

## **Global Perspectives Grant Report**

### **Summer 2022**

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### **Large grazer and carnivore ecology across open landscapes**

**Amount Spent: \$3043**

#### **Non technical summary:**

This project seeks to establish a durable connection between University of Wyoming's Rangeland Ecology and Management program and managed wildlands around the world to ultimately better understand how free-range livestock, native herbivore populations, and large carnivore populations interact. Both Wyoming and Zambia possess large expanses of public and private lands used for livestock production that also hold diverse communities of native herbivores and carnivores. This project identified key Zambian collaborators to engage in future teaching and research activities, shared new data collection and organization protocols to build data sets needed to test theories explaining how large herbivore and carnivore systems work over a range of land uses, and identified two University of Zambia graduates for potential recruitment to the M.S. in Rangeland Ecology and Management Program.

## **Main Results**

Beginning in April 2022, DC began coordinating research and collaboration activities with partner agency the Zambian Carnivore Programme including weekly zoom meetings to schedule activities and develop workshop materials. On May 11, 2022, DC travelled to the headquarters of the Zambian Carnivore Programme (ZCP) in Mfuwe, Zambia. I immediately began working primarily with UW graduate, Henry Mwape (MS, REWM), who is now Assistant Manager and Senior Ecologist for the Zambian Carnivore Programme in Zambia. Activities and accomplishments achieved at while at ZCP included:

1. Discussing and integrating online data collection and management platforms (SMART, ESRI, ACCESS, and Cybertracker) with ZCP Deputy Director Terry Brnic to facilitate organization, analysis, and dissemination of environmental data going back to 2009.
2. Identifying research priorities and monitoring protocols with former graduate student and Luangwa Project Manager, Thandiwe Mweetwa who is monitoring livestock/carnivore conflicts in eastern Zambia.
3. Deployment and refinement of a tablet based data entry and archival system for logging wild and domestic herbivore locations in the Luangwa Valley Ecosystem.
4. Discussing proposal development, undergraduate recruitment, and graduate student recruitment with Dr. Matt Becker, CEO of ZCP. Additionally, meeting with the Rachel McRobb, founder and CEO of Conservation South Luangwa to identify synergistic activities.
5. Delivery of 75 VHF and GPS carnivore and herbivore telemetry collars, data entry tablets, and additional field equipment to collect the necessary data to achieve research goals.
6. Graduate recruitment discussions with Dennis Zimba and Bridget Mayani who are interested in graduate degrees at UW.
7. Field training and computer training with T. Mweetwa, H. Mwape, B Mayani, B Beza, D Zimba, (and additional ZCP seasonal personnel) and G. Banda (Zambian Department of National Parks and Wildlife).
8. Development of data management and workflow protocols to facilitate modelling and analysis of large carnivore and large herbivore locations with H. Mwape, M. Becker, B. Goodheart, and J. Merkle.

## **Future Plans and Potential Impacts**

D. Christianson is currently developing proposals to continue this research with the Zambian Carnivore Programme. D. Christianson intends to recruit at least one Zambian graduate student in the next year. D. Christianson is currently working on two research manuscripts that developed during this project.



Team meeting to discuss current monitoring protocols for wildlife and human/livestock conflicts at  
Zambian Carnivore Programme headquarters, Mfuwe, Zambia (14 May 2022).



Heading into the field with ZCP ecologist, Benny Biza, to review data collection protocols for studying herbivore-carnivore-community interactions, new Mfuwe, Zambia (14 May 2022).



Benny Biza, Ecologist for the Zambian Carnivore Programme, collecting identification photos for one of the lion prides in the Luangwa Valley Ecosystem (14 May 2022)



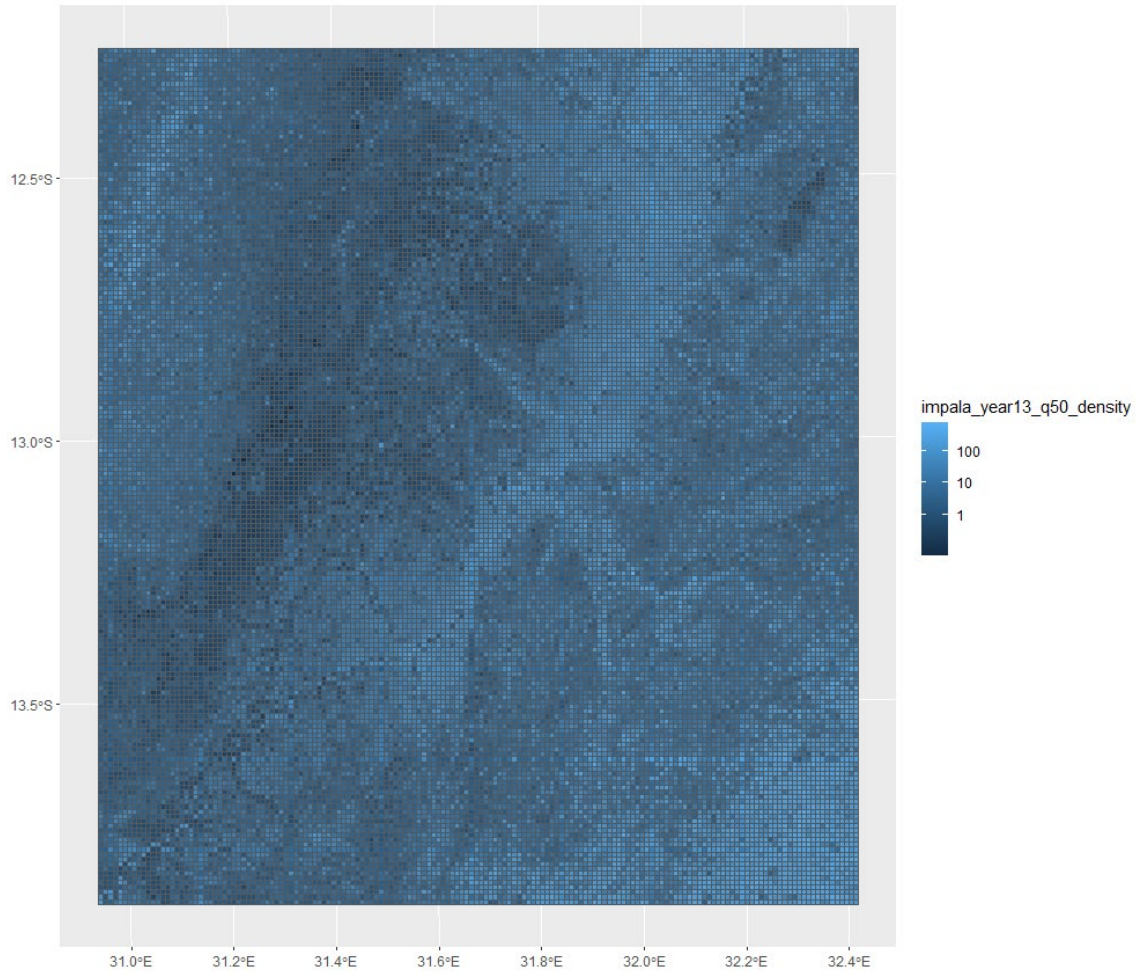
Field testing new tablet based herbivore observation protocol using CyberTracker database with the  
Zambian Carnivore Programme – Luangwa Team in South Luangwa National Park, Mfuwe, Zambia (17  
May 2022)



Zambian Carnivore Programme – Luangwa Team and D. Christianson during debrief after field testing of CyberTracker observation protocol for distance sampling of large herbivores, near South Luangwa National Park, Mfuwe, Zambia (21 May 2022).



Human wildlife human conflict meeting (during brief interruption) with former graduate student T. Mweetwa and prospective graduate student D. Zimba at the Zambian Carnivore Programme headquarters, Mfuwe, Zambia (16 May 2022).



Test raster produced with Zambian Carnivore Program to develop predictive models of herbivore density across a 3000 km<sup>2</sup> area in eastern Zambia.