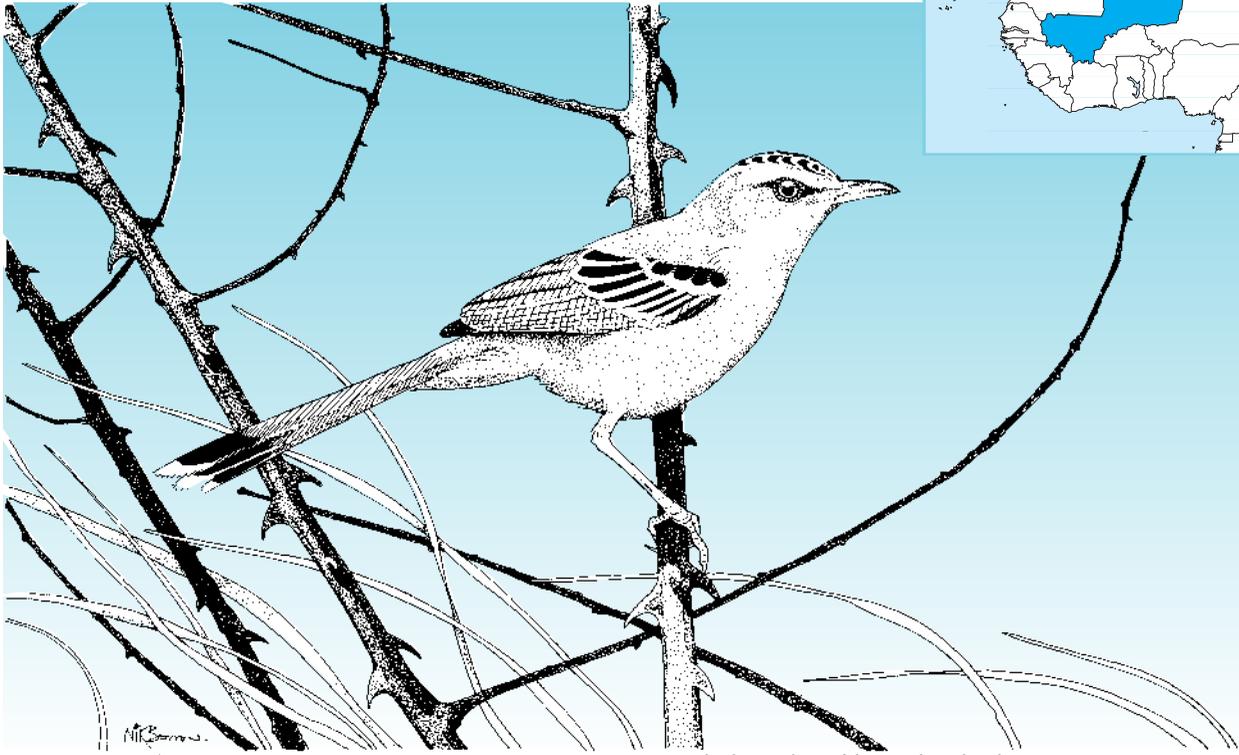
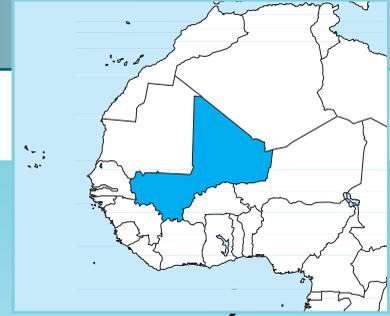


MALI

PETER ROBERTSON



Scaly-fronted Warbler *Spiloptila clamans*. (ILLUSTRATION: NIK BORROW)

GENERAL INTRODUCTION

The Republic of Mali is a large and landlocked country, with a surface area of 1,240,190 km². It is bordered by Algeria to the north, Niger to the east, Burkina Faso, Côte d'Ivoire and Guinea to the south and Senegal and Mauritania to the west. Most of the country, apart from two low-lying areas, lies at an altitude of 200–500 m and presents a flat or gently undulating landscape. In 1990 the human population was 8.1 million with a rate of increase of 3.1% per annum. The average population density is 6.5 people per km² but, as large areas of the country are almost unpopulated, those parts that have significantly higher densities.

Mali was the centre of three of West Africa's greatest kingdoms between the 9th and 16th centuries; the Empires of Ghana, Mali and Songhai. More recently, Mali was a French colony from 1883 until independence in 1960. Ethnically the population is very diverse and includes the nomadic Tuareg of the Sahara and, in the Sahel, the semi-nomadic, cattle-herding Peulh and the agro-pastoralist Bambara and Marka peoples. Fishermen of the Bozo and Somono tribes are concentrated in the Inundation Zone of the Niger river.

In the southern and central parts of the country there are well-marked wet and dry seasons, but north of Tombouctou there is no reliable wet season. In Bamako, the capital, the wet season lasts from June to October and average annual rainfall is 1,037 mm. In the Sahelian zone annual rainfall varies between 200 and 600 mm. In the Sahel, the drought periods of the recent past have had a major impact on both the country's ability to produce sufficient food to sustain its growing population and also on the natural habitats and wildlife of the region. In Bamako mean monthly temperatures range between 25° and 32°C, but in the far north the variation may be much greater and temperatures as high as 58°C have been recorded.

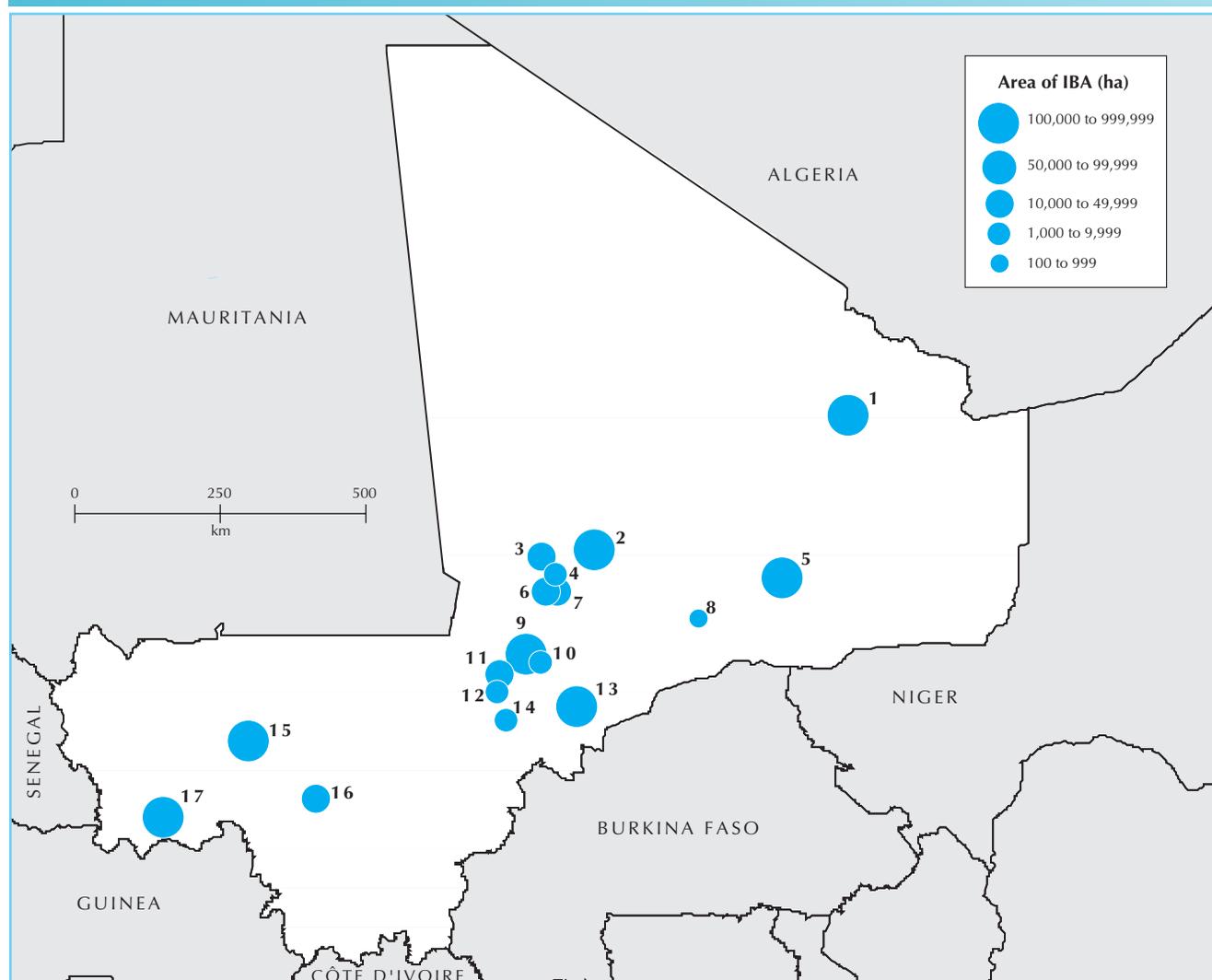
Determined largely by rainfall, Mali is divided latitudinally into three sub-equal vegetation zones—the Saharan, the Sahel, and Sudan–Guinea Savanna.

The Saharan zone: about a third of the country, from the northern border with Algeria at 25°N to approximately 17°N, the

northernmost point reached by the Niger river, is occupied by the Sahara Desert and a zone of transition between it and the Sahel. Here, apart from a few oases and some dunes which support perennial grasses, there is little permanent vegetation; annuals that develop rapidly after rain predominate. Otherwise, the area mostly comprises unvegetated regs, hamadas, dunes and wadis. In the far north lie two parallel depressions, below the 200 m contour, oriented south-east–north-west. They are each nearly 150 km long and more than 25 km in maximum width. Ephemeral watercourses enter these depressions which contain areas of saline marsh, kept moist in large part by subterranean water. The Adrar des Iforhas Massif, a southern extension of the larger Ahaggar Massif in southern Algeria, rises to 980 m in the south-eastern part of this zone. The greater altitude of this area leads to a somewhat increased level of rainfall and, in consequence, its vegetation has some Sahelian elements. The Adrar is bounded for much of its length on the western side by the Tilemsi valley, the course of ancient river which once joined the Niger near the town of Bourem. Average annual rainfall in the region is less than 200 mm.

The Sahelian zone spans the country east–west across its widest extent, from 12°W to 4°E. Peak monthly rainfall occurs in August throughout the area, but amounts decrease steadily with increasing latitude, from about 600 mm annually in the south to under 200 mm per year in the north. Sparse annual grasslands are the predominant feature of the vegetation in the Sahel, particularly in northern parts, where *Cenchrus biflorus* is a conspicuous element, while in the south *Acacia*-wooded grassland and deciduous bushland occur. In the central part of this region, to the east of the Inundation Zone of the Niger river, lies the Dogon plateau and the Hombori mountains. The Dogon plateau rises to 777 m and Mount Hombori to 1,155 m, the highest point in Mali. On the Mali–Niger border within this zone is part of a fossil watercourse, the Vallée de l'Azaouagh. Such areas, known as daias, are floored by humid sands which, in wet years, may contain ephemeral ponds called douanas.

The south-western portion of Mali lies within the Sudan–Guinea zone. The upper catchment of the Senegal river, which includes the

Map 1. Location and size of Important Bird Areas in Mali.

Table 1. Summary of Important Bird Areas in Mali.

 17 IBAs covering 28,692 km²

IBA code	Site name	Administrative region	Criteria (see p. 11; for A3 codes, see Table 2)						
			A1	A2 s040	A02	A3 A03	A04	A4i	A4iii
ML001	Aguelhok	Kidal			✓				
ML002	Tombouctou	Tombouctou				✓			
ML003	Lac Faguibine	Tombouctou	✓					✓	✓
ML004	Lac Télé	Tombouctou	✓					✓	✓
ML005	Ag Oua–Ag Arbech	Gao			✓	✓			
ML006	Lac Horo	Tombouctou	✓					✓	✓
ML007	Lac Fati	Tombouctou	✓					✓	
ML008	Mare de Gossi	Tombouctou						✓	✓
ML009	Lac Débo–Lac Oualado Débo	Mopti				✓		✓	✓
ML010	Timisobo–Képagou	Mopti						✓	✓
ML011	Séri	Mopti	✓					✓	✓
ML012	Koumbé Niasso	Mopti						✓	✓
ML013	Falaise de Bandiagara	Mopti				✓	✓		
ML014	Kouakourou	Mopti						✓	✓
ML015	Boucle du Baoulé	Kayes					✓		
ML016	Sirakoroni–Tyènfa	Koulikoro	✓	✓				✓	
ML017	Bafing	Kayes	✓	✓				✓	
Total number of IBAs qualifying:			7	2	2	4	4	10	9

Bafing and Baoulé rivers, is a feature of the western part of this region. The lowest-lying land in the country occurs in the Bafing and Baoulé river valleys, where 20,000 km² of land lie below the 100 m contour. The Manding plateau near Bamako is an extension of the Fouta Djallon mountains of Guinea and forms the watershed between the Senegal and Niger river systems. It rises to a height of

over 760 m, and it is composed of sandstone that has been deeply cut in places by tributaries of the Senegal and Niger rivers. East of the Manding plateau the Niger river and its tributaries, the Bagoé and Baoulé (another of this name), flow north-west through this zone. In the south-eastern corner the hills around Sikasso also rise to over 760 m. The woodlands are here dominated by *Isoberlinia* sp.

The Inner Delta of the Niger: much of Mali is dominated by the course of the Niger river which flows first north-east, then east and finally south-east across much of the southern and central parts of country between about 9°W and 1°E. The most conspicuous feature of the river is its Inner Delta or Inundation Zone, one of the major wetlands of the Sahel. The Inner Delta stretches between the towns of Segou to the south and Tombouctou to the north, straddling the narrowest point of central southern Mali and covering the entire latitudinal range of the Sahel and part of the Sudan–Guinea zone (13–17°N). It is a uniformly flat flood-plain of some 38,000 km² in extent, which is flooded seasonally along a 570-km stretch of the river. The river here meanders and divides repeatedly, widening in places to form numerous lakes.

The annual flood of the Niger is due primarily to rainfall in the highlands of Guinea, about 800 km to the south-west. An additional influence is rainfall in southern Mali and northern Côte d'Ivoire, from where water reaches the Inundation Zone principally via the Bani river. Direct rainfall on the inundation one has only a minor effect on flood height. There is a delay of several months between rainfall in the southern catchment areas and the start of the flood, when watercourses overflow progressively from south to north between August and January. The shallow gradient of the flood-plain means that peak flooding occurs about three months later in the north than the south. Outside of periods of flood some 1,600 km² of lakes remain, mostly in the northern part of the zone. Within the Inundation Zone there is a patchwork of flood-affected lower areas and raised parts above flood limits. Soils of the flood-plain are alluvial, the type of deposit depending on local topography, varying from impervious black clays to sands.

The vegetation of this area is largely determined by micro-topography, particularly altitude and, in particular, whether the area is exposed to flooding or not. The flood-plains, comprising about 75% of the total area, are dominated by perennial hygrophilous grassland. The dominant grasses are *Eragrostis atrovirens*, *Panicum anabaptistum*, *P. fluviicola*, *Vetiveria nigritana*, *Echinochloa stagnina*, and the wild rice *Oryza barthii*. Trees and woody shrubs are rare, but do occur as patches of woodland which are important as breeding sites for herons and cormorants. The component species of these woodlands are determined by length of exposure to flood, rainfall and soil type. As the floodwaters recede, human influence, such as harvesting, burning, grazing and trampling by stock, considerably modifies the condition of the grasslands. At the border between the upper flood-levels and the flood-free areas is a transition zone. Dominant grasses of this zone are *Andropogon gayanus*, *Cynodon dactylon* and *Hyparrhenia dissoluta*. Trees and shrubs are scarce. Elevated, flood-free areas (toguérés) within the Inundation Zone comprise a relatively small total area and occur throughout, but are more numerous and often more extensive in the northern half. The largest toguérés are dominated by shrubs, particularly associations of *Acacia nilotica* with *Mimosa* and *Ziziphus* spp. and *Guiera senegalensis*. *Borassus* and *Hyphaene* spp. palms occur around villages. Remnants of degraded gallery forest exist along the Bani and in the north, near the town of Niafouké. Grasslands of the non-flooded areas are dominated by annuals and are rapidly degraded after maturity by desiccation, trampling and overgrazing.

The human population of the area is estimated at 580,000 or 19 people per km². The semi-nomadic, cattle-herding Peulh, who account for 35% of this figure, keep some 1.2 million cattle within the Inundation Zone for seven to eight months of the year. Some 1.5 million sheep and goats are also kept within the delta. Grazing is managed by a traditional system based on the division of the Inundation Zone into 35 grazing units ('leydi') of varying size. The nomadic Tuareg also occasionally graze their livestock within the area. The transition zone at the limits of the flood is used by agriculturalists and agro-pastoralists who practise rain-fed agriculture on the soils of higher areas not subject to inundation, and recession agriculture on recently exposed wet soils as the floods recede. Here they grow millet, sorghum, cassava and vegetables as well as, during the flood, floating rice varieties, producing some 78,400 tons of rice annually. Fishermen market, on average, 100,000 tonnes of fish annually, a yield of 33 kg/ha, but harvest much more for local consumption. Exports of dried fish to neighbouring countries represent 8% of Mali's total exports.

ORNITHOLOGICAL IMPORTANCE

A total of 622 bird species are known from Mali, of which 335 are resident. There is proof of breeding for 202 of these. In all, 243 species show regular seasonal movements, with 137 such species being Palearctic in origin (Dowsett and Dowsett-Lemaire 1993).

Twelve species of global conservation concern have been recorded in Mali. Of these, seven are Palearctic migrants or vagrants: *Marmaronetta angustirostris* (VU), *Aythya nyroca* (VU), *Circus macrourus* (NT), *Falco naumanni* (VU), *Gallinago media* (NT), *Glareola nordmanni* (NT) and *Acrocephalus paludicola* (VU). Of the other five species, *Neotis nuba* (NT) and *Lagonosticta virata* (NT) are thought to be breeding residents, as the poorly known *Prinia fluviatilis* (DD) may also prove to be. The status of the remaining two is unclear: *Ceratogymna elata* (NT) is only known from partial remains seen in a village in the extreme south-west of the country and may have originated from elsewhere, while the presence of *Criniger olivaceus* (VU) requires confirmation as it may be based upon a misidentification.

Lagonosticta virata is also a restricted-range species, whose distribution defines the Upper Niger valley Secondary Area (s040). Elements of three biome-restricted assemblages occur in Mali. The Sahara–Sindian biome (A02) covers much of the northern third of the country and 13 of the 22 species that are restricted to this biome occur in the country; the Sahel biome (A03) spans central Mali and all 16 species of this biome have been recorded nationally, as have 35 of the 54 species of the Sudan–Guinea Savanna biome (A04) which occupies the south-west.

Mali is perhaps most important ornithologically for its wetlands, particularly those of the Inundation Zone of the Niger. This area is of great importance for Palearctic migrants during the northern winter, especially for *Anas querquedula* and *Anas acuta*, numbers of which may exceed 1,000,000 and 100,000 respectively. At this time, Afrotropical wildfowl may constitute only some 20% of total numbers. In addition to wildfowl the Inner Delta also contains numerous large heron colonies with significant numbers of *Bubulcus ibis* and *Casmerodius albus*.

CONSERVATION INFRASTRUCTURE AND PROTECTED-AREA SYSTEM

Management of National Parks and Faunal Reserves is the responsibility of the National Parks Department. The Forest Service is responsible for the management of forested land, including gazetted forests. Both the Forest Service and the National Parks Department come under the Department of Water and Forests in the Ministry of Natural Resources and Livestock.

There are 19 protected areas currently designated in Mali including one National Park (included within a Biosphere Reserve), nine Faunal Reserves and two Partial Faunal Reserves, one Sanctuary (also a World Heritage Site), three Forest Reserves and three Ramsar Sites. These sites are variously designated under Law No. 86-43/AN-RM, concerning hunting and the conservation of fauna and its habitat, and Law No. 86-42/AN-RM, setting out the forest code. They cover a total land area of 59,088 km² or rather less than 5% of the country. In addition, there are c.100 Classified Forests, with a total area of 6,450 km² in the Sudanian zone and 710 km² in the Sahel. No part of the Sahara within Mali is formally protected.

Traditionally, land was managed collectively under the guidance of village elders, and rules derived from religious fetishism imposed regulations regarding hunting, grazing and the protection of sacred woods. Strict sanctions were imposed for contravention of these rules. However, the advent of Islam has reduced adherence to these practices and this, combined with increased population pressure, has led to less well regulated resource-use and consequent over-exploitation.

INTERNATIONAL MEASURES RELEVANT TO THE CONSERVATION OF SITES

Mali has ratified the Convention on Biological Diversity, CITES, the Convention on Migratory Species, the African–Eurasian Migratory Waterbird Agreement, the Ramsar Convention (under

Table 2. The occurrence of biome-restricted species at Important Bird Areas in Mali. Sites that meet the A3 criterion are highlighted in bold. Species of global conservation concern are highlighted in bold blue.

A02 – Sahara–Sindian biome (13 species in Mali; two sites meet the A3 criterion)									A04 – Sudan–Guinea Savanna biome (35 species in Mali; four sites meet the A3 criterion)				
IBA code:	001		005						013	015	016	017	
<i>Pterocles senegallus</i>									✓		✓	✓	
<i>Pterocles coronatus</i>									✓	✓	✓	✓	
<i>Pterocles lichtensteini</i>				✓						✓	✓	✓	
<i>Bubo ascalaphus</i>				✓	✓					✓			
<i>Ammomanes cincturus</i>										✓		✓	
<i>Ammomanes deserti</i>									✓	✓	✓		
<i>Alaemon alaudipes</i>									✓				
<i>Hirundo obsoleta</i>													
<i>Oenanthe leucopyga</i>									✓				
<i>Cercomela melanura</i>									✓	✓	✓		
<i>Turdoides fulvus</i>											✓	✓	
<i>Rhodopechys githaginea</i>									✓				
<i>Passer simplex</i>													
Number of species recorded:									5	5			
A03 – Sahel biome (16 species in Mali; four sites meet the A3 criterion)													
IBA code:	002	003	004	005	006	007	009	013	015				
<i>Neotis nuba</i>													
<i>Ardeotis arabs</i>			✓									✓	
<i>Eupodotis savilei</i>													
<i>Streptopelia roseogrisea</i>	✓	✓		✓					✓				
<i>Caprimulgus eximius</i>					✓								
<i>Trachyphonus margaritatus</i>	✓	✓	✓			✓	✓						
<i>Dendropicos elachus</i>	✓								✓	✓			
<i>Mirafra cordofanica</i>	✓												
<i>Mirafra rufa</i>													
<i>Eremalauda dunni</i>	✓												
<i>Cercotrichas podobe</i>	✓		✓	✓		✓	✓	✓	✓	✓			
<i>Prinia fluviatilis</i>													
<i>Spiloptila clamans</i>	✓		✓	✓					✓	✓			
<i>Anthoscopus punctifrons</i>	✓											✓	
<i>Passer luteus</i>	✓			✓		✓	✓	✓	✓	✓			
<i>Lamprotornis pulcher</i>	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	
Number of species recorded:	10	3	3	6	2	4	6	6	6	2			
<i>Falco alopex</i>											✓	✓	
<i>Poicephalus senegalus</i>											✓	✓	
<i>Musophaga violacea</i>											✓	✓	
<i>Merops bulocki</i>											✓		
<i>Coracias cyanogaster</i>											✓	✓	
<i>Lybius dubius</i>											✓	✓	
<i>Galerida modesta</i>											✓		
<i>Hirundo leucosoma</i>													
<i>Lanius gubernator</i>													
<i>Corvinella corvina</i>										✓	✓	✓	
<i>Cossypha albicapilla</i>											✓	✓	
<i>Myrmecocichla albigrons</i>										✓	✓	✓	
<i>Turdoides reinwardtii</i>										✓	✓		
<i>Cisticola ruficeps</i>											✓		
<i>Cisticola rufus</i>											✓		
<i>Hypergerus atriceps</i>											✓		
<i>Eremomela pusilla</i>										✓	✓	✓	
<i>Muscicapa gambagae</i>										✓			
<i>Anthoscopus parvulus</i>										✓	✓	✓	
<i>Nectarinia coccinigaster</i>										✓			
<i>Nesocharis capistrata</i>												✓	
<i>Pytilia phoenicoptera</i>											✓		
<i>Pytilia hypogrammica</i>													
<i>Lagonosticta rufopecta</i>													
<i>Lagonosticta virata</i>											✓	✓	
<i>Lagonosticta larvata</i>											✓	✓	
<i>Estrilda caerulescens</i>											✓	✓	
<i>Estrilda troglodytes</i>										✓	✓	✓	
<i>Vidua interjecta</i>													
<i>Petronia dentata</i>										✓	✓	✓	
<i>Plocepasser superciliosus</i>										✓			
<i>Ploceus heuglini</i>													
<i>Lamprotornis purpureus</i>										✓	✓		
<i>Lamprotornis chalcurus</i>											✓	✓	
<i>Ptilostomus afer</i>										✓	✓	✓	
Number of species recorded:										12	19	20	10

which three sites have been designated—Lac Horo, Lac Débo–Lac Oualado–Débo, Séri), the World Heritage Convention (under which three sites have been designated—the Falaise de Bandiagara and two towns of archaeological/cultural importance), the Convention to Combat Desertification and the Convention on Climate Change. In addition, Mali participates in the UNESCO Man and the Biosphere Programme under which one site has been designated as a Biosphere Reserve (Boucle de Baoulé). Mali has also ratified the African Convention on the Conservation of Nature and Natural Resources.

OVERVIEW OF THE INVENTORY

Seventeen Important Bird Areas (IBAs) have been identified in Mali, covering 28,692 km² or 2.3% of the surface area of the country (Map 1, Table 1). Ten of these sites are primarily wetlands, nine of which are in the Inner Delta of the Niger river, reflecting the enormous importance of the area for waterbirds. Of the remaining sites, four qualify under the A3 criterion for the Sudan–Guinea Savanna biome and, between them, hold 29 of the 35 species of the biome recorded from the country; four sites qualify for the Sahel biome, holding 12 of the 16 species; and two do so for the Sahara–Sindian biome, with eight of the 13 species in Mali (Table 2). In contrast to the wetland sites, for several of these sites only provisional boundaries are given, since ornithological data are few or attributable only to the general area rather than confirmed from the site. In addition, a number of biome-restricted species are not known to occur at (or near) any of the sites, while much of the information for terrestrial species in particular is at least 20 years

old, some considerably more. All of this reflects the lack of knowledge of the avifauna of Mali in general and of the need for surveys and research to validate several of the sites selected here and to identify others. Potential additional sites include, in the Sudan–Guinea Savanna, the Faunal Reserves of Keniébaoulé and Soussan, to the west and east of Bamako respectively and, in the Sahel, the Partial Faunal Reserve of Ansongo–Ménaka on the border with Niger in the extreme south-east of the country. Other potential sites in the Sahel should be looked for in Gourma, to the west of Gao as well as in the Sahara. Lastly, a number of other wetland sites, including Lakes Korientze and Kabara, are likely to merit IBA status.

COMMENTS ON THE INVENTORY

- Spelling of place names conforms with that used on the relevant sheets of the *Carte Internationale du Monde* (1:1,000,000) IGN, Paris, 1963–1974 except in some cases where the *Carte Générale du Mali* (1:2,000,000) IGN, Paris, 1993, is followed.

ACKNOWLEDGEMENTS

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GLOSSARY

daia fossil watercourse.

douana ephemeral pond in daia.

hamada stony or rocky desert.

reg gravel desert.

toguéré higher area in the Inner Delta of the Niger not subject to inundation.

wadi or oued desert valley, usually dry except after heavy rainfall.

SITE ACCOUNTS

Aguelhok

Admin region Kidal

Coordinates 19°05'N 01°11'E

Area c.900,000 ha Altitude c.350–600 m

ML001

A3 (A02)

Unprotected

Site description

The site lies immediately to the south of the town of Aguelhok in the south-western foothills of the Adrar des Iforhas (or Ifôghas), towards the northern end of the Tilemsi valley in the north-east of the country. Provisional boundaries run east from just south of Aguelhok to Adrar Ichoualen, south-west to Oued Hamoum, west through Oued Ibdeken across the Tilemsi valley turning north to Asler and thence to the southern edge of the scarps of Krib Terech and so east back towards Aguelhok. It thus encompasses areas of stark, rocky hills, sheer cliffs, regs, hamadas, sand desert and, in parts of the Tilemsi valley, alluvial soils which, depending upon rainfall, support annual grasslands.

Birds

See Box and Table 2 for key species. It is likely that further surveys would reveal more species characteristic of the Sahara–Sindian biome.

Key species

A3 (A02) Sahara–Sindian biome: Five of the 13 species of this biome that occur in Mali have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The mammals *Addax nasomaculatus* (CR) and *Ammotragus lervia* (VU) used to occur and some of the latter may do so still. The flora is a mixture of Saharan and Sahelian species and may contain Saharo montane endemics.

Conservation issues

Overgrazing and fuelwood-collection is a problem in the more vegetated areas of the Tilemsi valley.

Tombouctou

Admin region Tombouctou

Coordinates 16°55'N 03°05'W

Area c.175,000 ha Altitude 260–271 m

ML002

A3 (A03)

Unprotected

Site description

The site lies immediately north of the town of Tombouctou in central Mali, on the Sahel–Sahara boundary. Provisional boundaries are defined by the rivers Tassakan and Niger from El Mensara to Korioumé, the track from Korioumé to Tombouctou, the Araouane road north from Tombouctou as far as its junction with the track to Râs-el-Mâ, near El Hajjou, then west towards Râs-el-Mâ as far as the administrative boundary between Tombouctou and Goundam Districts and from there south-south-east to El Mansara. The site includes cultivation and scrub woodland along the course of the Niger and its tributary the Tassakan, fixed dunes and ephemeral interdunal slacks. Parts of the site are sparsely vegetated with grasses and shrubs.

Birds

See Box and Table 2 for key species.

Key species

A3 (A03) Sahel biome: 10 of the 16 species of this biome that occur in Mali have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The site is affected by heavy grazing and the collection of fuelwood. Much riverine habitat has been cleared for agriculture.

Lac Faguibine

Admin region Tombouctou

Coordinates 16°45'N 04°00'W

Area 45,000 ha Altitude 255 m

ML003

A1, A4i, A4iii

Unprotected

Site description

Lac Faguibine is a semi-permanent wetland lying to the north of the Inner Delta, about 80 km west of Tombouctou, on the boundary between the Sahelian and Saharan zones. It is oriented south-west–north-east and triangular in shape, 75 km long, up to 15 m deep and, maximally, 12 km wide at its north-eastern end. From this point a permanent swamp runs south that connects it with Lac Télé (site ML004).

Birds

See Box for key species. In addition, three species of the Sahel biome (A03) have been recorded from around Lac Faguibine; see Table 2.

Key species

Code	Species	Breeding (pairs)	Non-breeding
A1	<i>Aythya nyroca</i>		
A4i	<i>Casmerodius albus</i>	—	1,020 (1980)
	<i>Dendrocygna bicolor</i>	—	67,100 (1983)
	<i>Dendrocygna viduata</i>	—	28,400 (1983)
	<i>Anas acuta</i>	—	126,800 (1983)
	<i>Anas querquedula</i>	—	150,000 (1983)
	<i>Aythya nyroca</i>	—	300 (1983)
	<i>Himantopus himantopus</i>	—	3,060 (1987)
	<i>Calidris minuta</i>	—	10,000 (1983)
	<i>Philomachus pugnax</i>	—	20,500 (1983)
	<i>Larus cirrocephalus</i>	—	2,000 (1978)
	<i>Chlidonias leucopterus</i>	—	2,000 (1980)
A4iii	More than 20,000 waterbirds have regularly been recorded at this site.		

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

During periods of drought the lake may dry up completely.

Lac Télé

Admin region Tombouctou

Coordinates 16°33'N 03°45'W

Area c.5,600 ha Altitude c.260 m

ML004

A1, A4i, A4iii

Unprotected

Site description

Lac Télé is a semi-permanent wetland on the northern edge of the Inner Delta of the Niger, situated immediately north-west of the town of Goundam. It connects Lac Faguibine (site ML003), some 30 km to the north, with the Inner Delta to the south through an intermittent drainage system.

Birds

See Box for key species. In addition, three species of the Sahel biome (A03) have been recorded from around the lake (see Table 2). In February 1985 the site held 24,603 waterfowl of 17 species. However, the following winter the site was completely dry.

Key species

A1	<i>Aythya nyroca</i>		
A4i		Breeding (pairs)	Non-breeding
	<i>Aythya nyroca</i>	—	300 (1984)
A4iii	More than 20,000 waterbirds have been recorded at this site.		

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The site is dependent on adequate rainfall and resultant flood-levels to retain water through the northern winter.

Further reading

Altenburg *et al.* (1986), Skinner (1987).

Ag Oua–Ag Arbech

Admin region Gao

Coordinates 16°30'N 00°05'E

Area c.100,000 ha Altitude 250–318 m

ML005

A3 (A02, A03)

Unprotected

Site description

Ag Oua–Ag Arbech lies north-north-east of the town of Gao in the east of the country. Provisional boundaries for the site are as follows; the Niger river from opposite the village of Aguinaouiaoui north along the river to opposite Doumbaria-ou-Echak, north-east to Amakouladji on the Gao–Bourem road, continuing in the same direction to 16°40'N 00°00'W, then due east to 00°17'E, turning due south to meet the course of the wadi running through In Chaouag, following the course of the wadi south-east until it reaches the road from Gao to Almoustarat, and from there to Aguinaouiaoui. This area includes part of the ancient watercourse of the Tilemsi valley, open desert, dunes, rocky outcrops and mixed cultivation together, with scattered shrubs and trees along the Niger river.

Birds

See Box and Table 2 for key species. In addition, it is possible that the Data Deficient *Prinia fluviatilis* may occur in the riverine vegetation.

Key species

A3 (A02)	Sahara–Sindian biome: Five of the 13 species of this biome that occur in Mali have been recorded at this site; see Table 2.
A3 (A03)	Sahel biome: Six of the 16 species of this biome that occur in Mali have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

Intensive agriculture along the course of the Niger river and overgrazing and fuelwood-collection elsewhere are degrading the vegetation of the site.

Lac Horo

Admin region Tombouctou

Coordinates 16°13'N 03°55'W

Area 18,900 ha Altitude c.260 m

ML006

A1, A4i, A4iii

Ramsar Site (unprotected)

Site description

Lac Horo is a semi-permanent wetland located 60 km south-west of the town of Goundam at the northern end of the Inner Delta of the Niger, some 20 km south-west of Lac Télé (site ML004), but not directly connected with it. Under natural conditions the lake retained flood water from the Niger throughout the dry season in years of good rainfall, but otherwise dried out completely by April. Now the lake is separated from the river by a dam and sluice gate through which the flow of water from the river is controlled. The sluice is opened in mid-November to allow flood water to fill the lake and closed again when the desired level is reached. The lake edges support beds of *Typha* sp.

and *Polygonum senegalensis* and open water is colonized by *Nymphaea* sp. and *Vossia cuspidata*.

Birds

See Box for key species. In addition, two species of the Sahel biome (A03) have been recorded from this site (see Table 2). Total counts of waterfowl made in nine years during the period 1972–1987 varied between 25,419 (1983) and 127,823 (1985).

Key species

A1	<i>Aythya nyroca</i>		
A4i		Breeding (pairs)	Non-breeding
	<i>Casmerodius albus</i>	—	560 (1999)
	<i>Dendrocygna bicolor</i>	—	23,000 (1984)
	<i>Anas acuta</i>	—	27,600 (1985)
	<i>Anas querquedula</i>	—	31,270 (1985)
	<i>Aythya nyroca</i>	—	5,600 (1987)
	<i>Himantopus himantopus</i>	—	1,600 (1978)
	<i>Limosa limosa</i>	—	6,200 (1985)
	<i>Philomachus pugnax</i>	—	32,000 (1978)
	<i>Sterna caspia</i>	—	2,000 (1979)
	<i>Chlidonias leucopterus</i>	—	3,000 (1980)
A4iii	More than 20,000 waterbirds have regularly been recorded at this site.		

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

Lac Horo was designated a Wetland of International Importance under the Ramsar Convention in 1987. The cultivation of millet over much of the area around the lake is bound to cause some disturbance to waterbirds and may make the site less attractive to waders, although *Philomachus pugnax* may prefer this man-modified habitat. In addition, the lake is fished and uncultivated parts of the margins are grazed.

Further reading

Jones (1993), Skinner (1987).

Lac Fati

Admin region Tombouctou

Coordinates 16°12'N 03°41'W

Area c.13,500 ha Altitude c.260 m

ML007

A1, A4i

Unprotected

Site description

Lac Fati is another of the lakes at the northern end of the Inner Delta of the Niger, and is situated between the towns of Goundam and Tonka, about 15 km east of Lac Horo (site ML006) and some 15 km south of Lac Télé (ML004). It is a semi-permanent wetland connected to the main Niger river system by a relatively small, ephemeral watercourse.

Birds

See Box and for key species. In addition, four species of the Sahel biome (A03) have been recorded from the edge of Lac Fati (see Table 2).

Key species

A1	<i>Aythya nyroca</i>		
A4i		Breeding (pairs)	Non-breeding
	<i>Platalea alba</i>	—	200 (1987)
	<i>Aythya nyroca</i>	—	2,150 (1985)
	<i>Gallinula chloropus</i>	—	1,800 (1978)

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The site is dependent on adequate rainfall and resultant flood-levels to retain water through the northern winter.

Further reading

Skinner (1987).

Mare de Gossi

Admin region Tomboutou
 Coordinates 15°47'N 01°19'W
 Area c.300 ha Altitude c.290 m

ML008

A4i, A4iii
 Unprotected

Site description

The Mare de Gossi is a semi-permanent wetland in central Mali, to the east of the Inner Delta of the Niger, between the towns of Douentza and Gao, some 3 km south-west of the town of Gossi. It is situated within the rocky Gourma plain, along the valley of a seasonal watercourse, and is isolated from the drainage system of the Niger river.

Birds

See Box for key species. In addition, sixty *Marmaronetta angustirostris* were recorded at this site in 1972, but this is thought unlikely to have been anything other than an exceptional occurrence. Aerial surveys in January 1984 recorded a total of 25,800 wildfowl (Anatidae).

Key species

A4i	Breeding (pairs)	Non-breeding
<i>Anas querquedula</i>	—	21,000 (1984)
<i>Marmaronetta angustirostris</i>	—	60 (1972)
A4iii	More than 20,000 waterbirds have been recorded at this site.	

Other threatened/endemic wildlife

The site is adjacent to the Douentza Elephant Reserve and is used by *Loxodonta africana* (EN) during the dry season.

Conservation issues

No recent information.

Further reading

Roux and Jarry (1984).

Lac Débo–Lac Oualado Débo

Admin region Mopti
 Coordinates 15°15'N 04°15'W
 Area 103,100 ha Altitude 261–265 m
 Ramsar Site (unprotected)

ML009

A3 (A03), A4i, A4iii

Site description

This site is part of the Inner Delta of the Niger and is located about 90 km north of Mopti, to the east of the town of Youvarou. It comprises an area of almost level flood-plain and includes a number of seasonally inundated lakes (of which Lac Débo and Lac Oualado Débo are by far the largest), ponds and river channels. In years with good rainfall the area is flooded between August and January after which the size of wetlands shrinks gradually. The grasses *Echinochloa stagnina* and *Vossia cuspidata* are dominant in seasonally flooded areas. Included in the site, to the east of Lac Oualado (=Walado or Gualado) Débo, is an area of *Acacia* woodland. This area was first used as a breeding site by a colony of herons and cormorants in 1985, the breeding season coinciding with the time of the flood.

Birds

See Box and Table 2 for key species. In addition, it is possible that *Prinia fluviatilis* (Data Deficient), may occur in marginal vegetation. Total counts of waterfowl made in 12 years during the period 1977–1998 varied between 26,446 (1980) and 534,552 (1994).

Key species

A3 (A03)	Sahel biome: Six of the 16 species of this biome that occur in Mali have been recorded at this site; see Table 2.	
A4i	Breeding (pairs)	Non-breeding
<i>Phalacrocorax africanus</i>	4,400 (1986)	59,000 (2000)
<i>Pelecanus onocrotalus</i>	—	5,500 (1983)
<i>Egretta ardesiaca</i>	—	510 (1998)
<i>Egretta garzetta</i>	—	4,002 (2000)
<i>Casmerodius albus</i>	630 (1986)	4,563 (1999)
<i>Mesophox intermedia</i>	—	1,501 (2000)
<i>Ardea purpurea</i>	—	4,171 (2000)
<i>Bubulcus ibis</i>	12,000 (1986)	260,000 (1994)
<i>Ardeola ralloides</i>	—	5,120 (1996)

A4i (continued)	Breeding (pairs)	Non-breeding
<i>Nycticorax nycticorax</i>	—	6,750 (2000)
<i>Plegadis falcinellus</i>	—	16,000 (1996)
<i>Platalea alba</i>	—	765 (2000)
<i>Dendrocygna bicolor</i>	—	19,100 (1994)
<i>Plectropterus gambensis</i>	—	11,000 (2000)
<i>Anas acuta</i>	—	150,000 (1994)
<i>Anas querquedula</i>	—	272,500 (1994)
<i>Porphyrio porphyrio</i>	—	580 (2000)
<i>Himantopus himantopus</i>	—	5,299 (1994)
<i>Glareola pratincola</i>	—	8,254 (1994)
<i>Charadrius hiaticula</i>	—	6,057 (1998)
<i>Charadrius pecuarius</i>	—	11,834 (2000)
<i>Limosa limosa</i>	—	26,852 (1999)
<i>Tringa erythropus</i>	—	4,431 (1999)
<i>Calidris minuta</i>	—	17,666 (1998)
<i>Philomachus pugnax</i>	—	45,000 (1992)
<i>Larus cirrocephalus</i>	—	1,000 (1983)
<i>Sterna nilotica</i>	—	1,948 (1998)
<i>Sterna caspia</i>	—	3193 (2000)
<i>Chlidonias hybridus</i>	—	3,600 (2000)
<i>Chlidonias leucopterus</i>	—	3,800 (1997)
A4iii	More than 20,000 waterbirds have regularly been recorded at this site.	

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

This site was designated Wetland of International Importance under the Ramsar Convention in 1987. The site is state-owned but villages within its boundaries have traditional rights of exploitation over some areas. The impact of proposed dams and water diversion projects in the region is a significant potential threat. The *Acacia* woodland within the site is threatened by clearance for rice cultivation, degradation through overgrazing by goats and the cutting of wood to provide fuel. The breeding colonies of herons and cormorants that use this woodland are dependent on the annual flood reaching the area.

Further reading

Altenburg *et al.* (1986), Jones (1993).

Timisobo–Képagou

Admin region Mopti
 Coordinates 15°08'N 03°58'W
 Area 8,000 ha Altitude 264 m

ML010

A4i, A4iii
 Unprotected

Site description

This site is located in the north-eastern part of the Inner Delta of the Niger, some 25 km north-west of the town of Kona and 20 km south-east of Lac Débo (site ML009). The site includes two areas of *Acacia* woodland, approximately 4 km apart, which support mixed heron and cormorant breeding colonies. The IBA is defined as a circle with a diameter of 10 km, centred on the middle of the woodland area. The area surrounding the woods is composed of seasonally inundated agricultural land, permanently and semi-permanently flooded depressions and areas of mixed grasses.

Birds

See Box for key species. In 1985 more than 15,000 pairs of herons and cormorants of nine species were recorded breeding at Timisobo while in 1986 up to 20,000 pairs of herons and cormorants of 10 species were breeding at Képagou.

Key species

A4i	Breeding (pairs)	Non-breeding
<i>Casmerodius albus</i>	800 (1986)	—
<i>Bubulcus ibis</i>	15,500 (1986)	—
<i>Anas querquedula</i>	—	150,000 (1977)
<i>Limosa limosa</i>	—	30,000 (1977)
<i>Philomachus pugnax</i>	—	31,000 (1978)
A4iii	More than 20,000 waterbirds have regularly been recorded at this site.	

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The purpose of including an area surrounding the core woodland is to provide a buffer zone to prevent excessive disturbance and to allow for the further regeneration of woodland. The birds breeding at the site use a larger area of up to 30 km radius to feed, but much of this is agricultural land which does not require protection or any particular management for conservation. The woodland at Timisobo was completely burnt down in 1959 and most of the current wood has regrown since 1973, while that at Képagou increased in extent between 1970 and 1985. Woodlands in the Inner Niger Delta are threatened by clearance for rice cultivation and degradation through overgrazing by goats during the dry season. The importance of the site as a breeding colony also depends upon the annual flood continuing to reach the woodland.

Further reading

Skinner *et al.* (1987).

Séri

Admin region Mopti

Coordinates 14°50'N 04°40'W

Area 40,000 ha Altitude 263 m

ML011

A1, A4i, A4iii

Ramsar Site (unprotected)

Site description

Séri is an extensive flood-plain complex on the western bank of the Diaka river, in the western central part of the Inner Delta of the Niger, immediately west of the town of Toguéré-Koumbé. It is located about 65 km north-east of the town of Mopti and some 50 km south-west of Lac Oualado Débo (site ML009). In years of good rainfall the area is flooded between August and January and begins to dry out thereafter.

Birds

See Box for key species. In January 1995 a total of 16,546 waterbirds was counted on approximately 25% of the site.

Key species

A1	<i>Aythya nyroca</i>	Breeding (pairs)	Non-breeding
A4i	<i>Pelecanus onocrotalus</i>	—	2,000 (1978)
	<i>Casmerodius albus</i>	—	1,750 (1995)
	<i>Sarkidiornis melanotos</i>	—	12,500 (1978)
	<i>Anas acuta</i>	—	63,000 (1987)
	<i>Anas querquedula</i>	—	57,000 (1987)
	<i>Aythya nyroca</i>	—	350 (1986)
	<i>Glareola pratincola</i>	—	9,000 (1986)
A4iii	More than 20,000 waterbirds have been recorded at this site.		

Other threatened/endemic wildlife

The mammal *Trichechus senegalensis* (VU) has been reported to occur.

Conservation issues

This site was designated a Wetland of International Importance under the Ramsar Convention in 1987. Several villages around the edge of the site depend on the wetlands for fishing and rice production. Although currently not a major threat, these activities could increase to become so, either through increased human population or through a reduction in size of the wetland. The impact of proposed dams and water diversion projects within the catchment area is also a significant potential threat.

Further reading

Dodman and Taylor (1995), Jones (1993).

Koumbé Niasso

Admin region Mopti

Coordinates 14°40'N 04°43'W

Area 8,000 ha Altitude 267 m

ML012

A4i, A4iii

Unprotected

Site description

Koumbé Niasso lies between the towns of Toguéré-Koumbé and

Ténenkou on the western side of the Inner Delta of the Niger. It is situated to the east of the Diaka river, about 15 km south of Séri (site ML011). The site includes an area of seasonally flooded *Acacia* woodland surrounded by flooded grassland, seasonal agricultural land and permanent water-bodies in the deeper depressions. The site is defined as a circular area with a diameter of 10 km, centred on the woodland which, in 1986, was reported to be increasing in extent.

Birds

See Box for key species. There are two major heron breeding colonies, 1.5 km apart, included within this site. In both 1985 and 1986 these sites together held over 30,000 pairs of herons of 10 species.

Key species

A4i		Breeding (pairs)	Non-breeding
	<i>Phalacrocorax africanus</i>	14,000 (1985)	—
	<i>Plegadis falcinellus</i>	—	2,800 (1985)
	<i>Casmerodius albus</i>	1,600 (1985)	—
	<i>Mesophoyx intermedia</i>	530 (1985)	—
	<i>Bubulcus ibis</i>	17,000 (1985)	54,662 (1999)
	<i>Nycticorax nycticorax</i>	—	3,000 (2000)
A4iii	More than 20,000 waterbirds have been recorded at this site.		

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The purpose of including an area surrounding the core woodland is to provide a buffer zone to prevent excessive disturbance and to allow for the further regeneration of woodland. The birds breeding at the site use a larger area of up to 30 km radius to feed, but much of this is agricultural land which does not require protection or any particular management for conservation. As with other woodland sites within the Sahelian region of Mali, this site is threatened by clearance for fuelwood, overgrazing by goats and by clearance for rice cultivation. The importance of the site as a breeding colony also depends upon the annual flood continuing to reach the woodland.

Further reading

Altenburg *et al.* (1986), Skinner *et al.* (1987).

Falaise de Bandiagara

Admin region Mopti

Coordinates 14°23'N 03°25'W

Area 400,000 ha

Altitude 282–777 m

ML013

A3 (A03, A04)

Sanctuary,

World Heritage Site

Site description

The Falaise de Bandiagara is part of the Dogon plateau in the south-central part of Mali, to the east of the Inner Delta, some 90 km east of Mopti. The site is centred on the town of Sanga and bounded by the roads and tracks linking the towns and villages of Diankabou, Bankas, Ouo, Bandiagara, Dé, Berdossou and Diankabou. The area comprises three distinct geographical features; the Bandiagara plateau to the west, the Bandiagara escarpment running north-east–south-west through the middle of the site and the Séno plain to the east. The altitude of the plateau varies between 400 and 500 m, with a peak of 777 m at Bamba. The plateau is sandstone and is punctuated with holes, faults and caves that link up with springlines along the base of the cliffs. The escarpment extends for over 150 km, and varies in height from 100 m in the south to over 500 m in the north. It is broken by ravines, gorges and rocky passages connecting the plain with the plateau. Near Sanga there are sheer cliff-faces as well as rock outcrops. The Séno plain, at around 250 m in altitude, consists of sandy steppes and damp or flooded depressions with scattered trees, dissected by large rocky riverbeds which seasonally hold water. The plateau has a typical Sudan savanna flora, including communities of *Daniella oliveri*, *Butyrospermum parkii*, *Parkia biglobosa*, *Terminalia macroptera*, *Khaya senegalensis* and bushy species such as *Combretum micranthum*, *Heeria insignis* and *Guiera senegalensis*. Dense vegetation is present in steep-sided ravines as a result of water retained in rock fissures. On the low-lying plain there is a preponderance of Sahelian species such as *Acacia albida*, *Combretum aculeatum* and the introduced

Tamarindus indica, with *Borassus aethiopum* and the grass *Andropogon gayanus* in humid depressions. *Adansonia digitata* and *Vittelaria paradoxa* are also frequent. A series of dams on ephemeral watercourses, which hold water for much, if not all, of the year have allowed an aquatic and semi-aquatic vegetation to develop, predominantly *Nymphaea maculata*, *Naias graminea*, *Cyperus* sp. and floating carpets of *Pistia stratiotes*, *Neptunia oleracea* and *Ipomoea reptans*. Average annual rainfall is 529 mm.

Birds

See Box and Table 2 for key species.

Key species

- A3 (A03) Sahel biome: Six of the 16 species of this biome that occur in Mali have been recorded at this site; see Table 2.
- A3 (A04) Sudan–Guinea Savanna biome: 12 of the 35 species of this biome that occur in Mali have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

Mammal species that occur in the area, or used to do so, include *Vulpes pallida* (DD), *Lycaon pictus* (EN), *Gazella dorcas* (VU) and *Gazella dama* (EN). *Acridocarpus monodii* (R), a localized endemic plant, is found at Kikara.

Conservation issues

There is much pressure on the land from various forms of agriculture, including the cultivation of ground-nuts, millet and sorghum. Fuelwood-cutting is also a potential threat.

Further reading

Balança and Visscher (1993).

Kouakourou

Admin region Mopti
Coordinates 14°12'N 04°32'W
Area 8,000 ha Altitude 269 m

ML014

A4i, A4iii
Unprotected

Site description

Kouakourou is situated in the southern part of the Inner Delta of the Niger, approximately 50 km south-west of Mopti. The site includes a seasonally flooded woodland of *Acacia* and *Zizyphus* spp., surrounded by seasonally flooded areas of mixed agricultural land and pasture. The site is defined as a circle of 10 km diameter centred on the middle of the woodland.

Birds

See Box for key species. This site holds a major heron breeding colony which, in 1986, consisted of 15,191 pairs of seven species. Thus, the total number of birds at the site during the breeding season is in excess of 30,000 individuals. The site is also likely to be used by significant numbers of Palearctic migrant waterbirds, but there is no information.

Key species

	Breeding (pairs)	Non-breeding
A4i		
<i>Casmerodius albus</i>	290 (1986)	—
<i>Bubulcus ibis</i>	12,500 (1986)	—
A4iii	More than 20,000 waterbirds have been recorded at this site.	

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The purpose of including an area surrounding the core woodland is to provide a buffer zone to prevent excessive disturbance and to allow for the further regeneration of woodland. The birds breeding at the site use a larger area of up to 30 km radius to feed, but much of this is agricultural land which does not require protection or any particular management for conservation. As with other woodland sites within the Sahelian region of Mali, this site is threatened by clearance for fuelwood, overgrazing by goats and by clearance for rice cultivation. The importance of the site as a breeding colony also depends upon the annual flood continuing to reach the woodland.

Further reading

Skinner *et al.* (1987).

Boucle du Baoulé

Admin region Kayes
Coordinates 13°52'N 08°54'W
Area 709,800 ha Altitude 160–577 m

ML015

A3 (A04)
Biosphere Reserve

Site description

The Boucle du Baoulé Biosphere Reserve is located in the south of the country, some 160 km north-west of the capital Bamako. The Biosphere Reserve incorporates the Boucle du Baoulé National Park and the contiguous faunal reserves of Badinko to the south-west, Fina to the south-east and Kongossambougou to the north-east. All except the last, which lies its northern side, are enclosed within the large loop of the Baoulé river which gives the reserve system its name. The area is almost entirely sandstone, cut by erosion into a series of plateaux, dissected by valleys and flood-plains. In the south there are steep escarpments flanking large valleys. The rivers within the reserve are semi-permanent. The vegetation is semi-arid Sahelian bushland in the north and Sudan–Guinea Savanna woodland in the south (*Combretum*, *Acacia*, *Butyrospermum* and *Isoberlinia* spp.). Dense riverine forest occurs along the Baoulé river and its major tributaries, as well as bordering marshes and larger lakes. The herbaceous layer is characterized by perennial grasses, notably *Andropogon gayanus*. There are human settlements within the site and human use is increasing, particularly in the north. Most of the region (>90%) is burnt each year from mid-October. Mean annual rainfall varies between 650 mm in the north and 1,000 mm in the south.

Birds

See Box and Table 2 for key species. In addition, two species characteristic of the Sahel biome (A03) are known from the site (see Table 2).

Key species

- A3 (A04) Sudan–Guinea Savanna biome: 19 of the 35 species of this biome that occur in Mali have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

Of the larger mammals which once occurred in the reserve, *Loxodonta africana* (EN), *Giraffa camelopardalis* (LR/cd) and *Tragelaphus derbianus* (LR/nt) are known to have been eliminated. Some of the following may still occur, although any that do are likely to be at low densities: *Panthera leo* (VU) and *Acinonyx jubatus* (VU).

Conservation issues

The site was declared a Biosphere Reserve in 1982, and some modifications to its boundaries were made in 1994 which resulted in a reduction in the size of its core area. The area has a long history of human use and agriculture, and grazing and wood-cutting have all affected the current character of the savanna such that the remaining habitat is highly degraded. The reserve is under pressure from ground-nut-growers, transhumant pastoralists, poachers, hunters, firewood-cutters and sedentary farmers. Annual burning has degraded much of the wooded savanna habitat.

Further reading

De Bie and Morgan (1989), IUCN (1987).

Sirakoroni–Tyènfala

Admin region Koulikoro
Coordinates 12°50'N 07°45'W
Area c.18,000 ha Altitude 303–545 m

ML016

A1, A2 (s040), A3 (A04)
Unprotected

Site description

The site lies between Bamako and Kulikoro and is named after the villages of Sirakoroni and Tyènfala which, respectively, lie to the north and south. The site is bounded by the Niger river between Koulikoroba and the dam east of Bamako, from where the boundary runs along the track towards Kolounikoro as far as the junction of two tributaries

of the Dlan river, from there east to Sirakoroni and from Sirakoroni eastwards along the track to the junction with the track from Koulikoro to Banamba, then south along the track to Koulikoroba. The site includes an area of rocky hills dissected by steep-sided valleys through which temporary watercourses flow. The vegetation of the area is rough grass and stunted shrubs and bushes, interspersed by rocky outcrops.

■ Birds

See Box and Table 2 for key species.

Key species

- A1 *Lagonosticta virata*
 A2 (s040) Upper Niger valley Secondary Area: *Lagonosticta virata* has been recorded at this site.
 A3 (A04) Sudan–Guinea Savanna biome: 20 of the 35 species of this biome that occur in Mali have been recorded at this site; see Table 2.

■ Other threatened/endemic wildlife

The endemic amphibian *Schoutedenedella milletihsorini* (Arthroleptidae) has been recorded from close to this site and may well occur within it.

■ Conservation issues

Due to its proximity to the capital, human pressure on the area is high. The effects of fuelwood-collection, grazing and, possibly, market gardening are all significant.

Bafing

Admin region Kayes

Coordinates 12°38'N 10°20'W

Area 316,000 ha Altitude c.190–499 m

ML017

A1, A2 (s040), A3 (A04)

Unprotected

■ Site description

Bafing is located some 250 km west of Bamako and 40 km south of the town of Manantali, where there is a dam on the Bafing river. The waters of the artificial lake so created form the eastern boundary of the reserve for much of its length. The area is characterized by rugged and broken terrain, especially in the west, formed by a succession of lateritic plateaux, averaging 300 m in altitude, and sandstone hills varying between 400 and 600 m. There are spectacular escarpments at Solo near the northern boundary. The relief is less marked along the gently sloping alluvial river plains. The park is drained by the Bafing river and a network of small watercourses including the Balinn, Dassabola and Naria rivers. Hill summits and their immediate

surroundings are denuded by erosion. Vegetation is predominantly wooded savanna, shrub savanna and gallery forest. Forest occurs not only along watercourses, but also in enclosed valleys, geological faults and even at the base of certain hills from which spring small, seasonal rivers. These forests are characterized by *Khaya senegalensis*, *Celtis integrifolia*, *Daniella oliveri*, *Prosopis africana*, *Anogeissus leiocarpus* and *Pterocarpus erinaceus*, with a shrubby and a herbaceous layer. Wooded savanna occurs at higher altitudes and is characterized by *Pterocarpus erinaceus*, *Daniella* sp., *Vitellaria paradoxa*, *Parkia biglobosa*, *Cordyla pinnata*, *Khaya* sp., *Bombax costatum*, *Detarium microcarpum* and an understorey of small shrubs and grasses. Shrub savanna is characterized by *Acacia*, *Gardenia* and *Ziziphus* spp. and Combretaceae, with a graminaceous layer of *Pennisetum*, *Loudetia* and *Vetiveria* spp. and Andropogoneae.

■ Birds

See Box and Table 2 for key species. Although data on the birds of the reserve itself are few, a number of species have been recorded from its vicinity, including those listed below, and are expected to occur within it.

Key species

- A1 *Lagonosticta virata*
 A2 (s040) Upper Niger valley Secondary Area: *Lagonosticta virata* has been recorded at this site.
 A3 (A04) Sudan–Guinea Savanna biome: 10 of the 35 species of this biome that occur in Mali have been recorded from the vicinity of this site; see Table 2.

■ Other threatened/endemic wildlife

The following mammal species have been recorded from the site, although their current status is unknown: *Loxodonta africana* (EN) (an estimated population of 30), *Pan troglodytes* (EN), *Panthera leo* (VU) and *Taurotragus derbianus* (LR/Nt).

■ Conservation issues

The site is a proposed National Park. It is only sparsely populated, by sedentary agriculturalists, who produce sorghum, maize, ground-nuts and vegetables, and by transhumant pastoralists. With the exception of the village of Kouroukoto (200 inhabitants) in the centre of the proposed park, there are few villages. Sleeping sickness and river blindness, the poor condition of roads and the stony, infertile soil have limited human occupation. The use of bush-fires to clear land for agriculture is leading to degradation of the savanna habitat.

■ Further reading

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