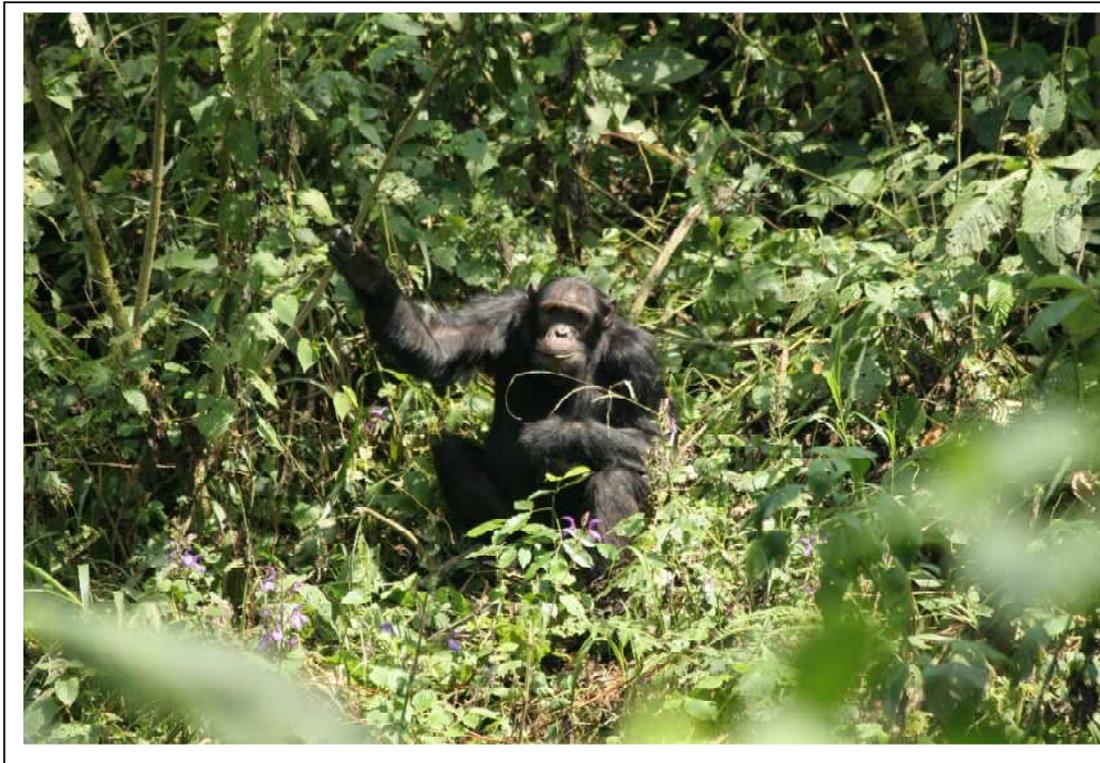


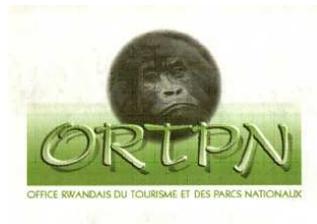
**CONSERVATION OF CHIMPANZEES IN THE CONGO NILE DIVIDE
FORESTS OF RWANDA AND BURUNDI.**



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LIST OF ACRONYMS

ADP	African Development Bank
ARCOS	Albertine Rift Conservation Society
CARPE	Central African Regional Program for the Environment
CND	Congo Nile Divide
GPS	Global Positioning System
INECN	Institut National Pour l'Environnement et la Conservation de la Nature
KNP	Kibira National Park
MoU	Memorandum of Understanding
NGO	Non Governmental Organization
NNP	Nyungwe National Park
NP	National Park
ORTPN	Office Rwandais du Tourisme et des Parcs Nationaux
PCFN	Projet Conservation de la Foret de Nyungwe
RBM	Ranger Based Monitoring
USFWS	USA Fish and Wildlife Service
WCS	Wildlife Conservation Society

EXECUTIVE SUMMARY

The Congo-Nile Divide runs from North West Rwanda down to the south of Burundi. Rivers flowing to the west form the tributaries of the Congo River while rivers flowing east enter Lake Victoria and the Nile River. Several forest reserves and national parks are found along this mountain crest including: Gishwati Forest Reserve, Mukura Forest Reserve, and Nyungwe National Park (including Cyamudongo Forest) in Rwanda; and Kibira National Park in Burundi. Chimpanzees occur in each of these forests except Mukura. Nyungwe National Park and Kibira National Park are contiguous and together include 1,413 km² of montane forest ranging from 1,600-2900 metres in altitude. This forest landscape has been identified as one of six key landscapes in for conservation in the Albertine Rift region.

This project targeted three main objectives:

- 1. To document the distribution and abundance of chimpanzees in the Cyamudongo and Gishwati forest fragments in Rwanda and Kibira National Park in Burundi.***
- 2. To promote transboundary collaboration in the Nyungwe-Kibira Landscape for the conservation of chimpanzees and their habitats***
- 3. To raise awareness among the local population and governments of Rwanda and Burundi for the conservation of Chimpanzees in fragmented and/or disturbed areas.***

Surveys of chimpanzees using standard line transect techniques estimated 390 chimpanzees for Kibira National Park, 400 chimpanzees for Nyungwe National Park and 13 chimpanzees for Gishwati Forest Reserve. Using a different technique of individual recognition over time we estimated 25 chimpanzees in Cyamudongo Forest (an isolated forest patch that is part of Nyungwe National Park).

Efforts to conserve Nyungwe and Kibira parks as one landscape made it possible for a delegation from Burundi composed of the Technical Director of INECN, the park chief warden of Kibira and 6 representatives of rangers to visit Nyungwe National Park. The delegates spent 2 days visit to witness and learn from Nyungwe National Park experience in tourism development and data collection for ranger based monitoring.

This approach made it possible for two meetings between local leaders from districts adjacent to both Kibira and Nyungwe National Parks (namely Nyaruguru and Kayanza district) to be organized in order to discuss issues pertaining forest bamboo smuggling from either side.

Furthermore twelve rangers from Kibira National park were empowered with skills to undertake biodiversity and key species surveys due to this effort. The staff were empowered with human-impact and wildlife monitoring techniques, inventory techniques, and use of different field equipment including GPS, map reading, compass, top measure to mention but a few. They were also skilled with techniques to collect data on transect.

Additionally educational materials were developed and distributed to local government authorities, local communities and tourists. The educational materials emphasized the status of the species and its ecological role in the maintenance of the habitat needed for not only the wellbeing of chimpanzees but also surrounding human communities. Prior to the development and distribution of educational materials various meetings and contacts with local authorities, teachers and authorities from both ORTPN and INECN was necessary to ensure that ideas and views from different stakeholders are considered. In line with this 4 contacts were organized with leaders from ORTPN and INECN to capture their views. Other contacts were arranged for 4 secondary schools in Burundi and 6 in Rwanda.

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I. THE CONGO-NILE DIVIDE

I.1. Introduction

The Albertine Rift region of Africa has been identified as an Ecoregion, Endemic Bird Area and is part of the Eastern Afromontane Biodiversity Hotspot (Plumptre et al., 2007). Six major landscapes in the Albertine Rift have been identified as part of a strategic planning process for the conservation of the biodiversity of this highly species rich region of Africa (Plumptre et al., 2007). The Congo-Nile Divide formed the 4th landscape (figure 1). This region is emerging from over ten years of conflict, both in Rwanda and in Burundi and part of the reason of the surveys in Kibira National Park was to assess the impact of the civil war in this country. This was the first time that it had been possible to undertake survey work in this park for over 10 years. Our field teams were not able to access some areas because of the presence of rebels but were able to access about 60-70% of the forest. Biodiversity survey work and human impacts were also assessed as a result.

The Wildlife Conservation Society (WCS) has been undertaking surveys of all the forested sites in the Albertine Rift and these areas formed one of the last areas to be visited because of the insecurity in the region.

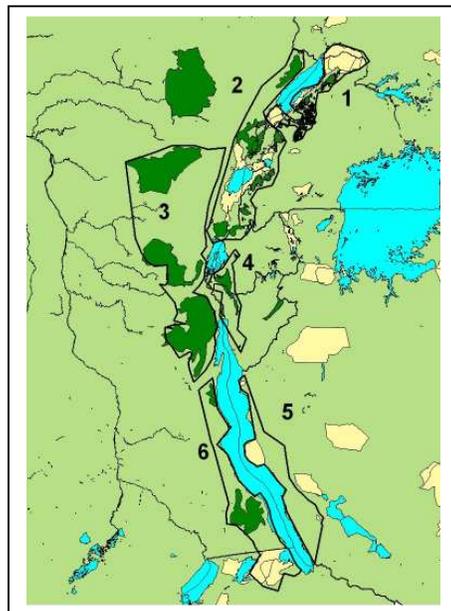


Figure 1. Map of the six key landscapes in the Albertine Rift. The Congo-Nile Divide forms the 4th landscape.

Five main forests form part of the Congo-Nile Divide: Gishwati Forest Reserve, Mukura Forest Reserve, Nyungwe National Park (including Cyamudongo Forest) in Rwanda, and Kibira National Park and Bururi Forest Reserve in Burundi (Figure 2). Mukura Forest Reserve does not contain chimpanzees so was not surveyed in this study and Bururi Forest Reserve was not surveyed for logistical reasons. Nyungwe National Park had been surveyed for chimpanzees under a previous USFWS Great Ape Conservation Fund grant but the results are summarised here also to compare with the other sites.



Figure 2. The Congo-Nile Divide showing the location of protected areas in Rwanda and Burundi.

Despite their biological and economic value, the montane forests of Burundi and Rwanda have been under immense pressure from nearby communities in search of forest resources (e.g. timber, bamboo, minerals, back harvesting etc) and land for agriculture as a result of exceptionally high human population densities.

This region contains some of the highest population density in Africa. While the Nyungwe National Park has remained intact due to the presence of the Wildlife Conservation Society (WCS) and the Rwandan park authority, insecurity, wars, resettlement of refugees and returnees, and presence of militia groups have led to the degradation and reduction in size of Kibira National Park and Gishwati Forest Reserve. Such pressures likely impact the chimpanzee populations in both forests, as well as many other wildlife species. Unfortunately, forests in the CND have received less international investment than the Central African region's other protected areas, many in lowland forest, currently receiving substantial support from donors such as CARPE.

As a policy response to the threats faced by its montane forest, the Rwanda Government has taken some measures to reduce pressure including upgrading the protected status of Nyungwe Forest to a national park and relocation of human populations settled in Gishwati forest to areas outside the forest. In addition a reforestation project in Gishwati forest has been initiated with the financial support of the African Development Bank (ADB). On a similar positive note, Cyamudongo forest has been annexed to Nyungwe National Park to emphasize its importance for conservation in the region.

The government of Rwanda has already taken a step further to improve the conservation of chimpanzee populations in its protected areas by developing and approving the GRASP action plan for Rwanda. However, little is known about the size and distribution of chimpanzees outside of the Nyungwe National Park to guide the GRASP initiative in Rwanda. In particular, chimpanzee conservation and population assessment initiatives must consider the larger Nyungwe – Kibira landscape to be effective. Therefore it was critical to extend recent census work in Nyungwe National Park to the chimpanzee populations in the remaining montane forests in Rwanda and Burundi.

The census work is particularly important as tourism is currently being promoted by the Rwandan government as a major emphasis nationally, and the chimpanzees are included in this plan (on the Frontier, 2003). A better understanding of the distribution and density of chimpanzee populations is needed in the region for management planning that includes monitoring protocols and protected area zoning.

In addition to this kind of information, the development and distribution of educational materials for government authorities, local communities and tourists that emphasize the status of the species and its habitat is needed. Most of the decision makers in both Rwanda and Burundi are not aware of the extent of destruction of montane habitats, and the resulting impact on chimpanzees and other wildlife species.

The political situation is recovering in Burundi following the recent election of a new government which gives hope for peace and improved conservation prospects for Kibira National Park. Security has returned to most of Kibira NP and there is a conducive environment to restart conservation activities. However, little research and monitoring has been done on the biodiversity in this park, and the current chimpanzee population size and distribution remains unknown, as is the case for the remaining montane forest fragments outside of Nyungwe National Park in Rwanda. In addition to this urgent need, greater emphasis should be placed on collaboration between Kibira NP and Nyungwe NP in order to increase conservation and management effectiveness. This proposed project aimed to initiate transboundary collaboration in the census of chimpanzee populations and the creation of conservation education materials focused on this species and its landscape. Conservation educational materials targeting local government officials and communities around these montane protected areas are sorely needed to emphasize the status of the chimpanzee and the unique Albertine Rift habitat in which it exists.

To support Burundian and Rwandan government conservation initiatives and improve the status of threatened chimpanzee populations in these habitats, a population census of chimpanzees would highlight the conservation importance for such threatened habitats and strengthen governmental resolve to protect these habitats. Also, support to the protection, conservation and management of these important forests through transboundary collaboration is needed for the long term survival of chimpanzee populations in this region.

I.2. Goals and Objectives

The overall goal of the project was to 'Protect, conserve and maintain viable populations of threaten chimpanzees in the CND forests'. Three specific objectives were identified:

1. Document the distribution and abundance of chimpanzees in Cyamudongo and Gishwati forest fragments of Rwanda and in the Kibira National Park, Burundi.
2. Promote and enhance transboundary collaboration in the Nyungwe-Kibira Landscape
3. Raise awareness among the local population and governments of Rwanda and Burundi for the conservation of chimpanzees in the CND forests.

Each of these objectives was tackled during the project and is reported on in the following three sections of the report.

II. CHIMPANZEE AND BIODIVERSITY SURVEYS IN THE CONGO-NILE DIVIDE FORESTS

II.1. Introduction

Nyungwe National Park, Gishwati Forest Reserve, and Cyamudongo forest in Rwanda, and Kibira National Park in Burundi are important components of the Congo-Nile Divide (CND) forest complex, and they also form the components of planning unit 4 of the Albertine Rift Strategic Planning Framework. These montane forests are among the richest habitats in the whole Albertine Rift region and are the only habitats for chimpanzees (*Pan troglodytes schweinfurthii*) in both Rwanda and Burundi (Plumptre et al, 2003; 2007). Aside from a recent population census in Nyungwe National Park supported by the USFWS Great Ape Fund, little is known about the distribution and conservation status of chimpanzees in these forests.

Nyungwe and Kibira National Parks are contiguous with each other and form the largest montane forest block in eastern Africa. This landscape is widely recognized as a site of national, regional and global significance for its biodiversity and ecological services. Nyungwe National Park is the largest protected area (1,013 km²) in Rwanda's system of protected areas. Kibira National Park is the largest forest protected area (400 km²) remaining in Burundi. The Nyungwe – Kibira landscape is important for the conservation of several restricted-range species that are only found in the Albertine Rift ecoregion. This protected area complex holds populations of 13 species of primates, including chimpanzees, an endangered species, and owl-faced monkeys (*Cercopithecus hamlyni*), listed as "Vulnerable" by the IUCN.

Gishwati and Cyamudongo are important montane forest fragments located in the western part of Rwanda, with areas of 9 km² and 4 km² respectively. Both forests are of importance to Rwanda because of their contributions to biodiversity conservation and socio-economic values. A preliminary biodiversity assessment carried out in the Gishwati forest recently confirmed

the presence of four primate species including the golden monkey (*Cercopithecus mitis kandti*), chimpanzees and more than 80 species of birds (WCS, 2004). Cyamudongo forest, lying very close to Nyungwe forest, contains a chimpanzee group that is being proposed for tourism viewing due to ease of accessibility. Socio-economically, these forests serve as water-catchments areas for not only the nearby communities but the whole country. In addition, these remaining forest fragments are particularly important for their cultural value to the neighboring communities and the role they play in serving as sources of traditional medicine and many other non timber forest products.

Conservation of the CND Forests in Rwanda and Burundi has benefited in recent years from the Albertine Rift Strategic Planning Framework (ARCOS 2004). This process began with a 2001 meeting in Rwanda of interested stakeholders from five countries. The initiative is intended to assist conservation planning within the region, assess relative diversity values across sites, identify priority conservation targets, share information and experiences, and focus government, NGO, and donor attention on key areas and needs. One of the objectives of this initiative is to enhance regional networks and cross border collaboration, and create mechanisms for partnerships across the region.

II.2. Methods

We used a combination of methods to survey chimpanzees in these forests and also survey plant and bird diversity and human impacts in Kibira National Park.

II.2.i. Training

The field surveys commenced in December 2006. Training of the mammal, bird and plant survey teams took place in Burundi. The teams were formed from WCS's Projet Conservation de la Foret Nyungwe



(PCFN) staff and INECN staff from Burundi. Field data collection methods included training in the use of:

1. Hip chain and topofil thread to measure distance traveled
2. Range finders to measure perpendicular distances when these were greater than 30 metres (30 metres tape measures were provided to each team).
3. Use of GPS units. Garmin II Plus and 12 XL units were used to collect positional data.
4. Completion of data sheets

II.2.ii. Sampling methods

Teams were also trained in how to sample the forest when they were in the field situation. Training was given in line transect methods using perpendicular distance techniques and marked nest counts (Plumptre & Cox, 2005; Plumptre & Reynolds, 1996; 1997). Transects were established using a baseline from which parallel lines were established of about 3 km length in Kibira (figure 3) and about 2 km in Gishwati. Four sites in Kibira were surveyed (selected to access most of the Sectors of Teza, Musigati, Rwegura and Mabayi). The presence of rebels still in Musigati meant that only part of this sector could be surveyed.

GPS positions were taken for any sighting of an animal or its signs (nest or dung of bush pigs) and also every 250 metres a GPS position was taken with a description of the habitat type. This allowed us to map where teams had visited and also helped ground truth the satellite classifications. GPS locations were also taken of any human sign observed in the forest also.

II.2.iii. Censusing chimpanzees

Chimpanzees are difficult to census directly because they tend to be shy and secretive and are often missed when walking through forest. They are also rare and live at low densities and so are not often encountered either. However, they make nests in which they sleep and we can use these nests to obtain an index of the population and with correction factors we can estimate the densities of chimpanzees (Plumptre and Reynolds, 1996, 1997; Plumptre,

Cox and Mugume, 2002; Plumptre and Cox 2005). Each field team counted chimpanzee nests along the transects walked and measured the perpendicular distance between the centre of the nest and the transect. Where groups of nests occurred together, each individual nest was measured separately (Plumptre and Cox, 2005). In order to correct nest density to obtain an estimate of chimpanzee density we needed to correct for the production rate of nests. Because we used a marked nest count technique there was no need to calculate a decay rate of nests. Only one study has measured the production rate of nests in wild chimpanzees which incorporated the construction of nests during the day as well as at night and the reuse of nests (Plumptre and Reynolds, 1997) and therefore we borrowed the value of 1.1 nests per day per nesting individual from this study. Nests sighted on transects were assigned age classifications as follows:

1= Fresh: Leaves in cup of nest all green and cup solid

2= Dry: Leaves going brown (possibly some green) but nest cup still pretty much intact

3= Old: Nest cup disintegrating – most leaves lost and can mainly see gaps between leaves in cup

4= Decayed: No leaves left (less than 5%) – twigs left only.

II.3. Data analyses

II.3.i. Chimpanzee densities

Chimpanzee nest density was calculated using standard perpendicular distance techniques and the computer software DISTANCE (Buckland *et al.* 2001). Nest densities were calculated for each census area and an average nest density computed for the whole forest. Marked nest counts repeatedly walk transects and count only new nests that are produced over the time period between the first and last visit. The nest density estimates are therefore divided by this time period to obtain a density of nests produced each day and then this is multiplied by 1.1 to estimate the density of

chimpanzees using the correction factor described above (Plumptre & Reynolds, 1997).

Chimp density = (Nest density x 1.1)/ days

Chimpanzee density is then multiplied by the area of the forest to obtain an estimate of the numbers of chimpanzees in the forest.

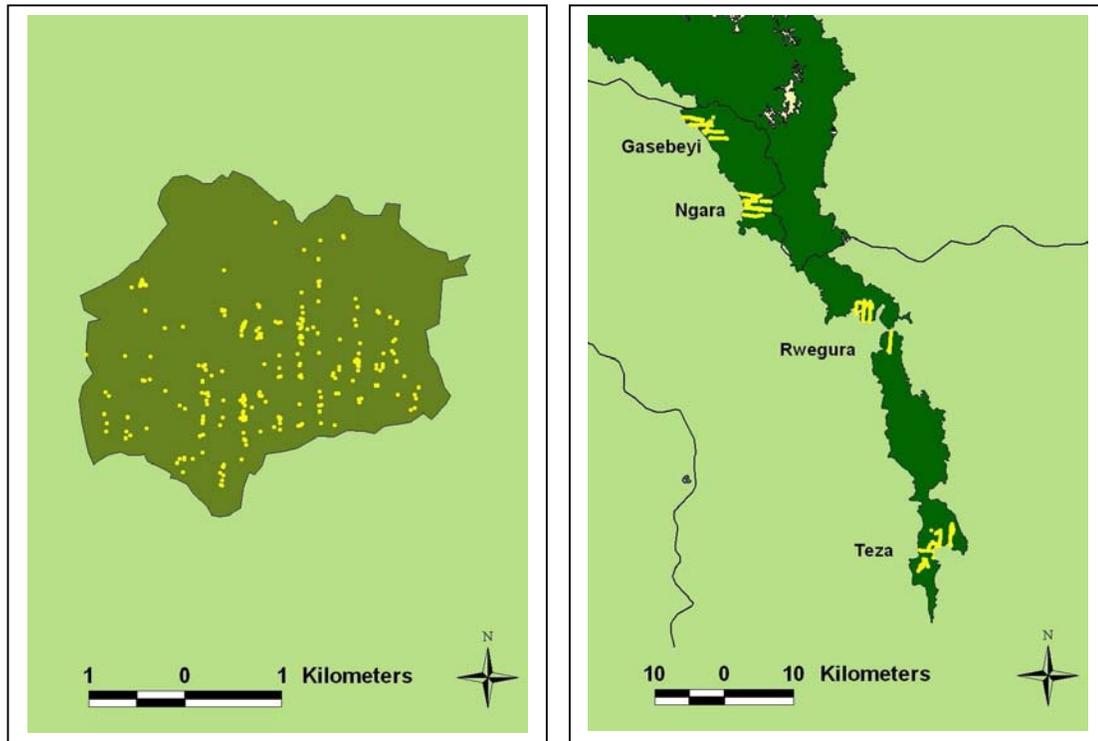


Figure 4. Location of transects and reconnaissance points visited in Gishwati Forest (left) and Kibira National Park (right).

II.3.ii. Bird and plant surveys

In Kibira National Park a team of ornithologists and a team of botanists worked along the same transect lines used by the large mammal/chimpanzee survey teams. At each 250 metres point the ornithological team would make a 5 minute point count, recording all birds seen or heard. At the same points the botanical team would record all plants in a variable diameter circular plot as follows: all herbs within 2 metres radius, all lianas and trees between 2.5-10 cm DBH within 10 metres and all trees larger than 10 cm DBH within 20 metre

radius. Examples of all plant species would be collected for confirmation of identifications and these are currently being analyzed at Makerere University Herbarium.

However, it was possible to separate species from each other even if they could not be identified and we have been able to assess species abundances and diversity as a result. Bird and plant data were analyzed for species richness using rarefaction and for similarities between sites using a Bray Curtis cluster analysis in Biodiversity Professional (a free software that can be downloaded from the internet).

II.4. Results

II.4.i. Chimpanzee densities in each forest

A total of 168 new chimpanzee nests were observed on 47.49 km of transect (16 transects) that was walked at least four times over the census period in Kibira National Park. In Gishwati Forest 150 new nests were observed over 39.73 km of transect (17 transects) that were walked four times. In Nyungwe National Park 204 new nests were observed over 64 km of transect (eight sites with eight 1 km transects) that were walked seven times. Tables 1-3 summarize the density data

Table 1. The density of chimpanzee nests in the four regions of Kibira National Park. The total density is also given.

Forest type	Density (no. km ⁻²)	Lower 95%	Upper 95%
Gasebeyi	0.326	0.195	0.546
Ngara	1.283	0.410	4.014
Rwegura	1.189	0.345	4.091
Teza	0.978	0.659	1.451
Total	0.984	0.601	1.612

Table 2. The density of chimpanzee nests in the eight regions of Nyungwe National Park. The total density is also given.

Forest type	Density (no. km ⁻²)	Lower 95%	Upper 95%
Bweyeye	0.849	0.428	1.687
Gasare	0.499	0.152	1.633
Gisovu	0.558	0.194	1.607
Kamatsira	0.754	0.181	3.132
Karamba	0.049	0.010	0.239
Kivu	0.015	0.002	0.108
Nshili	0.059	0.008	0.422
Uwasenkoko	0.083	0.028	0.248
Total	0.353	0.219	0.569

Table 3. The density of chimpanzee nests Gishwati Forest Reserve

Forest type	Density (no. km ⁻²)	Lower 95%	Upper 95%
Total	1.473	1.007	2.151

It is interesting that Gishwati Forest which has recently lost much of its habitat and is severely degraded as a result of refugees moving into the reserve has the highest density of chimpanzees of any of the sites. It is possible that these animals have been compressed into a small area because of recent loss of habitat and that they are at artificially high densities. If this is true then we would expect to see a decline in their numbers over the coming years. The relative densities of chimpanzees in the areas surveyed are summarized in figure 4.

Table 4 calculates the numbers of chimpanzees that are estimated for these forests, calculated by multiplying the average density by the area of each forest: Nyungwe – 1,080 km²; Kibira – 400 km²; Gishwati – 9 km². A total of

around 790 chimpanzees are estimated for the Congo-Nile divide region (excluding Bururi, a forest of about 15 km², which may contain up to about 10-20 chimpanzees if at similar densities). Vyanda forest reserve in southern Burundi was also reported to have about 50 chimpanzees in 1989 (Anon 1989). 395 are estimated for Rwanda and around 405 for Burundi if we estimate 11 individuals for Bururi Forest.

Table 4. The numbers of chimpanzees that are estimated for the Congo-Nile Divide.

Forest type	Chimp numbers	Lower 95%	Upper 95%
Kibira	394	240	645
Nyungwe	382	237	615
Gishwati	13	9	20
Total	789	486	1,279

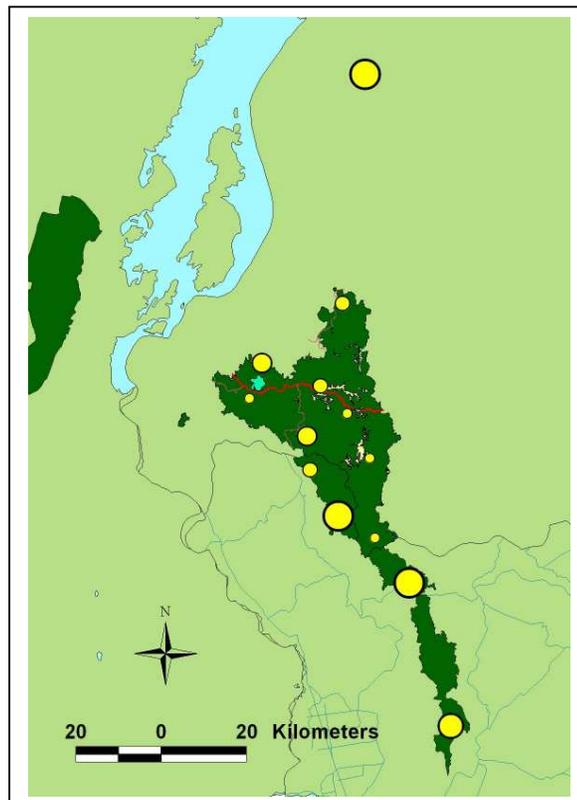


Figure 4. The relative densities of chimpanzees plotted across the different forests surveyed in Rwanda and Burundi.

Other primates observed in Kibira included Mona monkey (*Cercopithecus mona*), Blue monkey (*C. mitis*), L'Hoest's monkey (*C.lhoesti*), and Grey-cheeked Mangabey (*Lophocebus albigena*). No observations were made of the Angolan Colobus (*Colobus angolensis*) which occurs in very large groups in Nyungwe to the north and historically were present in the Musigati sector of the park (Trenchard undated) which we could not visit because of security issues.

II.4.ii. Bird and plant surveys of Kibira National Park

Kibira National Park is still relatively rich in species of plants and birds despite the years of neglect and lack of protection because of the civil war. The number of plants identified as separate species totaled 287 species and the number of birds totaled 125. The bird list for the park recorded in the late 1980s was 175 (Trenchard, undated) and this was increased to 211 through a better assessment of the old literature (Plumptre et al. 2003). Twenty three albertine Rift endemic birds were recorded during this survey adding six species to the known list for the forest and bringing the total to 27: *Apalis personata*, *Caprimulgus rwenzori*, *Cinnyris stuhlmanii*, *Graueria vittata*, *Hemitesia naumani*, *Laniarius poensis*. This makes Kibira one of the richest sites in the Albertine Rift for endemic birds.

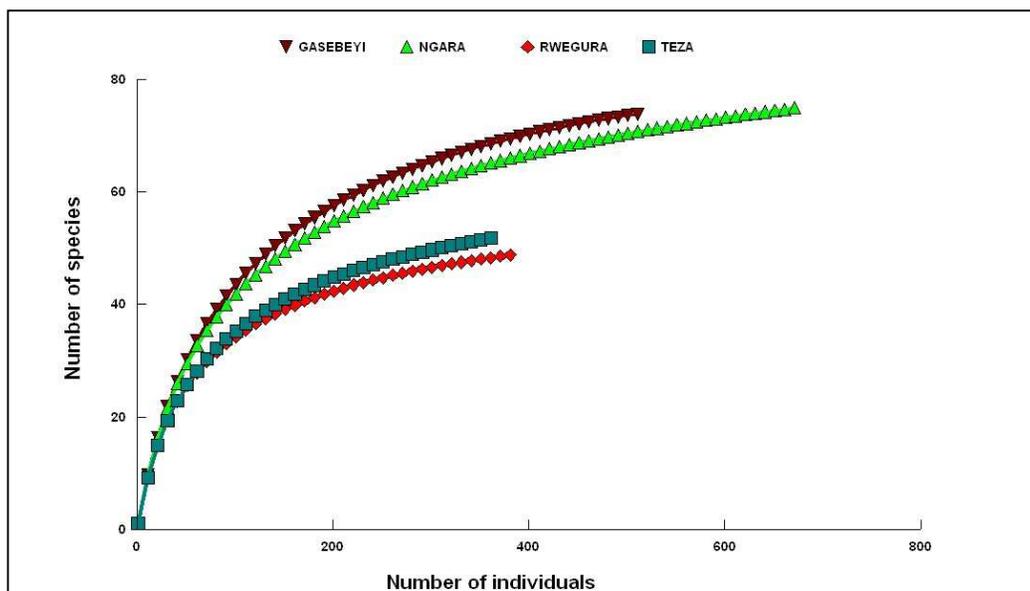


Figure 5. Species accumulation curves for birds at the four sites in Kibira.

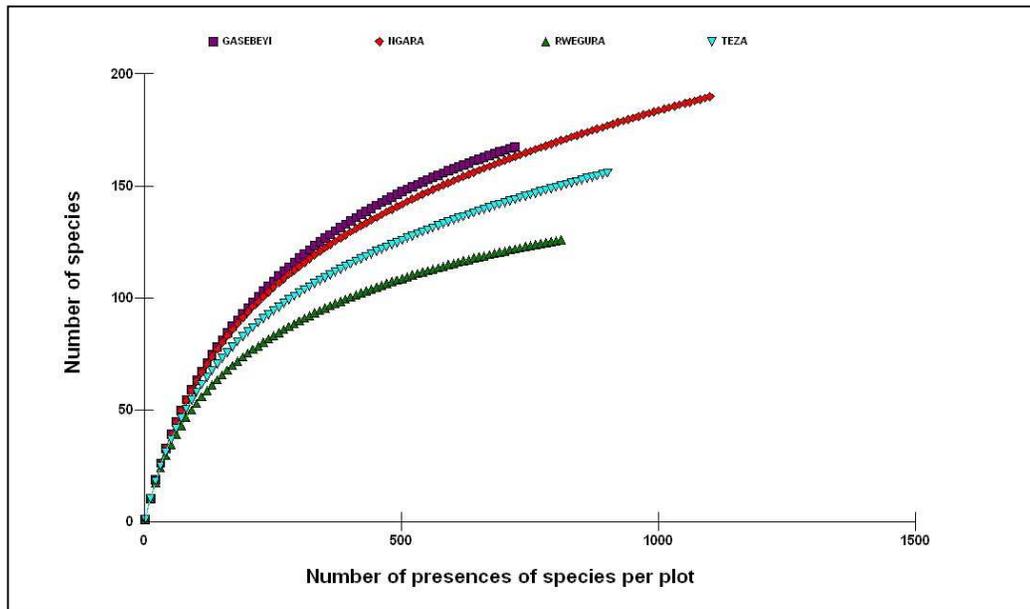


Figure 6. Species accumulation curves for plants at the four sites in Kibira. Examination of the rarefaction curves for birds (figure 5) and plants (figure 6) at the four sites in Kibira shows that Gasebeyi and Ngara sectors are richer in species than the more southerly Rwegura and Teza sectors. The curves for the birds are starting to level off indicating that a reasonable sample of all the species has been made. However, the plant curves are still increasing rapidly indicating that there is a good likelihood of finding many more species in the forest with further effort.

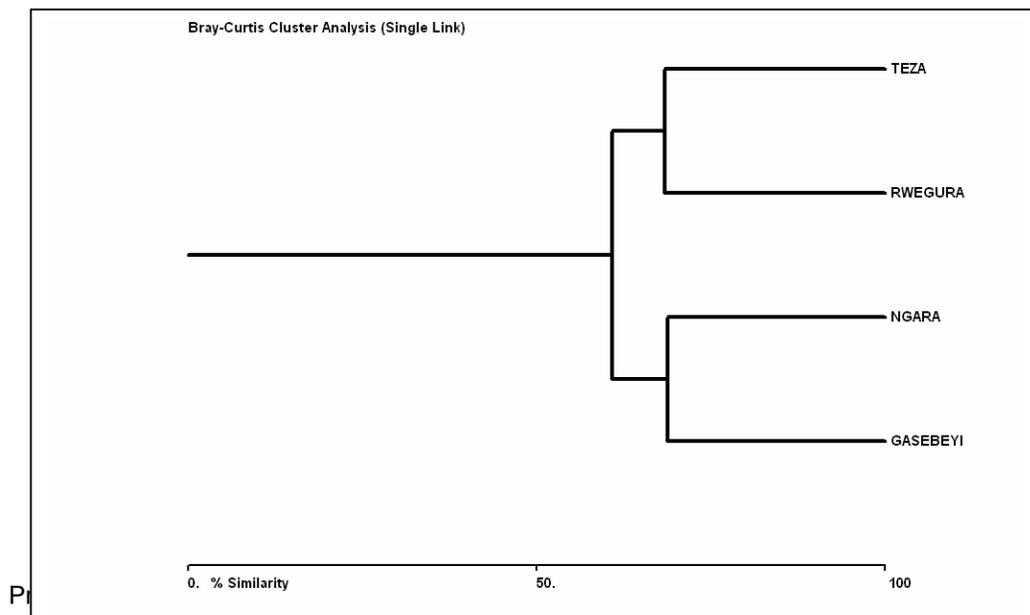


Figure 7. Cluster analysis of the bird communities at the four sites in Kibira.

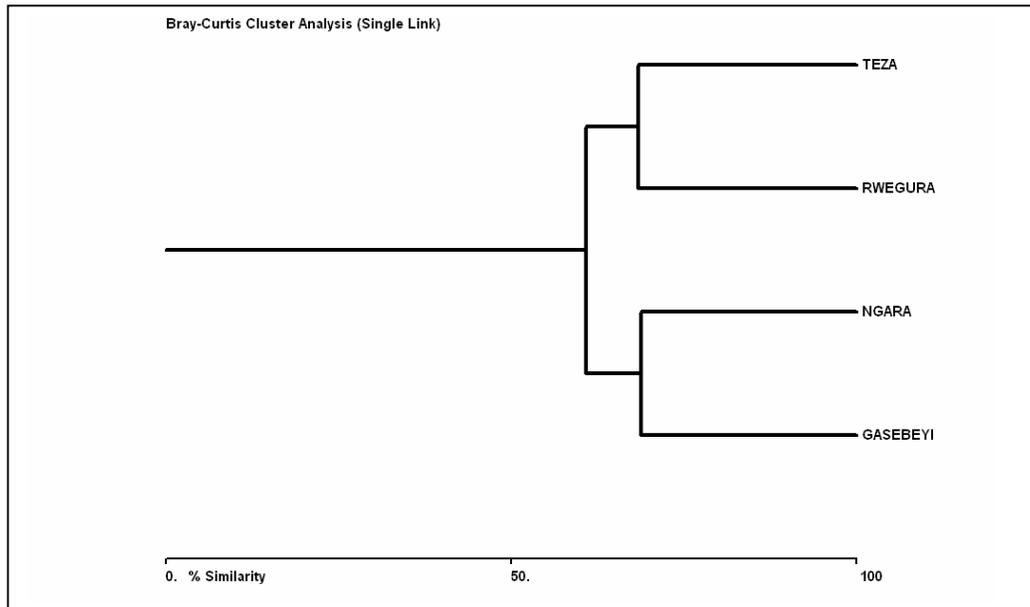


Figure 8. Cluster analysis of the plant communities at the four sites in Kibira.

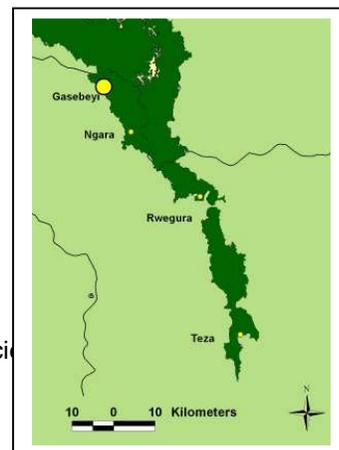
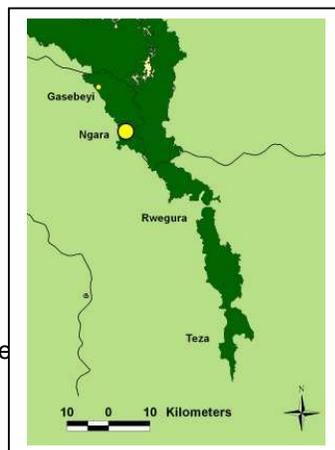
Both the plant and bird communities show the similar patterns in the level of similarity between the four sites with Gasebeyi and Ngara, and Teza and Rwegura having closer similarities (figures 7 and 8).

II.4.iii. Human impacts

The encounter rates of signs of human activity were recorded along both transects and reconnaissance walks. These show that the northern end of Kibira Park has relatively higher levels of gold mining and poaching (figure 9) while the southern areas have more signs of tree harvesting and total human impacts.

Goldmining sign (left)
and poaching sign
(right)

Presented by N. Barakabuye



Soci

Logging sign (left)
and Total human
signs (right)

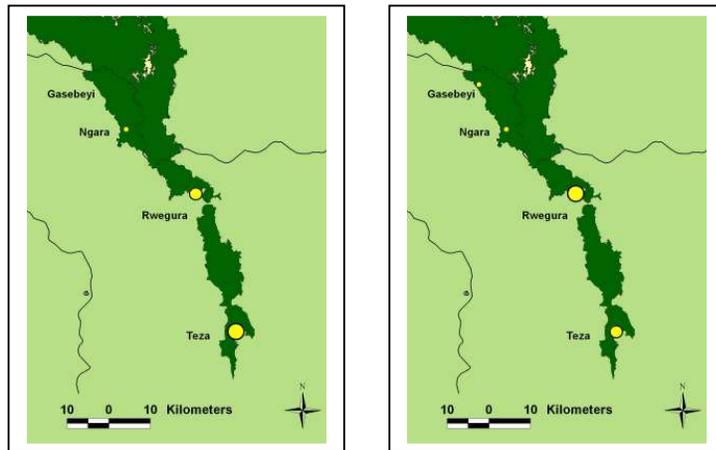


Figure 9. Relative differences in the encounter rates of human signs in Kibira National Park.

The area where most poaching sign was observed is also the area with the lowest chimpanzee density. It is possible therefore that chimpanzee numbers are being affected by snaring (most of the poaching sign).

II.5. Discussion

Kibira National Park is clearly still relatively intact and contains a high diversity of plant and bird species. We have increased the list of Albertine Rift endemic birds from 21 species to 27 species making Kibira one of the most important sites for bird conservation in the Albertine Rift. The population size of chimpanzees in Kibira is relatively large compared with Nyungwe (almost equal populations despite being less than half the area) and therefore this park conserves at least half of the chimpanzee population of this important forest block. Why this is so is unclear but possibly because Kibira contains more forest at lower altitudes.

Previous estimates of chimpanzee numbers have been made for Kibira by Peter Trenchard but we were unable to locate any copies of his report or

figures. There was an estimate made of 400 chimpanzees for the forest (D. Cox pers. comm.) but we are unsure of where this number comes from. However it seems that the population has remained stable over the period of the conflict if this number is true.

The total population of chimpanzees in Rwanda and Burundi number about 400 individuals each. The populations in Gishwati, Cyamudongo and Bururi cannot be viable in the long term but the combination of the chimpanzees in Kibira and Nyungwe makes the total population for this forest block (about 776 individuals) more likely to be viable if the two parks remain connected. The results show the importance of managing this species at a regional scale, and support the need for efforts to promote transboundary collaboration between INECN and ORTPN.

III. TRANSBOUNDARY COLLABORATION BETWEEN NYUNGWE AND KIBIRA

Nyungwe and Kibira National Parks are flanking with each other and form the largest montane forest block in eastern Africa. Whereas Nyungwe National Park is the largest protected area (1,013 km²) in Rwanda's system of protected areas, Kibira National Park is the largest mountainous forest protected area (400 km²) remaining in Burundi. Both forests are of great importance to the region because of their contributions to biodiversity conservation and socio-economic values.

Despite the level of connectivity and similarity in terms of threats and species movement, Nyungwe and Kibira NP have been managed as individual units with little reference to the neighboring protected areas. With the support of USFWS a one year project was developed with the aim to safeguard integrity of Nyungwe Kibira Landscape through the change of scale at which these parks were/are perceived and managed. It is important to note that WCS had already started facilitating the trans-frontier collaboration between the park managers for both Kibira and Nyungwe National Parks to improve the conservation and management of the Kibira-Nyungwe landscape with support of Marc Arthur Foundation. The USFWS grant came to complement the ongoing efforts for the conservation and protection of threatened chimpanzee populations.

In particular, this support made it possible for communication and collaboration between Burundi and Rwanda to be strengthened. The grant enabled INECN to acquire basic equipments for park rangers such as radios, uniforms, GPS units among many others which were required for joint patrols and to develop a ranger-based monitoring program that would allow managers to monitor the effectiveness of the joint patrolling. Additionally, the project supported the rehabilitation of Kibira's basic infrastructures for the effective management and training of Kibira field staff in various aspects of conservation and field techniques to improve their skills.

To put these into context, actions and accomplishments attained are elaborated in the forth coming paragraphs.

III.1. Actions:

- Conduct four Preliminary contacts to prepare meetings between managers and staff from both parks Nyungwe and Kibira.
- Organize a round table meetings to assess training and equipments needs to conduct adaptive management in Kibira National Park
- Assist to organize a collaborative meeting between managers from Kibira and Nyungwe National Parks
- Facilitate meetings between local leaders from districts adjacent to both Kibira and Nyungwe National Parks (namely Nyaruguru and Kayanza district) to discuss issues pertaining forest bamboo smuggling from either side.
- Preparation of Memorandum of Understanding between ORTPN and INECN
- Equipment purchase and distribution for Kibira National Park
- Development of Memorandum of Understanding between INECN and WCS Rwanda program
- Launch of Kibira National Park infrastructure rehabilitation

III.2. Results:

Study tour for Kibira National Park managers and staff organized.

Delegates from Burundi composed of the Technical Director of INECN, the park chief warden of Kibira and 6 representatives of rangers visited Nyungwe National Park spent 2 days visit to witness and learn from Nyungwe National Park experience in tourism development and data collection for ranger based monitoring. The visit enabled delegation from Burundi to visit Uwinka station which has the major attractions including trails network. It was also an opportunity for the team to discuss with Nyungwe National Park staff on challenges they encounter in their day to day duties.

Production of a transboundary collaboration operational work plan.

In October 2006, a delegation conducted by the Technical Director for INECN



Mr. Ndagijimana Dieudonné met with their counterpart from Rwanda led by the director of the Rwanda Wildlife Authority (RWA) Mr. Ruzigandekwe Fidele in Gisakura the head of

office of Nyungwe Conservation Project a WCS field project. The meeting was an opportunity for both parties Rwanda delegation and Burundi delegation to discuss various issues related to the management of the two parks.

The meeting which lasted a whole day made it possible for a collaboration operational work plan to be developed. Major features of the work plan included but not limited to the following:

- Development and ratification of a Transboundary collaboration protocol between ORTPN and INECN
- Undertake Biodiversity survey of Kibira National Park
- Capacity building (joint training, joint study tours, RBM initiated at KNP)
- Launch of Joint patrols when security and working condition permit
- Transboundary collaboration meetings(planning, evaluation, etc)(quarterly)
- Support communication between PA managers, local authorities, military etc
- Harmonization of the monitoring program
- Needs of basic Field Equipments for KNP
- Minor rehabilitation of KNP head office
- Strategic Plan elaboration
- Chimpanzee habitat management and conservation action plan
- Community enterprise development around KNP
- Regional tourism master plan
- Identify and contact the potential partner institutions
- Develop tourism infrastructures- trails in Kibira etc

- Development of a Management plan for KNP

With regards to this work plan, the transboundary collaboration work plan was a road map for activities implementation for the conservation of this landscape as a number of planned activities were implemented.

The approach made it possible for the project to initiate and facilitate a meeting between leaders from Nyaruguru district of Rwanda and Kayanza district of Burundi to settle issues pertaining forest bamboo smuggling from Burundi side which is a preferable habitat for the endangered Owl faced.

Constant bamboo smuggling emerged from Burundian side carried by both Rwandese and Burundian as result of weak law enforcement in Burundian side. This situation expanded to Rwandan side in that people started to cut bamboo in Rwanda and carry it to Burundi and bring it back to Rwanda claiming that it is purchased or harvested from Burundi. To halt this practice WCS with its partners INECN and ORTPN conducted awareness campaigns to inform different authorities in both sides Rwanda and Burundi of the effects of this practice. This in turn brought the two parties to meet and advise measures to stop this undesired activity. Thanks to this initiative, key partners were involved including the army and policy from both sides and collaborated to halt this practice. The end result was that a number of 36 of forest bamboo smugglers from Burundi were arrested and transferred from Rwanda to Burundi. Since then bamboo cutting in this area has reduced tremendously.

A Memorandum of Understanding between ORTPN and INECN drafted. The ultimate outcome of the transboundary collaboration of NKL is the ratification of a MoU between ORTPN and INECN. It is believed that the agreement will enable both parties to smoothly work together against the threats to this regionally and globally important landscape. Attaining this however, is not an easy task. There are too many interests to cater for. For instance the big number of people to be involved, divergence in priorities, and political environment in Burundian side are factors that hindered the ratification of the MoU. This situation has been exacerbated by change of leaders from park level, INECN headquarter level and even ministry level. For this year the

change in the leadership of the INECN and the mother ministry (The ministry of Environment) had retarded the MoU ratification. But as the MoU is drafted coupled with, built trust, commitment and good will from the new leadership for INECN, our hope is that the MoU will be endorsed soon.

Constant change in leadership in Burundian side has also hindered the accomplishment of certain tasks including the rehabilitation of offices for Kibira National Park.

IV. RAISING AWARENESS ABOUT CHIMPANZEES AND THE IMPORTANCE OF TRANSBOUNDARY COLLABORATION

Though informed about the extent of destruction of montane forest in the Albertine Rift landscape, there still lack of awareness of the impact on chimpanzees and other wildlife species loss in most of the decision makers in both Rwanda and Burundi. In addition few decision makers are aware of the national and international laws and policies related to the conservation of endangered species such as chimpanzees. Furthermore, in tandem with the emphasis on tourism development being promoted in the CND forests, which includes chimpanzee viewing, there is a need to raise awareness among communities living around the CND forests regarding the conservation and tourism initiatives. These communities interact with the forests adjacent to their land, and will be affected by the tourism development. Thus this project was developed with the aim to address the lack of information among decision makers and local communities living around the protected areas of the CND forests through the production and distribution of education materials such as posters and discussions in local communities and villages surrounding critical chimpanzee habitats. It is believed that Chimpanzees will serve as an ideal focal species for such educational and awareness raising efforts. Among the audience tourists were also targeted for these materials as their behaviors will have an impact on chimpanzee conservation and the forests in general. To make this a reality, posters with different themes were developed and distributed to different targets.

Posters were produced into four languages including English, French, Kinyarwanda and Kirundi to bridge up heterogeneity of the audience in terms of languages. Themes developed include the following:

Box 1: Posters Themes

- Our Chimpanzees are Rare and Precious
- Healthy Forests Depend on Chimpanzees
- A Global Treasure in Our Backyard

Prior to the development and distribution of educational materials various meetings and contacts with local authorities, teachers and authorities from both ORTPN and INECN was necessary to ensure that ideas and views from different stakeholders are considered. In line with this 4 contacts were organized with leaders from ORTPN and INECN to capture their views. Other contacts were arranged for 4 secondary schools in Burundi and 6 in Rwanda. Four and two awareness campaigns were organized in Rwanda and Burundi respectively.

FORESTS ALONG THE CONGO-NILE DIVIDE:

OUR CHIMPANZEES ARE RARE AND PRECIOUS!



Chimpanzees, *Pan troglodytes*, share over 98% of their genetic material with humans and are more similar to humans than their gorilla relatives! Unfortunately, chimpanzee populations are threatened by hunting and a decrease in the forests that support their groups. However, unlike us, chimpanzees live **ONLY** in a few places in AFRICA and are in danger of extinction!

Conservation scientists estimate that there are less than 400 chimpanzees in the Nyungwe National Park and fewer than 20 individuals in the Gishwati Forest. Similarly, less than 400 chimpanzees remain in the Kibira National Park, Burundi.

Chimpanzees play an important role in the forest by distributing the seeds of forest fruits to new areas where the seeds are able to grow into new trees. Many of these tree species, like *Myrianthus*, are used by people for nutrition and medicine. Without chimpanzees, our forests may be changed in a way that will ultimately reduce the quality of human life.

The continuation of these precious animals depends on us; we must protect the forests that they, and ultimately we, depend on.



Photo by Simon Camp, 2006

FORESTS ALONG THE CONGO-NILE DIVIDE:

A GLOBAL TREASURE IN OUR BACKYARD!



In Africa, great river systems provide entire nations and a continent of people with water for drinking and washing, agriculture, and transportation.

And for the Congo and Nile Rivers, it all starts in Rwanda and Burundi, along the Congo-Nile Divide. Along the Divide, water falling on the eastern side eventually flows into the Nile River and the Mediterranean Sea, and water falling on the western side eventually flows into the Congo River and Atlantic Ocean.

Forests along the Congo-Nile Divide offer unique benefits to local communities, nations downstream, and to the world by providing us with:

- MEDICINAL PLANTS
- CLIMATE CONTROL
- CLEAN AIR
- CLEAN WATER
- ENDANGERED SPECIES LIKE CHIMPS
- RICH BIODIVERSITY
- ECOTOURISM OPPORTUNITIES
- PROTECTION FROM EROSION AND LANDSLIDE



FORESTS ALONG THE CONGO-NILE DIVIDE: HEALTHY FORESTS DEPEND ON CHIMPANZEES!



A wadgie containing seeds

Chimpanzees, *Pan troglodytes*, are omnivores like us. Their diet consists mainly of the fruits, leaves, and bark of plants but they also occasionally eat insects and other animals.

When chimpanzees eat fruits, they also eat seeds. Forests depend on chimpanzees to distribute seeds of trees through their feces and wadgies.



Seeds germinating from a wadgie

What is a wadgie? When chimpanzees eat fruits, they sometimes store them behind their lower lip. After sucking out the fruit juices and pulp, chimpanzees spit out what is called a wadgie.

And the seeds remaining in wadgies and feces have a better chance to germinate and grow! The digestive juices have removed any barriers to germination, feces and wadgies provide instant fertilization, AND seeds have been distributed away from the parent tree.



A mature tropical forest

In Nyungwe forest, conservation scientists have discovered that chimpanzees are important distributors of over 20 plant species! Especially trees with larger seeds—seeds that aren't eaten by birds and not distributed by wind, including *Olea capensis*, *Syzygium guineense*, and *Myrianthus holstii*.

Photos by N. Gross-Camp, 2006 and Simon Camp, 2006

WHAT ARE GREAT APES?

Great Apes are primates that all belong to the same taxonomic family (*Hominidae*). Great apes are unique among primates because they have larger bodies, larger brains, are generally less arboreal (spend less time in trees), and build nests to sleep/rest in.

Humans (*Homo sapiens*), gorillas (*Gorilla beringei*, *G. gorilla*), chimpanzees (*Pan troglodytes*), orangutans (*Pongo abelii*, *P. pygmaeus*), and bonobos (*Pan paniscus*) are all great apes.

TAXONOMIC LEVELS FOR GREAT APES:

- Kingdom: *Animalia*
- Phylum: *Chordata*
- Class: *Mammalia*
- Order: *Primates*
- Family: *Hominidae*

FOR CHIMPANZEES:

- Genus: *Pan*
- Species: *Pan troglodytes*

WHAT YOU'LL FIND IN THIS BROCHURE:

- Glossary of Terms
- Supplementary Examples
- Supplementary Information

WHAT WE HOPE YOU GAIN:

We have developed this brochure to provide teachers with the information needed to discuss topics related to natural history, biology, and ecology in the region of the Congo-Nile Divide.

We hope that this series will spark curiosity in students and teachers, encouraging the next generation of informed citizens and conservation scientists.

A TEACHERS' GUIDE TO: FORESTS ALONG THE CONGO-NILE DIVIDE POSTER SERIES



- CHIMPANZEES ARE RARE AND PRECIOUS
- HEALTHY FORESTS DEPEND ON CHIMPANZEES
- A GLOBAL TREASURE IN OUR BACKYARD

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