



# DSAIL-Porini: Annotated camera trap images of wildlife species from a conservancy in Kenya

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# Introduction

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- Camera traps record accurate data in a non-invasive way
- These data can be reviewed/used by other researchers.
- Census, Sex distribution, feeding habits.
- Replaced traditional techniques - release & capture
- Deployed 4 camera traps for 7 months; from June 2021 to December 2021



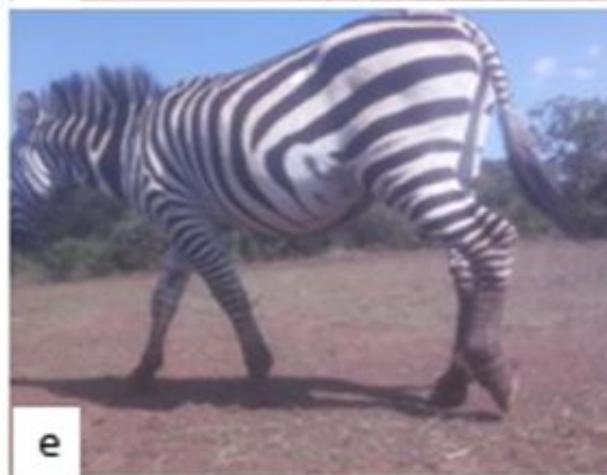
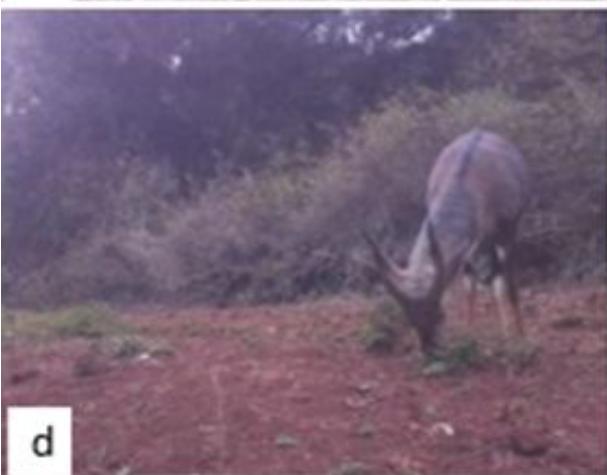
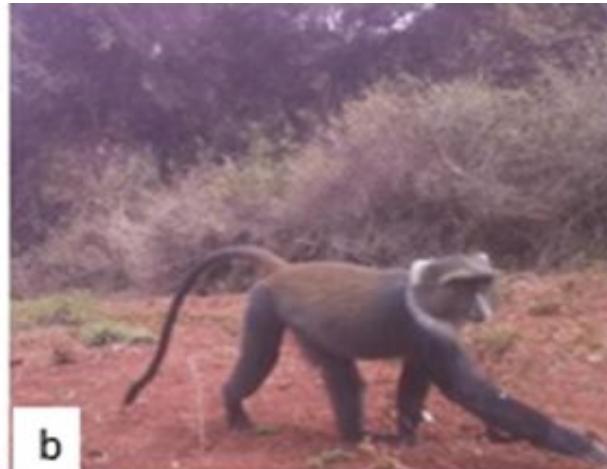
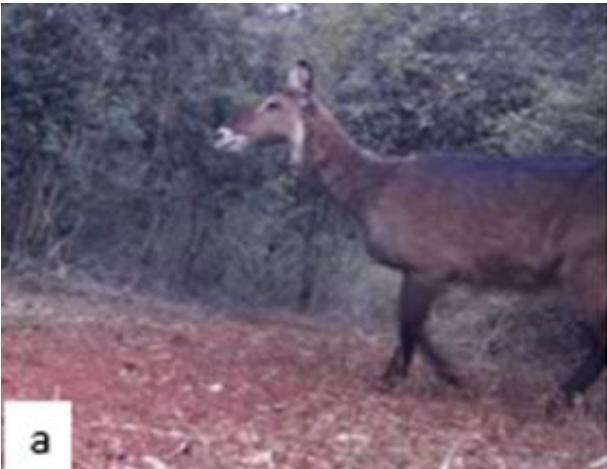
# DSAIL-Porini Dataset

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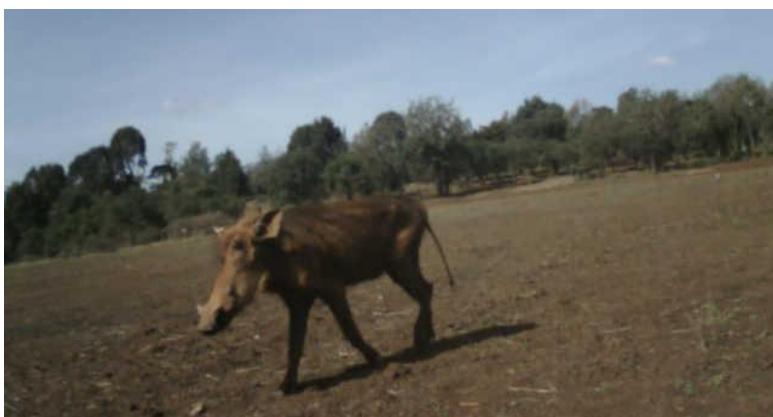
- 8524 annotated images of animals
- The dataset has 6 categories;
  - Impala
  - Common warthog
  - Burchell's zebra
  - Sykes' monkey
  - Defassa waterbuck
  - Bushbuck.
- 8254 images from the Raspberry Pi 2 and 610 from the Pi zero
- 325 images from the Open mv
- All the images are in JPG format



# Species in the conservancy



# Value of the Data



- Train machine learning models for classification and Object detection
- Train and test image-based census algorithms as it includes animal counts,
- Understand animal behaviour
- Estimate the animal population growth with time

# Deployment

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- We painted the camera traps green to camouflage them.
- We got more close ups of animals like the waterbuck.



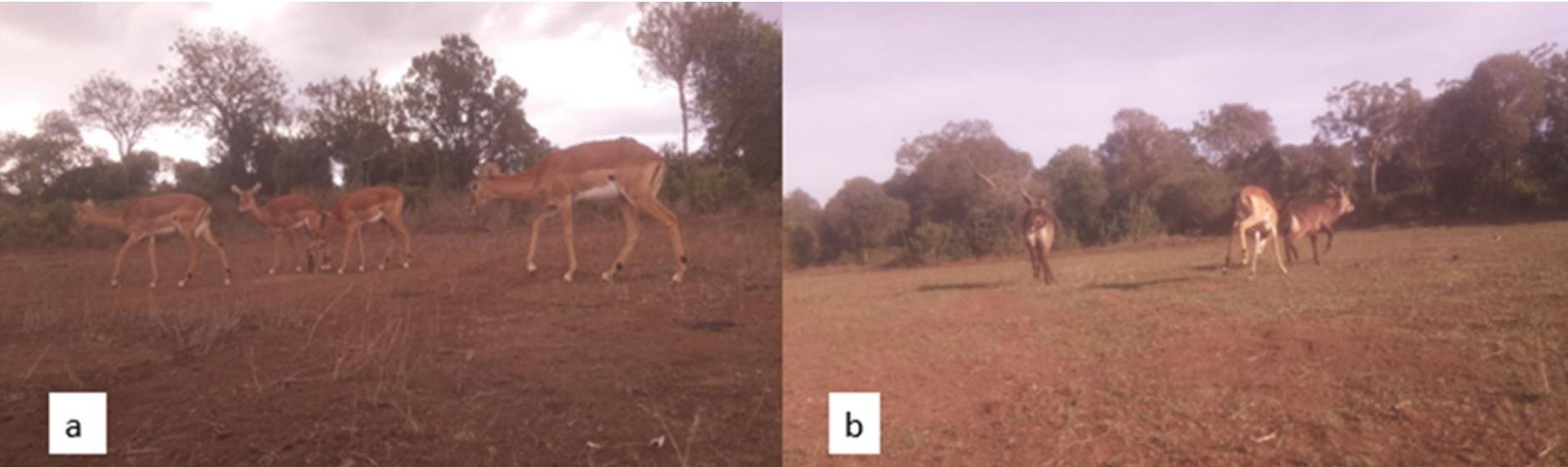
# Camera trap placement

The decision to place the camera traps in these locations was based on;

1. Locations where mineral supplements were provided for the animals
2. Trails that led to water holes in the conservancy and areas near the waterholes
3. Any other place where water would be provided by the wardens.



# Data Annotation



Filename	Device	Species	Count	Sex	Latitude	Longitude
2021-10-24-16-18-18.jpg	Raspberry Pi 2	IMPALA	4	MALE,FEMALE,FE MALE,FEMALE	-0.390381	36.962386
2021-11-23-07-48-43.jpg	Raspberry Pi 2	WATERBUCK, IMPALA	2,1	MALE,MALE,MALE	-0.390224	36.962036

# Challenges during data annotation

- Lens flare: This degraded the quality of some images
- Overlapping animals in an image
- The body of the animal being in the image partially
- The process was time-consuming
- At times, the images were captured when the animals were too far away. It was hard to tell which animals were captured especially when the grass had grown too long.
- Telling the sex of animals like the zebras, warthogs and monkeys

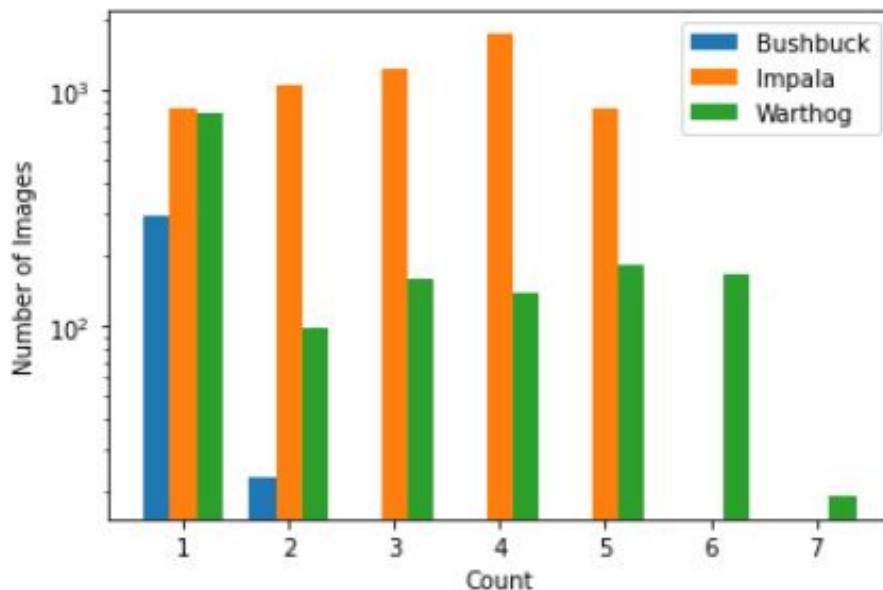


Lens flare

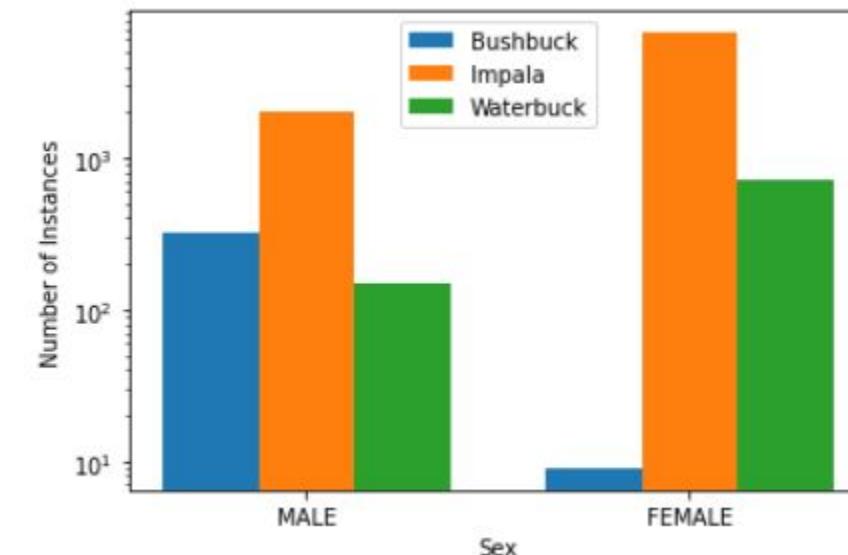


# Data analysis

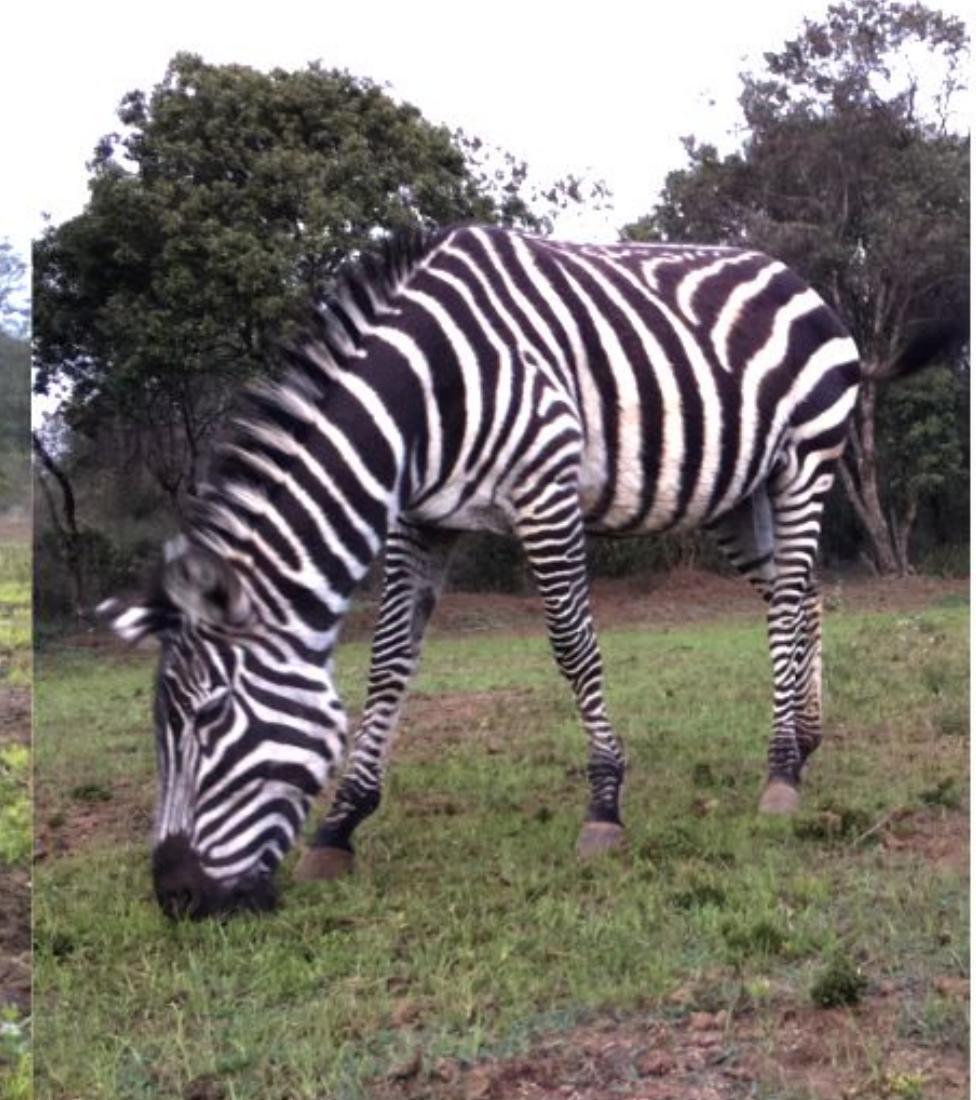
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Published: 18 March 2022 | Version 6 | DOI: 10.17632/6mhrhn7rxc.6

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## THANK YOU