



HIROLA CONSERVATION PROGRAMME
2020 ANNUAL REPORT





90%

Population decline.

<500

Individuals left

Approx.
75%

Decline in grass cover (hirola food) across hirola range.

Approx.
300%

Increase in invasive tree cover across hirola's range

Restricted to
<1500KM²

Of its range

Restricted to approx.

5%

Of its natural range

0

Hirola in captivity

THE HIROLA'S STORY

1996

A total aerial count produced a figure of a minimum of 303 individuals which led to an emergency translocation exercise of 35 hirola to reinforce the Tsavo population which was static at a minimum of 76 individuals.

2002

First detailed research study (Phd project) focusing on the Tsavo hirola

2007

Ishaqbini community conservancy supported.

2011

Total aerial count of hirola across natural range, estimated 402-466 hirola

2012 – 2016

Detailed research study (PhD) on hirola and drivers of decline in the natural range (A.H. Ali), Hirola Conservation Program (HCP) established; free ranging populations showing continued decline.

MSC studies on Tsavo population, confirm population stable but not increasing (ZSL & KWS).

2018

Landscape level restoration of hirola habitat in selected core hirola areas starts

2021

1235 acres of hirola habitat reclaimed

2004

National hirola management strategy developed

2012

Ishaqbini predator proof sanctuary established with founder population of 48 hirola

2017

Establishment of Bura East Hirola Conservancy by HCP
Ishaqbini sanctuary population estimated 90 individuals; 5-yr strategy for sanctuary developed

2020

Re-instatement of Arawale National Reserve

1998

Captive population becomes nonviable with 2 females remaining.

2009 – 2010

Msc Project on Tsavo hirola habitat suitability (KWS), including aerial census of hirola.

National Hirola Conservation and Management Strategy developed

DIRECTOR'S NOTE

The last two years have been the most difficult since our establishment in 2008. COVID-19 saw our operations grounded to a near halt and before we could recover from the pandemic, a severe drought hit our region. Within the two years we have had a lot of wildlife mortalities in our conservation sites including two of the snow-white giraffes. All in all, these happenings have build our resilience in coping with disasters.

We also made great progress within the two years and attained commendable achievements. Notably, are our accomplishments in restoring hirola habitat, reducing poaching incidents and other illegal activities within our conservation sites, and carrying out emergency interventions to cushion the locals, livestock and wildlife against the effects of the pandemic, drought, locusts' invasions and other calamities.

Central to our efforts, are our partners and local communities whose continuous support has kept us going despite the challenges we have encountered. We look forward to strengthening our relations in order to create more impact and ensure hirola and other endangered wildlife species are well protected and conserved.

Abdullahi H. Ali, Ph.D.

Founder & Director



CONSERVATION IMPACTS

RANGELAND RESTORATION PROJECT

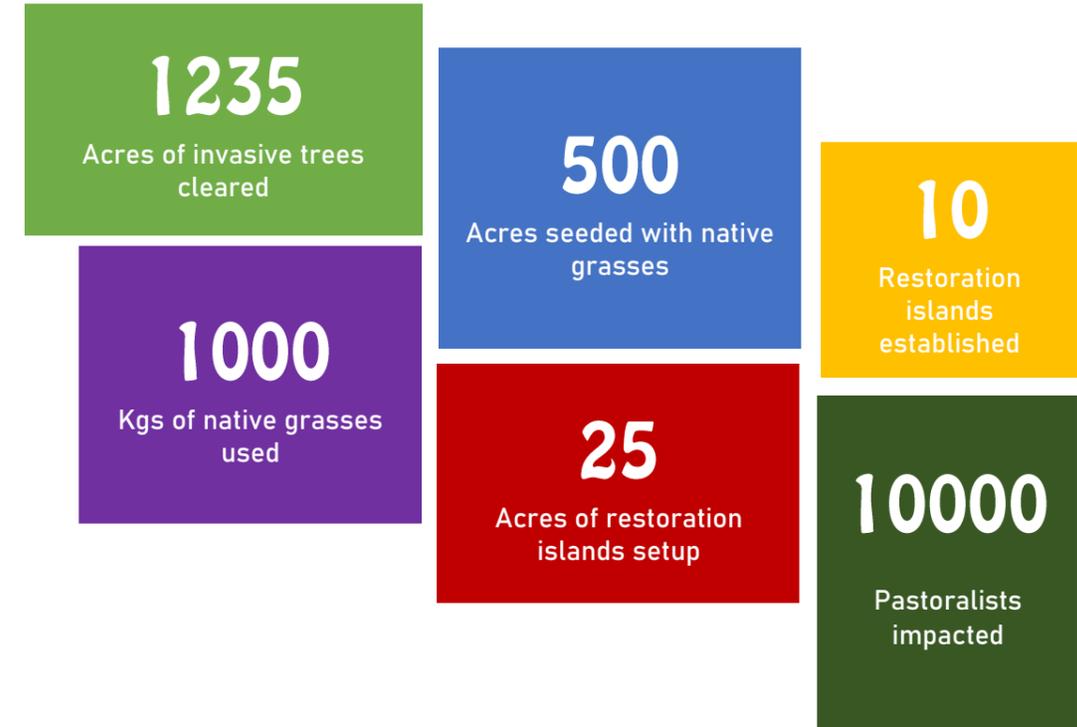
We scaled down our habitat restoration efforts due to the impact of the COVID-19 pandemic as we had challenges keeping our habitat restoration teams in the fields. Our restoration efforts were also disrupted by prolonged drought that ravaged our conservation areas.





INVASIVE TREE CUTTING

In collaboration with the local community and other partners' support we have been manually cutting down invasive tree species. This year we managed to thin 1235 acres of invasive tree cover and seed 500 acres.



HIROLA RANGELAND RESTORATION

The hirola antelope is regarded as a refugee species as it has experienced about 95% population decline that is driven by shrinking grasslands (approximately 75% decline).

SEEDING AND RESEEDING

We seeded and reseeded our selected restoration sites with 1000 kgs of native grass seeds including *Eragristis superba*, *Cenchrus ciliaris* and *Entropogon macrostachyus*.



ANTI POACHING

Since the beginning of the COVID-19 pandemic, poaching has been on the rise within our conservation sites. This was fueled with the rising cost of living which pushed communities to rely on bushmeat for both domestic and commercial utilization.

Our team of rangers have been successful in curbing this menace through anti-poaching operations and awareness meetings to preach against poaching.

Our rangers in collaboration with KWS rangers oversaw the arrest of 25 poachers and 50 poaching attempts were averted with the aid of community alerts. 250 snares were recovered and destroyed by our scouts. 32,380 km was covered in patrols.



SCIENTIFIC IMPACTS

RESEARCH PROGRAMMES

Our research efforts have been instrumental in filling vital knowledge gaps and understanding the underlying factors influencing hirola declines and to explore the best management interventions to curtail ongoing declines. Our past studies have been published in global journals of high repute including the Journal of Applied Ecology, Animal Conservation and Ecological Applications.





ON GOING STUDIES

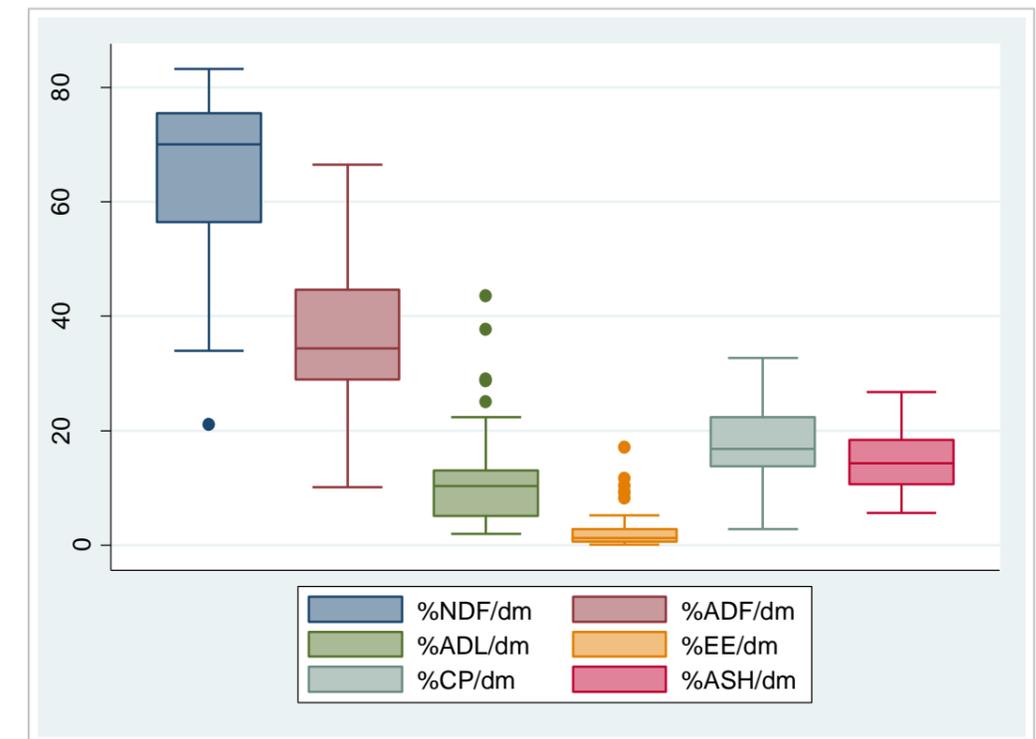
The currently ongoing scientific studies include hirola nutrition study, hirola rangeland restoration and decoding of human-giraffe conflicts in our region.

HIROLA NUTRITION STUDY

This study was carried out to establish how hirola selects diets across highly variable landscape that includes the hirola sanctuary and community conservancy areas.

Some of our findings are:

- i) During the both wet and dry seasons, the nutritional profiles were different across the food species consumed by hirola.
- ii) Plant foods consumed by hirola regardless of season contained higher percentage of digestible fiber (NDF – $64.26 \pm 13.76\%$ and ADF – $34.79 \pm 10.60\%$) and crude protein ($17.39 \pm 6.27\%$) as compared to the indigestible fiber (ADL – $9.56 \pm 7.77\%$), Lipids ($2.49 \pm 2.9 \%$) and total Non-structural carbohydrates ($15.86 \pm 12.69\%$).



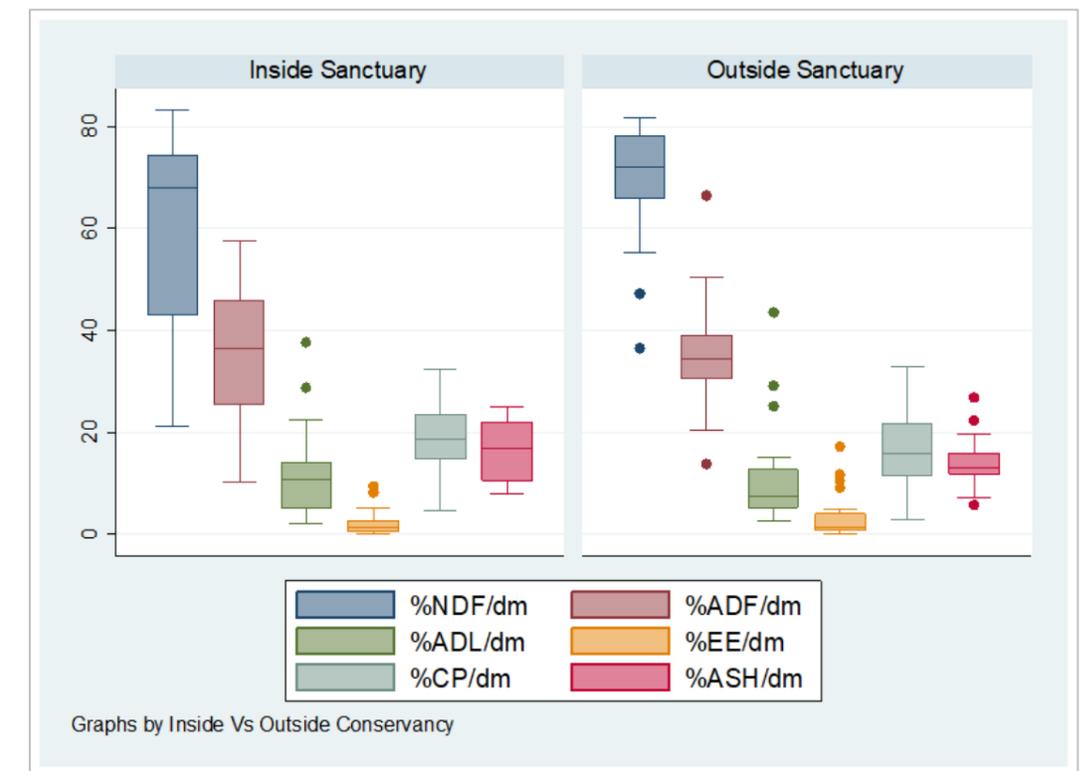
Note: %EE/dm – percent ether extract or fats or lipids of dry matter, %CP/dm – percent crude protein of dry matter, %NDF/dm =percent Neutral Detergent Fiber of dry matter, %ADF/dm =percent Acid Detergent Fiber of dry matter, %ADL/dm =percent Acid Detergent Ligin of dry matter, %TNC – percent Total Nonstructural Carbohydrates of dry matter



ON GOING STUDIES

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iii) Nutrient concentration in the hirola foods showed no differences between the two habitats utilized by the Hirola (Table 1). The nutritional profile in both habitats showed similar patterns compared to that of all the foods combined. In both habitats plant foods were highest in NDF (Inside Sanctuary - $61.73 \pm 15.04\%$; Outside Sanctuary - $66.67 \pm 12.13\%$) and lowest in EE (Inside Sanctuary - $2.14 \pm 2.14\%$; Outside Sanctuary - $2.83 \pm 3.53\%$). Crude protein content was slightly higher in plant foods inside the sanctuary ($17.58 \pm 5.90\%$) compared to foods outside the sanctuary ($17.21 \pm 6.68\%$) but the difference was insignificant ($p > 0.05$).



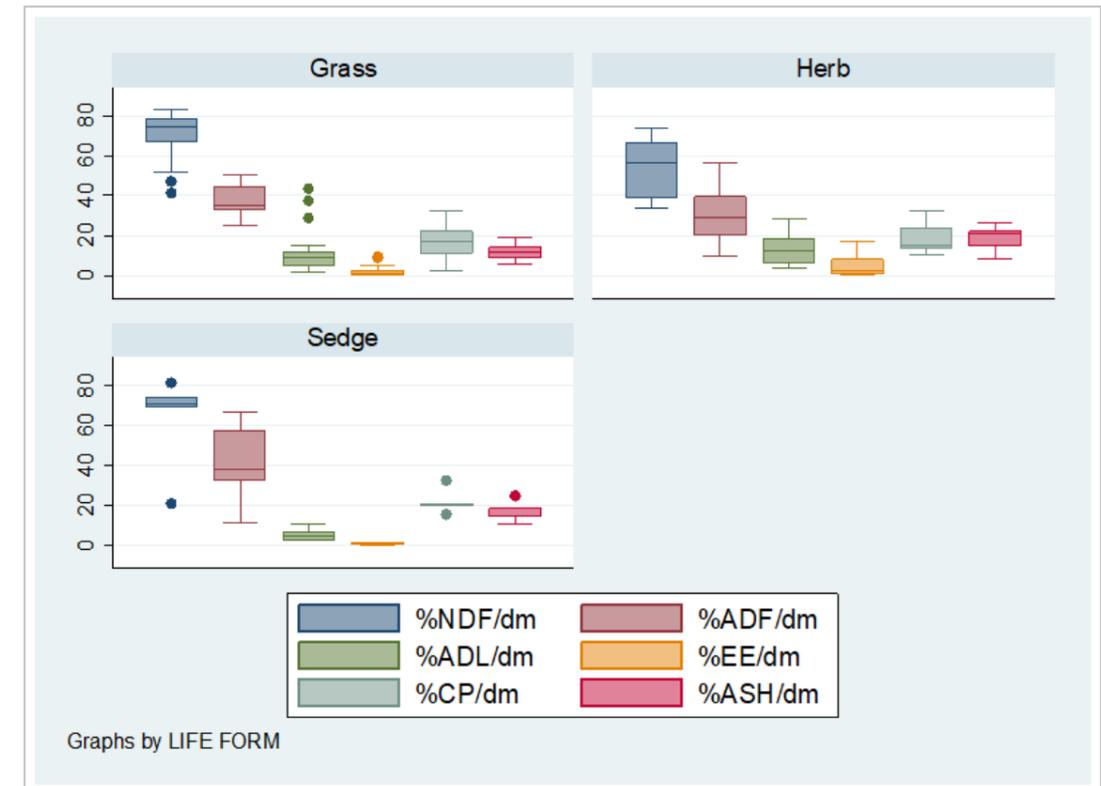
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ON GOING STUDIES

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iv) Grasses accounted for highest diet component of the hirola foods analyzed contributing 56.52% and 41.30% in dry and wet seasons, respectively (Table 2). The concentrations of NDF, ADF, EE and TNC differed significantly across the three-plant food life forms utilized by the hirola antelope ($p < 0.05$).



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ON GOING STUDIES

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v) Concentrations of the macronutrients in the hirola foods showed a similar pattern in both the dry and wet season (Table 3). Fiber content in the food and particularly NDF was the highest in the diet in both wet and dry seasons accounting for 62.48% and 57.63%, respectively. Except for NDF, other fiber components (ADF, ADL), Lipids (EE), and Crude protein (CP) remained significantly higher over the dry season compared to the wet season ($p < 0.05$). Alternatively, Total Nonstructural Carbohydrates (TNC) increased significantly in hirola foods during the wet season ($p < 0.05$).

Characteristic	Dry, N = 46	Wet, N = 29	p-value
NDF/dm	65 (15,21,83)	62 (11,34,74)	0.060
ADL/dm	11 (9,2,44)	7 (4,0,14)	0.018
CP/dm	18 (7,3,33)	16 (4,8,33)	0.2
ADF/dm	36 (12,10,66)	33 (8,14,59)	0.14
EE/dm	2.72 (3.66,0.06,17.12)	2.16 (0.90,1.01,4.23)	0.040
TNC/dm	14 (14,-8,45)	19 (10,11,47)	0.026

Note: %EE/dm – percent ether extract or fats or lipids of dry matter, %CP/dm – percent crude protein of dry matter, %NDF/dm =percent Neutral Detergent Fiber of dry matter, %ADF/dm =percent Acid Detergent Fiber of dry matter, %ADL/dm =percent Acid Detergent Ligin of dry matter, %TNC – percent Total Nonstructural Carbohydrates of dry matter

DECODING HUMAN-GIRAFFE CONFLICTS IN OUR REGION

For a long time, farmers along river Tana have been continuously clashing with giraffes that invade their farms. Sadly, the situation seems to be escalating as more farms are being established along the river Tana, with more and more farmers resolving to lethal measures such as digging pitfalls and erecting fences to keep the giraffes away from their farms. To address this, we recently surveyed the landscape for alternative routes, and discovered that most giraffe corridors have been blocked by farms and invasive tree species (majorly *Prosopis juliflora*).



ON GOING STUDIES

The currently ongoing scientific studies include hirola nutrition study, hirola rangeland restoration and decoding of human-giraffe conflicts in our region.

In addition, we administered over 400 questionnaires in an attempt to provide solutions to this conflict. Our preliminary analysis suggests that most locals like giraffes, view them as no risk and they encounter giraffes 7 days a week. Analyses of the human-giraffe conflict survey will provide us with the much-needed insight to come up with a win-win situation for locals and the giraffes within our region.

CAPACITY BUILDING & NETWORKING

ASSOCIATIONS & PARTNERSHIPS

One of our greatest strengths lies in our identity as a locally led organization. This indigenous identity has facilitated our interactions, partnerships and collaborations with local communities, organizations and international organizations. Our associations with both the local and international groups have been able to enhance our capacity not only at the grassroots level but also at the national and global level through networking, policy advocacy, communication and capacity building. This has greatly facilitated our efforts to create bigger impacts.





SCHOOL OUTREACH PROGRAMME

We occasionally visit schools in the hirola range with an aim of cultivating a culture of wildlife and habitat and wildlife conservation while they are still young. With an annual target of 12 schools, we visited 2 schools in 2020 and 6 schools in 2021 due to the COVID-19 pandemic.

SOCIETY FOR ECOLOGICAL RESTORATION

We were honored to submit our habitat restoration project to the Society of Ecological Restoration. We were glad to share our project to enable us to tell the story of the critically endangered hirola antelope to ensure that we raise its profile as currently, hirola is arguably one of the least known and rarest antelope globally. We also hope to learn a lot from the Society of Ecological Restoration that will help us achieve more success with the project. Also, we shared the project as a way to impact knowledge as other projects would pick some lessons from our project.

PATHWAYS CONFERENCE

Our founder and director Dr. Abdullahi Ali attended the third iteration of Pathways Africa held in Limuru, Kenya. The three-day conference saw the convergence of wildlife researchers, practitioners and stakeholders who value the contributions of social science to conservation management. We are grateful to the Pride Lion Conservation Alliance and the Department of Human Dimensions of Natural Resources (HDNR) at Colorado State University for cohosting the conference and making it a success.

ADMISSION TO IUCN

We were admitted to the International Union for Conservation of Nature (IUCN) and for the first time participated in the IUCN World Congress in 2020.

PARTNERSHIPS

IMPACTERS

We joined the Family of Impacters, We joined Milkywire! Milkywire is a platform for impact that connects people who want to change the world. They bridge the gap between trusted organizations working to save the world and individuals who care about our world and want to act. They empower local change makers through continuous funding and providing digital tools and infrastructure.





NORTH EASTERN WILDLIFE CONSERVANCIES ASSOCIATION (NECA)



SECURING HABITATS FOR WILDLIFE WITH NECA

Through our partnership with the North Eastern Wildlife Conservancies association, we have been able to facilitate the formation 4 more conservancies in Eastern Kenya. These conservancies include the Banane Community Conservancy, Sigley Wildlife Conservancy, Chachabole conservancy, and Wajir South Community Conservancy. These conservancies are strategically distributed across Garissa, Wajir and Mandera Counties. They go a long way in countering habitat loss and fragmentation which are great threats to the survival of hirola and other endangered species occurring in Eastern Kenya.

MAPPING THE FORGOTTEN GREVY'S ZEBRA

There exists a small population of the Grevy's Zebra in their initial range in Garissa and Wajir. However, due to the inaccessibility and safety of these sites, this population is slowly fading. In partnership with NECA, we are surveying the isolated Grevy's Zebra population to return them to their species distribution map and protect them from challenges they face in the region.

NECA'S 1ST REGIONAL MEETING

NECA held its first ever regional meeting with the support of Kenya Wildlife Conservancies Association (KWCA) on 22nd June, 2021. The meeting brought together 17 conservancies' representatives. NECA was also officially admitted by the National Conservancies Council governing KWCA as a regional association representing conservancies from Garissa, Wajir and Mandera counties.

GREVY'S ZEBRA

MAPPING THEM BACK

Following our objective of putting the Grevy's Zebras in Garissa and Wajir back to the map, we have made tremendous progress including the discovery of a new herd in Nunow area, Garissa. This herd, the latest of discoveries in 2021, was added to our database.



PARTNERSHIPS

SOMALI GIRAFFE PROJECT

The Somali Giraffe Project is a trans-boundary community-based conservation project that focusses on the conservation and recovery of the endangered reticulated giraffe through research, education, and community involvement.





BATTLING ILLEGAL MINES

Since the discovery of gypsum in some parts of the Garissa Giraffe Sanctuary in Mid-2021, rangers from the Somali Giraffe Project have been engaged in running battles with illegal miners. Illegal miners have moved into the sanctuary, digging every bit oblivious of the fact that the area is an important giraffe habitat. We have been working closely with the Somali Giraffe rangers to put an end to this as the mines act as deadly pit-fall traps for giraffes and other mammals. Our collaboration, amongst other activities seeks to destroy this and other emerging threats.

SOMALI GIRAFFE DATABASE

With the aim of establishing a regional database for identifying and monitoring Somali giraffes, our partner, Somali Giraffe Project have been traversing eastern Kenya taking geotagged photos for identification using hotspotter software. However, due to COVID restrictions and security challenges especially near the Kenya - Somalia border, the research team only managed to get as far as Southern Wajir (from their Garissa office). They circled the areas of Lagdima, Habaswein and Samatar and managed to take 300 photos that were added to the Somali giraffe database.

SOMALI GIRAFFE PROJECT



RECOGNITIONS

2020 WHITLEY FUND FOR NATURE AWARD

Our founder and director Dr. Abdullahi Ali was announced Whitley Funds for Nature Award Winner. The Awards are held annually by the Whitley Fund for Nature (WFN) to recognize and celebrate effective grassroots conservation leaders across the Global South. The award went a long way in raising our organization's profile as well as that of the hirola antelope.



RECOGNITIONS

2021 NATIONAL GEOGRAPHIC SOCIETY AWARD

In 2021, Dr. Abdullahi Ali was recognized as a Honoree of the National Geographic/ Buffet Award for Leadership. This award recognizes trailblazers whose commitment to innovation and excellence are making astonishing contributions in the fields of science, conservation, education, technology and storytelling.





ARTICLE FEATURES

Our work continues to elicit attention from major media outlets. We worked with both local (Kenyan) and global media to publish various stories.

MEDIA COVERAGE LINKS

Hirola - [Rewilding Grasslands - SWARA](#) | Jan - March 2021

WFN - [Landscape-level approach to conservating the hirola antelope](#) | Dec 2020

Wildlife Warriors [Kids Weekly Issue - 14](#) | 21 Aug 2020

Africa.com '[How Climate Change is Wiping out an Endangered Somali Antelope](#)' | 22nd July 2020

BBC News Clip '[Hirola Antelope and the Fight to Save Them \(Kenya/Somalia\)](#)' | 15th July 2020

BBC News '[Meet the Man Fighting to Save Africa's Hirola](#)' | 12th June 2020

The Standard '[Kenyan among 2020 'Green Oscars' Award Global Winners](#)' | 4th May 2020

Africa Times '[Three African Conservation Leaders receive Whitley Awards](#)' | 29th April 2020

Citizen Digital '[Kenyan Conservationist, Abdullahi Hussein, Bags the coveted Whitley Award](#)' | 30th April 2020

The STAR '[Kenyan Conservationist Honored for Saving Rare Antelope](#)' | 2nd May 2020

Aljazeera News '[Rare White Giraffes Killed by Poachers in Kenya](#)' | 3rd March 2020

Euro News '[Conservationists devastated after poachers in Kenya kill last female white giraffe](#)' | 3rd March 2020

BBC Wildlife Magazine '[Meet the Scientist](#)' | February 2020



EMERGENCY INTERVENTIONS

HUMAN-GIRAFFE CONFLICTS

Human-giraffe conflicts escalated in areas along the river Tana more so in giraffe concentration areas such as Bour-Algy Giraffe Sanctuary. We set up 3 water troughs with a 15,000 liters capacity each to serve giraffes within the Bour-Algy Giraffe Sanctuary to keep them away from farms along the river Tana where they destroy crops and property as they force their way to the river. We also renovated 2 water troughs in the sanctuary as well as facilitating water supply to the water troughs by water bowsers.



DROUGHT IN NORTH EASTERN KENYA

North eastern Kenya is amongst the most vulnerable regions to drought given that it lies in the ASALs, level of land degradation, limited adaptive capabilities and frequent conflicts that it experiences.

Kenya relies on two rainy seasons annually, the long rains (March to May) and the short rains (October to December). The short rains of 2020 failed while in 2021 both rainy seasons failed. The result was an intensive prolonged drought that has caused great misery to wildlife, humans and livestock. These important rainy seasons were defined by late onsets, below average cumulative quantities, and poor distribution both in time and space mostly in northeastern Kenya. This resulted in poor vegetation conditions, increased distances to water sites, worsening wildlife and livestock body conditions, reduced milk production in livestock, increased conflicts (both human-wildlife and inter-clan conflicts), invasions by pastoralists to core wildlife areas and increased poaching incidents. In addition, these conditions make wildlife and livestock susceptible to malnutrition, diseases and even mass mortalities.

To cushion wildlife and the local communities against the impacts of drought, we carried out the following emergency intervention measures:

- We supplied over 2,000,000 liters of water to households and core wildlife areas through water trucking.
- We constructed 10 water pans and rehabilitated 10 water pans.
- We provided 500 bales of hay to livestock, 400 bales to Grevy's Zebra and 1000kg of acacia pods to giraffes
- We also provided 50 bags of nutritious pellets to wildlife and 150 bags of pellets to livestock
- We vaccinated 61,400 livestock to prevent the spread of highly contagious diseases amongst livestock and a spillover to wildlife.
- We opened 58 wildlife access corridors along the Tana River to increase access to water by wildlife especially during drought periods.
- We strengthened our anti-poaching units through capacity building and scaled up our efforts to reduce the increased poaching incidents.



MIGRATIONS DURING DROUGHT





COVID-19

One of the major consequences of COVID-19 was the failing global economy that threatened decades of conservation efforts due to diminishing conservation funds. Our conservation sites experienced reduced management effectiveness as a result of budget cuts and staff cuts, while vital operations including ranger patrols, response to emergencies (e.g., human-wildlife conflicts and emergency rescue and treatment of sick wildlife), combined field operations with Kenya Wildlife Service, illegal wildlife trade monitoring, wildlife monitoring for research purposes, and community engagements through education and awareness were either scaled down or suspended. This tremendously affected our capacity to perform basic functions and protect the critically endangered hirola antelope, and a suite other species found within the hirola's geographical range. In addition, COVID-19 restrictions and lockdowns greatly affected local livelihoods through reduced local tourism revenues and closure of livestock markets which were the major source of livelihoods. This led to a steep rise in poaching incidences, human-wildlife conflicts and destruction of core wildlife habitats within our conservation sites. Unfortunately, we lost two rare, snow-white giraffes, 10 Somali giraffes, over three lions and destruction of about 80 hectares of restored hirola habitat.

We successfully handled the emerging COVID-19 threats and came out more resilient to future pandemics. With the support of caring partners, we responded to the challenges through the following ways:

- Recruited 10 more rangers, and strengthened the capacity of all hirola rangers with the necessary anti-poaching equipment so that they could communicate and respond swiftly to conflicts and potential poaching incidences.
- We maintained the essential operational capacity of vital staff in order to effectively manage our conservation sites and especially protect endangered wildlife species. These included all our field teams and core office teams. All our field teams and most of our office staff are recruited from the local communities and thus this reduced the number of locals affected by job loss.
- We continued our education and awareness program albeit through radio programs due to the COVID restrictions.
- In 2021, after the restrictions were eased, we scaled up our long-term range restoration project that also includes the establishment of Nature-based Solutions (NbS) on the restored sites. This diversifies local livelihoods and builds their resilience to future disasters that also includes climate change.



Locusts Invasions

MONITORING & CONTROL OF LOCUST INVASION

From February 2020, East Africa experienced the worst locust invasion in 70 years. This invasion significantly threatened the livelihoods of locals and the survival of wildlife. As a response measure, we worked closely with local authorities by offering real-time ground surveillance from our vast network that includes hirola rangers and the herders for hirola.

The surveillance by our rangers and herders had a great impact countering the spread of the locust invasion as breeding grounds of the locust swarms were detected early and controlled hence, we were able to defeat the locust invasion by September 2020.





Thank You!



Your overwhelming support and generosity has enabled us to incredibly expand and strengthen our conservation efforts in 2018. We rely on this support to keep our operations running and to help us realize our vision of documenting the struggles of the world's most endangered antelope. We are humbled and very grateful to all the donors, individuals and institutions who support us.



Hirola Conservation Programme
www.hirolaconservation.org
hcp@hirolaconservation.org

 Hirola Conservation Program

 @hirola_program

P.O Box 1774 - 70100,
Nairobi, Kenya.

