

WILD CHIMPANZEE FOUNDATION



Secrétariat

69, Chemin de Planta
1223 Cologny – Genève
Switzerland
Email: wcf@wildchimps.org
Internet: www.wildchimps.org

Head Office & European Representation

c/o MPI for Evolutionary Anthropology
Deutscher Platz 6 04103 Leipzig, Germany
Tel: +49 341 3550 250/200
Fax: +49 341 3550 299

West African Représentation

23 BP 238 Abidjan 23
Côte d'Ivoire
Tel / Fax: +225 40234468
Email: abidjan@wildchimps.org

Guinean Representation

BP06, Sangaredi, pref. de Boke
Guinea Conakry
Tel: +22464007309
Email: guinea@wildchimps.org

Liberian Representation

SD Cooper Road – Paynesville
Monrovia
Tel. +231 (0)880533495
Email: liberia@wildchimps.org

Annual report 2013

Activities of the Wild Chimpanzee Foundation for improved conservation of chimpanzees and their habitat in West Africa

Prepared by the WCF team

January 2014

General conclusion and outlook for 2014

By the president of the Wild Chimpanzee Foundation Christophe Boesch

The Wild Chimpanzee Foundation (WCF) has the mission of contributing to the protection of the largest remaining chimpanzee populations and the forests they inhabit. We are active in three West African countries, **Côte d'Ivoire, Guinea and Liberia**, with teams of scientific experts, European and African conservationists, as well as many local ecologists and animators. Although the times are hard for Nature in many places in Africa, through our local involvements and numerous partnerships, we are able to keep conservation alive and are supported in many places by the local populations, giving us daily lessons about what can work in conservation.

The year 2013 was a year of consolidation in the face of both the international recovery from the financial crisis concomitant with the continuing intensive attacks on fauna and the tropical rainforests. The WCF could ensure its financial stability thanks to the tremendous effort of all team members, and at the same time develop our activities in West Africa. Partnerships became more important with the increasing stability of the countries in the regions, allowing us to develop long-term stable collaboration with partners towards achieving goals directly related to our mission. Diversification is becoming, in parallel, an important way to address the different threats and find potential solutions to react to these threats, not only in protected areas, but also in areas partly populated by humans, worthwhile for intensifying protection of wild chimpanzee populations and their natural habitat, given the fact that today, the biggest number of chimpanzees live outside protected areas, and if we are not very attentive, no natural fauna and flora will remain.

As an example of this approach, in early December 2013, WCF was fully registered and accredited to operate in Liberia. The creation of this new representation was essential to develop WCF's involvement in the conservation management of the Liberian site of the **Taï-Sapo Forest Complex**. The office in Monrovia will benefit our activities in this forest complex and enable WCF to collaborate closely with the Forestry Development Authority (FDA) and increase communication with other NGOs in Liberia. The WCF-Guinea representation has created a second office in the **Fouta-Djalon-Bafing Region** that was chosen as a priority site for chimpanzee conservation. We are doing detailed biomonitoring and socio-economic surveys in this region with the aim to propose a mixed conservation model to the government, including conservation corridors, fully protected regions and parts with human settlements and local agriculture.

In parallel, the WCF is in the process of creating a **USA representation**. We are officially a registered NGO in the state of California and are now in the process of applying for tax-exempt status 501.c3. This will hopefully pave the way to more fund raising opportunities to enhance our activities on the ground in Africa.

Executive Summary

In 2013, the first steering committee meeting for the **trans-boundary collaboration for Taï-Sapo Forest Complex (TSFC)** took place in Abidjan, Côte d'Ivoire with a total of 20 participants from both countries. The participants agreed on the overall vision for TSFC: "The conservation of biodiversity and sustainable management of natural resources in TSFC, taking into account the well-being of the local human population." WCF and the International Institute for Sustainable Development undertook a study to determine the conflict implications of the proposed establishment of two landscape corridors linking Taï National Park (TNP) in Côte d'Ivoire to Proposed Grebo National Park (PGNP) in neighbouring Liberia as well as a land-use study to determine the feasibility of rehabilitation corridors between PGNP and TNP.

For the **creation of PGNP in Liberia** several steps have to be made. The limits of the park should be revised in consultation with the local communities as there are villages and camps inside the proposed limits. Some areas outside the proposed limits have been revealed as being essential for the conservation of biodiversity following the WCF biomonitoring report. The support of local communities in the area is essential in this process, as well as legally required. Consultations with the communities started in 2013 and are ongoing.

In 2013, the WCF continued **environmental education** throughout its priority areas, the TSFC in Côte d'Ivoire and Liberia; and in the region of Boké in Guinea. Overall, we were able to educate more than 23.600 people about the conservation of chimpanzees and the importance of protecting their forest habitat in three West African countries, through theatre plays, film presentations, radio broadcasts, Club P.A.N., newsletters, school competitions, environmental days, a school exchange program and guided tours for school children in TNP.

Table 1: Informations about WCF's environmental education activities in 2013

Activities	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Assessment
Theater CI	1900	720						1500				1080	5200 spectators
Films CI	1700	600						1850				1450	5600 spectators
Films Liberia		2373											2373 spectators
Theater Liberia		2030											2030 spectators
Radio broadcasts	1	1	1	1		2		1		1			8 broadcasts
School competition			120										120 children 37 schools
Environmental day						2000							2000 participants
Guided tour in TNP				6						6			12 children
Club P.A.N.			808								818		1626 children
Parents' day					4100								4100 adults

In 2013, the WCF maintained four grass-cutter, two snail and four fish farms. These **alternative livelihood projects** aim to provide local communities around TNP, with an alternative source of protein compared to bushmeat and another source of income compared to illegal bushmeat hunting and trade. The **eco-tourism projects** of the WCF and its partner OIPR in **Taï and Djouroutou** (TNP, Côte d'Ivoire) have successfully continued their habituation programs. In Djouroutou, a community of wild chimpanzees can be observed by tourists and guided tours in TNP were booked in 2013. In the village of Taï, WCF created an eco-museum and a nature walk in a beautiful forest area, the habituation of the mangabeys and red colobus monkeys is ongoing.

In 2013, WCF and OIPR led the **8th phase of the biomonitoring programs across TNP in Côte d'Ivoire**. Results show a decrease in bovids, a regeneration of monkeys, no significant change in the chimpanzee and elephant population compared to the previous phase 7. Illegal human activities decreased because some areas of the park have intensive law enforcement. Despite the noted decrease in bush-meat hunting, populations of bovids decreased, which mean that the current rate of hunting remains too high to allow the wildlife to regenerate. **Biomonitoring and law enforcement in priority sites of TNP** (chimpanzee research site and the eco-tourism areas) revealed a 54.7% decrease of illegal human activities in the research area, thanks to the support of law enforcement with an average of 4 OIPR agents who patrolled the area for 110 days.

The **biomonitoring in Comoé National Park, Côte d'Ivoire** was postponed to 2014 because we could not obtain in 2013 a special authorisation for surveying the park by flight.

In 2013, WCF, SODEFOR, STBC and the police conducted urgently needed **law enforcement activities in Cavally Classified Forest**. 179 ha of illegally planted cocoa crop were destroyed by the team during the 42-day mission. WCF also worked with SODEFOR to organize a workshop to validate the Cavally Classified Forest management plans in December 2013.

In the **PGNP in Liberia, the second phase of biomonitoring** was conducted in collaboration with FDA. The analysis confirmed the presence of a population of 341 chimpanzees, as well as the presence of elephants, pygmy hippos, monkeys and duikers. Comparisons of the spatial distribution of animal species and illegal human activities between 2012 and 2013 have revealed alarming changes in the distribution of wildlife populations in relation to human activities. In 2013, endangered and vulnerable species were more rarely observed in areas close to human settlements, and the locations of highest diversity of large mammals have been confined to the central areas of the PGNP compared to observations from 2012.

WCF works with the project « greening the cocoa industry », a program for cocoa certification in western Côte d'Ivoire under the Rainforest Alliance label. The five cooperatives producing certified cocoa include around 2300 plantations, with 1500 of them very close to TNP. So far, cocoa nurseries have been developed and trees will be planted starting in April 2014. 704 local cocoa farmers were trained in environmental friendly farming and **sustainable use of natural resources**.

The new director for WCF Guinea, Vincent Lapeyre, started in March 2013. Discussions with Guinea Alumina Corporation (GAC) for continuing WCF's involvement in the **mining concession in Sangarédi** were finalized with a new contract during a visit of Ch. Boesch in October 2013. Presently, the 5th year of biomonitoring is implemented. Vincent has also established a second WCF-office in the **Fouta-Djalon-Bafin Region**, and he initiated a detailed survey of fauna in the possible **biodiversity offset** for the different mining companies working in the bauxite extraction within the prefecture of Boké in Guinea. A socio-economic survey is presently underway as well.

In 2013, WCF conducted a **survey in an oil palm plantation of Golden Veroleum Liberia**, to confirm the presence of chimpanzees and propose a mitigation plan.

Bush-meat studies were performed differently in 2013. An investigation at **trans-border markets between Côte d'Ivoire and Liberia**, discovered 20 species which are fully protected in Liberia on sale, these 20 species accounted for 30% of all the meat sold at the markets. The discovery of such a high volume of protected species threatens the biodiversity in PGNP. A **study in restaurants and households in Côte d'Ivoire** showed that although fish is a more staple protein source, bush-meat was still widely sold. Extrapolating this data to include the three regions of Djouroutou-Taï-Zagne estimated that this level of bush-meat consumption could threaten 9173 duikers and 4363 monkeys per year. The reassuring part is that the people who've seen the theater pieces seem to consume three times less bush-meat than the ones who did not view the theatre (preliminary analysis). The last step was the **bush-meat study performed around the PGNP**. It revealed an important difference between the north and south of the region, within the north, 78% of the animal protein consumed by the population is bush-meat, against 52% for the southern area. However, both areas declared they would prefer to have better access to fish (around 40%) and livestock meat (around 30%) showing how important it is to favor local development in the region.

Acronyms

CAEZA – Cooperative Agricole Espoir de Zagné
CASO – Cooperative Agricole Soleil de Taï
CCF – Cavally Classified Forest
Club P.A.N. – People, Animals, Nature
CNP - Comoé National Park
COAT – Cooperative Agricole Allakabo de Tienkoula
COOPAHZ – Coopérative Agricole de Zagné
CPE - Cellule des Projets Environnementaux
ECODA – Entreprise Cooperative de Daobly
FDA - Forestry Development Authority
FLEGT - Forest Law Enforcement, Governance and Trade
FDBR - Fouta-Djalou-Bafing Region
GAC – Guinea Alumina Corporation
GDCF - Goin-Débe Classified Forest
GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit
GNF – Grebo National Forest
GVL - Golden Veroleum Liberia
IUCN – Union Internationale pour la Conservation de la Nature
KFW - Kreditbank für Wiederaufbau
MAP - Multi-Agri-Systems Promoters
MINEF - Ministère des Eaux et Forêt
OIPR - Office Ivoirien des Parcs et Réserves
PGNP – Proposed Grebo National Park
RSPO - Roundtable on Sustainable Palm Oil
SODEFOR - Société pour le développement des forêts
STBC – logging company
TNP – Taï National Park
TSFC – Taï-Sapo Forest Complex (stretching between Liberia and Côte d’Ivoire)
WCF – Wild Chimpanzee Foundation

Table of Contents

General conclusion and outlook for 2014.....	2
Executive Summary.....	3
1. Trans-boundary collaboration for Taï-Sapo Forest Complex.....	8
2. Creation of Grebo National Park, Liberia	10
3. Environmental Education	11
3.1. Theater tours	11
3.1.1. Theater in Côte d’Ivoire	11
3.1.2. Theater in Liberia.....	12
3.2. Radio broadcast.....	12
3.2.1. Radio in Côte d’Ivoire	12
3.2.2. Radio in Liberia	13
3.3. School competition in Côte d’Ivoire	13
3.4. Environmental days in Côte d’Ivoire	13
3.5. School children in Taï National Park	14
3.6. Club P.A.N.....	14
3.6.1. Club P.A.N. in Côte d’Ivoire.....	14
3.6.2. Club P.A.N. in Guinea.....	15
3.7. Proximity awareness.....	16
3.8. School exchange between German and Ivorian schools	16
4. Alternative livelihood projects.....	17
4.1. Eco-tourism in Côte d’Ivoire	17
4.1.1. Eco-tourism and eco-museum in Taï	17
4.1.2. Eco-tourism site of OIPR in Djouroutou.....	19
4.2. Micro-projects in Côte d’Ivoire	19
5. Biomonitoring and law enforcement	21
5.1. Biomonitoring in Taï National Park, Côte d’Ivoire	21
5.2. Biomonitoring in priority sites of Taï National Park, Côte d’Ivoire.....	22
5.3. Biomonitoring in Comoé National Park, Côte d’Ivoire	24
5.4. Law enforcement in Cavally Classified Forest, Côte d’Ivoire	24
5.5. Biomonitoring in Proposed Grebo National Park, Liberia.....	26
5.6. Biomonitoring in Guinea	27
6. Sustainable use of natural resources.....	28
6.1. Cacao certification in Côte d’Ivoire	28
6.2. Sustainable forest management in Côte d’Ivoire	28
6.3. Biomonitoring in oil palm plantation, Liberia	29
7. Sociological and bush-meat studies	30
7.1. Bush-meat study on trans-boundary markets between Liberia and Côte d’Ivoire.....	30
7.2. Sociological study in Côte d’Ivoire	30
7.3. Sociological study in Liberia	32
8. Acknowledgments	34
9. References.....	36
10. WCF Team	37

1. Trans-boundary collaboration for Tai-Sapo Forest Complex



Steering committee meeting for the TSFC

In March 2013, the **first steering committee meeting for the trans-boundary collaboration for TSFC** took place in Abidjan, Côte d'Ivoire with a **total of 20 participants from both countries**. The participants agreed on the overall vision for TSFC: **"The conservation of biodiversity and sustainable management of natural resources in TSFC, taking into account the well-being of the local human population."** The pressure on natural

resources is increasing, the committee compiled a list of immediate threats to TSFC and suggested urgent action to be implemented by both governments to mitigate these threats and protect the natural heritage of West Africa. The major role of the steering committee is to promote and encourage trans-boundary cooperation to achieve the objectives that direct the overall vision. At the end of the meeting, KFW (Kreditbank für Wiederaufbau) presented the terms for a feasibility study and the preparations for the implementation of biological corridors in TSFC. More than 10 million Euros will be available for the development of ecological corridors. The feasibility study was carried out from June to November 2013 by a KFW consultant and the final report is available (KFW feasibility study, 2013).

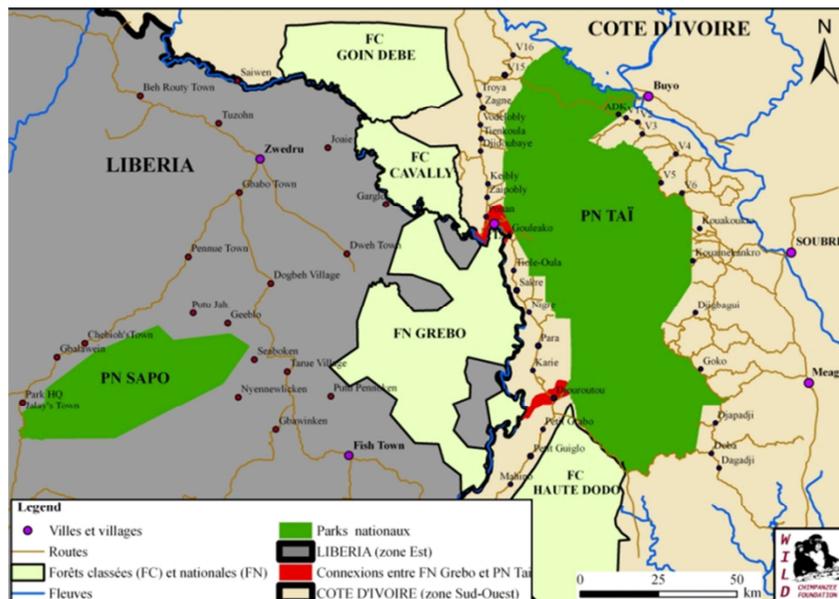


Figure 1: Map with the trans-boundary Tai-Sapo Forest Complex (Côte d'Ivoire-Liberia) with the classified forests of Goïn-Débé, Cavally, Haute Dodo and Grebo in light green, and the national parks Sapo and Tai in dark green, and the proposed landscape corridors in red.

In January 2013, WCF and the International Institute for Sustainable Development (IISD) undertook a study to determine the conflict implications of the proposed establishment of two landscape corridors linking TNP in Côte d'Ivoire to GNF in neighboring Liberia (Figure 1). The corridor initiative is part of a broader plan to establish a connected network of protected areas known as the TSFC. This study specifically looked at the conflicts that currently affect the sites of the proposed corridors, conflicts that will increase in both locations as a result of the establishment of the landscape corridors. With this analysis in place, the project team worked with stakeholders to identify solutions and peacebuilding opportunities that might arise from the project, and developed a roadmap for the creation of a conflict prevention platform to be used to increase dialogues, promote community management, encourage trans-boundary collaboration, and help with the identification of shared conservation and development interests. For the creation of corridors between TNP and GNF, observations of the landscape and cartographic work were used to characterize and measure the land in the rural area between TNP and GNF. Various intervention plans for the corridors were proposed including rights of traditional owners being preserved, or conversion to agroforestry of farmers and reforestation recommended or imposed, management done by an institution of the ecological corridors etc. see Varlet, F, 2013. Detailed mapping and collection of information is needed now to decide which plan is the most appropriate (Figure 2).

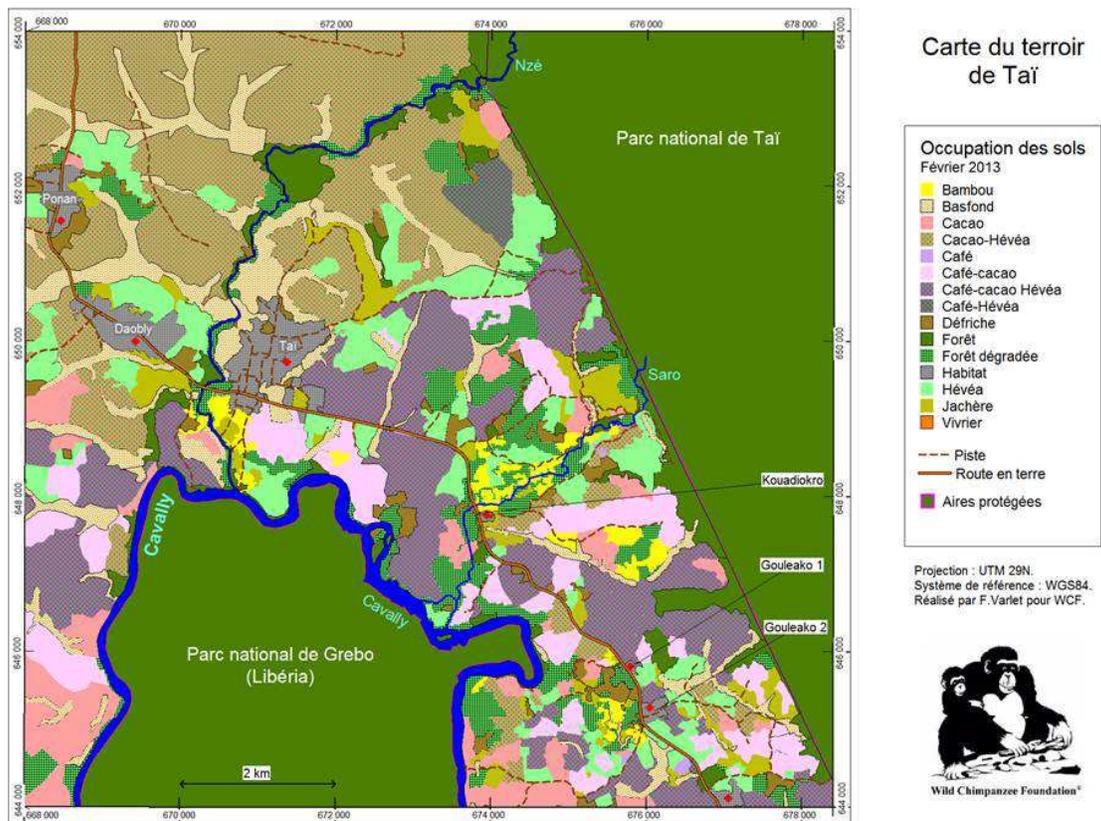


Figure 2: Map of the use of the proposed corridor landscape between Taï National Park (Côte d'Ivoire) and Proposed Grebo National Park (Liberia) in February 2013

2. Creation of Grebo National Park, Liberia

Since 2006, Liberia has identified the forestry sector as a priority for sustainable management and has pledged to fully protect 30% of the remaining forest. To do so, an emphasis has been placed on creating a new network of protected areas across the country. **Part of the Grebo National Forest (GNF) has thus been Proposed to be promoted to Grebo National Park status (PGNP)**, comprising 97,140 hectares. It is located in the heart of the TSFC, the largest remaining relatively intact forest block in the Upper Guinea ecosystem. Before the creation of the park three major issues have to be solved:

- First, the limits of the park should be revised as there are villages and camps inside the proposed limits. This involves the local communities.
- Second, some areas outside the proposed limits have been revealed as being essential for the conservation of biodiversity following the biomonitoring report of 2012 (WCF, 2012). Again, this involves the local communities.
- Third, having the support of local communities in the area (heavily making use of the forest for bush-meat hunting) is essential in this process, as well as legally required.

To engage this very complex process needed to solve the aforementioned points, the WCF has developed a community consultation program in collaboration with FDA, the organization in charge of forest management in Liberia.

The program is being executed in two phases, working first with the communities in Grand Gedeh in the Northern part of PGNP, and then with the communities of River Gee in the southern part of PGNP. Consultations in Grand Gedeh were initiated from the 5th to 15th of December 2013. A total of 9 meetings were held in 27 different towns and villages. Consultations were led by a team made up of 2 WCF, 3 FDA and 2 MAP staff (Multi-Agri-Systems Promoters, a local NGO based in Grand Gedeh, with whom WCF has started collaborating). Discussions were held in all towns and villages about the importance of the forest and wildlife; the different protected species of Liberia and the need for a national park in GNF. Decisions and agreements on all of these aspects were reached with the communities to begin the process of empowering the communities to work alongside FDA for the creation and management of the national park. Once agreed upon, a simple community mapping exercise was led in each town individually. During this exercise, communities were encouraged to show the location of their community land, where they farm, where they have sacred forests, where they hunt, etc. They also mapped the GNF boundary line, all of them being aware of the border, since it had been created back in 1958. Some of the communities provided information about those having started farms there in recent years, and also about those having hunting tents inside the forest. All communities agreed that the boundary line of GNF should be kept as the boundary line for the northern part of the PGNP.

Once this program has been repeated with the communities of River Gee, WCF and FDA will reassess the current limits of both the proposed park and the original GNF, along with the concerns of the local communities to propose a new park boundary in 2014.

3. Environmental Education

3.1 Theater tours

3.1.1 Theater in Côte d'Ivoire

In 2013, as the years before, the WCF has developed several environmental education activities such as the amateur school theaters in collaboration with the CPE (Cellule des Projets Environnementaux of the Ministry of Education in Côte d'Ivoire). Four school theater tours were organized around TNP (Table 2). Each tour involved 4 villages with performances of the plays, the WCF and BBC chimpanzee films, as well as the distribution of the WCF newsletters and discussion rounds with the local human communities.

Table 2: Informations related to the amateur theater tours in Côte d'Ivoire

Theater group	Date	Numbers of:		
		Plays	Spectators at plays	Spectators at films
Lycée de Taï	19. – 22.01.2013	4	1900	1700
EPP Wonséaly	14. – 17.02.2013	4	720	600
EPP Djouroutou	24. – 28.08.2013	4	1550	1850
Lycée de Taï	13. - 16.12.2013	4	1080	1450
Total		16	5250	5600



Theater group of Wonsealy imitates chimpanzees

The theater groups from **Lycée de Taï** and **Wonsealy**, for example, presented a play which explained the origins of the chimpanzee totem in some African communities. One village was threatened with a war from a neighbouring village. The witchdoctor of the village had a special solution to the problem. To save all villagers he transformed them into chimpanzees. Unfortunately, the witchdoctor was killed during the war and nobody was able to transform the chimpanzees back into humans. So from this time on, the chimpanzees had to live like this and the humans are still singing

today “the chimpanzees are our parents” and because they are related to us, we are not eating them. The play from **Djouroutou** involved a conflict with the head of a family who had bought chimpanzee bush-meat for a party, a group of adolescents from the village doing environmental awareness, agents of the park authorities and the chief of the village. The bush-meat owner was arrested and had to defend himself in front of the park authorities. He explained he had bought the bush-meat in Liberia. After having been exposed to the sensitization by the young people, he agreed to help with the protection of wildlife and nature. **In 16 villages, 5250 people assisted a play and 5600 watched the films.**

3.1.2 Theater in Liberia



Theater play in Ziah's town, community member explains to the hunter why he should not kill chimpanzees

In Liberia in February 2013, the WCF, in collaboration with the FDA, led an awareness campaign around the PGNP, in River Gee and Grand Gedeh counties, in the heart of TSFC. The aim of the mission was to raise awareness in the local communities on the importance of protecting chimpanzees in accordance with the laws of Liberia that prohibit the hunting of chimpanzees and other protected animals. A drama on this issue was presented by a Liberian theater group “**Eddie Theatre Productions**” in 10 villages around PGNP, followed by discussions with the communities. In each village, posters created by WCF on

Liberia’s protected species were distributed and explained to the audiences. Dozens of copies of the WCF newsletter, “Forest Wisdom”, were distributed as well. Finally, after dusk, the 2 WCF and BBC chimpanzee films were projected to confront the audience with the sight of real chimpanzees, thus emphasizing the content of the play. These films could only be presented in 8 out of the 10 villages, two of them being beyond reach by car due to disastrous roads. **In 10 villages, 2030 people assisted a play and 2373 watched the films.**

3.2 Radio broadcast

3.2.1 Radio in Côte d’Ivoire



Radio interview of Gregoire Nohon

Two different types of features were prepared for broadcasting: one accompanied by a school class with the heading: “**Attention parents, your children talk to you!**” and one called “**Taï National Park**”, interviewing people of interest for the park, e.g. Gregoire Nohon, long-time assistant in the Taï chimpanzee project and WCF with 25 years of knowledge about the park and the chimpanzees, officers from the park authorities

(OIPR), and managers from sustainable development projects, such as cacao certification

companies. The children, via radio, talk about endangered species such as elephants and chimpanzees to their parents, discuss deforestation and alternatives to protect TNP. The radio shows are regularly broadcasted in big villages close to TNP, Soubré, Buyo and Zagné, and they are very popular.

3.2.2 *Radio in Liberia*

In December 2013, WCF commissioned three radio drama performances from its partner “**Eddie Theatre Productions**”, to be aired in several counties in Liberia (Sinoe, Grand Gedeh, River Gee, and Montserrado). “**Chimpanzees and Us**” is a 7-minute feature, illustrating the many similarities between humans and chimpanzees and why it is of great importance to protect them. “**All about Bush-meat and Protected Animals**” is a 15-minute sketch informing communities of Liberia’s laws protecting endangered and threatened species. It also explains about the deleterious health effects of hunting and preparing chimpanzee bush-meat such as Ebola, SIV and Anthrax. The third 15-minute sketch “**What Forests Can Do for Us**” details the importance of conserving forests and is placing emphasis on Liberia’s current protected areas and future proposed parks. This feature outlines the benefits the forest provides to the communities such as clean air and water, reliable rainfall for crops and it informs communities on the ongoing process of creating TSFC.

3.3 School competition in Côte d’Ivoire



The painting of the winner, Willy Lagba, exhibited in Buvo.

The topic of the school competition that took place in March 2013 was a painting to illustrate the protection of chimpanzees. Twenty out of the **120 participating children from 37 villages around TNP** were selected to participate in the final competition. The winner, **Willy Lagba**, pupil at the primary school in Buvo, was honored with a prize and his painting called “My panel for the Taï National Park” was framed and exposed in the village.

3.4 Environmental days in Côte d’Ivoire

In June 2013, two interactive environmental days were celebrated in Gbliglo, in collaboration with OIPR. The audience was able to see theater plays, cultural dances and songs, WCF films about chimpanzees and a presentation by OIPR, all to sensitize humans to nature and wildlife. All local organizations were invited to present themselves such as the Gbliglo choir of adolescents with songs, the dancing masks of Kouzié, the theater group of Gbliglo with their play “Let us be reconciled with the TNP!” and the association of women of Gbliglo with a big parade. **In total, 2000 people joined these environmental days.**

3.5 School children in Taï National Park



The children of Djouroutou on top of mount Niénokoué in TNP

In 2013, **two guided tours to TNP were organized for 12 school children and their teachers** by WCF/CPE, in collaboration with OIPR. The first visit was for the six winners of the school painting competition. On April 14th, they were able to observe wild chimpanzees from the OIPR eco-tourism site in Djouroutou, and on the next day they climbed up the sacred Mount Niénokoué. The second visit took place from October 27th to 29th for the six most dedicated

children taking care of the school micro-project of EPP Djouroutou, feeding the Giant African snails, breeding and finally selling them with benefits for their school. The children were not able to see the chimpanzees (still not fully habituated to humans), but they climbed the Mount Niénokoué and had a breath-taking view above the canopy of TNP.

3.6 Club P.A.N.

3.6.1 Club P.A.N. in Côte d'Ivoire



Club P.A.N. outdoor nature class room in Taï

Club P.A.N. was fully active during the school year 2012/2013 and 2013/2014 around TNP in Côte d'Ivoire. **In total, twelve schools with 696 children were reached in 2012/2013 and 15 schools with 818 children in 2013/2014.** All children underwent two evaluations, 10 lessons and an additional new lesson, number 11, with a conservation activity chosen by the children. All children joined in preparing a parents' day at the end of their school year (with an estimated audience of 2800 adults), 150 parents underwent evaluation as well about their knowledge and all Club P.A.N.

teachers and principals received intensive training. One of WCF's highlights in 2013 is a scientific publication published by Claudia Borchers and colleagues (Borchers et al., 2013) on the Club P.A.N. evaluation results, presenting the positive impact it has on knowledge and attitudes of the children who participate in the program.

3.6.2 Club P.A.N. in Guinea

In 2013, Club P.A.N. was active in 4 schools in the region of Boké / Guinea reaching 112 children and 1300 spectators during the parents' days. The two coordinators Mr. Kaba and Mr. Diallo were guiding all principals and teachers. They assisted the teachers on-site with the lessons, conducted the teacher training and evaluated the project by organizing a pre- and post-evaluation. Evaluation results show a knowledge gain (Figure 3) and a positive change in attitudes towards nature conservation (Figure 4) in Club P.A.N. children.

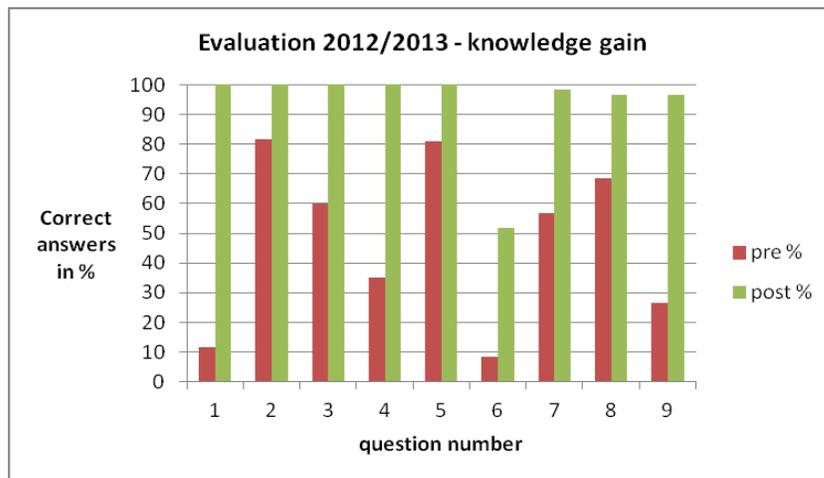


Figure 3: Pre- and post-evaluation results show a knowledge gain after the children have joined the Club P.A.N. lessons.

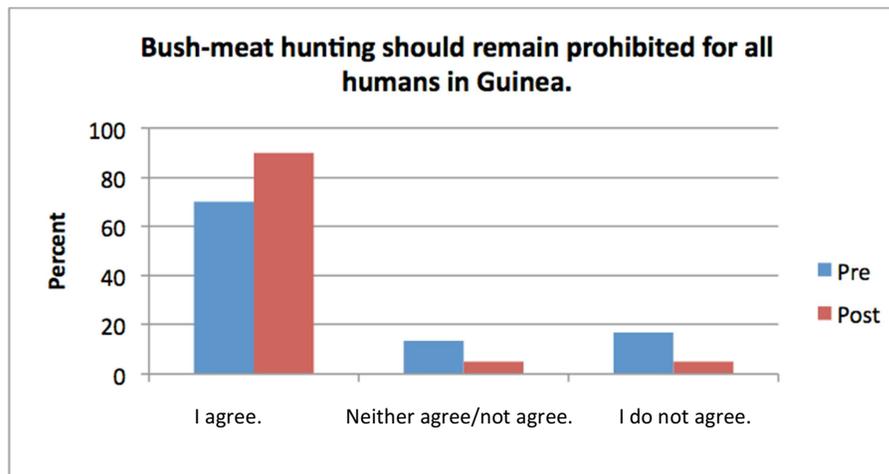


Figure 4: Pre- and post-evaluation results show a positive change in attitudes towards nature conservation after the children have joined the Club P.A.N. lessons. There are still 10% of children that need more sensitization to fully understand the conservation message.

3.7 Proximity awareness



WCF sticker used in proximity awareness campaigns

In 2013, the WCF began a **proximity awareness program in villages in the TSFC** (Côte d'Ivoire and Liberia) to improve relationships with the local human communities and to inform them on the trans-boundary corridor project, the importance to protect the forest and its wildlife. Local animators visited villages on a monthly basis, where they met the authorities such as the village chief, the

president of the women, and the young people. During the visits, the animators showed posters created by WCF and

films about chimpanzees and the WCF projects. In 2013, an additional awareness program was developed for cacao producers for them to receive the certification of Rainforest Alliance for their cacao.

3.8 School exchange between German and Ivorian schools



Children of Petit-Tiémé with letters from their German friends

The WCF/CPE school exchange program between German and Ivorian children has been ongoing since 2005. The children write letters to each other in French, they create posters and paintings. **In 2013, about 1900 letters, several posters and small gifts were exchanged between Germany and Côte d'Ivoire, on both sides there are more than 2000 children involved each year.** Thanks to donations from 3 German schools, Mittelschule Kirchberg, Kepler Gymnasium Leipzig and Humboldt Gymnasium Werdau, the Ivorian school of Ziriglo was able to renovate their

main building, the school fee were donated for six girls from the villages of Amaragui and Petit Tiémé, and a waste system and a toilet was provided for the school of Adamakro.

4. Alternative livelihood projects

4.1. Eco-tourism in Côte d'Ivoire

In March 2013, the third edition of the Salon International of Tourism in Abidjan had eco-tourism as the topic. WCF in collaboration with OIPR and the Foundation for Parks and Reserves shared a stand to present their eco-tourism projects in TNP. Dr. Emmanuelle Normand presented a talk on wild chimpanzees. **110 interested persons signed up for more information on the eco-tourism projects.**

4.1.1. *Eco-tourism and eco-museum in Taï*

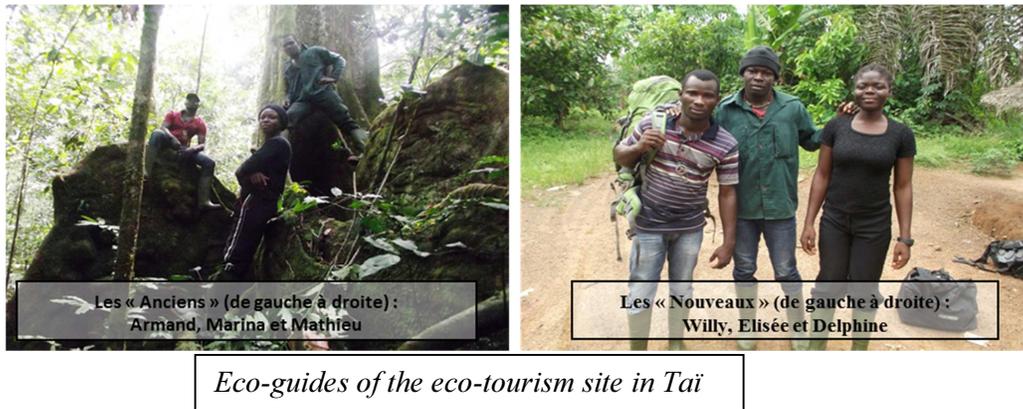


Inside the eco-museum, there are posters, a termite mound and casts of animal tracks on a table

In the village of Taï, we created an eco-museum and a nature walk in a beautiful forest area. The poster exhibition, created in 2012 for the celebration of 33 years of research and conservation of chimpanzees in the TNP, is now a permanent exhibition at the eco-museum. Furthermore, flyers with details on wildlife in the region, cultural events, but also on the possibilities for eco-tourism, food and accommodation in Taï are

offered. The visitors can learn about chimpanzee tool behaviour such as termite-fishing and nut-pounding and explore animal tracks, trees and plants of the tropical rainforest. The nature walks leads visitors to chimpanzee nests and the threats chimpanzees are facing, such as snares set by poachers. It is close to the outdoor nature class room of the Taï Club P.A.N.. In August 2013, the local authorities of Taï agreed that the region around the river Nzé near the nature walk and the eco-museum would become protected.

The **eco-tourism project in TNP** is progressing. Thierry Fabbian, the WCF-program officer in Taï was joined by two international volunteers in support of his tasks. After considering several sites, the optimal one for the project was chosen because of high wildlife abundance, a beautiful primary tropical rainforest and logistical advantages. The base camp is named Marina, the **habitation of the mangabeys, chimpanzees and red colobus monkeys** started and a second team of local eco-guides was trained and equipped. The team of local eco-guardians consists of four men and two women. The eco-guides learn all about the main animal and plant species and how to present them well to tourists. Documents for their training were developed, such as sheets with ethno botanical information, sheets about hygienic rules and rules how to behave in the national park.



The red colobus is the easiest species to find and to habituate. The group is around sixty strong and they often associate with other monkey groups very close to camp Marina. The habituation of mangabeys and chimpanzees is slower because of their larger territories (Figure 5), but it is also progressing well.

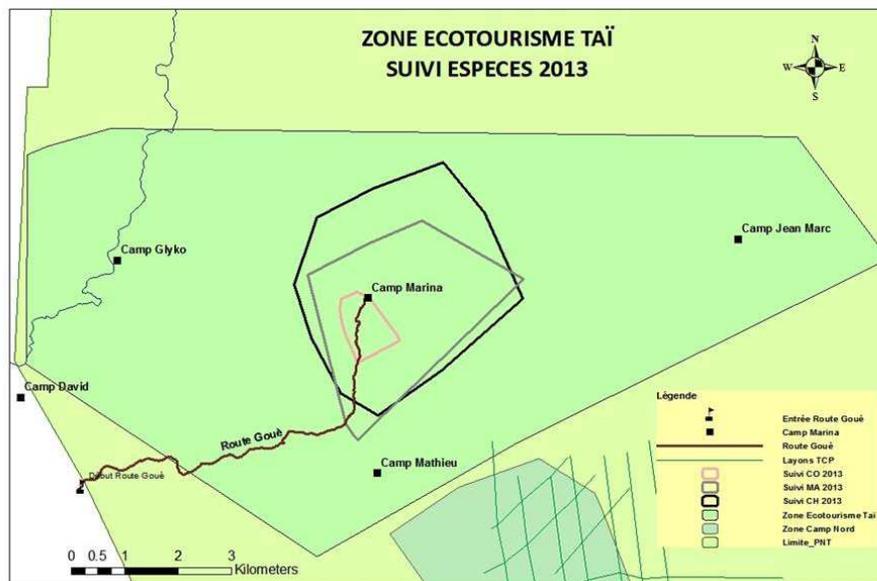


Figure 5: Map presenting the eco-tourism zone with the territories of the red colobus monkeys in pink, the mangabeys in grey and the chimpanzees in black.

An **ethno botanical round walk** near the base camp for the tourists is being developed and impressive primary rainforest trees are identified. In 2013, the first tourists stayed at camp Marina overnight and were able to see the red colobus monkeys and completed the ethno botanical walk. The **traditional evenings** in the villages Gouléako 1 or Daobly were developed during 2013 in collaboration with the Dao and Oubi canton, to introduce tourists to the human cultures of the region. The ceremony takes 3 hours and includes traditional dances, drumming, games, scenic walks, storytelling and delicious African food, special to that region, is offered. The fee paid by the tourists will be entirely for the community having organized the event. In October 2013, the first tourists visited the traditional evenings as well as cocoa plantations certified under the Rainforest Alliance label in the region of Taï.

4.1.2. Eco-tourism site of OIPR in Djouroutou

WCF is supporting the OIPR with the habituation of chimpanzees in the eco-tourism site of Djouroutou in TNP. Eight chimpanzees are identified and partly habituated, the others are still shy and it will take more time until they are fully habituated. A maximum of 18 individuals have been seen together in 2013, but the size of the community is not known yet. International volunteers were added to the local habituation teams and good progress is underway. Eco-guides can follow the chimpanzees now from nest to nest and up to 10 hours without losing them (Figure 6).

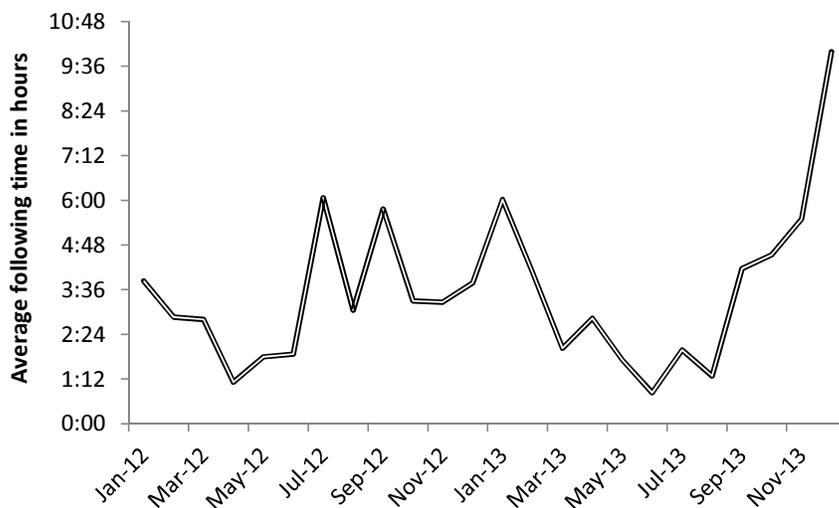


Figure 6: Development of the time eco-guides were able to follow the chimpanzees

In 2013, several tourists visited the TNP at this striking site near Djouroutou with the eco-hotel Touraco. A visit of twenty representatives from European travel agencies in April 2013 was very promising. The visit was organized by the Ministry of Tourism of Côte d'Ivoire and was used to promote the potential of TNP for eco-tourism.

4.2. Micro-projects in Côte d'Ivoire



Snail farm in Djouroutou

Micro-projects connected to villagers and to primary schools near TNP in Côte d'Ivoire were established in order to help promote alternatives to the consumption of bush-meat in the region and to provide alternative sources of income to the local human communities. In total, WCF maintains four grass-cutter, two snail and four fish farms (Table 3).

Table 3: Details about the micro-projects

Micro-project	Number of individuals			Sold individuals	Income (FCFA)	Losses	Comments
	01/13	06/13	12/13				
Grass-cutter farm							
Petit-Tiémé	22	24	19	5	100000	0	Farm is working well
Wonséaly	10	5	0	0	0	10	Farm was robbed and animals were killed
Taï	14	13	10	9	143500	3	Farm is working well
Paulé-Oula	10	1	10	0	0	10	Farm was not well seen after, another try since October 2013
Snail farm							
Sakré	45	135	200	16	2000	0	Farm is working well
Djouroutou	50	254	302	0	0	10	Farm is working well
Fish farm							
Daobly							
Ponan							
Zagné							
Vodelobly							

With the income due to the selling of the grass-cutters or snails, the benefit of the micro-projects can support renovation costs of the school buildings and, as in the school of Petit-Tiémé, support children for lunch in their canteen. The farms are regularly visited by local authorities and have evolved to be an important part of the school life because children learn how to take care of animals, how to breed them and sell them. Most of the farms work well, except for some incidents: In Wonséaly, the farm was robbed and five grass-cutters were killed, the thief was not found. In Paulé-Oula, the farm was simply abandoned during the school holidays and the animals left to die. Both schools are however motivated to continue their work in 2014 and the WCF/CPE will check weekly the farm in Paulé-Oula.

During 2012, the fish-farms were well kept and producing. Chicken farms had been installed on the ponds and in December 2012, an expert in fish farming from Guiglo led a training workshop for the coordinators of the four farms around TNP. The coordinators did not work well claiming the work to be too intense to make productive fish ponds. We then contacted the international NGO APDRA (Association Pisciculture et Développement Rural en Afrique tropicale humide) willing to evaluate on site how to improve the ponds so as to reduce the burden on the coordinators. Secondly, we will encourage the women of the village to lead the program, as out of the four farms, the one at Daobly worked best and it had women following up the project.

5. Biomonitoring and law enforcement

5.1. Biomonitoring in Taï National Park, Côte d'Ivoire

WCF collected the monitoring data of the **phase 8** in TNP from January until June 2013. In January, the data collectors underwent field work training, and the OIPR officers were trained for the data analysis in July 2013. In December 2013, the report was presented and agreed on by OIPR and their partners. **For phase 9**, the teams started data collection in October 2013 and will finish in March 2014. The results of phase 8 are compared to the previous ones, mainly to phase 7 that had shown a dramatic decline in the chimpanzee and monkey population of TNP. **The new biomonitoring data shows a decrease in average abundance of bovids** between phase 7 to phase 8 (Figure 7, 1) (GLM, Estimates= -0,221; $p < 0.001$). **The monkey population that had decreased in phase 7 seems to have regenerated, i.e. the indices of monkey signs increased significantly in phase 8** (Figure 7, 2) (GLM, Estimates= -0.415, $p = 0.014$). **The chimpanzee population remained stable compared to phase 7** (Figure 7, 3) (GLM, Estimates= 0.286, $p = 0.297$). **The abundance estimates for elephants are fluctuating, but did not vary significantly compared to the previous phase** (Figure 7, 4) (GLM, Estimate = 0.335, $p = 0.141$).

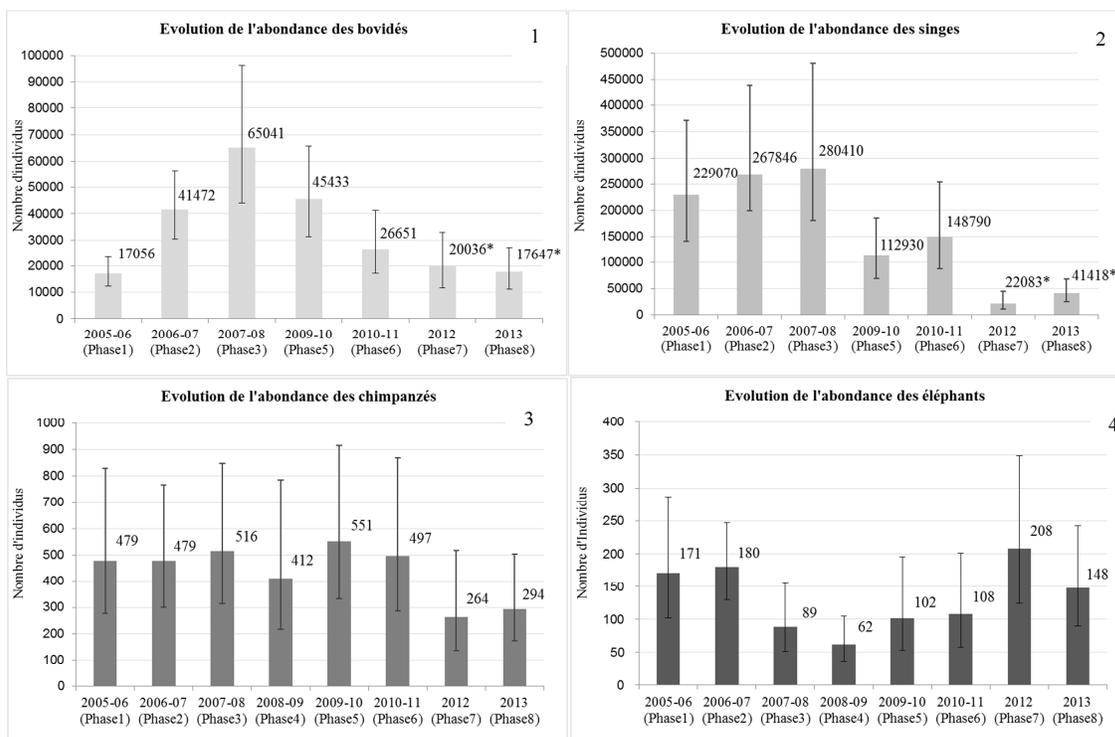


Figure 7: Wildlife abundances from the biomonitoring program in TNP for four animal species

All illegal human activities encountered were recorded (1,6 indices/km) of which 83% involved animals, meaning illegal bush-meat hunting. Indices of aggression on wildlife decreased significantly during this phase 8 compared to 7 (Figure 8) (GLM, Estimates= -0,319, $p < 0.001$). Some areas of the park have intensive law enforcement such as the

chimpanzee study site, the new eco-tourism zone in Taï and the eco-tourism area in Djouroutou. In these areas, illegal human activities decreased the most, which confirms again that more patrols and the permanent presence of researchers and eco-guides reduces illegal human activities (Campbell et al, 2011). **Despite the noted decrease in bush-meat hunting, populations of bovids and monkeys decreased between phases 5 to 8, which mean that the current rate of hunting remains too high to allow the wildlife to regenerate. Illegal bush-meat hunting has to stop now to allow the wildlife to recover.**

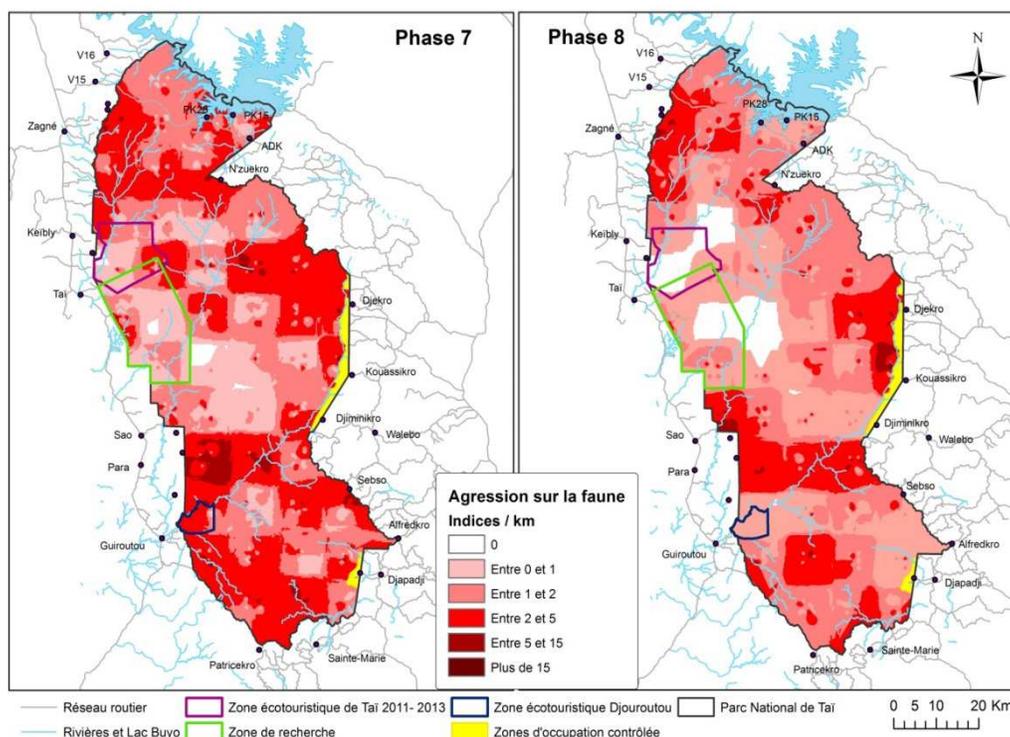


Figure 8: Encounter rates of illegal human activities in TNP during phase 7 and 8, the darker the red, the more illegal human signs were detected.

5.2. Biomonitoring in priority sites of Taï National Park, Côte d'Ivoire

Since 2009, WCF has supported the intensive biomonitoring and law enforcement of priority conservation sites in TNP, i.e. the chimpanzee research site and the eco-tourism areas. Ivorian PhD students follow the development of wildlife abundance and illegal human activities to determine the factors that influence wildlife distribution. In 2013, data were collected on 162 transects each 1km long with the help of the students, local eco-guides and volunteers. In September 2013, the new phase has started after refresher training for all participants, and 29 transects were added to the existing design, summing up to 191 transects to include important areas of the eco-tourism site. At the same time, OIPR agents provided patrolling in these areas. **Between January and August 2013, 110 days of patrols were carried out by an average of 4 OIPR agents.** Several indices of illegal human activities have been observed and poachers have been arrested.

Between 2008 and 2012, the encounter rates of illegal human activities in the research area decreased from 2.176 to 0.986 signs/km, a 54.7% decrease (Figure 9). Thus, the increased permanent presence of eco-guides, OIPR agents and researchers resulted in a major decrease in illegal human activities in this area of TNP, despite the lack of supervision during four months of the post-electoral crisis in 2011. **The signs of monkey and bovid presence increased significantly between 2008 and 2012.** There was no significant change in the chimpanzee population.

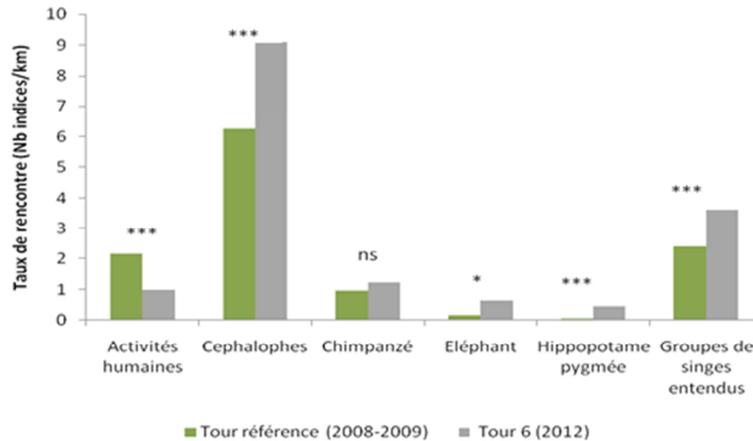


Figure 9: Development of presence signs of illegal human activities and wildlife in the chimpanzee research area of TNP (ns: not significant, * $p < 0.05$, *** $p < 0.001$).

There was a significant **decrease in illegal activities** from the center of the forest towards the periphery (Figure 10) and **bovids repopulate the eastern part of the research area** (with more than 15 signs/km) (Figure 11).

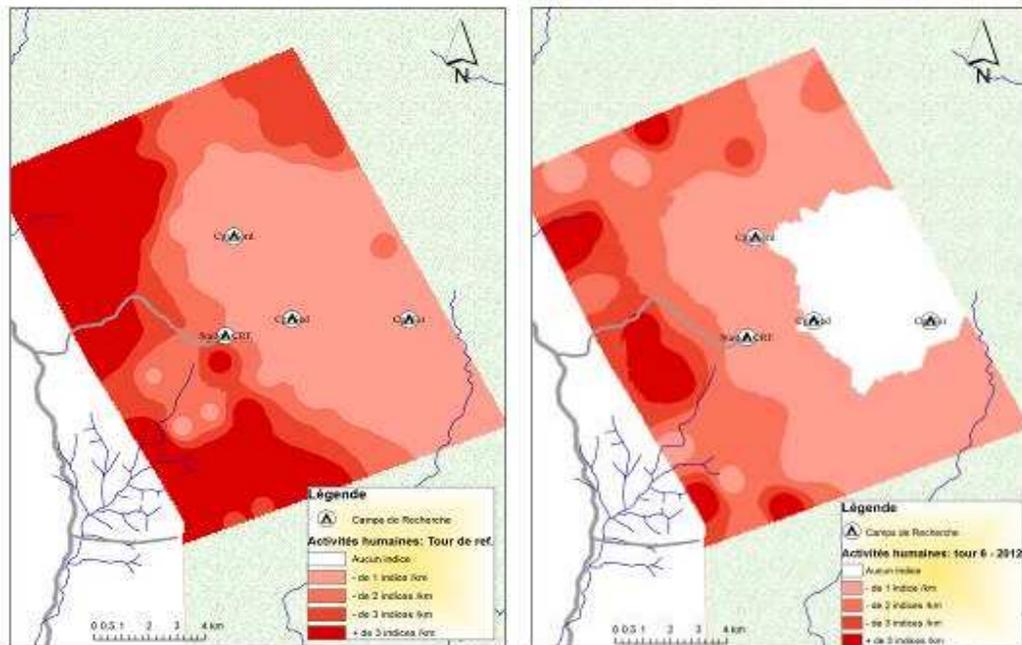


Figure 10: Spatial distribution of illegal human activities signs in the chimpanzee research area of TNP in 2008 left and 2012 right, the darker the red the more illegal human signs.

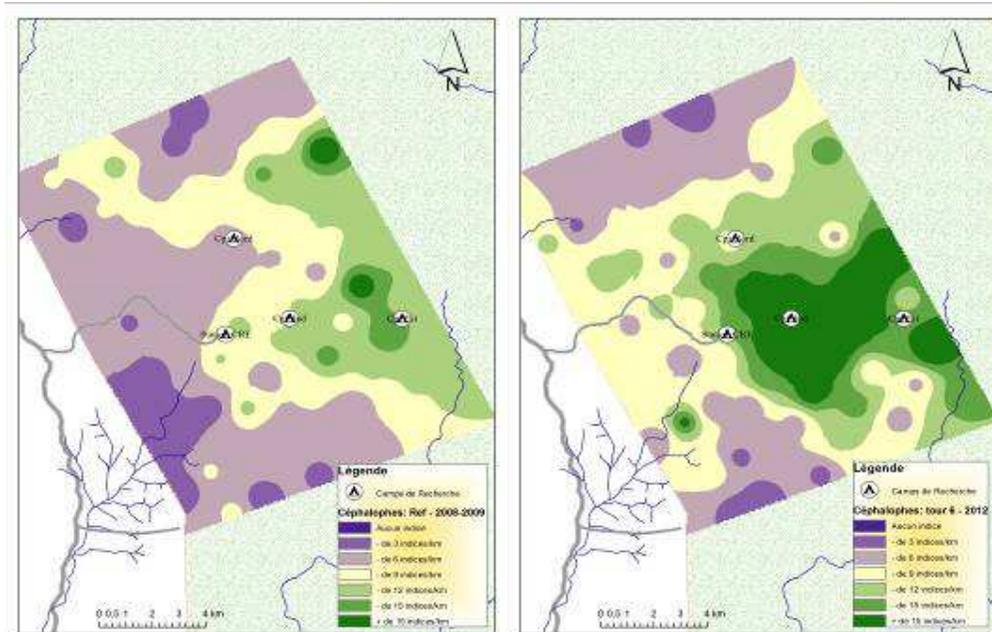


Figure 11: Spatial distribution of bovid signs in the research area of TNP in 2008 left and 2012 right, the darker the green, the more bovid signs.

5.3. Biomonitoring in Comoé National Park, Côte d'Ivoire

Since 2010, WCF and OIPR have agreed to organize regular helicopter flights over Comoé National Park (CNP) to control for the status of the park. In 2010 a pilot flew over CNP, sadly this pilot died in 2012 in a plane crash. This resulted in the restriction of aerial work for single-engine aircrafts by the “Agence Nationale de l’Aviation Civile”, and an exceptional license was refused. We were thus unable to do a control flight in 2013 and postponed it to 2014.

5.4. Law enforcement in Cavally Classified Forest, Côte d'Ivoire

In January and February 2013, supported by the police, the urgently needed law enforcement activities were taken up in Cavally Classified Forest (CCF) by WCF, SODEFOR and STBC (a logging company operating under an agreement with SODEFOR). WCF has renewed its support for biomonitoring in CCF, and organized the training of 11 eco-guides along with SODEFOR and STBC agents and conducted a survey between February and December 2013. A permanent presence of eco-guides and/or police is crucial should this forest remain protected, because of the very high measure of illegal human activities. **Between February 2013 and December 2013, 179 ha of illegally planted cocoa crop were destroyed by the team during the 42-day mission** (Figure 12). Due to constant car problems of the SODEFOR in charge of transporting the agents to CCF, we failed to maximize the monitoring efforts in 2013. The goal for 2014 is 10 to 15 mission days per month.

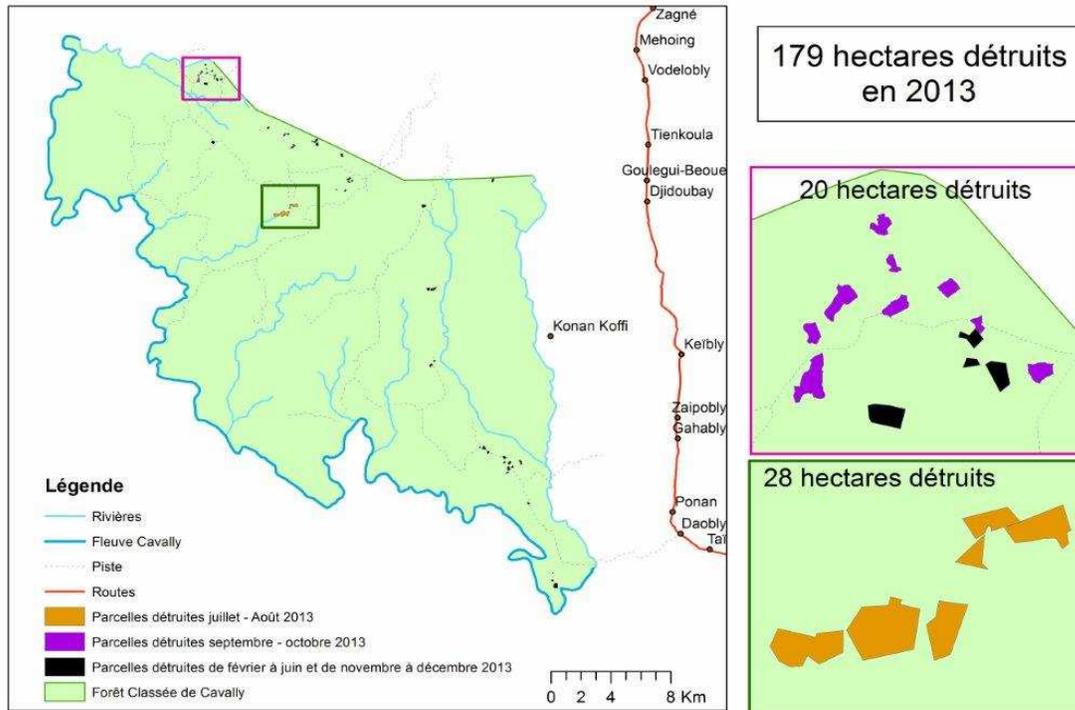


Figure 12: Map of Cavally Classified Forest with the illegal cacao plantations that were destroyed in 2013.

Humans found illegally in CCF were mostly of Burkinabe origin, the others were non-native Ivoirians, all humans were young, between 13 to 17 years of age, and they were arrested by SODEFOR, sensitized and released. Illegal sellers of the forest have been arrested several times, but were released for various reasons. It is very important in 2014 to strengthen the law enforcement capacities of the SODEFOR agents. A first meeting was held in December 2013 with the judge, the prosecutor, the presiding judge of Guiglo, and the head of the police of Guiglo, to raise awareness for the surveillance activities of the WCF / SODEFOR / STBC.



Destruction of illegal plantations in CCF

5.5. Biomonitoring in Proposed Grebo National Park, Liberia

The data in PGNP has been collected from February to March 2013. This survey is the second phase of biomonitoring for PGNP and was specifically conducted by two teams of FDA and local community members, supervised by two WCF-program experts. Data collection was done over a total of 51.5km of line transects to establish the diversity and abundance of large mammals, as well as signs of habitat disturbance and hunting in the area. During this 2013 survey, the presence of several species of primates was confirmed with direct observations (*Cercopithecus diana*, *Cercopithecus petaurista*, *Procolobus badius*, *Cercocebus atys*). The presence of *Cercopithecus mona*, *Procolobus verus*, *Colobus polykomos* and the western chimpanzee (*Pan troglodytes verus*) was confirmed through indirect observations such as vocalizations, feeding signs and nests. Indirect observations of chimpanzees were the most encountered among wild primates with about one sign observed per km walked. **The population density of chimpanzees was 0.289 chimps/km² with a mean population estimated at 341 individuals, with a confidence interval ranging from 139 to 836 and a coefficient of variation (CV) of 46.21%.** During our previous survey in 2012 in the whole of GNF, the population of chimpanzees was estimated to be 412 individuals with a CV of 33.7% (WCF, 2012). This means that 82.76% of the chimpanzee population from GNF is found within PGNP. Comparisons of the spatial distribution of animal species and human activities between 2012 and 2013 have revealed alarming changes in the distribution of wildlife populations in relation to human activities. In 2013, wildlife was more rarely observed in areas close to human settlements, and the locations of highest diversity of large mammals have been confined to the central areas of PGNP compared to observations from 2012.

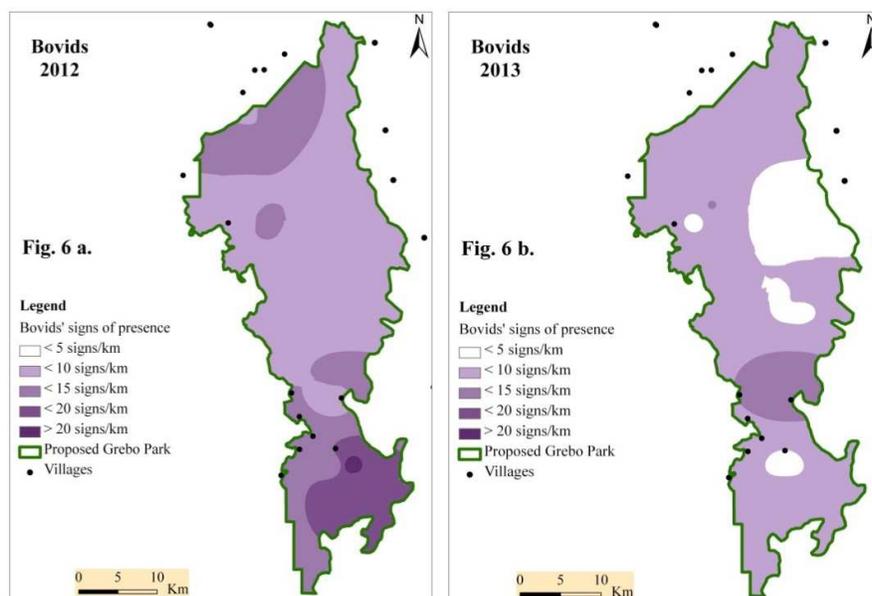


Figure 13: Comparison of the spatial distribution of bovids observed in 2012 and 2013, dark color means high indices.

Furthermore, hunting activities, which had been noted mostly in the southern part of the study area in 2012, have increased in 2013 by 51% and now cover the entire PGNP. Consequently,

as an example (Figure 13), encounter rates of bovid signs have decreased by 36% between 2012 and 2013 (dark color means high presence of signs). In addition, 6 new settlements were identified within the proposed limits of the PGNP and we recommend that the proposed park limits are quickly redefined. The gazetting process to create PGNP should become a priority, as well as taking urgent measures to ensure the conservation of this area. We propose to undertake intensive environmental education programs for the local communities, intensify law enforcement, and continue regular biomonitoring activities.

5.6. Biomonitoring in Guinea

Last October, Christophe Boesch has spent 10 days in Guinea and used the occasion to finalize another contract of cooperation with the new owners of Guinea Alumina Corporation (GAC). GAC had closed their concession for over a year due to the low world-market price of Bauxite, and mining activities are now to start again. They agreed to continue the mitigation project in the mining concession with WCF, as well as the offset strategy (see below 5.7.). Vincent Lapeyre and his assistant Thibault Cottineau and a local team of assistants implement **presently the 5th year of biomonitoring in the GAC concession.**



Fouta-Djallon-Bafing Region

Biodiversity offset being very new in Guinea, this project is in very good view by the government. The **Fouta-Djallon-Bafing Region (FDBR) was chosen after extensive survey in all protected areas in Guinea as a possible biodiversity offset for the different mining companies working in the bauxite extraction within the prefecture of Boké in Guinea.** So far only GAC is involved to some extent, i.e. they included 50'000 \$ for conservation activities in the FDBR

in their 2014 grant to WCF. The FDBR contains possibly the highest number of chimpanzees in West Africa and it urgent to enhance its conservation status. During Christophe's visit, Vincent had also arranged meetings with the Minister of "Environment, Eaux et Forêts et Développement Durable" and the Minister as well as his agents are extremely interested in the project, find it very timely and are willing to support it with all their local representatives.

Vincent has rented a house in Dabola, to establish a 2nd WCF-office. From here, he organizes the biomonitoring. The survey is going well despite the far-out and mountainous region with no communication possibilities. At the same time a socio-economic survey is underway (with the University of Leipzig), as the involvement of the human population and considering their needs, besides law enforcement and capacity building, will be crucial for enhancing conservation in the region.

6. Sustainable use of natural resources

6.1. Cacao certification in Côte d'Ivoire

In 2012, WCF began working with the project « greening the cacao industry », a program for cacao certification in western Côte d'Ivoire under the Rainforest Alliance label. The cacao plantations are close to the TNP. The project is a huge collaborative enterprise with Rainforest Alliance, GIZ, Barry Callebaut, OIPR and five cacao cooperatives ECODA, CASO, COOPAHZ, COAT and CAEZA. WCF is involved because the certified cacao concept provides a sustainable use of natural resources with environmental benefits, as well as social and economic benefits to the local cacao farmers. Farmers that accept the certification have to follow certain rules such as reforestation in areas of their plantations, no bush-meat hunting, and limits on the use of pesticides. **The five cooperatives producing certified cocoa include around 2300 plantations, with 1500 of them very close to TNP.** Unfortunately the program has taken a long time to start mainly because negotiations for the signing of the agreement form took so long. So far, only cacao nurseries have been developed and trees will be planted starting in April 2014. **704 local cacao farmers were trained on environmental friendly farming and sustainable resource use.** At the steering committee meeting for this project with the partners in December 2013, it was decided that for 2014, the program will be more detailed and with a chronogram of execution so it will be possible for the WCF, Barry Callebaut and Rainforest Alliance to quickly report on delays and problems and to be able to find swift solutions.

6.2. Sustainable forest management in Côte d'Ivoire

Since 2008, WCF has been working with SODEFOR for the sustainable forest management of 2 Classified Forests in Côte d'Ivoire, Goin-Débe (GDCF) and Cavally (CCF). Since 2010, the management plan for both forests is created, but because of the post-election crisis in the country negotiations with stakeholders were difficult. In December 2013, WCF was able to organize a workshop with all stakeholders to validate the development and management of CCF, this revised management plan has been submitted in January 2014 for signature to the Ministry of Water and Forestry. The logging company STBC will receive an annual activity plan for 2014 based on the CCF management plan that takes into account the principles of sustainable forestry.

The management plan for GDCF has to be revised, because the forest has changed greatly between 2010 and 2013 during the post-election crisis, due to illegal human activities such as deforestation and illegal plantations within GDCF. The plantations of cocoa will not be tolerated in the central area of the forest and co-plantations of local trees will be required in the old cocoa plantation in the eastern and western sides of the forest.

In January 2010, the République de Côte d'Ivoire announced officially the FLEGT process to improve forest governance to maintain its market share in the economic space of the

European Union. In June 2013, the first formal negotiations of the FLEGT partnership took place and WCF as a civil society was presenting its expectations to the committee. WCF expectations are: improvement of logging transparency and recognition of the civil society as an independent observer. WCF has participated in various workshops mainly to include the civil society into the FLEGT process. Currently, questions about the legality of timber are being discussed. WCF aims to initiate a pilot study in CCF on the feasibility of implementing an independent observation strategy for forest management.

6.3. Biomonitoring in oil palm plantation, Liberia

In light of the recent discovery of 2 chimpanzee nests in the area next to the concession's nursery, Golden Veroleum Liberia (GVL) (an oil palm company in Liberia) needs to reassess the concession for the presence of chimpanzees and other IUCN high risk species (also protected by Liberian law) and develop mitigation plans and 'no-go' areas to protect the present wildlife. GVL follows Roundtable for Sustainable Palm Oil (RSPO) set standards as well as the Forest Conservation policy standards set by their investor Golden Agri-Resources. Presence of such species is of the utmost concern for GVL to meet these standards and to take into account the impact of their activities on these wildlife populations and forest cover. Further information on the presence of chimpanzees and other IUCN high-threatened animal species is therefore needed to assist GVL in updating their concession management plan and to develop their activities in such a way as to decrease their negative impact on faunal and floral biodiversity. The 8,000-hectare concession lies in the TSFC biodiversity hotspot (Mittermeier et al., 1999), home to over 1,000 chimpanzees. WCF is initiating biomonitoring and data collection started in December 2013 with one local team, and it lasted for 37 days, covering the whole concession (Figure 14). The report will be available in March 2014.

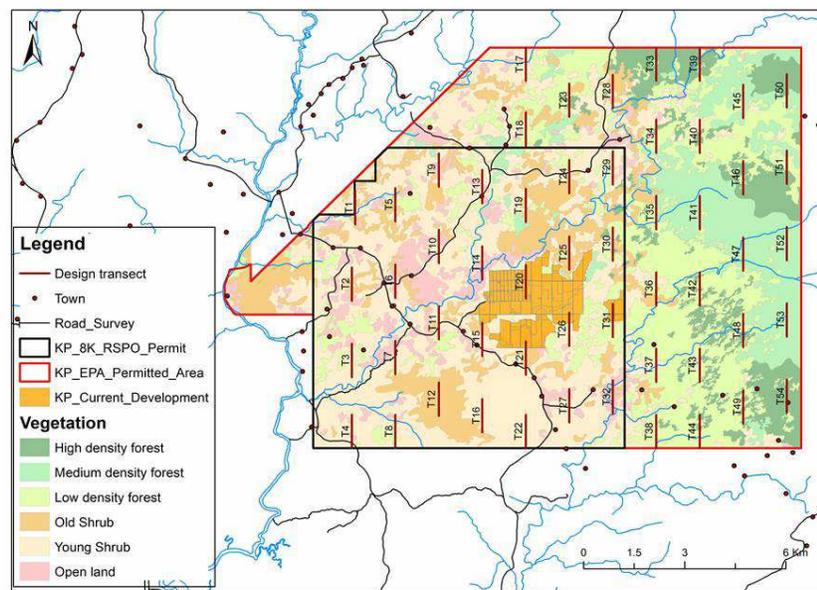


Figure 14: Design of the survey in the GVL concession, Liberia

7. Sociological and bush-meat studies

7.1. Bush-meat study on trans-boundary markets between Liberia and Côte d'Ivoire

The trade and consumption of bush-meat, which often includes species threatened with extinction is another problem affecting conservation efforts in Western Africa. The WCF is monitoring this trade and consumption and is investigating the effect that environmental education is having on peoples' attitudes to bush-meat by measuring levels of consumption over extended periods of time. This effort is concentrated along the Liberian-Ivorian boarder.



*Bush-meat market of Daobly,
WCF-expert weights meat*

The trans-boundary bush-meat market study in Daobly (started in 2009) had to stop from April 2012 until March 2013 because of security problems. In March 2013, data collection started again when a second market along the trans-boundary river Cavally was detected in the region of Djouroutou, named Tarsla. Tarsla is a human settlement camp in PGNP, Liberia, and every Saturday canoes cross the Cavally river to sell bush-meat in Côte d'Ivoire. WCF-experts visit Tarsla market every Saturday and Daobly market every Friday and Sunday. Check sheets are filled out to obtain detailed information

on the bush-meat sold, e.g. species, price, amount, origin, destination, whole carcass or pieces of meat, meat is fresh or smoked. **Results show that a total of 20 fully protected species in Liberia and Côte d'Ivoire were sold. Among these, 14 are on the IUCN Red List, four are endangered, five are threatened and five are near threatened. By interpolating the 2013 data, around 1742 animals could be sold in Daobly and 1284 in Tarsla each year. Protected species represent 24% of the meat sold in Daobly and 36% in Tarsla. This represents a significant loss of biodiversity in Liberia.** WCF will continue its bush-meat study in 2014. The governments of Liberia and Côte d'Ivoire were asked to act immediately to stop this trade during the first steering committee meeting of the TSFC.

7.2. Sociological study in Côte d'Ivoire



*Sociological survey in private
households*

Sociological surveys were conducted in the region of Djouroutou (August 2012) and in the region of Taï / Zagné (December 2012) while the trans-boundary bush-meat markets were closed. The same study was carried out in the region of Djouroutou (August 2013) after the re-opening of the markets. In 2012, WCF-experts had visited 24 local restaurants (each visited 24 times) and 144 private households (each visited 4

times) in villages close to TNP, they determined the weight and the costs of the bush-meat found. The 2013 study in the region of Djouroutou was conducted after the trans-boundary bush-meat markets re-opened again in March 2013. For this study, WCF-experts visited 11 restaurants (each visited 24 times) and 66 families (visited once a week for four weeks) between August and September 2013.

Firstly, using the results from the 2012 study in Taï, Zagne and Djouroutou, we were able to extrapolate the results to include the estimated 15408 families (figure from CIA Factbook 2012) and 172 restaurants in this region (figure estimated internally). **We deciphered from these figures that the combined consumption by families and in restaurants would equate to 9178 duikers and 4363 monkeys per year.**

Second, when comparing the results of the two studies in Djouroutou in 2012 and 2013, we found that overall from both the 2012 and 2013 results, **a total of 27 wild animal species consumed in restaurants and households.** Preliminary results from the 2013 survey show that the **average daily bush-meat consumption in households was just slightly higher than in 2012, showing a 0.0012kg increase in consumption of bush-meat** (Table 4). **The average daily amount of bush-meat sold in restaurants was 1.59 kg, more than double of what was reported in 2012 (0.69 kg).** **By extrapolating the 2013 data, these 11 restaurants would sell over 6952 kg of bush-meat per year, compared to the 2012 results where the amount was 2780 kg.** The difference between these two study years is the re-opening of the trans-boundary bush-meat markets in the 2nd year. From the declarations of restaurants owners, we have quantified that 226 kg of bush-meat would come from Liberia, which represents 54% of the meat sold in restaurants. These results illustrate the parlous illegal bush-meat traffic from Liberia to supply the rural human populations in south-west of TNP, Côte d'Ivoire with animal protein.

Table 4: Mass of protein weighed at the restaurants and in homes for bush-meat, livestock and fish for both 2012 and 2013

Consumption of animal protein	Weight of bush-meat (kg)	Weight of meat from livestock (kg)	Weight of fish (kg)	Weigh of bush-meat (kg)/unit/day
S/P Djouroutou 2012				
Families	20.80	32.60	56.50	0.0073
Restaurants	167.50	158.45	126.75	0.69
S/P Djouroutou 2013				
Families	22.60	27.02	50.30	0.0086
Restaurants	419.00	241.80	67.62	1.59

Despite this very worrying result, bush-meat is not the main protein source (Table 4); fish is available at an affordable cost, which is two to three times lower than that of meat. The perception of the local population is generally positive towards flora and fauna conservation in TNP, 90% of the questioned individuals said it is necessary to protect the park's wildlife.

On the contrary, when the question was with regard to wild animals foraging in rural areas, 37% of respondents said to kill those animals. The reasons for this response are primarily related to the destruction of their agricultural products by these animals. Others state that once out of the park, the animals are no longer protected by the park authorities and become a source of protein. Finally, one preliminary result of the 2012 study is that there is a relationship between the number of people who consumed bush-meat during the study and have, or have not, participated in a WCF multi-media awareness campaign, demonstrating the importance of these activities for the protection of wildlife (Figure 15).

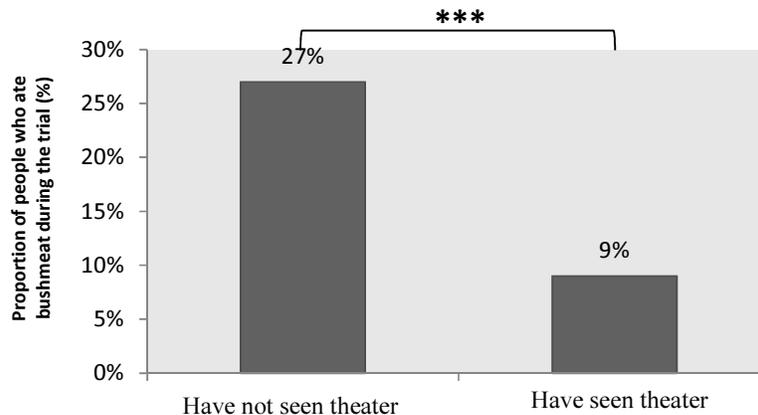


Figure 15: Impact of WCF awareness campaign on the consumption of bush-meat (McNemar's $\chi^2 = 69.1215$, $N=144$, $p < 0.001$).

7.3. Sociological study in Liberia

Grebo National Forest (GNF) is one of the six fragments of forest block left in Liberia along the border of Côte d'Ivoire. It is located in two administrative regions namely Grand Gedeh in the north and River Gee in the south of Liberia. We conducted a sociological study around Proposed Grebo National Park (PGNP) located in the eastern part of the GNF. The purpose was to gather information about the villagers' daily habits, food preferences, including the quantity of animal protein consumed during the survey period, and their perceptions on forest conservation. Finally, the impact of conservation activities on the consumption of bush-meat has been evaluated. Data collection was conducted from January to March 2013 in ten villages around PGNP. **A list of 17 animal species consumed has been established.** These species are divided into 6 orders among which there are artiodactyls (5 species), primates (5 species), and several other orders with less than two species in each. These orders include five protected species in Liberia. During the survey in the villages, we found carcasses of three protected species in Liberia: chimpanzee, zebra duiker and crocodile. Duikers and monkeys represent the biggest % of bush-meat in River Gee and Grand Gedeh. Fish is the other important animal protein available in households, and in River Gee it represents a proportion of 48% (Figure 16).

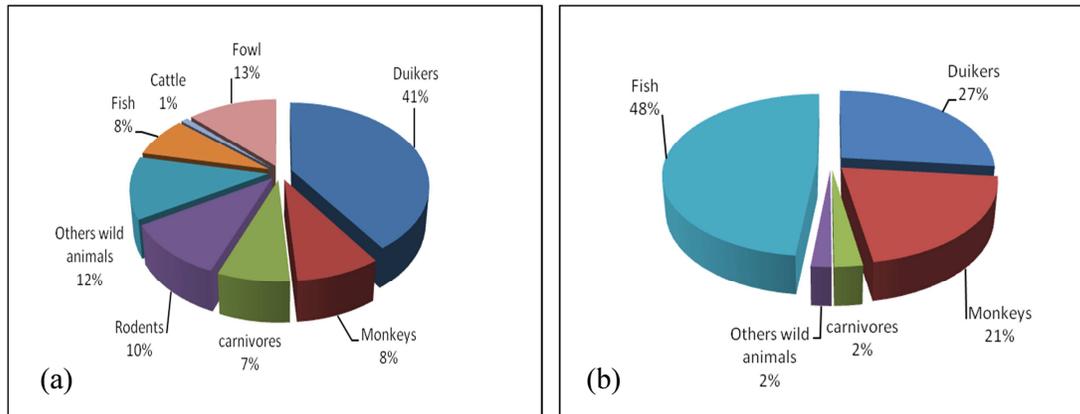


Figure 16: Proportions of different animal proteins available in the households visited in Grand Gedeh (a) and River Gee (b) region

When comparing the levels of bush-meat consumption and fish, we notice a difference between the two regions (preliminary analysis).

In Grand Gedeh, the average weight of bush-meat consumed is 34g/day/person which is almost double of the estimated average weight of 19g/jour/person in River Gee ($N = 151$, Wilcoxon test, $W = 3033$, $p = 0.0098$). In contrast, the average weight of consumption of domestic protein of 9g/day/person in Grand Gedeh is about half times that of River Gee, estimated at 18g/day/person ($N = 151$, Wilcoxon test, $W = 1779$, $p = 0.0003$).

Since consumption is quite different, we wanted to know if, in absolute terms, the preferences expressed in these two regions were also different. In **Grand Gedeh**, although bush-meat is very popular, 44% of the sampled population say to prefer fish, 30% livestock. The same in River Gee with 41% preferences for fish, followed by livestock meat with 31%. Bush-meat is preferred by 26% in Grand Gedeh and 28% in River Gee. The preferences expressed in the two regions are statistically identical (Fisher's exact test, $p < 0.9523$).

To see the effect of the primary factors influencing the consumption of bush-meat, we performed a logistic regression involving variables such as the number of people in the household, the ethnic group of respondents and their participation in the theater performances. The interaction between the latter two was looked at for the first time, since it is the first time that WCF led education activities in the north of GNF whereas WCF had implemented theatre in River Gee in the past. **Preliminary analysis show that people from Grand Gedeh consume more bush-meat than people from River Gee (GLM, $z = -2.609$, $df = 104$, $p = 0.009$) and people eat less bush-meat when they have seen the theater campaign ($z = -2.222$, $df = 104$, 0.026).**

The theatrical performances organized by the WCF were seen by only 9% of respondents in Grand Gedeh, but by 51% in River Gee. As for film projections about chimpanzees and other animals, they were seen by 12% of respondents in Grand Gedeh and by 28% in River Gee.

8. Acknowledgments

The WCF would like to thank all private donors, conservation organizations and foundations that have helped finance the activities of 2013:

Arcus Foundation, Auckland Zoo, Afrique Nature, Ambassade de Norvège en Côte d'Ivoire, Ambassade de Suisse en Côte d'Ivoire, BBC Natural History Unit, Brevard Zoo, Bongo-BMZ/WWF-Germany, Bongo Umweltstiftung, Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, Columbus Zoo, Deutsche Gesellschaft für Internationale Zusammenarbeit, DierenPark Amersfoort Wildlife Fund, DisneyNature, Great Ape Conservation Fund of the US Fish and Wildlife Service, Flegt-FAO, Great Ape Survival Partnership of the United Nations Environment Program, Guinea Alumina Corporation, Global Giving, Goldberg Grant for Conservation, GVL, Keidanren Nature Conservation Fund, Leipzig Zoo, MAVA Fondation pour la Nature, Mohamed bin Zayed Species Conservation Fund, Oklahoma City Zoo, Paul Schiller Stiftung, PNUD, Puma /UNEP-GRASP/SSFA, Sweden Chimpanzee Trust, Teach A Man To Fish, Tierschutz Zürich, Mr. and Mrs. Wientjes – WWF-Netherlands, World Bank and Zoo am Meer Bremerhaven.

Markus Altstädter, Yoeriska Antonissen, Mimi Arandjelovic, Daniel Arranaga, Eric Arroyo, Karin Augst, Sabine Bäcker, Elizabeth Baggett, Katharina Baier, Gisela Bär, Sascha, Thomas and Simone Bertrams, Niki Black, Christophe, Hedwige, Lukas and Ernst Boesch, Alexandra Boese, Heike Böhm, Claudia Borchers, Nicolas Bouton, Greger Braun, Jürgen Breimer, Richard Browning, Redouan Bshary, Alexander Burkhardt, E. and Ch. Burnand Thevenoz, Genevieve Campbell, Beth Cataldo, Holger Cerwonka, Grace Chang, Julia Cissewski, Paul Conrad, M.u. A. Contini-Sauser, Martin Coutts, Catherine Crockford, Caroline Deimel, Eva Demler, Tobias Deschner, Christophe Deutsch, Joerg Dietrich, I. Dolan, Heins Dorlas, Nadin Eckhardt, Susanne Eipper, Wolfgang Enard, Beate Feil, Karin Fenzlau, Alexander Fiegen, Julia Fischer, Alastair Fothergill, Gabriela Francik, Axel Friedrich, Marlen Fröhlich, Pascal and Barbara Gagneux, Thi Gaire, Dagmar Gambichler, Katherine Gaudet, Monique Gauthey, Karin Gebhardt, Ulrich Grimmer, Ryan Grippo, Thomas Große, Vera Grosskinsky, Sabine Gundlach, Christoph Hardt, Jacqueline Henrot, Ilka Herbinger, Horst Heydlauf, Thurston Cleve Hicks, Hoferichter & Jacobs, Antje Hoyer, Alexander Hügi, Humboldt Gymnasium Verdau, Beate Huschka, Sandra Jacob, Heiko Janssen, Jean Tercier, Katrin John, Paul Johnson, Will Jones, Jessica Junker, Ammie Kalan, Kepler-Gymnasium Leipzig, Ingaburgh Klatt, Alexander Kluge, Marianne Knecht, Fabian Knoll, Ingo Köhne, Pedro Koller, Gergana and Alex Kopp, Manfred Kornfeld, Stefan Korte, Axel Krause, Karin and Sandra Kroker, Verena Kummer, Louis Lazure, Sylvain Le Braz, Peter Lehmann, Jürgen and Vera Leinert, Elena Lieven, Tanja Löb, Robert MacDonald, , Catherine Mannion, Mahmoud Maslem, Paul McGlone, Mittelschule Kirchberg, , Christiane Mues, Barbara Müller, Rita Müller, Kurt Malerwerkstätten Nebel & Roeder Müller, Guillaume Murat, Claudia Nebel, Dorothy Newman, Susanne and Emmanuelle Normand, Charles Nunn, Maude Pauly, Astrid Pauselius, Tim Perkins, Dana Pfefferle, Brigitee Pötzl, Brigitte Pradel, Tanja Preun, Ullmann Reinhard,

Marlen and Julia Riedel, Erika Rüge, Duri Rungger, Marzela Scheller, Vera Schmeling, Silvia Schütze, Virginia Scott, Dorothea Seber, Kirstin Seidenschwand, Rainer Seliger, Emma Sheppard, Audrey Soria, Juliane Straub, Jens Stroschmieden, Amand Strubin, Emily Stubbs, Gerhard Theewen, Patricia Tran Van Minh, Ferreira Ulysse, A.J.M. van Gemert, Hayez van Riet, Erica van de Waal, Saskelina van Hemmen, Frederic Varlet, , Linda Vigilant, Philip von Döhren, Ines von Kuelmer, Jamila Wagner, Rosmarie Waldner, , Werner Westhus, Clare Wilcox, Indra Willms-Hoff, Roman Wittig, Martina Wittig, Klaus Wittig, Penelope Ysabel, Dieter Zeis and Margaret Zetting.

The WCF is grateful to all partners supporting its activities in 2013:

Max Planck Institute for Evolutionary Anthropology, WILD Foundation, Wildlife Conservation Society, World Wildlife Fund, Rainforest Alliance, Fauna & Flora International, Ministères de la République de la Côte d'Ivoire, Ministère de l'Environnement, du Développement Durable, de Salubrité Urbain, des Eaux et Forêts, Ministère de l'Enseignement Supérieur et de la Recherche Scientifique, Ministère du Tourisme, Ministère de l'Education Nationale, Ministère de l'Economie et de Finances, Office Ivoirien des Parcs et Réserves, Ministères de la République du Liberia, Ministères de la République de la Guinée, Direction Nationale des Aires Protégées et de la Biodiversité, Centre Forestier de N'Zerekore, Société des Mines de Fer de Guinée, Centre de Conservation des Chimpanzés, Forestry Development Authority, ONG Guinée-Ecologie, Société de Développement des Forêts, Fondation Parcs et Réserves de Côte d'Ivoire, Cellule des Projets Environnementaux, Centre Suisse de Recherches Scientifiques, University of Abobo-Adjame et de Cocody Abidjan, Afrique Nature International, Deutsche Gesellschaft für Internationale Zusammenarbeit, KfW:Bankengruppe, Division Agriculture et Ressources Naturelles Afrique sub- Saharienne, Agence Française de Développement, Union Européenne, SOS FORET, ACB en Côte d'Ivoire, Ymako Teatri, Dao N'Daw Koumba, Désirée Koffi, Ben A. Sylla, Baïlo Telivél Diallo, Eddie Theatre Productions, Compagnie Touchatou, Jawordee Conservation Awareness Culture Troop, University of Monrovia, African Methodist Episcopal University.

9. References

- Borchers C., Boesch C., Riedel J., Guilahoux H., Ouattara D. & Randler C. (2013). Environmental Education in Côte d'Ivoire/West Africa: Extra-Curricular Primary School Teaching Shows Positive Impact on Environmental Knowledge and Attitudes, *International Journal of Science Education, Part B: Communication and Public Engagement*, DOI:10.1080/21548455.2013.803632
- Campbell, G., Kuehl, H., Diarrassouba, A., N'Goran, P. K. and C. Boesch (2011). Longterm research sites as refugia for threatened and over-harvested species. *Biology Letters* doi: 10.1098/rsbl.2011.0155
- Crawford A. (2013). Conflict prevention and resolution in Taï National Park, Côte d'Ivoire International Institute for Sustainable Development, WCF report.
- Kablan Y, Kouassi J., and Normand E. (2013). Impact de quelques mesures de gestion sur la distribution de la faune et sur la perception des populations riveraines vis-à-vis de la conservation. WCF report
- Kablan Y, Kouassi J., Dowd D. and Normand E. (2013). Socio-economic study of local populations around the proposed Grebo National Park (South East Liberia): Perceptions of forest conservation, diet and impact of environmental education. WCF report
- Kouakou C., Vergnes V., Normand E., Dowd D. Boesch C. (2013). Population status and monitoring of the western chimpanzee (*Pan troglodytes verus*) and other large mammals in the Grebo national forest, Liberia, Rapport WCF/FDA.
- KfW (2013). Feasibility and Preparations Study for the Implementation of Ecological Corridors in the Taï-Grebo-Sapo Landscape (Côte d'Ivoire/Liberia). Draft Report
- Mostert P. et Kalpers J. (2013). Étude de faisabilité et de préparation pour la mise en oeuvre de corridors écologiques dans l'Espace Taï-Grebo-Sapo (Liberia/Côte d'Ivoire). Rapport KfW
- SODEFOR (2013). Plan d'aménagement de la forêt classée de Cavally.
- Tiedoue R., Vergnes V., Kouakou C., Normand E., Ouattara M., Diarrassouba A., Tondossama A. et Boesch C., (2013). Etat de conservation du parc national de Taï : Rapport de résultats de biomonitoring Phase 8 (Janvier 2013 – Juin 2013), rapport OIPR/WCF.
- Varlet F. (2013). Etude des terroirs et couloirs écologiques entre le parc national de Taï et le parc nationale de Grebo, WCF report.

10. WCF Team



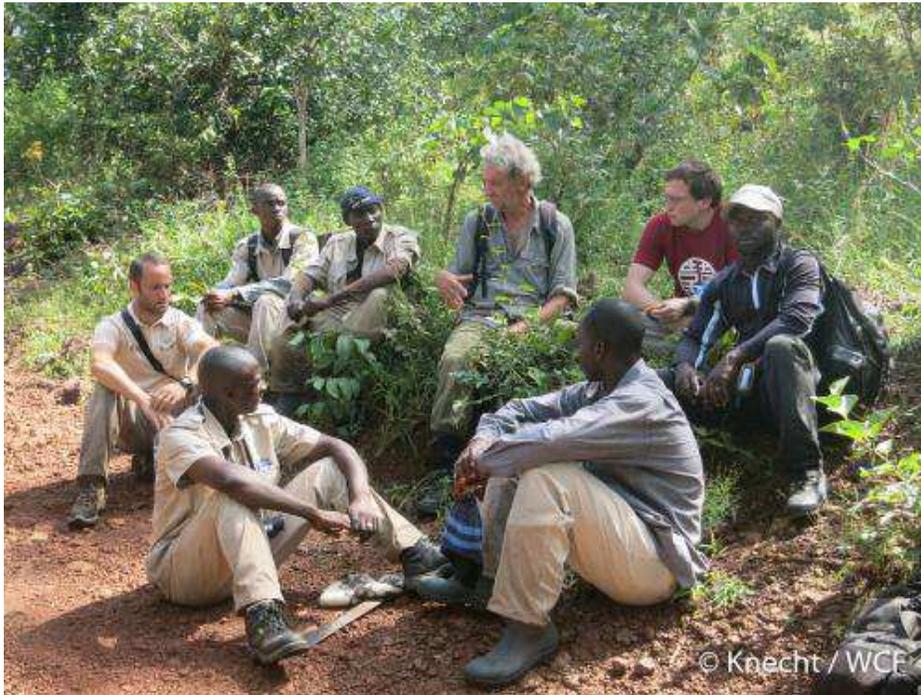
WCF team in Abidjan, Côte d'Ivoire



WCF team in Taï, Côte d'Ivoire



WCF team in Monrovia, Liberia



WCF team in Dabola and Sangaredi, Guinea