index (NDVI) profiles derived from remote sensing technology. The study shows the applicability and importance of remote sensing as a spatial technology in detecting temporal variations in habitat type and quality between seasons and years in savanna protected areas.

Although the seven articles provides detailed and interesting perspectives on biodiversity conservation in Zimbabwe, there still exist some research gaps which need to be filled. Thus, future research should focus on a number of areas. First, a detailed analysis is required on the new conservation initiatives and how these influence biodiversity conservation, e.g., transboundary conservation, conservation partnerships and funding models and how to progress community-based wildlife conservation (Hanks and Myburgh, 2015, Harrison *et al*., 2015). Second, the impacts of emerging threats (e.g., climate change, illegal hunting, and invasive species) on biodiversity and ecosystem services need further assessment (Beale *et al*., 2013, Ford *et al*., 2016). Third, biodiversity conservation is influenced by both internal and external pressures and hence, an analysis of how biodiversity is framed and also how local conservation is impacted by forces (e.g., hunting and non-hunting groups, global politics) at various levels is essential given the socio- economic and political nature related to biodiversity conservation (Giller *et al*., 2008, Gandiwa *et al*., 2014). Thus, innovative models of wildlife conservation are required taking into cognisance the drive towards non-consumptive wildlife use and global decline in some wildlife species due to rising levels of illegal resource harvesting and trade.

Further, several other research questions exist that need to be addressed as a way of enhancing biodiversity conservation in savanna ecosystems. For instance, to what extent does local community involvement in wildlife conservation contribute towards reduction in illegal resource extraction in adjacent protected areas? What are the drivers of cross-border wildlife crime and trade in wildlife products? What new technologies can be used to further enhance biodiversity conservation in savanna ecosystems? Given these questions and many others, it is increasingly becoming clear that more inter- and multi-disciplinary research is needed when addressing biodiversity conservation related issues in savanna ecosystems.

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