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A West African Black-and-White Colobus Monkey, *Colobus polykomos dollmani* Schwarz, 1927, Facing Extinction

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Abstract: The conservation status of several African colobines has been studied extensively during recent years; however, this is not the case for the West African black-and-white colobus monkeys, notably *Colobus polykomos dollmani* of Côte d'Ivoire. In 2003 and 2004, we conducted surveys in three forest reserves and Marahoué National Park between the Sassandra and Bandama rivers in Côte d'Ivoire to assess the status of the primates there, with a special focus on *Colobus p. dollmani*. Thirteen primate taxa were expected in the south-central part of the interfluvial region. We confirmed the presence of eight, including *Colobus p. dollmani*. Only two of the eight taxa, however, were found to be relatively frequent in all of the four protected areas: *Cercopithecus (c.) lowei* and *Cercopithecus p. petaurista*. The presence of *Cercopithecus (diana) roloway* and *Pan troglodytes verus* in all four reserves could only be inferred from interviews with local people. *Procolobus badius badius* was mentioned as present by local people in only one reserve. We detected *Colobus p. dollmani* in only one of the forests visited but indirect evidence of its presence in a second reserve. Poaching and habitat destruction are the main threats to this subspecies as well as to the other taxa. Without immediate and vigorous action, this colobine taxon will probably be extinct in the near future.

Résumé: L'état de conservation de plusieurs espèces de Colobes d'Afrique a beaucoup été étudié ces dernières années. Cependant, cela n'a pas été le cas des Colobes noirs et blancs d'Afrique de l'ouest, en particulier *Colobus polykomos dollmani* de Côte d'Ivoire. Par conséquent, des investigations ont été menées de 2003 en 2004 dans trois forêts classées et le Parc National de la Marahoué situés entre les fleuves Sassandra et Bandama en Côte d'Ivoire, en vue d'établir le statut des espèces de primates vivant dans ces forêts avec un intérêt particulier pour *Colobus p. dollmani*. D'après les informations recueillies, treize taxa de primates pouvaient être rencontrés dans la partie centre-sud de cette région inter fluviale. La présence de huit taxa (incluant *Colobus p. dollmani*) a été confirmée. Cependant, seulement deux ont été plus fréquemment rencontrés. Ces deux taxa étaient *Cercopithecus (c.) lowei* et *Cercopithecus p. petaurista*. La présence de *Cercopithecus (diana) roloway* et *Pan troglodytes verus* a été signalée au cours d'interviews menées auprès de villageois dans toutes les réserves. Celle de *Procolobus badius badius* n'a été signalée que dans une seule forêt. *Colobus p. dollmani* n'a été observé que dans une seule des forêts visitées, alors que sa présence a été mentionnée dans une seconde forêt par les villageois. La chasse et la destruction des forêts sont les principales sources de menaces pour cette sous-espèce mais aussi pour d'autres taxa. Sans une action immédiate et vigoureuse, ce Colobe va probablement disparaître dans un proche futur.

Key Words: Black-and-white colobus monkey, *Colobus polykomos dollmani*, endemic, primate survey, extinction, conservation, south-central Côte d'Ivoire

Introduction

With at least 20 different taxa, Côte d'Ivoire has a high primate diversity. Most of these taxa are listed as threatened on the IUCN Red List (IUCN 2006), and three are among the world's 25 most threatened primates—*Cercocebus atys lunulatus*, *Cercopithecus diana roloway*, and *Procolobus badius waldronae* (see Mittermeier *et al.* 2006), the last considered already extinct by Oates *et al.* (2000), although new evidence suggests that it still survives (McGraw 2005). Most studies on primates in Côte d'Ivoire have focused on the western part of the country, especially the Taï National Park (for example, Noë and Bshary 1997; Wachter *et al.* 1997; Boesch and Boesch-Acherman 2000). Long-term field studies are still underway in the Taï forest, including the Taï Monkey Project (TMP) and the Taï Chimpanzee Project (TCP). Surveys for *C. diana roloway* and *P. badius waldronae* have been conducted in the eastern part of the country (McGraw *et al.* 1999; Oates *et al.* 2000), but only a few studies have focused on central Côte d'Ivoire, between the Bandama and Sassandra rivers. This region is of special interest because it is a zone where ranges of related taxa (including primates) overlap and where hybridization may occur (Kingdon 1997).

There are two species of black-and-white colobus in West Africa, *Colobus polykomos* (Zimmerman, 1780), the king or western pied colobus, and *C. vellerosus* (I. Geoffroy, 1834), the ursine or Geoffroy's pied colobus (see Oates and Trocco 1983; Oates *et al.* 1994). Both occur in Côte d'Ivoire (Fig. 1). *Colobus vellerosus* ranges from the Bandama River to western Nigeria (Oates *et al.* 1994; Kingdon 1997). *Colobus polykomos* ranges from Guinea to the Sassandra River in western Côte d'Ivoire (Napier 1985; Oates *et al.* 1994; Groves 2001).

The form *dollmani*, Dollman's colobus, was first described by Schwarz (1927) as a subspecies of *Colobus polykomos* (the single species of black-and-white colobus that he recognized; see Schwarz 1929), occurring east of the Sassandra River in the narrow strip extending to the Bandama

River. *Colobus p. dollmani* differs from *C. p. polykomos* by coat pattern, and especially by a white band on the thighs; a characteristic of *C. vellerosus*. While *dollmani* continues to be referred to by some authors as a subspecies of *polykomos* (see for example, Napier 1985; Kingdon 1997), the recognition of *C. vellerosus* as a valid species (distinct from *polykomos*) by Oates and Trocco (1983; see also Grubb *et al.* 2003), and its closer resemblance to *C. vellerosus*, led Groves (2001) and Grubb *et al.* (2003) to refer to it as *C. vellerosus dollmani*, and as a junior synonym of *C. vellerosus*.

Dandelot (1974) pointed out that "Booth (1954) observed interbreeding between [the subspecies] *vellosus* and *dollmani* in the Bouaflé Forest Reserve" (p.30), and that Rahm (1970) had supposed *dollmani* to be a hybrid between *vellosus* and *polykomos*. Groves *et al.* (1993), Oates (1996), Kingdon (1997), Groves (2001, 2005) and Grubb *et al.* (2003) all consider it to be a hybrid between *C. polykomos* and *C. vellerosus*. Groves (2001, 2005) and Grubb *et al.* (2003) listed it as a junior synonym of *C. vellerosus*. It is not known, however, whether it constitutes a consistent morphotype or whether there are local populations that differ according to the degree of gene influx from *C. polykomos* or *C. vellerosus*. A number of studies have focused on aspects of the socioecology of *C. polykomos* (see Moresco-Pimentel 1994; Nijssen 1999; Bitty 2001), but information on *C. p. dollmani* is still scarce.

The primates in Côte d'Ivoire are threatened by hunting for bushmeat and the clear-cutting of forest for agriculture. *Colobus p. dollmani* is endemic to the forests of Côte d'Ivoire, occupying just a small range from the Sassandra River to the Bandama River. This and our ignorance of its status make it particularly vulnerable to extinction. For this reason we carried out surveys to obtain an assessment of the general status of primates in central Côte d'Ivoire, between April 2003 and October 2004, in Dassioko, Bolo West, and Niégré forest reserves and Marahoué National Park, focusing especially on *C. p. dollmani*. We also interviewed people whenever we could on the presence and absence of all the primates with ranges extending into central Côte d'Ivoire, including, besides *C. p. dollmani*, *Perodicticus p. potto*, *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, *Cercopithecus (diana) roloway*, *Chlorocebus (aethiops) sabaesus*, *Cercocebus atys lunulatus*, *Papio anubis*, *Procolobus verus*, *Procolobus b. badius*, and *Pan troglodytes verus*. *Galagoides demidoff* and *Galagoides thomasi* are also expected to occur in southern Côte d'Ivoire, but we neither looked for them in particular nor did we ask about them in the interviews.

Methods

Prior to our survey, we consulted relevant literature from the Société de Développement des Forêts en Côte d'Ivoire (SODEFOR 1996; Anonymous 1999) to learn more of the historical distribution of *C. p. dollmani* and the status of the forests and their wildlife. Previous studies in the protected areas of Côte d'Ivoire noted the presence of *C. p. dollmani* in Marahoué National Park, and Bolo, Dassiéko, and Niégré for-

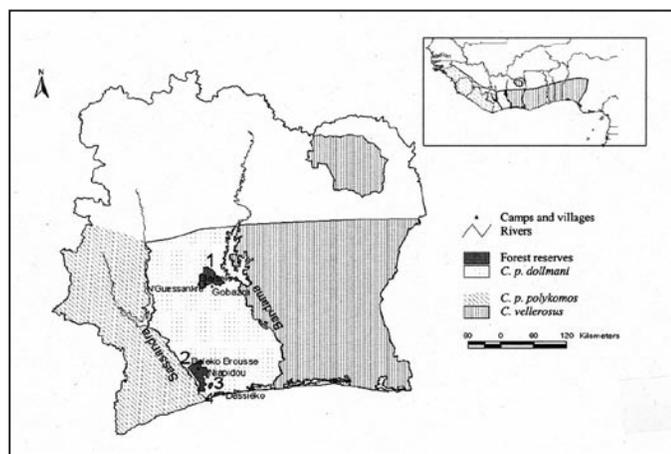


Figure 1. The approximate distribution of West African black-and-white colobus monkeys in West Africa and in Côte d'Ivoire. Rivers suggested as geographic barriers for a number of species and survey sites are also indicated (1 = Marahoué; 2 = Niégré; 3 = Bolo West; 4 = Dassiéko).

est reserves (Fig. 1). Relying on this information, we started our investigations in these forest reserves and provisionally treated all black-and-white colobus monkeys from the region between the Sassandra and Bandama rivers as *C. p. dollmani*. We interviewed people (particularly hunters) in the nearby villages, asking them to describe the primates they knew and to mimic their calls. We showed them photographs or paintings of the species afterward to confirm their identifications. We gathered information about the past and recent presence of primates, particularly *C. p. dollmani*, in the forest reserves and in neighboring forest fragments. We also visited a number of restaurants in these villages to gather information on primate species being offered as bushmeat.

We surveyed on foot, walking slowly and quietly along old logging roads and existing paths at about 1–1.25 km/hour for an average of 10 hours per day. During that time, we walked the paths repeatedly, noting any visible or acoustic sign of the presence of primates, and determining their position with a global positioning system. Primates in these forests are hunted and therefore shy, and we were usually unable to approach them closer than about 50 m. We began early in the morning at 06:00 and continued until 13:00. After an hour's rest, we continued the survey until 18:30. We collected fecal samples of *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, *Cercocebus atys lunulatus*, and *C. p. dollmani* for genetic analysis. Once a group of monkeys was detected we stayed with it and observed it for as long as we could. We used Kingdon (1997) for the identification of species and subspecies.

Because we noted mainly just presence-absence, our survey method did not allow for reliable estimates of population densities. We distinguished two reliability levels concerning our data. A taxon was classified as present in a certain forest reserve if we saw or heard it directly or if we found it on sale as bushmeat in nearby villages. A taxon was classified as most likely present if it was mentioned only as present in interviews. Furthermore, we defined three population density categories: a species was considered frequent when it was detected at least once a day during the survey; rare when observed occasionally or at least once in three days of survey or found as bushmeat in the restaurants; and very rare when it was not encountered during the survey, but its presence was reported by hunters (seen in last 12 months).

Survey sites

The location of the survey sites is shown in Figure 1. The Dassiéko Forest Reserve (11,317 ha) is situated between the towns of Fresco and Sassandra (5°02'44"N, 5°48'19"W). In 1990, this forest was divided into Dassiéko South (7,980 ha) and Dassiéko North (3,337 ha) by a road. The road improved access to the forest's interior and enhanced forest destruction. The conservation status of Dassiéko South seems to be better than the northern part. The Bolo Forest Reserve is north of the Dassiéko Forest, between 5°07' and 5°26'N and 5°47' and 6°03'W. It is made up of three forest blocks: Haute Bolo (18,750 ha), Bolo West (7,700 ha), and Bolo East (14,306 ha).

The Niégré Forest Reserve (97,300 ha) is in the northwest of Côte d'Ivoire. The coordinates for the center of this forest are 5°20'N, 6°10'W. The Dassiéko, Bolo, and Niégré forests belong to the Guinean domain, and include dense and marshy forests, and marshy, evergreen coastal forests with coastal lagoons, swamps, marshes, and mangroves.

Marahoué National Park (101 km²) has a relatively undulating terrain, drained in the southeast by the Bandama Rouge (Marahoué River) and its tributaries. This reserve is notable for its geographic location, with Guinean savannah woodlands in the east and northeast, and dense deciduous forest and some gallery forest in the south and southeast. This was the only site where we expected to find *Chlorocebus (aethiops) sabaesus* and *Papio anubis*, because the other three are to the south, and outside the known range of these two species.

In total, we spent 14 days and 10 nights in the Bolo West forest during the rainy season in May 2004, and 6 days and 5 nights in the Dassiéko South forest in July 2004. Three days were spent in Baleko Brousse, a village bordering the Niégré Forest reserve, and 13 days and 7 nights in the Niégré forest in April 2004. We did surveys on 16 days and 8 nights in various parts of the Marahoué National Park during the dry season in December 2003. See Table 1 for the precise dates.

Results

According to the criterion "directly seen or heard or found among bushmeat," we were able to confirm the presence of eight of the 13 possible primate taxa during our surveys in at least one of the four protected areas (Table 1). They were: *Perodicticus p. potto*, *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, *Cercocebus atys lunulatus*, *Papio anubis*, *Procolobus verus*, and *Colobus polykomos dollmani*. We did not see *Cercopithecus (diana) roloway*, *Procolobus b. badius*, and *Pan troglodytes verus*, although local people indicated that *Cercopithecus (diana) roloway* and *Pan troglodytes verus* were present in all four of the reserves. *Procolobus b. badius* was reported only for Dassiéko.

The presence and frequency of sightings of these eight primates varied among the reserves. *Perodicticus potto* was found being sold as bushmeat, and interviewees reported its occurrence at all four sites. *Papio anubis*, a savanna species, was found in Marahoué National Park but not in the southern forest reserves which are out of its known range. Similarly, *Chlorocebus aethiops sabaesus*, another savanna species, was reported as present only for Marahoué National Park during interviews.

Dassiéko Forest Reserve

We saw and heard *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, *Cercocebus atys lunulatus*, and *Procolobus verus* in Dassiéko South Forest. We also heard sounds of monkeys moving in the trees that were typical of the larger colobines, but we were unable to determine whether it was *Colobus p. dollmani* or *Procolobus b. badius*. *Cercopithecus (diana) roloway*, *Colobus p. dollmani*, and *Procolobus b.*

Table 1. Presence of primate taxa in three forest reserves (Dassiéko, Bolo West, and Niégré) and the Marahoué National Park between the Sassandra and the Bandama rivers, Côte d'Ivoire.

Species	Sites ¹	Interviews or found among bushmeat ²	Observation ²
Demidoff's dwarf Galago <i>Galagoides demidovii</i>	all sites	?	NO
Thomas' dwarf Galago <i>Galagoides thomasi</i>	all sites	?	NO
Western potto <i>Perodicticus potto potto</i>	Dassiéko	P	NO
	Bolo West	P	NO
	Niégré	BP	NO
	Marahoué	P	NO
Lowe's monkey <i>Cercopithecus (campbelli) lowei</i>	Dassiéko	BP	O/H
	Bolo West	P	O/H
	Niégré	BP	O/H
	Marahoué	P	O/H
Eastern lesser spot-nosed monkey <i>Cercopithecus petaurista petaurista</i>	Dassiéko	BP	O/H
	Bolo West	P	O/H
	Niégré	BP	O/H
	Marahoué	P	O/H
Roloway monkey <i>Cercopithecus (diana) roloway</i>	Dassiéko	P	NO
	Bolo West	P	NO
	Niégré	P	NO
	Marahoué	P	NO
White-naped mangabey <i>Cercocebus atys lunulatus</i>	Dassiéko	P	O/H
	Bolo West	P	NO
	Niégré	P	NO
	Marahoué	P	NO
Green monkey <i>Chlorocebus aethiops sabaesus</i>	Dassiéko	A	NO
	Bolo West	A	NO
	Niégré	A	NO
	Marahoué	BP	NO
Olive baboon <i>Papio anubis</i>	Dassiéko	A	NO
	Bolo West	A	NO
	Niégré	A	NO
	Marahoué	P	H
Olive colobus <i>Procolobus verus</i>	Dassiéko	P	O/H
	Bolo West	P	O/H
	Niégré	P	O/H
	Marahoué	P	H
Upper Guinea red colobus <i>Procolobus badius badius</i>	Dassiéko	P	NO
	Bolo West	A	NO
	Niégré	A	NO
	Marahoué	A	NO
Dollman's colobus <i>Colobus polykomos dollmani</i>	Dassiéko	P	NO
	Bolo West	P	O/H
	Niégré	P	NO
	Marahoué	P*	NO
Western chimpanzee <i>Pan troglodytes verus</i>	Dassiéko	P	NO
	Bolo West	P	NO
	Niégré	P	NO
	Marahoué	P	NO

¹ Surveys. Marahoué: 15–31 December 2003. Niégré: 2–18 April 2004. Bolo West: 5–19 May 2004. Dassiéko: 27 July – 2 August 2004.

² B = Species was found as bushmeat; P = Species was indicated as present in interviews; A = species was indicated as absent in interviews; O = Species was observed directly; H = Species was confirmed by vocalizations; NO = Species neither seen nor heard. * = Taxon was reported as last seen in 2002. ? = Status was not evaluated in interviews. Density estimates are not available because our survey methods did not meet the criteria necessary for line transect sampling (Burnham *et al.* 1980).

badius were reported by local people, but we were unable to confirm their presence. No evidence was forthcoming for the occurrence of *Pan troglodytes verus* in Dassiéko, although chimpanzees were mentioned as present in interviews.

We found a number of snares, many shotgun shells and a poachers' camp in the forest. When visiting local markets in the vicinity of the Dassiéko reserves, we found remains of *Cercopithecus (c.) lowei* and *Cercopithecus p. petaurista*, and in Dagbego, a nearby village, a hunter told us that he saw a group of *Colobus p. dollmani* in the forest in 2003.

Bolo Forest Reserve

We heard and saw the following primates in the Bolo Forest Reserve: *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, *Procolobus verus*, and *Colobus p. dollmani*. This was the only site where we found *Colobus p. dollmani*—one group of four individuals close to an area that had been recently clear-cut, near the Davo River (05°22.72'N, 005°59.55'W). Interviews with people cutting the forest and poachers we met in the forest revealed the presence of *Cercopithecus (diana) roloway*, *Cercocebus atys lunulatus*, and *Pan troglodytes verus*. This forest is under heavy human pressure. We found many recent clearings, hunters' paths, and many shotgun shells.

Niégré Forest Reserve

During surveys in the Niégré Forest we confirmed the presence of *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, and *Procolobus verus*. This reserve is under particular threat due to agricultural activities. Two- to three-year-old cocoa plantations and recent clearings were found inside the reserve. A poacher we met in the forest told us that he caught a young *Cercocebus atys lunulatus* 2 years previously and sold it in Djakouakoukro, a village inside the reserve. Following his advice, we visited the village and found the monkey still alive and kept as a pet. Other hunters told us that *Cercopithecus (diana) roloway*, *Colobus p. dollmani*, and *Pan troglodytes verus* still occurred there, but were rare. The restaurants in Baleko Brousse, a village bordering the forest, were frequently serving *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, and *Perodicticus potto*. We also found a young *Cercopithecus p. petaurista* being kept as a pet by a farmer in the same village.

Marahoué National Park

In Marahoué National Park we were able to confirm (by vocalizations and sightings) the presence of *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, *Papio anubis*, and *Procolobus verus*. Some of the farmers we met told us that *Cercopithecus (diana) roloway*, *Cercocebus atys lunulatus*, and *Pan troglodytes verus* were still present in this forest. Interviews of poachers in N'Guessankro and Blaisekro revealed that their most recent sightings of *Colobus p. dollmani* were in 2002. They also informed us that *Chlorocebus (aethiops) sabaesus* was present in Marahoué, and we found some remains of this monkey in a restaurant in Bouaflé, a town just outside the park. However, even the remotest parts of the forest are disturbed by

cocoa farms, and have poacher camps and trails. We also surveyed forest patches inside the savanna zone of the park. We heard baboons around the camp, but found recently cut clearings in the forest along with young cocoa plantations.

Discussion

During our survey, we gathered presence-absence information on 11 primate taxa, *Perodicticus potto*, *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, *Cercopithecus (diana) roloway*, *Chlorocebus (aethiops) sabaesus*, *Cercocebus atys lunulatus*, *Papio anubis*, *Procolobus verus*, *Procolobus badius badius*, *Colobus polykomos dollmani*, and *Pan troglodytes verus*, in four forest reserves between the Sassandra and the Bandama rivers in southern Côte d'Ivoire. We were able to confirm the presence of just three of these in all four of the protected areas we visited: *Cercopithecus (c.) lowei*, *Cercopithecus p. petaurista*, and *Procolobus verus*. From the numbers of encounters we could infer that the two guenons were the most abundant of the diurnal primates in these reserves. Although we recorded *Cercocebus atys lunulatus* in Dassiéko, we had only the reports of hunters as evidence for its permanence in the other three sites.

Indirect evidence suggested that another three taxa still occur in the four areas: *Perodicticus potto*, *Cercopithecus (diana) roloway*, and *Pan troglodytes verus*. The status of *Perodicticus potto* was difficult to assess due to its nocturnal activity and we might have overlooked it during our diurnal surveys. However, even this species was found among bushmeat in the markets, and its number may also be decreasing rapidly. *Pan troglodytes verus* was detected in only one reserve (Dassiéko), but reported by interviewees for the other three sites. Chimpanzees have been the focus of conservation efforts in the Taï National Park, but less attention has been given to other populations in the region. Given their rarity and low population sizes, they will soon go extinct in the forest reserves if no immediate conservation action is taken. In 2004, The Wild Chimpanzee Foundation (WCF) has begun a number of initiatives, particularly in Marahoué, Banco National Parks.

We found no evidence for the presence of *Procolobus badius badius* in any of the four reserves. Poachers living in the vicinity of Dassiéko informed us that its disappearance was recent, and it would seem to be due to hunting, rather than habitat loss. *Papio anubis* and *Chlorocebus (aethiops) sabaesus* occur only in Marahoué National Park which, unlike the three forest reserves, consists of a mosaic of Guinean savannah woodlands and dense deciduous forest. The two dwarf galagos, *Galagoides thomasi* and *Galagoides demidoff* might be present in the reserves, but we do not have any information about their status.

The main aim of our survey was to gather information about the status of *Colobus p. dollmani* in the interfluvial region of Côte d'Ivoire; its historical range. It was observed in only one of the four sites, Bolo Forest Reserve—and just one group was found—evidently very low numbers. Local people

said that it occurred at the other four sites, but the last report in the Marahoué National Park was in 2002. No information was available for this colobine subspecies prior to our study, and its restricted range compared with that of the other black-and-white colobus monkeys, the destruction of its habitat, and hunting pressure could lead to its extinction in the near future. According to Oates and Trocco (1983), Groves *et al.* (1993), Groves (2001), and Grubb *et al.* (2003), *C. p. dollmani* is most likely a hybrid form of *C. polykomos* × *C. vellerosus*, both of which are already on the IUCN Red List of Threatened Species (IUCN 1994, 2006): *Colobus polykomos* is listed as Lower Risk/Near Threatened, and *Colobus vellerosus* as Vulnerable. A more recent assessment (resulting from a status assessment workshop held in Orlando, Florida, 27–30 January 2005, and using the IUCN [2001] criteria) has yet to be incorporated into the IUCN Red List, but places both species as Vulnerable (Hoffmann 2006).

Colobus p. dollmani is not included on the Red List because it is regarded as a hybrid and a synonym of *C. vellerosus*. Genetic analyses are necessary to clarify its taxonomic status and to estimate the degree of genetic exchange with its possible parent species and whether the population is monophyletic or paraphyletic. It is also important to determine whether its morphotype varies locally or whether it is consistent over its range. We would argue that even if it is a hybrid form, it is worthwhile preserving it—it is an evolutionary unit and possibly undergoing speciation. A comparable situation exists for the West African scaly-tailed squirrel, *Anomalurus pelii*, where different subspecies are recognized to the east and west of the interfluvial region, and the form between the Sassandra and Bandama rivers was recently recognized as a distinct, third subspecies (Schunke and Hutterer 2005).

The conditions of the four reserves in southern Côte d'Ivoire are not good. Only Dassiéko South was found to be relatively undisturbed—most likely at least in part an effect of a long-term ecological monitoring project there. The frequent presence of researchers in the forest might be discouraging potential poachers and farmers to hunt and farm the forest. The other three reserves have numerous clearings made by farmers, and only a very few parts remain undisturbed. There are camps, small villages, and many people in these forest reserves. In February 2005, the illegal camps and villages inside Marahoué National Park were destroyed, and the people were forced to leave the park.

Hunting is a major threat to primates and other wildlife in these forest reserves. Although wildlife is legally protected, there is almost no control of poaching. The first concern of the managers of forest reserves in Côte d'Ivoire is forestry, and not the protection of wildlife. Civil unrest in Côte d'Ivoire since 2002 has created social and economic instability, and the protection of forests and wildlife is not currently a priority for the government. People have taken advantage of this and there have been dramatic increases in encroachment in these supposedly protected forests. The National Protected Areas Management Program (PCGAP), a project funded by the European Development Fund (EFD), World Wildlife

Fund, Agence Française de Développement, the Global Environment Facility (GEF), and Kreditanstalt für Wiederaufbau (KfW), was ceased pre-term, and the resulting benefits of forest management and protection have been lost, with a corresponding upsurge of illegal forest clear-cutting and poaching. There are now numerous cocoa plantations, forest clearings, trails, snares, and poacher camps even in the remotest parts of the forests.

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