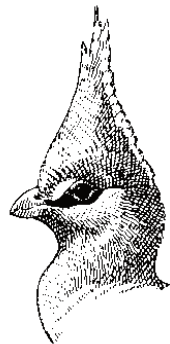
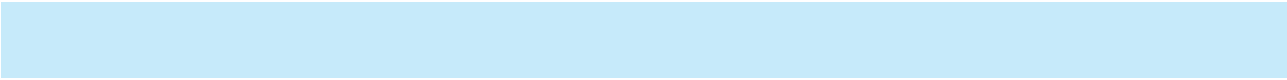


**Ornithological surveys in Kalakpa Resource Reserve,  
Ghana (2005, 2008-11),  
with notes on vegetation and mammals**

*Françoise Dowsett-Lemaire & Robert J. Dowsett*

**A report prepared for the Wildlife Division, Forestry Commission, Accra**





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*by Françoise Dowsett-Lemaire & Robert J. Dowsett*

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## Summary

Kalakpa Resource Reserve protects some 320 km<sup>2</sup> of savanna and gallery forest in eastern Ghana. It is situated in the forest/savanna transition zone, and the dominant vegetation is a rather uniform type of *Borassus-Combretum* woodland. There are half a dozen broad galleries of dry semi-evergreen forest crossing the reserve from north to south. A narrow range of hills in the west bears some dry deciduous forest or transition woodland. The broad galleries of *Diospyros mespiliformis* forest in the Kalakpa plain are lined with a belt of *Chromolaena odorata* or transition woodland; small pockets of woodland are locally turning into dry forest. The south-east (Atixoe) is drier, with thicket-clump savanna and short grassland.

After seven visits by the authors (from 12-16 February 2005, 20 March-1 April 2008, 18-21 March and 1-3 May 2009, 12-14 January and 26-31 October 2010, 11-12 May 2011), and a few additional records by visitors or guards, the avifauna of Kalakpa now consists of 270 species. While that of savanna woodlands is rather poor, the forest avifauna is surprisingly rich, with at least 59 Guineo-Congolian endemics. Of these Spot-breasted Ibis *Bostrychia rara* is otherwise unknown east of the Volta. The densities of Nkulengu Rail *Himantornis haematopus* are surprisingly high, Yellow-throated Cuckoo *Chrysococcyx flavigularis*, Spotted Honeyguide *Indicator maculatus* and Capuchin Babbler *Phyllanthus atripennis* are also common. African Pitta *Pitta angolensis* has been recorded displaying in the rains. The avifauna of the south-east is very different, with Lesser Black-winged Lapwing *Vanellus lugubris* and Swamp Nightjar *Caprimulgus natalensis* in short grassland, and Yellow-breasted Apalis *Apalis flavida* and Yellow-throated Leaflove *Chlorocichla flavicollis* in thickets. A small amount of mist-netting in forest has confirmed the general impression that most forest birds are not breeding in the dry season (when some are in post-breeding moult), while some savanna species do breed in the late dry season. Of savanna species, Golden-tailed Woodpecker *Campethera abingoni*, Spotted Creeper *Salpornis spinolotus*, Bush Petronia *Petronia dentata* and Little Weaver *Ploceus luteolus* all reach their southern limits of range here, and until recently were unknown from the south of the country. Red-billed Hornbill *Tockus erythrorhynchus* has been recorded in *Acacia* on the western boundary but does not appear to be resident.

Of the mammals, perhaps the most exciting discovery is that of the coexistence of two hyrax species in the forest, the Tree Hyrax *Dendrohyrax dorsalis* and an unknown species *Dendrohyrax* sp. nov.?, with very different calls; the common forest galago is Thomas's *Galagoides thomasi*. A wandering lion visited the reserve in February 2009. In general, the west and north of the reserve have much potential for ecotourism: Kob, several species of duiker and monkey are common and quite visible, and the existing system of footpaths is also very good for bird-watching and enjoying the views.

## 1. INTRODUCTION

Kalakpa Resource Reserve protects some 320 km<sup>2</sup> of savanna and wide gallery forest in eastern Ghana. It is situated in the forest/savanna transition zone, and the dominant vegetation is a rather uniform type of dry *Borassus-Combretum* woodland. There are half a dozen broad galleries of semi-evergreen forest crossing the reserve from north to south, the central one (Kalakpa) giving its name to the reserve. The plain lies at an altitude of around 80-100 m in the north, decreasing to 30 m in the south on the Kalakpa river. A narrow range of hills in the west, 10 km long north-south, rises to 350 m, with the highest peak (Kadanga) at 422 m. While Kadanga is rocky, with some small vertical cliffs, the rest of the range bears woodland or patches of dry forest on its slopes. Some smaller hills (like Zitoe, 200 m alt.) are covered in transition woodland. The Kalakpa river or stream flows year-round, some sections turning into pools at the end of the dry season. The other streams flow in the rains only, when much of the forest gets flooded.

Unlike the Afram Plains (from south Digya to Kogyae and Bomfobiri) which have been suffering from a drying out of the climate leading to a reduction in forest cover in recent decades, the conditions at Kalakpa seem to be stable. There are even signs that pockets of woodland are turning into dry forest (as near Dzakpo, or north of Fosime). The broad galleries of *Diospyros* forest in the north and north-west of the Kalakpa plains do not show fire damage; they are protected by early burning practices, and a belt of *Chromolaena odorata* bush and transition woodland has developed along the edges. The situation is rather different in the centre and south-east of the park, where several villages are established and are clearing land for cultivation and charcoal. We did not visit the centre-south of Kalakpa, except for the eastern foot of Kadanga Hill, which is indeed suffering from deforestation by the Fosime community. In the north and west of the park there is only one road, leading from the north-west border to Fosime village in the centre-west. This road is maintained by the villagers who use it for exporting charcoal, among other things. Around Zitoe, a good system of footpaths established by the guards, in Kolor forest and towards Zitoe Hill, facilitate exploration of the area. Elsewhere, we have also used the boundary line for access, as it is well maintained.

In 2005 we spent only 4 days (12-16 February) divided between the Zitoe and Agodeke areas. In 2008 we spent 12 days (20 March-1 April), revisiting forest and woodland in the north-west, but also the Kalakpa riparian forest and surrounding woodland near Dzakpo camp. A small amount of mist-netting was carried out in forest (Kolor at Zitoe, Ayiwa near Agodeke) to ring birds and especially to examine them for signs of breeding and moult. In 2009 we spent one night at Zitoe (19 March) before moving to Kpetsu camp for two nights (20-21), to explore degraded woodland between Kpetsu village and Dorkpo (in the park), a small section of riparian forest on the Awato stream and dry forest on the north-east boundary. We stopped again at Zitoe on 1 May for two nights, but this was mainly to rest at the end of a spell of field work in Ghana. We returned to Kpetsu camp on 12 January 2010 and continued to Atixoe camp in the south-east to explore this area on 13-14 January. Our sixth visit, on 26-31 October 2010, was shared between Zitoe (2 nights) and Agodeke (3 nights), with mist-netting at Agodeke. Our last visit was to Kpetsu, 11-12 May 2011. For localities, see Appendix 2 and map (p. 27).

The main rainy season is from April to mid-November, with early showers in late February-March. The weather in mid-February 2005 was hot and humid, with no rain. In 2008, after a dry month of January, the first rains arrived late February, and occasional storms (about one a week) occurred locally in March. We experienced one good shower at Zitoe on 23 March, and steady rain end of afternoon on 31 March near Agodeke. March 2009 had experienced some rain, and we had an afternoon storm on 19 March. Early May 2009 experienced a dry spell, so was January 2010, whereas October 2010 (at the end of the rainy season) was still wet, with short afternoon showers on three of four days.

We present an annotated bird species list, preceded by chapters on vegetation, biome-restricted and globally-threatened species, and results of mist-netting and breeding records. We also include a complete checklist of mammal species recorded and discuss conservation aspects. Most bird observations are our own, but we have questioned wildlife staff with an interest in birds, and some records

have been provided by visiting ornithologists: Andrew Hester in October 2006, Jan Pienaar in November 2008, David Hoddinott and Rainer Summers in November 2009 (the last three as leaders of Rockjumper bird tours).

## 2. HABITAT CLASSIFICATION

**Woodland.** The dominant vegetation type is woodland, which in the north-west and west is rather species poor: the main tall trees in the vicinity of Zitoe and in the plains below Kadanga Hill are *Borassus aethiopum* and *Combretum fragrans*. This palm woodland is very extensive and can be seen for miles around from the hills east of Agodeke, stretching all the way from the western boundary to at least the Nyito and Kolor streams. At the foot of hills or in the vicinity of guards' camps, the woodland is a little denser, with a greater variety of trees, including *Cussonia arborea*, *Daniellia oliveri*, *Entada abyssinica*, *Ficus platyphylla*, *F. sur*, *Parkia biglobosa*, *Pericopsis laxiflora*, *Pseudocedrela kotschyi*, *Pterocarpus erinaceus*, *Vitellaria paradoxa*, etc. On Zitoe Hill the vegetation tends towards transition woodland or even dry forest: *Lannea acida*, *L. barteri*, *Lophira lanceolata*, *Parkia biglobosa*, *Piliostigma thonningii*, *Vitellaria paradoxa* (woodland species) occur next to several *Ceiba pentandra*, and some *Anthocleista djalonensis*, *Ekebergia senegalensis*, *Elaeis guineensis*, *Ficus vogelii* (= *lutea*, a forest strangler) and *Trichilia emetica*, while *Vitex doniana* is also characteristic of dry forest or transition woodland. The dense understorey is partly overtaken by *Chromolaena odorata*, but there is also *Psychotria vogeliana*, which appears fire-resistant. On the edge of the Ayiwa forest near Agodeke, there is a strip of transition woodland with mainly *Lannea barteri*, *Malacantha alnifolia*, *Millettia thonningii*, also *Ekebergia senegalensis*.

The woodland in the north of the reserve, south of Dzakpo camp, is much more diverse and dense, with only the occasional *Borassus* palm; its composition is similar to that of the woodland at the foot of Zitoe Hill, but it occupies a much larger area. There are pockets of *Acacia* woodland or scrub, with *A. polyacantha* as the main tree, also *Dichrostachys cinerea*, and both thorn trees were also seen near the boundary line at Agodeke. Between Dzakpo camp and the Kalakpa river, some patches of woodland are now invaded by forest vines and are turning slowly into forest. Some big *Vitellaria* in fruit were so smothered by vines that they looked unlikely to survive much longer.

The woodland near Kpetsu has been partly degraded by cultivation; *Combretum fragrans* is the commonest tree, *Acacia polyacantha*, *Adansonia* (Baobabs), *Borassus* palms, *Entada abyssinica*, *Ficus platyphylla* and *Pseudocedrela* were noted around the guards' camp.

**Dry semi-evergreen forest.** (Semi-deciduous forest is a synonym). There are two types. On **rocky hills** (as between Ayiwa forest and Kadanga Hill), most tree species are briefly deciduous, such as *Azelia africana*, *Ceiba pentandra*, *Cola millenii*, *Erythrophleum suaveolens*, *Manilkara multinervis*. *Ceiba* is dominant in several patches of dry forest seen in the distance near Kadanga Hill. *Antiaris* grows even on top of Kadanga Hill, among rocks.

On the **plains** along seasonal streams, there are broad strips of dry semi-evergreen forest. They get partly flooded in the rainy season. The strip on the seasonal Kolor stream (at Zitoe) varies in width from 60 to 120 m opposite Zitoe camp. The tongue of Ayiwa forest near Agodeke has no stream, but is fed by smaller gullies of forest that eventually form the Ayiwa stream further south. Opposite Agodeke camp, Ayiwa forest is as broad as 500 m (measured both by pacing and with a GPS). The canopy reaches 40 m and is closed in places, or interrupted by gaps with a very dense thicket understorey. These wide galleries of forest are dominated, surprisingly, by a savanna near-evergreen species, *Diospyros mespiliformis*. A count of canopy trees across Ayiwa gave the following results, along 500 m: 19 *Diospyros mespiliformis*, 14 *Dialium guineense* (and many smaller, medium-sized ones), 12 *Lonchocarpus sericeus*, 6 *Ceiba pentandra*, 4 *Cola gigantea*, 1 *Azelia africana*, 1 *Ficus vogelii* (strangling a *Diospyros*), 1 *Manilkara multinervis*. In late March the *Dialium* were fruiting, the *Lonchocarpus* were in fresh foliage, with some old fruit and flower buds, but the *Diospyros* were largely leafless. In February 2005, they were still in full foliage, and the period of deciduousness is probably very short.

Other tall trees in the north-west include *Albizia glaberrima*, *Alstonia boonei*, *Antiaris toxicaria*, *Erythrophleum suaveolens* (usually along streams), *Milicia excelsa*, *Sterculia tragacantha* and *Vitex doniana*; *Celtis wightii* is a widespread medium-sized tree, as also the palms *Elaeis guineensis*, and *Kigelia africana* can be found on small streams. *Napoleonaea vogelii* is a common small tree of the understory, next to some Sapindaceae (*Lecaniodiscus* and others), *Zanthoxylum (Fagara) zanthoxyloides*. Lianas or creeping shrubs belong to *Hippocratea* sp., *Lonchocarpus cyanescens*, *Olox subscorpioidea*, *Strychnos* sp., etc.

In the vicinity of the Kalakpa river, the structure of the riparian forest is somewhat different, with a few tall trees overtopping thickets. The tallest trees are mostly *Antiaris*, *Ceiba*, *Lonchocarpus sericeus* and *Anogeissus leiocarpus*. *Anogeissus* becomes frequent in drier forest types away from the river, and is generally common in transition woodland. Evergreen thickets on the river are dominated by *Cola laurifolia* and *Cynometra megalophylla*, with *Napoleonaea* below. Some clumps of bamboo *Oxytenanthera abyssinica* also grow not far from the river. The dry forest inside the boundary north-west of Kpetsu has some tall *Albizia zygia*, *Anogeissus*, *Antiaris*, *Ceiba*, *Diospyros mespiliformis*, *Lonchocarpus sericeus* and *Manilkara multinervis*.

**Thicket-clump savanna.** The habitat around Atixoe (Atihoe) in the south-east is very different. Thicket clumps are rather similar to those in Shai Hills, but somewhat drier, with Baobabs *Adansonia digitata*, *Diospyros mespiliformis*, *Malacantha alnifolia*, *Zanthoxylum zanthoxyloides*, and exotic Neem trees (*Azadirachta indica*). *Sterculia setigera*, *Lannea* sp. (leafless in January), some *Acacia* and *Ficus platyphylla* were also noted. These thicket clumps are scattered in a landscape of short grassland, some of which may get flooded in the rains. The grass is kept short by cattle, allowed to graze in this area but possibly due to move out of the reserve in the near future.

**Rocky hills.** Of the range of hills in the west, only Kadanga (the tallest peak at 422 m) has rock faces and some large boulders. It is likely to have some birds confined to this rocky habitat. On our visit there in March 2008 we did not have time to identify more than one (Rock Martin) before the Fosime villagers forced us to turn back to Zitoe.

**Zitoe dam.** A small dam has been built at Zitoe by using the Kolor stream, in c. 2001. This small pool occasionally attracts birds who come to drink, e.g. some Mottled Spinetails and Pied-winged Swallows, the odd raptor or Cattle Egret. It is often visited by Patas Monkeys, Kob and occasionally Buffalo.

### 3. THE AVIFAUNA

#### 3.1. Past references and reports

Kalakpa was virtually unknown ornithologically. An unpublished zoological report by M. Sam (1994) includes a short bird list of 52 species. Unfortunately this list contains many errors, such as species completely unknown from Ghana: e.g. the robin *Cercotrichas podobe* from the Sahel, or the robin-chat *Cossypha isabellae* from the mountains of Cameroon. This makes this source unreliable. Kalakpa has been visited in recent years (mainly since 2008) by a few bird tours or tourists, especially Rockjumpers, who have provided a few additional observations.

#### 3.2. Totals recorded

In four days of surveys in February 2005 we recorded nearly 150 species. In 12 days in March 2008, we recorded some 206 species; about 72 were added to the list, and a few more by other observers, bringing the total to 233 species. Further visits in 2009 and 2010-11 have produced more additions, the overall total now being 270 species. Of those, we have observed 253.

### 3.3. Ecological considerations

Woodland. A striking feature of the *Borassus*-dominated woodland is its paucity, in tree and birdspecies. In the most uniform sections of *Borassus-Combretum* woodland, one is unlikely to encounter more than four or five species (Vinaceous Dove, the odd roller, one or two starlings, one or two warblers (*Eremomela*, *Cisticola* or *Prinia*)). The number of species increases in denser woodland at the ecotone between woodland and forest, or in tree species-rich woodland as in the region of Dzakpo.

**Semi-evergreen *Diospyros* forest.** Despite the dominance of tree species of savanna or very dry forest, this forest type is surprisingly rich in rain forest birds. Several species of the Guineo-Congolian biome were unexpected, such as Nkulengu Rail *Himantornis haematopus* and the alethe *Alethe diademata*, both species of longbill *Macrosphenus* spp. and two wattle-eyes *Dyaphorophya* spp. The wide gallery forests in the plains are inhabited by a dozen forest bulbuls; perhaps as a result of this competition the Leaflove *Pyrrhurus scandens* appears to be restricted to the drier forests on hills, and locally in the plain near Dzakpo.

**Thicket-clump savanna near Atixoe.** The vegetation and birdlife are very different from the rest of Kalakpa, with species of short grassland (e.g. Swamp Nightjar *Caprimulgus natalensis* and Lesser Black-winged Lapwing *Vanellus lugubris*) and drier thicket (e.g. Yellow-breasted Apalis *Apalis flavida* and Common Wattle-eye *Platysteira cyanea*).

### 3.4. Biome-restricted species

**Sudanian.** Seventeen species belong to this category, all but one (the sparrow *Petronia dentata*) widespread in Ghana south to the coast: *Poicephalus senegalus*, *Musophaga violacea*, *Coracias cyanogaster*, *Lybius dubius*, *Hirundo leucosoma*, *Hypergerus atriceps*, *Eremomela pusilla*, *Turdoides reinwardtii*, *Nectarinia coccinigaster*, *Corvinella corvina*, *Lamprotornis purpureus*, *L. chalcurus*, *Ptilostomus afer*, *Petronia dentata*, *Pytilia hypogrammica*, *Lagonosticta rufopicta* and *L. rara*.

**Guineo-Congolian.** Fifty-nine species belong here: *Tigriornis leucolopha*, *Bostrychia rara*, *Dryotriorchis spectabilis*, *Fringilla achantensis*, *Himantornis haematopus*, *Sarothrura pulchra*, *Tauraco persa*, *Chrysococcyx flavigularis*, *Centropus leucogaster*, *Alcedo leucogaster*, *Merops malimbicus*, *Eurystomus gularis*, *Tropicranus albocristatus*, *Tockus fasciatus*, *Bycanistes fistulator*, *Pogoniulus scolopaceus*, *Tricholaema hirsuta*, *Trachylaemus purpuratus*, *Prodotiscus insignis*, *Indicator maculatus*, *I. exilis*, *Campethera nivosa*, *Andropadus gracilis*, *A. curvirostris*, *Baeopogon indicator*, *Chlorocichla simplex*, *Thescelocichla leucopleura*, *Pyrrhurus scandens*, *Phyllastrephus baumanni*, *P. albigularis*, *P. icterinus* (vagrant), *Bleda canicapillus*, *Nicator chloris*, *Alethe diademata*, *Stiphornis erythrothorax*, *Cossypha cyanocamper*, *Sylvietta virens*, *Macrosphenus concolor*, *M. kemp*, *Hylia prasina*, *Camaroptera superciliaris*, *C. chloronota*, *Megabyas flammulatus*, *Dyaphorophya blissetti*, *D. castanea*, *Trochocercus nitens*, *Terpsiphone rufiventer*, *Illadopsis fulvescens*, *I. puveli*, *Phyllanthus atripennis*, *Deleornis fraseri* (vagrant), *Nectarinia seimundi*, *N. adelberti*, *N. superba*, *Prionops caniceps*, *Ploceus nigerrimus*, *Malimbus nitens*, *Spermophaga haematina*. In Ghana several of these are encountered mainly in the forest/savanna transition zone, such as *Pyrrhurus scandens*, *Illadopsis puveli* and *Phyllanthus atripennis*. The turaco *Corythaeola cristata* (a visitor) may be added as a Guineo-Congolian near-endemic.

### 3.5. The biogeographical importance of Kalakpa

As the area had never been explored by ornithologists, not surprisingly several observations represent extensions of known range, southwards (in the case of the woodland species White-breasted Cuckoo-shrike *Coracina pectoralis* and Bush Petronia *Petronia dentata*) or eastwards in the case of forest

birds. Species of special interest include the following:

White-crested Tiger Heron *Tigriornis leucolopha*. This discreet species is far more adaptable than hitherto supposed and has a wide distribution in Ghana, north to Kyabobo and Digya National Parks (pers. obs.), in the forest/savanna transition zone.

Spot-breasted Ibis *Bostrychia rara*. These are the first and only records of the species east of the Volta, and it is still unknown from Togo. This Guineo-Congolian endemic is less rare in Ghana than implied by Grimes (1987 — Dowsett *et al.* 2008).

Congo Serpent Eagle *Dryotriorchis spectabilis*. Previously unknown from eastern Ghana (and Togo) but also discovered at Kyabobo and Afadjato (pers. obs.), this discreet forest raptor is nevertheless easily located in the dry season when it calls for long periods.

Nkulengu Rail *Himantornis haematopus*. In February 2005, the finding of this species represented the first record east of the Volta, although the bird was known from wetter forest at Misahöhe in Togo (6°57'N, 00°35'E, one specimen collected in the 19th century: Cheke & Walsh 1996). In 2008-09 we found this species commonly throughout the eastern highlands from Apepesu Forest Reserve to Afadjato and Amedzofe, and it is known very locally to reach Kyabobo N.P. (Dowsett-Lemaire & Dowsett 2007).

Yellow-throated Cuckoo *Chrysococcyx flavigularis*. This cuckoo is normally recorded from the open canopy of moist semi-evergreen forest, or secondary forest in the rain forest zone (pers. obs. throughout the south-west). It is not uncommon in Kalakpa, especially in the forest along the Kalakpa river. East of the Volta it was otherwise known from only one specimen, at Liati Datem (between Amedzofe and Afadjato).

Rosy Bee-eater *Merops malimbicus*. So far known only as a non-breeding migrant in the dry season (mainly October-March, Grimes 1987), with the nearest (huge) breeding colonies located along rivers in Nigeria (Fry 1984). In February-March we found them more commonly in Kalakpa than anywhere else in southern Ghana, and they were often feeding close to the ground. Elsewhere in Ghana, migrant birds feed quite high over forest, rarely alighting (as over Kakum, pers. obs.).

Red-billed Hornbill *Tockus erythrorhynchus*. The discovery of this savanna hornbill in Shai Hills in 2005 represented a big extension of range from the north. The presence of very small numbers in the Kalakpa area in part fills the gap between the coastal population and those of northern Ghana. This hornbill is partial to *Acacia* woodland and was indeed found near a pocket of this habitat.

Spotted Honeyguide *Indicator maculatus*. This Guineo-Congolian species is surprisingly common in the dry forests of Kalakpa; it is also very widespread in the forests east of the Volta (pers. obs.).

Golden-tailed Woodpecker *Campethera abingoni*. Greatly overlooked until recently (Grimes 1987 knew it only from Mole), records from Kalakpa represent yet a further extension of range south, from Bui and Digya in 2005.

African Pitta *Pitta angolensis*. Very poorly known in Ghana; until recently there were no records of displaying birds. The forests of Kalakpa, with their thick understorey, are suitable for this species, found displaying in the rains (about June-July). In 2010 it was also discovered in the drier semi-evergreen forests in the west (Ofinso and Sunyani districts), where it is heavily threatened by forest clearance.

Baumann's Greenbul *Phyllastrephus baumanni*. Kalakpa is one of several new localities in eastern Ghana, this bird being in fact also very common in the eastern highlands (pers. obs.), north to Kyabobo.

Kemp's Longbill *Macrosphenus kempii*. This is locally common in thickets at Kalakpa and also in the eastern highlands (Amedzofe and Afadjato to Tolome, pers. obs.). Grimes (1987) had no records from east of the Volta; we discovered it in several localities of western Togo in 2010-11.

Spotted Creeper *Salpornis spinolotus*. Identified by L. Titrim in 2011, this record represents a notable southerly extension of range from central Ghana (Ejura and Kete Kratchi, Grimes 1987).

Little Weaver *Ploceus luteolus*. A bird of savanna woodland with (usually) some Acacias, this species reaches its southern limit in and near Kalakpa. Recent surveys have shown it to be

present on the eastern side of Lake Volta in short secondary woodland. Previously unknown south of 9°N (Grimes 1987), although in the meantime also found in Bui N.P. across to the north of Digya at 7°42'N (pers. obs.).

### 3.6. Mist-netting

A small amount of mist-netting was carried out to determine the breeding and moult status of some species, and to detect any discreet species that might otherwise have been overlooked (only one species, the Western Bluebill, had escaped direct observation in 2008, it was seen or heard on later visits). A total of 58 birds of 16 species were mist-netted and ringed (with Nairobi Museum rings) in Ayiwa forest (Agodeke) on 14-16 Feb 2005, with also a Long-tailed Nightjar near Zitoe; another 97 birds of 21 species were ringed in 2008, 32 in Kolor forest (Zitoe, 21-23 Mar) and 65 in Ayiwa (29-31 Mar), plus 6 retraps of 4 species; 47 birds of 11 species were ringed on 29-31 Oct 2010 in Ayiwa, plus 4 retraps of 3 species (see Table 1). The two main species caught are White-throated Greenbul and Olive Sunbird.

**Table 1. Birds examined in the hand and ringed**

Species	Agodeke (plus retraps)			Zitoe	Total.....Moult <sup>1</sup>
	2005	2008	2010	2008	
African Goshawk	0	1	0	1	2
Red-necked Buzzard	0	0	0	1	1
Pygmy Kingfisher	1	1	0	0	2.....1
Spotted Honeyguide	0	1	0	1	2
Little Greenbul	1	4	0	2	7
Cameroon Sombre Greenbul	0	1	0	0	1
Yellow-whiskered Greenbul	2	3	7	4	16.....6
White-throated Greenbul	10	9	12 (2)	1	32.....2 (Oct)
Grey-headed Bristlebill	4	4 (1)	8 (1)	1	17.....1
Western Nicator	1	0	0	0	1
Fire-crested Alethe	4	0 (1)	1 (1)	0	5
Snowy-crowned Robin Chat	0	1	0	0	1
Forest Robin	6	4 (2)	8	2	20.....1 (Oct)
Kemp's Longbill	1	0	0	0	1
Green Hylia	5	2 (2)	1	0	8.....1
Grey-backed Camaroptera	0	2	0	0	2.....1
Chestnut Wattle-eye	0	1	0	1	2
Red-cheeked Wattle-eye	2	1	1	0	4
Blue-headed Crested Flycatcher	1	0	0	0	1
African Paradise Flycatcher	0	0	0	1	1
Red-bellied Paradise Flycatcher	4	8	1	5	18.....9
Brown Illadopsis	4	0	0	0	4
Capuchin Babbler	0	2	0	0	2.....1
Collared Sunbird	0	2	1	0	3.....1 (Oct)
Olive Sunbird	11	17	6	12	46.....4 + 3 (Oct)
Blue-billed Malimbe	1	0	0	0	1
Western Bluebill	0	1	1	0	2
<b>Totals</b>	<b>58</b>	<b>65 (6)</b>	<b>47 (4)</b>	<b>32</b>	<b>202 .....24 + 7 (Oct)</b>

<sup>1</sup>Feb-Mar, except where Oct indicated.

### 3.7. Breeding records

In February 2005 the only records of active breeding obtained related to woodland species (see below), and forest birds seemed particularly inactive, some completely silent (Blue-headed Crested Flycatcher), or almost so (Fire-crested Alethe). In March 2008 and 2009, some forest birds were still very quiet: almost no song by the Tambourine Dove, the Yellow-whiskered Greenbul was not singing either (or very little in 2009), with most birds in moult as shown by mist-netting. A few species were just starting to call, especially after rain (e.g. Alethe, Yellow-browed Camaroptera, Blue-headed Crested Flycatcher in 2009). However, very conspicuous displays of Thick-billed Cuckoo late Mar over Ayiwa forest were indicative of breeding; Cuckoo Hawks were also very active in February and March, singing and displaying, and Congo Serpent Eagle sings probably throughout the dry season. Overall one gets the impression that several woodland birds breed in the dry season, while many forest birds will do so in the rains, with some notable exceptions. In early May 2009 there was still reduced vocal activity from forest birds at Zitoe. Woodland species that must breed in the rains include grassland-dependent birds such as *Cisticola* warblers, which were just beginning to sing end of March, and seed-eaters such as firefinches breed in the late rains (see below).

Examination of mist-netted birds confirmed that forest understorey species were inactive in February-March, most were in fresh plumage (having recently moulted) while some were still in post-breeding moult, especially Yellow-whiskered Greenbul (6 of 9 caught) and Red-bellied Paradise Flycatcher (all 4 birds caught in February were in moult, and 5 of 13 in March). By late October, some White-throated Greenbuls were in very worn plumage, and two were moulting (primary scores of 21 and 23), suggesting that most had finished breeding. Three of 6 Olive Sunbirds were in moult, while a female was still breeding (with nestlings).

The following breeding records are by ourselves or L. Titrim (LT):

Grey Kestrel: one pair breeding in stump of *Borassus* at Kpetsu, female brooding April (LT).

Red-eyed Dove: 2 eggs on 11 January (LT).

Laughing Dove: breeding throughout the rains at Kpetsu camp (LT).

African Grey Cuckoo: female soliciting call on 12-13 January (Kpetsu); and several on 27-28 March (suggests egg-laying in January-March).

Broad-billed Roller: feeding nestlings 21-24 March (egg-laying February), in a hole in tall *Borassus*.

Green Wood Hoopoe: feeding at nest in Zitoe camp, mid-Feb (egg-laying January).

Ethiopian Swallow: several pairs feeding at nests under bridge (Kpetsu), 11-12 May (egg-laying April); observed nest-building there in March (LT).

Common Bulbul: brooding clutch 1 March (LT; laying February).

African Thrush: brooding clutch 4-11 May (LT; probably laid April).

Northern Crombec: adult feeding fledgling, 26 March (laying February).

Tawny-flanked Prinia: two feathered chicks evicted from nest by farmer, 29 October (laying October).

Pale Flycatcher: adult feeding fledgling, 21 March (laying late January or early February).

Senegal Batis: female sitting on eggs 20 February, LT (laying February); female begging from male 12 May (incubation stage).

Splendid Sunbird: female nest-building 25 March.

Marsh Tchagra: a female alarm-calling persistently, 20-24 March, suggests an occupied nest. Male alarm-calling and carrying food (to nest?) 27 March (laying probably March).

Fork-tailed Drongo: pair mating 21 Mar (laying March).

Lesser Blue-eared Starling: pair feeding at nest 14 Feb (laying January). The few seen in late March were not breeding.

Little Weaver: female brooding in nest, 21 May, LT (laying May).

Western Bluebill: male nest-building on 17 July (LT).

Bar-breasted Firefinch: nest-building 24 October (LT).

Blue-billed Firefinch: nest-building 29 October.

- Black-and-white Mannikin: nest with 5 eggs, Agodeke, 29 October (LT), thus laying October; 6 eggs checked on 7 November had all hatched well before 18 November (LT), thus laying October.
- Magpie Mannikin: brooding eggs on 12 March, the nest being situated in a *Citrus* tree, LT (laying March).
- Yellow-fronted Canary: nest with 3 eggs on 7 October, LT (laying September-October).

#### 4. ANNOTATED SPECIES LIST

Species reported by other observers are indicated by an asterisk (\*). English names usually follow Borrow & Demey (2001), while scientific nomenclature generally follows Dowsett & Forbes-Watson (1993), with a few changes.

- White-crested Tiger Heron *Tigriornis leucolopha* (\*). Some wildlife guards know this bird well from the middle of the Kalakpa river, in deep shade of riparian forest.
- Black-crowned Night Heron *Nycticorax nycticorax*. Heard at night over the Kalakpa river, at Agodeke (2008), and near the Awato stream (2009).
- Cattle Egret *Bubulcus ibis*. Grassland, usually commensal; occasional visitor to Zitoe dam. Seen on all visits except October.
- Green-backed Heron *Butorides striata*. Occasional visitor to Zitoe dam, present on the Kalakpa river and Awato stream.
- Spot-breasted Ibis *Bostrychia rara* (\*). One well seen in Kolor forest (Zitoe) by D. Shackelford on 19 Aug 2007. The distinctive calls of this ibis are well known to wildlife staff at Agodeke, Dzakpo and Kpetsu; at Dzakpo it appears when the Kalakpa river starts flooding, from about May. L. Titrim saw it on the Awato stream near Kpetsu. Feeds in damp ground near water. In the dry season likely to disperse not very far to the edge of permanent rivers, perhaps just to other sections of the Kalakpa river.
- African Cuckoo Hawk *Aviceda cuculoides*. Quite a common raptor in the reserve. Some displaying over hills and forest, both Zitoe and Agodeke, Feb 2005. At least two (probably three) birds displaying over or singing in canopy of Ayiwa forest late Mar 2008, along a width of 500 m (the song can be transcribed as a fast *tictictic-tuwuu*). Also near the Kalakpa river and in woodland (pair near Kpetsu). Just one song heard at Zitoe on 2 May 2009. No song in October, but an immature seen at Zitoe, which suggests indeed that this species breeds in the late dry season or start of the rains.
- European Honey Buzzard *Pernis apivorus*. One passing through, 22 Mar 2008.
- Black-shouldered Kite *Elanus caeruleus*. In woodland between Kpetsu and Dorkpo, Mar 2009; grassland near Atixoe (Jan) and near entrance to Agodeke camp (Oct 2010).
- Yellow-billed Kite *Milvus migrans*. Small numbers (widespread) all visits, up to 4 adults together (Mar). One pair attacking a Tawny Eagle (Mar 2008).
- Palm-nut Vulture *Gypohierax angolensis*. Around forest, only in the Zitoe area (on three of four visits there).
- Hooded Vulture *Necrosyrtes monachus*. One between Kpetsu and Dorkpo. A commensal species in the south of Ghana.
- African White-backed Vulture *Gyps africanus*. A vagrant on 10 Feb 2011 (W. Apraku *et al.*).
- Brown Snake Eagle *Circaetus cinereus*. One at Zitoe (over the forest), Mar 2008. Also Nov 2009 (R. Summers).
- Congo Serpent Eagle *Dryotriorchis spectabilis*. One singing daily in Ayiwa forest (Feb). In Mar 2008 one heard also on the edge of Kolor forest near Zitoe. Frequency of singing seemed to decrease late Mar 2008 (not heard every day, Ayiwa) but still singing for just 5 minutes on morning of 1 Apr. Song first noted by A. Hester 26 Oct (2006). Not calling much in late Oct 2010, just one on 30 Oct (a few notes at 5h35, Agodeke).
- African Harrier Hawk (Gymnogene) *Polyboroides typus*. Widespread (including Atixoe), especially common around Zitoe, associated with forest.

- Eurasian Marsh Harrier *Circus aeruginosus*. One in female plumage between Kpetsu and Dorkpo, 20 Mar 2009.
- Black Sparrowhawk *Accipiter melanoleucus* (\*). One “near” Kalakpa (Zitoe), seen by D. Hoddinott, Nov 2009.
- African Goshawk *Accipiter tachiro*. Forest (Kolor, Ayiwa, Kalakpa river, north-east boundary), singing daily (Feb and Mar, until we left on 1 Apr). Much less active in Oct, with just one singing briefly (3 notes) on 31st, 5h30, Agodeke.
- Shikra *Accipiter badius*. Woodland near Dzakpo; occasional at Zitoe (two records Oct).
- Grasshopper Buzzard *Butastur rufipennis*. A dry-season visitor from the north: one on 22 Mar 2008.
- Lizard Buzzard *Kaupifalco monogrammicus*. Widespread in woodland and forest edges.
- Common Buzzard *Buteo buteo*. One passing over, 13 Feb 2005.
- Red-necked Buzzard *Buteo auguralis*. A few in woodland and forest, including one killing a Nicator in a mist-net (in Kolor forest). Not recorded in Oct.
- Tawny Eagle *Aquila rapax*. A distant (unconfirmed) view in 2005, one pair clearly seen in the north-west (Zitoe-Agodeke) in Mar 2008. On one occasion, seen flying out of the reserve to hunt over the plain to the west. One circling over Zitoe hill in Oct 2010.
- Booted Eagle *Hieraaetus pennatus*. One flying north, 13 Feb 2005 (dark phase).
- Long-crested Eagle *Lophaetus occipitalis*. One by dam (Zitoe) on 23 Mar 2008; one near Atixoe (Jan 2010).
- Martial Eagle *Polemaetus bellicosus* (\*). One seen by A. Hester, 18 Mar 2006, near Zitoe.
- Common Kestrel *Falco tinnunculus* (\*). One seen by A. Hester, 28 Oct 2006, near Zitoe. Probably the local (African) race.
- Grey Kestrel *Falco ardosiaceus*. One in transition woodland near Dzakpo; a pair near Kpetsu, in 2011 breeding in a broken stump of *Borassus*.
- African Hobby *Falco cuvierii*. Forest edges and woodland, especially conspicuous near Agodeke (2005 and 2008): up to three hunting insects at dusk 30 Mar.
- White-throated Francolin *Francolinus albogularis* (\*). We have not come across this species in the rank grass of the northern woodlands, but it is known to wildlife guards from the south-east around Atixoe, where the grass is shorter.
- Double-spurred Francolin *Francolinus bicalcaratus*. Widespread in any grassland.
- Ahanta Francolin *Francolinus achantensis*. Throughout (including Atixoe), in semi-evergreen forest, low thickets, *Chromolaena* at forest edges and dry forest on hills.
- Common Quail *Coturnix coturnix*. One in grassland near Zitoe dam, 13-14 Feb 2005.
- Stone Partridge *Ptilopachus petrosus*. In the north-west mostly around hills, in dry forest; also patches of thicket or dry forest and woodland near Dzakpo and Kpetsu, woodland at Agodeke.
- Helmeted Guineafowl *Numida meleagris*. Small numbers in forest and woodland, throughout.
- Nkulengu Rail *Himantornis haematopus*. Quite common in forest along the Kalakpa and Kolor streams and in Ayiwa (near Agodeke), calling mostly at dusk and just before dawn; up to 10 pairs heard from our camp in Ayiwa (Mar)! Said by guards at Zitoe to wander occasionally into camp in the rainy season. Also heard on the Awato stream (Kpetsu, Mar). Heard on all visits to the north and west (Feb-May, Oct). Also heard Nov (R. Summers, 2009).
- White-spotted Flufftail *Sarothrura pulchra*. Localized, in Kolor forest (or even thickets), on the Kalakpa river, on a tributary of the Ayiwa near Agodeke, Awato stream and tributaries. Calling increased in Mar 2008 after the first storms.
- African Crake *Crex egregia* (\*). One on road entering the reserve (Zitoe), 3 Nov 2009 (J. Pienaar). A bird of rank grassland, which can be expected to occur locally in the reserve.
- Black Crake *Amaurornis flavirostra* (\*). Seen at pool near Atixoe, 18 Jun 2011 (L. Titrim).
- African Finfoot *Podica senegalensis*. On the Kalakpa river.
- Black-bellied Bustard *Eupodotis melanogaster*. Well known to wildlife staff; one singing at Kpetsu Jan 2010.
- African Wattled Lapwing (Plover) *Vanellus senegallus*. Largely absent from the park as the grass is too

- tall. Territorial pairs in the south-east (Atixoe, Jan), where the grass is shorter. Wanderer in the north: heard at dusk near Zitoe dam, 20 Mar 2008. A pair in a field on the boundary at Agodeke (Oct).
- Lesser Black-winged Lapwing *Vanellus lugubris*. In short grassland near Atixoe, one pair calling at dusk, and flying around in the early morning, next to African Wattled Lapwing, 13-14 Jan 2010.
- Laughing Dove *Streptopelia senegalensis*. Mainly around wildlife camps.
- Vinaceous Dove *Streptopelia vinacea*. Common in woodland (all visits, especially vocal Jan-Feb). By late Mar, not seen daily in west of park, and mainly in small concentrations; more common around Kpetsu.
- Red-eyed Dove *Streptopelia semitorquata*. In forest and denser woodland.
- Blue-spotted Wood Dove *Turtur afer*. Common in forest and woodland. Very vocal in Oct, much less in Mar.
- Black-billed Wood Dove *Turtur abyssinicus*. In woodland on the eastern boundary (Kpetsu).
- Tambourine Dove *Turtur tympanistria*. Uncommon, in forest, including on the Kalakpa. Almost silent in Mar: one singing briefly on 27 Mar (just four songs) and 1 Apr 2008. No song on 19-21 Mar 2009, but a few heard on 2 May 2009, and very vocal in Oct.
- African Green Pigeon *Treron calvus*. Mainly in forest, also wandering to fruit trees in adjacent woodland. In Mar feeding frequently in fruiting *Lannea barteri*. Also on figs (*F. platyphylla*, L. Titrim).
- Brown-necked Parrot *Poicephalus robustus*. One flying past Kolor forest on 28 Oct 2010 is our only record. There are at least three other records, by D. Hoddinott and R. Summers (Nov 2009) and W. Apraku *et al.* (9 Feb 2011), from the same area. Perhaps just a seasonal visitor.
- Senegal Parrot *Poicephalus senegalus*. Small numbers in forest and woodland. Taking seeds of the exotic *Cassia* (now *Senna*) *siamea* at Agodeke, Oct. Apparently fed on figs (*F. platyphylla*, L. Titrim), probably to take seeds.
- Red-headed Lovebird *Agapornis pullarius*. One pair in woodland near Agodeke, 30 Mar 2008.
- Green Turaco *Tauraco persa*. Common in forest and thicket clumps, throughout.
- Violet Turaco *Musophaga violacea*. In forest and thickets, smaller numbers than Green in the forests of the north and west.
- Great Blue Turaco *Corythaeola cristata* (\*). Occasionally noted by guards and retired ranger P. Darko, wandering into semi-evergreen forest. No records in recent years (since about 2008).
- Western Grey Plantain-eater *Crinifer piscator*. Widespread (woodland, forest edges).
- Levaillant's (Striped) Cuckoo *Clamator levaillantii*. One seen in woodland Feb 2005 (Zitoe); a few singing in Mar 2008, particularly near Dzakpo (where we found several Brown Babblers, the likely host). Noisy near Kpetsu in Mar 2009, and one singing there briefly on 13 Jan 2010 and another singing at dusk on the same day, Atixoe.
- Thick-billed Cuckoo *Pachycoccyx audeberti*. Several seen and heard singing in and outside forest in the north-west, all visits. Very active display over Ayiwa forest (Agodeke) late Mar, and one singing near Kpetsu, Jan. Also heard in Nov (D. Hoddinott, 2009). Hosts are helmet shrikes.
- Red-chested Cuckoo *Cuculus solitarius*. One in song (Kolor forest) Feb 2005 is the only record.
- Black Cuckoo *Cuculus clamosus*. None heard in Feb 2005, but singing frequently in Mar, near Zitoe and especially on the Kalakpa river; also on the Awato. Singing in May (Zitoe, Kpetsu); not heard in Oct.
- Common (Eurasian Grey) Cuckoo *Cuculus canorus*. Several in woodland near Dzakpo 27-28 Mar 2008, including a rufous female, feeding on hairy caterpillars.
- African (Grey) Cuckoo *Cuculus gularis*. In woodland, singing from at least mid-Jan (2010) and even Dec (from 2 Dec 2010 at Kpetsu, L. Titrim), very vocal in Feb and Mar, especially common around Dzakpo (Mar), where we noticed large numbers of hairy caterpillars (the favourite food of cuckoos). Still several singing in May (Kpetsu), but none singing in Oct.
- African Emerald Cuckoo *Chrysococcyx cupreus*. Heard in Kolor forest at Zitoe in May 2009 and in Ayiwa forest in Oct 2010. May be a seasonal migrant, or if resident then completely silent in Feb-Mar.
- Yellow-throated Cuckoo *Chrysococcyx flavigularis*. One calling and singing in Kolor forest on 23 Mar 2008 (7h20) did not stay, but one seen by R. Summers in Nov 2009. More conspicuous in

- forest along the Kalakpa river, with three singing birds located over 3 km on 25-26 Mar 2008.
- Klaas's Cuckoo *Chrysococcyx klaas*. Somewhat local: in dry forest (Kadanga Hill), also thickets near Zitoe, forest on the Kalakpa, and woodland and forest near Kpetsu (singing even in Jan).
- Didric Cuckoo *Chrysococcyx caprius*. One seen in woodland between Kpetsu and Dorkpo, 20 Mar 2009.
- Yellowbill (Green Coucal) *Ceuthmochares aereus*. Common in forest, including dry forest on hills.
- Black-throated Coucal *Centropus leucogaster*. Widespread in forest and big thickets (including Atixoe).
- Blue-headed Coucal *Centropus monachus*. One pair singing in rank grass near forest edge (Kolor); transition woodland near Kpetsu.
- Black Coucal *Centropus grillii* (\*). Seen near Atixoe, 18 Jun 2011 (L. Titrim).
- Senegal Coucal *Centropus senegalensis*. Common, woodland and forest edges.
- Barn Owl *Tyto alba*. Present around all guards' camps on the boundary, but also in thicket-clump savanna (Atixoe) and woodland.
- African Scops Owl *Otus senegalensis*. Widespread (woodland, thicket-clump savanna).
- Northern White-faced Owl *Ptilopsis leucotis*. Woodland: heard at Zitoe, near Dzakpo and Kpetsu, and Agodeke (singing very little in Oct).
- Spotted (Greyish) Eagle Owl *Bubo africanus cinerascens*. Woodland (uncommon, one record 2005 at Zitoe); known from Kpetsu (L. Titrim and other guards).
- Verreaux's (Giant) Eagle Owl *Bubo lacteus*. At least two pairs in the Agodeke area, calling by day in Ayiwa forest and on a tributary near the boundary, Mar 2008. Well known to local staff (Paul Dziwornu).
- African Barred Owlet *Glaucidium capense*. One calling by day on the edge of Ayiwa forest, apparently prompted by distress calls of a Nicator (when taken out of a mist-net), Feb 2005. Not heard on later visits.
- African Wood Owl *Strix woodfordii*. In forest throughout.
- Black-shouldered (Fiery-necked) Nightjar *Caprimulgus pectoralis nigriscapularis*. The commonest nightjar at Kalakpa, at forest edges and in woodland: very noisy in Feb 2005 and mid-Mar 2008 and 2009, but singing frequency dropping sharply in the last week of Mar. Several seen at night on the road between Zitoe camp and Abutia Kloe (Feb 2005). Not singing 1-3 May 2009, but very vocal in Oct 2010.
- Swamp Nightjar *Caprimulgus natalensis*. Singing in short grassland, 14 Jan 2010, Atixoe.
- Long-tailed Nightjar *Caprimulgus climacurus*. Several on the road between Zitoe camp and Abutia Kloe, one immature male caught with a butterfly net and ringed (Feb 2005). Known from the road near Kpetsu. Apparently not in rank grass in the reserve, but singing in short grass near Atixoe, Jan 2010. One record on 3 Nov 2008 just outside the reserve (J. Pienaar), and 6 on the road out of the park (Zitoe) 22 Nov 2009 (D. Hoddinott).
- Standard-winged Nightjar *Macrodipteryx longipennis*. A male of this species was killed on the road near Zitoe Feb 2005; also known from Kpetsu in the dry season (Jan-Feb, L. Titrim). Displaying in short grass near Atixoe, 14 Jan 2010, just before dawn.
- Mottled Spinetail *Telacanthura ussheri*. One or two seen regularly coming to drink in the dam at Zitoe, Mar 2008; also noted Oct 2006 by A. Hester and Nov 2009 by D. Hoddinott and R. Summers.
- African Palm Swift *Cypsiurus parvus*. Widespread (especially around *Borassus* palms).
- Common Swift *Apus apus*. Small numbers passing through (and often calling), more in stormy weather, 22 Mar-1 Apr 2008.
- Narina's Trogon *Apaloderma narina*. Several singing in Kolor and Ayiwa forests in Feb 2005. In Mar 2008 only one heard (briefly, on 29th) in Ayiwa. One singing in Kolor forest 19 Mar 2009 and 27 Oct 2010. One singing Nov 2008 in Kolor (J. Pienaar).
- White-bellied Kingfisher *Alcedo leucogaster*. One seen on the Kalakpa river, in deep shade, Mar 2008; by pools in flooded Kolor forest, Oct 2010.
- African Pygmy Kingfisher *Ceyx pictus*. Small numbers in woodland and dry forest, Jan-May.
- Grey-headed (Chestnut-bellied) Kingfisher *Halcyon leucocephala*. Rare: a silent bird in woodland (Zitoe), Feb 2005 and Mar 2008. One in song near Kpetsu, 13 Jan. In the north-west apparently breeds just

outside the reserve (some noisy pairs in Mar), but not inside, probably due to absence of tall dry banks for nesting.

Blue-breasted Kingfisher *Halcyon malimbica*. Widespread and common in forest and large thickets.

Woodland Kingfisher *Halcyon senegalensis*. Very local, as encountered only in the south-east, in thicket-clump savanna, Jan 2010.

Striped Kingfisher *Halcyon chelicuti*. A few pairs in woodland.

Little Bee-eater *Merops pusillus*. One pair in grassland edge of thicket, 14 Jan 2010, near Atixoe.

White-throated Bee-eater *Merops albicollis*. A non-breeding visitor, with some groups "wintering", common Jan-Mar; still common early May 2009 (Zitoe) but by 12 May 2011 only one seen (Kpetsu) and also 25 Jun 2011 (L. Titrim). In Oct 2010 the first group was recorded on the 29th, flying over southwards (Agodeke); noted at Kpetsu from 16 Nov 2010 and 4 Nov 2011 (L. Titrim).

European Bee-eater *Merops apiaster*. Some wintering in Jan 2010 (Kpetsu) and noted as common throughout dry season there (L. Titrim). Large groups Feb 2005, active passage north in second half of Mar 2008 (and 2009), conspicuous until at least the 29th. Numerous at Zitoe on 27 Oct 2010, over 100 coming to bath in dam, then flying on south; more passage southwards on 29-30 Oct (Agodeke). Also noted on 28 Oct 2006 (A. Hester), early Nov 2008 (J. Pienaar), late Nov 2009 (R. Summers).

Rosy Bee-eater *Merops malimbicus*. Quite widespread in season, in pairs or small groups, mainly at the ecotone between forest and open woodland. Often feeding close to the ground, sometimes groups rest in trees. Seen and heard every day in Feb-Mar, but in Mar 2008, numbers seemed to decrease in the last 3 days, still a few present on 1 Apr when we left. None in early May 2009 nor Oct 2010. Noted on 3 Aug 2011 on passage (L. Titrim).

Abyssinian Roller *Coracias abyssinicus*. A noisy pair in open woodland (Zitoe) Feb; none seen in Mar 2008 but present in Mar 2009, and still there early May. Two also in woodland near Kpetsu Feb 2010 and Feb-Apr 2011 (L. Titrim).

Rufous-crowned (Purple) Roller *Coracias naevius*. A few pairs in open woodland (especially *Borassus*), including road to Fosime (Mar). Also seen on the eastern edge in Jan, and at Agodeke in Oct.

Blue-bellied Roller *Coracias cyanogaster*. Fairly common in woodland, including *Borassus*, and in thicket-clump savanna (Atixoe).

Broad-billed Roller *Eurystomus glaucurus*. Widespread at forest edges and woodland, also coming to drink in Zitoe dam. Noted all visits except Oct, but noted by J. Pienaar in early Nov 2008 (Zitoe) and by D. Hoddinott late Nov 2009.

Blue-throated Roller *Eurystomus gularis*. This forest roller was found in two places in 2008: in the north-west corner (between Zitoe and Agodeke), and in Ayiwa forest, where calling on 1 Apr.

Green (Red-billed) Wood Hoopoe *Phoeniculus purpureus*. Widespread in woodland; nesting in Zitoe camp Feb 2005. Occasionally in forest (e.g. Kolor).

Black Wood Hoopoe (Scimitarbill) *Phoeniculus aterrimus*. A few pairs found in rich woodland near Dzakpo and at Agodeke.

White-crested Hornbill *Tropicranus albocristatus*. Widespread in forest around Zitoe and Agodeke, often in association with monkeys. One seen flying in the open from the Afubo escarpment and into forest near Ayiwa: a forest species which does not hesitate to cross large open spaces!

Red-billed Hornbill *Tockus erythrorhynchus*. One pair calling (in duet) on the boundary near Agodeke, in an area with quite a few thorn trees (*Dichrostachys*, *Leucaena*, *Acacia polyacantha*), 31 Mar 2008. Not relocated on later visits.

African Pied Hornbill *Tockus fasciatus*. Common in forest, throughout.

African Grey Hornbill *Tockus nasutus*. Common in woodland on all visits (Oct, Jan-May). Feeding on figs of *F. platyphylla* (L. Titrim).

Piping Hornbill *Bycanistes fistulator*. A rare visitor to Agodeke (Mar 2008). Unknown to the wildlife staff except L. Titrim, who noted it as an occasional visitor to forest in the Kpetsu area, but not in the last couple of years.

Speckled Tinkerbird *Pogoniulus scolopaceus*. At forest edges and in thickets, from Agodeke to the

## Kalakpa river.

- Yellow-fronted Tinkerbird *Pogoniulus chrysoconus*. In woodland: uncommon in the north, perhaps more common in the south-east. Seen taking figs of *F. platyphylla* (L. Titrim).
- Yellow-rumped Tinkerbird *Pogoniulus bilineatus*. Common in any forest and thicket, and also in rich or transition woodland (as near Zitoe, Dzakpo). Not very vocal in Oct.
- Hairy-breasted Barbet *Tricholaema hirsuta*. Localized forest species: some calling in the north-west (forest between Zitoe and Agodeke camps), and one calling persistently edge of Ayiwa forest, Mar 2008.
- Vieillot's Barbet *Lybius vieilloti*. Very local: a few pairs in rich woodland near Dzakpo and Kpetsu, and in thicket-clump savanna near Atixoe.
- Double-toothed Barbet *Lybius bidentatus*. In riparian forest on the Kalakpa river, close to the reserve's boundary; no doubt more widespread.
- Bearded Barbet *Lybius dubius*. A pair on the north-eastern boundary, ecotone of short woodland and thicket, and one visiting the large *Ficus platyphylla* in Kpetsu camp, Mar 2009. Also in thicket-clump savanna near Atixoe.
- Yellow-billed Barbet *Trachylaemus purpuratus*. One calling near Zitoe (boundary line), with an old nest-hole in a tall *Borassus* just outside forest.
- Cassin's Honeybird *Prodotiscus insignis*. One seen at forest edges near Kpetsu, 13 Jan 2010.
- Spotted Honeyguide *Indicator maculatus*. Apparently common in semi-evergreen forest (Kolor, Ayiwa, Kalakpa), with two birds mist-netted and at least 7 song-posts located Mar (2 in Kolor, 4 on the Kalakpa and beyond, one in Ayiwa). One bird near our camp on the Kalakpa started singing 15 minutes after dawn on each of three days (i.e. from 5h45) until late morning (10h30), and again in the afternoon from 15 or 16h. Others heard until at least 17h. One singing in Kolor forest in Oct 2010, where first heard in Mar 2008.
- Greater Honeyguide *Indicator indicator*. Woodland. Singing at Kpetsu in Jan and Mar. Singing Feb near Zitoe. Also one or two singing occasionally near Dzakpo (Mar).
- Lesser Honeyguide *Indicator minor*. One singing in Dzakpo camp (26-28 Mar), starting as early as 9h07, but with interruptions later in the morning. One singing near Kpetsu 20 Mar 2009 and 13 Jan 2010.
- Least Honeyguide *Indicator exilis*. One seen at close range just outside forest on the Kalakpa, 26 Mar 2008.
- Eurasian Wryneck *Jynx torquilla*. One flushed from tall, unburnt grass in woodland near Kadanga Hill, 24 Mar 2008, perched in full view on tree.
- Fine-spotted Woodpecker *Campethera punctuligera*. In mixed woodland on the north-east boundary (Kpetsu) and at Agodeke, and in thicket-clump savanna (Atixoe).
- Golden-tailed Woodpecker *Campethera abingoni*. Rare: one calling in dry forest near the Kalakpa river (Mar 2008) and one calling in Kolor forest on 28 Oct 2010, but had not been observed there on four previous visits.
- Buff-spotted Woodpecker *Campethera nivosa*. Discreet species in Kolor and Ayiwa forests, also noted in dense forest on the north-east boundary near Kpetsu.
- Cardinal Woodpecker *Dendropicos fuscescens*. Local: in mixed thicket and woodland near Dzakpo; near the boundary at Agodeke; and near Kpetsu (L. Titrim).
- Grey Woodpecker *Mesopicos goertae*. One pair in rich woodland between Dzakpo camp and the Kalakpa in Mar (very discreet, looking alarmed and probably breeding), also near Kpetsu and Atixoe.
- Brown-backed Woodpecker *Picoides obsoletus*. Rare woodland species: Zitoe (Feb) and Kpetsu (Jan).
- African Pitta *Pitta angolensis* (\*). Paul Dziwornu, camp leader at Agodeke (2010), has seen this species in full display in the months of Jun-Jul in "Sitoe" forest, on a stream to the south of Ayiwa forest, in the last two years (since 2008). It could be more widespread, as the type of thick forest found in Kalakpa appears optimal habitat.
- Preuss's Cliff Swallow *Hirundo preussi*. One on passage, 29 Mar 2008 (Agodeke).
- Rock Martin *Hirundo fuligula*. A few pairs along rocks at Kadanga Hill.
- Pied-winged Swallow *Hirundo leucosoma*. Up to 8 birds coming to drink at Zitoe dam (Mar, May). This source of water apparently attracts several pairs; likely to breed in woodland where there are Baobabs,

or in earth banks. Also noted Nov 2009 (R. Summers).

Ethiopian Swallow *Hirundo aethiopica*. Breeds under bridge near Kpetsu camp (Mar-May).

Barn (Eurasian) Swallow *Hirundo rustica*. Small flocks on passage north, on 22 and 29-31 Mar 2008, and 20-22 Mar 2009. A few in Jan 2010.

House Martin *Delichon urbicum*. Some on passage north with Common Swifts on 31 Mar 2008. Also noted by A. Hester on 18 Mar 2006.

Plain-backed Pipit *Anthus leucophrys*. Several pairs, and birds singing, in short grassland near Atixoe, Jan 2010.

Tree Pipit *Anthus trivialis*. This species does winter, as recorded in Jan (Kpetsu), also Dec (L. Titrim). Quite common Feb, in woodland, especially with clear understorey (recently burnt, or near rocks). Numerous in Mar, with concentrations of birds on passage.

Yellow-throated Longclaw *Macronyx croceus*. Calling in short grassland near Atixoe, Jan 2010.

Red-shouldered Cuckoo-shrike *Campephaga phoenicea*. Several in dry forest (hills) in Feb. Only one female seen 27 Mar 2008, near Dzakpo; male singing near Kpetsu on 19 Mar 2009. Present all year at Kpetsu (L. Titrim).

Purple-throated Cuckoo-shrike *Campephaga quiscalina*. Singing in Kolor forest, Feb, calling in Oct. Two singing in Kalakpa riparian forest and one in Ayiwa forest (a song starting with loud whistle similar to main call, followed by a light “*ti-tsutui-ti-tju*”), Mar.

White-breasted Cuckoo-shrike *Coracina pectoralis*. Several in rich woodland, Agodeke to Kpetsu.

Little Greenbul *Andropadus virens*. Widespread in forest and moist thickets, all localities except Atixoe.

Little Grey Greenbul *Andropadus gracilis*. Widespread in forest and transition woodland, Agodeke to Zitoe, singing infrequently in Mar, perhaps more in early May.

Cameroon Sombre Greenbul *Andropadus curvirostris*. Widespread in forest near Zitoe, Agodeke and Kpetsu, singing rarely in Mar. Song consists of 4 detached whistles, as elsewhere in eastern Ghana.

Slender-billed Greenbul *Andropadus gracilirostris*. Widespread in canopy in Kolor and Ayiwa forests.

Yellow-whiskered Greenbul *Andropadus latirostris*. Widespread in Kolor and Ayiwa forests; not singing in Feb-Mar, when most birds caught were moulting (adults and immatures). Singing in May, and very vocal also in Oct.

Honeyguide Greenbul *Baeopogon indicator*. Small numbers in semi-evergreen forest, throughout (including near Kpetsu), but absent from drier thickets near Atixoe. Not calling every day in Mar.

Simple Leaflove *Chlorocichla simplex*. Not uncommon in thickets, along the boundary line between Zitoe and Agodeke, south of Agodeke, around the Kalakpa river, east of Dzakpo to Kpetsu, and Atixoe.

Yellow-throated Leaflove *Chlorocichla flavicollis*. Confined to the drier thickets of the south-east, near Atixoe (Jan 2010). Pair duetting.

Swamp Palm Bulbul *Thescelocichla leucopleura*. Local in semi-evergreen forest in the north-west (not exclusively near dry streams, as present in Ayiwa forest away from stream). No records near the Kalakpa.

Leaflove *Pyrrhurus scandens*. Near Zitoe absent from Kolor forest but present on Zitoe Hill, and similarly near Agodeke present only in the drier forests on hills. But near Dzakpo found in some patches of forest on the plain near the reserve's boundary.

Baumann's Greenbul *Phyllastrephus baumanni*. Common in low thickets, as on boundary line between Zitoe and Agodeke, near the Kalakpa river, and east of Dzakpo to Kpetsu. Singing in Jan, but in Mar singing increased after rain. Observed next to White-throated Greenbul in forest on the boundary line at Agodeke.

White-throated Greenbul *Phyllastrephus albigularis*. Very common in understorey of semi-evergreen forest, throughout the north (including the Kalakpa and Kpetsu area). This is the second commonest bird caught in mist-nets (32 ringed).

Icterine Greenbul *Phyllastrephus icterinus* (\*). One record by A. Hester from Kolor forest, 18 Mar 2006, of presumably a wanderer. The *Diospyros* forests appear too dry for a resident population.

Grey-headed Bristlebill *Bleda canicapillus*. Widespread in semi-evergreen forest in the north.

Common Bulbul *Pycnonotus barbatus*. Throughout.

- Western Nicator *Nicator chloris*. In semi-evergreen forest and rich transition woodland, throughout the north and west. One ringed, and another killed in a mist-net by Red-necked Buzzard.
- (West) African Thrush *Turdus pelios*. Widespread in woodland and dry forest. Feeding on figs of *F. platyphylla* (L. Titrim).
- Fire-crested (White-tailed) Alethe *Alethe diademata*. Small numbers in Kolor and Ayiwa forests. Vocally inactive in Feb, but occasional song at dusk or just after dawn heard in late Mar. A bird gave a jumbled song full of imitations (of Black Cuckoo, Green Pigeon etc.) on 19 Mar 2009 at Zitoe. A little singing activity in Oct.
- Forest Robin *Stiphrornis erythrothorax*. Common in dense understorey in semi-evergreen forest, throughout west and north. Readily responds to tape playback of Forest Scrub Robin *Erythropygia leucosticta*, but its own song (similar in tone) is shorter.
- Common Nightingale *Luscinia megarhynchos*. A few winter in thickets: one singing softly on 13 Jan (near Kpetsu), one calling 15 Feb (Agodeke). None heard in late Mar.
- Blue-shouldered Robin Chat *Cossypha cyanocampter*. At least one singing in Kolor forest (Zitoe), Feb. One pair seen at close range in a thicket near Kpetsu by L. Titrim in Oct 2010, and heard there in May 2011.
- Snowy-crowned Robin Chat *Cossypha niveicapilla*. At forest edges and in *Chromolaena*, also dry forest away from streams (Dzakpo) and thicket clumps (Atixoe). Singing in Jan (one imitating Black Cuckoo), very little in Feb, perhaps a little more in Mar. In May one bird at Kpetsu imitated Black Cuckoo (rolled call), Black-shouldered Nightjar, Blue-breasted and Striped Kingfishers, European Bee-eater, Black-crowned Tchagra and Sulphur-breasted Bush Shrike. Only two encountered on our October visit (Agodeke). Appears more common in the dry season ("wintering") than in the rains.
- Whinchat *Saxicola rubetra*. One in grassland near Atixoe, Jan. One on the boundary at Zitoe, Feb. One near Zitoe Hill, 22 Mar; one on boundary near Dzakpo, 27-28 Mar. One near Kpetsu, 20 Mar 2009. (Several in grassland outside reserve near Agodeke village on 1 Apr 2008.)
- African Moustached Warbler *Melocichla mentalis*. Common in rank grass, also mixed with *Chromolaena*.
- Eurasian Reed Warbler *Acrocephalus scirpaceus*. One in a thicket, near Kpetsu, 20 Mar 2009.
- Melodious Warbler *Hippolais polyglotta*. One calling near Kpetsu, 13 Jan, and several singing near Atixoe, 14 Jan (in thickets). Some singing in *Daniellia* woodland, Feb, and a few in thickets, including on the Kalakpa, until 28 Mar.
- Green-backed (Senegal) Eremomela *Eremomela pusilla*. Widespread in woodland.
- Green Crombec *Sylvietta virens*. Common in forest and thickets, throughout the north and west.
- Northern Crombec *Sylvietta brachyura*. Local, in rich woodland.
- Grey Longbill *Macrosphenus concolor*. Common in semi-evergreen forest, in tangles, throughout the north and west.
- Kemp's Longbill *Macrosphenus kempii*. At edges of and in semi-evergreen forest (low tangles) near Zitoe and Ayiwa, also Kpetsu, but not located near the Kalakpa.
- Willow Warbler *Phylloscopus trochilus*. Some on the edge of forest, in transition woodland; often in song, Feb-Mar, until 28 Mar. At least one at Agodeke on 29-31 Oct (singing).
- Wood Warbler *Phylloscopus sibilatrix*. A few on passage in Mar 2008 (singing) near Zitoe.
- Yellow-bellied Hyliota *Hyliota flavigaster*. Several pairs in rich or transition woodland, near Zitoe and Dzakpo.
- Green Hylia *Hylia prasina*. Common in semi-evergreen forest, throughout.
- Garden Warbler *Sylvia borin*. One singing at forest edge, 15 Feb.
- Croaking Cisticola *Cisticola natalensis*. Overlooked during our Feb visit, and very few starting to sing on 31 Mar 2008, in rank grass near Agodeke, and one seen open *Borassus* woodland, 29 Mar. One in song near Kpetsu on 20 Mar 2009, May 2011 and even in Jan 2010. One seen near Atixoe. Singing late Oct (Zitoe dam).
- Short-winged Cisticola *Cisticola brachypterus*. In Jan-Feb partial to unburnt grass in short wood-

- land; more widespread in Mar (when fresh grass was growing everywhere), although not yet singing. Likely to start in Apr (full song on 12 May, Kpetsu), and still singing late Oct.
- Rock-loving Cisticola *Cisticola aberrans*. In open wooded grassland on pebbly hill near Kadanga (Feb).
- Whistling Cisticola *Cisticola lateralis*. Very common, at forest edges, transition or thicker woodland. Not singing Jan-Feb; starting to sing late Mar and still singing late Oct, and even late Nov (D. Hoddinott).
- Red-faced Cisticola *Cisticola erythroptus*. In rank growth on the edge of forest and short secondary woodland near Agodeke, Kpetsu, and near Dzakpo (Kalakpa drainage).
- Singing Cisticola *Cisticola cantans*. Local, in shrubby woodland, west and east. Sings more or less year round.
- Tawny-flanked Prinia *Prinia subflava*. Widespread (woodland).
- Red-winged Warbler *Heliolais erythropterus*. Local in open woodland (including Kpetsu); in Feb restricted to unburnt rank grass.
- Yellow-breasted Apalis *Apalis flavida*. Very local, as found only in large thickets near Atixoe, Jan 2010.
- Grey-backed Camaroptera *Camaroptera brachyura*. Common in understorey of any forest or thicket.
- Yellow-browed Camaroptera *Camaroptera supercilialis*. Overlooked in Feb (when not singing), and calling very little in late Mar except after rain; noisy in Oct. In understorey of Kolor forest, thickets along boundary (Zitoe and Agodeke) and near the Kalakpa river.
- Olive-green Camaroptera *Camaroptera chloronota*. One singing in thick forest on the boundary between Zitoe and Agodeke, 24 Mar 2008.
- Oriole-Warbler *Hypergerus atriceps*. Very local, as found only in the large thicket clumps near Atixoe, Jan 2010.
- Pale (Pallid) Flycatcher *Bradornis pallidus*. A pair in *Daniellia* woodland (Zitoe), and open woodland towards Kadanga Hill; more common in short woodland near Kpetsu; also near Atixoe.
- Pied Flycatcher *Ficedula hypoleuca*. A few on passage in woodland, 22 and 26 Mar 2008, 21 Mar 2009. One seen on 18 Oct 2010 at Kpetsu (L. Titrim) and 31 Oct at Agodeke.
- Spotted Flycatcher *Muscicapa striata*. Winters in the park, as seen at Kpetsu and Atixoe in Jan; Zitoe in Feb (woodland). Several 19-21 Mar 2009. One on hill near Kadanga, 29 Mar 2008.
- Lead-coloured Flycatcher *Myioparus plumbeus*. Widespread, in dry forest (hills), transition woodland and generally forest edges.
- Shrike-Flycatcher *Megabyas flammulatus*. Several in canopy of Kolor and Ayiwa forests. Rarely active outside bird parties.
- Black-and-white Flycatcher *Bias musicus* (\*). One pair near Djakpo camp, Feb 2011 (L. Titrim).
- Senegal Batis *Batis senegalensis*. Widespread in rich woodland, and even thin woodland on high ridges.
- Red-cheeked Wattle-eye *Dyaphorophya blissetti*. Common in thick understorey of semi-evergreen forest, and thickets along boundary, throughout (including Kpetsu), but not Atixoe.
- Chestnut Wattle-eye *Dyaphorophya castanea*. Widespread in semi-evergreen forest from Agodeke to Zitoe; more local on the Kalakpa river.
- Common Wattle-eye *Platysteira cyanea*. Restricted to drier thickets in the south-east (Atixoe).
- Blue-headed Crested Flycatcher *Trochocercus nitens*. Not singing in Feb 2005, and would have been overlooked but for one mist-netted in Ayiwa forest. Starting to sing in mid or late Mar, especially after rain, then found throughout, in Kolor, on the Kalakpa, dry forest east of Dzakpo to Kpetsu.
- African Paradise Flycatcher *Terpsiphone viridis*. Widespread in forest and transition woodland (some black-and-white males with long white tail), Jan-Mar, but no records in Oct at Zitoe and Agodeke. Two noted in late Nov 2008 by J. Pienaar.
- Red-bellied Paradise Flycatcher *Terpsiphone rufiventer*. Common in semi-evergreen forest, throughout; also one in thickets (Kpetsu) and drier forest on Zitoe Hill. Several in moult in Feb-Mar.
- Brown Illadopsis *Illadopsis fulvescens*. Common in semi-evergreen forest, throughout. Some singing a lot in late Mar, and also in Oct.
- Puvel's Illadopsis *Illadopsis puveli*. At least two singing in Kolor forest (Zitoe), next to congener, Feb-Mar.

Also in forest patch east of Dzakpo and near Kpetsu (north-east boundary, singing on both visits, Jan & Mar). One singing at forest edge at Agodeke, Oct.

Brown Babbler *Turdoides plebejus*. Local, in woodland: one group near Zitoe, near Dzakpo and on boundary near Agodeke and Kpetsu.

Blackcap Babbler *Turdoides reinwardtii*. Common in thicket clumps near Atixoe, but absent from forest in the north and west of the reserve.

Capuchin Babbler *Phyllanthus atripennis*. Common in Kolor and Ayiwa forest, and more local on the Kalakpa; present also further east in dense forest near Kpetsu. Density of five groups along the 500 m of path crossing the Ayiwa forest, as shown by tape playback experiments.

White-winged (White-shouldered) Black Tit *Parus leucomelas guineensis*. Widespread in woodland.

Spotted Creeper *Salpornis spinolotus* (\*). One well seen in a bird party in woodland near Kpetsu camp, 5 Apr 2011 (L. Titrim). LT already knew the species which he had identified by himself while in training in northern Ghana in 2010.

Fraser's Sunbird *Deleornis fraseri*. Seen twice in mixed bird party in Kolor forest (Mar 2008).

Western Violet-backed Sunbird *Anthreptes longuemarei*. One pair in transition woodland on Zitoe Hill (Feb), and a male taking insects in a *Vitellaria* tree in woodland near Agodeke (Oct). A male in fruiting fig tree (*Ficus platyphylla*) at Kpetsu camp in Jul and Nov 2010 (L. Titrim).

Collared Sunbird *Anthreptes collaris*. Widespread, in any forest and thickets (including on rocky hills). Taking nectar of *Ceiba* flowers, Jan. Not singing in Oct, when indeed the one bird mist-netted was moulting.

Little Green Sunbird *Nectarinia seimundi*. Two seen at the edge of Ayiwa forest (Feb).

Olive Sunbird *Nectarinia olivacea*. Common in semi-evergreen forest in the north and west; the most numerous species in mist-nets (46 ringed).

Green-headed Sunbird *Nectarinia verticalis*. Common in thickets and transition woodland throughout; also riparian forest on the Kalakpa; a few came to *Gmelina* flowers in Dzakpo camp, Mar. On mistletoe flowers in a Teak, Oct.

Scarlet-chested Sunbird *Nectarinia senegalensis*. Rare: one record of a male in woodland near Dzakpo, 27 Mar 2008.

Buff-throated Sunbird *Nectarinia adelberti*. Common in thickets and transition woodland west and north; many on *Gmelina* flowers in Dzakpo camp (Mar).

Variable Sunbird *Nectarinia venusta*. Rare: one male in eclipse plumage on *Gmelina* flowers, Dzakpo, 26 Mar 2008. Seen at Kpetsu in Feb 2010 (L. Titrim). One in partial dress, singing a little, 12 May 2011.

Olive-bellied Sunbird *Nectarinia chloropygia*. In thickets along the boundary between Zitoe and Agodeke, near the Kalakpa river, and also east of Dzakpo and near Kpetsu.

Copper (Coppery) Sunbird *Nectarinia cuprea*. Widespread in woodland. Common near Dzakpo, including several on *Gmelina* flowers in guards' camp (Mar). The commonest sunbird near Kpetsu in transition woodland, Mar 2009.

Splendid Sunbird *Nectarinia coccinigaster*. Common in any woodland and transition woodland, and at forest edges. Also on *Gmelina* flowers, Dzakpo. One feeding on figs *Ficus platyphylla* in Nov 2010 at Kpetsu (L. Titrim).

Superb Sunbird *Nectarinia superba*. In the canopy of Kolor and Ayiwa forests, and locally elsewhere (e.g. east of Dzakpo).

Yellow White-eye *Zosterops senegalensis*. Local: in dry forest and woodland around rocky hills (near Kadanga); also in woodland near Kpetsu.

African Golden Oriole *Oriolus auratus*. Common in woodland around Dzakpo and Kpetsu. More local in transition woodland and dry (hill) forest (Feb). The odd one singing in forest in Mar (Kolor, Ayiwa). Fond of fruits of *Lannea barteri*, and also figs (*F. platyphylla*, L. Titrim). Subject to local movements.

Yellow-billed Shrike *Corvinella corvina*. One in dense woodland near Dzakpo; normally encountered in more open woodland, as near Kpetsu, Agodeke camp, and in thicket-clump savanna (with short grass)

near Atixoe.

Brubru *Nilaus afer*. Local, as found only in woodland around Dzakpo and Kpetsu.

Northern Puffback *Dryoscopus gambensis*. Uncommon in the north-west, common elsewhere, in any forest and thicket or transition woodland.

Marsh Tchagra *Tchagra minutus*. Three observations of adults of either sex alarm-calling in dense *Chromolaena* just outside forest (Kolor, Ayiwa) and in secondary growth near Dzakpo, where seen carrying food (late Mar). Several singing and calling in secondary growth and *Hyparrhenia* near Kpetsu, Jan & Mar.

Black-crowned Tchagra *Tchagra senegalus*. Widespread in woodland.

Brown-crowned Tchagra *Tchagra australis*. One pair in secondary growth on boundary near Dzakpo, another on boundary near Kpetsu.

Tropical Boubou *Laniarius aethiopicus*. Marginal, as found in thickets in abandoned fields on the edge of the reserve, near Dzakpo and Agodeke; woodland with thickets near Kpetsu.

Yellow-crowned Gonolek *Laniarius barbarus*. In woodland with thickets, between Kpetsu and Dorkpo, and in the south-east (Atixoe).

Sulphur-breasted Bush Shrike *Malaconotus sulfureopectus*. Associated with dry thickets and *Acacia* in the drainage of the Kalakpa (Dzakpo), near Agodeke camp and Kpetsu, thicket clumps near Atixoe.

Grey-headed Bush Shrike *Malaconotus blanchoti*. Fairly widespread, in dry (hill) forest, transition woodland and forest edges.

White Helmet Shrike *Prionops plumatus*. Local in woodland. One group at forest edges near Zitoe, another of about 20 near Dzakpo (Mar), heard near Kpetsu; common in Agodeke woodland and even wandering into Teaks on boundary.

Red-billed Helmet Shrike *Prionops caniceps*. Very discreet in late Mar 2008 when a small group was discovered in Ayiwa forest. A group of 6 in Kolor forest, Nov 2008 (J. Pienaar).

Fork-tailed Drongo *Dicrurus adsimilis*. Few, in woodland. Noisy in Jan-Mar.

Piapiac *Ptilostomus afer*. A dozen in short grassland near Atixoe, with cattle. Well known to wildlife staff, usually seen around Buffalo.

Purple Glossy Starling *Lamprotornis purpureus*. Two in woodland near Zitoe Hill (22 Mar); one pair in Kolor forest, 3 May; one pair near Kpetsu (Mar), and near Atixoe (Jan). Small flock (7-8 birds) in Oct near Agodeke. Come to figs (*F. platyphylla*) at Kpetsu.

Bronze-tailed Glossy Starling *Lamprotornis chalcurus*. A few in tall woodland near Kadanga Hill, one calling loudly from top of tree (Mar 2008).

Lesser Blue-eared Starling *Lamprotornis chloropterus*. Widespread and nesting in woodland (Feb). Fewer in Mar 2008: two singles near Zitoe Hill, and one coming to a fruiting *Lannea* near Dzakpo, then moving on. Noted near Kpetsu until at least early May (L. Titrim). A single bird sitting on a dead tree near Zitoe, 28 Oct 2010. Small flocks coming several times to eat figs (*F. platyphylla*) at Kpetsu 16-26 Nov 2010 (L. Titrim).

Splendid Glossy Starling *Lamprotornis splendidus*. A few in semi-evergreen forest, throughout (Feb-May).

Violet-backed Starling *Cinnyricinclus leucogaster*. Status unclear: one male on Zitoe Hill, 22 Mar 2008.

Bush Petronia *Petronia dentata*. In woodland: rare in Feb, even fewer in Mar (one pair near Zitoe), none Oct. Not found near Kpetsu in Mar 2009 but L. Titrim found a few in dry season of 2010-11. Thus very local (at the south-eastern limit of range) and probably only in dry season.

Little Weaver *Ploceus luteolus*. Two sightings in woodland between Kpetsu and Dorkpo, of which one pair was working on a nest (male in breeding dress), 20 Mar 2009. In 2010 LT observed incubation behaviour in May. One old but well-preserved nest in a *Leucaena* next to a wasps nest, in Agodeke camp (2010).

Black-necked Weaver *Ploceus nigricollis*. In canopy of semi-evergreen forest and thickets, throughout. Often several in mixed bird parties.

Vieillot's Black Weaver *Ploceus nigerrimus*. Few in thickets on the boundary between Zitoe and Agodeke, in a mixed group with Village Weavers.

- Village Weaver *Ploceus cucullatus*. Some groups in woodland or thickets near Zitoe, Dzakpo and Kpetsu.
- Compact Weaver *Ploceus superciliosus*. Three flying through (calling), boundary at Zitoe camp, 25 Mar; a small group near Dzakpo 27 Mar.
- Blue-billed Malimbe *Malimbus nitens*. In understorey of semi-evergreen forest (frequent in Kolor). More local near Dzakpo: one pair in dry forest to the east.
- Red-headed Quelea *Quelea erythrops*. A flock of over 20 in woodland near Zitoe, 23 Mar 2008, in non-breeding dress. Some seen in grassland just outside the reserve in Oct (in breeding dress).
- Black-winged Bishop *Euplectes hordeaceus*. Localized: territorial male in rank grass near Agodeke camp (Oct) and also at Kpetsu (LT).
- Northern Red Bishop *Euplectes franciscanus*. One flock over grassland (Feb).
- Yellow-mantled Whydah (Widowbird) *Euplectes macroura*. Some in rank grass edge of Zitoe dam (Feb). More widespread in Mar (including Kpetsu, Agodeke), still in non-breeding dress but starting to sing in places: frequent in rank grass in secondary woodland along the boundary. On 12 May one male was half moulted into breeding dress (Kpetsu); still in full dress late Oct.
- Grey-crowned Negrofinch *Nigrita canicapillus*. A few in semi-evergreen forest, throughout, also in drier thickets near Atixoe.
- Yellow-winged Pytilia *Pytilia hypogrammica*. Two in woodland near Zitoe, Mar 2008. Two seen along the entrance to Zitoe camp, Nov 2008 (J. Pienaar).
- Western Bluebill *Spermophaga haematina*. A female mist-netted in Ayiwa forest, 30 Mar 2008 and a male in Oct 2010. One seen in forest on small stream, near Kpetsu, 13 Jan 2010, and male seen nest-building near Kpetsu in Jul 2010 (L. Titrim). Singing in Kolor forest and alarm-calling in Ayiwa forest, Oct.
- Bar-breasted Firefinch *Lagonosticta rufopicta*. Seen in riparian growth on the Awato stream, near Atixoe (Jan) and scrub on boundary line at Agodeke (Oct, singing). Recorded near Kpetsu in the rains, when breeding (L. Titrim).
- Black-bellied Firefinch *Lagonosticta rara*. Widespread in rich woodland and small thickets (including Kpetsu), usually in pairs.
- Blue-billed Firefinch *Lagonosticta rubricata*. Several in rank growth edge of Ayiwa forest, and on boundary line near Agodeke and Kpetsu (all visits).
- Orange-cheeked Waxbill *Estrilda melpoda*. Overlooked in Feb?, but several records on subsequent visits: Zitoe dam; some in rank growth near Dzakpo and Kpetsu.
- Bronze Mannikin *Spermestes cucullata*. Occasional in woodland.
- Black-and-white Mannikin *Spermestes bicolor*. One group of a dozen in transition woodland edge of Ayiwa forest and some near Kpetsu (Mar). More widespread in Oct, including Zitoe.
- Magpie Mannikin *Spermestes fringilloides* (\*). One small group in dry forest on the Kalakpa seen by T. Traub-Evans on 25 Mar 2008; the wild bamboo *Oxytenanthera* occurs locally on this river. Also observed near Kpetsu, breeding in Mar 2010 (L. Titrim), not far from wild bamboo.
- Indigobird sp. *Vidua* sp. (\*). Noted by P. Darko in the rainy season. Two species are possible: *V. camerunensis*, as two of its known hosts are present (Black-bellied and Blue-billed Firefinches) or *V. wilsoni* (parasitizing Bar-breasted Firefinch).
- Pin-tailed Widow (Whydah) *Vidua macroura*. One singing at Kpetsu camp was moulting into breeding dress, 19-21 Mar 2009. Full dress observed by end of Mar 2011 (L. Titrim). One of two singing at Agodeke camp late Oct was no longer in breeding dress.
- Yellow-fronted Canary *Serinus mozambicus*. Local in woodland, near Zitoe Hill (Feb and Mar), Zitoe camp (Oct), Dzakpo and Kpetsu. Came to eat figs of *F. platyphylla* in Nov (L. Titrim).

**Two deletions.** In our previous reports in 2008-09 we included Malachite Kingfisher *Alcedo cristata*, as having been reported by visitors on the Kolor stream in forest in Oct. Having observed instead White-bellied Kingfisher, which is indeed a characteristic species of flooded forest, we prefer to withdraw Malachite Kingfisher, which generally avoids forest. Fraser's Eagle Owl *Bubo poensis*, included in the first version of this report in 2011, is withdrawn: one report by R. Ntakor is believed more likely to refer to Verreaux's Eagle Owl.

## 5. MAMMALS

The density of small antelopes in the protected sections of the reserve (Zitoe, Agodeke) is quite high: we saw more Red-flanked Duikers and Maxwell's Duikers here than anywhere else in Ghana. Several pairs of both species were seen daily on our walks through the forests in the dry season, in the plain as well as on Zitoe Hill and up the Afubo escarpment. Bushbuck and Kob were also seen and heard, and one Grey Duiker seen (on first two visits). Kolor forest has some large groups of small monkeys (Green, Mona and Spot-nosed), and Patas can be seen in the vicinity. The numbers of hyraxes in forest seem quite high. Of particular interest in Kalakpa is the coexistence of two species of Hyrax in forest: the common Tree Hyrax and also another Hyrax with different vocalizations, which seems to outnumber the former in places (as in riparian forest and adjacent dry forest on the Kalakpa).

In 2005 we interviewed staff from Agodeke camp, but there was too much confusion over species identification, and results of our discussions could not be used. In 2008 we interviewed more senior staff at Dzakpo, and they provided some valuable information. They were Walter Obikyere (who had been in Kalakpa since 1989) and Rubin Attakumah (since 1980), while Robert Amedodzi had recently been transferred from Kyabobo. In 2009 we interviewed staff at Kpetsu camp (Lawrence Titrim and three others) who, between them, had some interesting information too. The new camp leader in Agodeke, Paul Dziwornu, and his colleagues were also interviewed in 2010.

### Systematic list

- Potto *Perodicticus potto*: reported seen by the Kalakpa river by guards at Dzakpo and said to be common in Ayiwa forest at Agodeke. Mapped in the Kalakpa square by Grubb *et al* (1998).
- Senegal Galago *Galago senegalensis*: heard at dusk in woodland, edge of Ayiwa forest, on all visits (FD-L), and widespread, according to guards. Also heard extralimitally next to the source of the Kalakpa river. An extension of its confirmed range southwards from Haho-Baloué (6°45'N, 1°00'E) in Togo (Grubb *et al.* 1998).
- Thomas's Galago *Galagoides thomasi*: more attention was paid to galago calls in 2009, and we are now convinced that the species heard at Dzakpo on the Kalakpa river in 2008 and Zitoe in Kolor forest on several visits is Thomas's, whose voice is higher-pitched than Demidoff's *G. demidoff*. Discovered in eastern Ghana by Simon Bearder in June 2005; this is the common forest galago of the Dahomey Gap (also heard and tape-recorded by FD-L in southern Benin in 2009).
- Olive Baboon *Papio anubis*: mapped in the Kalakpa area by Grubb *et al* (1998), and reported locally to have been exterminated (poisoned) by villagers in the past, to protect their crops. Last known date was 1993 (William Apraku, pers. comm. 2008). It would be surprising if it did not occur within the reserve from time to time, but we know of no recent records.
- Spot-nosed Monkey *Cercopithecus petaurista*: one group seen and heard in Kolor forest in Mar 2008 (FD-L); also known to staff at Dzakpo and Agodeke (Ayiwa forest), and not extinct as feared by Sam (1994). An historical record is mapped by Grubb *et al.* (1998).
- Mona Monkey *Cercopithecus mona*: listed for the reserve area in 1972 (Volta 1972) and there is a plot for the Kalakpa square in Grubb *et al.* (1998). By the 1990s considered extinct (Sam 1994), but one group was well seen by A. Hester in Kolor forest in 2006 and by ourselves in Oct 2010. Lawrence Titrim and colleagues know it from forest around the Awato stream and its tributaries, and Paul Dziwornu and colleagues also know it from Ayiwa forest.
- Green Monkey *Cercopithecus aethiops*: several groups in forest and transition woodland in the west.
- Patas Monkey *Erythrocebus patas*: a very large troop was disturbed from Kolor dam (2005), and reported widespread (guards).
- Black-and-white Colobus *Colobus vellerosus*: one group heard in Feb 2005 (near Kadanga Hill, in a patch dominated by *Ceiba*), and one isolated animal seen eating fresh leaves of *Antiaris* on top of Kadanga Hill on 24 Mar 2008. The dry forest on the eastern side of Kadanga had just been cleared by Fosime villagers for charcoal. Threatened by the clearing of dry forest in the area.

Occasionally come into Ayiwa and Kolor forest (P. Dziwornu).

African Civet *Civettictis civetta*: known to occur (M. Adu-Nsiah pers. comm. 2005). P. Dziwornu has seen it at Agodeke.

Genet sp. *Genetta* sp. Known to staff, but cannot be identified to species.

Egyptian Mongoose *Herpestes ichneumon*: one well seen in woodland near Kadanga Hill, 24 Mar 2008 (FD-L).

[A medium-sized mongoose seen edge of forest (Kalakpa river), 27 Mar 2008, was possibly the Marsh Mongoose *Atilax paludinosus*.]

Slender Mongoose *Galerella sanguinea*: known to guards.

Spotted Hyaena *Crocuta crocuta*: a few still present in the south of the reserve to 2004 (wildlife guards, pers. comm. 2008). None in recent years.

Lion *Panthera leo*. L. Titrim and other guards at Kpetsu saw tracks of a Lion in the north of the reserve in Feb 2009. This animal, after eating two goats in a village (Adaklu Worpe) and wounding one man (just the arm), entered the reserve between the camps of Djakpo and Torkpete, then crossed it to the south-west (Agortive) before walking back north and out of the reserve near Sokode. Before reaching Sokode he killed a cow. One poacher saw him at very close range and climbed a tree, watched by the Lion who, luckily, left him alone. The origin of this Lion is of course completely unknown; east of the Volta Lions are not known to occur regularly any nearer than the Pendjari National Park in Benin!

Serval *Felis serval*: known to guards (Dzakpo, Agodeke).

[Leopard *Panthera pardus*: now extinct, according to guards (pers. comm. 2008).]

Western Tree Hyrax *Dendrohyrax dorsalis*: commonly heard at night in semi-evergreen forest throughout the north and west. This is its eastern limit of range within Ghana, as it does not otherwise occur in the Dahomey Gap.

Undescribed tree hyrax *Dendrohyrax* sp.: heard at night, in Kalakpa riparian forest and adjacent dry forest; also several in Ayiwa forest (Agodeke). At Zitoe (Kolor forest) Tree Hyrax appears more common, but at least one other hyrax was calling in Mar and May 2009. Occurs next to Tree Hyrax and seems to occupy different territories. The voice is much more varied than that of Tree Hyrax, starting with a dry rattle “*krrrrrrrrrrrrrr*”, getting louder and slower (“*krrrrrrrrrrrrrr-ret-ret-ret*”) as it is repeated, then a series of coughs “*ko-ko-ko-ko-ko-ko-ko*”, getting slower and with fewer notes as it is repeated “*wiurr-ko-ko-ko-ko-ko-ko*”, then a sluggish “*kof-kof-kof-kof*” to finish. The “*ko-ko-ko*” notes are well detached. At our camp on the Kalakpa, we located 2 Tree Hyrax and 5 of the other species calling in different territories. Tape-recorded 27 Mar 2008. The animals heard in 2010 (Ayiwa) did not give the full range of calls, but only the series of “*ko-ko-ko-ko*”. It is also very common in the forests of Afadjato and Amedzofe highlands, Odomi River and Togo Plateau Forest Reserves near Hohoe and Jasikan. The same species (based on voice) is common in the forests of southern Benin (where tape-recorded in Feb 2009), locally in western Togo (2011) and reaches Okomu forest in south-west Nigeria (S. Bearder and J. Oates *in litt.* 2009). As there are two old specimens of a *Dendrohyrax* from Okomu forest in the British Museum, the chances are that this is the author of the unknown calls. It remains to be described.

[Antbear *Orycteropus afer*: said by some guards to have occurred “formerly”, but it is not clear how it became extinct.]

Red River Hog *Potamochoerus porcus*: widespread in small numbers in forest (tracks and distinctive smell noted).

[Warthog *Phacochoerus aethiopicus*: mentioned as seen by Sam (1994: 7), but not repeated in his table. Guards confirm (pers. comm. 2008 and 2010) that they do not know of any record at all.]

[Bongo *Tragelaphus euryceros*: Brashares *et al.* (2001) claimed that this species was now extinct in the 3 savanna wildlife reserves from which it had been known. They did not say which reserves these were, but one was presumably Kalakpa. East (1996) had suggested that “a few bongo may also persist in the Kalakpa reserve”, but the species was not mentioned by Ankudey and Ofori-Frimpong (1990), a reference not cited by Brashares *et al.* (2001). M. Adu-Nsiah (pers.

comm. 2005) knows of no certain evidence that it ever occurred.]

Bushbuck *Tragelaphus scriptus*: seen and heard in small numbers in the north-west, and tracks below Kadanga Hill, in recently cleared dry forest.

Buffalo *Syncerus caffer*: semi-fresh tracks near the (recently dried up) Kolor stream near Zitoe in 2005, and in 2008 two visited the dam there. Guards report several in the Agodeke area (where tracks seen), where present until the temporary streams or pools dry up (by January). It is rather more common near Kpetsu on the eastern border, and small groups cross the road occasionally to visit farmbrush outside the park.

Maxwell's Duiker *Cephalophus maxwelli*: common in any forest, with several pairs seen daily on our walks.

Red-flanked Duiker *Cephalophus rufilatus*: common in dry forest and transition woodland.

[Yellow-backed Duiker *Cephalophus sylvicultor*: not known within the reserve, but guards report that one was poached recently in the hills near Abutia Agove.]

Grey or Common Duiker *Sylvicapra grimmia*: present in small numbers in lightly-wooded areas. Each time, the guard who was with us called this animal "Oribi".

Waterbuck *Kobus ellipsiprymnus*: seen only rarely by guards at Dzakpo (pers. comm. 2008), their last report was in 2004. P. Dziwornu and colleagues saw 5 together just south of Agodeke in 2010. Considered endangered because of poaching by illegal settlers.

Kob *Kobus kob*: still common in the north-west, especially near Zitoe Hill, fewer east of Ayiwa in *Borassus* woodland. Groups of up to 20, or more. Just over 100 were seen by a tourist and guide on 21 Mar 2008.

[Bohor Reedbuck *Redunca redunca*: its presence in the area was accepted in a 1972 survey solely on the basis that local hunters reported it "common". It may well have been misidentified by them.]

[Roan Antelope *Hippotragus equinus*: may have occurred in the past, as guards at Dzakpo had heard talk of it (pers. comm. 2008).]

[Oribi *Ourebia ourebi*: reported to occur in short grass areas (Sam 1994). We did not see it, and guards throughout Ghana often confuse Grey Duiker with this species.]

Giant Pangolin *Phataginus giganteus*: said to occur by guards (pers. comm. 2008 and 2010).

Tree Pangolin *Phataginus tricuspis*: said to occur by guards (pers. comm. 2008 and 2010), and there is a plot in the Kalakpa square (Grubb *et al.* 1998).

Red-legged Sun Squirrel *Heliosciurus rufobrachium*: common throughout.

Giant Squirrel *Protoxerus stangeri*: quite common in forest.

Kintampo Squirrel *Funisciurus substriatus*: a few seen in thicket and the understorey of riparian forest in the Dzakpo area. A slight extension of known range southwards (see map in Grubb *et al.* 1998).

Ground Squirrel *Xerus erythropus*: seen by Sam (1994).

Beecroft's Flying Squirrel *Anomalurus beecrofti*: a female and young watched very closely in the top of an *Anogeissus* tree in dry forest east of Dzakpo, 26 Mar 2008 (17 hrs). The call was heard at night in Ayiwa forest (FD-L), late Mar 2008.

Giant Rat *Cricetomys gambianus*: recorded by Sam (1994).

Striped Mouse *Lemniscomys striatus*: recorded by Sam (1994).

Crested Porcupine *Hystrix cristata*: widespread (quills seen).

Brush-tailed Porcupine *Atherurus africanus*: a forest species, reported to occur by Sam (1994), and known to guards (pers. comm. 2008).

Grasscutter *Thryonomys swinderianus*: present in grassy areas throughout (Sam 1994, pers. obs.).

The following species (among others) were listed in a 1972 survey (Volta 1972, Sam 1994), but it seems they may only have been hypothetical, as no detailed records were given (and some of them seem highly unlikely, even eccentrically impossible): Palm Civet *Nandinia binotata*, Giant Forest Hog *Hylochoerus meinertzhageni*, Black Duiker *Cephalophus niger*, Bay Duiker *C. dorsalis*, Abbot's Duiker *C. spadix*, Hartebeest *Alcelaphus buselaphus*. None of these can be accepted, nor any of the other

species mentioned in those references and not repeated here.

## 6. CONSERVATION ASPECTS

Most of the savanna sections burn every dry season, more or less severely. The wide galleries of forest crossing Kalakpa from north to south need protection through a policy of early burning. Some early fires had indeed been lit in the vicinity of guards' camps (Zitoe, Agodeke). Where the invasive shrub *Chromolaena odorata* is dominant along the edges of forest, it provides a barrier against fires as long as the fires are not too severe; otherwise transition woodland bordering forest may be damaged by fires, which usually do not penetrate dense forest.

East of Agodeke, however, the fate of the reserve is in the hands of villagers settled in the centre of Kalakpa. Villagers clear woodland and dry forest not only to grow crops, but also to make charcoal for selling outside the reserve. The village of Fosime has cleared natural vegetation even close to the foot of Kadanga Hill. This includes dry forest that must have been home to Black-and-white Colobus (of which we saw one, isolated on the top of the hill). The aggressive nature of the villagers is a problem for the guards as well as for any visitor who might venture in that direction.

We did not visit the southern half of the reserve apart from a brief trip to Atixoe; the vegetation in the north-west and the north (including south and east of Dzakpo) appears intact. Some fields are cultivated outside the reserve right up to the boundary, creating a hard-edge effect. The boundary line between Dzakpo, Zitoe and Agodeke camps is very well defined and maintained, and often planted with Teak *Tectona grandis*.

The density of medium-sized mammals near Agodeke and Zitoe shows that this particular area is well protected against poachers, but this is unlikely to be the case around illegal settlements. In 2010 however, funding was made available (through the Dutch embassy) to help remove illegal settlers. The great majority of villagers are willing to move, but the process is likely to take time.

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**APPENDIX 1. ITINERARY AND TIMETABLE****In 2005:**

Afternoon of 12 February to 14 (midday): camp in Zitoe guards' camp then Kolor forest (near the dam); observations in Kolor forest (using excellent system of paths); walk to Zitoe Hill and beyond to Nyito forest. One evening drive looking for nightjars along the road from Zitoe to Abutia Kloe.

Afternoon of 14 to 16 February (midday): camp edge of Ayiwa forest near Agodeke. Mist-netting in forest by RJD, exploration of woodland and dry forest on hills in the Afubo range, near Kadanga by FD-L.

**In 2008:**

20-23 March: base camp in Kolor forest (near the dam); local observations (including Zitoe Hill), and mist-netting for 2-3 days in forest;

24 March: morning in Kolor forest and along boundary towards Agodeke; afternoon drive towards Kadanga Hill, through woodland. Had to turn back as villagers from Fosime village proved too aggressive; night in Kolor forest;

25-28: base camp established for 3 nights on the Kalakpa river 1 km west of Dzakpo guards' camp. Forest along the Kalakpa (southwards for 3 km), woodland and dry forest for up to 3 km east and west of Dzakpo;

28-31 March: base camp on the edge of Ayiwa forest, as in 2005; mist-netting in forest, and observations in forest, woodland, and up the hill to the Afubo range;

1 April: leave in mid-morning.

**In 2009:**

18-19 March: one night camping in Kolor forest near Zitoe, morning walk in forest, then transfer to Kpetsu camp via Ho;

19-21 March: two nights at Kpetsu camp, exploring woodland and farmbrush along road to Kpetsu village and beyond towards Dorkpo village (inside park), then dry forest just south of boundary line north-west of Kpetsu camp.

1-3 May: two nights camping in Kolor forest, local observations 2-3 May by RJD.

**In 2010:**

12-13 January: reached Kpetsu camp at 16h30; walk along boundary line early morning to large patch of forest;

13-14 January: drive to Atixoe (Atihoe) wildlife camp. After talk with staff, drive to Awato stream, then set up camp in short grassland in thicket-clump savanna. Local obs. evening and morning.

26-28 October: two nights camping in Kolor forest, mornings in forest and near Zitoe Hill (midday in Ho on 27th);

28 October: drive to Agodeke in late afternoon, camp in guards' camp;

29-31 October: camp moved to edge of Ayiwa forest for two nights, after clearing old track. Observations in woodland, along boundary line (scrub, patches of dry forest) and in Ayiwa forest along main path, mist-netting by RJD in the forest on 29-31. Leave midday on 31st.

**In 2011:**

11-12 May: Kpetsu camp, local observations and meeting with L. Titrim.

APPENDIX 2. GAZETTEER

Agodeke camp (Ayiwa forest) .....6°23'N, 0°19'E  
 Atixoe (Atihoe) camp .....6°19'N, 0°28'E  
 Dzakpo camp (near the Kalakpa river) .....6°28'N, 0°25'E  
 Kadanga Hill .....6°23'N, 0°21'E  
 Kolor forest (near the dam and Zitoe) .....6°28'N, 0°22'E  
 Kpetsu camp .....6°27'N, 0°30'E



Figure. Map of Kalakpa Resource Reserve (courtesy of Theo van der Sluis, SNV, Ho).

## CHECKLIST OF THE BIRDS OF KALAKPA RESOURCE RESERVE

Compiled by R.J. Dowsett & F. Dowsett-Lemaire

The English names usually follow Borrow & Demey (2001, *Birds of Western Africa*. London: C. Helm) and scientific nomenclature Dowsett & Forbes-Watson (1993. *Checklist of birds of the Afrotropical and Malagasy regions*. Liège: Tauraco Press), with a few changes. Abbreviations used: Res. = Resident; PM = Palearctic (Eurasian) migrant; AM = Intra-African migrant; Irreg.: irregular visitor. The status of some species is poorly known, as we do not have reliable observations for all times of year.

### Species .....Status .....Observations

White-crested Tiger Heron <i>Tigriornis leucolopha</i> .....	Res.....	
Black-crowned Night Heron <i>Nycticorax nycticorax</i> .....	Res.....	
Cattle Egret <i>Bubulcus ibis</i> .....	AM.....	
Green-backed Heron <i>Butorides striata</i> .....	Res.....	
Spot-breasted Ibis <i>Bostrychia rara</i> .....	Res.....	
African Cuckoo Hawk <i>Aviceda cuculoides</i> .....	Res.....	
European Honey Buzzard <i>Pernis apivorus</i> .....	PM.....	
Black-shouldered Kite <i>Elanus caeruleus</i> .....	Res.....	
Yellow-billed Kite <i>Milvus migrans</i> .....	AM.....	
Palm-nut Vulture <i>Gypohierax angolensis</i> .....	Res.....	
Hooded Vulture <i>Necrosyrtes monachus</i> .....	Res.....	
African White-backed Vulture <i>Gyps africanus</i> .....	Vagrant.....	
Brown Snake Eagle <i>Circaetus cinereus</i> .....	Res.....	
Congo Serpent Eagle <i>Dryotriorchis spectabilis</i> .....	Res.....	
African Harrier Hawk (Gymnogene) <i>Polyboroides typus</i> .....	Res.....	
Eurasian Marsh Harrier <i>Circus aeruginosus</i> .....	PM.....	
Black Sparrowhawk <i>Accipiter melanoleucus</i> .....	Res.....	
African Goshawk <i>Accipiter tachiro</i> .....	Res.....	
Shikra <i>Accipiter badius</i> .....	Res.....	
Grasshopper Buzzard <i>Butastur rufipennis</i> .....	AM.....	
Lizard Buzzard <i>Kaupifalco monogrammicus</i> .....	Res.....	
Common Buzzard <i>Buteo buteo</i> .....	PM.....	
Red-necked Buzzard <i>Buteo auguralis</i> .....	AM.....	
Tawny Eagle <i>Aquila rapax</i> .....	Res.....	
Booted Eagle <i>Hieraaetus pennatus</i> .....	PM.....	
Long-crested Eagle <i>Lophaetus occipitalis</i> .....	Res.....	
Martial Eagle <i>Polemaetus bellicosus</i> .....	Res.....	
Common Kestrel <i>Falco tinnunculus</i> .....	Res?.....	
Grey Kestrel <i>Falco ardosiaceus</i> .....	Res.....	
African Hobby <i>Falco cuvierii</i> .....	Res.....	
White-throated Francolin <i>Francolinus albogularis</i> .....	Res.....	
Double-spurred Francolin <i>Francolinus bicalcaratus</i> .....	Res.....	
Ahanta Francolin <i>Francolinus achantensis</i> .....	Res.....	
Common Quail <i>Coturnix coturnix</i> .....	PM.....	
Stone Partridge <i>Ptilopachus petrosus</i> .....	Res.....	
Helmeted Guineafowl <i>Numida meleagris</i> .....	Res.....	
Nkulengu Rail <i>Himantornis haematopus</i> .....	Res.....	
White-spotted Flufftail <i>Sarothrura pulchra</i> .....	Res.....	
African Crake <i>Crex egregia</i> .....	Res./AM?.....	

Species .....	Status .....	Observations
Black Crake <i>Amaurornis flavirostra</i> .....	Res .....	
African Finfoot <i>Podica senegalensis</i> .....	Res .....	
Black-bellied Bustard <i>Eupodotis melanogaster</i> .....	Res .....	
African Wattled Lapwing (Plover) <i>Vanellus senegallus</i> .....	Res .....	
Lesser Black-winged Lapwing <i>Vanellus lugubris</i> .....	Res .....	
Laughing Dove <i>Streptopelia senegalensis</i> .....	Res .....	
Vinaceous Dove <i>Streptopelia vinacea</i> .....	Res .....	
Red-eyed Dove <i>Streptopelia semitorquata</i> .....	Res .....	
Blue-spotted Wood Dove <i>Turtur afer</i> .....	Res .....	
Black-billed Wood Dove <i>Turtur abyssinicus</i> .....	Res .....	
Tambourine Dove <i>Turtur tympanistria</i> .....	Res .....	
African Green Pigeon <i>Treron calvus</i> .....	Res .....	
Brown-necked Parrot <i>Poicephalus robustus</i> .....	Irreg. ....	
Senegal Parrot <i>Poicephalus senegalus</i> .....	Res .....	
Red-headed Lovebird <i>Agapornis pullarius</i> .....	Res .....	
Green Turaco <i>Tauraco persa</i> .....	Res .....	
Violet Turaco <i>Musophaga violacea</i> .....	Res .....	
Great Blue Turaco <i>Corythaeola cristata</i> .....	Irreg. (Extinct?) .....	
Western Grey Plantain-eater <i>Crinifer piscator</i> .....	Res .....	
Levaillant's (Striped) Cuckoo <i>Clamator levaillantii</i> .....	AM/Res? .....	
Thick-billed Cuckoo <i>Pachycoccyx audeberti</i> .....	Res .....	
Red-chested Cuckoo <i>Cuculus solitarius</i> .....	AM? .....	
Black Cuckoo <i>Cuculus clamosus</i> .....	Res? .....	
Common (Eurasian Grey) Cuckoo <i>Cuculus canorus</i> .....	PM .....	
African (Grey) Cuckoo <i>Cuculus gularis</i> .....	AM/Res? .....	
African Emerald Cuckoo <i>Chrysococcyx cupreus</i> .....	AM? .....	
Yellow-throated Cuckoo <i>Chrysococcyx flavigularis</i> .....	Res .....	
Klaas's Cuckoo <i>Chrysococcyx klaas</i> .....	Res .....	
Didric Cuckoo <i>Chrysococcyx caprius</i> .....	Res .....	
Yellowbill (Green Coucal) <i>Ceuthmochares aereus</i> .....	Res .....	
Black-throated Coucal <i>Centropus leucogaster</i> .....	Res .....	
Blue-headed Coucal <i>Centropus monachus</i> .....	Res .....	
Senegal Coucal <i>Centropus senegalensis</i> .....	Res .....	
Black Coucal <i>Centropus grillii</i> .....	Res? .....	
Barn Owl <i>Tyto alba</i> .....	Res .....	
African Scops Owl <i>Otus senegalensis</i> .....	Res .....	
Northern White-faced Owl <i>Ptilopsis leucotis</i> .....	Res .....	
Spotted (Greyish) Eagle Owl <i>Bubo africanus cinerascens</i> .....	Res .....	
Verreaux's (Giant) Eagle Owl <i>Bubo lacteus</i> .....	Res .....	
African Barred Owlet <i>Glaucidium capense</i> .....	Res .....	
African Wood Owl <i>Strix woodfordii</i> .....	Res .....	
Black-shouldered Nightjar <i>Caprimulgus pect. nigriscapularis</i> .....	Res .....	
Swamp Nightjar <i>Caprimulgus natalensis</i> .....	Res .....	
Long-tailed Nightjar <i>Caprimulgus climacurus</i> .....	Res? .....	
Standard-winged Nightjar <i>Macrodipteryx longipennis</i> .....	AM .....	
Mottled Spinetail <i>Telacanthura ussheri</i> .....	Res .....	
African Palm Swift <i>Cypsiurus parvus</i> .....	Res .....	
Common Swift <i>Apus apus</i> .....	PM .....	
Narina's Trogon <i>Apaloderma narina</i> .....	Res .....	

Species .....	Status .....	Observations
White-bellied Kingfisher <i>Alcedo leucogaster</i> .....	Res .....	
African Pygmy Kingfisher <i>Ceyx pictus</i> .....	AM .....	
Grey-headed (Chesnut-bellied) Kingfisher <i>Halcyon leucocephala</i> ..	AM .....	
Blue-breasted Kingfisher <i>Halcyon malimbica</i> .....	Res .....	
Woodland Kingfisher <i>Halcyon senegalensis</i> .....	AM/Res? .....	
Striped Kingfisher <i>Halcyon chelicuti</i> .....	Res .....	
Little Bee-eater <i>Merops pusillus</i> .....	Res .....	
White-throated Bee-eater <i>Merops albicollis</i> .....	AM .....	
European Bee-eater <i>Merops apiaster</i> .....	PM .....	
Rosy Bee-eater <i>Merops malimbicus</i> .....	AM .....	
Abyssinian Roller <i>Coracias abyssinicus</i> .....	AM .....	
Rufous-crowned (Purple) Roller <i>Coracias naevius</i> .....	Res .....	
Blue-bellied Roller <i>Coracias cyanogaster</i> .....	Res .....	
Broad-billed Roller <i>Eurystomus glaucurus</i> .....	AM .....	
Blue-throated Roller <i>Eurystomus gularis</i> .....	Res .....	
Green (Red-billed) Wood Hoopoe <i>Phoeniculus purpureus</i> .....	Res .....	
Black Wood Hoopoe (Scimitarbill) <i>Phoeniculus aterrimus</i> .....	Res .....	
White-crested Hornbill <i>Tropicranus albocristatus</i> .....	Res .....	
Red-billed Hornbill <i>Tockus erythrorhynchus</i> .....	Irreg.? .....	
African Pied Hornbill <i>Tockus fasciatus</i> .....	Res .....	
African Grey Hornbill <i>Tockus nasutus</i> .....	AM .....	
Piping Hornbill <i>Bycanistes fistulator</i> .....	Irreg .....	
Speckled Tinkerbird <i>Pogoniulus scolopaceus</i> .....	Res .....	
Yellow-fronted Tinkerbird <i>Pogoniulus chrysoconus</i> .....	Res .....	
Yellow-rumped Tinkerbird <i>Pogoniulus bilineatus</i> .....	Res .....	
Hairy-breasted Barbet <i>Tricholaema hirsuta</i> .....	Res .....	
Vieillot's Barbet <i>Lybius vieilloti</i> .....	Res .....	
Bearded Barbet <i>Lybius dubius</i> .....	Res .....	
Double-toothed Barbet <i>Lybius bidentatus</i> .....	Res .....	
Yellow-billed Barbet <i>Trachylaemus purpuratus</i> .....	Res .....	
Cassin's Honeybird <i>Prodotiscus insignis</i> .....	Res .....	
Spotted Honeyguide <i>Indicator maculatus</i> .....	Res .....	
Greater Honeyguide <i>Indicator indicator</i> .....	Res .....	
Lesser Honeyguide <i>Indicator minor</i> .....	Res .....	
Least Honeyguide <i>Indicator exilis</i> .....	Res .....	
Eurasian Wryneck <i>Jynx torquilla</i> .....	PM .....	
Fine-spotted Woodpecker <i>Campethera punctuligera</i> .....	Res .....	
Golden-tailed Woodpecker <i>Campethera abingoni</i> .....	Res .....	
Buff-spotted Woodpecker <i>Campethera nivosa</i> .....	Res .....	
Cardinal Woodpecker <i>Dendropicos fuscescens</i> .....	Res .....	
Grey Woodpecker <i>Mesopicos goertae</i> .....	Res .....	
Brown-backed Woodpecker <i>Picoides obsoletus</i> .....	Res .....	
African Pitta <i>Pitta angolensis</i> .....	Res? .....	
Preuss's Cliff Swallow <i>Hirundo preussi</i> .....	AM .....	
Rock Martin <i>Hirundo fuligula</i> .....	Res .....	
Pied-winged Swallow <i>Hirundo leucosoma</i> .....	Res .....	
Ethiopian Swallow <i>Hirundo aethiopica</i> .....	Res .....	
Barn (Eurasian) Swallow <i>Hirundo rustica</i> .....	PM .....	
House Martin <i>Delichon urbicum</i> .....	PM .....	

Species .....	Status .....	Observations
Plain-backed Pipit <i>Anthus leucophrys</i> .....	Res .....	
Tree Pipit <i>Anthus trivialis</i> .....	PM .....	
Yellow-throated Longclaw <i>Macronyx croceus</i> .....	Res .....	
Red-shouldered Cuckoo-shrike <i>Campephaga phoenicea</i> .....	Res? .....	
Purple-throated Cuckoo-shrike <i>Campephaga quisqualis</i> .....	Res .....	
White-breasted Cuckoo-shrike <i>Coracina pectoralis</i> .....	Res .....	
Little Greenbul <i>Andropadus virens</i> .....	Res .....	
Little Grey Greenbul <i>Andropadus gracilis</i> .....	Res .....	
Cameroon Sombre Greenbul <i>Andropadus curvirostris</i> .....	Res .....	
Slender-billed Greenbul <i>Andropadus gracilirostris</i> .....	Res .....	
Yellow-whiskered Greenbul <i>Andropadus latirostris</i> .....	Res .....	
Honeyguide Greenbul <i>Baeopogon indicator</i> .....	Res .....	
Simple Leaflove <i>Chlorocichla simplex</i> .....	Res .....	
Yellow-throated Leaflove <i>Chlorocichla flavicollis</i> .....	Res .....	
Swamp Palm Bulbul <i>Thescelocichla leucopleura</i> .....	Res .....	
Leaflove <i>Pyrrhurus scandens</i> .....	Res .....	
Baumann's Greenbul <i>Phyllastrephus baumanni</i> .....	Res .....	
White-throated Greenbul <i>Phyllastrephus albigularis</i> .....	Res .....	
Icterine Greenbul <i>Phyllastrephus icterinus</i> .....	Vagrant .....	
Grey-headed Bristlebill <i>Bleda canicapillus</i> .....	Res .....	
Common Bulbul <i>Pycnonotus barbatus</i> .....	Res .....	
Western Nicator <i>Nicator chloris</i> .....	Res .....	
(West) African Thrush <i>Turdus pelios</i> .....	Res .....	
Fire-crested (White-tailed) Alethe <i>Alethe diademata</i> .....	Res .....	
Forest Robin <i>Stiphornis erythrothorax</i> .....	Res .....	
Common Nightingale <i>Luscinia megarhynchos</i> .....	PM .....	
Blue-shouldered Robin Chat <i>Cossypha cyanocampter</i> .....	Res .....	
Snowy-crowned Robin Chat <i>Cossypha niveicapillus</i> .....	AM/Res .....	
Whinchat <i>Saxicola rubetra</i> .....	PM .....	
African Moustached Warbler <i>Melocichla mentalis</i> .....	Res .....	
Eurasian Reed Warbler <i>Acrocephalus scirpaceus</i> .....	PM .....	
Melodious Warbler <i>Hippolais polyglotta</i> .....	PM .....	
Green-backed (Senegal) Eremomela <i>Eremomela pusilla</i> .....	Res .....	
Green Crombec <i>Sylvietta virens</i> .....	Res .....	
Northern Crombec <i>Sylvietta brachyura</i> .....	Res .....	
Grey Longbill <i>Macrosphenus concolor</i> .....	Res .....	
Kemp's Longbill <i>Macrosphenus kempii</i> .....	Res .....	
Willow Warbler <i>Phylloscopus trochilus</i> .....	PM .....	
Wood Warbler <i>Phylloscopus sibilatrix</i> .....	PM .....	
Yellow-bellied Hyliota <i>Hyliota flavigaster</i> .....	Res .....	
Green Hylia <i>Hylia prasina</i> .....	Res .....	
Garden Warbler <i>Sylvia borin</i> .....	PM .....	
Croaking Cisticola <i>Cisticola natalensis</i> .....	Res .....	
Short-winged Cisticola <i>Cisticola brachypterus</i> .....	Res .....	
Rock-loving Cisticola <i>Cisticola aberrans</i> .....	Res .....	
Whistling Cisticola <i>Cisticola lateralis</i> .....	Res .....	
Red-faced Cisticola <i>Cisticola erythrops</i> .....	Res .....	
Singing Cisticola <i>Cisticola cantans</i> .....	Res .....	
Tawny-flanked Prinia <i>Prinia subflava</i> .....	Res .....	

Species .....	Status .....	Observations
Red-winged Warbler <i>Heliolais erythropterus</i> .....	Res .....	
Yellow-breasted Apalis <i>Apalis flavida</i> .....	Res .....	
Grey-backed Camaroptera <i>Camaroptera brachyura</i> .....	Res .....	
Yellow-browed Camaroptera <i>Camaroptera superciliaris</i> .....	Res .....	
Olive-green Camaroptera <i>Camaroptera chloronota</i> .....	Res .....	
Oriole-Warbler <i>Hypergerus atriceps</i> .....	Res .....	
Pale (Pallid) Flycatcher <i>Bradornis pallidus</i> .....	Res .....	
Pied Flycatcher <i>Ficedula hypoleuca</i> .....	PM .....	
Spotted Flycatcher <i>Muscicapa striata</i> .....	PM .....	
Lead-coloured Flycatcher <i>Myioparus plumbeus</i> .....	Res .....	
Shrike-Flycatcher <i>Megabyas flammulatus</i> .....	Res .....	
Black-and-white Flycatcher <i>Bias musicus</i> .....	Res .....	
Senegal Batis <i>Batis senegalensis</i> .....	Res .....	
Red-cheeked Wattle-eye <i>Dyaphorophya blissetti</i> .....	Res .....	
Chestnut Wattle-eye <i>Dyaphorophya castanea</i> .....	Res .....	
Common Wattle-eye <i>Platysteira cyanea</i> .....	Res .....	
Blue-headed Crested Flycatcher <i>Trochocercus nitens</i> .....	Res .....	
African Paradise Flycatcher <i>Terpsiphone viridis</i> .....	AM .....	
Red-bellied Paradise Flycatcher <i>Terpsiphone rufiventer</i> .....	Res .....	
Brown Illadopsis <i>Illadopsis fulvescens</i> .....	Res .....	
Puvel's Illadopsis <i>Illadopsis puveli</i> .....	Res .....	
Brown Babbler <i>Turdoides plebejus</i> .....	Res .....	
Blackcap Babbler <i>Turdoides reinwardtii</i> .....	Res .....	
Capuchin Babbler <i>Phyllanthus atripennis</i> .....	Res .....	
White-winged (-shouldered) Black Tit <i>Parus leucomelas</i> .....	Res .....	
Spotted Creeper <i>Salpornis spilonotus</i> .....	Res .....	
Fraser's Sunbird <i>Deleornis fraseri</i> .....	Vagrant .....	
Western Violet-backed Sunbird <i>Anthreptes longuemarei</i> .....	Res .....	
Collared Sunbird <i>Anthreptes collaris</i> .....	Res .....	
Little Green Sunbird <i>Nectarinia seimundi</i> .....	Res .....	
Olive Sunbird <i>Nectarinia olivacea</i> .....	Res .....	
Green-headed Sunbird <i>Nectarinia verticalis</i> .....	Res .....	
Scarlet-chested Sunbird <i>Nectarinia senegalensis</i> .....	Res .....	
Buff-throated Sunbird <i>Nectarinia adelberti</i> .....	Res .....	
Variable Sunbird <i>Nectarinia venusta</i> .....	Res .....	
Olive-bellied Sunbird <i>Nectarinia chloropygia</i> .....	Res .....	
Copper (Coppery) Sunbird <i>Nectarinia cuprea</i> .....	Res .....	
Splendid Sunbird <i>Nectarinia coccinigaster</i> .....	Res .....	
Superb Sunbird <i>Nectarinia superba</i> .....	Res .....	
Yellow White-eye <i>Zosterops senegalensis</i> .....	Res .....	
African Golden Oriole <i>Oriolus auratus</i> .....	Res .....	
Yellow-billed Shrike <i>Corvinella corvina</i> .....	Res .....	
Brubru <i>Nilaus afer</i> .....	Res .....	
Northern Puffback <i>Dryoscopus gambensis</i> .....	Res .....	
Marsh Tchagra <i>Tchagra minutus</i> .....	Res .....	
Black-crowned Tchagra <i>Tchagra senegalus</i> .....	Res .....	
Brown-crowned Tchagra <i>Tchagra australis</i> .....	Res .....	
Tropical Boubou <i>Laniarius aethiopicus</i> .....	Res .....	
Yellow-crowned Gonolek <i>Laniarius barbarus</i> .....	Res .....	

