

# **Conserving Bonobos in the last Unexplored Forest of the Democratic Republic of Congo the Tshuapa-Lomami-Lualaba Landscape**

**By**

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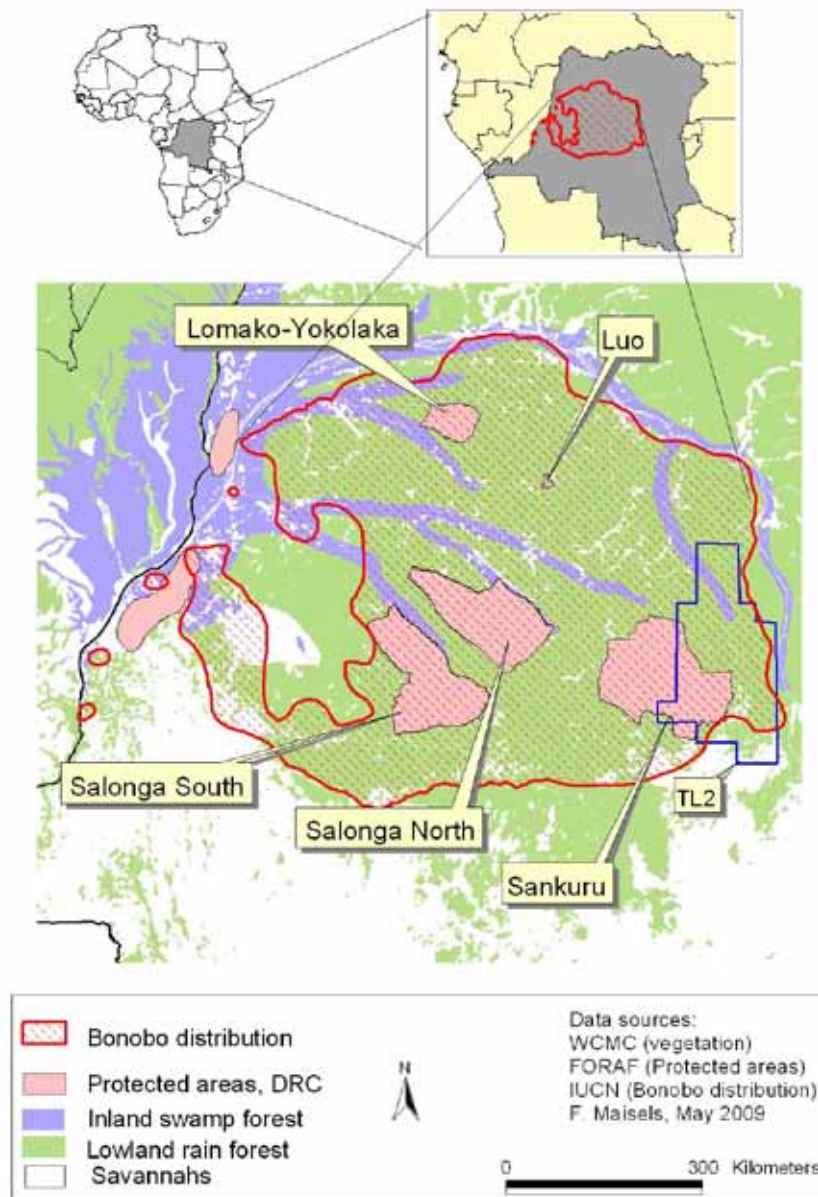
## **FINAL REPORT to the BENEFICIA FOUNDATION**

### **1 Introduction.**

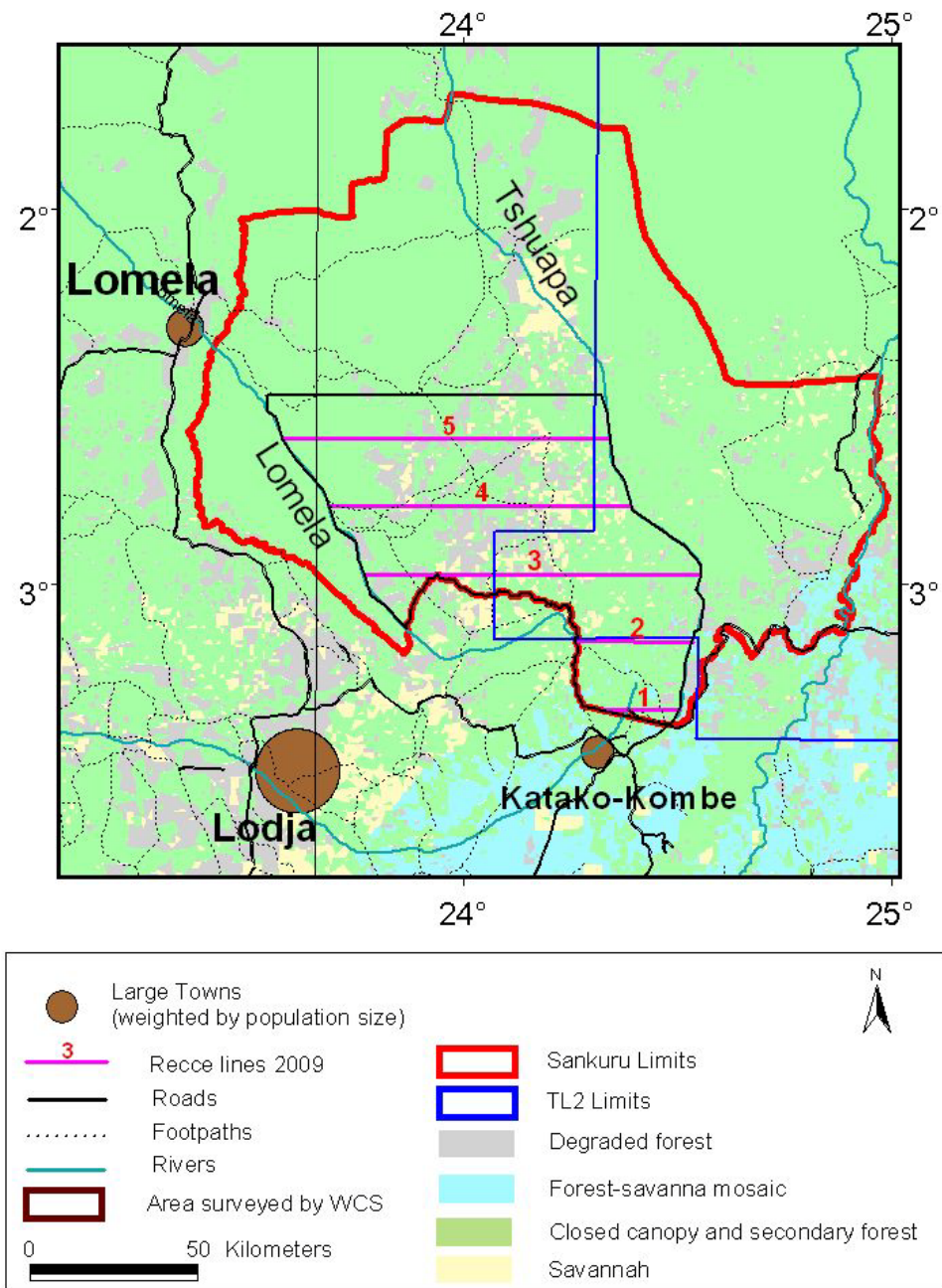
Bonobos, are probably the world's least known great ape, and occur only in the Democratic Republic of Congo (DRC). They were put on the Endangered list by the IUCN, and remain Endangered today (IUCN 2008) Their range covers some of the most inaccessible forest remaining in central Africa (Fig. 1). In November 2007, the government of DRC created the Sankuru Natural Reserve (SNR) west of the Tshuapa-Lomami-Lualaba landscape, specifically for the protection of bonobos. However, because only one brief field survey had been conducted prior to its creation (Balemba & Mulavwa 2007), little was known about the wildlife or the human activities existing within the Reserve. It was thus vital to assess the abundance, distribution and status of bonobos, and the scale, distribution, and impact of threats on the long-term protection of the species.

The socioeconomic information gathered during the first phase of this project (WCS 2008) indicated that there was widespread poaching, commercial bush meat hunting, agriculture and mining in the area. Trade in bushmeat was very active with meat being transported from the more remote forest blocks along rivers and footpaths. The destination of this bushmeat was the towns and the mining settlements (mainly outside of the forest zone), where the urban dwellers, miners and people working in the various service trades in the minefields had sufficient money to purchase bushmeat.

The second phase of the project, reported upon here, was the assessment of the distribution and relative abundance of bonobos; the distribution, intensity and types of threats to their populations; and recommendations for conservation actions in this new protected area. We conducted a survey of about 30% of the Reserve, covering the area between the Tshuapa and Lomela rivers (Fig. 2). A further 43% of the Reserve (the area east of the Tshuapa River and part of the northern sector) had already been surveyed by the Tshuapa, Lomami, Lualaba (TL2) Project. The remaining 27% of unsurveyed land is mostly in the northern sector, and is covered by degraded forest. (Fig. 3).



**Fig. 1. Location of DRC within Africa, bonobo range, and the location of Sankuru, Salonga, TL2 and other areas within bonobo range.**



**Fig. 2. Survey design of the recce within the western sector of the Sankuru Reserve.**

## 2 Project Goals and Objectives

### 2.1 Goal:

The overall objective of this project was to assist the DRC government to ensure long-term protection of the bonobo in one of the last major forest blocks within its range, and to initiate conservation activities for this endangered species.

### 2.2 Objectives:

- Assess bonobo abundance and distribution in key areas, and the threats to their survival.
- Recommend specific conservation strategies that will ensure long-term protection within the landscape for these great apes.

## 3 Activities

The primary objective of carrying out the survey in the Sankuru Natural Reserve was to locate the remaining important populations of bonobo, assess the status and threats to these populations and develop site specific conservation interventions. A survey design of a series of parallel recces oriented roughly perpendicular to the main drainage pattern of the area was drawn up using the DISTANCE program (Buckland et al. 2001) and ArcView 3.2 (ESRI 2000; Thomas 2006). The survey consisted of 401 kilometers of recce lines that covered the major forest block between the Tshuapa and Lomela rivers, right in the centre of the SNR. Two experienced field teams carried out the field work in March and April 2009. Data entry, analysis and reporting was completed by the end of May 2009.

### 3.1 Recruit and train field teams.

Survey team leaders and assistants were recruited from the existing WCS Salonga National Park survey teams and were given a short refresher course in March 2008 in the Salonga National Park. Areas addressed in the training included: navigation, data collection, data entry and reporting, theoretical basis of wildlife surveys, and a refresher on logistics. A subsequent short training session was then organized in the Sankuru area for four members of ACOPRIK (Action Communautaire pour la Protection des Primates du Kasai), a local NGO dealing with primate conservation. The four ACOPRIK members then accompanied the WCS teams in the Sankuru survey.

### **3.2 Biological assessment**

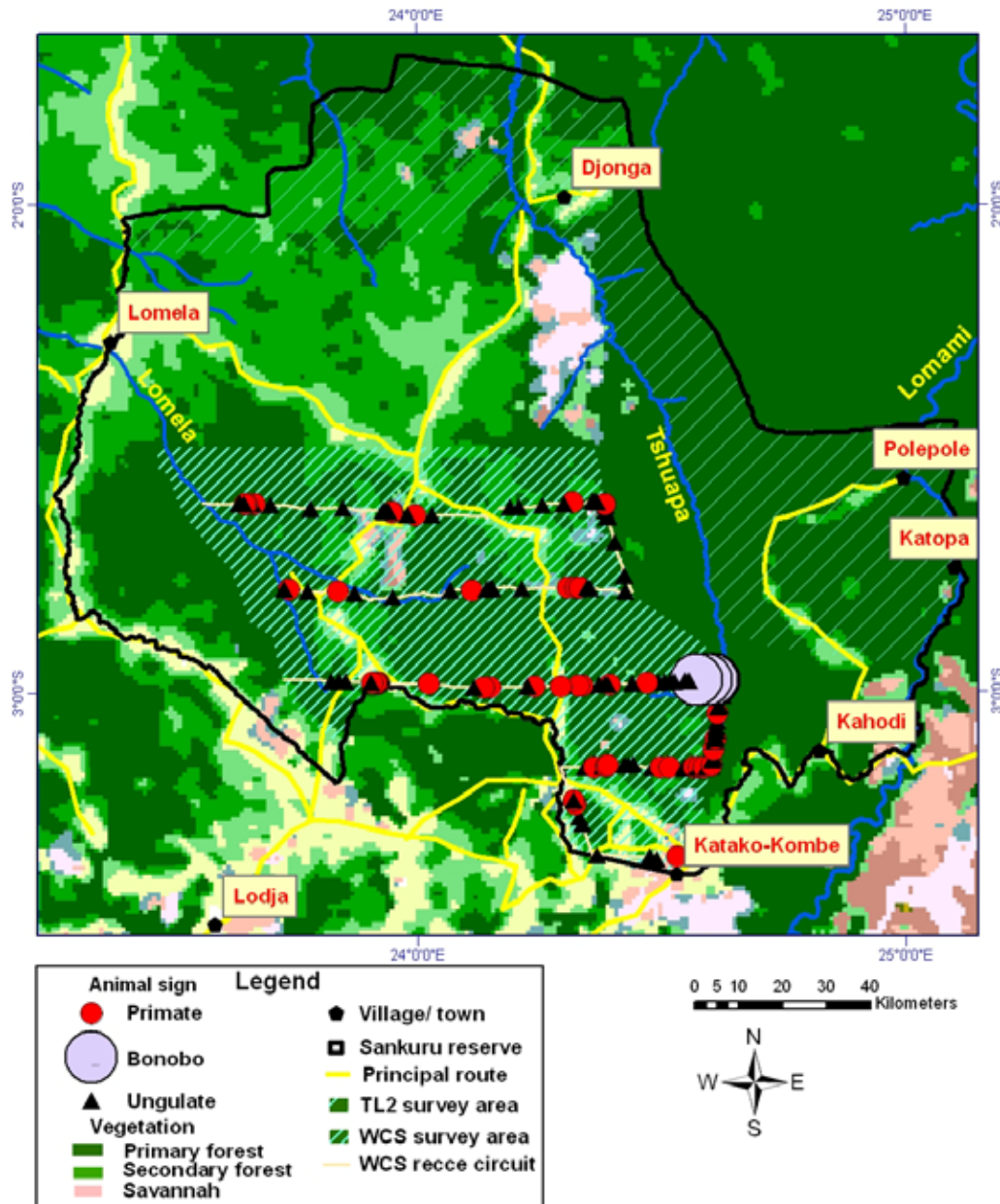
Major findings of the field surveys are summarized as follows:

#### **Bonobos**

The area surveyed between the Tshuapa and Lomela rivers (Fig. 2) covered approximately 6900 km<sup>2</sup> (30% of the Sankuru Natural Reserve). The survey team located only nine old bonobo nests all situated in one area close to the Tshuapa river, clustered within a four kilometer stretch of the four hundred kilometers of recce line (Fig 3). The location of these nests was adjacent to the only important concentration of bonobo that the TL2 project recorded in the area of the SNR that they surveyed. The encounter rate for this very low number of nests is 0.02 nests / kilometer surveyed which is lower than any recorded for Salonga NP or the TL2 landscape. The area surveyed by the TL2 survey teams west of the Tshuapa River (the northern sector of the SNR) had no bonobo sign at all. This survey, combined with the TL2 surveys (which together covered over 70% of the least disturbed parts of the Sankuru Reserve), unfortunately illustrates that the SNR has an extremely low bonobo population, the lowest in the Tshuapa-Lomami-Lualaba landscape. Most of the SNR contains no bonobos at all and what bonobos there are, were found *outside* the Reserve, to the southeast.

#### **Elephants**

Eight long-abandoned elephant paths and one very old elephant carcass were encountered, all within a three kilometer stretch of the four hundred kilometers walked. This species appears to have been wiped out in this area by poaching and civil war during the past decade.

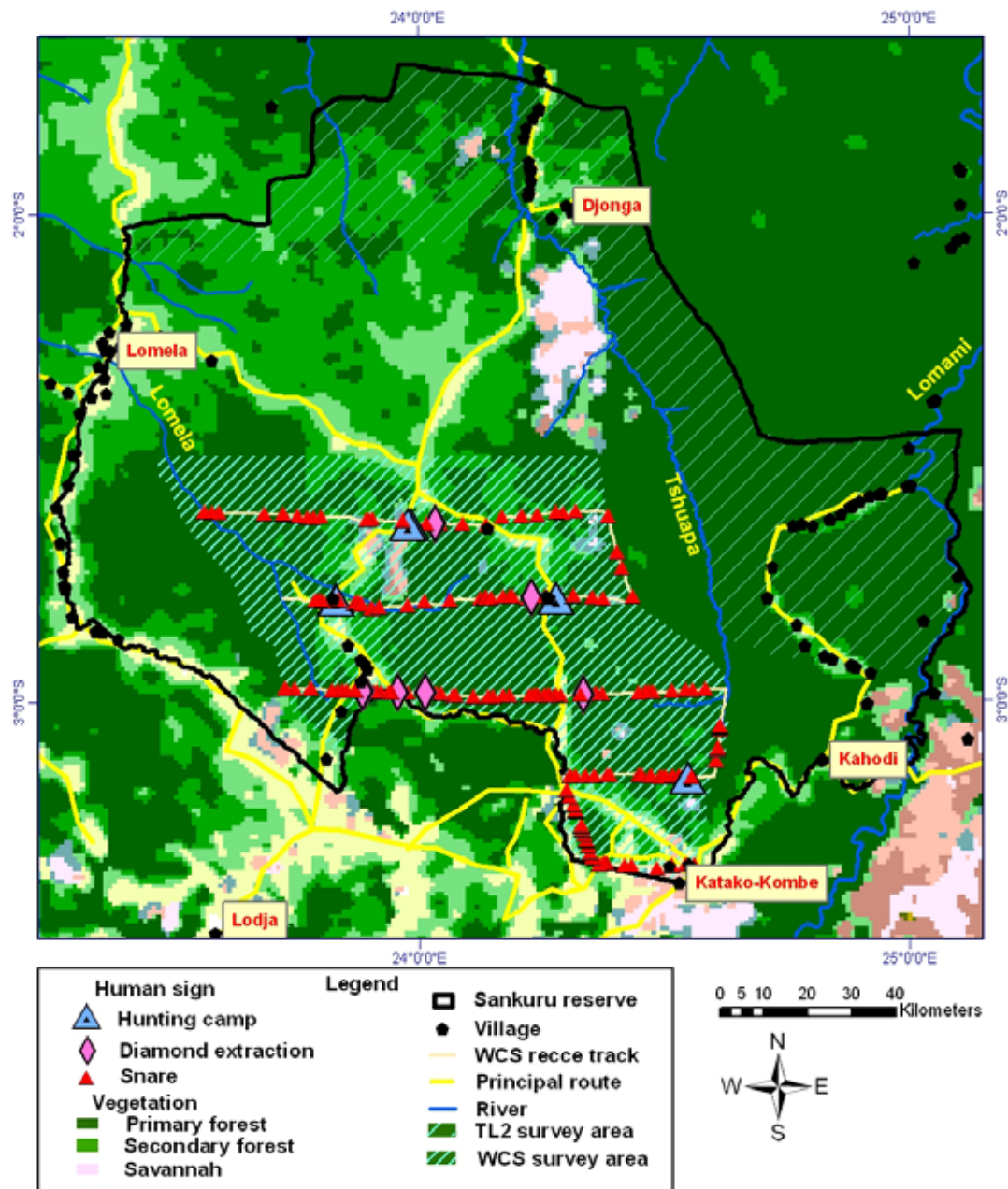


**Fig. 3.** Location of bonobo sign on the survey lines, as well as other primates and ungulates. Vegetation type is shown from a classified satellite image.

## Humans

Survey teams recorded all sightings of human activity on the recce walks (Fig. 4). There was a very high encounter rate of all human sign (3.14 signs/ km walked, and 0.55 of these were specifically hunting signs (snares, gunshots etc). The encounter rate of snares alone was 0.47 per km walked.





**Fig. 4. Location of all human sign on the survey lines..**

Most signs were associated either with hunting (snare, old elephant carcass), settlements (many villages within and around the Reserve), agriculture, or the several diamond mining sites found in the area. The sighting of human signs was so frequent, that when they are represented graphically the individual points merge and appear as an almost continuous string (Fig. 4).

## 4 Conservation implications for the Sankuru Natural Reserve

Normally, creation of protected areas follows a series of biological and socioeconomic surveys of various areas of interest within the country, region, or province, so that the areas of maximum biological/conservation importance can be identified, and the types, intensity and degree of different threats assessed. The results of these surveys are then normally used to define the areas for protection, buffer zones, community development, and so on. One biological survey covering a part of the currently gazetted area was conducted prior to the creation of Sankuru Natural Reserve (Balemba & Mulavwa 2007) and the conclusions were that the area west of the Tshuapa River had been very heavily hunted and that the better areas were to the east of this river. This survey found no signs of bonobo at all west of the Tshuapa.

Unfortunately, there was little communication between the government and local communities prior to the creation of the Sankuru Reserve. This has resulted in a negative attitude of local communities towards the existence of the SNR and in some areas a total refusal to even accept it. This is not surprising as many villages now find themselves inside a Reserve, without having been consulted.

The results of the WCS survey reported on here, combined with the earlier 2007 survey (Balemba & Mulavwa 2007) and the TL2 surveys of 2007-2008, indicate that the SNR contains very low numbers of bonobos, with most parts containing none at all. Therefore to ensure the long-term conservation of bonobos we cannot rely on the SNR, and additional protected areas will have to be created.

## 5 Conclusions

We surveyed an area containing a mosaic of primary and secondary forest, savannah and human settlements. The surveyed zone is criss-crossed by major active trails used by hunters and diamond miners (Fig 2, 4). Bonobo nests were absent in nearly all areas we surveyed and this was coupled with very high indices of hunting sign over almost all of the area surveyed. Local people confirmed that there is no taboo against hunting or consuming bonobos. The bonobo population has been severely reduced in the reserve area because of high hunting pressure, and elephants have been completely or almost completely hunted out.

Because no bonobos were found even in the areas where there is closed-canopy primary forest and no villages (i.e., ideal bonobo habitat), it is highly unlikely that the remaining unsurveyed portion of the Reserve, which has a much higher human population density and is mostly covered by visibly degraded forest and agriculture (visible on satellite images) (Fig. 3, 4), contains any bonobos. We have therefore decided not to waste valuable resources to continue the surveys into these remaining 27% of SNR.

We conclude that any further funding should be targeted at areas with much greater bonobo conservation potential. Salonga National Park, to the west of Sankuru (Fig. 1) contains several areas with high bonobo densities and much lower levels of hunting (due in part to the traditional taboo in the south-eastern sector against killing or eating bonobos (Grossmann et al. 2008; Hart



et al. 2008). Protection of these areas provides a much more viable and cost effective way to conserve bonobos. In Salonga NP, targeted bonobo monitoring and community conservation activities could be very beneficial to the overall conservation efforts for this species..

As much of the Sankuru Reserve is devoid of bonobos and large parts of the TL2 landscape also contain low numbers of bonobos, and there is no taboo on hunting bonobo in any part of this vast landscape, we feel an increased sense of urgency. These two areas (SNR and TL2) represent approximately 20% of the total bonobo range. Thus, in order to maximize chances of conserving the bonobo for future generations of Congolese we must focus on attention immediately on the other 80% of their range, including Salonga NP.

## **6 Acknowledgements**

We thank the Government of the Democratic Republic of Congo for their constant support for conservation in DRC, especially the ICCN. We would like to thank Mr. André Tusumba, the coordinator of ACOPRIK and the chef de Site of Sankuru Natural Reserve for allowing us to carry out the surveys in the Reserve.

Thanks to all the WCS DRC staff for facilitating these surveys, and to the local communities who helped us in the field.

## 7 References

- Balemba, M. S., and M. Mulavwa. 2007. Sankuru Reserve Survey Report. Page 10. Ministere de la recherche scientifique et technologique; Centre de recherche en ecologie et foresterie « CREF ».
- Buckland, S. T., D. R. Anderson, K. P. Burnham, J. L. Laake, D. L. Borchers, and L. Thomas 2001. Distance sampling: estimating abundance of biological populations. . Oxford Univ. Press, Oxford.
- ESRI. 2000. ArcView 3.2. Environmental Systems Research Institute, Redlands, CA.
- Grossmann, F., J. Hart, A. Vosper, and O. Ilambu. 2008. Range Occupation and Population Estimates of Bonobos in the Salonga National Park: Application to Large-scale Surveys of Bonobos in the Democratic Republic of Congo. . Pages 189-216 in T. Furuichi, & Thompson, J., editor. The bonobos: Behaviour, ecology and conservation. Springer Publishing, New York.
- Hart, J., F. Grossman, A. Vosper, and J. Ilanga. 2008. Human hunting and its impact on bonobo in the Salonga National Park, D.R. Congo. Pages 245-271 in T. Furuichi, & Thompson, J.A.M, editor. The bonobos: Behaviour, ecology and conservation. Springer Publishing.
- IUCN. 2008. 2008 IUCN Red List of Threatened Species, Cambridge, U. K. .
- Thomas, L., Laake, J. L. , Strindberg, S. , Marques, F. F. C. , Buckland, S. T. , Borchers, D. L. , Anderson, D. R. , Burnham, K. P. , Hedley, S. L. , Pollard, J. H. , Bishop, J. R. B. and Marques, T. A. . 2006. Distance 5. 0. Release 2. . Research Unit for Wildlife Population Assessment, University of St. Andrews. , St. Andrews, U. K. .
- WCS. 2008. Exploration of the Tshuapa-Lomami-Lualaba Landscape, and Conservation of Bonobos in the Democratic Republic of Congo. Page 34.