

**ASSESSMENT OF ANTHROPOGENIC IMPACT AND HABITAT
DISTRIBUTION OF SMUTSIA GIGANTEA, ILLIGER 1815; IN THE
FOREST VERSUS SAVANNA OF THE DENG-DENG NATIONAL PARK.**

Submitted By;
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**IDEA WILD SUPPORT PROJECT FOR THE LONG-TERM
CONSERVATION OF PANGOLINS IN THE DENG-DENG
NATIONAL PARK, EASTERN REGION OF CAMEROON**

Study area

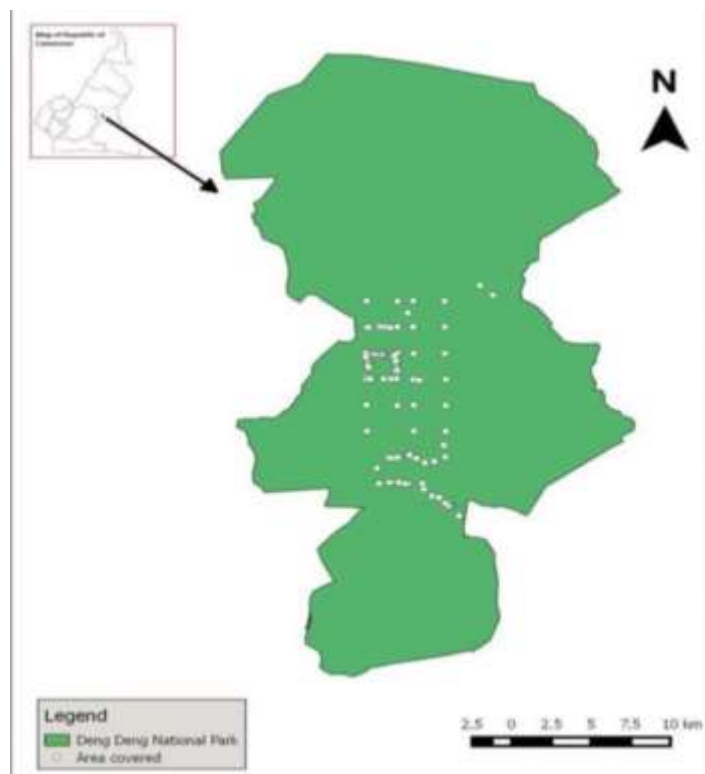
This study was conducted in Deng-Deng National Park (DDNP) located in the Eastern Region of Cameroon in the Lom et Djerem Division ($5^{\circ}5'25''\text{N}/13^{\circ}23'34''\text{E}$). Deng-Deng National Park is characterized by an equatorial and humid climate with annual rainfall ranging between 1,500 and 1,600 mm (Diangha, 2015). It is located in the forest–savannah transition zone of the country. The park area experiences seasonal dry and wet periods (Diangha, 2015), and other than pangolins, it harbors vulnerable wildlife species including gorilla (*Gorilla gorilla*), chimpanzee (*Pan troglodytes*) and forest elephant (*Loxodonta africana*) (Maisels et al., 2011).

This project is the second support received from IDEA WILD for continues conservation of pangolins as well as to enhance the capacity of the project participants in the field of biodiversity protection and environmental sustainability.

Objectives

1. To confirm and document the presence of *Smutsia gigantea* in the Park using camera traps
2. To assess the habitat preference and relative population density of giant pangolins in the different habitat types,
3. Map out and describe anthropogenic activities occurring in and around the park and their impact on species welfare
4. To divert community's attention from forest resources to alternative livelihoods by building local awareness and developing environmental education programs for schools.

Field work



Fourteen camera traps (six Cuddeback X Change Colour Model 1279, and Long-range IR E2 Model, eight Bushnell Trophy Camera Brown 119836 and Trophy Cam HD 119875C) were deployed at sites with good potential for giant pangolin activity in different primary and secondary forest gallery such as Mixed Forest, Liana, marsh, forest with open or closed undergrowth.

Cameras were tied to trees at a height of 30–40 cm above the ground for potential ground burrows and feeding sites. Cameras targeting fallen logs were set higher according to the tree diameter and elevation above ground level and were placed ~30–40 cm above the upper side of the tree trunk. The cameras were positioned perpendicular to the targets at a distance of 3–4 m with the aim of obtaining full body lateral images of the specie.

The cameras were left in the field for a minimum of 60 trap nights and were not checked until removal. Consecutive photographs of the same species were judged temporally independent when separated by a standard 1hr interval (Cusack et al., 2015; O'Brien & Wibisono, 2017).

All signs of human presence such as hunters' huts and tracks, bullet shells, snares and carcass disposed by hunters.

Environmental sensitization was given to hunters, farmers, and schools teachers. Local hunters who provided field assistance and those that showed willingness to disengage from hunting activities, and eco-guards were trained using camera traps, GPS and compass for refresher.

Species abundance

There was a cumulative total of 794 operational camera-trap nights during this survey with just 14 records of independent events of the giant pangolins at nine different camera locations. This The camera traps installed at ground feeding sites recorded the highest trapping rate, followed by the camera traps installed adjacent to burrows, and then those targeting fallen logs. The lowest trapping rates were recorded on tree cavities (Table 1).

The first photographic event was recorded on a camera set perpendicular to a fallen log within seven days of the camera-trap deployment.

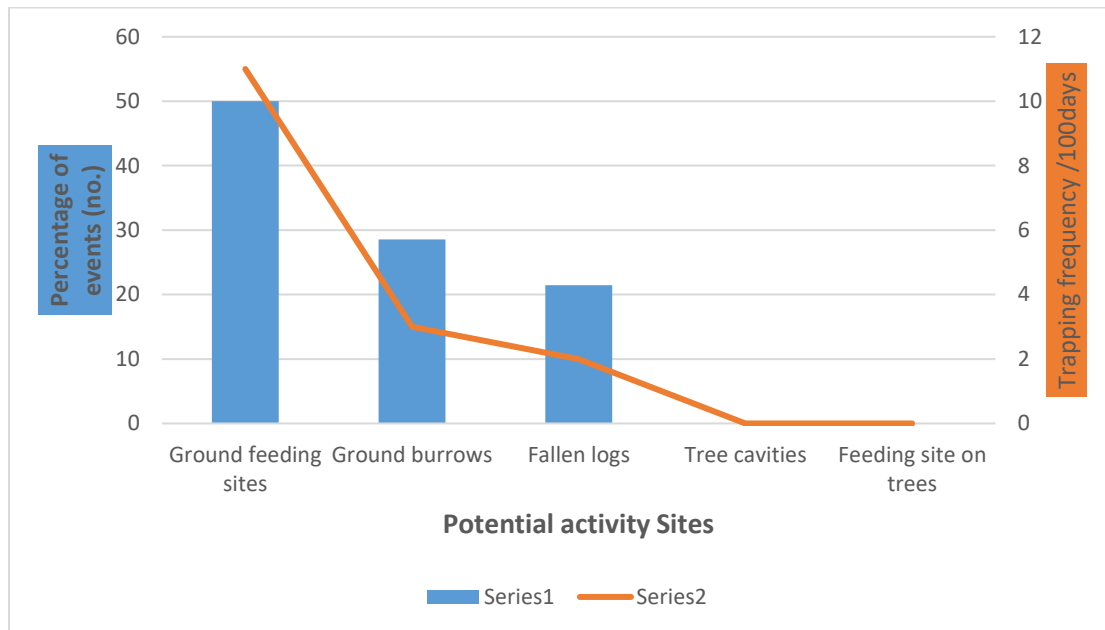
The giant pangolins appear to be motivated by its food source for its movement and habitat use. Only 02 cameras installed at logs recorded photographs of giant pangolins walking along their length (02 events), while 03 foraging events were recorded. Over the five. Photographic events of pangolins obtained at feeding sites on dead trunks show the animal foraging in

TABLE 1: Giant pangolin detections per potential pangolin activity sites

Potential activity Sites	Number of camera locations	Sampling efforts (days)	Average number of events per camera	Percentage of events (no.)	Trapping rate per 100 days
Ground feeding sites	4	300	7.2	50% (7)	11
Ground burrows	2	145	1.8	28.57% (4)	3
Fallen logs	1	120	0.5	21.43% (3)	2
Tree cavities	0	133	0	0% (0)	0
Feeding site on trees	0	96	0	0% (0)	0

Total	07	794	100% (14)
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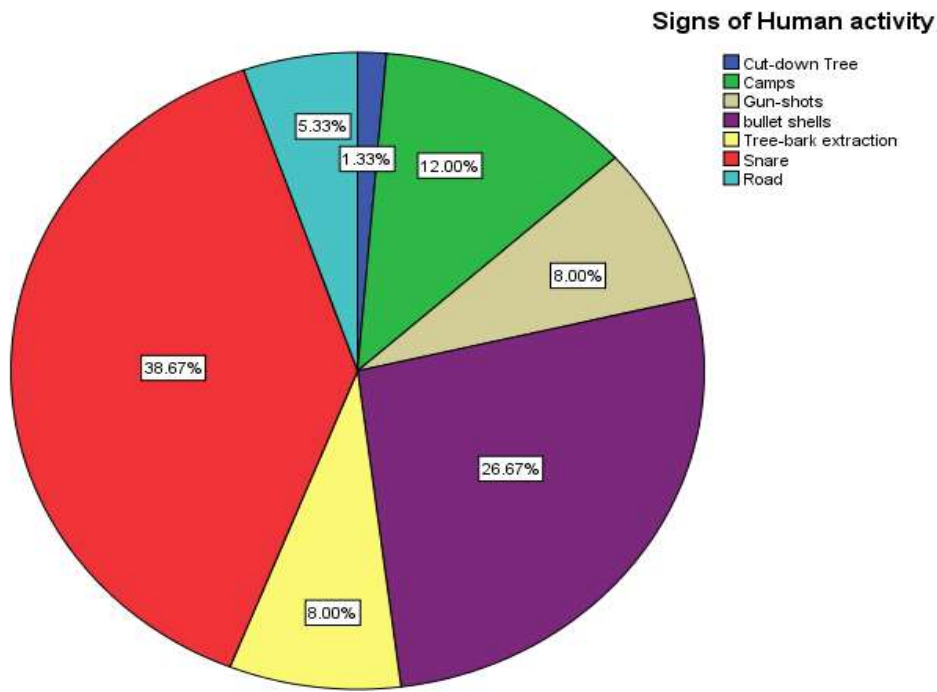
Table 2: Percentage of Trapping Events of the Giant Pangolin



Anthropogenic threats

The study had clear evidence of anthropogenic threats (Figure 3) with a record of 38.67% on snares, believed to have been set by the local hunters and trappers, pangolin carcass. However, this would not be a surprise to anybody since the local villagers are using these animals for bush meat consumption and revenue generation for household. An encounter rate of 26.67% for empty bullet-shells was an additional confirmation of heavy poaching in this protected area, necessitating the need for a new conservation strategy. Sporadic gun-shots recorded a frequency rate of 8.00% during the study, another confirmation of the ineffectiveness of wildlife protection by the wildlife management authorities in the national park.

Figure 3: Encountered anthropogenic threats



Recommendations

There is need for periodic monitoring of the sites proven to have pangolins. The government and the protected area management authorities needs to collaborate with individual researchers and make use of submitted coordinates from our field surveys for their field patrols. Also, identified rich zones of the park needs continues M&E in collaboration with the local guides since conservation is a continues process.

Importantly, it is a historical fact that most villages around Deng-Deng National Park have been dependent on the gathering of forest resources, hunting and trapping of wildlife for household survival. Changing this culture would mean the evolution of animal husbandry at a large scale should be introduced and financed by the national government with support from other conservation stakeholders in villages found in the peripheral zone of the protected areas. This will be providing alternative livelihood sources. It is in this regard that I will be expanding this conservation work beyond field level to livelihood action with the support of IDEA WILD, to secure funds that will help improve livelihoods and divert local attention of the people from the forest resources of the Deng-Deng National Park (DDNP).


Field Pictures and Local Field Assistant Training



Some species obtained from Camera traps in 2020 survey





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