



## Jana Robeyst Trust Fund Impact Report

- **Project:** Savanna Dynamics and Conservation Challenges: Assessing the Status of Lions and Other Carnivores and Policy Gaps in Nigeria's Yankari Game Reserve
- **Recipient:** Kabir Adekunle Adelokun
- **Amount:** 1500 euros
- **Project Period:** March - October, 2025.
- **Reporting Year:** February, 2026

### 1. Project Overview

This project studied the status of lions and other carnivore species in Yankari Game Reserve, Nigeria, to understand population trends, habitat conditions, and threats to carnivore conservation. The work also evaluated relevant policy gaps and their implications for the long-term survival of species. The project served as the basis for my master's thesis, which I successfully defended on the 23rd of September 2025.

### 2. Project summary

The Yankari Game Reserve in Nigeria faces critical threats to its West African lion population, including habitat loss, human-wildlife conflict, and poaching. The objectives of the study include assessing the status of lion populations, identifying drivers of human-lion conflict, and co-designing conservation strategies with local communities. This project addresses these challenges through a mixed-methods approach that combines field surveys, camera trapping, GIS mapping, and participatory workshops to assess lion populations, habitat use, and conflict drivers. Crucially, community engagement will center on youth-led education initiatives, such as workshops on coexistence strategies, habitat restoration techniques, and the ecological role of lions. GIS analysis will identify conflict hotspots, while interviews with farmers, herders, and youth leaders will highlight socio-economic factors influencing conservation attitudes. Activities will generate updated data on lion populations, map habitat suitability and conflict hotspots, and integrate local knowledge into conservation planning. Anticipated outcomes include actionable strategies to reduce conflicts, promote coexistence, and strengthen ecological resilience. Through Adelokun, K.A. Report

its contributions to scientific understanding, practical applications, and integration of local knowledge, the study will also advance lion conservation efforts within Yankari and in similar landscapes across Africa and beyond.

### **3. Conservation Issue Addressed**

African savanna ecosystems are experiencing rapid ecological degradation, with apex carnivores such as the African lion (*Panthera leo*) undergoing significant population declines across West Africa (Bauer et al., 2015; Henschel et al., 2014). Once a stronghold for large carnivores and designated as an IUCN Lion Conservation Unit (Saidu, 2010), Nigeria's Yankari Game Reserve (YGR) now faces the likely local extinction of lions, reflecting broader systemic failures in conservation governance, habitat management, and human-wildlife coexistence. Lion populations across Africa have declined by approximately 43% over the past two decades due to habitat loss, poaching, and escalating human-wildlife conflict (Bauer et al., 2016). The West African subspecies now represents only about 1.2% of the estimated 35,000 lions remaining across the continent (Riggio et al., 2013) and is listed as Critically Endangered (Nicholson et al., 2023). Yankari's lions are emblematic of broader conservation challenges in Africa, where 90% of lion populations have vanished from historical ranges (Magama et al., 2018).

This conservation crisis stems from interconnected drivers, as habitat transformation has fundamentally altered the savanna landscape (Sankaran et al., 2005; Strampelli et al., 2022). In YGR, rapid agricultural expansion, settlement encroachment, extractive activities, and weak law enforcement have intensified habitat fragmentation and conflict with surrounding communities (Almeida et al., 2025). Livestock predation and safety concerns have fueled retaliatory killings, consistent with documented human-wildlife conflict dynamics across Africa (IUCN SSC HWCTF, 2020). These pressures are compounded by climate variability and woody encroachment, which further alter habitat suitability. Despite existing policy frameworks, including Nigeria's Endangered Species Act, CITES, and IUCN listings, implementation gaps, insufficient community engagement, and limited adaptive management have undermined the effectiveness of conservation (Funston et al., 2023).

The disappearance of lions not only signals ecological imbalance by altering trophic dynamics and elevating mesopredator dominance, such as spotted hyenas (*Crocuta crocuta*), but also represents lost economic and cultural opportunities tied to ecotourism and flagship species conservation (Packer et al., 2013). Addressing this issue requires integrated, evidence-based strategies that align ecological restoration, governance reform, and community-supported Nature-based Solutions (IUCN, 2020; Bauer et al., 2015).

This work directly addresses the science-policy-practice gap by translating ecological evidence into actionable recommendations for habitat restoration, targeted NbS investment, and institutional reform, offering a replicable framework for carnivore conservation across West Africa's human-modified savanna landscapes. Without targeted action, the reserve risks local extinction of lions, undermining Nigeria's biodiversity and global conservation efforts.

#### 4. Project Aims and Objectives

This study aims to develop sustainable strategies for lion conservation in Yankari's human-influenced landscape by investigating savanna ecosystem dynamics and human-lion interactions. Specific objectives include:

1. **Assess lion populations and habitat use:** Quantify lion abundance, distribution, and demographic structure through field surveys and camera trapping. GIS analysis will map habitat suitability and connectivity.
2. **Investigate human-lion conflict drivers:** Identify socio-economic and ecological factors (e.g., livestock predation, crop raiding) contributing to conflicts. Community interviews will gather insights on perceptions and conflict hotspots.
3. **Evaluate conservation strategies:** Co-design and prioritize interventions (e.g., community-based monitoring, habitat corridors) with stakeholders to mitigate conflicts and promote coexistence.

The research integrates ecological data with local knowledge, ensuring strategies are culturally relevant and actionable. By addressing these objectives, the project will inform adaptive management plans that balance conservation with community needs

#### 5. Project Activities and the Anticipated Achievements

Project activities include:

- Conduct systematic field surveys and deploy camera traps to monitor lion populations.
- Use GIS to map habitat corridors and conflict hotspots.
- Engage communities through interviews and workshops to document perspectives and co-design solutions.

The anticipated achievements are:

- Updated lion population estimates and habitat utilisation patterns, filling critical data gaps.
- Spatial maps identifying high-risk conflict zones and habitat fragmentation, guiding targeted interventions.

- Community-endorsed strategies (e.g., predator-proof livestock enclosures, conservation education programs) to reduce retaliatory killings.
- Strengthened partnerships between reserve management and local stakeholders, fostering long-term collaboration.
- Policy recommendations for integrating local knowledge into national conservation frameworks

These outcomes will enhance Yankari’s ecological resilience, support lion recovery, and serve as a model for human-wildlife coexistence in similar African landscapes

## 6. Major Study Findings

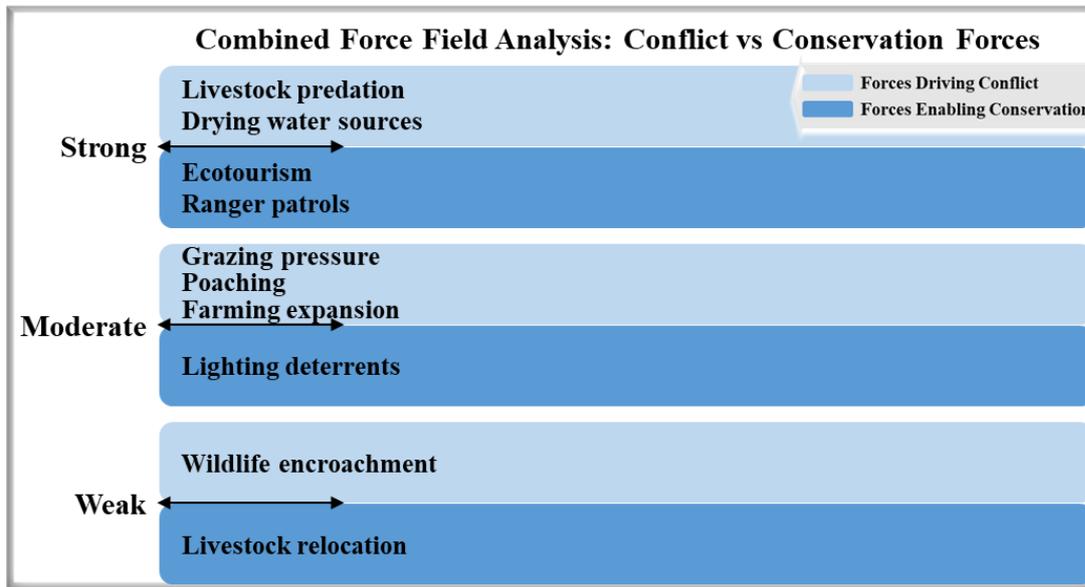
The research provided vital insights into carnivore behaviours, habitat alterations, and governance issues in YGR.

- i. **Carnivore status and local extinction:** Lions appear locally extinct, with no direct sightings of lions or leopards during survey periods. Smaller carnivores (cheetah, jackal, caracal) remain, suggesting a trophic imbalance and possible mesopredator release.

**Table 1.** Carnivore species detection summary in Yankari Game Reserve (April to July 2025).

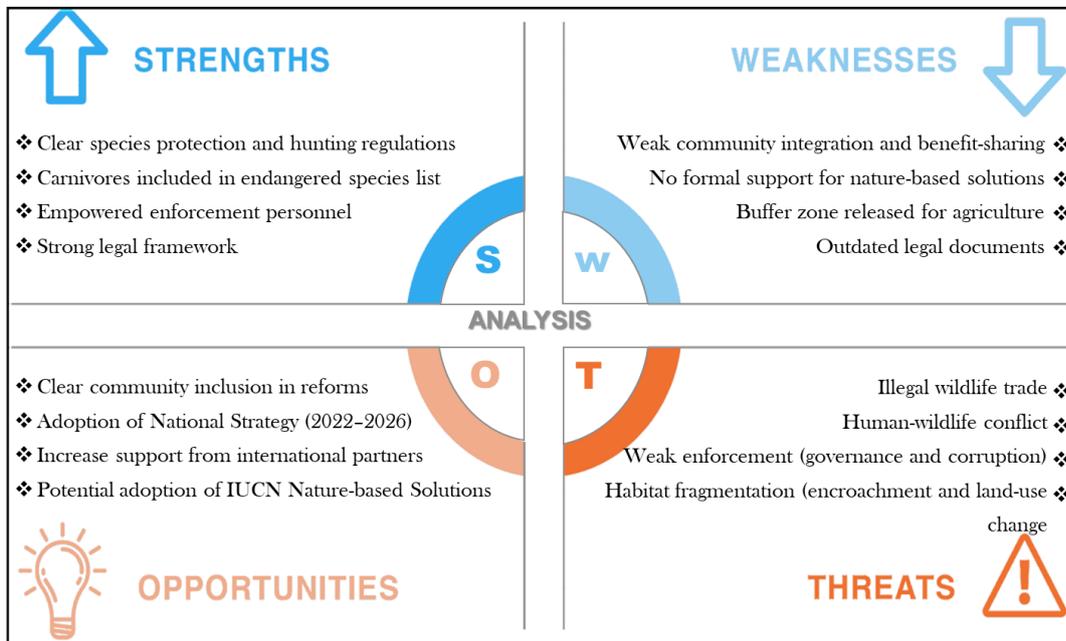
Common Name	Scientific Name	Status	Detection Method(s)
Lion	<i>Panthera leo</i>	Not detected	-
Leopard	<i>Panthera pardus</i>	Not detected	-
Cheetah	<i>Acinonyx jubatus</i>	Not detected	-
Spotted Hyena	<i>Crocuta crocuta</i>	Detected	Camera trap, spoor, call-up
Side-striped Jackal	<i>Canis adustus</i>	Detected	Camera trap, spoor, call-up
African Wild Dog	<i>Lycaon pictus</i>	Detected	Camera trap
Serval	<i>Leptailurus serval</i>	Detected	Camera trap
Caracal	<i>Caracal caracal</i>	Detected	Camera trap
African Civet	<i>Civettictis civetta</i>	Detected	Camera trap, call-up
Large-spotted Genet	<i>Genetta thierryi</i>	Detected	Camera trap

- ii. **Habitat Change:** NDVI and land-cover analyses indicate woody encroachment and vegetation densification, which are associated with fire suppression, climate trends, and reduced megaherbivore activity.
- iii. **Human Pressure:** Buffer zones around YGR are heavily utilised for farming, livestock grazing, and resource extraction, creating ecological sink zones that hinder carnivore movement and survival.
- iv. **Conflict Dynamics:** Communities report increasing livestock losses to remaining carnivores, often leading to retaliatory killings.



**Figure 1:** An integrated force field analysis of human-carnivore conflict drivers and conservation enablers in Yankari Game Reserve (rated from strong, medium and weak forces).

- v. **Policy & Governance Gaps:** The 2006 transfer of YGR to state control has weakened institutional oversight and enforcement. Outdated legal frameworks, weak stakeholder coordination, and poor incorporation of indigenous knowledge undermine conservation efforts. Additionally, stakeholders strongly favour restoring greater Federal involvement. Youth participation remains limited despite widespread interest and potential for impact.



**Figure 2:** SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of governance in YGR.

## 7. Outputs and Achievements

Despite limited funding and logistical challenges, the project achieved concrete results:

- **Master’s Thesis:** Successfully defended in September 2025.
- **AFAS Stakeholder Workshop (24–28 November):** Presented project findings via a research poster to conservation practitioners, researchers, and policymakers.



- **Conference Acceptance:** A poster was accepted for presentation at the Student Conference on Conservation Science (SCCS) 2026, though I cannot attend due to financial constraints.
- **Policy Brief Published:** A policy brief summarizing the study’s key findings and strategic recommendations was published and disseminated to relevant conservation stakeholders in Nigeria.  
<https://lnkd.in/eituC944>
- **Manuscripts Under Review:** Two scientific papers based on this work are currently under review and will be shared with the Jana Robeyst Trust Fund once published.

## 8. Future Plans, Acknowledgement & Continued Engagement

The findings highlight persistent conflict and ongoing gaps in carnivore conservation. I plan to:

- Create a community-driven documentary to capture local views on lion extinction and the coexistence of carnivores.
- Implement focused conservation education initiatives to reduce conflicts, encourage coexistence, and boost youth involvement.
- Maintain ongoing monitoring and share results, ensuring all outputs recognise Jana Robeyst Trust Fund while seeking further support.
- All social media posts and public engagement efforts will continue to credit and tag Jana Robeyst Trust Fund. Future publications, conference talks, and outreach materials related to this research will be shared and will also fully acknowledge the organisation's support.

In conclusion, Jana Robeyst Trust Fund donation was vital in finalising this research and furthering the understanding of carnivore conservation in one of Nigeria's key protected areas.

## 9. References

- Almeida, J., Briers-Louw, W. D., Jorge, A., Begg, C., Roodbol, M., Bauer, H., ... and Nicholson, S. K. (2025).** Unsustainable anthropogenic mortality threatens the long-term viability of lion populations in Mozambique. *PLoS One*, 20(6), e0325745.
- Bauer, H., Chapron, G., Nowell, K., Henschel, P., Funston, P., Hunter, L. T., ... and Packer, C. (2015).** Lion (*Panthera leo*) populations are declining rapidly across Africa, except in intensively managed areas. *Proceedings of the National Academy of Sciences*, 112(48), 14894-14899.
- Bauer, H., Packer, C., Funston, P.F., Henschel, P., Nowell, K. and Pimm, S.L. (2016).** *Panthera leo*. The IUCN Red List of Threatened Species 2016: e.T15951A79929984. <https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T15951A79929984.en>. (Accessed 25 July 2024).
- Funston P. J., Bürki R., Nicholson S., Brouwer E. and Breitenmoser U. (2023).** Spatially Explicit Strategic Action Plan for the Recovery of the Northern Lion in Africa 2023-2027 - Part B: SPATIALLY EXPLICIT CONSERVATION ACTION PLAN (SECAP) (Accessed 25 January 2025).
- Henschel, P., Coad, L., Burton, C., Chataigner, B., Dunn, A., MacDonald, D., ... and Hunter, L. T. (2014).** The lion in West Africa is critically endangered. *PLoS One*, 9(1), e83500.

- IUCN (2020).** *Global Standard for Nature-based Solutions. A user-friendly framework for the verification, design, and scaling up of NbS.* First edition. Gland, Switzerland: IUCN. <https://doi.org/10.2305/IUCN.CH.2020.09.en> (Accessed 18 June 2025).
- IUCN SSC HWCTF (2020).** *What is human-wildlife conflict?* Briefing Paper by the IUCN SSC Human-Wildlife Conflict Task Force. [www.hwctf.org](http://www.hwctf.org) (Accessed 18 January 2025).
- Magama, Y. A., Babagana, M., Usman, A. U., Gujja, A. A., Adamu, A. and Karachi, A. E. (2018).** Assessment of wildlife species mostly involved in human-wildlife conflict around Yankari Game Reserve, Bauchi State, Nigeria. *International Journal of Contemporary Research and Review*, 9(09), 20262-20277.
- Nicholson, S., Bauer, H., Strampelli, P., Sogbohossou, E., Ikanda, D., Tumenta, P. F., ... and Loveridge, A. (2023).** *Panthera leo.* *The IUCN Red List of Threatened Species. 2023: e. T15951A231696234.*
- Packer, C., Loveridge, A., Canney, S., Caro, T., Garnett, S. T., Pfeifer, M., ... and Polasky, S. (2013).** Conserving large carnivores: dollars and fence. *Ecology Letters*, 16(5), 635-641.
- Riggio, J., Jacobson, A., Dollar, L., Bauer, H., Becker, M., Dickman, A., ... and Pimm, S. (2013).** The size of the African savannah: a lion's (*Panthera leo*) view. *Biodiversity and Conservation*, 22(1), 17-35.
- Saidu, Y. (2010).** A Survey on the Status and Distribution of the Lion (*Panthera leo*) in Nigeria. Unpubl. Report to the Nigeria National Park Service and WCS, Abuja, Nigeria. (Accessed 18 June 2024).
- Sankaran, M., Hanan, N. P., Scholes, R. J., Ratnam, J., Augustine, D. J., Cade, B. S., ... and Zambatis, N. (2005).** Determinants of woody cover in African savannas. *Nature*, 438(7069), 846-849.
- Strampelli, P., Henschel, P., Searle, C. E., Macdonald, D. W. and Dickman, A. J. (2022).** Habitat use of and threats to African large carnivores in a mixed-use landscape. *Conservation biology*, 36(6), e13943.

## 10. Images from Fieldwork



**Plate i:** interview session with some of the Key Informant Groups (Source: Author's field work).



**Plate ii:** Images from community engagement (Source: Author's field work).



**Plate iii:** Image of YGR boundary (buffer zone) turned into agricultural land (Source: Author's field work).



**Plate iv:** Image of settlements on the boundary of the reserve (Source: Author's field work).



**Plate v:** Images from setting of camera traps (Source: Author's field work).



**Plate vi:** Image from the broadcast/call-up survey (acoustic fieldwork) using the FOXPRO Snow-Crow Pro 5 game call system (Source: Author's field work).



**Plate vii:** Image of hyena scat (Source: Author's field work).

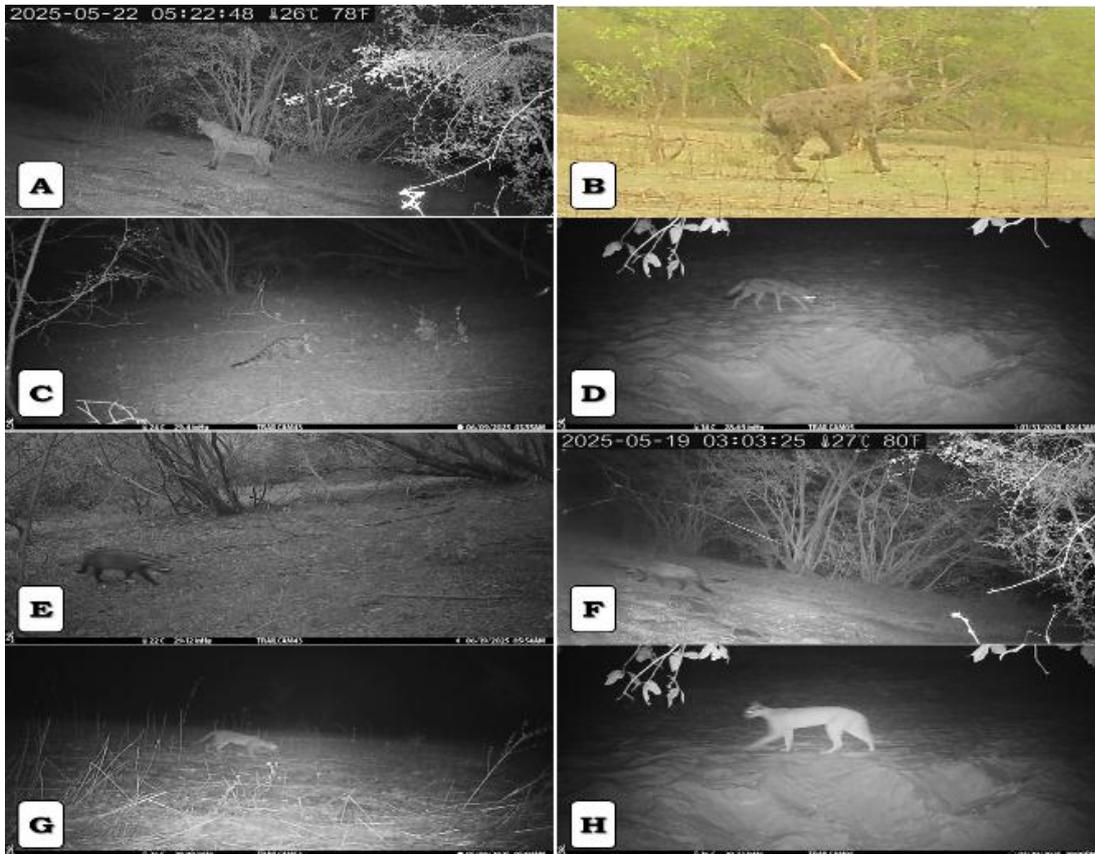
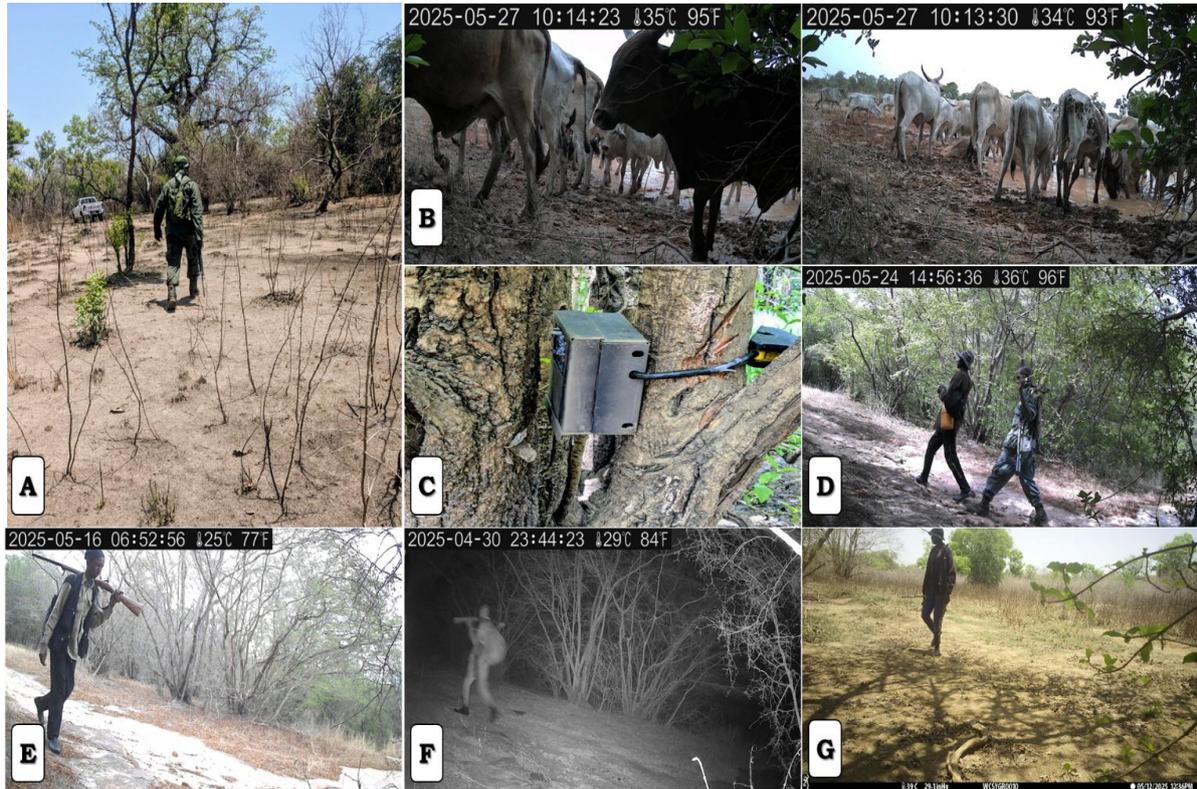


Plate VIII: Captured images of different carnivores, (A) Hyena at night, (B) Hyena in the early morning, (C) large spotted Genet, (D) side-striped Jackal, (E-F) African civet, (G-H) Caracal (Source: Author's field work).



**Plate ix:** Images of (A) a ranger on patrol (B) illegal entry for grazing by cattles within the reserve, (C) attempt by poachers/herders to vandalize a camera trap to avoid capturing their images, (D) arrested herders patrolled to the camp by a ranger (E-F) poachers within the reserve, and (G) cattle herders within the reserve (Source: Author's field work).



**Plate ii:** Images of the field team (Source: Author's field work).