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Annual Report 2020

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



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February 2021

General Conclusion 2020 and Outlook for 2021

By the president of the Wild Chimpanzee Foundation, Christophe Boesch

The upgrading of the West African chimpanzees as ‘critically endangered’ by the IUCN in September 2016 was a turning moment in our fight for the conservation of this sub-species, because the international community recognized the dire situation in West Africa. This spurred our motivation and, thanks to increased funding, facilitated efforts to create protected areas in Liberia and Guinea for the remaining wild chimpanzee populations.

The year 2020 was a very special year because of the global COVID-19 pandemic that directly affected us at different levels: Some funding was delayed, due to the lockdown and other restrictions part of our staff left Africa, and finally we closed the ecotourism projects to prevent the disease transmission to wildlife. It is only by the second half of the year that we could restart our operations at the normal level, except the eco-tourism project at Taï in Côte d’Ivoire.

The WCF continued to develop its priority projects, namely the creation of new protected areas to contribute to sustainable improvement of the survival of chimpanzee populations in West Africa. At the same time, the community eco-guard program implemented in the three West African countries has been reinforced, as the data show an important positive impact on the protection of the protected areas and its wildlife. WCF employed more community members, including both women and men. New initiatives were installed and enforced by instructing the employees in SMART technologies.

In Liberia, WCF continued working with the Liberian Forestry Development Authority (FDA) to promote the creation of the Krahn-Bassa National Park where elephants and chimpanzees are still abundant. The WCF generalised the new biomonitoring approach with camera traps in Taï National Park (Côte d’Ivoire), in Grebo-Krahn National Park (Liberia) and the Moyen-Bafing National Park (Guinea). Convinced by the increased number of wildlife species detected and the potential for quantification of population size with a larger number of animal species, the local authorities are interested to adopt this approach.

In Guinea we have included up to 600 members of the local communities in an unprecedented effort to manage the bushfire issue and ensure that forest regeneration will increase in the whole Moyen-Bafing National Park. The aim is to have these people work with the WCF for most of the year to protect the high value conservation sites and promote natural forest regeneration in the Moyen-Bafing National Park. And, WCF has invited some expert organizations to join and implement activities requiring agro-ecological knowhow.

In Liberia, WCF leads a large consortium of NGOs to improve the fight against illegal wildlife traffic.

In Côte d'Ivoire, WCF will maintain the continuously required efforts to protect the remaining natural habitat with its chimpanzees and other threatened wildlife.

The reputation of the WCF in the West African region as a conservation organization with a solid accounting expertise and strong nature experience has brought different large donor organizations to signal their desire to develop new projects in the West African region. To that end, the WCF staff has been working with many of them to plan the new activities to be developed in the region.

In 2021, the creation of the Moyen-Bafing National Park in Guinea will be finalised by the signature of the presidential decree and the contract for the Public-Private Partnership (PPP) managing body of the park.

In Liberia, the negotiations for the finalisation of the creation of the Krahn-Bassa National Park should be finalised in 2021, and this would be the largest national park of the country. WCF's implication in the conservation of the Sapo National Park will continue with the community eco-guard program to support FDA's effort to protect this oldest national park of the country. WCF launched a promising eco-lodge in the Sapo National Park with a partner who has the skill to build very attractive lodges suitable for the tropical rainforest habitat.

In Côte d'Ivoire, we hope to revive the ecotourism project in 2021 by opening it up again to tourists by applying a new health protocol to limit the risks of transmission of COVID-19. In support of the project, two volunteers have arrived in December 2020 for the supervision of the chimpanzee habituation, as well as to relaunch the communication on the project. We will also continue to support the SODEFOR in protecting the Cavally Classified Forest, considering the promising results of 2020, we have a chance to save the Cavally Classified Forest from complete destruction and protect the small population of chimpanzees surviving there.

In 2021, WCF will intensify its collaboration with the chimpanzee research projects in bad need for support to ensure the conservation of the very important chimpanzee populations in the Taï National Park, Côte d'Ivoire, in Loango National Park, Gabon, and in the Moyen-Bafing National Park, Guinea. We will also work more closely with the Taï Chimpanzee Project in Côte d'Ivoire to continue the data collection with two anti-poaching teams instead of just one, to ensure their permanent presence in the ecotourism and research areas of the Taï National Park.

See below the detailed annual activity reports of Côte d'Ivoire, Liberia and Guinea.



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Annual Report 2020 - WCF Côte d'Ivoire



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Table of contents

Executive summary	3
1. Biomonitoring and law enforcement in the Taï National Park and Cavally Classified Forest	5
1.1. Biomonitoring by camera trap in the Taï National Park.....	5
1.2. Anti-poaching program in the research and ecotourism area in Taï National Park.....	7
1.3. Biomonitoring and law enforcement in the Cavally Classified Forest.....	8
1.4. Strengthening law enforcement in the management of forest resources	9
1.5. Establishment of cross-border law enforcement.....	10
2. Awareness raising around the Cavally Classified Forest and in Taï National Park.....	11
2.1. A documentary film and debate on the independent monitoring.....	11
2.2. Theatre and proximity awareness in the Cavally Classified Forest and Taï area	11
2.3. Ecomuseum in Taï.....	13
3. Alternative livelihoods.....	13
3.1. Ecotourism - Nature and Culture in Taï National Park	13
3.2. Ecotourism: habituation of mangabeys, red colobus and chimpanzees	14
3.3. Promoting ecotourism in Taï National Park	15
3.4. Micro-projects with the local communities	16
4. Acknowledgements	17

Acronyms

CTDS -	Camera Trap Distance Sampling
CSO -	Civil Society Organisation
CTTAL -	Technical Committee on Law Enforcement
FACI -	Forces Armées de Côte d'Ivoire
FCFA -	West African Franc
FIP -	Forest Investment Program (World Bank)
IDEF -	Initiatives pour le Développement Communautaire et la Protection de la Forêt
IFCI -	Institut français de Côte d'Ivoire
ISTO -	International Social Tourism Organization
IUCN -	International Union for the Conservation of Nature
MINEF -	Ministère des Eaux et Forêts
NOFNA -	Notre Forêt, Notre Avenir
OIPR -	Office Ivoirien des Parcs et Réserves
OIREN -	Observatoire ivoirien pour la gestion durable des ressources naturelles
NGO -	Non-Governmental Organisation
RAI -	Relative Abundance Index
REM -	Resource Extraction Monitoring
SE -	Standard Error
SODEFOR -	Société pour le Développement des Forêts
SPIB -	Syndicat des Producteurs Industriels du Bois
TGKS -	Taï-Grebo-Krahn-Sapo forest complex
TNP -	Taï National Park
WA BiCC -	West Africa Biodiversity and Climate Change
WCF -	Wild Chimpanzee Foundation

Executive summary

In 2020, WCF-Côte d'Ivoire has developed different activities mainly in the Taï National Park (TNP) for its protection and in the Cavally Classified Forest (CCF) to ensure its sustainable management by fighting against deforestation.

In Taï National Park, a new biomonitoring approach based on camera traps was implemented in 2019 by WCF and “Office Ivoirien des Parcs et Réserves” (OIPR). **285 cameras** were installed on average over 102 days in the forest and operated cumulatively **over 24837 days by recording 58524 videos. 50 species** including 28 mammal, 16 bird, and 6 reptile species were identified. The final report with abundance calculations will be published in 2021. The anti-poaching program in the research and ecotourism area was continued and resulted in poaching being at its lowest rate (0.48 signs/km) since the beginning of the program in 2009.

Eight ordinary patrols were organised with SODEFOR in the Cavally Classified Forest. The community eco-guards recorded that **12.95% of the plantations encountered were abandoned (compared to 5.84% in 2019), when revisiting the plantations.**

After two years of meetings of the Technical Committee on Law Enforcement, the committee members achieved the drafting and adoption of a cross-border law enforcement action plan for the Taï-Grebo-Krahn-Sapo (TGKS) forest complex in Côte d'Ivoire and Liberia. The main threats identified were illegal gold mining, bush-meat markets and illegal timber trade. **Corruption has been identified as an impediment to strengthening law enforcement.** WCF has hence collaborated with the High Authority for Good Governance to produce a note on anti-corruption legislation to be published in the first quarter of 2021. Two training sessions on this legislation and on the protection of Independent Observers and witnesses were each conducted in 2020 with authorities and NGOs.

In 2020, **a total of 8606 persons have been sensitised** in more than 30 villages and campsites bordering the Taï National Park and the Cavally Classified Forest: 296 persons sensitised with the authorities to address issues of poaching and illegal gold panning. In February 2020, in fifteen villages and campsites, 1,930 people were sensitised in partnership with SODEFOR to address the consequences of deforestation. 5,170 people were sensitised in partnership with

SODEFOR and Alma Production during the theatrical awareness-raising tour on illegal gold panning, and cocoa trafficking.

A **documentary film on Independent Forest Monitoring in the Cavally Classified Forest** was developed with Alma Production and SODEFOR. The film was presented during a debate at the French Institute (IFCI) and supported by the famous reggae star Tiken Jah Fakoly. The film was shown to more than 5,000 people after each theatre performance.

Because of the COVID19 pandemic, and to protect wildlife, the ecotourism project was closed in March 2020 and therefore received few tourists this year. The eco-museum was also closed during that time and we counted only 68 visitors.

We took advantage of this time to renovate the eco-museum and reinforce chimpanzee habituation to human presence. Hygiene measures were reinforced at the WCF office in Taï and in the forest (wearing masks was already included in the habituation process protocol of the primates, hand washing and good respiratory health practices were also encouraged).

Since 2018, seven development projects have been supported through the local NGO NOFNA ((Notre Forêt Notre Avenir). This support continued during the first half of 2020 in terms of accounting, supply of equipment, and the purchase of new cassava plant cuttings needed to start new cycles. **Training in permaculture and good agricultural practices** was organised from 21 March to 8 April 2020 for 14 beneficiaries living in Taï and the surrounding villages by Grainothèque, an agribusiness start-up company. A field school was created in Taï, and its production should benefit the ecotourism project.

WCF supports a group of women from Zaïpobly **to extract Makoré butter** from nuts of the makoré trees (*Tieghemella heckelii*) planted twenty years ago in village plantations around the Taï National Park. At the end of 2020, they managed to produce 50 kilos of Makoré butter that was bought by “Fine Sélection d'Adjoua”.

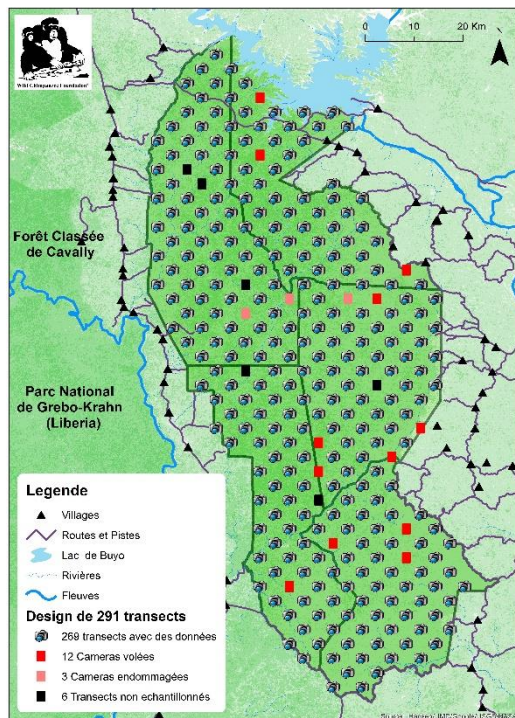
1. Biomonitoring and law enforcement in the Taï National Park and Cavally Classified Forest

1.1. Biomonitoring by camera trap in the Taï National Park

In 2019 and 2020, the Wild Chimpanzee Foundation (WCF) in collaboration with the “Office Ivoirien des Parcs et Réserves” (OIPR) and the Max Planck Institute for Evolutionary Anthropology implemented a new method of biomonitoring based on “Camera Traps Distance Sampling” (CDTS) (Howe et al., 2017; Cappelle et al., 2019 and Bessone et al., 2020).

This method uses camera-traps (automatic triggering) to overcome the line transect method shortcomings described by Buckland et al. (1993). The sampling design included 291 point transects placed throughout the entire park, but it was only possible to set up 285 cameras, representing a 98% rate, with an average time effort of 102 days per camera trap. Out of 285 cameras, 267 properly operated for 24837 cumulative days, by **recording 58524 videos**. Analyses showed **74828 observations (or events)**, with a total of **97 vertebrate species, namely; 47 mammal species (including 11 carnivore, 17 ungulate, 3 pangolin, 8 primate and 8 rodent species); 49 species of birds, and 1 species of reptile**. In comparison, with the **line transect method**, where only **50 species, including 28 mammal, 16 bird, and 6 reptile species** were identified by signs such as dung, footprints, nests, vocalisations etc. (Biomonitoring, phase 13).

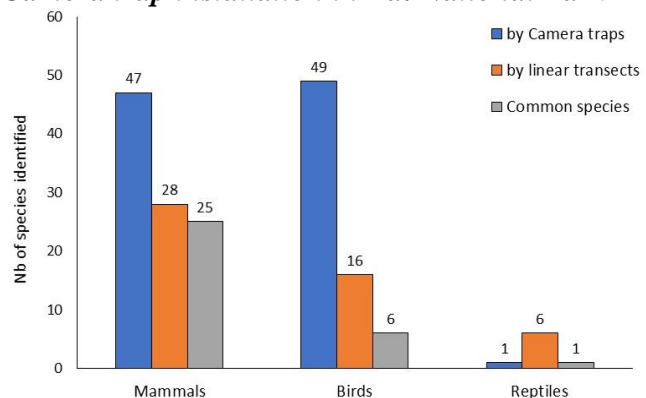
Ungulates were the most observed animals with 50% of the data analysed, followed by rodents (15%), primates (7%), birds (6%), carnivores (4%), and other observations (3%).



Sampling design



Camera trap installation in Taï National Park



Comparison of species identified by camera trap and line transect

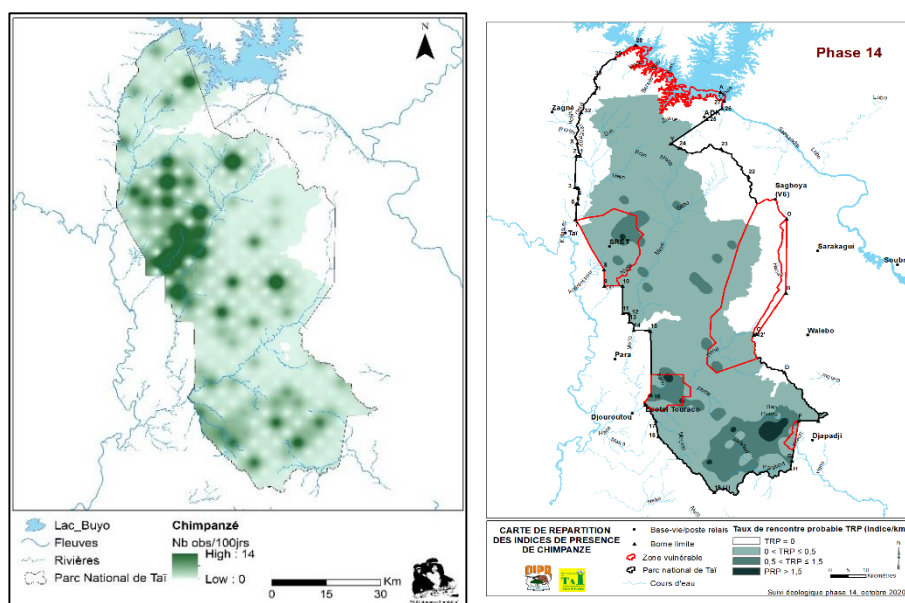
The calculation of species density and abundance is made from the CTDS method that requires a minimum of 20 observations to generate the radial distances needed for the estimates. With the size of this collected data, it is possible to calculate the density and abundance of 50 out of the 97 species identified with the CTDS method. Analyses of chimpanzee, elephant, pygmy hippopotamus and leopard density and abundance estimations are ongoing. However, the relative abundance index (RAI) was calculated (Palmer et al. 2018; Rovero and Marshall 2009) for each identified species, particularly some target species (see table). RAI represents the number of independent events that can be recorded on average by a camera set up for 100 days and is presented with the standard error (SE).

Table: Relative abundance of some conservation target species in Taï National Park

Group	Species	IUCN status	Nb. Obs.	No. Obs. Indep.	Nb. transects*	RAI (SE)
Carnivores	<i>Panthera pardus</i>	VU	80	58	44	0.28 (0.05)
Ungulates	<i>Cephalophus dorsalis</i>	NT	3421	2264	206	9.17 (0.94)
Ungulates	<i>Cephalophus jentinki</i>	EN	606	428	139	1.82 (0.19)
Ungulates	<i>Cephalophus niger</i>	LC	746	442	136	1.92 (0.20)
Ungulates	<i>Cephalophus ogilbyi</i>	LC	7469	4737	215	19.17 (1.65)
Ungulates	<i>Cephalophus silvicultor</i>	NT	117	71	35	0.29 (0.07)
Ungulates	<i>Cephalophus zebra</i>	VU	760	562	110	2.42 (0.31)
Ungulates	<i>Philantomba maxwellii</i>	LC	21966	12596	251	49.08 (3.19)
Ungulates	<i>Choeropsis liberiensis</i>	EN	278	163	80	0.78 (0.14)
Ungulates	<i>Loxodonta cyclotis</i>	VU	158	76	34	0.30 (0.08)
Primates	<i>Cercocebus atys</i>	NT	4085	1264	194	5.65 (0.46)
Primates	<i>Cercopithecus campbelli</i>	LC	406	276	110	1.29 (0.17)
Primates	<i>Cercopithecus diana</i>	EN	56	35	21	0.13 (0.03)
Primates	<i>Cercopithecus petaurista</i>	LC	173	114	55	0.45 (0.11)
Primates	<i>Colobus polykomos</i>	VU	5	2	2	0.01 (0.01)
Primates	<i>Procolobus verus</i>	VU	12	10	10	0.05 (0.02)
Primates	<i>Galagoides sp</i>	LC	13	13	6	0.05 (0.02)
Primates	<i>Pan troglodytes verus</i>	CR	218	137	64	0.54 (0.09)

Nb. Obs. Indep. : Number of observations with at least 15 minutes between them

* Number of transects where species were detected out of 267 where cameras worked properly



Maps showing chimpanzee distribution in the Taï National Park with data from camera traps (left) and line transects collected in 2019-2020 (right)

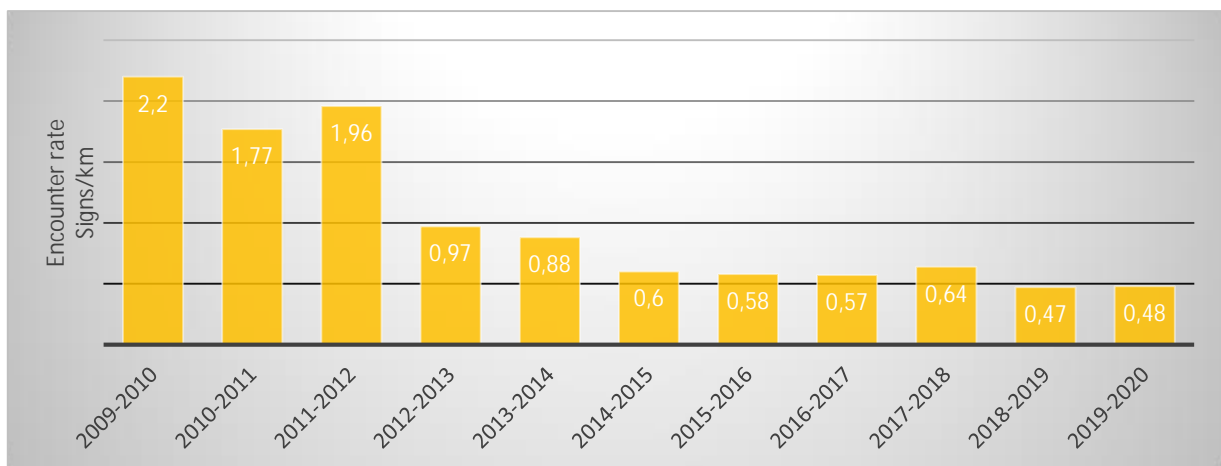
With the **camera trap method**, **eight of out of 11 primate species present in the TNP were observed**. *Cercocebus atys*, the most terrestrial species of the monkeys found in the forest, was the most frequently observed (RAI= 5.65 events/100 days; SE= 0.46), followed by *Cercopithecus campbelli* (RAI= 1.29 events/100 days, SE= 0.17) and *Pan troglodytes verus* (RAI= 0.54 events/100 days; SE= 0.309). Red colobus, *Cercopithecus nictitans* and *Bosman's potto* were the three known present primate species that were not observed during the study.

Camera traps permit the production of a wide range of distribution maps for all species, even those that are difficult to observe, such as chimpanzees and some nocturnal species. This figure above shows clearly that detection of chimpanzee on the two maps is higher with cameras traps compared to line transects.

1.2. Anti-poaching program in the research and ecotourism area in Taï National Park

The anti-poaching program was established in 2009 to maintain a permanent patrol presence in the research area in the Taï National Park, and it was then extended to the ecotourism area a few years later. In 2019-2020, four field assistants collected data along 158 transects, representing 316 km in the Taï research and ecotourism areas. It represented the **13th phase of biomonitoring data** for this program.

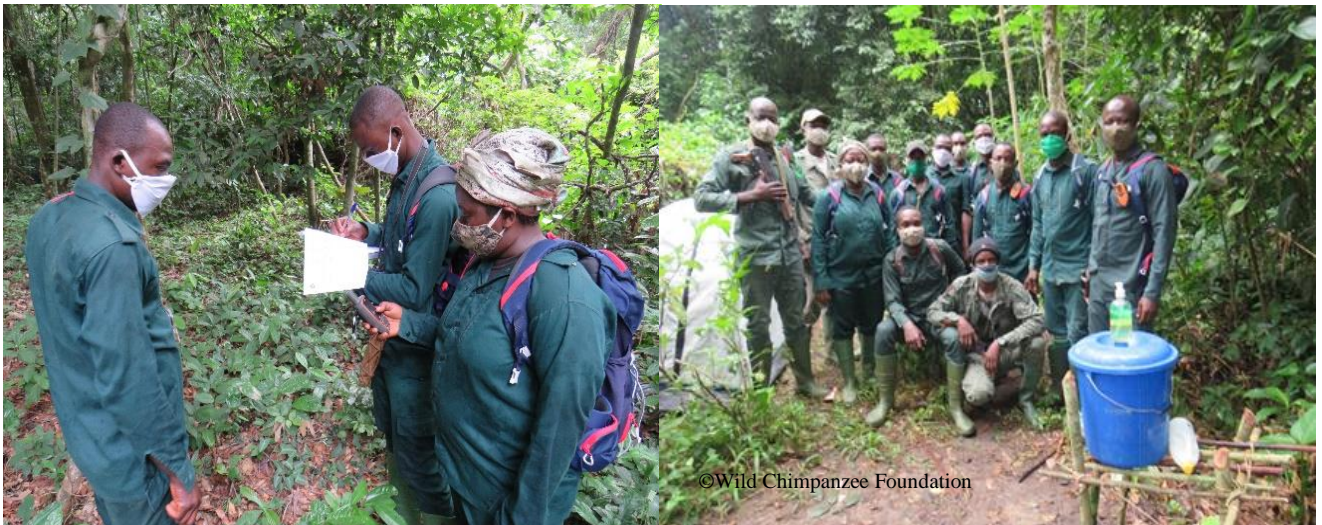
The illegal activities encounter rate was observed at 0.48 signs per km. The rate seems stabilised at this level and is similar to the rate of illegal activities encountered in the park overall. In March 2020, the anti-poaching team patrolled the poachers' trails in the research and ecotourism area to map them.



Encounter rate of human illegal activities in the Taï research and ecotourism areas since 2009

1.3. Biomonitoring and law enforcement in the Cavally Classified Forest

In 2020, eight community eco-guards were supported and 35 community auxiliaries to accompany missions and support “Société pour le Développement des Forêts” (SODEFOR) agents in their regular patrols. This year eight ordinary patrols were organised of approximately 15 days each, totalling 125 days in the forest. Eco-guards mainly accompanied the SODEFOR missions and collected data over 500 x 500m quadrats to record the proportions of abandoned farms in the different parts of the forest. In 2020, we observed an increase in abandoned farms; 12.95 % of detected farms over the monitored area of 983.1 ha were abandoned, compared to the 5.84 % determined for 2019 which is consistent with the confirmed decreased rate of deforestation.



Ecoguards registering a cocoa plantation – A team of ecoguards and SODEFOR rangers



Regeneration of a former field in the Cavally Classified Forest

1.4. Strengthening law enforcement in the management of forest resources

In partnership with the Ministry of Water and Forests, WCF has been in discussion to approve of WCF developing mandated independent monitoring in three forests in Côte d'Ivoire. The contract is expected to be signed in early 2021.

In the meantime, WCF pursued independent monitoring missions with the local NGO NOFNA and, more generally, with the civil society to observe and report on suspected infractions around the Cavally Classified Forest, the western part of TNP, and along the Cavally River. The main threat observed in 2020 was illegal gold mining, developed around Djouroutou on the Hana River, and around the Taï prefecture on the Cavally River. Despite the local authorities' knowledge of these developments, the activity is continuing to spread along the Cavally River. Threats to the management of natural resources are largely linked to corruption. To tackle the problem, WCF has supported, with the High Authority for Good Governance, to produce a note on anti-corruption legislation oriented towards environmental infractions to be published in the first quarter of 2021.

Two training sessions on this legislation and on the protection of Independent Observers and witnesses were each conducted over two days: one for the departmental authorities in charge of forest management (Guiglo court, Gendarmerie, MINEF, Mines, Customs, FACI, SODEFOR Cavally and Goin-Débé - 25 participants), and another for 12 Ivorian Civil Society Organisations. Offences and related offences of public officials, and related sanctions were reviewed, as well as the law on witness protection and the framework for independent monitoring in Côte d'Ivoire. This allowed for the responsibilities of public officials and risks involved to be highlighted, and to understand the approach and legitimacy of independent monitoring led by Civil Society Organisations on this issue.



Forest management authorities during the training on anti-corruption legislation in Guiglo

Four thematic notes are in preparation to facilitate the application of the law on various points where WCF or its partners have encountered difficulties, such as constitution of civil parties

and publicising of justice decisions, trafficking in cocoa from classified forests, contract sawing, and protection of independent observers (and witnesses).



Ivorian Civil Society Organisations during the training on anti-corruption legislation in Abidjan

Alongside the Ivorian Observatory of Natural Resource Management (OIREN), WCF participated in two plenary sessions organised by the Ministry of Water and Forests. The sessions took place to validate the regulatory texts related to the adoption of the law on the forest code of 23 July 2019, notably, to present the draft decree on the implementation modalities of Resource Extraction Monitoring (REM). Civil society in Côte d'Ivoire succeeded to encourage the government to include the following in the decrees: logging is only authorised when there is a validated management plan (the concession holder has two years to draw it up) and logging quotas are only given following a forest inventory. WCF supports OIREN in the implementation of its independent monitoring mandate of the World Bank's Forest Investment Program (FIP) signed in September 2020.

1.5. Establishment of cross-border law enforcement

Following three meetings, the Technical Committee on Law Enforcement (CTTAL) adopted a cross-border law enforcement action plan. This process aims to provide Ivorian and Liberian authorities with a substantial legal arsenal, enabling them to sustainably manage the forest resources on both sides of the Taï-Grebo-Krahn-Sapo forest complex. WCF conducted a mission in Liberia to observe progress in the collaboration between FDA and local representatives of the Ministry of Justice, thus improving law enforcement in Grand-Gedeh County, and to monitor law enforcement agencies in the Grebo-Krahn National Park. The improvement of law enforcement in both countries through the committee was marked by the drafting and adoption of a cross-border law enforcement action plan for the Taï-Grebo-Krahn-Sapo forest complex.

2. Awareness raising around the Cavally Classified Forest and in Taï National Park

2.1. A documentary film and debate on the independent monitoring

A documentary film on Independent Forest Monitoring in the Cavally Classified Forest: "Forests in danger of extinction, the hope of independent monitoring", directed by Alma Production, in collaboration with WCF and SODEFOR, was screened on January 29, 2020 at the French Institute of Abidjan. **The documentary gathered 275 participants**, and was followed by a panel of NGOs and members of the civil society (NOFNA, IDEF, OI-REN), government authorities (SODEFOR, Ministry of Water and Forests), as well as the private sector (SPIB: Union of Industrial Wood Producers). An exchange on the preservation of classified forests and general environmental issues was conducted with the public. Tiken Jah Fakoly, a celebrated Ivorian reggae star, was the special guest of this event and is an ambassador for the environmental cause. The Ivorian media (Ivoire Matin, KOACI, Afrikmonde, AIP, Fraternité Matin, Journal d'Abidjan, and Petit Journal d'Abidjan) was also invited.



Poster for the documentary debate on the independent monitoring

2.2. Theatre and proximity awareness in the Cavally Classified Forest and Taï area

In 2020, 8606 people have been sensitised in more than 30 villages and campsites bordering Taï National Park and Cavally Classified Forest. Sensitisation actions functioned to explain the benefits of protecting natural forests and to discuss the problems such as gold panning, poaching, illegal farming, etc. encountered in the area.

296 persons were sensitised, in partnership with OIPR, Ministry of Water and Forests and the Taï superintendent to address issues relating to the TNP, consequences of poaching and illegal gold panning, and penal provisions in relation to these illegal activities.

From 06 to 12 February 2020 1,930 persons were sensitised, in partnership with SODEFOR in fifteen villages and campsites to address the consequences of deforestation, and to invite the local population to become involved in the conservation, protection and participatory management of the Cavally Classified Forest.



WCF staff and SODEFOR rangers during the sensitisation around Cavally Classified Forest

In partnership with SODEFOR and Alma Production, **5,170 people were sensitised** through 10 theatre performances, “Cavally si tu es mouton... (Cavally, if you’re a sheep...) on gold panning and its consequences in villages, and cocoa trafficking.

From 21 November to 02 December 2020, a theatrical awareness-raising tour was held around the Cavally Classified Forest to inform the local population about the fight against the deforestation of this forest and the dangers linked to illegal gold panning. Ten performances were organised in 10 villages and camps surrounding the classified forest and in the Goin-Débé Classified Forest. Each performance was followed by a screening of the documentary on independent monitoring. Estimations of the number of participants were made at each presentation by WCF staff members and were as follows: Zagné: 707; Cocody : 343; Brunokro: 296; Ponan Bloc : 267 ; Lokosuékro : 370 ; 4 Maisons : 311 ; Cité : 410 ; Galilée : 534 ; Konankro : 652 ; Taï: 1280 represented the greatest participation.



Theater tour around Cavally Classified Forest

The play was appreciated and understood in the majority of the villages where it was performed. However, some reluctance to attend the play was observed in Brunokro and Cité (Goin Débé). After each performance, the opinion of the village audience and customary authorities was welcomed. They all expressed their satisfaction with the choice of their village to host this awareness campaign and they thanked WCF for the message of protecting the Cavally Classified Forest and fighting against gold panning. They agreed to pass on the message to those around them. SODEFOR was represented at each play by the Chief of the Cavally Forest Unit Management, who ensured the commitment of SODEFOR to protect the forest and that no cocoa farms be tolerated.

2.3. Ecomuseum in Taï

In January 2020 the ecomuseum in Taï was renovated both inside and outside, and **68 visitors were registered, including 21 women and 47 men**. Because of COVID19 pandemic, the ecomuseum was closed for 6 months to comply with the related restrictive measures.



High school students visiting the reading corner of the renovated ecomuseum in Taï

3. Alternative livelihoods

3.1. Ecotourism - Nature and Culture in Taï National Park

In the beginning of 2020, the impact of COVID19 on primate populations habituated to human presence was unknown, and research has been previously published citing the severe impact on chimpanzees by human respiratory diseases, we decided to close the Taï ecotourism site on the 17th March 2020. This is very disappointing, as January and February had registered many visitors and many future bookings were expected for 2020.

The first three months of tourism activity generated 3,860,500 FCFA. The village of Gouleako received 443 500 FCFA for cultural stays, and 720 000 FCFA to OIPR for access fees to the park, 2 697 000 FCFA for the expenses in the forest, representing less than 6 % of the annual operational costs which could have been approaching 40 % if the project had not closed because of the pandemic situation.

WCF, OIPR and Taï Town Hall signed a partnership agreement on the ecotourism project in Taï in September 2020. The town hall will invest in better tourist accommodation in Taï, make the town more attractive, and will support the ecotourism initiatives. For these reasons, a first Technical Committee was established at the Taï Town Hall on 28 November 2020 to allow for the local actors of the project to meet each other and to establish the projects for 2021.

3.2 Ecotourism: habituation of mangabeys, red colobus and chimpanzees

The Taï ecotourism site was closed to tourists, but the habituation of the primates to human presence continued. Hygiene measures were reinforced at the WCF office in Taï and in the forest (wearing masks was already included in the habituation process protocol for the primates; hand washing and other precautionary respiratory health behaviours were encouraged).



Taï ecotourism camp site

Already accustomed to human presence, the group of mangabeys was monitored almost daily (30 research days per month, 29 contact days per month and 60 individuals observed). Four births were observed this year.

The habituation of the red colobus group is still in progress as their identification is difficult because they live high in the canopy (7 days of research per month, 7 days of contact and 42 individuals observed). However, it is common to see red colobus during the walk to the camp. This species is often associated with other monkey species such as the king colobus (*Colobus polykomos*) or the Diana monkey (*Cercopithecus diana diana*).

Regarding the habituation of the chimpanzees: In general, the eco-guides leave the camp very early to listen to the chimpanzees' vocalizations as they leave their nests, and throughout the day, they will follow the drumming and vocalizations. On average, the eco-guides were able to ensure 17 search days/month. One female and one infant have been seen every month since August, presumably to be Tokwa and her younger brother Togo, who had immigrated from the southern research group of the Taï chimpanzee project in 2019. WCF is presently trying to establish the territory of the community to be habituated for tourism. To intensify this process with an observation team available every day, the recruitment of additional field assistants is needed.



Grooming moment in habituated Mangabeys - A red colobus in trees

The habituation of **chimpanzees in Djouroutou** was overseen until March 2020 by two supervisors who helped to enhance individual identification of the chimpanzees, and two juvenile males were identified. Since their departure, the eco-guide team continues the habituation, and was monitored by the WCF in July and August 2020.

3.3 Promoting ecotourism in Taï National Park

In order to promote ecotourism in the Taï National Park in the media and through professional tourism agencies, communication efforts have continued with numerous actions. Three newsletters were sent out, 1,000 leaflets were printed and distributed in various places in Abidjan (such as restaurants, hotels, shops, etc.). Social network pages and ecotourism project website were also managed and constantly updated. Le Petit Fûté, one of the most famous travel guides published in France will introduce the Taï ecotourism project next year's edition (web and print). Furthermore, the ecotourism project will be featured on the websites of Trip in Africa, Voy'Agir, as well as on the Fairtrip application, and presented in the brochure of the International Social Tourism Organization (ISTO). WCF also partnered with France Volontaires for the organisation of the International Volunteer Day at the French Institute of Abidjan on the 20th October 2019. In January 2020, the ecotourism site welcomed a Belgian volunteer, François Poncelet and his family, who helped rebuild a damaged traditional hut in Gouléako. He also participated in the rehabilitation of the Taï eco-museum.

3.4 Micro-projects with the local communities

Seven development micro-projects with the local communities around Taï National Park and Cavally Classified Forest that have been supported since 2018, continued during the first half of 2020. Support was in accounting, supply of equipment and the purchase of new Cassava plant cuttings needed to start new cycles. WCF has followed the development projects with the local partner NGO NOFNA. Tienkoula cassava growing and processing project has thus begun to harvest its produce and process it into plakali and attiéké in order to maximise the project's yield. The similar project in Keibly harvested sweet potatoes that had been planned as an intermediate crop. Finally, the pig and chicken breeding projects in Zagné continued to operate as usual. The chicken project was able to sell 488 broilers, 501 laying hens and 1,376 trays of eggs. The pig breeding project was able to sell about 15 pigs, and the sows are pregnant again and are expected to give birth to nearly 70 piglets.

Training in permaculture and good agricultural practices was organised from 21 March to 8 April by the Grainothèque agribusiness for 14 beneficiaries living in the commune of Taï and



Training at the field school

the surrounding villages (coming from six groups of Taï, Zaïpobly, Daobly A, Daobly B, Ponan and Gouléako respectively composed of 3, 30, 1, 28, 30 and 1 members). During this training, a field school was created in Taï, and its produce should benefit the ecotourism project. In addition, the beneficiaries were supported by a donation of seeds: carrot, okra, chilli pepper etc. and tools to cultivate their crops.

After the training, WCF followed the groups and their plots up to the harvest, and this new experience went well and showed that permaculture is a very credible and promising alternative to the current market gardening, which utilises chemical plant protection products that pollute and deplete the land. The first harvests were sold by the Taï group, **10'000 FCFA was generated by the sale of fresh chilli peppers.**



Experimental plot of chilli pepper

"Troti" ("fruit tree" in local language called Guéré), a gathering of thirty women and ten men organised into eight groups in seven localities continued their activity of processing cocoa and makoré, and honey harvesting. Despite the health restrictions of COVID19, it was possible, in July 2020, to hold sessions on accounting and organisation in a cooperative society.



these areas for the populations. At the end of 2020, they managed to produce 50 kilos of Makoré butter that was bought by “Fine Sélection d'Adjoua”.

WCF gives additional support to the Troti sub-group, **Troti-Makoré**. This group includes twelve women from Zaïpobly who extract butter from nuts of the makoré trees (*Tieghemella heckelii*) planted twenty years ago in village plantations all around the Taï National Park.

The development of products of controlled origin fosters conservation benefits and sustainable management of



4. Acknowledgements

WCF-Côte d'Ivoire would like to thank its financial and technical partners as well as the administrative and political authorities of Côte d'Ivoire. The WCF especially thanks the “Office des Parcs et Réserves de Côte d'Ivoire” and “Société de Développement des Forêts” for their collaboration in the execution of all projects around and in the Taï National Park and the Cavally Classified Forest.

We thank the Ministry of Foreign Affairs for facilitating the WCF missions in Côte d'Ivoire and are grateful to the other partners in Côte d'Ivoire whom we wish to thank for their collaboration and support: the Ministry of Water and Forests, the Ministry of Justice and Human Rights in particular the High Authority for Good Governance, the Ministry of Security and Civil Protection, in particular the National Police and Gendarmerie, the Mairie de Taï, the NGO NOFNA and Alma Production.

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Annual Report 2020 – WCF Liberia



Monrovia, December 2020

Table of contents

1. Summary	page 3
2. Community ecoguard program at Grebo-Krahn National Park	page 4
3. Community ecoguard program at Krahn-Bassa Proposed Protected Area	page 6
4. Community watch teams and community ecoguards at Sapo National Park	page 7
5. Community ecoguards and SMART training at a national level	page 8
6. Biomonitoring	page 8
7. Support for communities around GKNP, KBPPA and SNP	page 9
8. Demarcation of Grebo-Krahn National Park	page 14
9. Gazettement activities for Krahn-Bassa Proposed Protected Area	page 15
10. Awareness raising	page 16
11. Coordination of Biomonitoring and Law Enforcement Sub-Committees of the Liberia National Species Working Group	page 19
12. Capacity building	page 19
13. Acknowledgements	page 20

Acronyms

ACDI/VOCA-	Agricultural Cooperation Development International/Volunteers in Overseas Cooperative Assistance
Ape TAG -	Ape Taxon Advisory Group
CENFOR -	Center for Environment, Forest Conservation and Research
CI -	Conservation International
CWT -	Community Watch Team
EDA -	Environment and Development Associates
EPA -	Environmental Protection Agency (Liberia)
FDA -	Liberian Forestry Development Authority
FFI -	Fauna and Flora International
FIFES -	Forest Incomes for Environmental Sustainability
GESI -	Gender equality and social inclusion
GKNP-	Grebo-Krahn National Park
KBPPA -	Krahn-Bassa Proposed Protected Area
LCRP -	Liberia Chimpanzee Rescue and Protection
LiWiSa -	Libassa Wildlife Sanctuary
MAP -	Multi-Agrisystem Promoters
NGO -	Non-Governmental Organisation
RSPB -	Royal Society for the Conservation of Birds
SCNL -	Society for the Conservation of Nature of Liberia
SMART -	Spatial Monitoring and Reporting Tool
SNP -	Sapo National Park
UOF -	Universal Outreach Foundation
USAID -	United States Agency for International Development
WA BiCC -	West Africa Biodiversity and Climate Change
WCF -	Wild Chimpanzee Foundation
WWF -	Worldwide Fund for Nature
ZSL -	Zoological Society of London

1. Executive Summary

SPECIAL NOTE: With the emergence of COVID-19, and subsequent health and safety measures mandated by the Liberian government, WCF Liberia has maintained operations while remaining in compliance with government restrictions following the national state of emergency imposed from April to July 2020. WCF Liberia worked in close collaboration with the COVID-19 response of the Liberian government, and all activities were fully authorised during the lockdown period.

WCF-Liberia has been leading on transboundary initiatives with Côte d'Ivoire and several national initiatives, in collaboration with its national and international partners, including Liberian Forestry Development Authority (FDA), Environmental Protection Agency, Society for the Conservation of Nature of Liberia, Conservation International, Royal Society for the Conservation of Birds, Fauna and Flora International, Liberia Chimpanzee Rescue and Protection, Libassa Wildlife Sanctuary, Multi-Agrisystem Promoters, Environment and Development Associates, Universal Outreach Foundation, ACIDI/VOCA-FIFES and Center for Environment, Forest Conservation and Research.

The Wild Chimpanzee Foundation-Liberia (WCF) continues to be active mainly in the southeast of the country: In and around the Grebo-Krahn National Park (GKNP), Sapo National Park (SNP), and the Krahn-Bassa Proposed Protected Area (KBPPA).

The continuation of the community ecoguard program at Grebo-Krahn National Park (GKNP); showing further reduction of human activities by more than 30% compared to 2019.

The establishment of a community ecoguard program at Krahn-Bassa Proposed Protected Area (KBPPA), the transformation of the community watch team program into a community ecoguard program at Sapo National Park (SNP), and additional community ecoguard training at the national level in northwestern Liberia.

An extensive biomonitoring survey focusing on camera trap and line transect surveys was completed at GKNP.

WCF's livelihood activities in 2020 included continuous beekeeping and fish farming around GKNP, as well as the establishment of new conservation-friendly lowland rice and cassava farming projects with women around GKNP, while a new beekeeping program was established at KBPPA. With regard to infrastructure development, WCF supported the rehabilitation and construction of hand-pump water wells and bridges. Community-based ecotourism activities commenced with professional tourist guide training and preparations for the construction of an ecolodge at SNP.

Awareness activities in 2020 focused on special events, community meetings, radio, wildlife clubs and theatre. A new community volunteer program was established with women bush-meat sellers who are helping to raise awareness in their various markets, and at the same time are leaving the bush-meat business to change to other businesses and activities.

WCF's support to the Wildlife Crime Task Force, and to the activities counteracting wildlife and forest crimes have led to a significant increase in confiscations, arrests and prosecutions.

2. Community ecoguard program at Grebo-Krahn National Park

From January to December 2020, the seven community ecoguard teams at Grebo-Krahn National Park (GKNP) conducted 24 forest patrols, covering a total number of 206 grid cells (with repeated visits to most grid cells) and a total distance of 932.60 km. The number of days spent on forest patrol was 199 days with a total of 980 person days.

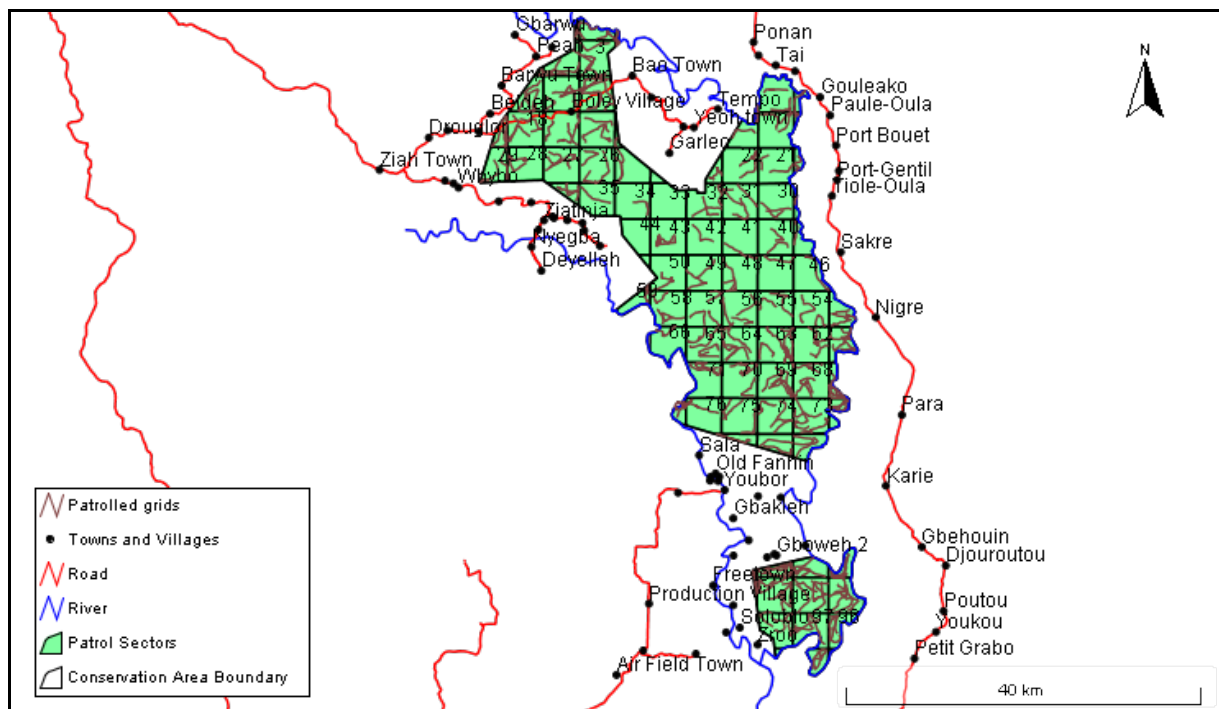
SMART (Spatial Monitoring and Reporting Tool) reports have regularly been produced and the information has been shared with FDA, in order to allow for the planning of law enforcement missions with the joint security. Two such missions were conducted in March and April 2020, leading to several arrests of illegal miners and the destruction of mining and poaching camps.

The community ecoguard data collection has been digitalised, using Cybertracker, and since July 2020, the new SMARTmobile app, for which a WCF team was trained by a SMART specialist from the Zoological Society of London (ZSL), one of the developers of the software. Since July 2020, GKNP also serves as one of the global pilot sites for the new app.

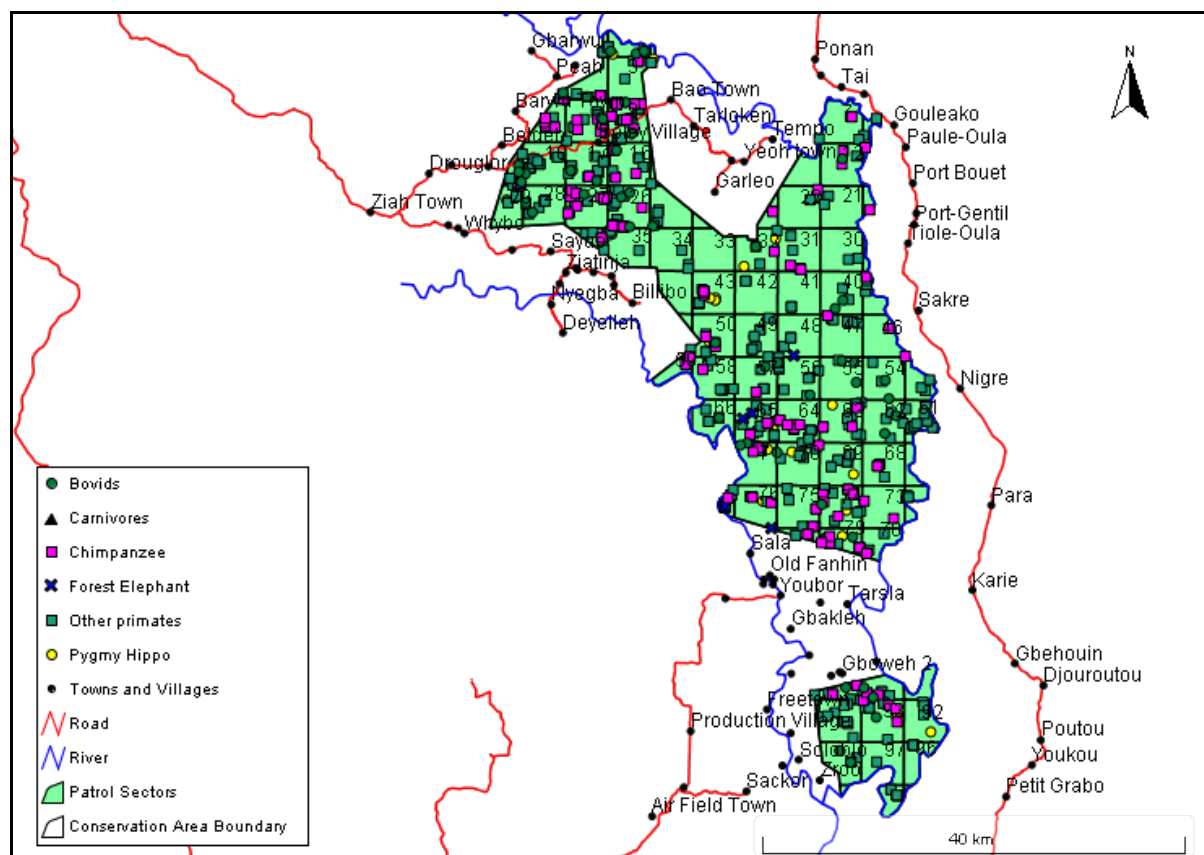
In 2020, the community ecoguard teams made a total of 696 wildlife observations, including observation of all key species, such as western chimpanzee, pygmy hippopotamus and forest elephant. The teams observed 2,777 signs of human activities, including 2,308 signs of hunting. With an encounter rate of 2.98 signs of human activities per kilometre, and 2.47 signs of hunting per kilometre, compared to 2019, those rates have decreased by 35% and 33% respectively. In 2019, the encounter rate for human activities was 4.55 signs/km, and for hunting activities it was 3.71 signs/km. This shows a significant reduction of human activities, which may be the result of regular presence of community ecoguard and biomonitoring teams in GKNP, as well as of increased awareness.



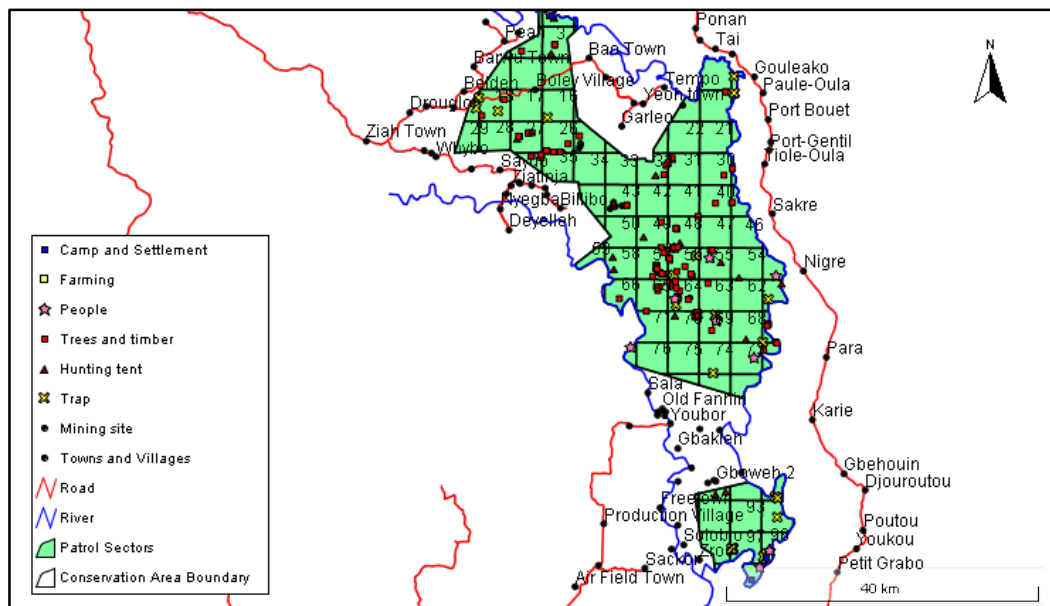
Community ecoguard team at Grebo-Krahn National Park



Overview of tracks of 24 forest patrols conducted by community ecoguards at Grebo-Krahn National Park in 2020



Map of wildlife observations made by the community ecoguard teams in Grebo-Krahn National Park in 2020



Map of human activities observed by the community ecoguard teams in Grebo-Krahn National Park in 2020

After the forest patrols, the community ecoguard teams raised awareness in 36 communities adjacent to GKNP, with repeated visits in some of those communities. During the awareness meetings, a total of 778 community members were sensitised, including 484 men and 294 women. These awareness meetings allowed for a dialogue between community ecoguards and local community members to discuss illegal encroachment within the park and to strategize approaches to discourage future illegal activities.

3. Community ecoguard program at Krahn-Bassa Proposed Protected Area

In June 2020, three community ecoguard training sessions were held in key locations in the three counties (Grand Gedeh, Sinoe and Rivercess Counties), which are hosting Krahn-Bassa Proposed Protected Area (KBPPA). Forty community members from 20 communities around KBPPA and four FDA auxiliaries were trained in all relevant theoretical and practical aspects of the community ecoguard program. At the end of the training, thorough tests were conducted to assess the skills of trainees and the first four community ecoguard teams were formed for KBPPA, including 16 community members (6 women, 10 men) and four FDA auxiliaries.



Two of four newly established community ecoguard teams for Krahn-Bassa Proposed Protected Area



Community ecoguard team at Krahn-Bassa Proposed Protected Area

From July to December 2020, the four community ecoguard teams at KBPPA performed ten forest patrols, covering 102 grid cells and a total distance of 399.10 km, during 98 patrol days or 590 person days. During the patrols, the teams observed 1,910 signs of human activities resulting in an encounter rate of 4.79 signs/km. The majority of those signs were hunting signs.

After the forest patrols, the teams conducted awareness meetings in 23 towns (including some repeat visits), during which a total of 509 community members were sensitised (146 women and 363 men).

4. Community watch teams and community ecoguards at Sapo National Park

The 100 community watch team (CWT) members at Sapo National Park (SNP) conducted 26 forest patrols in 2020, alongside FDA rangers. Their activities were reduced during the COVID-19 related lockdown. In April 2020, a basic assessment of the performance of the CWT members was made with their supervisors from FDA.

In July 2020 three community ecoguard training sessions were conducted in each of the three zones of SNP. The training and the post- training test allowed us to have a realistic and detailed overview of the skills of the CWT members. Out of 98 individuals who attended the training, 52 passed the test and hence proved to be eligible for a future community ecoguard program. The transfer from the CWT to the community ecoguard program is necessary in order to reach a more sustainable program, and is following the attempt to harmonise all currently existing community patrol programs under the community ecoguard unit. Sapo National Park is separated into six patrol sectors, and two community ecoguard teams will be established for each sector, i.e. 12 teams in total.

The CWT conducted a few awareness meetings, reaching out to 108 community members (43 women and 65 men).



Community ecoguard training for community watch team members at Sapo National Park in July 2020

5. Community ecoguards and SMART training at a national level

Following the model from Grebo-Krahn National Park and upon the request from FDA, WCF supported the establishment of a community ecoguard unit at FDA, which includes a community ecoguard and a SMART focal people. CWT conducted community ecoguard and SMART training at Lake Piso Multiple Use Reserve, Gola Forest National Park, Wonnegizi Proposed Protected Area, and East Nimba Nature Reserve. In total, 160 persons were trained at the various locations in July and October 2020, and WCF provided field materials for the newly trained teams. Furthermore, in collaboration with the FIFES project (Forest Income For Environmental Sustainability), community forest guards were trained in digital data collection with smartphones in three training sessions with 60 participants held in Sanniquellie, Tappita and Buchanan in November 2020.

6. Biomonitoring

Following the new camera trap methodology developed at Taï National Park in Côte d'Ivoire, in close collaboration with the Max Planck Institute for Evolutionary Anthropology, an intense biomonitoring program commenced in Grebo-Krahn National Park (GKNP) in December 2019, using a combination of line transect and camera trap surveys.

From December 2019 to August 2020, three biomonitoring teams, with support from seven community ecoguard teams, completed 235 line transects covering a total distance of 231.26 km, as well as 445 camera trap locations.

The camera traps recorded 22,785 videos, including videos of several threatened species, such as the critically endangered western chimpanzee, the endangered pygmy hippopotamus and Jentink's duiker, as well as the vulnerable king colobus, among many others. Due to the large number of camera trap videos, the analyses of the recorded data is still ongoing. Preliminary analyses indicate that detailed population estimates will be possible for several species (the team is starting with western chimpanzee, pygmy hippopotamus, white-breasted guinea fowl and the Liberian mongoose; more to follow).

Some of the best chimpanzee camera trap videos were selected for a video clip that was published in YouTube (<https://www.youtube.com/watch?v=9JnXBflj4RM>). A second video shows a larger variety of species (<https://www.youtube.com/watch?v=QtYUSk53p2Q>).



Still of chimpanzee clip compiled from camera trap videos from Grebo-Krahn National Park

7. Support for communities around GKNP, KBPPA and SNP

The support for community members around Grebo-Krahn National Park (GKNP), Krahn-Bassa Proposed Protected Area (KBPPA) and Sapo National Park (SNP) comprises various activities, from direct support through to the payment of monthly stipends for fish farming, beekeeping, agricultural activities, community-based ecotourism and infrastructure support.

- **Direct financial support:** Community members (44, including 17 women) serving as community ecoguards (28 at GKNP, 16 KBPPA), community watch team members (100 at SNP) and biomonitors (12 at GKNP) are receiving regular stipends, either for each mission or on a monthly basis.
- **Aquaculture:** The support for fish farmers in communities around GKNP continued, and the construction and stocking of a new pond in Drouglor, Grand Gedeh County was completed in June 2020. This community is in a central location and the new pond shall serve as a general training pond in the future. An initial training conducted in May focused on a group of six women from Drouglor, who were mentored by women fish farmers from Sayuo. The new fishpond in Drouglor was stocked with 1,200 Tilapia fingerlings from Peah, another fish farming community.

In April 2020, major fish harvests were organised in Sayuo and Peah. The total amount of fish harvested in April was 327 kg, of which 167 kg were consumed by the fish-farmers and 160 kg were sold, creating an income equalling to ca. US\$100. Due to the lack of daily fish consumption records, it is not possible to know the amount of fish harvested for daily consumption. Due to a broken head dyke in Sayuo and the poor health condition of the aquaculture assistant, two major harvests planned in Sayuo and Drouglor for December 2020 were postponed to January 2021.

At the end of 2020, WCF officially announced the end of the projects that supported the fish farming activities, and the project was fully handed over to the local communities and the local NGO Multi-Agrisystem Promoters (MAP).



Community members in Drouglor (left) involved in the construction of a new fish pond and the new pond close to completion (right) in May 2020

- Beekeeping:** At GKNP, WCF's partner Universal Outreach Foundation (UOF) continued their extension visits to the beekeepers and passed along information to WCF in order to evaluate the effectiveness of the project. During the first half of 2020, the trained beekeepers around GKNP harvested 39.5 gallons (149.5 litres) of honey and received US\$525.87 for the total sale of the honey. The honey was sold to the local market and UOF/Liberia Pure Honey. Until September 2020, no additional harvests were reported from GKNP, while the information for the last quarter of 2020 was not yet available when this report was written.



Honey harvest and extraction in Sallah, close to Grebo-Krahn National Park

After a beekeeping assessment tour around KBPPA in May 2020, 80 trainees from ten communities around KBPPA were identified for the training. The training for 60 beekeepers from eight communities was conducted by Universal Outreach Foundation in June/July 2020. Since the training the extension officers are visiting the beekeepers every month to monitor their progress and give additional technical support.



Some of the 60 newly trained beekeepers at Krahn-Bassa Proposed Protected Area with their beehives

- Agriculture projects:** From May to August 2020, WCF worked with its sub-contractors the Society for the Conservation of Nature of Liberia (SCNL) and Multi-Agrisystem Promoters (MAP) to implement eight conservation-friendly lowland rice and cassava farming projects, involving women's groups from ten communities around GKNP (Grand Gedeh County: Tempo, Garleo, Tarloken, Bao Town, Billibo; River Gee County: Sallah, Tarsla, Zroo, Dorzor, Soloblo). Seventy-nine women and one man were trained in farming techniques, leadership, business and the operation and maintenance of rice and cassava mills. Training field plots were established, and additional training was provided in an already existing field, in order to show improved farming techniques that will both provide yields and be forest-friendly.

Four rice and four cassava mills were purchased and handed over to the various groups, and members of the groups were trained in operating and maintaining the mills. The mills are not only serving the respective groups to clean the rice and to produce more durable cassava products, like gari, but also farmers from adjacent communities come to use the mills and are paying for their use.



Agriculture training (conservation-friendly farming techniques, leadership and business) for women in communities around Grebo-Krahn National Park.



Lowland rice cultivation around GKNP, supported by WCF and partners.



One of eight women groups at Grebo-Krahn National Park with their new rice mill



Women's group at Tarloken at Grebo-Krahn National Park in their lowland rice field

- **Development of community-based ecotourism:** Following exchange programs with the WCF ecotourism project in Taï National Park (Côte d'Ivoire) in 2019, two major activities were conducted in 2020, in order to kick-start some community-based ecotourism activities in south-eastern Liberia. In December 2020, a three-week professional tourist guide training was conducted with instructors from Ashanti Africa Tours Ghana and the Nimba Nature and

Environment Initiative. The training was conducted at Sapo National Park and targeted 14 trainees, including representatives from the Forestry Development Authority (FDA), WCF, and the Society for the Conservation of Nature of Liberia (SCNL), the Forestry Training Institute and community members from GKNP, SNP and KBPPA. The training focused in theoretical knowledge about ecotourism, as well as practical lessons on species identification (with a focus on birds, mammals and butterflies), waste management, and hospitality. In November 2019, WCF contracted Libassa Ecolodge to help with the construction of the Sapo Ecolodge, which will provide accommodation for tourists at the edge of SNP and should partly be managed by the local community in the future. WCF will present different management models to the community and FDA, which can be piloted based on their preference.

The designs for the ecolodge were presented to and approved by the FDA in early November and two cabins were pre-fabricated in Monrovia in November/December 2020. In the meantime, a team of WCF, FDA and the local community selected the location for the site and worked in the restoration of the road leading from the community to the site, as no cars have accessed the road in decades. Despite continuous rains which continued to degrade the road surface, a WCF vehicle could reach the selected parking area in December 2020. The local community worked on the collection of local materials for the completion of the ecolodge, such as thatch and rattan for the roofing.



Participants and facilitators of the professional tourist guide training conducted at Sapo National Park in December 2020



Community members, WCF and FDA team working on preparing the road and the footpath to the future Sapo Ecolodge site

- Infrastructure:** From February to October 2020, WCF Liberia, in close collaboration with the local NGO CENFOR, was able to rehabilitate three hand-pump water wells and to construct one hand pump around GKNP (in Tempo, Tarloken and Garleo, Grand Gedeh County and Matuah, River Gee County respectively). Two hand pump water wells were also rehabilitated and constructed in Dagbe Town, Sinoe County, close to KBPPA and two hand pump water wells were constructed at SNP; one for the headquarters of FDA, and one for the community hosting the FDA headquarters (Jalay Town, Sinoe County). The rehabilitated and new water wells are ensuring the communities' access to safe drinking water.

Furthermore, WCF and CENFOR rehabilitated several bridges along GKNP in Grand Gedeh County, in order to ensure smooth implementation of all field activities. Some of these bridges had been broken since June 2019, which made some field operations and also movement of community members extremely difficult.



Hand pump construction at FDA headquarters (left) and Jalay Town (middle) for Sapo National Park and rehabilitated bridge at Grebo-Krahn National Park (right).

8. Demarcation of Grebo-Krahn National Park

While the boundary line of GKNP was cleared in 2019, the installation of concrete beacon bollards around the boundary line was still pending. WCF has supported the installation of the beacon bollards in close collaboration with FDA and local community members, which started in May and was completed 2020. In total, from May to October 2020, 131 of 138 planned beacon bollards were installed along the GKNP boundary at a spacing distance of 1km. The seven bollards that were not installed fell on sacred forest sites, which remain available for traditional use by the local communities. With the installation of the beacons GKNP is the first protected area in Liberia which is fully demarcated (as required by Liberian law).



Installation of concrete beacons around Grebo-Krahn National Park, with FDA and community members

9. Gazettement activities for Krahn-Bassa Proposed Protected Area

Since January 2020, WCF has been working closely with the FDA to plan the various steps of awareness and consultation activities that will lead to the gazettelement of KBPPA. One FDA staff member has been seconded to WCF since April 2020 and while the restrictions linked to the COVID-19 pandemic did not allow for larger meetings with communities around KBPPA, an initial leadership consultation was conducted by FDA and WCF in June/July 2020. Meetings were held with 134 people at the district and county level. The overall feedback about the creation of the protected area was positive, the only concern was about potentially changing the name of the future national park, so that all tribes living in the area feel represented.

A theatre awareness research tour was conducted in selected communities around KBPPA in May 2020 by Eddie Theater Production, WCF and FDA. Based on the concerns raised by the community members and in order to inform about the process of the national park creation and potential benefits for the local population, a theatre play was drafted and shared for comments with FDA. In order to avoid large crowds in the communities however, and as the overall awareness and consultation at the community level could not start in 2020, there will first be a radio version of the theatre play.

In October 2020, a study tour was organised for key stakeholders from around KBPPA, including community leaders, paramount chiefs, district commissioners, district

superintendents and county superintendents. A group of 35 persons came to Zwedru where a meeting was held with FDA and community representatives from around GKNP, who shared their experiences of the gazettement of GKNP and the activities that FDA and WCF have implemented with the communities around GKNP. On the following two days, the participants from KBPPA had a chance to visit a series of projects supported by WCF in the field, such as lowland rice and cassava farming projects, beekeeping and fish farming, community ecoguards and several completed infrastructure projects, such as hand pump water wells, bridges, a school and a town hall.

In November 2020, WCF presented the activities implemented with FDA around KBPPA at the National REDD+ stakeholder dialogue in Gbarnga, in the presence of all relevant ministries and other institutions active in the forest sector.

In December 2020, a national multi-stakeholder information-sharing meeting about the gazettement of KBPPA, organised by FDA and WCF, was held with series of ministries, county superintendents from the 3 counties where KBPPA is located (Rivercess, Sinoe and Grand Gedeh Counties), NGO representatives, lawmakers and other relevant stakeholder in Monrovia, accompanied by important media coverage through radio and print press. During the meeting, the FDA leadership expressed the strong commitment to fully engage in and complete the gazettement process for KBPPA.

10. Awareness raising

In addition to the regular awareness raising meetings conducted by the community ecoguards, the awareness raising activities in 2020 concentrated on radio programs, special events, specific COVID-19 responses and a newly established community volunteer program with women bushmeat sellers. Due to COVID-19, most awareness programs that would have involved larger groups of people were cancelled.

Five radio kits from the Sapo National Park (SNP) theatre play were locally broadcasted over radio stations in communities surrounding SNP and GKNP in January and February 2020. This was followed by a national broadcast on Ecowas radio beginning in late January that continued until mid-March.

On 7 March 2020, selected community ecoguards from Grand Gedeh and River Gee Counties participated in the celebration of World Wildlife Day in Zwedru. The celebration included a radio program, in which two women community ecoguards participated alongside the regional forester of FDA and WCF's community engagement assistant. In addition; a march, an indoor program with one woman ecoguard making a special statement, and soccer games were organised, involving the community ecoguards, WCF, FDA and the joint security of Grand Gedeh County.



World Wildlife Day celebration in Zwedru on 7 March 2020, with the involvement of community ecoguards

On 14 July 2020, World Chimpanzee Day was celebrated with vehicle convoys in the major streets in Monrovia and Paynesville. The event was organised as a joint effort from FDA, WCF Liberia Chimpanzee Rescue and Protection, the Ministry of Health, the National Public Health Institute of Liberia, EPA and other conservation partners. Chimpanzee posters, stickers and flyers, as well as protected species fliers were distributed, alongside face masks and anti-bushmeat and COVID-19 awareness materials.

On 26 September 2020, WCF and FDA took the lead in organising the wildlife tourism component for the World Tourism Day, with the Liberia National Tourism Association and the Liberia Chamber of Commerce. A wildlife tourism truck was decorated and there was a march alongside other tourism actors, followed by a tourism festival with information booths, the sale of local products and cultural performances.



World Tourism Day celebration in Monrovia in September 2020

Until schools were closed in Liberia in March due to the COVID-19 pandemic, the six wildlife clubs established in schools around GKNP continued their activities. Children in the wildlife clubs were educated particularly in protected species and their value to the forest, as well as to local communities. A radio program was developed and broadcast in March, featuring several children from the wildlife clubs, teachers and WCF's community engagement assistant. The program focused on what the wildlife club members had learned and how they are helping to convince their families and friends not to destroy the forest and not to kill animals in the forest. The radio program was broadcast from two radio stations in Grand Gedeh and River Gee Counties.

In line with the COVID-19 response of the Liberian government, WCF supported the activities of the County Health Teams and supported the distribution of faucet buckets, soap and COVID-

19 awareness materials in all the communities around GKNP in both counties, Grand Gedeh and River Gee, as well as in 15 communities around KBPPA. The COVID-19 awareness was combined with general messages about the risk of zoonotic diseases through any interaction with wildlife, such as hunting, eating bushmeat and keeping wild animals as pets.



Faucet buckets for hand washing in the fight against COVID-19, ready for distribution in communities around Grebo-Krahn National Park

- **Community volunteer program with bushmeat sellers**

Based on a bushmeat and pet trade survey conducted in 2019, 15 major bushmeat markets were identified in Monrovia and Paynesville. WCF and FDA worked with the market associations and the Monrovia and Paynesville City Corporations, in order to identify women selling bushmeat who were willing to be trained as community volunteers. In July and October 2020, a total of 30 women from the 15 markets were trained in general conservation concepts, the National Wildlife and Protected Area Management Law, protected species in Liberia and communication methodologies. Since then, the trained community volunteers have been conducting regular awareness activities in their respective market areas by sharing their new knowledge with their colleagues. Until the end of 2020, ten of the 30 women had already abandoned the bushmeat business and were engaging in different businesses. These women reported how much their lives changed and how much happier they are with their new, less stressful activities, which are not in conflict with any law.



Group of women bushmeat sellers trained as community volunteers in July 2020

In December 2020, the women who abandoned the bushmeat trade decided to form an “ex bushmeat sellers drama team” and were trained by WCF’s long-term awareness partner in Liberia, Eddie Theater Production. The new awareness program contains a short theatre play talking about the wildlife law and protected species, a song, and as a last program point some of the women shared their own story on how they left the bushmeat business and how much

their lives have changed and improved with their new activity. The women tested their program in one of the bushmeat market areas in Monrovia and received a lot of positive feedback. The drama team also had the opportunity to perform at the Liberia Kolloqua (=Liberian English) Festival at Libassa Ecolodge, alongside famous Liberian artists.



Banner of the newly formed ex-bushmeat sellers drama team (left) and the team performing at the Kolloqua Festival in December 2020 (right)

11. Coordination of Biomonitoring and Law Enforcement Sub-Committees of the Liberia National Species Working Group

WCF is coordinating the Biomonitoring and Law Enforcement Sub-Committees of the Liberia National Species Working Group, hosted by the FDA. Along with the FDA, the two Sub-Committees comprise all international and national conservation NGOs and other relevant institutions active in the field of biomonitoring and law enforcement. WCF is organising regular meetings and supporting the coordination of activities of these sub-committees.

Significant progress was made in 2020 related to amendments of the National Wildlife Conservation and Protected Area Management Law and increased numbers of wildlife confiscations by the Wildlife Crime Task Force, which is directly supported by WCF.

12. Capacity building

During the first half of 2020, WCF continued to train internship students from the Forestry Training Institute, the University of Liberia and other academic institutions. Sixteen interns were trained in theory and fieldwork on topics including research, law enforcement and community engagement, and two interns continued their training in administration and finance.

Throughout 2020, WCF continued to train local community members and FDA through various programs, such as the community ecoguard program and livelihood projects.

Gender equality and social inclusion (GESI) are important aspects considered throughout WCF's numerous project activities, from the recruitment and development of project details to the support for local NGOs. WCF constantly seeks to reach a gender balance in all activities, such as in the community ecoguard program and livelihood projects.

In February 2020 the entire WCF team and key partners received GESI and advocacy training, which was a major boost and greatly motivated the WCF team and partners. While WCF already has been applying many GESI principles and a general gender policy exists for WCF, the team now has the background knowledge and tools to improve the implementation of GESI. Immediately after the workshop, WCF staff formed a committee that drafted a gender policy for WCF Liberia. Furthermore, even prior to the finalisation of the draft, individual staff members changed their behaviour and showed increased consciousness of GESI, both at work and in their private environment. Now, for the implementation of all activities and plans, the GESI aspect is being actively included and staff members are making regular suggestions for more GESI consideration. Likewise, WCF staff are conscious of advocacy tools and are including advocacy in their daily activities.

13. Acknowledgements

The WCF Liberia team is grateful to their partners in Liberia; in particular the Forestry Development Authority, who has been by WCF's side for the implementation of all projects. We are grateful for the cordial planning and project implementation.

Other partners in Liberia we wish to thank for their collaboration and support, are: Environmental Protection Agency, Ministry of Internal Affairs, especially represented through the Superintendents in Grand Gedeh, River Gee, Sinoe and Rivercess Counties, Ministry of Justice, Liberia National Police/Transnational Organized Crime Unit, Interpol, Forestry Training Institute, University of Liberia, Paynesville and Monrovia City Cooperations, Society for the Conservation of Nature of Liberia, Royal Society for the Protection of Birds, Liberia Chimpanzee Rescue and Protection, Libassa Wildlife Sanctuary, CENFOR, Multi-Agrisystems Promoters, Universal Outreach Foundation, FIFES-ACDI/VOCA, Fauna & Flora International, WWF Germany, Environment and Development Associates, Partners in Development, Born Free Foundation, Zoological Society of London, and Urias S. Goll.

We wish to thank our donors, without whom none of our projects would be possible; The late Henry Wientjes via WWF-Germany, USAID/WA BiCC, European Union, Great Ape Conservation Fund/US Fish and Wildlife Service, Critical Ecosystem Partnership Fund, Rainforest Rescue, Ape TAG, German Federal Ministry for Economic Cooperation and Development, Zoo Leipzig, Zoo Furuviksparken and the German Embassy in Liberia.

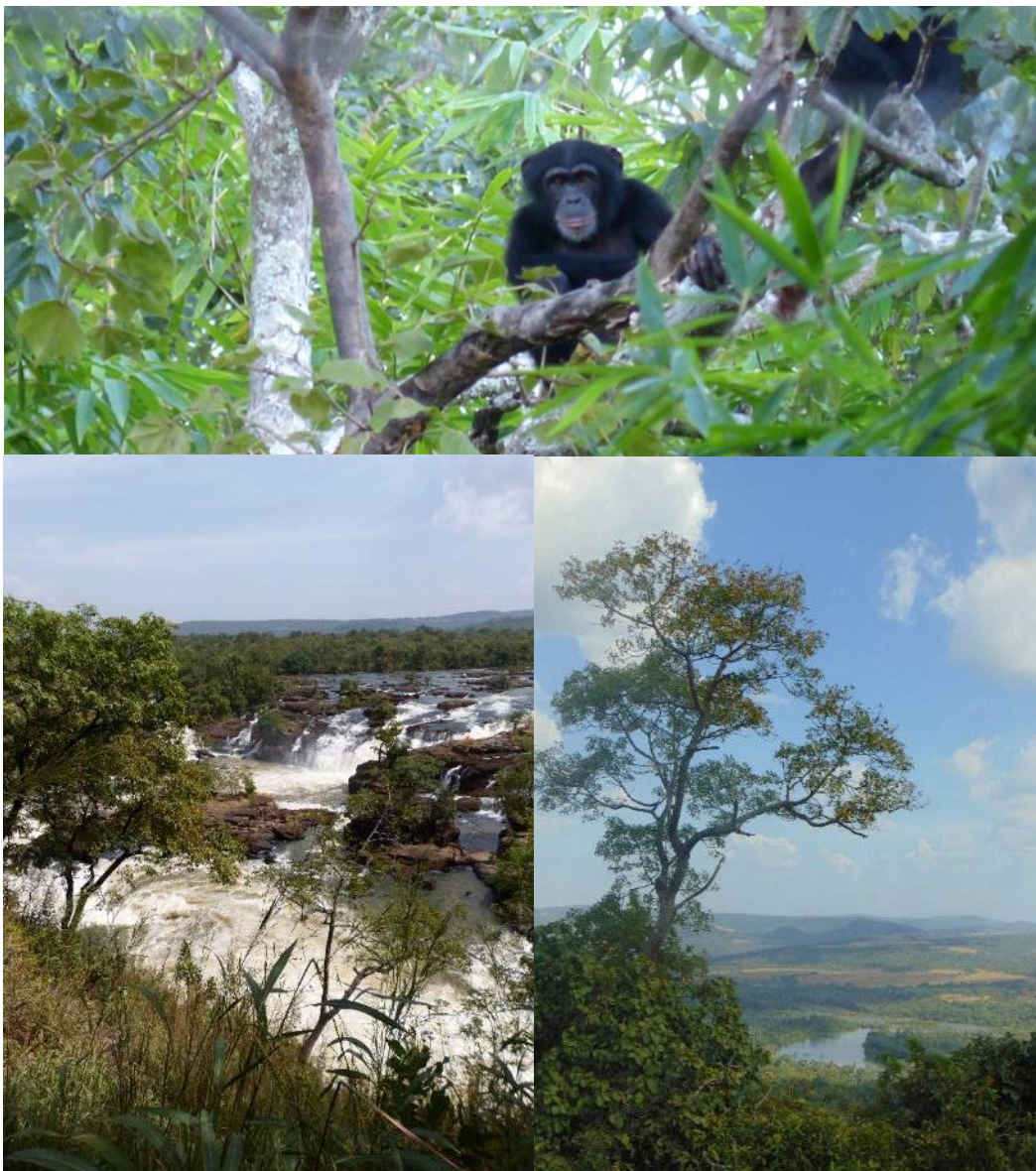


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Annual Report 2020 – WCF Guinea

Executive summary from the full annual report



Conakry, December 2020

Table of contents

Summary	page 3
1. Biomonitoring with camera traps	page 3
2. Setup phase of the Moyen-Bafing National Park	page 7
3. Management of the Moyen-Bafing National Park	page 8
4. Thoughts about the chimpanzee offset concept	page 14
5. Acknowledgements	page 17

Acronyms

CBG -	Compagnie des Bauxites de Guinée
CC -	Community Consultation
CTF -	Conservation Trust Fund
DS -	Distance Sampling
EIG -	Economic Interest Groups
FMNR -	Farmer Managed Natural Regeneration
GAC -	Guinea Alumina Corporation
HVCs -	High Value Conservation areas
IFC -	International Finance Corporation
ITP -	Intermediate Technical Panel
MBNP -	Moyen-Bafing National Park
MEEF -	Ministry of Environment, Eaux et Forêts
NASA-FIRMS	National Aeronautics and Space Administration - Fire Information for Resource Management System
NER -	Natural Ecological Regeneration process
NGO -	Non-Governmental Organisation
OGPR -	Office Guinéen de Parcs et Réserves
PPP -	Public-Private Partnership
PS -	Performance Standard (International Finance Corporation)
SECR -	Spatially Explicit Capture-Recapture
TBC -	The Biodiversity Consulting
TC -	Trust Company
UCOMB -	Unité de Coopération pour l'Offset Moyen Bafing
WCF -	Wild Chimpanzee Foundation

Summary

The 2020 annual report corresponds with the end of the Action Plan 2018-2020 validated by the partners of the project for the setup phase of the Moyen-Bafing National Park (MBNP) and the “Compagnie des Bauxites de Guinée / Guinea Alumina Corporation” (CBG/GAC) chimpanzee offset. Therefore, the present report will not only present the main accomplishments of the year 2020, but also place them in the context of the 3-year period of the Action Plan.

Over the past three years, the project has gathered a substantial amount of new information and data specific to the western chimpanzees (*Pan troglodytes verus*) in the Moyen-Bafing region. While, the prefeasibility studies for the CBG/GAC offset assessments were based on a number of assumptions, due to the lack of available data at that time (TBC, 2016), these new data collected over the past three years will allow for a re-evaluation of the offset feasibility study. A new fact-based offset feasibility study would allow for the critical reframing of the offset strategy, thereby maximizing the probability of the Net Gain objective for the chimpanzee offset.

The year 2020 expanded and completed the achievements of the previous two years covering all our seven management objectives as presented in the Action Plan. In agreement with the offset partners, the setup phase included actions specifically aimed at legalizing the national park as a functioning entity; others were aimed at initializing the key activities mandatory to work towards the Net Gain for the chimpanzee offset.

By nature of the International Finance Corporation (IFC) supported CBG/GAC offset project, the chimpanzee is the focus animal species of the Net Gain objective (IFC PS6, 2012). However, no detailed study of chimpanzees living in open mosaic habitat, like in the Moyen-Bafing National Park, exist, and therefore one key aim of the project was to collect representative data that would allow for the adaptation of our strategies to the specific context of the project. As a result of the continued efforts of the Wild Chimpanzee Foundation (WCF) to develop a new and more precise survey method based on camera traps, we are not only able to provide a more precise estimation of the chimpanzee population size in the Moyen-Bafing National Park, but also provide the first detailed demographic study of this historically under-studied population. From the detailed data that have been gathered relative to chimpanzee social groups, reproductive biology and demographic trends, the key results and lessons learned are summarized in the following chapters.

1. Biomonitoring with camera traps

Initial provisional estimates of chimpanzee population size in the northern zone of the park show that chimpanzee density is strongly influenced by vegetation type (Table 1). Estimates of chimpanzee group size are similar to those known for other chimpanzee communities (range: 25-65 individuals per group, N=6), although groups occupy much smaller territories than expected for such an environment (range: 20-30 km², N=4). Our analyses indicate that vegetation type significantly influence chimpanzee density estimates within the park.

Table 1: Chimpanzee density and abundance in the Moyen-Bafing National Park according to the main vegetation types.

Habitat	Density ¹ (ind/km ²)	CV ³ (%)	Surface	Abundance ⁴ (CI)
Gallery Forest	1.61	21.07	647	1,041 (692-1,567)
Open Forest	0.92	43.2	2,449	2,253 (1,001-5,068)
Wooded savannah	0.32	37.07	1,278	409 (202-826)
Grass savannah	0.0	0	2,188	0
Anthropogenic areas	0.0	0	205	0
Total	0.92	25.0	6,766²	3,703 (2,286-5,998)

¹ The density per habitat was calculated from the data collected in the south and north-east of the MBNP between 2019 and 2020. To estimate the MBNP chimpanzee population, it was then extrapolated to the whole park surface. (Gallery Forest= 141 camera points, Open Forest= 68 camera points, Wooded savannah= 124 camera points, Grass savannah= 0 camera point, Anthropogenic areas= 0 camera point).

² The final park external limits, as in the presidential decree, bring the surface of the MBNP to 6'766.95 km².

³ Coefficient of Variation

⁴ Confidence Interval



Chimpanzees in the Moyen-Bafing National Park captured by camera traps while they fish for algae

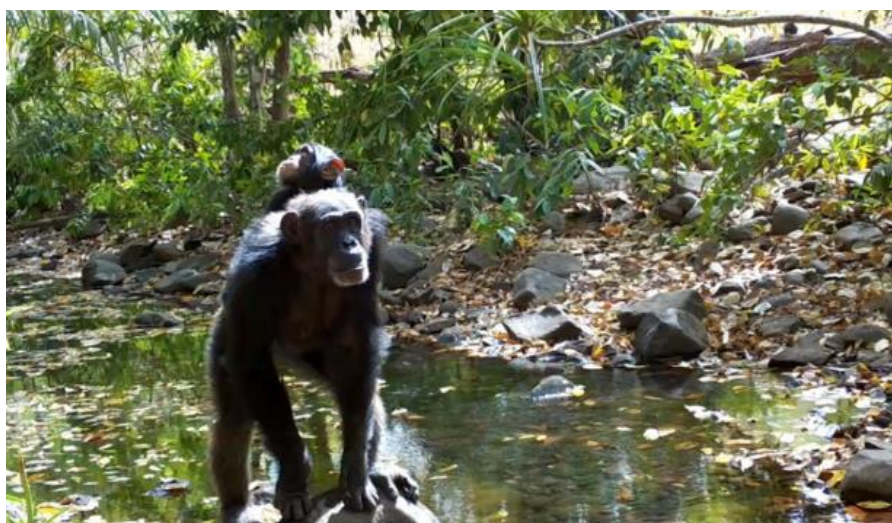
Table 2: Total chimpanzee population size within the Moyen-Bafing National Park in 2018.

The comparison of the distance sampling (DS) method with the spatially explicit capture-recapture (SECR) method for the Bakoun area in the MBNP provides a correction factor to control for the under-estimation of the DS method.

Habitat	Surface	Density (method DS)	Abundance (Method DS)	Abundance (Method SECR)
Gallery forest	42.1 km ²	1.61	68	
Open forest	152.9 km ²	0.92	141	
Wooded savannah	49.9 km ²	0.32	16	
Grass savannah	133.5 km ²	0	0	
Anthropogenic area	9.2 km ²	0	0	
TOTAL	387.6 km²		225	597
		Correction factor =		2.65

The chimpanzees in the Moyen-Bafing National Park possess a net reproductive rate of $R_0=0.727$ resulting from high sub-adult mortality, with 70% of the chimpanzees dying before reaching the age of 10 years, and a shortened female reproductive lifespan after 30 years.

Consequently, **the chimpanzee population in the Moyen-Bafing region was decreasing at an annual rate of 0.27% in 2018.** The most likely cause of this fact seems to be the decrease in the forest cover observed over the last 30 years within the MBNP area, occurring at a rate of 1.27% per year. Both of these results represent important new knowledge with respect to chimpanzee conservation and will be submitted to peer-reviewed scientific journals for publication.



Female chimpanzee with infant in the Moyen-Bafing National Park captured by a camera trap

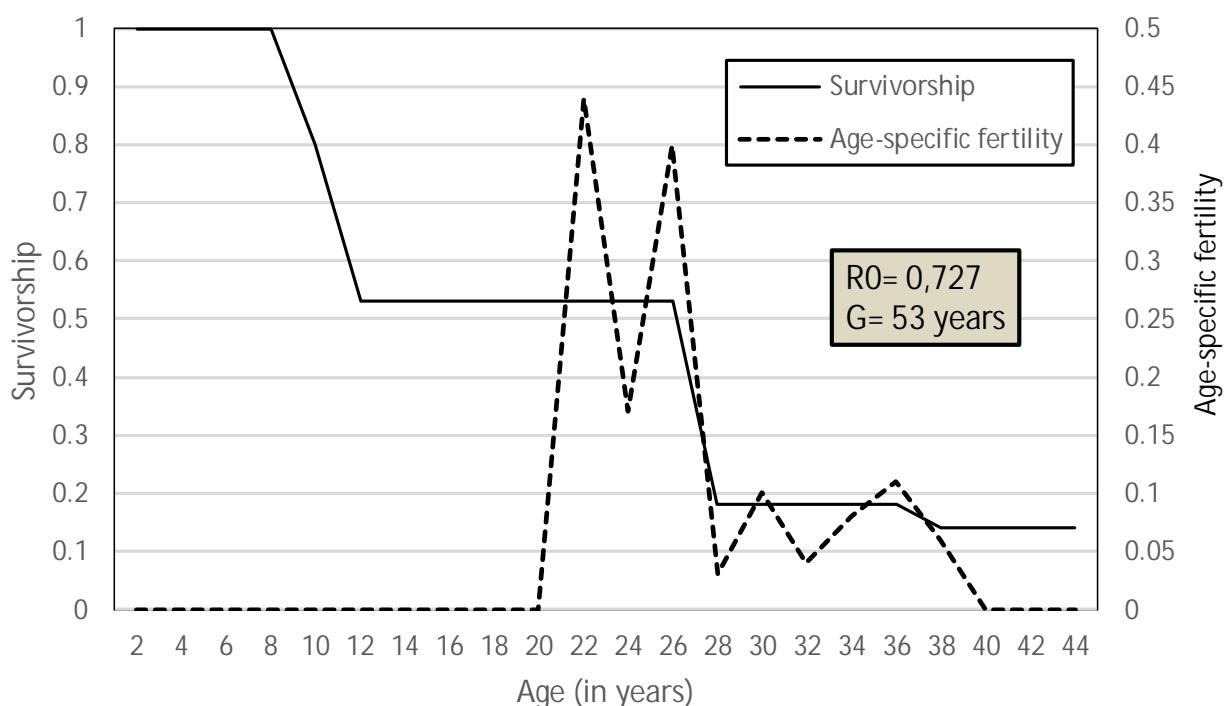


Figure 1. Survivorship and age-specific fertility of the Bakoun female chimpanzees.

The data set includes 235 female years and 53 births. Survivorship of the Bakoun females decreases rapidly even when adult (however, the sample size is limited for adult females). Fertility seems to decrease quite rapidly after 28 years, which could be influenced by our limited sample. The provisional net reproductive rate is 0,727 with a generation time of 53 years.

Results from the recent analyses confirm that the assumptions made in the calculations of the prefeasibility studies for the CBG/GAC chimpanzee offset project from which a Net Gain is predicted to be achievable within 20 years, are overly-optimistic and even unrealistic. To achieve the Net Gain within 20 years, an unrealistically high and constant population growth of 1.65% per year, as of the first year of the project, is required. As animal populations never grow with a constant growth rate, and chimpanzees are known to have long generation times, the prediction of achieving the Net Gain in 20 years is bound to be wrong. This point requires consideration and merits a more thorough re-evaluation of the chimpanzee offset project, which will be presented in this report in the chapter: “Re-evaluation of the Chimpanzee Offset Concept”.

2. Setup phase of the Moyen-Bafing National Park

As described in the 2018-2020 Action Plan, project activities are designed to strengthen and protect the integrity of the park, by: 1) developing a coherent and complete legislative and regulatory framework, 2) ensuring social acceptance, 3) providing for natural resource protections, and 3) restoring the degraded habitats and ecosystem services of the future park.

The spatial context of the site identified for the offset program, and the future park, may be considered rather complex, given:

- a) the high population densities of the critically-endangered West African chimpanzees (*Pan troglodytes verus*), the presence of 46 other large mammal species, 51 species of freshwater fish and the presence of endemic plant species;
- b) the presence of a significant human population (280 villages); and
- c) national-level economic development interests, namely plans for a future bauxite mining and the development of hydroelectric potential of the Bafing River, the Koukatamba Dam project.

Despite the apparent complexity of these multiple and overlapping interests, since 2018 offset partners (WCF and “Office Guinéen de Parcs et Réserves” - OGPR) have made steady progress, while addressing the issues, in parallel, on these multiple fronts.

For the setup phase of the Moyen-Bafing National Park, the most important deliverables were arguably the signing of the presidential decree and of the PPP (public private partnership) contract for the management of the national park with the Guinean Government. The text of both the decree and the contract have been thoroughly discussed since February 2020 with the Ministry of Environment, Eaux et Forêts (MEEF) including the direction of the OGPR, the legal adviser of the Minister and many members of its cabinet with the support of the WCF legal adviser. Both texts have received comments from the Intermediate Technical Panel (ITP) members, as well. In December 2020, both texts were finalised and are ready to proceed to the final step, the official signing, which has been delayed due to the global Covid-19 crisis, and then again, by the presidential election that occurred in October 2020.

Currently, the plan is for the presidential decree to be signed in January 2021, and shortly thereafter, the PPP contract will be ready to sign, as well. Thus, 2021 should be the year that the park will be legally fully established by the Guinean authorities. Nevertheless, all project activities in support of the Net Gain objective of the chimpanzee offset should continue without delay to maintain the current project direction and momentum.

As the decree and the PPP documents are being finalised, in parallel, all the plans and regulations necessary for the national park to function were drafted and the management structures became functioning. To date, we have installed five “base-vies”, or ranger camps, within the park that are fully equipped, functioning and staffed all year round. From these camps, most activities are planned and supervised within the 15 communes of the park.

3. Management of the Moyen-Bafing National Park

Since the inception of the offset project, in 2018, substantial advancements have been made in understanding the sociology and cultures of the region. An improved understanding of the cultures of the region has facilitated the successful completion of a series of public community consultation (CC) workshops (CC1-CC4), leading to the acceptance of the park creation. In parallel to these efforts, progress was made to reconcile the priority of the national park with other projects presenting potential spatial conflicts, such as the planned projects of the bauxite mining company, Toubal, and the Koukatamba Dam project through the involvement of the Inter-Ministerial Commission.

The Action Plan 2018-2020 has been implemented to 91% (see the WCF 2020 Q4 quarterly reports) by the project team in the last three years. The scale of some actions were not as the WCF planned, due to the financial restrictions that were imposed by the mining companies. A worrisome fact, as the focus of the offset project should not only be the accomplishment of an Action Plan that was approved three years ago, but more so on the achievement of the Net Gain objective.

The monitoring of the chimpanzees and the five additional indicator species of the Action Plan 2018-2020 were followed systematically according to a stratified-systematic sampling design based on the main vegetation types (savannah, open and dense forest). One of the monitoring design, referred to as Distance Sampling (DS), has provided coverage of the whole park. The second design, referred to as Spatially-Explicit Capture Recapture (SECR) consisting of two 10 x10 km grids allowed for the determination of individual and group identities for all chimpanzees filmed by camera traps within the grids. Data collected from the SECR grid formed the basis of our detailed demographic study that included one full year of continuous data collection. It is worth noting that no previous studies have ever collected such detailed information on a chimpanzee population in a comparable period of time, as all previous research has been based on the traditional habituation approach, requiring multiple years of habituation of chimpanzees to humans prior to obtaining any data. Our results highlight the unique potential of the camera trap method and how it can be generalized to plan offset projects for great apes.

The uniquely large quantities of detailed information and data that have been collected on the chimpanzees of the MBNP formed the basis of our re-evaluation of the offset project, and equally, formed the basis of the calculations used to obtain chimpanzee population densities. With a chimpanzee population first suggested at 3'703 chimpanzees with the DS method, but estimated at 9'813 individuals when correcting for the underestimation due to the camera trap detection bias, we obtained a much larger population than previously expected (WCF biomonitoring report, 2016). At the same time, the demographic study revealed that the chimpanzees in the MBNP were decreasing by 2.7% per year in 2018, due to low sub-adult survivorship and low fertility for females over 30 years. These results indicate a clear need to revise the baseline chimpanzee population estimates used as the initial state of the population at the onset of the offset project in 2018.

Throughout the setup phase, the wildlife law enforcement capacity of the park has continuously grown, evolved and adapted to the constantly changing situations and circumstances being

confronted in the field. As compared to 2019, the number of eco-guards conducting missions inside the park has nearly doubled in number from 34 (2019) to 60 (2020). Increased patrolling effort translates to an increase in the spatial coverage of patrols, which in turn, has revealed decreased encounter rates of illegal activities, from 40% (2019) to 18% (2020). This is most likely the result of our ‘integrated landscape approach’ that benefits both the environment and the communities at different levels. Moreover, support and information collected by project staff have led to law enforcement interventions in the trafficking of protected resources, resulting in the issuance of nine citations and the confiscation of illegally harvested wildlife and timber products.



Female community eco-guards on mission in the Moyen-Bafing National Park

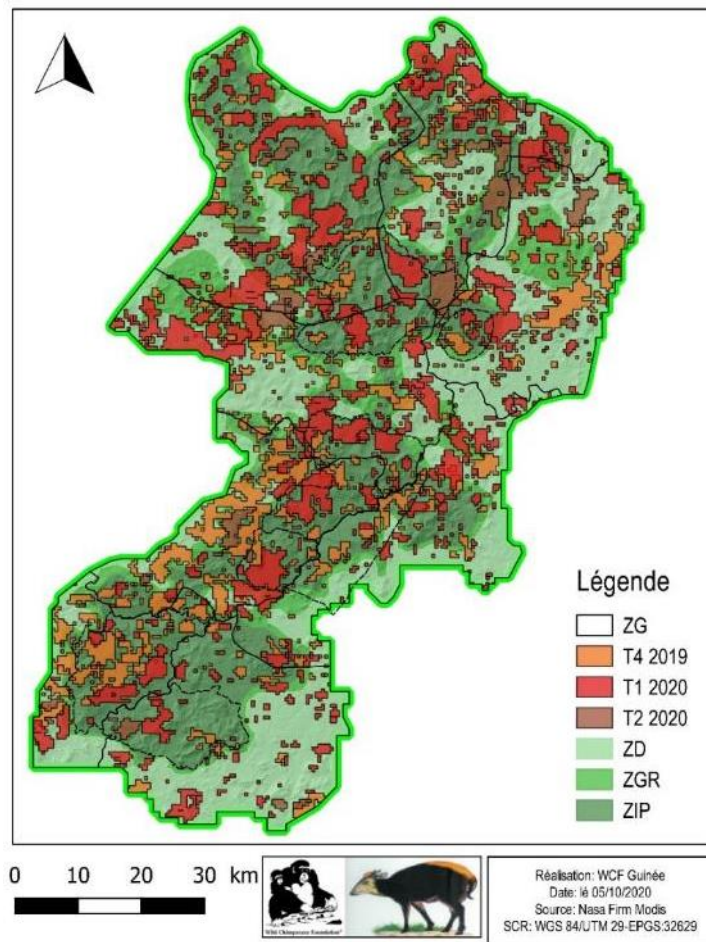
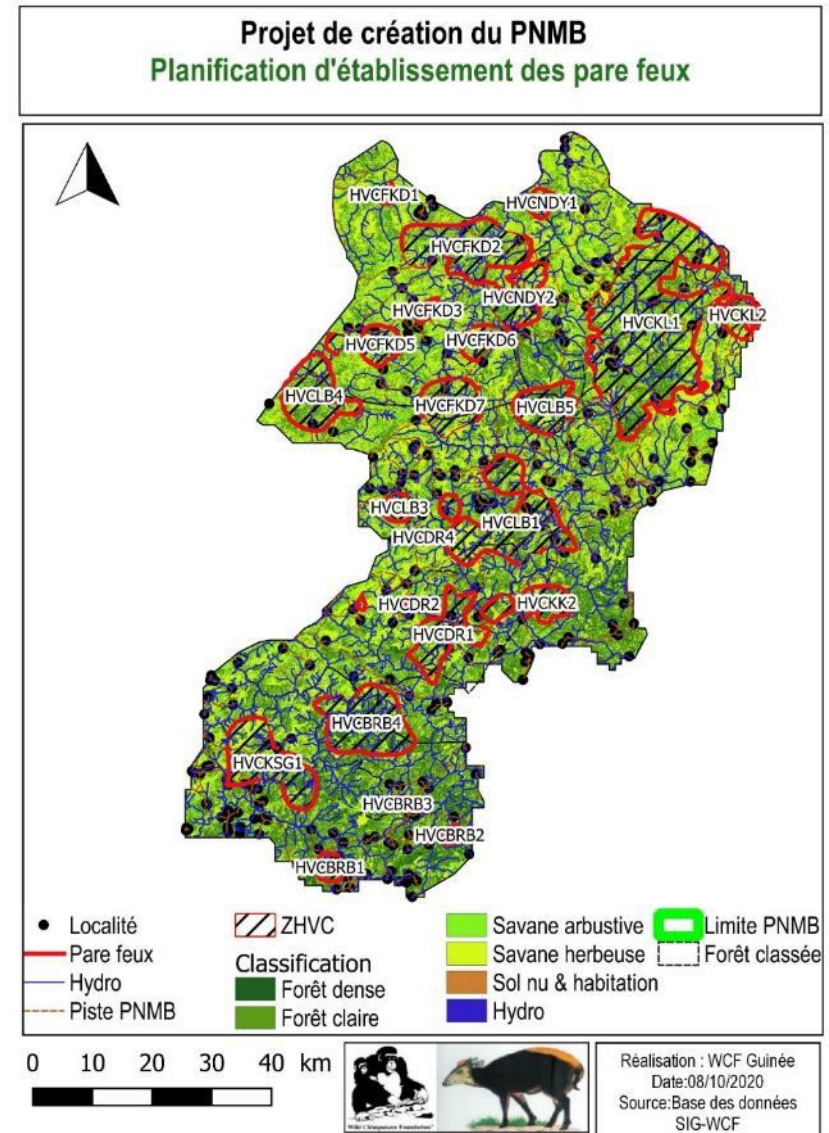


Figure 2: Areas burned within the park as a result of controlled and uncontrolled fires, 2019-2020 fire season (left); high conservation value areas requiring fire prevention measures, firebreaks (pare feux), for the 2020-2021 fire season (right)



Wildfires are one of the main contributors to deforestation in the MBNP. Over the past two years, the project has been intensifying its wildfire management efforts to the extent that the budget allows. During the fire season of 2019/2020, the project was responsible for 50% of the early-season fires, through the burning program, thereby preventing the much more damaging late-season fires (WCF provoked 46'152 ha of early fires versus 45'603 uncontrolled fires within the MBNP). This year, 2020/2021 fire-season, firefighting efforts have been expanded to cover the near totality of the park (Figure 2). In addition, based on information obtained from the satellite-based fire-detection system (NASA-FIRMS), we have a dedicated team active in the park year-round to react to any detected fire activity, with a particular focus on high value conservation (HVC) areas, as well as gallery forests protecting waterways and springs, and sites of forest regeneration. To restore and protect degraded forest habitats, since 2018, the project has been promoting the Natural Ecological Regeneration process (NER), which today covers 218 ha of the park. Natural Ecological Regeneration sites and other important forested areas (High Value Conservation areas, HVCs) must be protected on an annual basis from the destructive effects of wildfires (Figure 3). In order to protect these forest “assets”, covering an area of more than 1,665 km² (27 HVC sites), 679 km of firebreaks were prepared with the use of prescribed burns. Clearly, substantial human effort must be mobilised, including project staff plus approximately 17,000 community members from 109 villages (Table 3).

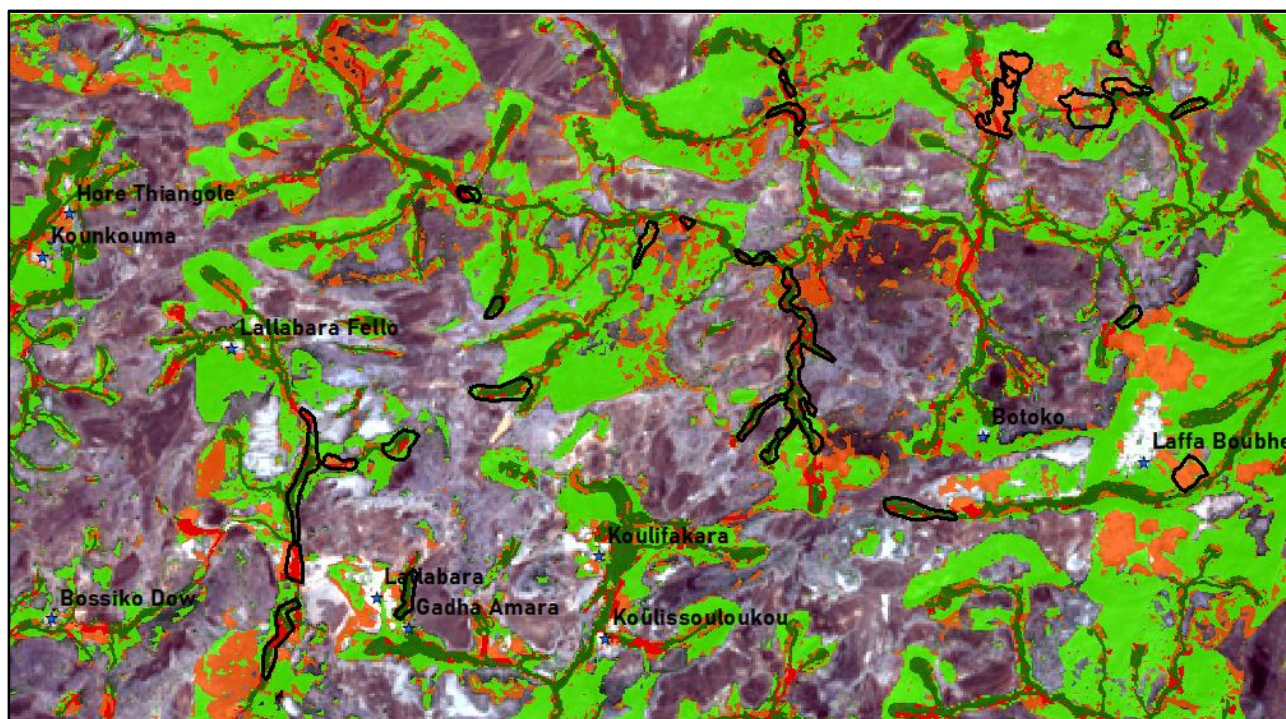


Figure 3: Map of Natural Ecological Regeneration sites in the northern corridor of the MBNP

Map of the vegetation type analysis done by the WCF team, showing in light green the existing woodland forest, in dark green the existing dense forest, in orange the woodland forest lost in the last 30 years, and in dark red the dense forest lost in the last 30 years. Location of the Natural Ecological Regeneration sites, delineated with a black line, within the rupture zones determined from satellite picture analysis (in orange and red). Strategic selection of Natural Ecological Regeneration sites in the future will directly contribute in re-establishing the connectivity of the forest and favour a healthy water system.

Table 3: Fire management effort in the Moyen-Bafing National Park in 2020

Zone de gestion	Village	Mise en défens/Pare feux					Bowal (km2)	Prestation (in USD)	GIG Actif
		HVC (km ²)	Pare feux artificiel (km)	Têtes de source (ha)	RNE (ha)	RNA (ha)			
Bouromba	19	161	63	16'350	0	0	69	1'564	20
Dara	14	82	69	12'949	0	0	180	1'729	80
Fello Koundoua	28	298	139		0		294	3'467	40
Kalinko	20	51	77		0	2	115	1'926	40
Kansangui	14	122	30	6'736	0	0	109	759	80
Kela	19	523	137	1'179	39	0	204	3'435	60
Laffa Boubé	27	354	107	30'800	118	42	245	2'664	140
Ndire Yangueya	23	75	58		62	8	271	1'440	40
Total	164	1'665	679	68'014	219	52	1'487	16'984	500

*Wildfires in the Moyen-Bafing National Park are one of the main contributors to deforestation*

The success of any conservation project depends on the full participation of local stakeholders. Therefore, in perfect alignment with the PS1 and PS5 policies of the International Finance Corporation (IFC), the project has invested substantial effort in working with the communities.

At the time of writing, WCF has supported the creation of 29 village-based committees, covering 55 villages in the Moyen-Bafing region. Additionally, 42 cooperatives (Economic Interest Groups,

EIG) have been created for the sustainable development and commercialization of agriculture products and activities, namely peanuts, rice, fonio, vegetable gardening, honey and shea butter. In 2020, some of the Economic Interest Groups have already benefitted from the sales of their products after having signed purchase agreements with vendors in Labé. These village-based committees are, equally, represented at the commune level through the creation of associations, “association pour la conservation et le développement”, in all 15 communes of the park. Interestingly, of the 17 village committees tested for their performance, women directed 12. Moreover, the committees and cooperatives that have been formed benefit from a strong representation of women, with some activities being predominantly led by female stakeholders, particularly honey, shea butter or vegetable gardening activities (760 women for 21 men).

Furthermore, eleven infrastructure projects dedicated to the community development in the park were realized in 2020:

- water source for Nguessawoula;
- water source and drilling of borehole at Baridonde and Fello Koundoua Centre;
- construction of a borehole in Kalinko Konkero and in Ley Kimbeli;
- rehabilitation of a well in Dara;
- construction of a market shed in Bellakoure;
- construction of a honey storage warehouse in Laffa Boubhe;
- fencing of a 17 ha plain in Lallabara.



Opening ceremony of the new market shed in Bellako

Given the increasing intensity of water shortages influencing the communities and wildlife of the park, and the strong causal links that exist between forest cover and water availability, WCF has actively promoted natural forest regeneration, continuously expanding regenerating forest areas, and protecting these areas from wildfire. Similarly, we have been continuously promoting the farmer-managed natural regeneration (FMNR) approach that has proven to be successful in reforesting millions of hectares in Niger, Mali, Senegal or Ethiopia. After an extended training camp in February 2020 by the Ugandan expert, Cotilda Nakyeyune, an impressive number of farmers volunteered themselves to take part in FMNR program activities in their fields, as this technique has been shown to increase yield and allows farming for much longer on the same land plot. To date, FMNR outreach campaigns have reached 434 community farmers, with 136 farmers currently practicing these techniques in their fields and 137 women practicing agro-ecological techniques in smaller plots near their houses, known as *tapades*. Outreach campaigns promoting other agro-ecological practices, such as bio-pesticides, mulching, etc. have reached more than 5,000 members of the communities. In 2020, vegetable gardening and bee-keeping cooperatives benefitted from the first sales of their produce.

In addition to agro-ecological initiatives, the project has always applied a general policy of supporting the sustainable economic development of the MBNP communities. Given the scale of the park (6,767 km²), many project activities require the temporary mobilisation of a large workforce (e.g., firefighting activities). In 2020, for example, 2'200+ people worked in support of project activities, representing a total income of 120'000+ USD for the local communities. Sustainable economic development efforts were further enhanced through the strategic infrastructure investments, *i.e.* construction of a market and the repair of village water sources.

4. Thoughts about the chimpanzee offset concept

In 2018, the WCF presented in the Action Plan 2018-2020, a Theory of Change based on the biological reality of the Moyon-Bafing National Park that clarifies some population biology concepts that are fundamental to our thinking about the chimpanzee offset. Figure 4, adapted from the WCF Action Plan 2018-2020, illustrates these points, which are based on known facts about chimpanzee population dynamics, specifically:

- 1) Chimpanzee population growth follows a logistic curve, due to an important density-dependent effect that is observed when the population size approaches the carrying capacity of the environment.¹
- 2) The growth rate of any animal population is never constant, and varies with the conditions within the environment. As seen in Figure 4, as the population approaches the carrying capacity, growth rate declines. At carrying capacity, the population is theoretically stable (Growth rate = 0).

¹ Density-dependent factor is known to be essential to understand animal population dynamics and is presented in all textbook in ecology and population biology (Krebs 2009, Begon et al. 1990, Caughley 1977).

- 3) The closer to the carrying capacity, the longer the duration until a Net Gain can be achieved, given the declining growth rates, and this is independent of the starting population size (contrary to what is reported in the TBC reports).
- 4) Increasing the carrying capacity of the environment is a safe method to increase growth rate in the chimpanzee population (increase it from K_1 to K_2 in Figure 4, see also the WCF Action Plan 2018-2020). Data available since 2016 have provided clear indications that direct hunting pressure on chimpanzees in the Moyen-Bafing National Park is minimal, while the extent of environmental degradation is one of the most severe examples relative to all other protected areas surveyed in Guinea (WCF biomonitoring report 2016).

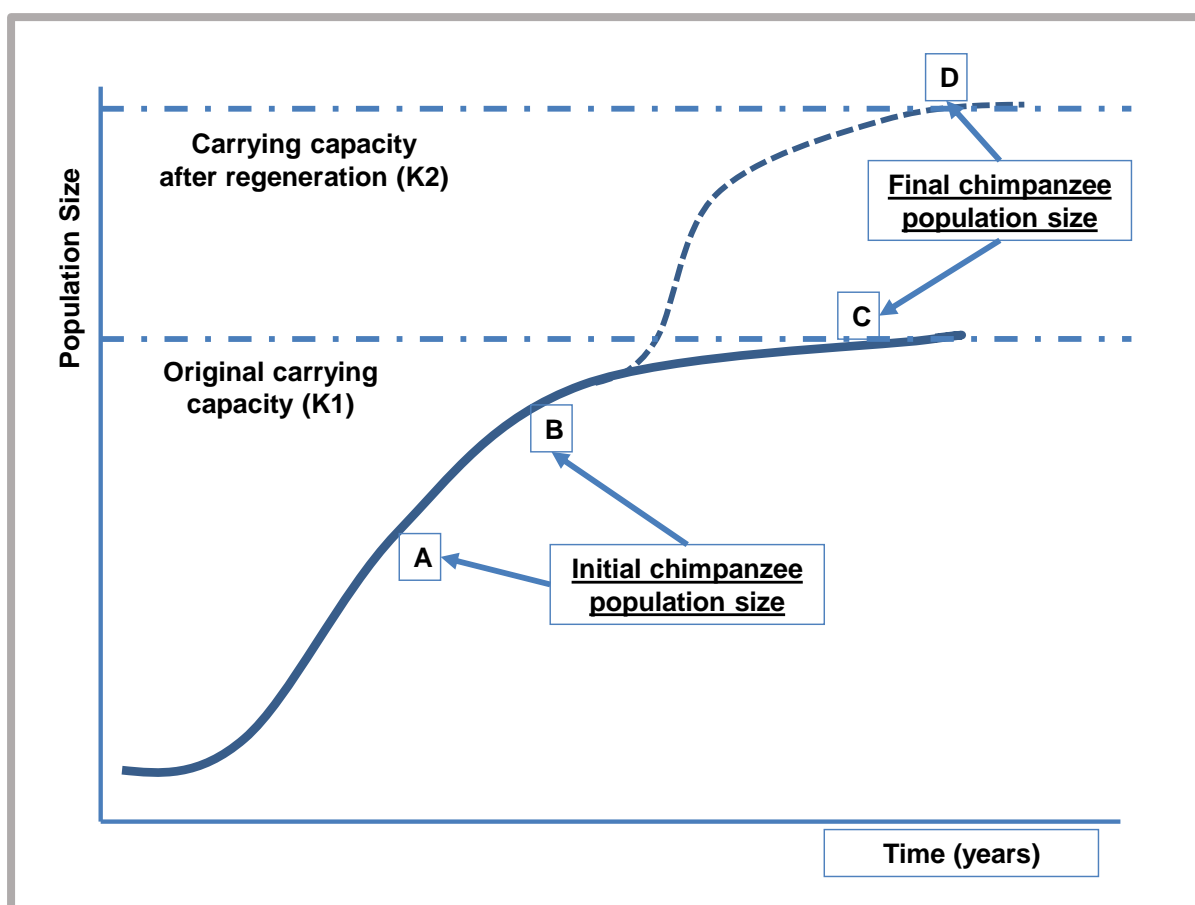


Figure 4. Theoretical growth curve of chimpanzee population in the MBNP (adapted from the WCF Action Plan 2018-2020).

Population growth follows a logistic curve starting slowly, then growing quickly in the middle and slowing down as it nears the carrying capacity of the environment (Begon et al. 1990, Krebs 2009). At the outset of the chimpanzee offset, if the chimpanzee population size was estimated, it would still be impossible to precisely place the population on the curve, be it close to the point A, indicating a rapidly growing population, or rather to point B, indicating a population close to carrying capacity with less potential for growth. Accordingly, WCF has planned from the beginning to invest heavily in habitat regeneration within the MBNP in order to increase the carrying capacity to where it was 30+ years ago (Carrying Capacity growing from K_1 to K_2). By doing so, the population could expand and would move towards the point D and the Net Gain objective of the offset could be achieved.

Question: When will the MBNP chimpanzee offset reach a Net Gain?

For a re-evaluation of the chimpanzee-offset duration following results and principles should be considered:

- 1) The environment in the MBNP area has been subjected to a long history of deforestation,
- 2) Reproductive rate used in the calculation is representative of the MBNP population, using data collected from the Bakoun chimpanzee groups,
- 3) Regeneration of the forested habitat within the ecosystem of the Moyen-Bafing National Park will lead to an increase of the carrying capacity in the area; after three3 years of monitoring and surveillance, the hunting pressure within the MBNP remains at a relative level considered to be negligible.

In addition, we would need to make the following assumptions:

- 1) Chimpanzee survivorship and reproductive rates are affected by biotic factors, such as hunting and food availability, that the project can influence, as well as, by abiotic factors, such as disease, climatic extremes and competing development projects, that the project cannot influence;
- 2) Chimpanzee population growth will therefore vary under the influences of these factors affecting survivorship and reproduction,
- 3) Alleviation of the factors negatively impacting reproductive rate in chimpanzees will be progressive, requiring multiple years (5 years) before positive impact may be measurable;
- 4) A time delay for the chimpanzees to react to an increase in carrying capacity due to reproductive potential of the chimpanzee needs to be integrated (4 years).

It is important to note that in the context of our tests of the WCF Theory of Change, it will be important to consider potential alternative explanations for the observed decline in the chimpanzee population. This will become mandatory, if in the next population counts, and despite important and successful efforts to increase the forest cover in the MBNP, we still observe a decline in the chimpanzee population.

First, poaching on chimpanzees could potentially be an important mortality factor, although our data do presently not confirm this. Nevertheless, we need to ensure this, and make sure the mortality, as we have observed, remains age dependent, which would then not support a poaching explanation, as it we should expect poaching to affect all age/sex classes more evenly, if not be directed more at adult females.

Second, disease could also affect strongly mortality and we have some observations of skin disease showing that the Moyen-Bafing chimpanzees might have health issues. As we will start a collaboration with the University of St Andrews (UK) and Harvard University (USA) in early 2021, the researchers will be looking for the potential importance of disease in the chimpanzees.

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