



## Proposal to the African Elephant Fund

1.1 Country: GABON

1.2 Project Title: Elephant inventory in the Gamba Protected Area Complex (CAPG)

1.3 Project Location: Gamba Protected Areas Complex

1.4 Overall Project Cost: **323.311 USD**

AMOUNT Requested from African Elephant Fund: **109 049 USD**

1.5 Project Duration: 7 Months (February-August)

1.6 Project Proponent: World Wide Fund for Nature (WWF)

1.7 Name of Project Supervisor: Pierre Brice MAGANGA

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1.12 Date proposal submitted: 02/05/2018

## 2.0 Project Summary: (not more than 250 words)

CAPG is the largest protected area of the country (11 320 km<sup>2</sup>). Several surveys have been carried out of different parts of the Gamba Complex. In Loango NP in 2007, 290 elephants were estimated; 900 elephants (231-1,617) in the Kivoro logging concession in 2008 and 236 (183-304) in a small part of the Moukalaba-Doudou NP and a part of the adjacent Sette-Cama Reserve in 2011. But there was a previous estimate of 11,205 ± 969 from 1999 for the entire area but this is not comparable because a larger area was covered and a different decay rate was used.

WWF support in CAPG began in 1992 with the construction of the Setté-Cama Wildlife Brigade. In 2008, thanks to WWF, a Public-Private Partnership was born. An Anti-Poaching Program (ProLab) is functional in private forest and oil concessions.

Given the alarming expansion of ivory trafficking and the disappearance of forest elephants, it is urgent to carry out a new comprehensive inventory of all CAPG. On private concessions, the data collection will be carried out by WWF and Smithsonian Institution on the Prolab funds and on Loango NP, the data collection will be done by WCS on "Vulcan" funds. The budget needed to inventory the elephants of Moukalaba-Doudou NP remains to be mobilized, that is why we seek the financial support of African Elephant Fund to have a complete and critical reading of the elephant situation on the whole CAPG .

## 3.0 Which Priority Objectives and Activities (there may be more than one) in the African Elephant Action Plan does this project fall under? (For ease of reference, Priority Objectives are attached under Appendix 1)

Our proposal falls under the framework of the following objectives and activities of the African Elephant Action Plan (PAEA) of the United Nations Environment Program.

*STRATEGY 5.1: Determine and monitor the status of African elephant populations and their habitat within and among elephant range States.*

- *Activity 5.1.1. Conduct population surveys in prioritized areas as identified by the regions.*
- *Activity 5.1.2. Conduct inventories for unknown/less known populations to ascertain their biological status and their habitats.*

## 4.0 Project Rationale – why is this project necessary and urgent? What threats face this elephant population (give, for example, what information you have regarding population details, trends in population (downward or upward), ivory seizure information, details about levels of poaching, human/elephant conflict, etc.).

Research's on elephant presence between 2002 and 2011 in Cameroon, CAR, Congo, Gabon and RDC has shown that the population of forest elephant is now less than 10% of its potential size, occupying less than 25% of its potential range.

As a result of poaching, the forest elephant lost in 10 years 80% of its population in a Minkébé National Park in northern Gabon. This corresponds to the loss of 25 000 individuals killed between 2004 and 2014. In front of this massacre, the CAPG represents the one of the last bastion of forest elephants in Gabon.

However, the human need for natural resources threatens the biodiversity of the CAPG. Indeed, the operations of the oil company Shell Gabon have been the catalyst for the creation of the small town of Gamba, which has around 11 000 inhabitants and much of which is employed in the oil sector. The presence of these employees, most of who are from a second generation, have an impact on the surrounding biodiversity of Gamba through the development of slash and burn agricultural activities, habitats loss, illegal hunting and wildlife trade.

The development of infrastructures such as the "Gamba-Loubomo" road that connects the city of Gamba to the road network and the future "Port-Gentil-Yombi" road that will cross the Gamba Complex to connect Port-Gentil to the national road n° 1 increasing the risk of poaching to an area that has long been naturally protected by the relative inaccessibility. These serious threats must be mitigated by appropriate measures based on reliable information. To do this we need accurate and recent Data. Ecological monitoring will help understand trends in natural evolution, assess the state of the environment, make progress on management objectives, strengthen patrols effectiveness, reduce threats to biologically rich areas and provide early warning for adaptive management.

This is the purpose of this action which is part of a permanent monitoring of biodiversity during initiation which consists in setting up a monitoring program of elephant populations.

5.0 Detailed Proposal – including activities to be carried out, milestones (at least quarterly milestones), timelines, equipment to be purchased, reporting procedures, etc. (not more than 1 000 words). It will be helpful in evaluating this Project Proposal if you to divide it into phases such as Planning; Procurement; Implementation; Evaluation and Reporting  
Should include anticipated benefits (including benefits to the conservation and management of elephant populations and communities) and outputs from the project, and how the project will be monitored and evaluated.

**General objective**

To evaluate the abundance and distribution of large mammals in the Complex of Gamba, to allow managers of protected areas and industrial concessions to adapt their interventions and define new conservation objectives.

**Specific objectives**

To describe the abundance and punctual distribution of elephants and others large mammals;  
Describe the distribution of illegal human activities related to elephant conservation.  
Generate a baseline of densities and abundances that would allow to detect substantial changes (> 20%) of elephant populations and others large target mammal if the study is replicated in the future.

### Activity

CAPG has been stratified into 6 sectors:

'Gamba' (751 km<sup>2</sup>, 44 transects), 'Kivoro' (3 149 km<sup>2</sup>, 172 transects), 'Rabi' (1 853 km<sup>2</sup>, 100 transects), 'Mandji' (1 656 km<sup>2</sup>, 178 transects), 'Loango' (1 397 km<sup>2</sup>, 150 transects), and 'Moukalaba' (4 457 km<sup>2</sup>, 247 transects).

5 teams of 6 peoples currently cover the sectors Gamba, Kivoro, Ndougou and Mandji. The funds come from the private sector. At this stage 288 transects out of a total of 494 have been completed. The remaining 206 will be covered by the end of December at the latest. The Loango National Park will be inventoried by WCS and the African Elephant Fund will cover the missing area of the Moukalaba-Doudou National Park.

### Methodology

The methodology used follows the regional (N'Goran, 2014) and international recommendations for elephants (*Loxodonta cyclotis*, Hedges & Lawson, 2006) and great apes (Chimpanzee, *Pan troglodyte* and Gorilla, *Gorilla gorilla*, Kühl et al. 2009) monitoring. Sampling combines two-kilometer linear transects (Buckland et al., 2001) and reconnaissance walks ("recce", Walsh & White, 1999) between transects.

The data will be collected on 2km line transects and recce and will be analyzed by the method of *Distance sampling* to estimate the densities of elephants and great apes. At the same time, a study of elephant dung and great ape nest degradation to refine density estimates was conducted. Predictive models will be used to check that the differentiation between chimpanzee and gorilla nests is satisfying. The data will also be used to model factors affecting the distribution of mammals of interest through logistic regressions.

The expected coefficient of variation for elephants in all areas is 20%

The monitoring is conducted between 7:00 and 16:00 and each team has four people.

A **tracker** at the front of the team is responsible for opening the transect and making direct observations. In some places, secateurs are used rather than machetes. In all cases, the transect is open with minimal damage to the plants. Shrubs and lianas undergrowth more than 2cm of diameter are not cut.

A **navigator**, placed ~ 5m after the tracker, is in charge of indicating the direction of the transect by following the azimuth on a compass of aiming to realize perfectly straight transects. The navigator directs the tracker when it opens the transect ('left' or 'right'). The navigator is also in charge of the GPS, the watch, the topofil, and to make observations of signs on the ground.

A **team leader**, placed about 2m after the navigator on the side of the transect is responsible for taking notes and making observations of nests of great apes and arboreal species. He is in charge of the data collection.

An **assistant** is placed about 2m after the navigator on the side of the transect. It is responsible for detecting human activities, performing perpendicular distance measurements and assisting in the identification of encountered animals and trees for great ape nests

The team will also include two porters carrying most of the baggage when camping on the field. They move silently about 200m behind the team on transects.

**Data collected**

Are collected: direct observations of elephant, dung, carcasses, and opportunistic observation of other target mammals (gorillas) and human activities.

**Data entry and verification**

The team leader is also responsible for entering and verifying the data. All data is organized in an Excel file containing the following sheets:  
 list of "waypoints" obtained directly from the GPS and containing at least the name of each "waypoint" in the GPS, the date, the time and the corresponding coordinates;  
 list of observations recorded in the CyberTracker database during the mission. All the fields for each observation are filled in or marked 'ND' (for 'No Data') if it has been forgotten or 'NA' (for 'Not Applicable') if it is not necessary,

The tracklogs of each transect and each recce during the mission are sent in .gpx format together with the Excel file within one week after each mission to the Smithsonian Institution responsible for writing the final report for inspection. The inspection consists of looking for data entry errors and then comparing the data obtained by different teams in the same areas, in order to alert the team leaders if there is a suspicion of bias. The inspected data is shared with the rest of the partners in a common database.

**Expected results and evaluation**

- The density and distribution of elephants are known
- The type and distribution of human activities are known
- A baseline of densities and abundances that would detect substantial changes (> 20%) in elephant populations is established
- A low-cost methodology for ongoing monitoring of elephant populations in the Gamba Complex is developed.

6.0 Project Timeline – outline the timeline for proposed activities within this project. You may find it helpful to relate the timeline to the Phases identified in Section 5.0 above.

Calendar

Activities/Month	1	2	3	4	5	6	7
Renewal of some equipment and consumable acquisition							
Field data collection							
DNA extraction							
Data analysis							
Report writing and communication							

BUDGET

7.0 Has this project received or been pledged any other sources of funding (external)? Give all relevant details (for example, amount, source of funds, timetable, any restrictions):

For all 5 sectors (Gamba, Kivoro, Rabi, Mandji and Moukalaba Doudou sectors), the total estimated budget is 323 311 USD distributed as follows: 174 089 USD to cover the first 4 sectors and 149 222 USD for the Moukalaba Doudou National Park and genetic analyzes. The first funds were allocated mainly by the private sector, the WWF and the Smithsonian Institution.

For the ecological inventory in the Moukalaba-Doudou National Park, the budget requested from the African Elephant Fund will support:

Wages of the project coordination team, 5 field team leaders, 15 assistants and 10 porters for 3 months (February-April), some equipment and consumables, genetic analysis for the 5 sectors and part of the logistics cost (fuel, ...).

The WWF will provide two 4x4 land cruiser vehicles and a 100 hp motorized boat.

7.1 Please provide a detailed proposed budget for this project (in US\$). You may find it helpful to relate expenditure to the Phases you have set out in Section 5.0

Details included in Table annexed to the document:

*Any other budget lines:*

7.2 Please specify the proponents contribution towards the project

DETAILED FORECAST BUDGET (USD: 1 USD=564 FCFA)

<b>Lignes budgétaires</b>				
<b>Activités de terrain</b>		<b>Honoraires/transect</b>	<b>Nbre transects/personne</b>	<b>Total</b>
1	Chef d'équipe (5 chefs d'équipes)	31	50	7 750
2	Assistants (15 assistants)	18	50	13 500
3	Porteurs (10 porteurs)	13	50	6 500
4	Primes (30 personnes)	5	50	7 500
5	Rations (30 personnes)	9	65	17 550
<b>Sous-Total activités de terrain</b>				<b>52 800</b>
<b>Achat équipements et combustibles</b>				<b>Total</b>

6	Piles trimbles (3/jr*4)+ Imprévu	2	682	8 520
7	Piles GPS (2/2jrs*5)+ Imprévu	2	415	5 192
8	Piles App. Photo (4/4jrs*5) + imprévu	2	14	173
9	Bobines topofil (2km/bobine)	520	5	2 671
10	Frais de douanes (Bobines topofil)	Forfait	1	1 500
11	Gaz oil (2jrs/mission déposer/récupérer les équipes)*6 missions+ Imprévu	600	1	3 600
12	Essence (100% missions bateau WWF)*5 missions + Imprévu	300	1	1 500
<b>Sous-total achat équipements et combustibles</b>				<b>23 156</b>
<b>Analyse génétique</b>				<b>33 093</b>
<b>TOTAL GENERAL</b>				<b>109 049</b>

Please submit the completed proposal by:

Email: [africanelephantfund@unep.org](mailto:africanelephantfund@unep.org)

You should receive acknowledgement of receipt of your proposal within 14 days.  
If you do not receive such an acknowledgement, please telephone: (254) 20 7625069 / (254) 20 762 5046

Further details on any of the above details may be requested by the Steering Committee of the African Elephant Fund.