

# BENIN

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Brown-rumped Bunting *Emberiza affinis*. (ILLUSTRATION: NIK BORROW)

## GENERAL INTRODUCTION

The Republic of Benin is a narrow country of 112,620 km<sup>2</sup>, bounded to the west by Togo, to the north by Burkina Faso and Niger and to the east by Nigeria. The territory stretches 700 km northwards inland from the Bight of Benin on the Atlantic coast of West Africa at 06°15'N, to the Niger river, which forms Benin's border with the Republic of Niger from 11°40' to 12°23'N. The country's maximum width is 330 km, between 00°45' and 03°50'E, while the coastline between Togo and Nigeria is only 125 km.

Despite its small size Benin has a diversity of habitats. There is a coconut-palm-lined coastal strip and a coastal plain of sandy soils with marshes, lagoons, mangroves and freshwater lakes. These include the important Lake Nokoué lying to the north of the economic capital, Cotonou, and to the west of the administrative capital, Porto-Novo. Inland from the coast, the land gradually increases in elevation to about 250 m, forming a plateau which stretches over much of the country, with a few scattered hills and rocky outcrops. The main topographical feature is the ridge known as the Atacora Chain which runs through the north-west of the country starting, at its south-western end, at the border with Togo, near Natitingou. Elevations here reach 640 m but descend to 150 m along the Pendjari river in the north-west which, for part of its length, forms the border with Burkina Faso, and down to about 170 m along the edge of the Niger river in the north-east.

Forest is restricted to a few isolated patches in the southern part of the country, mainly in the south-east close to Nigeria, apart from some isolates elsewhere such as the Lama forest and gallery strips along riverbanks. Only 410 km<sup>2</sup> of forest remained in 1985, with a further 77.5 km<sup>2</sup> of industrial plantation forest. The lack of forest throughout most of Benin and central and northern Togo accounts for the zoogeographically interesting Togo-Benin (or Dahomey) Gap. This gap of mostly savanna vegetation lies between the forest block stretching eastwards from Nigeria and the Upper Guinea forests found from Ghana westwards. Thus, Togo and Benin have

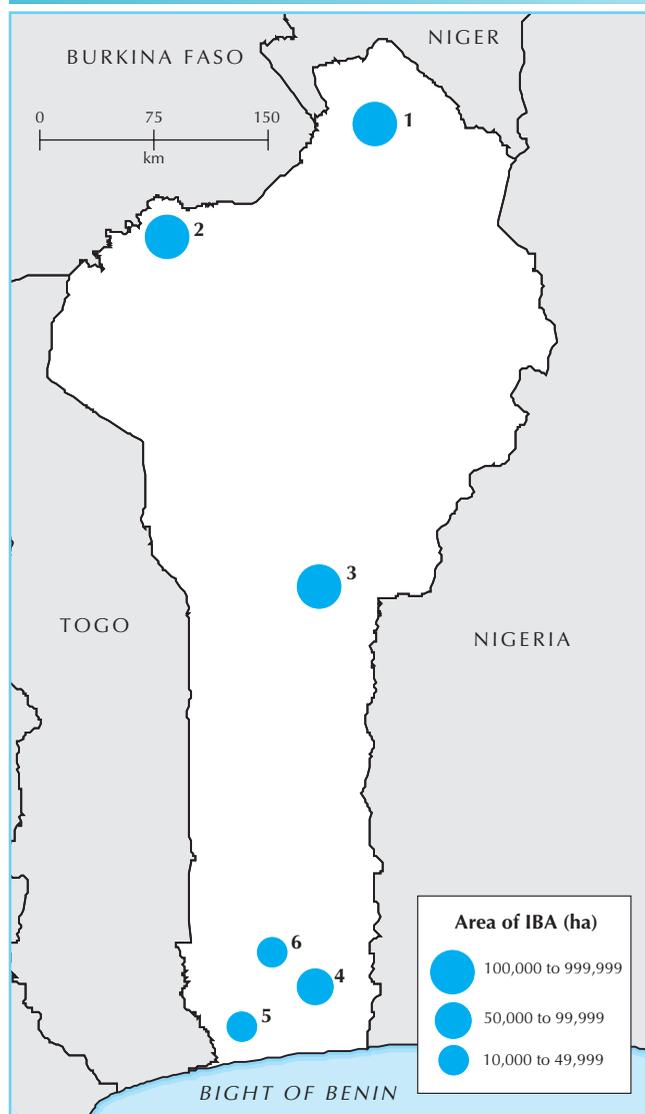
an impoverished forest fauna, including birds, compared with Ghana and Nigeria. However, the extensive savanna vegetation remaining in Benin is probably in better condition for conservation purposes than savanna in either of these countries or in Togo. There is some Sudan savanna in the north and there are extensive tracts of both Northern and Southern Guinea savanna; cultivation is intense but, nevertheless, substantial areas (24.2% of the country) have been set aside in reserves.

One major river, the Ouémé, flows through the country from about 10°N to drain into Lake Nokoué. The Ouémé system includes many substantial rivers, including the Okpara river which forms the border with Nigeria for part of its length. In addition, the Mono system, which forms the border with Togo in the south-western corner of Benin, drains through southern Guinea savanna and derived savanna to reach the sea, creating a number of important wetlands as it does so.

The pattern of the seasons is typical for West Africa and is determined by the movements of the Inter-tropical Convergence Zone (ITCZ), bringing rain between April and October. During

**Table 1.** Summary of Important Bird Areas in Benin.

Table 1. Summary of Important Bird Areas in Benin.			6 IBAs covering 14,900 km <sup>2</sup>			
			Criteria (see p.11; for A3 codes, see Table 2)			
IBA code	Site name	Administrative region	A1	A3	A4i	
				A04 A05		
<b>BJ001</b>	W du Bénin National Park	Borgou		✓		
<b>BJ002</b>	Pendjari National Park	Atacora		✓		
<b>BJ003</b>	Ouémé river basin	Borgou		✓	✓	
<b>BJ004</b>	Lake Nokoué	Atlantique, Ouémé			✓	✓
<b>BJ005</b>	Lake Ahémé and Aho complex	Atlantique, Mono	✓			✓
<b>BJ006</b>	Lama forest	Zou		✓		
Total number of IBAs qualifying:			1	3	3	2

**Map 1.** Location and size of Important Bird Areas in Benin.


the dry months, the Harmattan wind blows from the north, bringing hot, dry air almost to the coast.

Much of the country, especially the coastal area, is densely populated (400 people/km<sup>2</sup> in parts of the south) but the north is only sparsely inhabited (up to 12 people/km<sup>2</sup>), with the country as a whole having 51 people/km<sup>2</sup>. Administratively, the country is divided into 12 Départements and 77 Sous-préfectures. The population is increasing at 3% per annum and in 1992 numbered 4,915,555, increasing to 5,786,000 by 1997. Staple foods include yams, cassava, beans, groundnuts, maize, sorghum, millet and rice. Much cotton is grown and there are some sugar plantations while coconuts and oil palms are cultivated on the coastal plain. Small quantities of coffee, cocoa and tobacco are also grown. Small ruminants and pigs are plentiful and there is some pastoralism with nomadic livestock in the north.

## ORNITHOLOGICAL IMPORTANCE

There is, as yet, no definitive list of the birds of Benin, although a provisional one was published by Dowsett (1993) and another is in preparation by P. M. Claffey. Dowsett's list rejected some apparently legitimate records and has been supplemented by more recent publications and unpublished data for the compilation of this account. Although it is a small country, and poorly studied ornithologically, at least 527 species of birds have been recorded.

Four species of global conservation concern have been recorded, none of which is resident. Three, *Circus macrourus* (NT), *Falco naumanni* (VU) and *Gallinago media* (NT), are rare to uncommon

migrants from the Palearctic, while the fourth, *Sterna balaenarum* (NT), is a non-breeding visitor to the Benin coast from southern Africa. No species of restricted range have been recorded.

Parts of two biomes occur in Benin. Almost all the country falls within the Sudan–Guinea Savanna biome (A04) and 34 species restricted to it have been recorded nationally. Small outliers, however, of the Guinea–Congo Forests biome (A05) are found in places, and 59 species of this biome are, so far, known to occur in the country. There are several wetlands important for waterbirds, mainly in coastal areas where several lakes are of significance for, in particular, migrant terns, e.g. *Chlidonias niger*.

## CONSERVATION INFRASTRUCTURE AND PROTECTED-AREA SYSTEM

The first legislation covering protected zones was a French colonial decree of 1925, followed by forestry regulations defined by Decree no. 1704 AP of 1935 and Decree no. 1107/EFC of 1943, which provided for the establishment of classified forests and faunal reserves. These decrees were followed by Law no. 87-012 of 1987 and Decree no. 89-385 of 1989. The bodies responsible for the administration of wildlife and environmental protection are the Direction des Forêts et des Ressources Naturelles (DFRN) (Department of Forests and Natural Resources), established in 1992 by Decree no. 0020/MDR/DC/CC/CP, and the Centre National de Gestion des Réserves de Faune (CENAGREF) (National Centre for Wildlife Reserves Management), created in 1996 by Decree no. 96-73. The national legislative framework currently recognizes the following categories of protected area:

- Parc national—There are two National Parks covering 843,500 ha, both well protected by legislation. The parks were created by Decree no. 009/SET of 1954 and supported by Ordinance no. 710141 of 1971, superseded by Law no. 87-014 of 1987.
- Forêt classée—There are or were 45 Forest Reserves covering a total of 1,373,707 ha. Few Forest Reserves receive adequate protection and, currently, only 31 are believed extant.
- Zone de reboisement—There are seven Reforestation Zones, covering 2,567 ha.
- Zone cynégétique—Three Hunting Zones are currently recognized, totalling 510,00 ha. The regulation of hunting in sport hunting zones is covered by Decree no. 90-366, relating to the application of Law no. 87-014 concerning nature protection and hunting.

## INTERNATIONAL MEASURES RELEVANT TO THE CONSERVATION OF SITES

Benin has ratified the Convention on Biological Diversity, the Ramsar Convention, the Convention on Migratory Species (including the African–Eurasian Waterbird Agreement), CITES, the World Heritage Convention, the Convention to Combat Desertification and the Convention on Climate Change. Benin also participates in UNESCO's Man and Biosphere (MAB) programme, under which one site, the Boucle de la Pendjari National Park (275,500 ha), together with the Pendjari (200,000 ha) and Atakora (175,000 ha) Hunting Zones, has been declared a Biosphere Reserve. Regionally, Benin has also ratified the African Convention on the Conservation of Nature and Natural Resources.

## OVERVIEW OF THE INVENTORY

This inventory identifies six Important Bird Areas (IBAs), covering 14,900 km<sup>2</sup> or 13.2% of the land area of the country (Map 1, Table 1); all are protected to some degree. Most of the important habitat-types in Benin are included. All species of global conservation concern that are known from the country have been recorded at one or more of the sites, but only *Sterna balaenarum* is thought to occur in numbers sufficient to justify selection under the A1 criterion (Table 1).

The sites include 29 of the 34 species of the Sudan–Guinea Savanna biome (A04) that are known from Benin and 47 of the

59 species of the Guinea–Congo Forests biome (A05) (Table 2). Most of Benin’s Guinea–Congo Forests biome species that are not included in the IBAs designated here were recorded by Brunel (1958) from Pobè forest, near the Nigerian border at 07°00’N 02°42’E; these records are supplemented by unpublished data from M. van den Akker. Pobè is a small forest remnant (150 ha) that includes 35 ha reforested in 2000. It descends from a dry plateau to a lower more humid valley with its own water source forming a small stream. The forest belongs to an agricultural research station specializing in oil palms. Its vegetation includes *Terminalia superba*, *Triplochiton scleroxylon*, *Chlorophora excelsa*, *Antiaris africana*, *Holoptelea*

*grandis* and *Piptadeniastrum africanum*. This is an unprotected site, which has been recommended for reserve status. It is known to have suffered from poaching, timber clearance and conversion to exotic plantations, so further work is needed to determine whether it merits IBA status.

The same applies to the equally small Niaouli forest (06°44’N 02°09’E), which is in two distinct parts, the dry Plateau (90 ha plus 20 ha reforestation) and the lower-lying Bas-fonds (25 ha plus 10 ha reforestation), where several springs form a small stream. Trees there include *Musanga cecropioides*, *Ceiba pentandra*, *Antiaris toxicaria* and *Triplochiton scleroxylon*, and Niaouli is one of the

**Table 2.** The occurrence of biome-restricted species at Important Bird Areas in Benin. Sites that meet the A3 criterion are highlighted in bold.

<b>A04 – Sudan–Guinea Savanna biome</b> (34 species in Benin; three sites meet the A3 criterion)						
IBA code:	001	002	003	004	005	006
<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>Corvinella corvina</i>	✓	✓	✓	✓	✓	
<i>Cossypha albicapilla</i>	✓	✓				
<i>Myrmecocichla albibrons</i>			✓			
<i>Turdoides reinwardtii</i>		✓	✓			
<i>Cisticola ruficeps</i>						
<i>Hypergerus atriceps</i>	✓					
<i>Eremomela pusilla</i>		✓	✓			
<i>Anthoscopus parvulus</i>		✓				
<i>Nectarinia coccinigaster</i>			✓	✓	✓	✓
<i>Emberiza affinis</i>						
<b>A05 – Guinea–Congo Forests biome</b> (59 species in Benin; three sites meet the A3 criterion)						
IBA code:	002	003	004	006		
<i>Tigriornis leucolophus</i>			✓			
<i>Accipiter erythropus</i>	✓	✓				
<i>Urotrochis macrourus</i>						
<i>Francolinus achantensis</i>		✓		✓		
<i>Sarothrura pulchra</i>				✓		
<i>Columba iriditorques</i>				✓		
<i>Psittacus erithacus</i>						
<i>Tauraco persa</i>		✓		✓		
<i>Merops malimbicus</i>			✓	✓		
<i>Eurystomus gularis</i>				✓		
<i>Tockus albocristatus</i>				✓		
<i>Tockus fasciatus</i>		✓	✓	✓		
<i>Tockus camurus</i>		✓				
<i>Ceratogymna fistulator</i>		✓				
<i>Ceratogymna subcylindricus</i>		✓				
<i>Ceratogymna albotibialis</i>		✓				
<i>Pogoniulus scolopaceus</i>						
<i>Dendropicos pyrrhogaster</i>				✓		
<i>Hirundo nigrita</i>						
<i>Psalidoprocne obscura</i>	✓	✓				
<i>Andropadus curvirostris</i>				✓		
<i>Chlorocichla simplex</i>				✓		
<i>Thescelocichla leucopleura</i>						
<i>Criniger calurus</i>						
<i>Phyllastrephus scandens</i>		✓				
<i>Phyllastrephus albigularis</i>		✓		✓		
<i>Bleda syndactyla</i>				✓		
<i>Bleda canicapilla</i>				✓		
<i>Nicator chloris</i>		✓		✓		
<i>Dryoscopus sabinii</i>						
IBA code:	001	002	003	004	005	006
<i>Nesocharis capistrata</i>			✓			
<i>Pytilia phoenicoptera</i>	✓	✓	✓			
<i>Pytilia hypogrammica</i>		✓				
<i>Lagonosticta rufopicta</i>	✓			✓		
<i>Lagonosticta rara</i>						
<i>Lagonosticta larvata</i>			✓			
<i>Estrilda caerulescens</i>	✓	✓	✓			
<i>Estrilda troglodytes</i>	✓	✓				
<i>Vidua interjecta</i>			✓			
<i>Vidua togoensis</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:	16	20	20	5	3	2
IBA No:	002	003	004	006		
<i>Prionops caniceps</i>				✓		
<i>Stiphornis erythrothorax</i>				✓		
<i>Illadopsis puveli</i>				✓		
<i>Illadopsis fulvescens</i>				✓		
<i>Phyllanthus atripennis</i>		✓				
<i>Apalis rufogularis</i>				✓		
<i>Camaroptera chloronota</i>				✓		
<i>Sylvietta virens</i>				✓		
<i>Macrosphenus concolor</i>				✓		
<i>Hylia prasina</i>				✓		
<i>Fraseria ocreata</i>				✓		
<i>Muscicapa cassini</i>		✓				
<i>Bias flammulatus</i>				✓		
<i>Platysteira castanea</i>				✓		
<i>Terpsiphone rufiventer</i>		✓		✓		
<i>Nectarinia fuliginosa</i>						
<i>Nectarinia adelberti</i>						
<i>Nigrita fusconota</i>		✓				
<i>Nigrita bicolor</i>						
<i>Spermophaga haematina</i>						✓
<i>Ploceus nigerimus</i>				✓	✓	
<i>Ploceus tricolor</i>					✓	
<i>Malimbus scutatus</i>				✓		
<i>Malimbus nitens</i>						✓
<i>Malimbus rubricollis</i>				✓	✓	
<i>Onychognathus fulgidus</i>				✓		
<i>Lamprotornis purpureiceps</i>						✓
<i>Oriolus brachyrhynchus</i>						✓
<i>Oriolus nigripennis</i>						
Number of species recorded:	2	16	7	34		

few remaining sites in Benin with *Entandrophragma angolense*. The forest is an ecological island surrounded by an intensively used agricultural landscape, posing threats given its high population density (274 people/km<sup>2</sup>). It retains many forest-biome species (van den Akker 2000, M. van den Akker *in litt.*). Other areas which may also deserve to become IBAs include Lokoli forest, the delta of the Mono river, which has sandbanks and mangrove habitats downstream of an extensive wetland area bordering the river, and the Forêt des Trois Rivières Classified Forest (10°31'N 03°15'E; 259,500 ha). More detailed surveys of existing IBAs are also required.

## SITE ACCOUNTS

### W du Bénin National Park

Admin region Borgou

Coordinates 11°55'N 02°45'E

Area 598,000 ha Altitude 160–320 m

**BJ001**

A3 (A04)

National Park

#### Site description

The W du Bénin National Park, in the extreme north of the country, is part of an extensive network of contiguous transboundary protected areas, including the W National Park in Niger (IBA NE001) and the Arli–W–Singou complex in Burkina Faso (BF008). The park includes extensive areas of Sudan savanna vegetation, and important riparian habitats along stretches of the Mékrou and Alibori rivers, both major tributaries of the Niger river, which form, respectively, the western and eastern boundaries of the park. There is a narrow neck of land outside the park separating its north-eastern boundary from the Niger river itself. This area is, however, included within the IBA, thereby capturing the perennial marshy areas that fringe the Niger. Both the Alibori and Mékrou rivers are seasonal, although some pools of stagnant water usually remain within the beds of both in the dry season. The Mékrou river, which also marks the international frontier with Burkina Faso for much of its length, is 10–20 m wide and 2–3 m deep at the height of the wet season, September, and usually dries up by December.

Habitat includes riverine forest with a dense understorey and a nearly closed canopy, with patches of shrubland and woodland. Trees present include *Diospyros mespiliformis*, *Ficus* sp., *Daniella* sp., *Cola* sp. and scattered *Borassus aethiopum* palms. *Mimosa pigra* is common in the riverine scrub. The Sudan savanna includes *Acacia* spp., *Terminalia* sp. and *Combretum* spp. and grasslands of *Hyparrhenia involucreata* and *Andropogon gayanus*. There is a spectacular gorge through which the Mékrou runs near its confluence with the River Niger. The terrain of the northern part of the park is more broken with numerous outcrops, but the highest point of 320 m is in the south of the park.

#### Birds

See Box and Table 2 for key species. *Falco naumanni* has been recorded occasionally between January and March. The reserve harbours a representative community of Northern Guinea savanna and Sudan savanna species, while the course of the Niger river is important for wetland birds such as *Ardea goliath*, *A. cinerea*, *Ciconia abdimii*, *Plegadis falcinellus* and *Balearica pavonina*. Other species of note are *Trigonoceps occipitalis* (breeding), *Terathopius ecaudatus*, *Scotopelia peli* and, along the banks of the Mékrou, several large colonies of *Merops nubicus*, occupied during January and February.

#### Key species

A3 (A04) Sudan–Guinea Savanna biome: 16 of the 34 species of this biome that occur in Benin have been recorded at this site; see Table 2.

#### Other threatened/endemic wildlife

Among mammals, the park is host to the most important savanna population of *Loxodonta africana* (EN) in West Africa, as well as populations of *Panthera leo* (VU) and *Acinonyx jubatus* (VU). *Damaliscus lunatus korrigum* (LR/cd) has been seen in the park and *Trichechus senegalensis* (VU) may occur in the Niger close to or within the IBA.

#### Conservation issues

The park was established in 1936 and notified in 1954. Legitimate insecticide use (spraying with Endosulphan to control tsetse) was tested

## ACKNOWLEDGEMENTS

Patrick Claffey, Ward Hagemeyer and Dr J. Frank Walsh each supplied valuable information relevant to more than one of the proposed IBAs, and the Lama forest account is based on the work of M. Waltert and M. Muhlenberg. Maarten and Elizabeth van den Akker commented on early drafts and provided additional material, especially on the southern forest sites. M. Jacques Boco Adjakpa of the Centre de Recherche Ornithologique et de l'Environnement also commented on an early draft and provided extra data. I am also grateful to Dr L. D. C. Fishpool for his comments.

in the late 1970s, with adverse effects on the fauna of the Mékrou river, which probably also affected birds. Poaching occurs. Plans for the possible construction of dams on the Niger and Mékrou rivers and for phosphate mining could, if implemented, have severe environmental consequences. There is continuous encroachment by subsistence farmers and nomadic pastoralists leading to vegetation degradation and competition for grazing between livestock and wild herbivores.

#### Further reading

Koster and Grettenberger (1983), Sayer and Green (1984), WCMC (1993).

### Pendjari National Park

Admin region Atacora

Coordinates 11°15'N 01°30'E

Area 275,500 ha

Altitude 160–423 m

**BJ002**

A3 (A04)

National Park,  
Biosphere Reserve

#### Site description

The Boucle de Pendjari National Park is situated in the north-west of the country, against the international frontier with Burkina Faso, where it is contiguous with the Arli–W–Singou protected area complex (IBA BF008). The south-eastern boundary of the park is formed by the quartzite cliffs of the Atacora Hills. The park itself is flat (c. 175 m), apart from the Buém hills in the east, which reach 423 m, and a second group of hills to the south-west. The park is bounded on three sides by the perennial Pendjari river, which rises in the Atacora Hills south of the park, before draining into the Oti river which flows into Togo and Ghana. The course of the Pendjari along the northern edge of the park forms the international border with Burkina Faso. The main habitats include Sudan and Northern Guinea savannas. There are extensive areas of open grasslands dominated by *Acacia sieberiana* and *Mitragyna inermis* or by *Terminalia macroptera*. There is good gallery forest, the Bondjago forest, beside the Pendjari river at the base of the Atacora Hills, and the river is fringed elsewhere by *Parinari congensis*, *Cola laurifolia*, *Syzygium guineense* and *Pterocarpus santalinoides*. Marshy areas occur next to the river where there are also stands of *Borassus aethiopum*, *Daniella oliveri*, *Anogeissus leiocarpus* and *Terminalia* spp. Average annual rainfall is c. 1,100 mm.

#### Birds

See Box and Table 2 for key species. *Circus macrourus* and *Falco naumanni* are occasionally recorded and two species of the Guinea–Congo Forests biome (A05) also occur (see Table 2). Pendjari is notable for large, conspicuous species such as *Anastomus lamelligerus*, *Ephippiorhynchus senegalensis*, *Ciconia abdimii*, *Neotis denhami* and, seasonally, flocks of up to 60 *Ciconia ciconia*. In addition, *Terathopius ecaudatus* and *Haliaeetus vocifer* breed in trees along the Pendjari river, where *Scotopelia peli* has also been seen.

#### Key species

A3 (A04) Sudan–Guinea Savanna biome: 20 of the 34 species of this biome that occur in Benin have been recorded at this site; see Table 2.

#### Other threatened/endemic wildlife

Mammals of global conservation concern include *Panthera leo* (VU), *Acinonyx jubatus* (VU), *Loxodonta africana* (EN), *Damaliscus lunatus korrigum* (LR/cd) and *Cephalophus rufilatus* (LR/cd).

### Conservation issues

The Boucle de Pendjari National Park, created in 1961, is part of the Pendjari Biosphere Reserve (880,000 ha), which also includes the Pendjari and Atacora hunting zones, and Arli National Park in Burkina Faso. Although the terrestrial parts of the park are well protected, poachers have been known to poison waters with insecticides, such as Endrin, to obtain fish illegally. Fires and climatic desiccation have depleted animal populations in the past, as have hunting by poachers and encroachment by cattle-grazing, but park management has improved.

### Further reading

Green and Sayer (1979), Sayer and Green (1984), Thonnerieux (1985), WCMC (1993).

### Ouémé river basin

Admin region Borgou

Coordinates 09°09'N 02°25'E

Area 465,342 ha Altitude 150–620 m

BJ003

A3 (A04, A05)

Forest Reserves

### Site description

This site is a diverse area in the centre of the country, comprising the three contiguous forest reserves of the Forêt Classée de l'Ouémé Supérieur (09°35'N 02°30'E; 177,542 ha), the Forêt Classée de Ouari-Marô (09°09'N 02°25'E; 107,500 ha) and the Forêt Classée des Monts Kouffé (08°45'N 02°06'E; 180,300 ha). The former two straddle the Ouémé river west and south-west of the town of Parakou, and are separated from each other by the Parakou–Natitingou road, while the latter is to the south of these, with the Ouémé river forming its eastern boundary and the Adjiro river its southern and western borders.

The area is within the Northern Guinea savanna zone and the main vegetation-types include savanna woodland up to 20 m high, with a dense understorey dominated by *Azelia africana*, *Daniella oliveri* and *Khaya senegalensis*, and dense semi-deciduous forest, occurring in small patches in the western part of Monts Kouffé Forest Reserve towards the border with Togo and in the Monts Kouffé themselves in the centre of the reserve, and consisting of tall trees up to 40 m high (*Antiaris africana*, *Ceiba pentandra*, *Cola cordifolia*, *Milicia excelsa* and *Ricinodendron heudelotii*) over a subcanopy layer dominated by *Dialium guineensis*, *Mimusops andongensis*, *Holarrhena floribunda*, *Drypetes floribunda* and *Malacantha alnifolia*. Similar vegetation forms gallery forest along rivers and thinner riverine forest also occurs. In addition, the IBA encompasses rocky outcrops, small ponds and marshes next to the Ouémé river. Average annual rainfall is 1,200 mm, mostly falling between May and October.

### Birds

See Box and Table 2 for key species. The area is important due to its large size and relatively undisturbed habitat. It is one of the few places in the country where *Ceratogymna albotibialis* occurs and is a refuge for many of the rarer birds of prey (e.g. *Haliaeetus vocifer*) and passerines. *Circus macrourus* has been recorded occasionally in January and November. The area has yet to be surveyed comprehensively.

#### Key species

A3 (A04) Sudan–Guinea Savanna biome: 20 of the 34 species of this biome that occur in Benin have been recorded at this site; see Table 2.

A3 (A05) Guinea–Congo Forests biome: 16 of the 59 species of this biome that occur in Benin have been recorded at this site; see Table 2.

### Other threatened/endemic wildlife

Mammals of global conservation concern include *Cephalophus maxwelli* (LR/nt), *C. silvicultor* (LR/nt) and *C. rufilatus* (LR/cd). The IBA includes the type-locality, and the only one known in Benin, for the grasshopper *Truxaloides chekei*.

### Conservation issues

A recent influx of people is leading to encroachment by slash and burn farmers who are cutting savanna woodland; small logging companies are also working in the area. Agricultural intensification and use of fertilizers and pesticides are increasing.

### Further reading

Claffey (1995, 1999a,b).

### Lake Nokoué

Admin region Atlantiqu, Ouémé

Coordinates 06°45'N 02°23'E

Area c.90,000 ha Altitude 0–10 m

BJ004

A3 (A05), A4i

Ramsar Site (Unprotected)

### Site description

Lake Nokoué is an extensive lagoon of c.16,000 ha extent, 20 km wide by 11 km long (north to south), immediately north of Cotonou. Its northern shore is formed by the deltas of the So and Ouémé rivers. It is connected to the sea not only via a channel through Cotonou, but also by another to the Lagune de Porto-Novo to the east and thence to the coast in Nigeria. On the western edge is the remarkable aquatic town of Ganvié, built on stilts made of bamboo or tree-trunks sunk into the water. The southern edge of the lake has the highest salinity, and is fringed with *Typha australis* as well as the ubiquitous grass *Paspalum vaginatum*. The proposed IBA includes not only the lake itself but also the seasonally inundated forest (*Berlinia grandiflora* and *Dalium guineense*), swamp-forest (*Mitragyna inermis* and *Raphia hookeri*), marshes and flood-plains of rivers north of it, up the Ouémé river as far as the village of Sagon, 10 km south-east of Zangnanado.

### Birds

See Box and Table 2 for key species. Large populations of waterbirds use the lake and surrounding areas. These include, in addition to those listed below, *Egretta ardesiaca*, *E. garzetta*, *Tringa glareola*, *T. stagnatilis*, *T. nebularia*, *T. erythropus* and *Chlidonias hybridus*. There is also a record of *Gallinago media*. It is expected that more species of the Guinea–Congo Forests biome will be found to occur. In addition, five species of the Sudan–Guinea Savanna biome (A04) have been recorded; see Table 2.

#### Key species

A3 (A05) Guinea–Congo Forests biome: Seven of the 59 species of this biome that occur in Benin have been recorded at this site; see Table 2.

A4i	Breeding (pairs)	Non-breeding
<i>Anastomus lamelligerus</i>	—	1,020 (1996)
<i>Chlidonias niger</i>	—	2,451 (1997)

### Other threatened/endemic wildlife

Small numbers of *Tragelaphus spekii* (LR/nt) are thought to persist but hunting pressure is intense. There are also records of *Cercopithecus erythrogaster* (VU) and *Trichechus senegalensis* (VU).

### Conservation issues

Much of the area was declared a Ramsar Site, known as Basse Vallée de l'Ouémé, Lagune de Porto-Novo, Lac Nokoué and covering 91,600 ha, in January 2000. Threats include hunting, poaching, pollution, mangrove destruction and deforestation. Traditional fishing methods may, however, benefit birds. Fishermen plant branches in the muddy lagoon bottom, surrounded by platforms of bamboo sticks and palm-leaves. When the leaves on the branches start to decompose, fish congregate to feed at these sites, known as acadja, before boatmen (and birds) return to catch them.

### Further reading

Brunel (1958), Hagemeyer *et al.* (2000a,b), Wetlands International (1997, 1998).

### Lake Ahémé and Aho complex

Admin region Atlantiqu, Mono

Coordinates 06°30'N 01°57'E

Area 45,000 ha Altitude 0–10 m

BJ005

A1, A4i

Ramsar Site (Unprotected)

### Site description

This triangular area, in the south-west of the country, comprises the marshes of the lower Kouffo river, Lake Ahémé, into which the river drains, and the 'Aho complex' consisting of marshes beside the Aho river, which carries water from the lake to the sea, and the coastal strip between the towns of Grand-Popo to the west and Ouidah to the east. The south of Lake Ahémé is fringed with *Typha australis* and the Aho supports mangroves (*Rhizophora* sp. and *Avicennia* sp.), maintained by seasonal influxes of brackish water.

## Birds

See Box for key species. The records of *Sterna balaenarum* come from the Bouche du Roi, part of the Aho delta where there is a channel to the sea. Large flocks of *Chlidonias niger* forage on the lake. In addition, three species of the Sudan–Guinea Savanna biome (A04) have also been recorded; see Table 2.

### Key species

A1	<i>Sterna balaenarum</i>		
A4i		Breeding (pairs)	Non-breeding
	<i>Sterna maxima</i>	—	502 (1996)
	<i>Sterna balaenarum</i>	—	200

## Other threatened/endemic wildlife

The fish *Trichechus senegalensis* (VU) was reported from Lake Ahémé in the mid-1970s.

## Conservation issues

The area was declared a Ramsar Site in January 2000. Threats include hunting, pollution, mangrove destruction and deforestation but some human activities, particularly the building of platforms for fishing, are beneficial to many piscivorous birds.

## Further reading

Hagemeijer *et al.* (2000a,b), Wetlands International (1998).

### Lama forest

Admin region Zou

Coordinates 06°57'N 02°08'E

Area 16,250 ha Altitude 50–60 m

BJ006

A3 (A05)

Forest Reserve

## Site description

The Forêt Classée de la Lama (also known as the Forêt de Ko), in the centre-south of the country, south of the city of Abomey, used to

comprise 16,000 ha of natural forest but by 1986, when a core area was designated for special protection, the amount of intact forest had been reduced to 2,400 ha. This core area of 4,500 ha, known as the Noyau Central, includes within it the remaining dense forest (now only 1,800 ha) with *Afzelia africana*, *Bombax buonopozense*, *Ceiba pentandra* and *Parinari excelsa*. Lama forest lies in an east–west oriented depression, the clay soils of which permit flooding of extensive areas in the wet season. This flooding is inimical to some tree species and their absence may account for a scarcity of frugivorous bird species in the forest. The Noyau Central is an ecological island surrounded by degraded forest, plantations of teak (*Tectonia grandis*), tree-less bush dominated by *Chromolaena odorata* and farmland.

## Birds

See Box and Table 2 for key species. To date, 106 species have been recorded, many of which are species of the Guinea–Congo Forests biome, such as *Sarothrura pulchra*, *Phyllastrephus albigularis*, *Bleda syndactyla*, *B. canicapilla*, *Illadopsis puveli*, *Apalis rufogularis* and *Fraseria ocreata*. The forest also supports a population of *Guttera pucherani*. Further surveys will undoubtedly lead to the discovery of more forest species. In addition, two species of the Sudan–Guinea Savanna biome (A04) have also been recorded; see Table 2.

### Key species

A3 (A05) Guinea–Congo Forests biome: 34 of the 59 species of this biome that occur in Benin have been recorded at this site; see Table 2.

## Other threatened/endemic wildlife

*Cephalophus silvicultor* (LR/cd) has been recorded.

## Conservation issues

Threats include continuing degradation of the surrounding forest, encroaching farmland and, probably, poaching, burning and logging.

## Further reading

Waltert and Mühlenberg (1999).

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