



**WILDLIFE  
RESEARCH  
& TRAINING  
INSTITUTE**  
*Discover Beyond*

# THE **IMPACTS** OF THE **CURRENT DROUGHT** ON **WILDLIFE** IN KENYA

29TH SEPTEMBER 2022







Written and Edited By (Authors): Stephen Mwiu<sup>1</sup>, Dr. Shadrack Ngene<sup>1</sup>, Dr. Patrick Omondi<sup>1</sup>, Dr. David Ndeereh<sup>1</sup>, Fredrick Lala<sup>2</sup>, Daniel Muteti<sup>3</sup>, Cedric Khyale<sup>1</sup>, Geoffrey Bundotich<sup>4</sup>, Dr. Fred Omengo<sup>5</sup> and Peter Maina<sup>1</sup>

<sup>1</sup>Wildlife Research and Training Institute, Headquarters, P.O. Box 842-20117, Naivasha, Kenya

<sup>2</sup>Wildlife Research and Training Institute, Tsavo Conservation Area, P.O. Box 14, Voi, Kenya

<sup>3</sup>Wildlife Research and Training Institute, Southern Conservation Area, P.O. Box 42076-00100, Nairobi, Kenya

<sup>4</sup>Wildlife Research and Training Institute, Mountain Conservation Area, P.O. Box 22-10109, Nyeri, Kenya

<sup>5</sup>Wildlife Research and Training Institute, Eastern Conservation Area, P.O. Box 11-60600, Maua, Kenya

**Concept and Design by:** Boniface Gor, [www.digimatt.co.ke](http://www.digimatt.co.ke) @digimattsol ©

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include: Grevy's Zebra Trust, Tsavo Trust, Sheldrick's Wildlife Trust, Northern Rangeland Trust, Save the Elephants and the Hilora Conservation Programme. Your contribution made provision of information in this report possible. We also thank the Wildlife Research Field Research Scientists for collating the wildlife mortality data and sharing with WRTI Team at the Headquarters in Naivasha. Your hard work resulted to sharing of the data contained in this report, without which this report would not have been a reality.



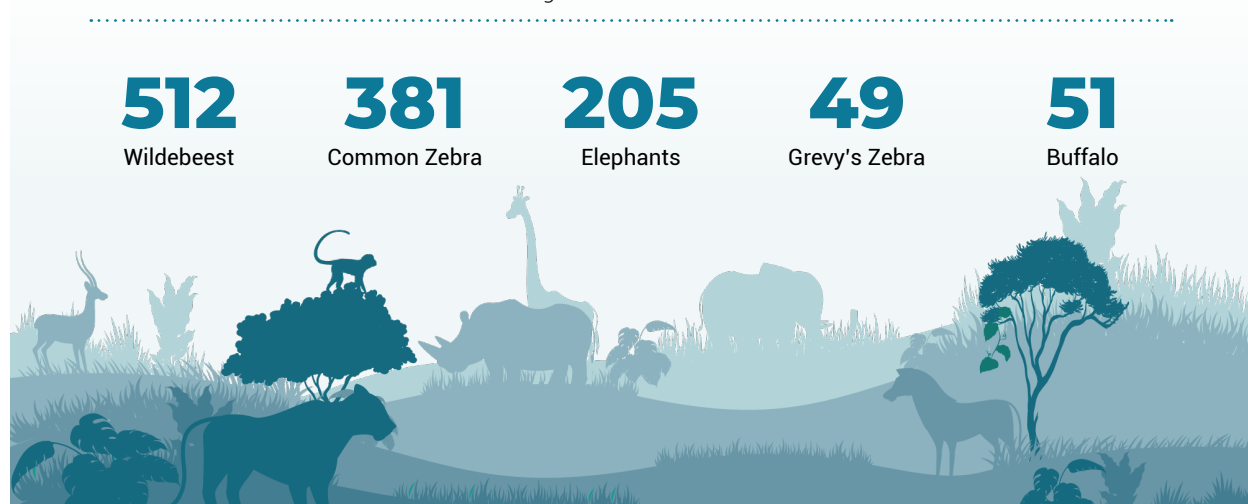
# Abstract

Our study examined the effects of the current drought on wildlife in Kenya's protected areas and surrounding areas. Kenya has experienced below average rainfall in the last two rain seasons (October –December 2021 and March – May 2022). In effort to monitor the Impacts of current drought on wildlife, mortality data was collected by Kenya Wildlife Service Rangers, Community Scouts and Research Teams from Wildlife Research and Training Institute, Non-Governmental Organizations operating in the eight Conservation Areas as defined by Kenya Wildlife Service. We confirmed drought related mortalities for species such as Wildebeest (512), Common Zebra (381), elephants (205), Grevy's zebra (49) and buffalo (51) among others. The most affected ecosystems include Amboseli, Tsavo and Laikipia-Samburu. The Amboseli and Laikipia-Samburu ecosystems are worst affected by the drought having recorded more than 70 elephants' deaths. The Grevy's zebra population, which is restricted to the Laikipia-Samburu landscapes has so far lost 49 Grevy's zebra even with the intervention of a feeding programme which is currently ongoing. The rhino population remains not seriously affected by the drought as only one rhino aged about 2 years having died in Ngulia rhino sanctuary, Tsavo West National Park. The drought continues to worsen as days' pass as evidenced by the upwards trend of wildlife mortality between February and October 2022. The continued worsening of the drought condition could affect more rhinos in overstocked rhino sanctuaries (e.g., Ngulia Rhino Sanctuary, Tsavo West National Park among others).

We therefore recommend the following as immediate interventions:

1. Urgent and immediate provision of water as well as salt licks is required in the most affected ecosystems (Amboseli, Tsavo, Laikipia-Samburu);
2. The provision of hay to Grevy's zebra in northern Kenya should be enhanced over the next two months (November and December) to cover a wider area;
3. WRTI to be supported to undertake well-structured monitoring of wildlife mortality in all protected areas and key ecosystems to better understand the effects of the drought and recommend future and timely appropriate management action;
4. There is need for an urgent total aerial census of wildlife in Amboseli ecosystem before the next rain season to determine and evaluate the impact of the current drought on wildlife;
5. Various research groups or persons continue to deposit their wildlife mortality reports in the WRTI site offices so as to facilitate information management and guide the wildlife managers accordingly;
6. The National Treasury to allocate funds to support the next National Wildlife Census in 2024 to establish the impact of the current drought on wildlife populations in all the affected ecosystems;
7. Provision of funding to support destocking of Ngulia Rhino Sanctuary (Tsavo West National Park) and prevent any eminent drought related mortality of black rhino in the sanctuary.

## *Drought Related Mortalities*









# 01

## Introduction



## 1.1 Background

Climate change occurs once there is a change in frequency of climatic events such as rainfall or temperature. It has been attributed directly or indirectly to human activity in addition to natural causes such as volcanic eruptions, earthquake and tsunami observed over comparable time periods. The impacts of droughts on wildlife populations can be monitored by having a baseline of wildlife population status, which forms the basis for comparison with results from future wildlife census. Information on wildlife mortality due to different causes is important as it explains observed wildlife population trends over time.

Kenya undertook a National Wildlife Census in 2021 (Waweru et al., 2021). The census provided baselines of wildlife populations in different protected areas and ecosystems against which comparisons with future wildlife populations can be undertaken. We provide information on wildlife mortality between February 2022 and October 2022. This information is critical to explain future wildlife population stagnations or declines.

## 1.2 The impact of drought on Kenya's protected areas

Kenya's Protected Areas such as Amboseli, Tsavo and Meru National Parks together with the expansive Laikipia-Samburu landscape are important because of their high diversity of wild animals ranging from small mammals to mega fauna (Waweru et al, 2021). Rainfall in the arid areas of the country failed completely in the last two seasons (October –December 2021 and March – May 2022). This resulted into the current drought being experienced in the savannah landscapes. Such droughts are characterized by both wildlife and livestock mortalities, mostly among the

herbivore species (PDNA, 2011). The mortalities may be attributed to depletion and low quality food resources as well as water shortage (Pratt and Gwynne, 1977). Rainfall enhances habitat suitability for herbivores through its influence on forage availability (Okello et al 2016). The drought which is attributed to below average rainfall during the two years' period has resulted to massive loss of wildlife population through death and, probably migration into other areas. Data on such mortalities have been collected through wildlife count reces and ranger patrols in the affected areas.







# 02

## Methods



Data on wildlife mortality was collected by Kenya Wildlife Service Rangers, Community Scouts and Research Teams from Wildlife Research and Training Institute, Non-Governmental Organizations operating in the eight Conservation Areas as defined by Kenya Wildlife Service. The teams collecting the data recorded the following attributes: Wildlife species affected, date of wildlife mortality, location of mortality (i.e., protected areas [park or reserve], conservancy [private or community] and ranch [private or community] and age (Adult, sub-adult, juvenile/young). On the onset of the drought, all teams were briefed on the type of data to collect using a standardized method.

The data collection teams drove or walked around the different ecosystem and any sighting of wildlife carcass were recorded as indicated above. The GPS location of the carcass was also taken. The daily data records were entered into an

excel spread sheet that was updated each day. The Wildlife Research and Training Institute Field Scientists collated all the data from the different stakeholders. The collated data was then shared with the Wildlife Research and Training Institute Headquarters to provide a national database for wildlife mortality (February 2022 to October 2022). This data has then been analyzed to produce this report.

The following organizations provided the wildlife mortality data: Kenya Wildlife Service, Grevy's Zebra Trust, Amboseli Trust for Elephants, Tsavo Trust, Save the Elephants, Northern Rangeland Trust, Big Life Foundation, International Fund for Animal Welfare, African Wildlife Foundation, World Wildlife Fund – Kenya, African Conservation Centre, Sheldrick Wildlife Trust, Giraffe Conservation Foundation and Hirola Conservation Programme.







# 03

## Results And Discussion



The data collated from the months of February through to October 2022 indicates that, the Southern Conservation Area particular Amboseli ecosystem is the most affected followed by the Mountain (Laikipia-Samburu landscape). The drought has negatively impacted on the herbivore populations and particularly wildebeest and zebra. It has claimed more than 500 and 380 wildebeest and common zebra respectively in the Amboseli Ecosystem (Infographic 1). Most of the affected wild animal species are grazers. Elephants were as well affected by the drought due to reduced forage and mostly to young elephants who may not reach out to above 2-meter vegetation biomass.

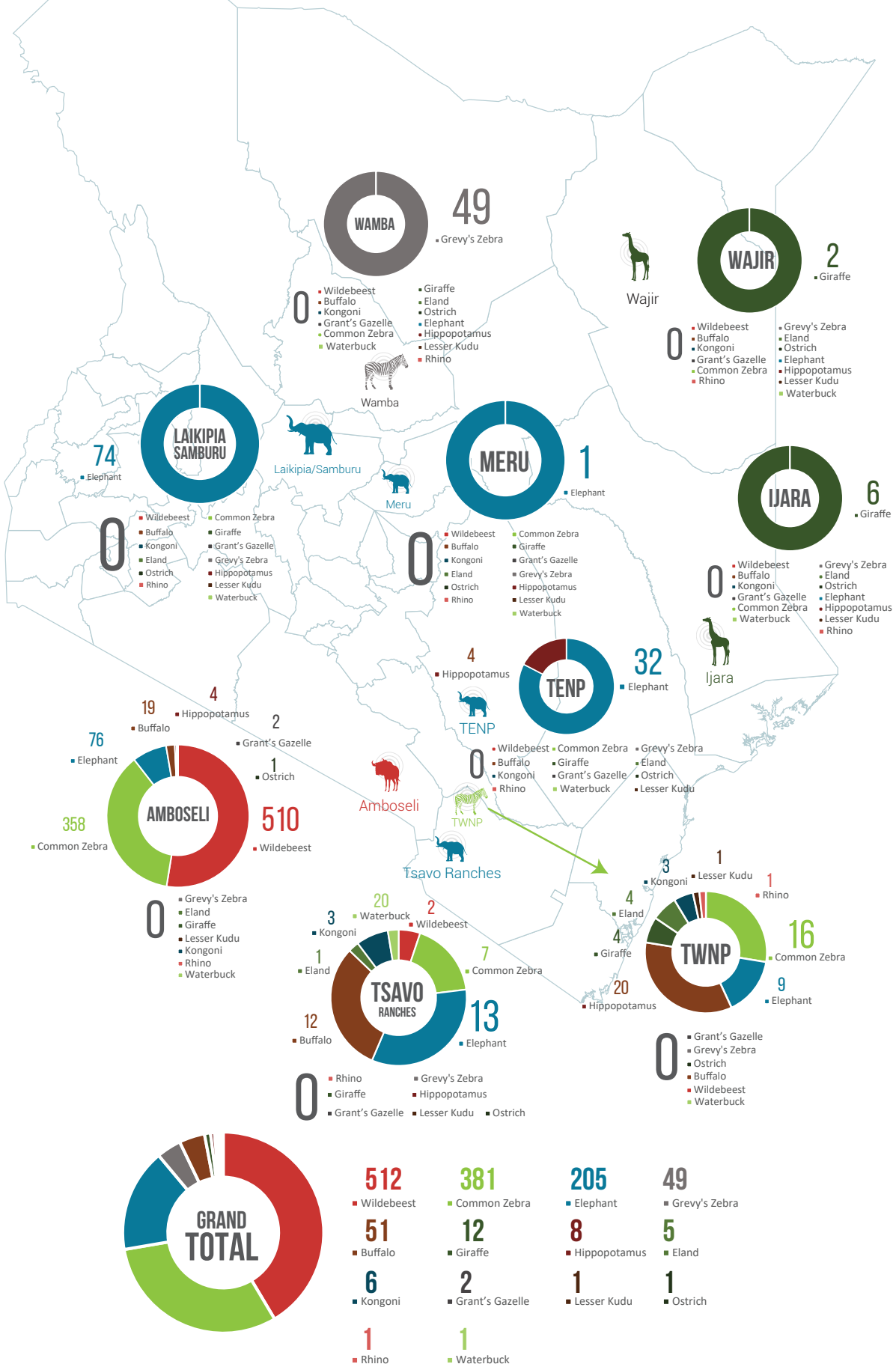
The Laikipia-Samburu and Amboseli ecosystems are worst hit having recorded more than 70 elephants' deaths each followed by Tsavo (54 deaths – Tsavo East, West and Ranches; Infographic 1). Amboseli ecosystem, which hosts over 1900 elephants has so far lost 76 elephants to the drought of which 45 were juveniles dying of malnutrition

since the mothers could not produce enough milk. In Tsavo, four elephant calves were preyed by lions as their mothers were too weak to protect them (Richard Moller Pers. Comm., 2022).

The Grevy's zebra population, which is restricted to the Laikipia-Samburu ecosystem has so far lost 49 Grevy's zebra (Infographic 1) even with the intervention of feeding programme, which is currently ongoing in areas of Buffalo Springs and Samburu National Reserves through the Grevy's Zebra Trust. The programme is currently providing supplement feeding to over 500 individuals daily with buffalo and oryx also benefiting from the feeds. The Trust has reported 49 deaths related to drought out the 90 deaths so far recorded. The Most affected areas within the Grevy's zebra's range are Isiolo County and Eastern parts of Samburu County, especially the Wamba Area.



Infographic 1: Wild animal deaths related to the drought situation in the Country





The above summary data should be taken with caution that, the landscape are expansive and the field teams may not have accessed every part of area where wildlife died. Again the areas host high carnivore densities and some carcasses could have been devoured by the predators before assessment is done. Thus there is a possibility of higher mortality above what is reported herein. However, the report provides a good indication of the impact of the current drought (February-October 2022) on wildlife in Kenya. From the study it was noted that the most affected ecosystems (i.e., Amboseli, Tsavo and Laikipia-Samburu) host 1887, 14879 and 6867 elephants respectively, which represents more than half (65%) of Kenya's elephant population. The elephants being mixed feeder and water depended animals together with other 12 large mammal species were adversely affected by the current dry spell across the three landscapes (Figure 1 and Figure 2).

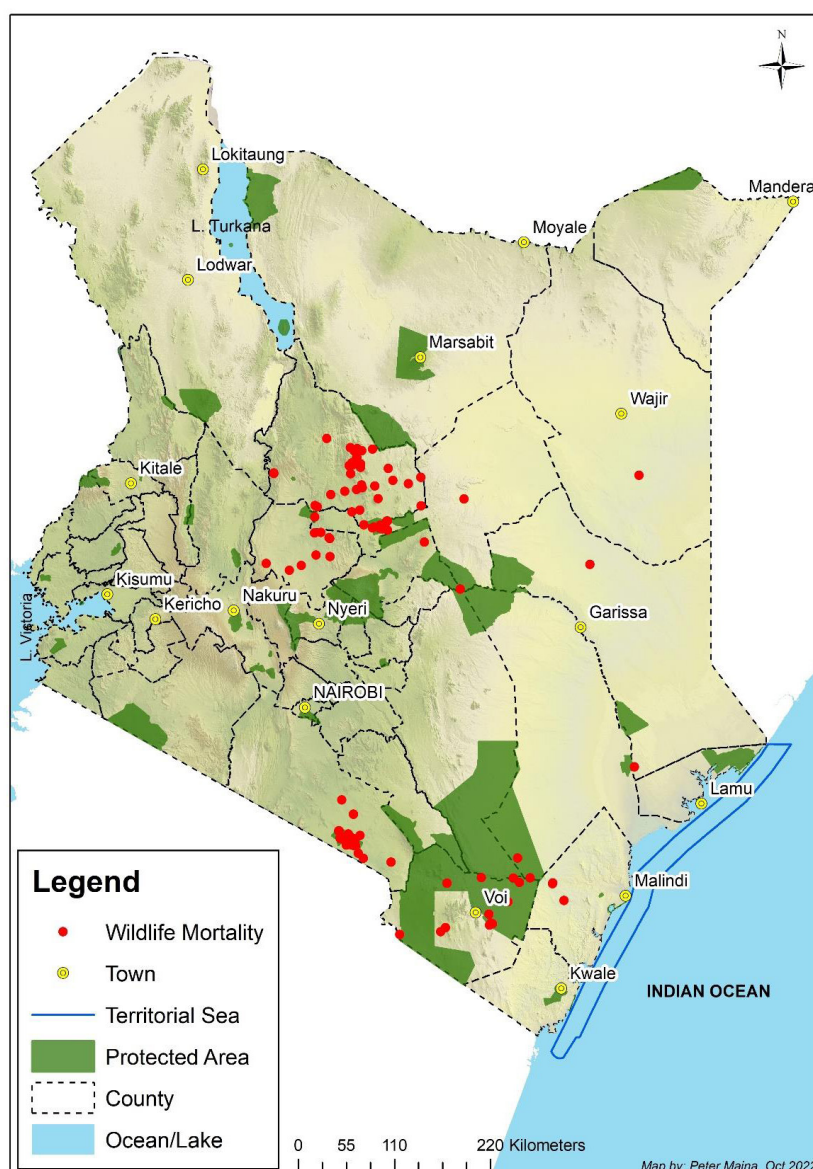
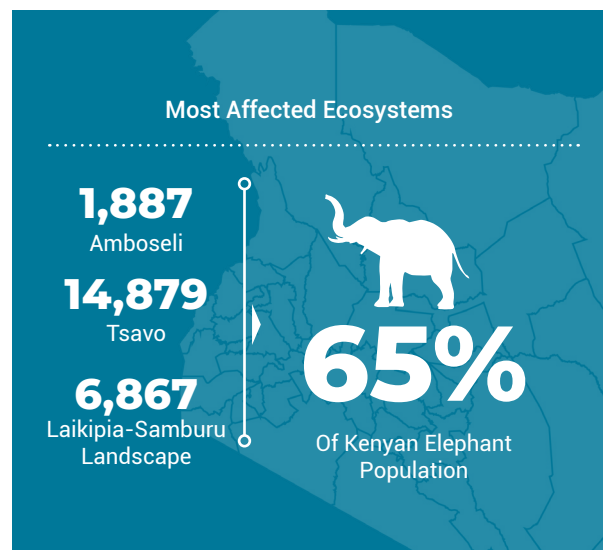
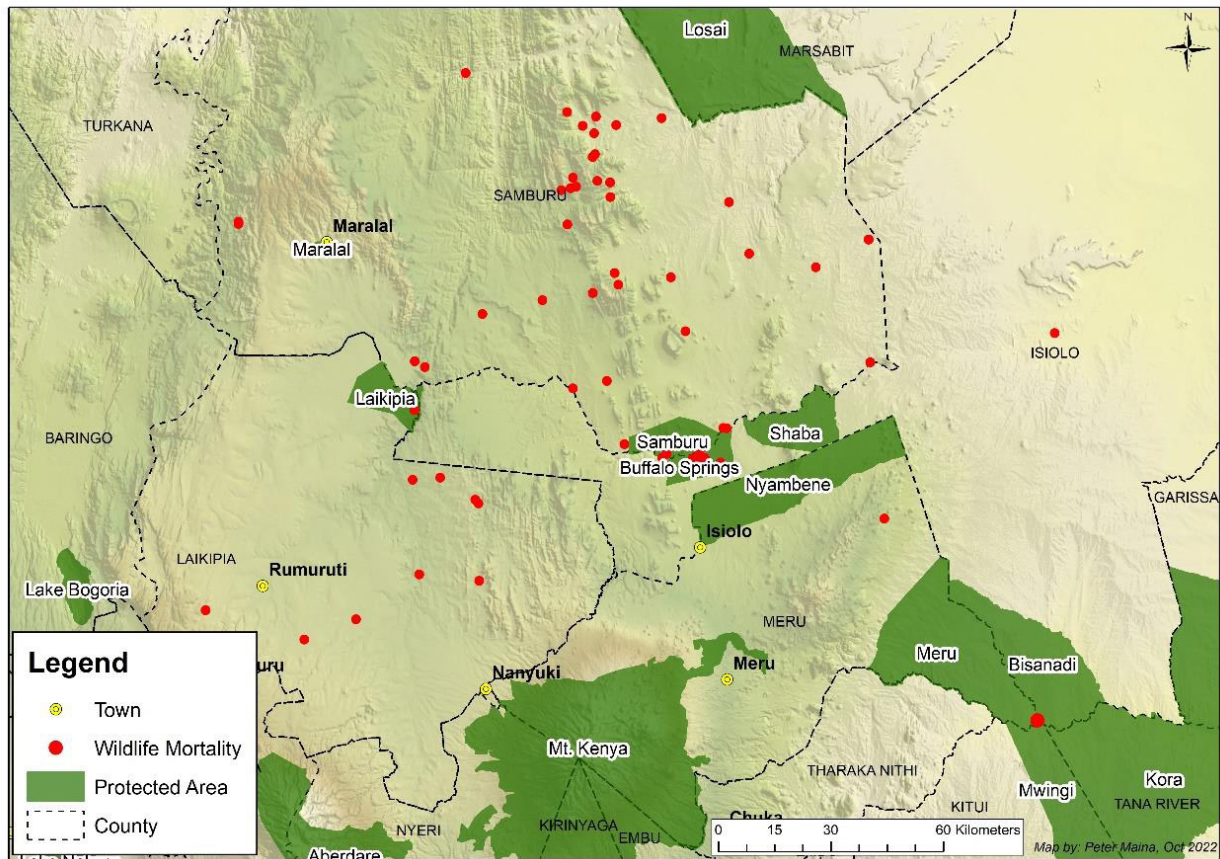
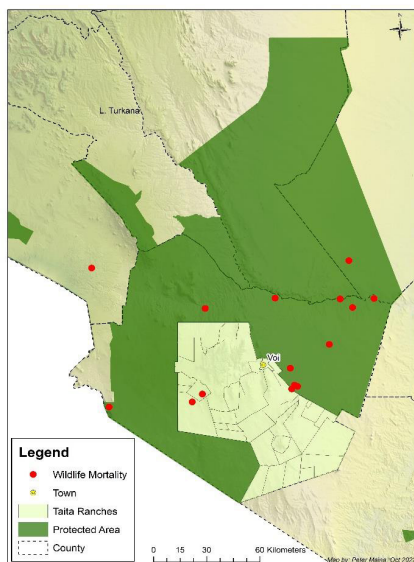


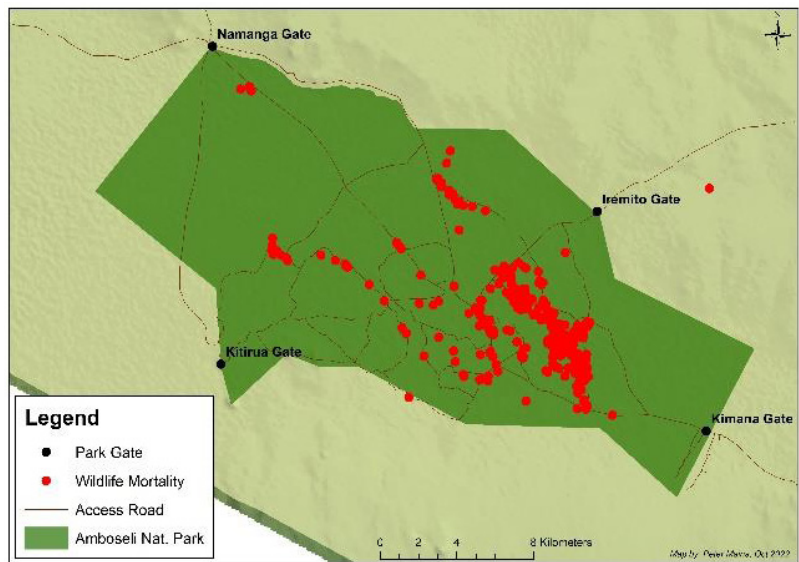
Figure 1: Most affected landscapes are Amboseli, Tsavo and Laikipia-Samburu



Wildlife mortality in Laikipia Samburu landscape



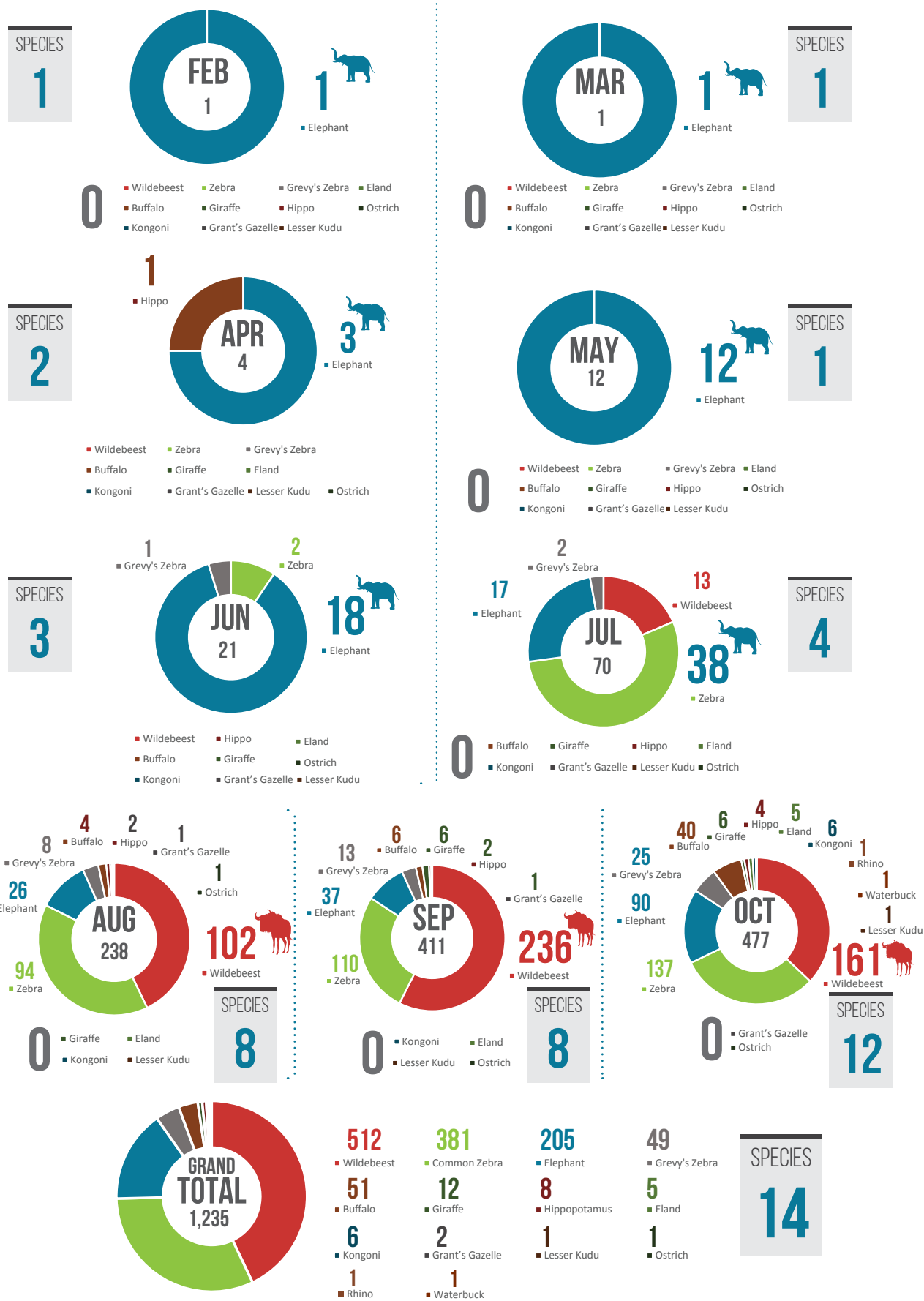
Wildlife mortality in Tsavo landscape



Wildlife Mortality in Amboseli national Park

Figure 2: Wildlife mortality in each of the landscape

Infographic 2: Monthly Wild animal deaths related to the drought situation in the Country



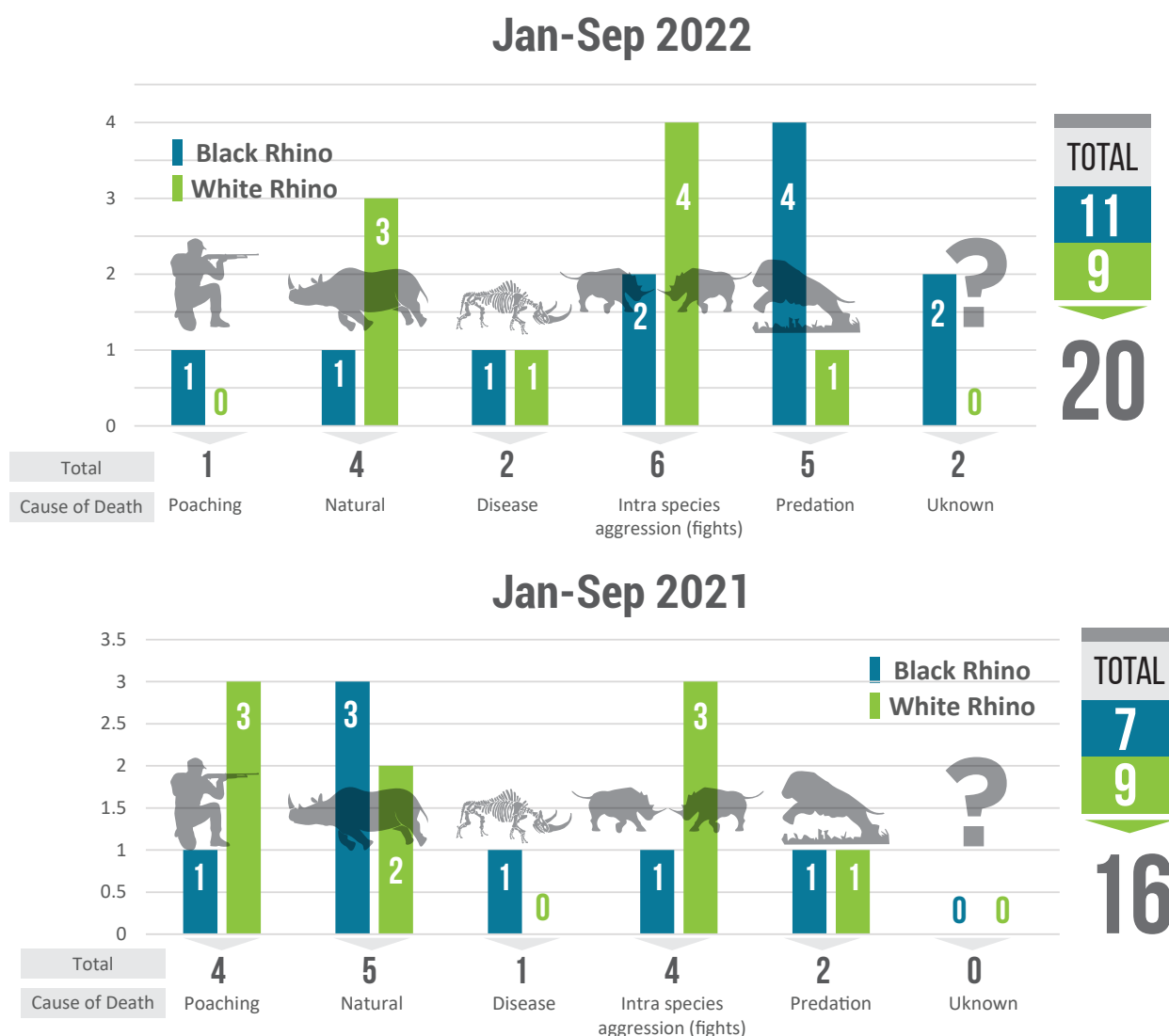


The carnivores are usually less impacted by drought however, they at long last suffer from reduced prey population long after the drought is over. Currently there is plenty of available food mostly for scavengers like hyena and vultures from the weak and the dead animals. There are reports of livestock deaths in the areas adjacent to protected areas as well as escalation of livestock predation by carnivores since the livestock are weakened by the current drought and have to converge at watering points with the carnivores. This makes the livestock easy prey targets by the carnivores (Lekisho Kenana Pers. Comm., 2022).

Despite the drought, the rhino population (black and white) is doing well although one young rhino aged about 2 years died in Ngulia rhino sanctuary, Tsavo West National Park due to the drought. The National Wildlife Census Report 2021 reported a populations as 1,811 rhinos (938 black rhinos, 871 southern white rhinos and 2 northern white rhinos; Waweru et al., 2021). Between January and September 2022, a total of 102 rhino birth (49 black and 53 white

rhinos) have been recorded compared to 127 rhino (67 black, 60 white rhinos) during the same period in 2021 (KWS, Database, 2022; WRTI Rhino Database, 2022). A total of 20 rhinos death (11 black and 9 white) have been recorded from January 2022 to September 2022 compared to 16 (7 black and 9 white) recorded in the same period in 2021 (KWS Rhino Database, 2022; WRTI, Rhino Database, 2022). Apart from the one young rhino that died in Ngulia rhino sanctuary in October 2022, the other rhino mortalities are attributed to poaching, natural causes, diseases among other causes (Infographic 3). However, if the drought persists, overstocked rhino sanctuaries like Ngulia Rhino Sanctuary in Tsavo West National Park among others could be more affected by the drought resulting to more rhino mortality. Enhanced monitoring of the rhinos is important to track their body conditions to ensure immediate interventions are made if their body conditions deteriorate.

**Infographic 3: Comparison of Rhino mortality per species and causes for the period January to September 2021 and 2022**











# 04 | Conclusion



The current drought is affecting wildlife in different ecosystems with the most affected areas being Amboseli, Laikipia-Samburu and Tsavo ecosystems. The most affected species are wildebeest, common zebra, elephant, Grevy's zebra and buffalo. One rhino aged about 2 years was also reported dead due to the drought at Ngulia Rhino Sanctuary in Tsavo West National Park. Amboseli ecosystem (the national park and surrounding areas) is the most affected ecosystem with the wildebeest and common zebra being the most affected species. Most of the elephant mortality cases were recorded in both Amboseli, Laikipia-Samburu and Tsavo

ecosystems. We report minimum mortality estimates as the affected ecosystems are expansive and data collection limited to area accessibility and road network. There is a possibility of higher mortality above what we have reported herein. However, we provide a good overview of the impacts of the current drought (February-October 2022) on wildlife in Kenya. Provision of water and forage to Grevy's zebra in northern Kenya has saved them from massive die-off due to the current drought. Such interventions should be urgently initiated at Amboseli and Tsavo ecosystems and expanded to cover other species in Laikipia-Samburu ecosystem.







# 05

## Recommendations



1. Urgent and immediate provision of water as well as salt licks is required in the most affected ecosystems (Amboseli, Tsavo, Laikipia-Samburu);
2. The provision of hay to Grevy's zebra in northern Kenya should be enhanced over the next two months (November and December) to cover a wider area;
3. WRTI to be supported to undertake well-structured monitoring of wildlife mortality in all protected areas and key ecosystems to better understand the effects of the drought and recommend future and timely appropriate management action;
4. There is need for an urgent total aerial census of wildlife in Amboseli ecosystem before the next rain season to determine and evaluate the impact of the current drought on wildlife;
5. Various research groups or persons continue to deposit their wildlife mortality reports in the WRTI site offices so as to facilitate information management and guide the wildlife managers accordingly;
6. The National Treasury to allocate funds to support the next National Wildlife Census in 2024 to establish the impact of the current drought on wildlife populations in all the affected ecosystems;
7. Provision of funding to support destocking of Ngulia Rhino Sanctuary (Tsavo West National Park) and prevent any eminent drought related mortality of black rhino in the sanctuary.





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## CONTACT US:

- 📍 P.O. Box 842-20117, Naivasha, Kenya.
- ☎ +254 700 000 321, 0731 919 465.  
+254-050-2020577, +2542020267
- ✉ [wrti@wrti.go.ke](mailto:wrti@wrti.go.ke)