



Tropentag, October 5-7, 2011, Bonn

“Development on the margin”

## Preliminary Information on the Density and Distribution of Duikers in the Oban Sector of Cross River National Park, Nigeria

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### Abstract

Duikers (Cephalophinae) represent a very high percentage of animal species killed for meat across forested West and Central Africa, and their populations are likely becoming depleted even in protected areas. There is therefore a strong need to provide baseline data for wildlife conservation, monitoring and management. So far, however, there is but very few reliable biological and ecological data on duikers, especially in Nigeria. We assessed the current status of duiker populations in the Oban Sector of Cross River National Park, using the line-transect method. Diurnal and nocturnal surveys were conducted along 32 transects of 2 km length each in four land use types *viz*: core of the park (closed canopy forest), buffer zone (secondary forest), farm fallow and plantation. Eight transects were located in each of the land-use types in four locations evenly distributed over the Oban Division of the Park. After 508 km survey effort on these transects, only two out of four species of duikers of the region were recorded, namely: Ogilby's (*Cephalophus ogilbyi*) and blue duiker (*Cephalophus monticola*). The two larger duiker species known from the region (yellow-backed *C. sylvicultor* and bay *C. dorsalis* duiker) were not observed at all. Using habitat as a covariate in modelling detection probability in DISTANCE 6.0, we calculated densities of each species and for each habitat. For the blue duiker, estimated densities ranged from 15.5 (95 % Confidence Interval C.I.: 7.8 – 30.9) in the core, over 5.8 (C.I.: 2.6–12.9) in buffer and 0.9 (C.I.: 0.09–10.1) individuals per km<sup>2</sup> in fallow to no duikers in the plantation. For the Ogilby's duiker, estimated densities ranged from 1.6 (95 % C.I.: 0.7–3.7) individuals per km<sup>2</sup> in core, over 1.6 (0.8 – 5.1) in buffer to no duikers in farm fallow and plantation. Based on these estimates, population sizes were estimated at a minimum of 16,000 individuals (lower bound of the 95 % Confidence Interval) for the blue duiker and 1,600 individuals (lower bound of the 95 % Confidence Interval) for the Ogilby's duiker in the 2,866 km<sup>2</sup> study area, with most occurring in the 2,064 km<sup>2</sup> core area of the Park (lower bound of C.I: 16,100 blue and 1,400 Ogilby's duikers). These data may serve as a basis to call for increased conservation efforts in order to restore depleted duiker populations and as a baseline for a model on hunting management. The apparent absence of yellow-backed and bay duikers may be an indication that these two species have already become locally extinct as a result of hunting and land use. There is therefore an urgent need to improve on the management of the Park.

**Keywords:** Abundance, Cross River National Park, density, duikers, encounter rate