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Chapter 6

Rapid survey of large mammals of North Lorma, Gola and Grebo National Forests

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SUMMARY

A Rapid Assessment Program survey was conducted from 16 November to 12 December 2005, to record the presence of large mammals, including primates, in three Liberian National Forests. Tracks, sound and visual observations and camera phototraps were used in the survey. During the 15 days of field work 29 mammal species were recorded: 21 in North Lorma National Forest, 14 in Gola National Forest and 28 in Grebo National Forest. Nine were primate species, including one prosimian (Demidoff's Galago *Galagoides demidoff*), seven anthropoid monkeys (Sooty Mangabey *Cercocebus atys*, Campbell's Monkey *Cercopithecus campbelli,* Lesser Spot-nosed Monkey *C. petaurista,* Diana Monkey *C. diana*, Western Red Colobus *Piliocolobus badius,* Western Pied Colobus *Colobus polykomos* and Olive Colobus *Procolobus verus*) and one hominoid ape (West African Chimpanzee *Pan troglodytes verus*). Three of these primate species are listed on the IUCN Red List as Endangered (*Pan troglodytes verus*, *Piliocolobus badius* and *Cercopithecus diana*) or Near Threatened (*Colobus polykomos, Procolobus verus* and *Cercocebus atys*). Other large mammal species of conservation concern that were recorded include Forest Elephant *Loxodonta africana cyclotis,* Pygmy Hippopotamus *Hexaprotodon liberiensis*, Leopard *Panthera pardus*, Bongo *Tragelaphus euryceros*, Bay Duiker *Cephalophus* dorsalis, Jentink's Duiker *C. jentinki*, Maxwell's Duiker *C. maxwelli*, Black Duiker *C. niger*, Ogilby's Duiker *C. ogilbyi* and Yellow-backed Duiker *C. silvicultor*. All of the forests were active timber concessions before the war in 1989. Artisanal mining was observed in Gola National Forest and prospecting for large-scale mining is occurring. Although hunting in National Forests is prohibited in Liberia, evidence of poaching was found in all three forests. Despite human pressures, North Lorma, Gola and Grebo National Forests still contain a wealth of large mammal diversity and should be protected.

INTRODUCTION

Primates and other large mammals are indicators of the biodiversity and state of a site and represent an important part of tropical ecosystems (Davies and Hoffmann 2002). North Lorma, Gola, and Grebo National Forests are part of the Upper Guinea hotspot, which includes forests from eastern Sierra Leone to eastern Togo and is considered one of the world's 34 priority conservation areas because of its high degree of biodiversity and endemism (Mittermeier et al. 2004).

Primate densities are high in some forests in the region (Whitesides et al. 1988, Struhsaker and Bakarr 1999, Kormos and Boasch 2003). However, large mammals are highly threatened as a result of the dramatic rate of deforestation which has caused the loss of nearly 75% of the original forest cover (Bakarr et al. 2001). Habitat loss and high hunting pressure account for the loss or reduction of species in the West African forests (Oates 1986, Lee et al. 1988, Bakarr et al. 2001, Kingdon 1997). Many large mammals, including primates, have declined drastically and some forms have been completely extirpated in certain countries (e.g., the recent

extinction of Miss Waldron's Red Colobus *Piliocolobus badius waldroni* in Ghana: Oates et al. 2000). The West African Chimpanzee is believed to be extinct in four West African countries (The Gambia, Burkina Faso, Togo and Benin) and Liberia is one of the few countries, along with Guinea, Sierra Leone, Côte d'Ivoire and Mali, with viable populations (Kormos and Boesch 2003).

The Forest Elephant *Loxodonta africana cyclotis* is found in very small and relict populations in both savanna and forest, and is a species of particular concern due to degradation and fragmentation of suitable habitats (Barnes 1999). Other important large mammals of conservation concern include Leopard *Panthera pardus*, Bongo *Tragelaphus euryceros*, Pygmy Hippopotamus *Hexaprotodon liberiensis,* Zebra Duiker *Cephalophus zebra* and Jentink's Duiker *C. jentinki*.

At a time when deforestation and bushmeat hunting are increasing across Upper Guinea, survey information is particularly important to assess species diversity and density, and monitor long-term effects of habitat changes. As part of a strategy to protect biodiversity, Conservation International undertook a rapid survey of North Lorma, Gola and Grebo National Forests, to support Liberia's Forest Reassessment Programme and to provide appropriate data to set priorities for biodiversity conservation in Liberia and the Upper Guinea region.

METHODS

Surveys were conducted at the end of the rainy season in North Lorma National Forest (08°01'53.6"N, 09°44' 08.6"W) from 20 to 24 November 2005, Gola National Forest (07°27'09.9"N, 10°41'33.2"W) from 28 November 28 to 3 December 2005 and Grebo National Forest (05°24'10.4"N, 07°43'56.2"W) from 6 to 11 December 2005. The three sites were approximately 400m a.s.l. National forests in Liberia are set aside for timber production and the three forests had all been logged before the civil war in 1989. Artisanal mining was observed in Gola National Forest during the survey and two mining companies were prospecting in order to start full-scale mining operations in anticipation of a lifting of the sanctions imposed by the United Nations on Liberia. Forest streams and rivers were flowing and it rained regularly during our survey, most frequently in North Lorma National Forest.

Active and passive methods were used to document the presence of large nonvolant mammals and to count the numbers of individuals when possible. Active methods included direct observations of animals and sounds and indirect information such as dens/nests, dung, tracks, feeding sites and rooting. Observations were made during daily excursions from base camp during the day and at night (when a spotlight was used). Some observations were made opportunistically by our colleagues, but as these may have been repeats, we used this information only to document species presence, rather than adding these records to our counts of individuals.

The passive method included the use of CamTrakker cameratraps, triggered by heat-in-motion (CamTrakker Atlanta, Georgia). Thirteen were used at North Lorma National Forest and seven in both Gola and Grebo National Forests. Each CamTrakker was equipped with a Samsung Vega 77i 35mm camera set on autofocus and loaded with Fujicolor Superia 200 print film. Time between sensor reception and the taking of a photograph was 0.6 seconds. Cameras were set to operate continuously (control switch 1 on) and to wait at least 20 seconds between photographs (control switches 6 and 8 on). They were placed at sites suspected of being frequented by various mammalian species, such as dens, trails, and feeding stations, particularly fruiting trees. Cameras were located approximately 500 m apart and at least 1000 m from base camp. We used this method to calculate observation rates for each site. Instead of the observer making observations along a standard transect, "observations" moved along routes in front of fixed cameras (observers). For shy mammals under severe hunting pressure camera-trapping might be more effective than walking transects, especially when observers have different levels of expertise (Sanderson and Trolle 2005, Karanth and Nicholas 1998).

RESULTS

We observed, heard or photographed a total of 29 large mammal species: 21 in North Lorma National Forest, 14 in Gola National Forest, and 28 in Grebo National Forest (Appendix 12). Among these were four Endangered mammal species (West African Chimpanzee *Pan troglodytes verus*, Western Red Colobus *Piliocolobus badius*, Diana Monkey *Cercopithecus diana* and Pygmy Hippopotamus *Hexaprotodon liberiensis*); two Vulnerable species (Forest Elephant *Loxodonta africana cyclotis* and Jentink's Duiker *Cephalophus jentinki*); one Lower Risk/Conservation Dependant species (African Buffalo *Syncerus caffer*); and nine Lower Risk/Near Threatened species (Western Pied Colobus *Colobus polykomos*, Olive Colobus *Procolobus verus*, Sooty Mangabey *Cercocebus atys*, Bay Duiker *Cephalophus dorsalis*, Maxwell's Duiker *C. maxwelli*, Black Duiker *C. niger*, Ogilby's Duiker *C. ogilbyi*, Yellow-backed Duiker *C. silvicultor* and Bongo *Tragelaphus euryceros*) (IUCN 2006). The cameratraps obtained two photographs in North Lorma National Forest, one in Gola National Forest, and three in Grebo National Forest. The six photographs included three of Maxwell's Duiker *Cephalophus maxwelli* and one each of Black Duiker *C. niger*, Yellow-backed Duiker *C. silvicultor* and Jentink's Duiker *C. jentinki*. One photograph of a ground-dwelling bird (White-crested Tiger Heron *Tigriornis leucolopha*) was also taken.

With the observation of tracks and dung, and the use of cameratraps, we recorded the presence of Pygmy Hippopotamus, Forest Elephant, and Leopard in North Lorma and Grebo National Forests. In these two forests we observed primates every day, whereas in Gola National Forest we did so on only four occasions. We recorded eight primate species in North Lorma National Forest, three in Gola National Forest, and nine in Grebo National Forest. In North Lorma National Forest, one old and seven rotten tree nests confirmed the continued presence of West African Chimpanzees, and in Grebo National Forest we heard their vocalizations (once) and drumming (daily), but direct sightings were not made. In Grebo National Forest we also found West African Chimpanzee nut-cracking sites. The fruits cracked were mainly those of *Parinari excelsa.* During an encounter with a large group of Western Red Colobus and Diana and Campbell's Monkeys, West African Chimpanzee calls sent the monkeys looking for cover and remaining silent for about 30 minutes. No evidence of West African Chimpanzees was found in Gola National Forest but hunters reported that they still occurred in some parts of the forest.

African Buffalo *Syncerus caffer*, Red River Hog *Potamochoerus porcus* and Olive Colobus *Procolobus verus* were documented only from North Lorma National Forest. This is probably due to the short duration of the survey and not to fundamental differences in mammalian faunas in the study areas.

Although Royal Antelope *Neotragus pygmaeus*, Zebra Duiker *Cephalophus zebra* and Aardvark *Orycteropus afer* were not recorded, local hunters reported that these species still occurred in North Lorma and Grebo National Forests. Hunters also reported the latter two at Gola National Forest, as well as other species we did not observe there, such as West African Chimpanzee, Western Red Colobus, Western Pied Colobus, and Pangolin.

DISCUSSION

The diversity and density of large mammals recorded during the present survey is high compared to results from other RAP surveys in Guinea, Côte d'Ivoire, and Ghana (Struhsaker and Bakarr 1999, Barrie and Kante 2004, Herbinger and Tounkara 2004, Sanderson and Trolle 2005, Barrie and Aalangdong 2005). This offers high potential for the conservation of primates and other large mammals in the Upper Guinean forest region. Although our survey lasted less than a month, we noted many species of conservation concern in reasonable numbers (Appendix 12), among which were six primates (*Cercocebus atys, Cercopithecus diana, Piliocolobus badius, Colobus polykomos, Procolobus verus* and *Pan troglodytes verus*) and six other large mammal species (*Hexaprotodon liberiensis, Cephalophus jentinki, C. niger, C. silvicultor, C. dorsalis, Syncerus caffer, Tragelaphus euryceros* and *Panthera pardus*). This offers hope for the future of large mammal species in Liberia.

However, the protected areas on which these species depend may become too small, fragmented and overexploited for their long-term survival, as these forests are threatened by human actions including commercial logging, mining, agricultural activities and bushmeat trade. Current distribution patterns of most large mammals and observed human activities in the areas under investigation in Liberia reflect these increasing pressures.

Logging is locally intense and destructive in many countries in West Africa and has been cited as the primary cause of habitat destruction in Sierra Leone (Bakarr et al. 2001). Primary forests outside protected areas are targeted for timber extraction and secondary forests are being encroached upon. Before the war, Liberia was a major source of timber and this has caused, and will continue to cause, forest fragmentation and the subsequent loss of large mammals. In particular, the Gola National Forest was being surveyed for commercial logging and mining. The Liberian civil conflict also negatively impacted upon large mammals as most of the forests were abandoned by government authorities and plundered by rebels engaged in illegal mining and logging.

Secondary impacts of resource extraction such as roads and trails are equally destructive to the forest. Logging roads create easy access for hunters (and others) into areas that were otherwise not penetrable (Sayer et al. 1992, Wilkie et al. 1992, Oates 1999). As humans move deeper into the forests, diseases to wildlife increase, especially to primates that have had no previous contact with humans (Chapman et al. 2006). Workers often support themselves and their families on bushmeat, consume trees for fuel wood and clear areas to plant crops. In addition, the increase in human population is accelerating the conversion of remaining forest habitats into human-dominated settlements and agricultural landscapes. Local communities cause additional habitat degradation by establishing farms and hunting within the boundaries of forest reserves.

During the survey we used extensive networks of trails created by heavy machinery and poachers. The roads and trails fragment the forest reducing the area for wildlife. Collateral damage from logged trees was extensive and many untargeted trees had been damaged. We saw evidence of trees that were cut and abandoned.

As the human population grows, bushmeat markets develop. Large mammals, including primates, are extremely rare in much of West Africa as a result of unregulated exploitation, habitat loss and the increasing demand for bushmeat (Davies 1987, Grubb et al. 1998, McGraw 1998, Davies and Hoffmann 2002). Populations of forest-dependent animals have been reduced to such low levels that a number of them can no longer be considered viable. Large mammals, prime targets for the bushmeat trade, are usually the first to be eliminated from forest areas. As in most other countries in West

and Central Africa, people in Liberia have always hunted and relied on bushmeat to provide them with protein. Species most preferred by hunters include antelopes, forest pigs, and primates, while smaller species like the Cane Rat *Thryonomys swinderianus* and Giant Rat *Cricetomys* spp. are taken opportunistically (Eves and Bakarr 2001). The bushmeat trade is a lucrative business in Liberia, as in other parts of Africa (Oates 1986, Barrie and Kante 2004, Sanderson and Trolle 2005, Barrie and Aalandong 2005), and the amount of bushmeat coming out of forest reserves continues to increase, despite laws banning hunting. The lack of law enforcement is often a major problem. The apparent extinction of Miss Waldron's Red Colobus *Piliocolobus badius waldroni* has been attributed to hunting and the demand for bushmeat (Oates et al. 2000). West African Chimpanzees are the most threatened of the three subspecies mainly due to habitat loss, high hunting pressure and the pet trade (Kormos and Boesch 2003). Around the forest reserves surveyed during the RAP, hunting was found to be a major source of meat. We found two Sooty Mangabeys and a Marsh Mongoose being kept by local villagers and through conversations it was apparent that these animals would be eaten.

Despite the various threats, Gola, Lorma and Grebo National Forests contain an important representation of the mammalian diversity of the region and Liberia and thus the inclusion of these forests into a protected area system has great potential for the conservation of these species in the Upper Guinea region.

CONSERVATION RECOMMENDATIONS

Raise both North Lorma and Grebo National Forests to National Park status. Eight primate species were recorded in North Lorma National Forest and nine primate species in Grebo NF. In comparison, Sapo National Park, which is the "core of an immense forest block that has not been disturbed or fragmented to the same extent as most of the Upper Guinea Forest Ecosystem, and as such it offers fantastic conservation opportunities" (Waitkuwait 2001), is known to support nine species of primates including West African Chimpanzees (Waitkuwait 2003). Of the mammal species noted in both forests, over half are of conservation concern including 63% of the primate species in North Lorma National Forest and 67% in Grebo National Forest. In Grebo National Forest primate populations of Western Red Colobus, Western Pied Colobus and Diana Monkeys were numerous and were seen daily in large groups. In addition, the presence of Pygmy Hippopotamus, Jentink's Duiker, Forest Elephant, Leopard and Bongo make this forest very important for large mammal conservation.

Create a biological corridor to connect the Gola National Forest in Liberia and the Gola Forest in Sierra Leone. Both Sierra Leone and Liberia have had very brutal civil conflicts and both countries can now work towards making a joint effort aimed at protecting biodiversity through the creation of a "Peace Park". This would not only enhance conservation efforts but could also help to maintain and foster peace and stability between the two countries.

Further surveys are strongly recommended for this site as the areas investigated were relatively degraded due to mining and poaching. Despite the degradation, five species of conservation concern were recorded with hunters indicating that additional species, such as West African Chimpanzee, were present in the forest.

With the formation of a transboundary park, Liberia and Sierra Leone could undertake a joint monitoring program of migrant and threatened mammal species such as West African Chimpanzee, Forest Elephant, Pygmy Hippopotamus, Bongo, Leopard, etc.

Halt all human activities that exploit and damage the forest and wildlife (e.g. logging, mining, hunting). Logging and mining interests are currently sizing up the forests for resource extraction. Hunters are using networks of old logging roads and poaching trails to kill wildlife for food and the bushmeat trade.

True protection for Liberia's forest and large mammal populations is not possible without the support of the surrounding communities. Therefore, the following is also recommended for North Lorma, Gola and Grebo National Forests:

Establish a conservation education and awareness program involving the local communities so that people know and understand the importance of the forest and biodiversity conservation.

Establish community forest monitors and wildlife guards and train them in patrolling techniques. Regular monitoring of the forest by monitors and guards is necessary to deal with illegal hunting and trade in bushmeat which is occurring.

Conduct further survey work during different seasons to get a complete picture of the diversity and abundance of the large mammal species in the three reserves.

Monitor species of conservation concern: West African Chimpanzee *Pan troglodytes verus*, Western Red Colobus *Piliocolobus badius*, Diana Monkey *Cercopithecus diana*, Pygmy Hippopotamus *Hexaprotodon liberiensis*, Forest Elephant *Loxodonta africana cyclotis*, Jentink's Duiker *Cephalophus jentinki*, African Buffalo *Syncerus caffer*, Western Pied Colobus *Colobus polykomos,* Olive Colobus *Procolobus verus*, Sooty Mangabey *Cercocebus atys*, Bay Duiker *Cephalophus dorsalis*, Maxwell's Duiker *Cephalophus maxwelli*, Black Duiker *Cephalophus niger*, Ogilby's Duiker *Cephalophus ogilbyi*, Yellow-backed Duiker *Cephalophus silvicultor*, Bongo *Tragelaphus euryceros* and Leopard *Panthera pardus*. This could be done in collaboration with Liberian universities, NGOs and other research institutions. Field or research stations can also act as deterrents to hunters and other illegal activities.

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Appendix 12

Large mammal species recorded in North Lorma, Gola and Grebo National Forests.

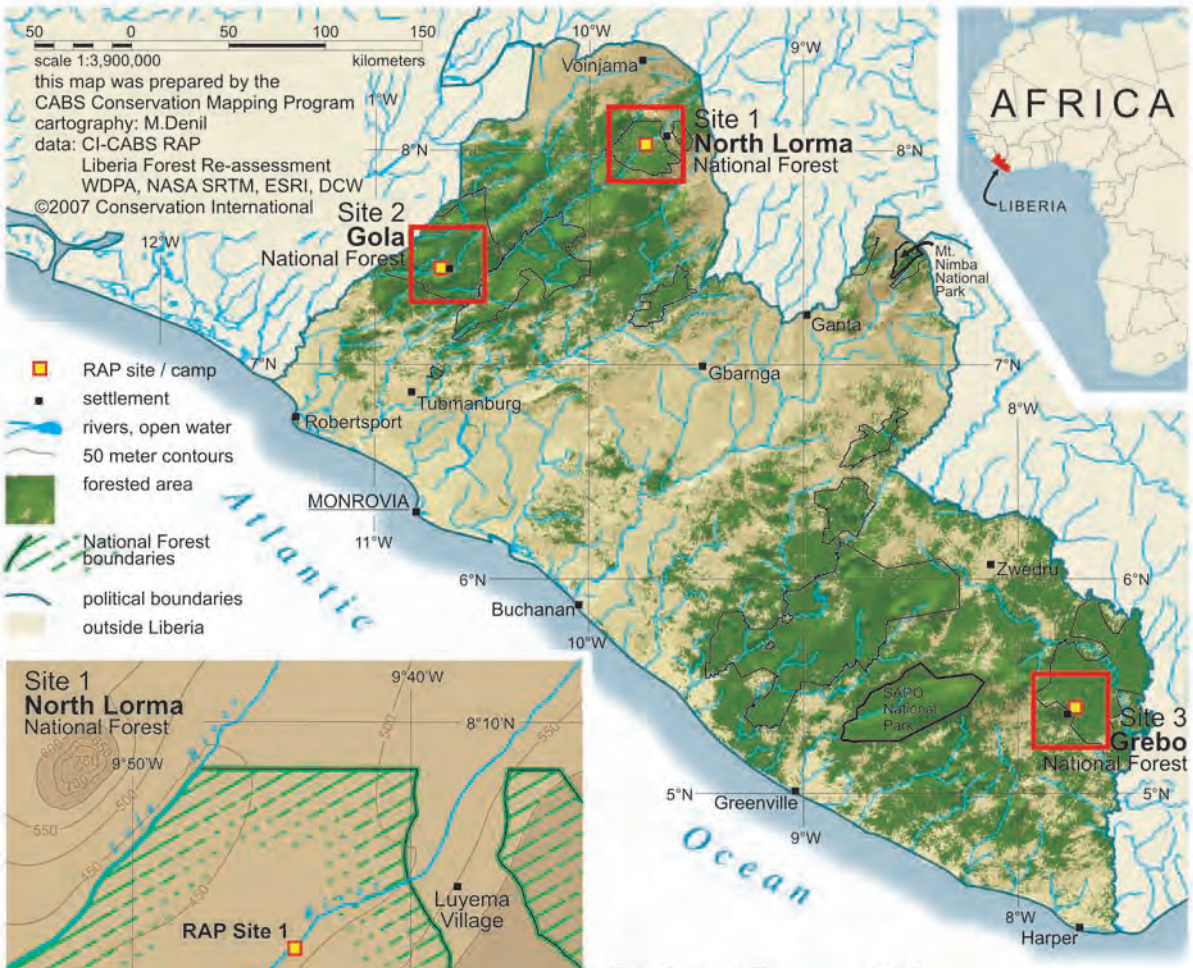
Abdulai Barrie

Site: NL=North Lorma, Go=Gola, Gr=Grebo
Evidence: H=heard, S=Seen, T=Tracks, P=Phototrap, O=Other
(#)=number of individuals, (*)=heard >20 times
IUCN Status (2006): EN=Endangered, VU=Vulnerable, LR/cd=Lower Risk/conservation dependant, LR/nt=Lower Risk/near threatened, LR/lc=Lower Risk/least concern, LC=Least Concern

Species	Common Name	NL	Go	Gr	Evidence	IUCN
PRIMATES						
Hominidae						
Pan troglodytes verus	Chimpanzee	x		x	H[Gr (3)] O[NL (nests), Gr (nut cracking, dung)]	EN
Colobidae						
Piliocolobus badius	Western Red Colobus	x		x	S[NL (3), Gr (25+)]	EN
Colobus polykomos	Western Pied Colobus	x		x	H[Gr (2)] S[Gr (3)]	LR/nt
Procolobus verus	Olive Colobus			x	S[(5+)]	LR/nt
Cercopithecidae						
Cercocebus atys	Sooty Mangabey	x	x	x	H[Go (2*), Gr (4)] S[Go (10+), Gr (12+)] O[Go (2 seen in village)]	LR/nt
Cercopithecus diana	Diana Monkey	x		x	H[NL (2), Gr (*)] S[NL (1), Gr (50+)]	EN
Cercopithecus campbelli	Campbell's Monkey	x	x	x	H[NL (2), Go (6*), Gr (*)] S[NL (2), Gr (15+)]	LR/lc
Cercopithecus petaurista	Lesser Spot-nosed Monkey	x		x	H[Gr (*)] S[NL (2), Gr (13)]	LR/lc
Galagonidae						
Galagoides demidoff	Demidoff's Galago	x	x	x	H[NL (3), Gr (*)] S[Gr (7)]	LR/lc
CARNIVORA						
Felidae						
Panthera pardus	Leopard			x	T O[dung]	LC
Herpestidae						
Herpestes sanguinea	Slender Mongoose	x	x	x	S[NL (1), Go (2), Gr (1)]	LR/lc
Atilax paludinosus	Marsh Mongoose	x	x	x	S[NL (5), Go (8), Gr (2)] T[Gr] O[Go (1 seen in village)]	LR/lc
Viverridae						
Civettictis civetta	African Civet	x		x	T[Gr] O[NL (dung), Gr (dung)]	LR/lc
Nandinidae						
Nandinia binotata	African Palm Civet	x	x	x	H[NL (*), Gr (*)]	LR/lc

continued

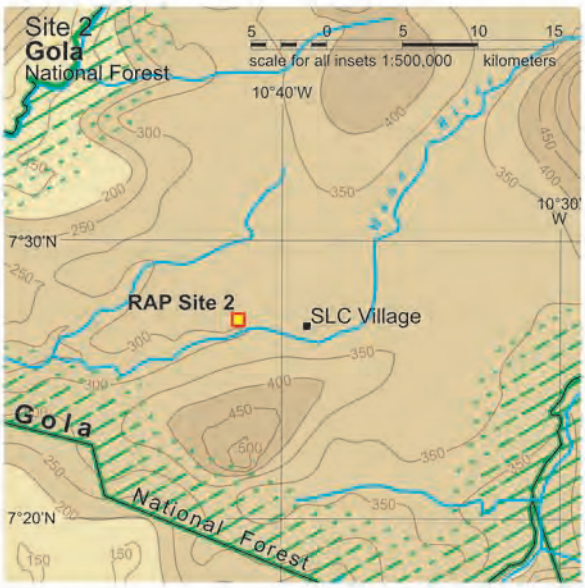
Species	Common Name	NL	Go	Gr	Evidence	IUCN
HYRACOIDEA						
Procaviidae						
Dendrohyrax dorsalis	Western Tree Hyrax	x	x	x	H[NL (5), Gr (*)]	LC
PROBOSCIDEA						
Elephantidae						
Loxodonta africana cyclotis	Forest Elephant	x	x	x	T[NL, Go, Gr] O[NL (dung), Go (dung), Gr (dung)]	VU
ARTIODACTYLA						
Bovidae						
Cephalophus dorsalis	Bay Duiker	x	x	x	S[NL (1), Go (1), Gr (1)] T[Go, Gr]	LR/nt
Cephalophus jentinki	Jentink's Duiker			x	P[(1)]	VU
Cephalophus maxwelli	Maxwell's Duiker	x	x	x	S[NL (1), Go (1), Gr (3)] T[NL, Gr] P[NL (1), Gr (2)] O[Gr (dung)]	LR/nt
Cephalophus niger	Black Duiker	x	x	x	S[NL (1), Gr (1)] T[Go, Gr]	LR/nt
Cephalophus ogilbyi	Ogilby's Duiker	x		x	S[NL (1), Gr (1)] T[NL] O[NL (dung)]	LR/nt
Cephalophus silvicultor	Yellow-backed Duiker			x	T P[(1)]	LR/nt
Syncerus caffer	African Buffalo	x			T O[dung]	LR/cd
Tragelaphus euryceros	Bongo			x	T	LR/nt
Tragelaphus scriptus	Bushbuck	x	x	x	S[Gr (1)] T[NL, Go, Gr] O[Go (dung), Gr (dung)]	LR/lc
Hippopotamidae						
Hexaprotodon liberiensis	Pygmy Hippopotamus			x	T O[dung]	EN
Suidae						
Potamochoerus porcus	Red River Hog			x	T O[rooting]	LR/lc
RODENTIA						
Hystricidae						
Atherurus africanus	Brush-tailed Porcupine	x	x	x	T[Go, Gr]	LC
PHOLIDOTA						
Manidae						
Uromanis tetradactyla	Long-tailed Pangolin		x	x	O[Go (scales), Gr (scales & feeding site)]	LR/lc

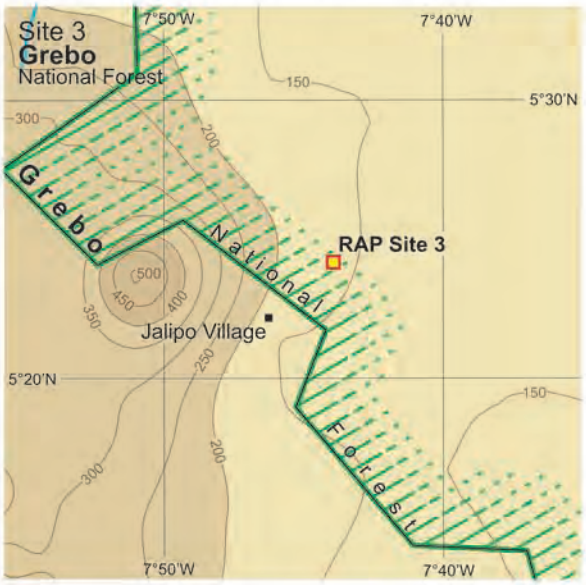


RAP Expedition
LIBERIA

North Lorma, Gola, & Grebo National Forests

November 16 to December 14, 2005





Annika Hillers

The many rocky streams in Gola National Forest represent a typical habitat for a number of frogs including the Endangered *Amnirana occidentalis*.

Peter Hoke

The community of Luyema welcoming the RAP team.

Annika Hillers

Bufo maculatus was recorded in all three National Forests.

Peter Hoke

Ara Monadjem and local guide setting up mist nets to capture bats in North Lorma National Forest.

Peter Hoke

Aerial view of forest in northwestern Lofa County.

Peter Hoke

A large rock with 20 Yellow-headed Picathartes, *Picathartes gymnocephalus*, nests in good condition in North Lorma Nationa Forest. This Upper Guinea endemic is a generally scarce and very local resident in the forest zone. Liberia probably holds the largest population of this Vulnerable bird species.

Peter Hoke

The records of *Rhinolophus hillorum* from Gola National Forest constitute a range extension of approximately 100 km to the southwest. It is a near-endemic to West Africa and is listed by IUCN as Vulnerable due to habitat loss within its limited distribution.

Peter Hoke

Members of the RAP team at the UNMIL compound in Fishtown.

Peter Hoke

Amandu K. Daniels (left) and Carel Jongkind (right) noting *Drypetes* sp., a plant species new to science, in Grebo National Forest.

Annika Hillers

The Endangered *Phyronbatrachus* cf. *annulatus* found in Grebo National Forest. Further genetic analyses will clarify if this specimen can be referred to a known species (*Phrynobatrachus annulatus*) or if it is new to science and thus probably a Liberian endemic.

Peter Hoke

A scaly-tailed squirrel, *Anomalurus* cf. *pusillus*, found inside a tree in Grebo National Forest. This is only the third record of this species for West Africa.

Carel C.H. Jongkind

River next to the base camp in North Lorma National Forest.

Carel C.H. Jongkind

Cola buntingii, an Upper Guinea endemic plant species.

Peter Hoke

Unloading gear from an UNMIL helicopter to pickup trucks at Voinjama.

Carel C.H. Jongkind

Psychotria ombrophila, an Upper Guinea endemic plant species.

Ara Monadjem

White-browed Forest Flycatcher, *Fraseria cinerascens*, an Upper Guinea endemic, that was mist-netted in North Lorma National Forest.

A Rapid Biological Assessment of North Lorma, Gola and Grebo National Forests, Liberia

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