

Large mammal and Fish Fauna assessments in the planned oil palm concession area of Herakles Farms in SW Cameroon

Brief Summary of mid-term results, 27 June 2013

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Report to Save Wildlife Conservation Fund, Greenpeace and WWF

Background

As per June 2013, Dschang University (DU., Dr. Bobo, Mr. Chia Bonito Ntumwel and others) in Cooperation with Georg-August-Universität (GU) Göttingen (Mr. Denis Kupsch) have been involved in the systematic assessment of Diversity and – potentially – Populations of Large Mammals and Birds. In addition, Ulrich K. Schliewen, Bavarian State Collection of Zoology (ZSM), in cooperation with Arnold Bitja Nyom, University of Yaounde/Ngaoundere (UY) have compiled fish data from the concession area and undertook a rapid fish assessment in early 2013.

As per 20 June 2013, the systematic large mammal survey and vegetation plot sampling has been completed with the exception of a few transects in the Mundemba block where local villages showed some resistance against ‚studies‘ in their forest. This resistance was related to the differences of interest in the villages regarding activities of Herakles Farms‘ operation. Bird survey work has also been hampered and is therefore still ongoing. Field work will need to be completed in June, however.

This short report summarises findings from the fish survey and the large mammal survey for the Nguti block of the concession, for which data from 33 two-km transects were available to me as per June 2013. These 33 transects were walked once and both a direct survey as well as an indirect survey was undertaken, amounting to a total systematic survey effort of 66 km both for direct as well as indirect survey.

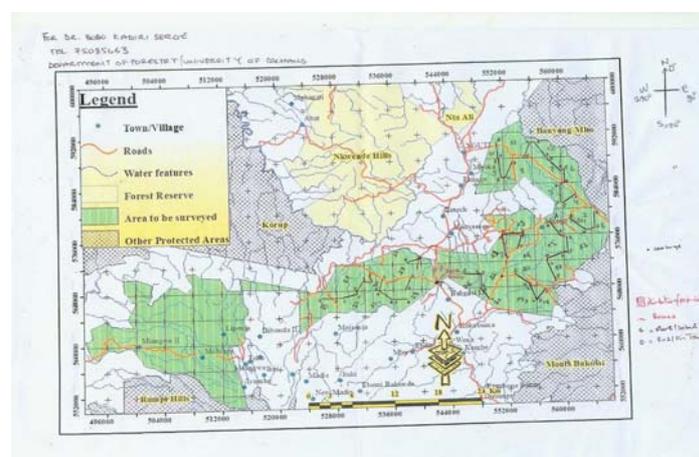


Fig.1: Map depicting survey design and those surveyed two-km transects for which information is made available in this report (so-called ‚Nguti-block‘), from Chia Bonito Ntumwel

Results

A Presence of Large Mammals (Nguti block)

In total, 23 large mammal species were recorded. The current (20 June 2013) list of wildlife indicator species is largely congruent to that of the PSMNR-SW programme, in that it e.g. contains all diurnal primate and duiker species which are also listed for Korup National Park, with the exception of Preuss' Guenon but who is a localised species, being confined largely to mountainous habitat, and for which presence isn't to be expected. Diurnal primates also include (Elliot's) Chimpanzee *Pan troglodytes* for which nests have been recorded along two of the 33 transects. Drill *Mandrillus leucophaeus* was recorded also indirectly based on their characteristic feeding signs on the ground along two transects. In addition, Preuss' Red Colobus *Procolobus preussi* and red-capped Mangabey *Cercopithecus torquatus* was recorded from one transect each (direct records). All typical lowland guenons (genus *Cercopithecus*) were recorded: these are Crowned *C. pogonias*, Mona *C. mona*, Putty-nosed *C. nictitans* and Red-eared guenon *C. erythrotis*.

Elephant trails and dung were recorded from 4 transects. All four species of duiker known from the region were recorded as well. The forest buffalo was not recorded.

These results show clearly that the planned concession area is of high conservation value. They also show that previous surveys were insufficient to establish adequate information on large mammal presence.

B Fish survey

Schliewen & Bitja (2013) found the waters of the Upper Cross in the vicinity of Nguti to harbor an endemic cichlid, *Etia nguti*, found only in the Upper Mamfue drainage system and not anywhere else in the world. This area contains relict fish assemblages and was therefore of major importance for African fish evolution, with *Etia nguti* being a phylogenetic sister taxon to the majority of African cichlids. Conservation of these waters is therefore of very high conservation priority. In addition, the survey revealed the presence of a fish species probably new to science, the cyprinid *Brycinus sp. aff. intermedius*, so far only known from the concession area.



Fig.2: *Etia nguti*, a cichlid fish endemic to the vicinity of Nguti (Upper Mamfue) (Schliewen & Bitja 2013).



Fig.3: *Brycinus sp. aff. intermedius*, probably a new species, so far only known from the concession area

Table 1: List of large mammal taxa relevant for large mammal conservation in SW Cameroon, and their presence in the Nguti block of the SGSOC concession. Population persistence of most of these species will depend on landscape scale conservation action, addressing issues of connectivity and matrix quality (permeability) in landscapes around the protected areas. Moreover, since population viability is largely dependent on population size - most of these species will require also extensive habitat for reproduction outside of protected areas.

Vernacular Name	Scientific Name	IUCN threat category¹	Population Trend¹	Presence in Nguti block of concession⁴	
Ogilby's duiker	<i>Cephalophus ogilbyi ogilbyi</i>	Vulnerable C1	↓	Decreasing	*
Blue duiker	<i>Philantomba monticola</i>	Least concern	→	Stable	*
Yellow-backed duiker	<i>Cephalophus silvicultor</i>	Least concern	↓	Decreasing	*
Bay duiker	<i>Cephalophus dorsalis</i>	Least concern	↓	Decreasing	*
Bushbuck	<i>Tragelaphus scriptus</i>	Least concern	→	Stable	
Sitatunga ²	<i>Tragelaphus spekei</i>	Least concern	↓	Decreasing	
Forest buffalo	<i>Syncerus caffer nanus</i>	Least concern	↓	Decreasing	*
Red river hog	<i>Potamochoerus porcus</i>	Least concern	↓	Decreasing	*
Water chevrotain	<i>Hyemoschus aquaticus</i>	Least concern	↓	Decreasing	*
Elephant ³	<i>Loxodonta africana (cyclotis)</i>	Vulnerable A2a	↑	Increasing	*
Putty-nosed monkey	<i>Cercopithecus nictitans martini</i>	Vulnerable A2cd	↓	Decreasing	*
Mona monkey	<i>Cercopithecus mona</i>	Least concern	?	Unknown	*
Crowned monkey	<i>Cercopithecus pogonias pogonias</i>	Vulnerable A2cd	↓	Decreasing	*
Red-eared monkey	<i>Cercopithecus erythrotis camerunensis</i>	Vulnerable A2cd	↓	Decreasing	*
Preuss' guenon	<i>Cercopithecus preussi preussi</i>	Endangered A2cd	↓	Decreasing	
Red colobus	<i>Procolobus preussi</i>	Critically Endangered A2cd	↓	Decreasing	*
Red-capped mangabey	<i>Cercocebus torquatus</i>	Vulnerable A2cd	↓	Decreasing	*

¹ for info and definitions, see redlist.org, accessed 07 August 2012

² The forest elephant is currently not separately assessed

³ (unconfirmed) record for Korup NP

⁴ based on 66 km direct and 66 km indirect surveys on 33 two-km transects

Table 1 (continued):

Vernacular Name	Scientific Name	IUCN threat category¹	Population Trend¹	Presence in Nguti block of concession
Drill	<i>Mandrillus leucophaeus leucophaeus</i>	Endangered A2cd	↓	Decreasing *
Chimpanzee	<i>Pan troglodytes ellioti</i>	Endangered A4cd	↓	Decreasing *
Cross River gorilla	<i>Gorilla gorilla diehli</i>	Critically Endangered A4cd	↓	Decreasing
Civet	<i>Civettictis civetta</i>	Least concern	?	Unknown
Brush-tailed porcupine	<i>Atherurus africanus</i>	Least concern	?	Unknown
African leopard	<i>Panthera pardus pardus</i>	Near-threatened	↓	Decreasing

¹ for info and definitions, see redlist.org, accessed 07 August 2012

² The forest elephant is currently not separately assessed

³ (unconfirmed) record for Korup NP

⁴ based on 66 km direct and 66 km indirect surveys on 33 two-km transects



Fig. 4: Pamol Plantation (right) and Korup National Park (left), separated by the Ndian river. For most rainforest biodiversity, industrial oil palm plantations do neither provide habitat of any quality nor enable connectivity. Photo: reflecta.tv/Markus Zehnder

Preliminary conclusion

The forest block along the Cameroon-Nigerian border (ca. 25,000 km²) is the largest continuous rainforest in the whole of the West African biodiversity hotspot – most forest in western West Africa (west of Nigeria) is already severely fragmented. Cutting the ‘heart’ out of this contiguous rainforest region will not be without consequences. Populations of species in a large and intact ecosystem are viable whereas small and fragmented populations have a much increased extinction risk. Already since the 1960ies, both theoretical ecology as well as empirical research have provided a basic understanding of the relationship between area size and species richness: in vertebrates, a reduction of original area by ten will lead to a reduction of species by 50%: this means, fragments of 2,000 km² theoretically will contain only half of the species present in a similar-sized section of a larger habitat of ca. 20,000 km².

It is therefore important to contain a forested landscape also outside the protected areas. Palm oil plantations function as non-habitat and non-corridor for the majority of forest species, in a similar way as an ocean does for terrestrial species. One empirical example: Bioko island (2,000 km²) is about the size of Korup National Park and its buffer zone (1,200 km⁺) yet it holds only ca. 150 bird species, while Korup holds ca. 450 bird spp. ! – Bioko also does not hold any of the following large mammals: forest elephant, red-capped mangabey nor chimpanzee. Why is that? – simply because the Korup populations of all these species are supported by populations in the surrounding forests.



Fig. 5: The current presence of most large mammals (here a Red-capped Mangabey) in the planned concession clearly shows that the area is still quality habitat of reproductive value as well as permeable matrix between protected areas. Photo: reflecta.tv/Markus Zehnder

The records from the current surveys show indeed that the planned concession area is part of a system which stabilises the existence of all species of conservation concern of the region. They also show that presence/absence surveys of limited areas such as those usually done by EIAs need to be interpreted in a much larger context. In that sense, we strongly have to argue for a wholistic concept for both economic development and biodiversity conservation in the region.

Literature

Schliewen, UK & Bitja, NA (2013) preliminary report ,Assessment of the coconservation value of the fish diversity in the proposed oil palm plantation (SGSOC area).