

Supporting Biomonitoring and Anthropogenic Threat Suppression for Long-term Protection of Pangolins in the Deng-Deng National Park

Period of study: 1st October to 30th Dember 2023



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Team members:

- **Esong Lionel Ebong (Team Leader)**
- **LIYONG Giscard Léon, Eco-guard MINFOF**
- **DODO Fridolin, (Disengaged Hunter and Local Field Guide)**
- **Wapan Floribert, (Disengaged Hunter and Local Field Guide)**
- **Hanboa Esaie (Disengaged Hunter and Local Field Guide)**
- **Abba Jackson (Disengaged Hunter and Local Field Guide)**
- **Mola (Disengaged Hunter and Local Field Guide)**
- **Baba Abel (Disengaged Hunter and Local Field Guide)**

General Background

This project in the Deng-Deng National park (DDNP), Eastern Region of Cameroon in the Lom et Djerem Division (5°–5° 25' N/13°–23° 34' E) , is a direct intervention initiative to ensure the welfare of pangolins by suppressing human threats in the park, that has a direct impact towards the pangolins or indirectly through their habitats. Pangolins are threatened and classified as Vulnerable on the IUCN Red List, listed on Appendix I of CITES and fully protected by Cameroon's wildlife conservation law as

'class A'. Their habitats are under threat of degradation and fragmentation by human activity such as deforestation, farmland encroachment and bushfires.

This RSG project, with co-funding from the Mohammed Bin Zayed Species Conservation Fund was a great match to building a resilient foundation for the long-term community based conservation of pangolins in the DDNP. To ensure the welfare of different wildlife species, we expanded our biomonitoring scope to chimpanzees (*Pan troglodytes*) which are also endemic to, and critically endangered in the Deng-Deng National Park due to the encroachment of poachers from neighbouring Central Africa.

Activities and outcomes

1. We have provided 07 days cumulative training to refresh 06 Local field guides skills the use of Compass, GPS, Camera Trapping, Cybertracker, compass and filling of datasheets.

Feedback: Even though the Community Rangers configured some camera traps without the accurate date, they placed the cameras at the right places that captured pangolins. They were able to identify live pangolins that was recorded. The plan is to both collaborate with them in this project, and also prepare them in our future Community Rangers.



Figure 2. Outdoor training of Local field guides (Potential Community Rangers)

2. We used interviews and key informants/focus group discussions to investigate on pangolin hunting and harvest. The Local trained guides (future community Rangers) served as a reliable source of information. After daily surveys while at our camp site, we had the opportunity to discuss with the local guides who opened up and gave us information about the hunting and marketing system of pangolins.

We also interviewed 10 households in the Ouami, Guoyom and Deng-Deng Villages about home consumption and trading of pangolins and derivatives.

Their feedback: The 06 trained local guides made us to understand that the giant pangolins in particular are become so rare to be seen both in the markets and with hunters. Through individual and private discussions, they asserted that there is great indication of the dwindling to extinction of giant pangolins (*Smutsia gigantea*) in Deng-Deng forest areas. They however accepted that the white bellied pangolins are still commonly encountered; however sales in market is rare because researchers have educated the community of ban on pangolin hunting. They say they are not ready for imprisonment.

It is interesting to note that the feedback from most of the local inhabitants were not different from the guides' observation.



Fig. 3a Interview with the Deng-Deng Chief

3b; Group discussion with local hunters/youths

3. In collaboration with the MINFOF ecoguards, we engage into active threat suppression along with the local guides.

Feedback: About 11 Snares and trapping instruments were removed. 03 hunters' shelters were dismantled; while we suggested to the ecoguard that we place a sign board with the write-up "STOP FARMING IN THE PARK".

4. The October to December phase of camera trap surveys showed the presence of pangolins in the same spots where we recorded the species from our 2018 surveys.

Feedback: The pangolins did not reflect the same high population density as in our previous surveys. According to the local guide's opinion which we also agree, the low population recorded is due to the decay and disappearance of the fallen logs that attracted the pangolins by providing termites for food.



Figure 4. White-bellied pangolin captured of different Camera traps

5. A community animation program of inter-pangolins Small (white-bellied) and Giant Pangolins football team was organized as a means to build moral awakening and sense of belonging in the entire community in conserving pangolins. The team involved our local guides, farmers/youths, students and was greatly supported by women and children.

Feedback: This initiative served as a psychological deterrence to the people from harvesting pangolins. After the match, we could hear the local people saying to each other that "I am a giant pangolin and I can't fall". They all portrayed their willingness to defend the species that they played for from any harms.



Figure 5: Pangolin football teams

Equipment used

- Map of the study site, two Hand held GPS units Garmin 65s, Camera Traps, Lensatic military Compass, a stopwatch, one digital camera NIKON, Energizer Batteries, 15 SD Cards Sandisk, 10 head torches, data collection forms, a note book “write in the rain”, tents, sleeping mats, Protective clothing and rain boots for the local guides, machetes and files. We also took along the printed jerseys for the football animation and a football.

Arrival and Presentation at the community

The Conservator of Deng-Deng NP, Mr. Meka Jean welcomed the initiative of suppressing anthropogenic threats along with the local guides. This according to him is a great phase of our project because the ecoguards have had challenges to sensitize the locals and build the collaboration with them to work towards the welfare of species in the park. As such, Mr. LIYONG Giscard Léon (Eco-guard) that we have developed a positive relationship with the local was assigned for the team work. We then assembled our team members. Our Local guides particularly received us with excitement as they were overwhelmed with a new project initiative that considered their full participation as key stakeholders in which we also presented their working materials like raincoats and rainboots. We then presented our plan and agreed on embarking in the field.

The entrance in the southern zone of the park was made from the village Deng-Deng marked with the GPS point on which we started the observation of animal presence indices, with special focus on pangolins, their signs and age of signs. Once in the area, we proceeded to the assessment of transects one after another as described on the map (Figure 2).

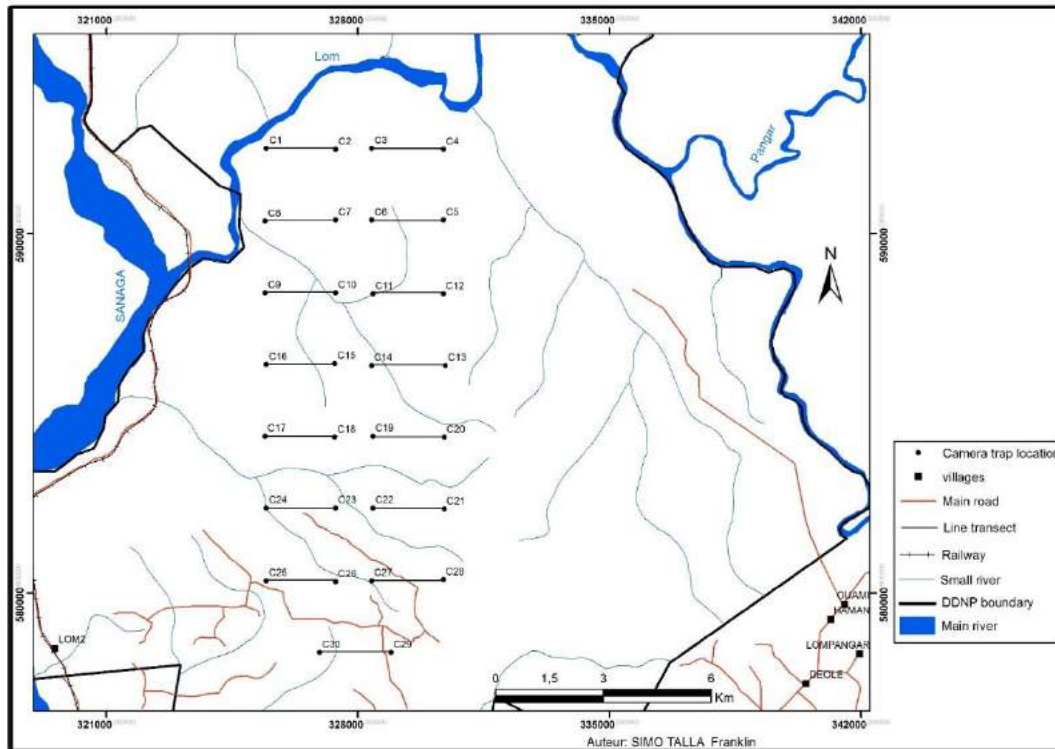


Figure 6: survey map showing transects location

Establishment of transects

It was done using the Hand held GPS and the compass. With the help of the GPS we targeted a point (end transect) located 2 km from our position (early transect) and rallied this point using the compass by following the orientation of the angle given by the GPS (Figure 3A). Transects were opened by the cutter. The latter was immediately followed by a scientist equipped with the Hand held GPS to check the orientation angle, the distance traveled and to record GPS points of all suspected pangolin signs. Another scientist was responsible for recording the data in the notebook (Figure 3B). The remainder of the team's role was to search for all potential Pangolin presence indices, although this task was also the responsibility of all team members working along the transects. Transects were separated respectively by 1 km recce for transects on the same line and 2 km for those on different lines.



Figure 7: Walk along transect and data collection

Collection of pangolin indices of presence

Along transects and recces, we identified and recorded all potential sign of pangolins presence that was guided with the Local Ecological Knowledge of the Local guides. The main signs recorded were the feeding sites, the burrows, and the claw marks on the trees (Figure 6). Since there is no evidence assuring that these signs are really those of pangolins, we emit this with great reserve and only the feeding sites located on dead woods that seem to be widely used by pangolins as a feeding site and as Pathways were chosen for the establishment of the cameras in addition to a few likely burrows.

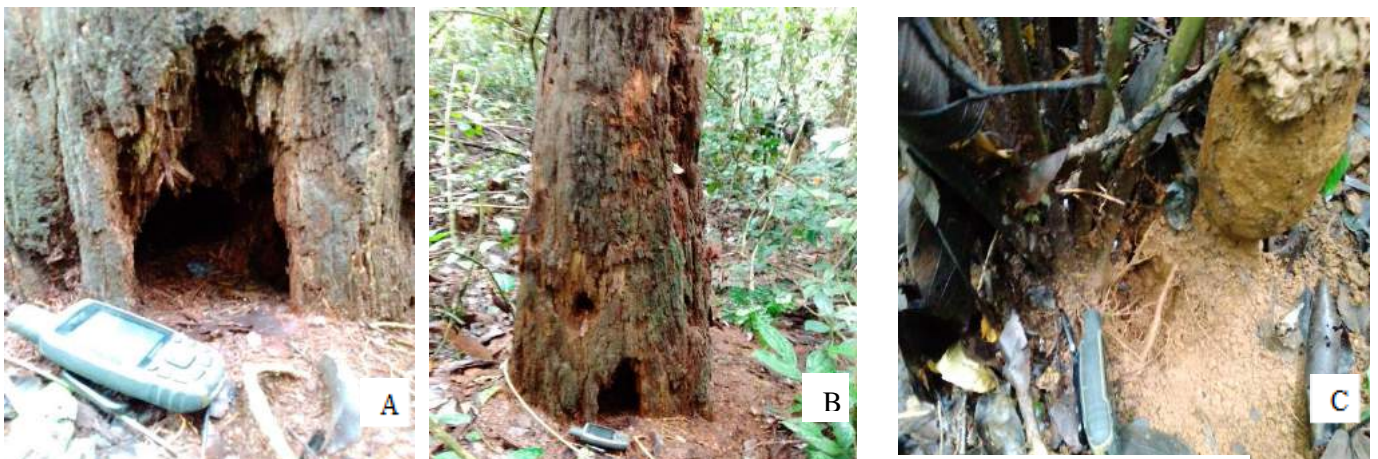


Figure 7: potential signs of presence of pangolins: A) pangolin feeding site on dead wood burrow, B)Pangolin claws as it feeds on dead wood C) site of nutrition on the ground

For each sign encountered, we noted its GPS point, its age and the species. We also characterized the habitat environment of each sign by noting: the forest type, the undergrowth vegetation, the canopy cover, the undergrowth visibility, the slope, the elevation, and the weather.

All burrows encountered along transects were characterized by the measurement of the following parameters: diameter, length, width, depth and orientation. These were located on the ground, in trees and at the base of trees. Traces of human activities in the park were also recorded in the study area.

Encountered Threats

We noted the presence of hunters' tracks, old wood exploitation roads, bullet shells (Fig 7B), hunters' camps (Fig. 7A), and gun shut during the night including the time of the gunshots heard.

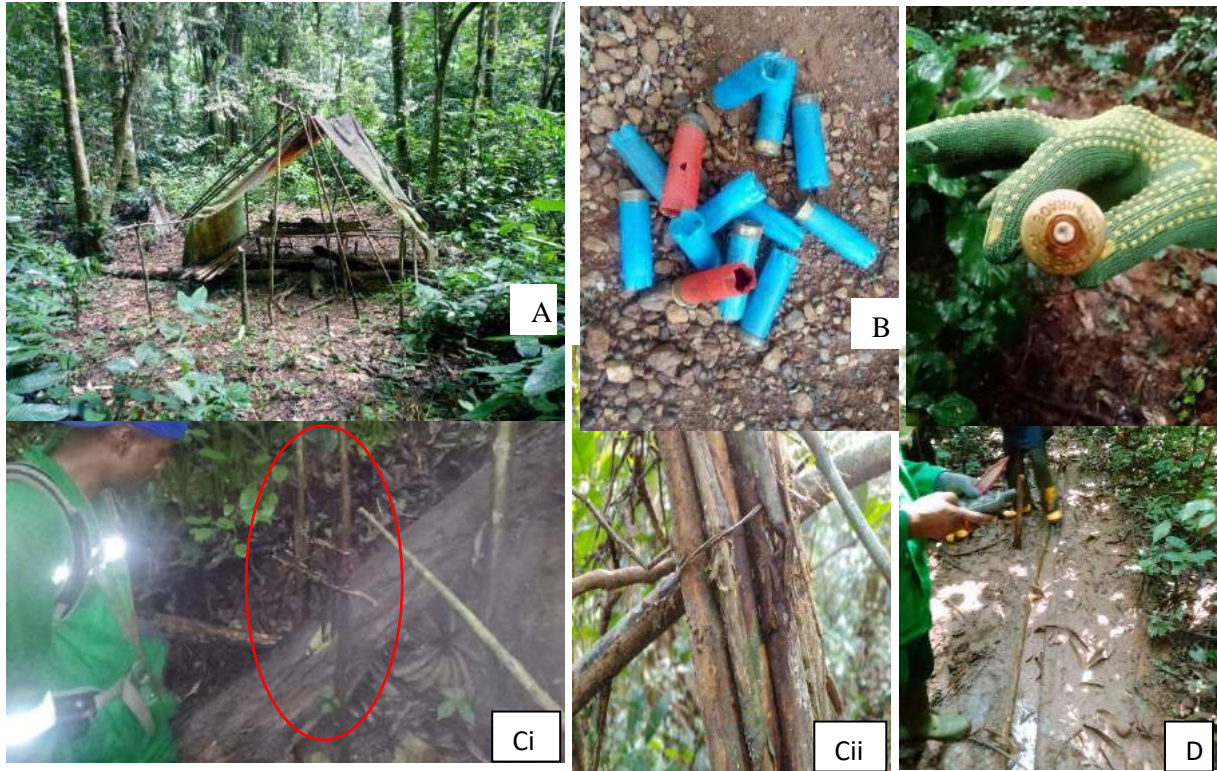


Figure 8: A) Hunter camp, B) bullet shells Ci & Cii) Typical pangolin snare set on a fallen log used by pangolins for passage/foraging, D) Active route used by poachers for the transportation of animal products (bushmeat)

Camera traps establishment

Only feeding point on dead woods that appear to be actively used by pangolins as a feeding site and as pathways were chosen for the establishment of cameras in addition to a few suspected burrows. Camera traps were established in order to confirm pangolin presence with images. Cameras were placed at a height of 30 cm above the ground according to the protocol described by Ancrenaz (2012) for small mammals such as Pangolin.

In the radius showing potential signs of Pangolins, we chose a tree providing the camera with a suitable orientation ensuring that the camera is not facing east or west as sunlight can affect pictures at sunrise and sunset if the camera position is not shaded. The ground was clear in front of the camera to avoid fake detection. The cameras were positioned perpendicular to the natural assumed pangolin sign at a distance of 4-8 m with the aim of obtaining full body lateral images of the animal, a tape measure was used for this. The digital camera was used to check that at least 4 m clear ground is visible in front of the camera and when necessary a small stick was used to ensure the camera is angled appropriately. After installing a camera a detection test was conducted to ensure correct operation of camera. It consists in miming all the possible movements of the animal in the field of the camera to confirm the position and the operation of the camera (Figure 8). A prepared plasticized A4 format showing date, time read from GPS, GPS location of the camera (in UTM) and the altitude was then used to take the first picture of the camera. Associated information such as the forest type and the distance to the nearest water point were also recorded for each camera.



Figure 9: camera traps establishment: **A)** positioning the camera, **B)** detection test

CAMERA SET UP / RECOVERY PHOTO SHEET			
TEAM:	LIDAR / Ebuong's Team		
DATE:	28/10/2023	TIME:	9:13 am
Park/Habitat type	DBND / FMSO / Liana		
LOCATION / WPT No.	Cam 4		
Target	Fallen Log	EL	
GPS UTM X	327529	327532	
GPS UTM Y	582334	582337	
(SETUP) / SERVICE / RECOVERY			

Figure 10: camera traps establishment: **C)** sample of camera prepared sheet cameras final verification, **Direct observations made in the park**

1. Along the transects, we encountered a life White bellied pangolin (*Phataginus tricuspis*)



Figure 11: Encountered life *Phataginus tricuspis*

Some other species encountered/captured

1. Forest hinge-back tortoise (*Kinixys erosa*) rescued from a pressed fallen log



We encountered a tortoise. While noting that it is not advisable to minimize contact with species during a conservation effort, we had to save a tortoise on which a large wood fell on it.

2. African palm civet (*Nandinia binotata*) captured by camera trap



3. Monkey



Encountered difficulties

- We had delay in getting started with this project phase because our GPS that had waypoints from the first phase of the project supported by MBZ had technical issues.

Way forward: We were able to effect repairs in Yaoundé Chinese Shop, and though it took a little bit longer it delayed the pace of the planned activities.

- There was disagreement among the local people who were project proponents on those to be trained and integrated as potential community rangers. Most of them wanted to be part of the team of Local guides knowing that it is a long-term conservation initiative and wanted to benefit from essential skills. Amongst them was a female (Engemba Philomena), who was a forest gatherer.

Solution: We made the locals understand that as a long-term initiative, we shall be moving along and bringing onboard like-minded and proven disengaged forest resource exploiters in the subsequent phase of the project.

- Another challenge was the fact that we had to divert our course from the transect lines in most cases because most streams had over flooded their banks.



Figure 14: Thairry Mpude (M.Sc. student from University of Buea who benefited from the project as an intern)



Figure 15: Environmental club for the students of Government Secondary School Deng-Deng

Acknowledgement

I appreciate the Rufford Foundation through the RSG, which has enabled me to move a step forward in my commitment to ensuring pangolin welfare. With co-funding from the Mohammed Bin Zayed through its Species Conservation Fund, this project is already gaining grounds for a long-term community based collaborative conservation.

Thanks goes to the local chief of Deng-Deng and the inhabitants for their collaboration, participation and willingness to share information with us. Along with the local guides, they all showed a proven commitment to halt pangolin hunting which they actually acknowledged that it is dwindling in population.