

**Conservation status of the West African chimpanzee
(*Pan troglodytes verus*) in Togo and Benin**



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1.0 INTRODUCTION

The Dahomey Gap, a drier vegetation transition area between the Upper and Lower Guinean Forests located mainly in Togo and Benin (Jenik, 1994), is thought to have acted as a barrier to the dispersal of many species, including primates (Campbell *et al.*, 2008a). However, this area has been poorly investigated and the distribution of species is not well understood. The distribution of the West African chimpanzee (*Pan troglodytes verus*) in these countries has never been assessed, and thus there is disagreement in the literature about the extent of their historic range and/or continued presence within this area (Kormos *et al.*, 2003; Campbell and Radley, 2006). No concrete evidence for chimpanzee's presence was ever recorded for this region, only reports of their presence. Given the paucity of information for these countries, chimpanzees were declared extinct from this area in the 60's-70's (Lee *et al.*, 1988; Kormos *et al.*, 2003), without any supporting evidences to sustain this claim. However, a recent survey of the Fazao-Malfakassa National Park in Togo, and several surrounding areas, revealed that chimpanzees may have disappeared more recently than previously thought (Campbell and Radley, 2006). Furthermore, new reports from 2010 indicate their possible survival in Togo (Dowsett-Lemaire, pers.comm.). Indeed, during bird surveys conducted in 2010 in Assoukoko Forest Reserve, a local guide reported the presence of chimpanzees within this reserve, and also that they occasionally saw their nests. Considering the lack of mammal surveys in this region, it is possible that chimpanzees may have been able to survive unnoticed at low density.

Other threatened primate species occur (i.e. *Cercopithecus e. erythrogaster*) or have been reported (i.e. *Cercopithecus diana roloway*) for this region, and thus, further surveys can help to assess their presence and distribution throughout this area (Campbell *et al.*, 2008a). In West Africa, primate populations are under imminent threats from hunting and deforestation (Campbell *et al.* 2008b; Bitty *et al.* 2013), and consequently, there is an urgent need to update their status to help guide conservation effort.

2.0 OBJECTIVES

In order to update the conservation status of the West African chimpanzee in Togo and Benin, as well as other primate species throughout this area, we conducted interviews and reconnaissance surveys with the aim of fulfilling these three objectives:

- a) Verify reports of chimpanzee's presence in Togo and Benin, and update its status for these countries;
- b) Collect presence and distribution data on other primate species in this area;
- c) Publish results in scientific journals.

3.0 METHODOLOGY

3.1 Study Area

The surveys were conducted in southern Togo and Benin, West Africa (Figure 1). There are approximately 6.31 million people living in Togo and 9.51 million people in Benin (United Nations, 2013). More ethnic groups are present in Benin, with 42 compared to 21 different ethnic groups for Togo.

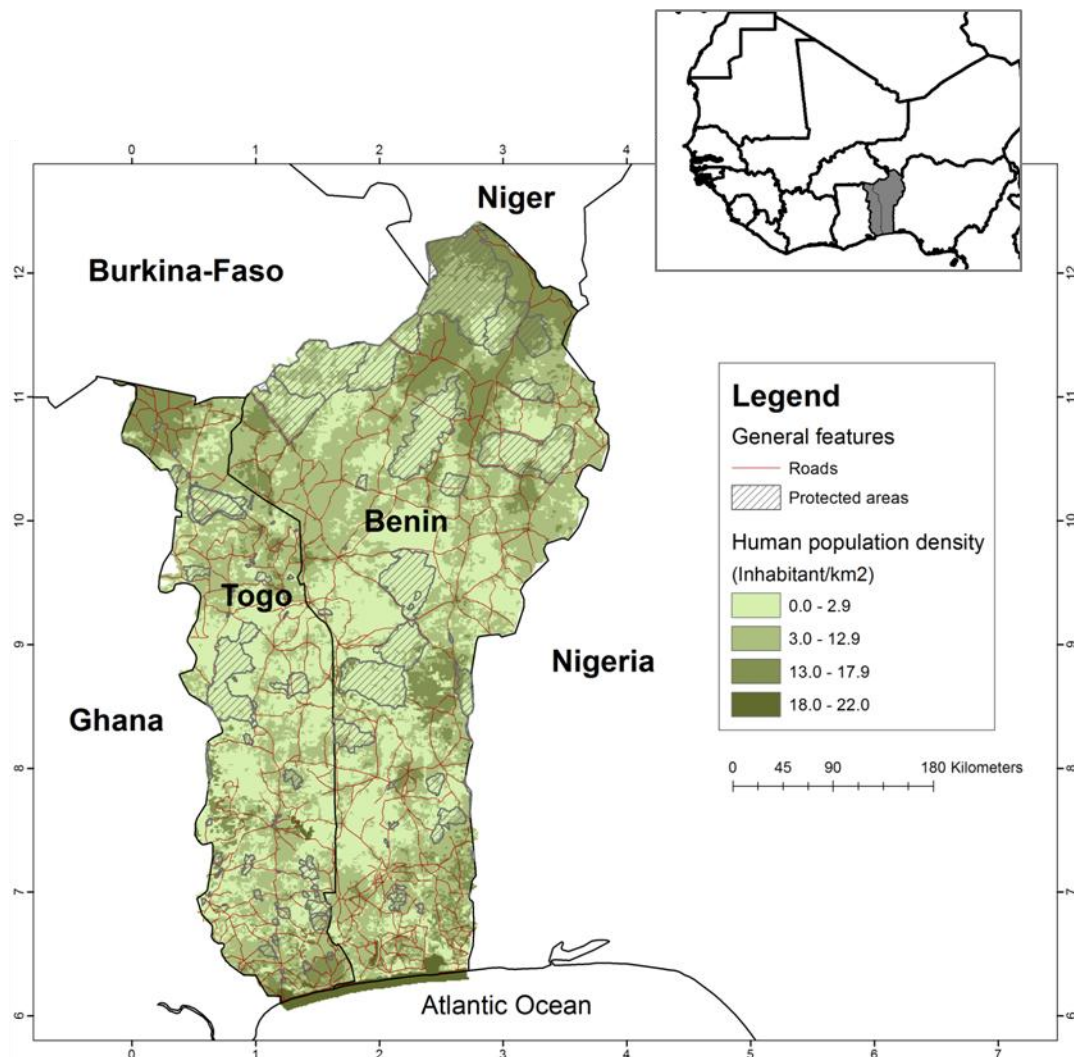


Figure 1. Location of Togo and Benin in West Africa.

There are 95 protected areas in Togo and 57 in Benin (Table 1). Nationally, the highest level of protection is through national park status (i.e. IUCN category II). There are three national parks in Togo and two in Benin. These are located mainly in the northern parts of these countries. Surveys were restricted to the southern portions of Togo and Benin, close to several forest reserves and classified forests.

Table 1. Nationally and internationally protected areas in Togo and Benin.

Protected Areas ⁽¹⁾	Country	
	Togo	Benin
<i>Nationally designated sites</i>		
IUCN Category II	3	2
IUCN Category IV	6	0
IUCN Category VI	0	3
Sites where the IUCN category is not known	81	47
<i>Internationally recognized sites</i>		
UNESCO Man and Biosphere Reserves	1	1
Ramsar wetlands of international importance	4	4
TOTAL	95	57

⁽¹⁾Information from the World Database on Protected Areas, joint project of UNEP and IUCN, managed by UNEP World Conservation Monitoring Centre (UNEP-WCMC).

3.2 Interview

We conducted semi-structured interviews in 21 villages in southwestern Togo and 15 in eastern Benin between December 2013 and March 2014 (Table 2; Figure 2). Interviews were conducted with a focus group composed of local hunters and/or elders with great knowledge of wildlife present in the area. We first asked to list all primate species present in their local language. Then we asked them to identify the primate species they listed on large picture plates (Kingdon, 2013; ARKive, 2013). Further questions were also asked, particularly relating to historic chimpanzee occurrence and the causes for their disappearance. We also conducted a few interviews at governmental offices to direct survey effort, but generally these people were not originally from the same region, and thus had poor knowledge of the wildlife present in their area. Therefore, results of these consultations are not included in this report.

Table 2. Details of the interviews conducted in Togo and Benin between December 2013 and March 2014.

ID	Village	Date	Latitude	Longitude	Language
TOGO					
1	Broufoun	28/11/2013	7.735844	0.674973	Akebou
2	Yalla	30/11/2013	7.795659	0.667869	Akebou
3	Sekounde	30/11/2013	7.836684	0.691407	Akebou
4	Saraga	30/11/2013	7.882120	0.658812	Akebou
5	Ouoro-orou	30/11/2013	7.956386	0.699638	Akebou
6	Assoukoko	30/11/2013	8.007048	0.656987	Ewe
7	Assara-kope	01/12/2013	7.908116	0.648579	Akebou
8	Sansanfou	01/12/2013	7.830965	0.660503	Akebou
9	Foto-Hoho	01/12/2013	7.796213	0.636212	Akebou
10	Klabe	05/12/2013	7.642193	0.882062	Akposso
11	Mouna	05/12/2013	7.632080	0.934312	Akposso
12	Oga	05/12/2013	7.637341	0.909137	Akposso
13	Yegue	06/12/2013	8.176270	0.655715	Adele
14	Aboussou-kope	07/12/2013	8.111101	0.640404	Adele
15	Diguengue	07/12/2013	8.081137	0.641780	Ntembo
16	Dikpeleou	07/12/2013	8.191895	0.618970	Adele
17	Itodougba	10/12/2013	7.449091	0.644775	Akposso/ Ewe
18	Kouma kunda	11/12/2013	6.954868	0.580916	Ewe
19	Agou-Akplolo	12/12/2013	6.891303	0.771403	Ewe
20	Wome	13/12/2013	6.841899	0.571229	Ewe
21	Apoti	13/12/2013	6.978811	0.559463	Ewe
BENIN					
22	Gnanhouizoume	19/12/2013	6.921759	2.414586	Fon
23	Kilibo	17/03/2014	8.560423	2.601370	Nago
24	Kilibo camp	18/03/2014	8.581997	2.670395	Nago
25	Afessomon	18/03/2014	8.559761	2.751490	Kabie
26	Ngbendoh	19/03/2014	7.812031	2.418037	Fon
27	Ayekossa	20/03/2014	7.835499	2.434458	Fon
28	Kpedekpo	21/03/2014	7.231192	2.498502	Fon/Mahi
29	Ile Agonve	21/03/2014	7.254574	2.457912	Fon/Mahi
30	Dovi-Dizigo	22/03/2014	7.164423	2.383593	Fon
31	Dovi-Dove	22/03/2014	7.172566	2.384759	Fon/Mahi
32	Sagon	22/03/2014	7.158026	2.409439	Fon/Mahi
33	Gbevozoun	23/03/2014	6.919482	2.482861	Fon/Weme
34	Atchonsa	23/03/2014	6.857814	2.462139	Fon
35	Adjarra	28/03/2014	6.531110	2.658831	Fon
36	Gbozounme	28/03/2014	6.620086	2.658906	Fon

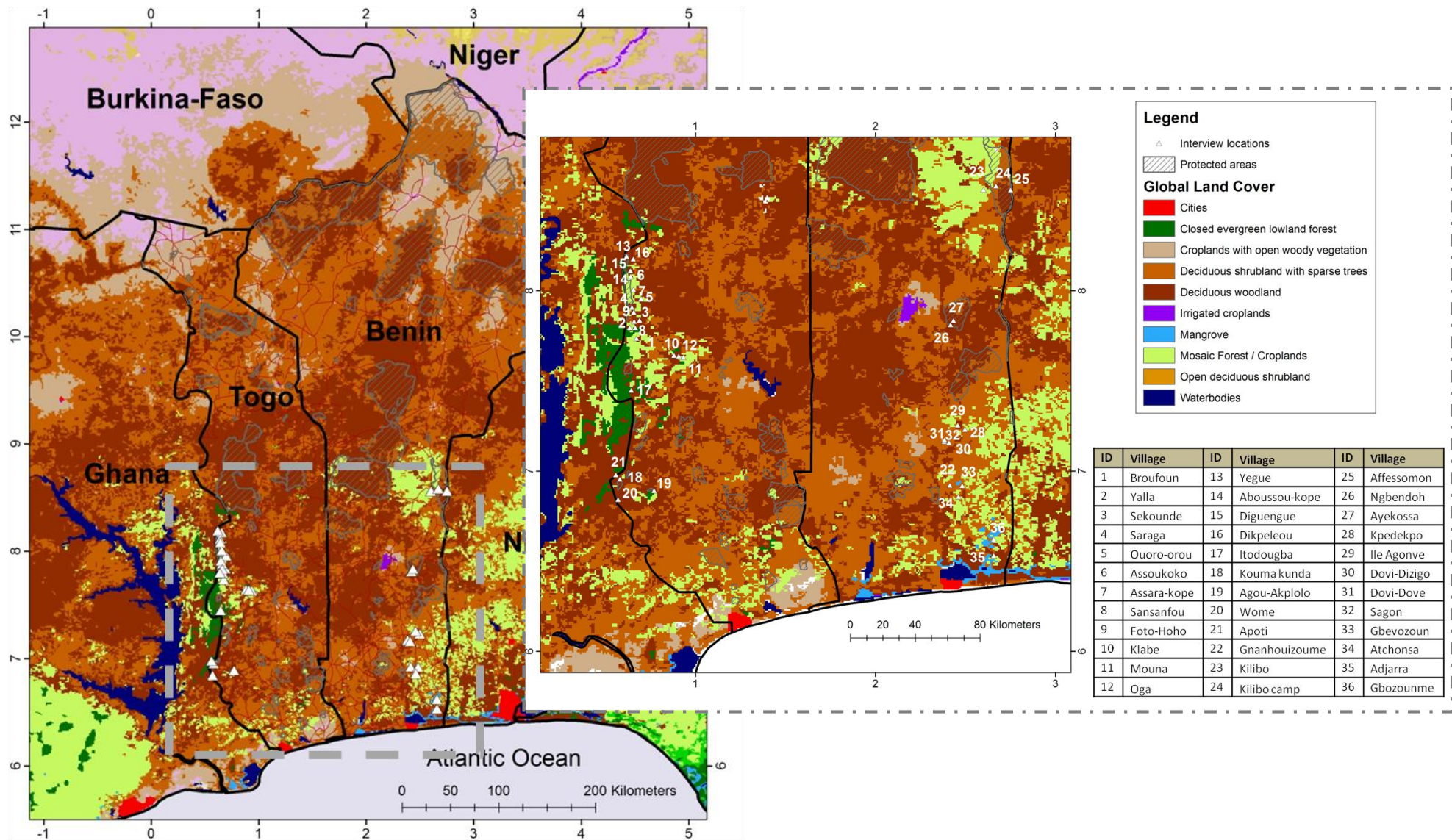


Figure 2. Location of villages interviewed in Togo and Benin. Vegetation layer from: Global Land Cover 2000 (<http://bioval.jrc.ec.europa.eu/products/glc2000/products.php>)

3.3 Reconnaissance walks

We used reconnaissance walks (recces) to search in potential high primate diversity areas. Recces follow a pre-determined direction but deviation from the main bearing is allowed to follow the path of least resistance (White and Edwards, 2000). Recces have the advantage of allowing the team to travel faster through the environment, and thus cover more area in a short period of time, while at the same time having a minimum impact on the environment (Walsh and White, 1999).

While walking recces, the survey team consisted of a maximum of four individuals to minimize noise made by the team and thus increase the chances of detecting primates. The team walked slowly at a speed at approximately 1 km/hr to allow sufficient time to scan the canopy, and to record all direct (i.e. sighting) and indirect (e.g. tracks, dung) signs of mammal presence. We also recorded all direct and indirect signs of anthropogenic presence (e.g. empty gunshells, hunting roads, logging).

4.0 RESULTS AND DISCUSSION

4.1 Interview

Interviews were first concentrated around Assoukoko Forest Reserve in western Togo where chimpanzee's presence had been reported. Our interviews then extended along the Togo-Ghana border, and further into Benin. We included 12 species in our interviews (Table 3), but only the presence of eight of these were recorded (Table 4).

Table 3. Primate species included in interviews.

Scientific name	English name	IUCN Status ⁽¹⁾	Population trend
<i>Pan troglodytes verus</i>	West African chimpanzee	EN	Decreasing
<i>Cercopithecus mona</i>	Mona monkey	LC	Unknown
<i>Cercopithecus p. petaurista</i>	Eastern lesser spot-nosed monkey	LC	Unknown
<i>Cercopithecus e. erythrogaster</i>	Red-bellied guenon	EN	Decreasing
<i>Cercopithecus diana roloway</i>	Diana monkey	EN	Decreasing
<i>Cercocebus atys lunulatus</i>	White-naped mangabey	EN	Decreasing
<i>Cercocebus torquatus</i>	Red-capped mangabey	VU	Decreasing
<i>Chlorocebus tantalus</i>	Tantalus monkey	LC	Stable
<i>Colobus vellerosus</i>	White-thighed colobus	VU	Unknown
<i>Procolobus verus</i>	Olive colobus	NT	Unknown
<i>Papio anubis</i>	Olive baboon	LC	Increasing
<i>Erythrocebus patas</i>	Patas monkey	LC	Decreasing

⁽¹⁾IUCN Red List category: LC=Least Concern; NT=Near-Threatened; VU= Vulnerable; EN=Endangered.

Table 4. Results of interviews conducted in Togo and Benin.

ID	Village	Primate species ⁽¹⁾							
		<i>Cercopithecus mona</i>	<i>Cercopithecus petaurista</i>	<i>Cercopithecus erythrogaster</i>	<i>Chlorocebus tantalus</i>	<i>Colobus vellerosus</i>	<i>Procolobus verus</i>	<i>Papio anubis</i>	<i>Erythrocebus patas</i>
TOGO									
1	Broufoun	R	R		R	*		R	R
2	Yalla	R	R		R	R		R	R
3	Sekounde	R	R		R	*		*	R
4	Saraga	R	R		R	*		*	R
5	Ouoro-orou	R	R		R	*		R	R
6	Assoukoko	R	R		R	*		R	R
7	Assara-kope	R	R		R	R		R	R
8	Sansanfou	R	R		R	R		R	R
9	Foto-Hoho	R	*		R	*		R	
10	Klabe	R	R		R	R		R	R
11	Mouna	R	R		R	*		R	R
12	Oga	R	R		R	R			R
13	Yegue	R				R		R	R
14	Aboussou-kope	R				P		R	R
15	Diguengue	R				R		R	R
16	Dikpeleou	R	R			P		R	R
17	Itodougba	R	R						R
18	Kouma kunda	R	R					R	
19	Agou-Akplolo	R	R		R	*			R
20	Wome				*				R
21	Apoti	R	*		R				
BENIN									
22	Gnanhouzoum	S		S	S	*	R		
23	Kilibo	R			R			R	R
24	Kilibo camp	R			R				R
25	Afessomon	R			R	R		R	R
26	Ngbendoh	R			R				R
27	Ayekossa	R			R				R
28	Kpedekpo	R			R				
29	Ile Agonve	R			R		R		
30	Dovi-Dizigo	R			R				
31	Dovi-Dove	R			R				
32	Sagon	R			R				
33	Gbevozoun	R			R				
34	Atchonsa	R			R		R		
35	Adjarra	R							
36	Gbozounme	R			R				

⁽¹⁾R=reported; S=seen; P=pelt; *=rare

Pan troglodytes verus

To verify the report of chimpanzee's presence from 2010 in Assoukoko Forest Reserve, we interviewed three people in Assoukoko village (including the chief of the village, the initial guide that had reported chimpanzee's presence, and another hunter). All three people had never seen or heard of chimpanzees. They referred to chimpanzees as 'Kessé', which is the local name for baboon. They also had never heard of a primate that sleeps in a nest. We presume the previous researchers may have asked leading questions to which the local people answered positively to agree with what was being said to them.

Overall it was often confusing during interviews as people called baboons chimpanzees in French. They also sometimes pointed to the chimpanzee pictures while describing baboons, and using the local name for baboon. The only reliable report for chimpanzee's presence in Togo came from Yegué where the chief of the village mentioned that he saw a chimpanzee (which he referred to as 'Akatia', the correct name in Ewe) a couple of years ago at the border with Ghana. He mentioned also that they crack palm oil nuts and that is father used to kill them in this area when he was younger (more or less 50 years ago). However, it wasn't clear of how long ago this recent sighting occurred and the exact location (i.e. in Togo or Ghana). Furthermore, none of the four other hunters we interviewed in this village could corroborate his claim, or had seen any chimpanzees in the surrounding forests. We therefore think this person had seen chimpanzees in his lifetime, but not in recent years.

Towards the end of our surveys, while inquiring about potential chimpanzee habitat, we try to obtain more information on Abdoulaye Faunal Reserve in Togo, where suitable forested habitat remains. We were told by researchers, who have conducted flora surveys in this area, that chimpanzees had been reported for this reserve. Once again it wasn't clear if these were actual chimpanzees or baboons. However, given that the habitat appears to be not too degraded, and that this forest host one of the two last remaining elephant populations for the country (Blanc *et al.*, 2007) (maybe indicating a lower hunting pressure), this area would deserve further surveys.

Other primate species

During interviews we also asked to see body parts or pelts of monkeys when available. The only body parts shown to us were white-thighed colobus' pelts, which we saw in

two villages in Togo (Figure 3). The two pelts seen were said to have come from animals killed in the surrounding forests about 6-8 years ago. We also saw common primate species kept as pets in two villages in southern Togo (Figure 4).



Figure 3. White-thighed colobus pelts seen in Togo in the village of a) Aboussou-kope and b) Dikpeleou.



Figure 4. Monkeys kept as pet in Togo: a) *Chlorocebus tantalus* and b) *Erythrocebus patas*.

In Benin, we gathered some reports for the presence of what we think might be the red-capped mangabey. During the interview in Gnanhouizoumé, this species was correctly described and the hunter interviewed depicted a monkey that is mostly terrestrial, that

has red coloring on the head, with the end of the tail white. Unfortunately, this species is now extinct in Gnanhouizoume, but the same species was also reported for Ile Angovia, where further surveys should be conducted to confirm the species reported.

Most primate species occur throughout the Dahomey Gap, except for the spot-nosed and the red-bellied guenon. The spot-nosed monkey's distribution ends mostly with the Upper Guinean Forest, and this species is then replaced by the red-bellied guenon in the Dahomey Gap (Campbell *et al.* 2008a). Both species seems to be decreasing throughout their range and we gathered evidence for the disappearance of the red-bellied guenon from one locality, Gbevozan in Benin.

4.2 Reconnaissance walks

We only conducted reconnaissance walks (recces) around one locality in Togo where there appeared to have a higher chance of detecting primate presence. We searched the forested habitat surrounding Foto-Hoho (number 9 on Figure 2) at the border with Ghana. We spent two days searching for primates and camped close to a river to increase our chances of detecting primate presence through vocalization in the early morning or late evening. The only sign of primate's presence we recorded was a distant call of what may have been a baboon. Other signs of mammal's presence were low. We only recorded tracks of common species such as the Maxwell's duiker (*Philantomba maxwellii*) and the African brush-tailed porcupine (*Atherurus africanus*). The habitat was highly fragmented with many crops and signs of human's presence, such as snares and poaching's trails (Figure 5&6).



Figure 5. Typical fragmented landscape present in the survey area.

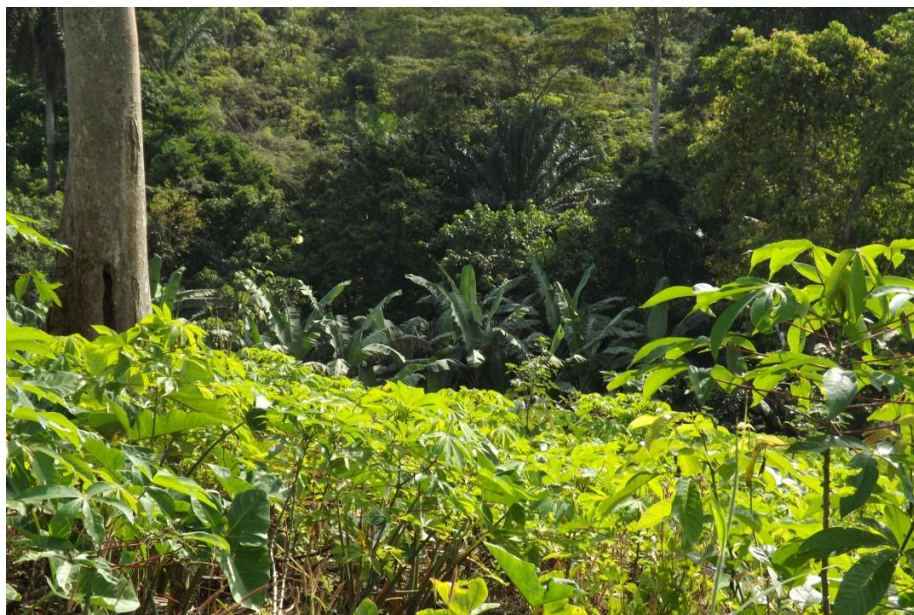


Figure 6. Example of cultivated areas found in the survey area, showing a cassava crop in the foreground and a banana crop in the background.

We also conducted a short recce in Benin to investigate habitat where a hunter had seen chimpanzee nests several years ago. This habitat was highly fragmented and gunshots were heard during our recce, but this site still arbors several primate species. No other locations warranted further field investigations.

4.3 Survey constraints

We had planned to use six camera-traps to increase our probability of detecting chimpanzee presence, however since we gathered no reliable report of recent chimpanzee's presence, these camera-traps were not used.

We also changed slightly our initial survey's objectives which were to concentrate our surveys around Assoukoko Forest Reserve (AFR) in Togo. Given the lack of chimpanzee's report around AFR, we decided to extend our surveys into Benin, and we focus on conducting interviews rather than recces.

4.4 Threats

Throughout Togo and Benin, we found the pressure on remaining forested habitats to be extremely high. Everywhere we stopped in Togo we heard the sounds of chainsaws. We saw wood planks to be loaded on the side of most roads we travel along in Togo (Figure 7). The first author (GC) had previously conducted surveys around the same area 10 years ago and she noticed a sharp increase in the deforestation rate. This is probably a consequence of improvement in road conditions which render remote areas more accessible, and also facilitate transport of goods to main cities.



Figure 7. Signs of deforestation found during surveys: a) truck being loaded with wood planks coming from the surrounding forests; and b) charcoal for sale on the side of the road.

Hunting seems to be also a common activity in all the areas surveyed. However, given the low wildlife density and diversity remaining in most areas, active hunters do not seem as knowledgeable as elders. Furthermore, in some villages wildlife seems to have been completely extirpated, as hunters mentioned that not only they had no primate populations left in their forests, but that also they had difficulty even to find the most common mammal species (e.g. the greater cane rat *Thryonomys swinderianus*).

4.5 Chimpanzee status update

West African chimpanzee's populations are declining rapidly throughout their range due to poaching, deforestation and disease (Campbell *et al.*, 2008; Oates *et al.*, 2008; Kormos *et al.*, 2003). They are listed as extinct from one country, the Gambia, and possibly extinct from three other countries (i.e. Burkina-Faso, Togo and Benin) (Oates *et al.*, 2008). Recent surveys in Burkina Faso failed to locate any remaining chimpanzee populations (Ginn *et al.*, 2013), and our results are also discouraging for the hope of locating any remaining viable population in Togo and Benin.

However, our results provide additional insights into chimpanzee historical distribution in Togo and Benin (Figure 8). Historical chimpanzee's distribution in Togo is restricted to the Togo-Ghana border (Kormos *et al.*, 2003), where we also conducted our surveys. Further south along the Togo-Ghana border, chimpanzee's disappearance seems to go back many years, as people had never seen or heard through their parents of chimpanzees living in this area. Further North along the same border, chimpanzee's disappearance appeared to have occurred about 50 years ago. The most recent account of chimpanzee's presence in the area comes from Yegue, where the specific year of the last sighting could not be confirmed. There is also an unconfirmed chimpanzee's presence report in Abdoulaye Faunal Reserve that would need further investigation.

Previous reports of chimpanzee's distribution within Benin are few and mainly restricted to the southern part of the country close to the Nigerian border (Sayer and Green, 1984). We gathered reports for their historical presence within two protected areas (i.e. Toui Kilibo Classified Forest and Ouémé Boukou Classified Forest), as well as their occurrence outside of protected areas (Figure 8). We didn't survey further North than Toui Kilibo Classified Forest, but chimpanzees may have range up to the border with Burkina Faso as their presence was previously reported in Arli National Park (Ginn *et al.*, 2013), which is contiguous with the Pendjari National Park in Benin. The most recent account of chimpanzee's presence in the country comes from Gnanhouizoume, where a

hunter recalls seeing chimpanzee’s nests and hearing vocalizations in the early 2000’s. His father had previously showed him chimpanzee’s nests in 1995 within the same area. However, he has not seen or heard chimpanzees since that time. This hunter was the only person that accurately described chimpanzee’s nests during the entire duration of our surveys.

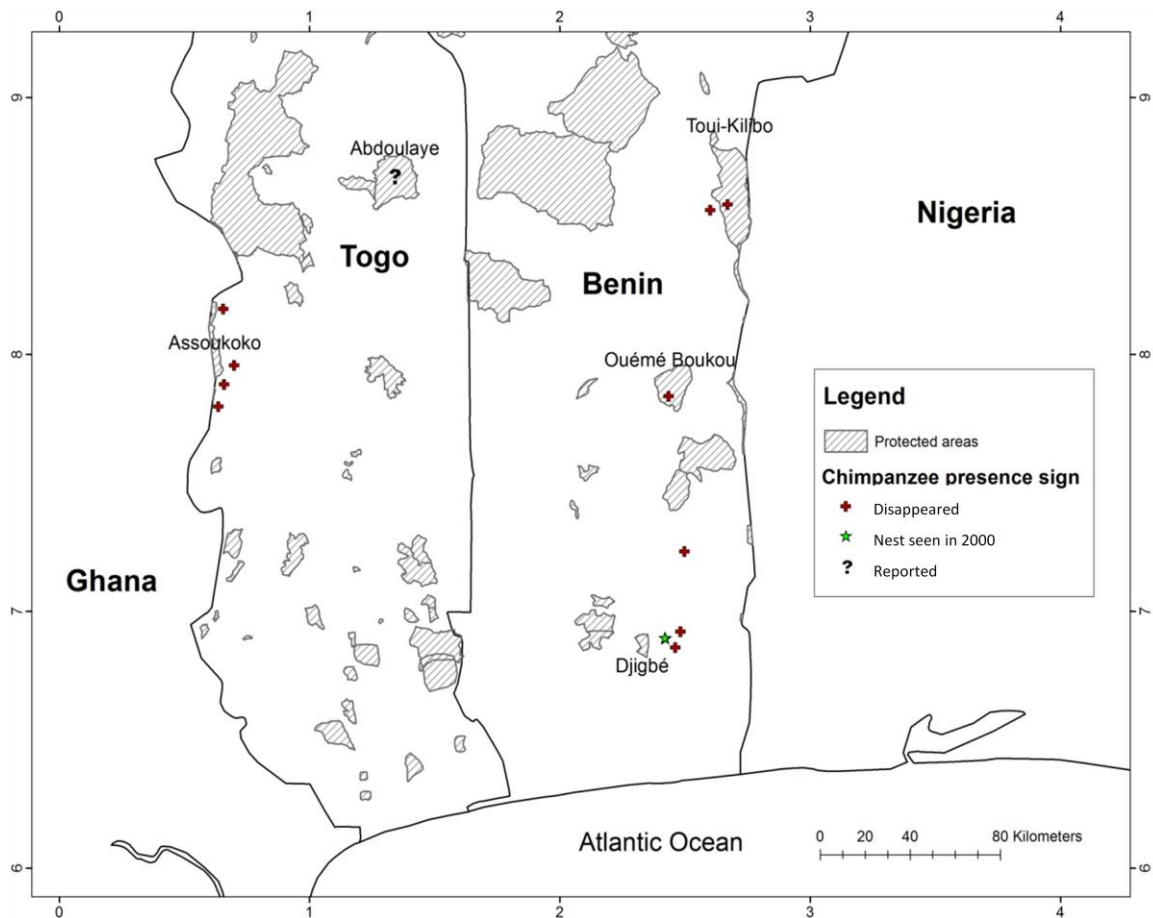


Figure 8. Chimpanzee’s presence signs collected within the survey area.

5.0 RECOMMENDATION FOR FUTURE SURVEYS

Surveys should be conducted in Abdoulaye Faunal Reserve in Togo, where chimpanzees were reported to us during this survey. Bird surveys are planned to be conducted in this area in 2015 (Dowsett-Lemaire, pers.comm.), therefore more information from the area will help to assess the possibility of a chimpanzee population remaining there. Another area that would warrant primate surveys is along the Togo-Ghana border, but on the Ghanaian side, where forested habitat remains.

In the aim of locating remaining populations of red-capped mangabey, further surveys should be conducted along the Benin-Nigeria border, where reports of their presence have been collected.

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