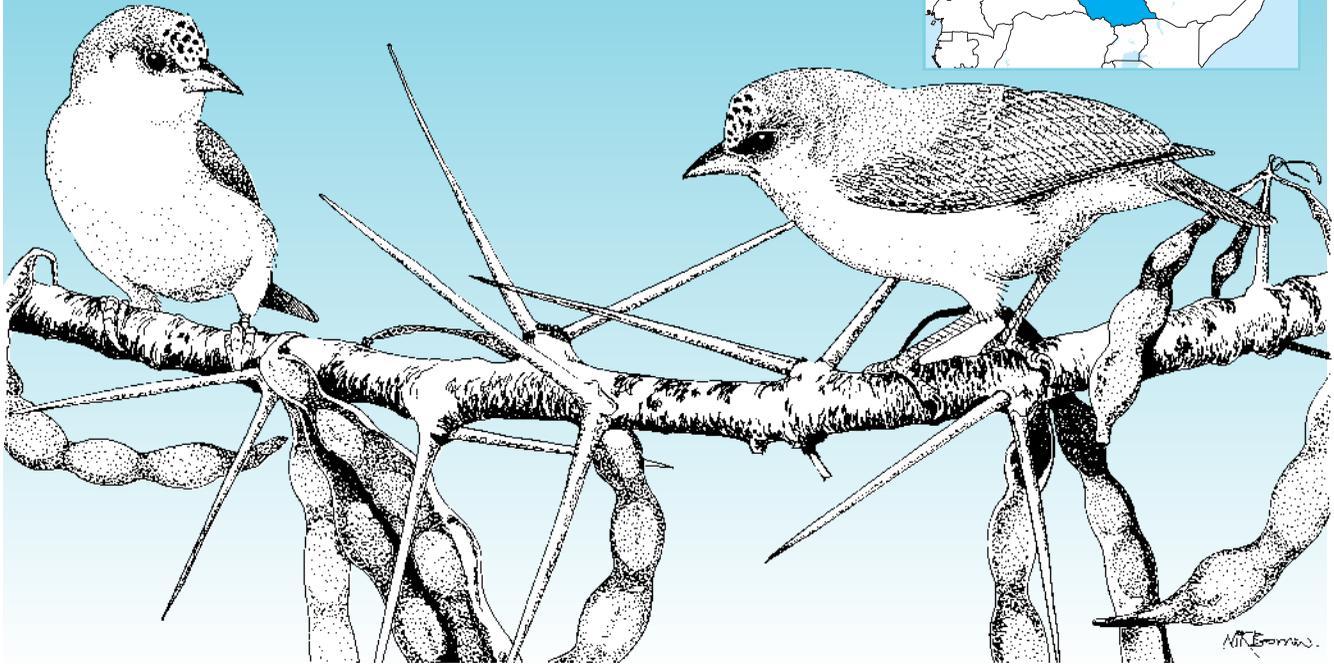


SUDAN

PETER ROBERTSON



Sudan Penduline Tit *Anthoscopus punctifrons*. (ILLUSTRATION: NIK BORROW)

GENERAL INTRODUCTION

The Republic of Sudan is the largest country in Africa, extending c.2,075 km along its north–south axis and 1,810 km east to west. It has an area of 2,505,815 km² and is bordered by the Red Sea, Eritrea and Ethiopia to the east, Kenya, Uganda and the Democratic Republic of Congo to the south, the Central African Republic and Chad to the west and Libya and Egypt to the north. The population, which consists of c.500 ethnic groups, was estimated to be 27,889,000 in 1997, while the average annual rate of increase is 1.1%. The average population density exceeds 10 per km², but this masks enormous regional variations, from fewer than 5 per km² in the Red Sea province to greater than 60 per km² in the Khartoum area. In addition to the Sudanese population there remain in the country significant numbers of refugees from Ethiopia, Chad and Uganda.

Because of the enormous latitudinal range, from 3°31' to 22°00'N, different parts of the country experience very different climates. Northern Sudan is desert with negligible rainfall and high mean daily temperatures, from 20°C in winter to 35°C in summer. The Red Sea coastal plain receives winter rainfall while the rest of the country south of 10°N experiences rainfall from March to November. Rainfall increases southwards to a maximum of 1,000–1,200 mm annually on the southern border and up to 1,500 mm annually in the Imatong mountains.

Sudan has a coastline of c.850 km bordering the Red Sea, the widest and deepest parts of which lie off Port Sudan. Much of the coast is bordered by fringing reefs 1–3 km wide and lying in a few metres of water. This reef is interrupted at the entrances to coastal lagoons (mersas) and at the Tokar delta. In addition, there are barrier reefs 1–14 km wide which lie 2–5 km offshore of the fringing reefs. At the southern end of Sudan's Red Sea Coast lies the Suakin archipelago in an area where the coastal shelf widens to over 100 km. A second series of islands lies off the town of Mohammed Qol and there is a further string of offshore islands between the town of Halaib and the Egyptian border in the north. There is only a limited, artisanal coastal fishery. In the late 1980s it was estimated that only c.350

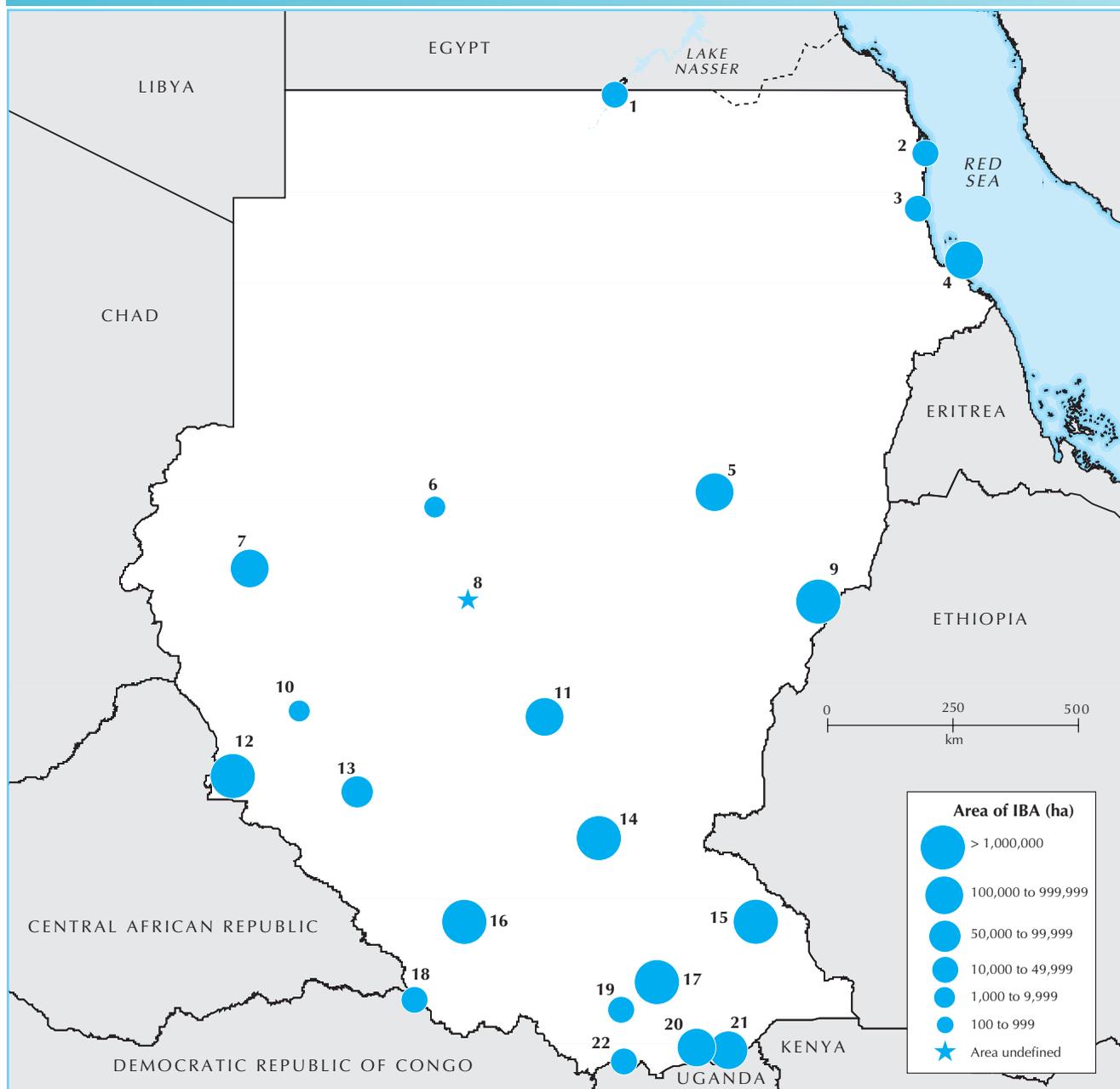
fishermen from six communities were involved in coastal fisheries, principally with handlines, catching c.300–600 tonnes per year.

The Red Sea coastal plain is generally 10–30 km wide but, in places, extends inland for c.50 km. The central section of the coastal plain is highly indented where a series of wadis, rising in the neighbouring mountains, reach the sea. The coastal plain is bounded by a chain of mountains, the Red Sea Hills, which run parallel to the coast and rise to 2,217 m at Jebel Asoteriba in the north, 2,260 m at Jebel Oda and to 2,780 m at Jebel Hamoyet on the Ethiopian border.

On the western side of Sudan lies the Jebel Marra, a mountain range which reaches 3,071 m and includes over 8,500 km² of land surface above 1,500 m, making it the largest mountain range in Sudan. Mount Kinyeti in the Imatong mountains, close to the Uganda border is, at 3,187 m, the highest point in Sudan. The Nuba mountains, which reach 1,300 m, lie in Kordofan in the centre of the country while in the south-west there is an area of upland which marks the watershed between the Nile and the Congo river systems and which also forms the international boundary between the Sudan and the Democratic Republic of Congo and the Central African Republic. Away from these areas Sudan is a largely flat, basin-shaped country with vast interior plains at an average altitude of 500–1,000 m.

The other main topographical feature of Sudan is the Nile river system. The northward-flowing White Nile (Bahr-el-Jebel) enters the country near the town of Nimule on the Ugandan border. North of Bor, the river, due to the almost flat topography, slows and spreads to seasonally occupy an enormous area of papyrus-dominated swampland, known as the Sudd, which extends northwards for c.350 km. Near the northern limit of the Sudd, close to the town of Marakal, the White Nile is joined by two large tributaries, the Sobat from the east and the Bahr-el-Ghazal from the west. From here, the enlarged river flows almost due north to Khartoum, which marks the confluence of the White Nile with the Blue Nile, flowing north-westwards from the Ethiopian highlands. A further large tributary, the Atbara, joins the system at the town of Atbara whence the Nile flows through the Sahara to reach the Egyptian border near the town of Wadi Halfa.

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



The vegetation of the country may be divided into five principal regions, largely reflecting the north–south rainfall gradient. North of c.16°N in the west and 20°N in the east, rainfall averages less than 50 mm annually and the region is desert. Away from the Nile valley vegetation is extremely limited and mostly confined to depressions and wadis. The river itself is lined with date-palms *Phoenix dactylifera*, and other common trees include *Hyphaene thebaica* and, in the south, *Acacia arabica*, *A. albida* and *A. seyal*. The grass *Desmostachya bipinnata* is also common while, in drier areas, other grasses include *Panicum turgidum*, *Cenchrus biflorus* and *Aristida* spp. South of the desert, between c.14–16°N in the west and 18–20°N in the east, where annual rainfall averages 50–300 mm, is a belt of semi-desert scrub and grassland. The woody vegetation here consists of scattered low trees and shrubs in which *Acacia seyal*, *A. albida*, *A. nubica*, *A. mellifera*, *Boscia senegalensis* and *Balanites aegytiaca* are common, as are, near watercourses, *Calotropis procera* and *Salvadora persica*. There are proportionately fewer trees in the west of this zone, north of Jebel Marra; here the landscape is dominated by undulating sands which may support a relatively thick growth of small shrubs, including *Leptadenia pyrotechnica*, and grasses.

To the south, where annual rainfall averages 300–400 mm, between 12–14°N in the west and 14–18°N in the east, lies a zone of Sahelian *Acacia*-wooded grassland. Grasses and herbs are much more common and there is a greater variety of tree species. East of

the Nile, dominant trees include *Capparis decidua*, *Boscia senegalensis*, *Cadaba rotundifolia*, *Acacia nubica*, *A. tortilis* and *Hyphaene thebaica*. There are, however, large areas of heavy clay soils, near rivers, including the Gezira, south of Khartoum, which are naturally treeless and support grasses and thorn scrub. West of the Nile, woody vegetation tends to be sparser, with *Acacia albida* and *A. senegal* the most common trees in places. In the extreme south-east of the country, north of the Kenyan border, this vegetation-type, with Somali–Masai affinities, recurs. Here there are large areas of thick thorn trees and scrub in which *Acacia mellifera* and *Commiphora* spp. are common. Open grass plains, dotted with *Balanites aegyptiaca*, occur on heavy clay soils.

Extending from between c.9–12°N in the west and c.5–14°N in the east is a large, triangular-shaped area in which annual rainfall averages 400–800 mm. Here, the natural vegetation, away from seasonally inundated areas and highland, is woodland. Dominant tree species include *Combretum* spp., *Acacia senegal*, *A. seyal*, *A. nubica*, *A. mellifera*, *Adansonia digitata*, *Capparis decidua*, *Dicrostachys cinerea* and, in places, *Borassus aethiopicum*. Along rivers, including on ‘mayas’ (seasonally inundated mudflats along the course of the Nile), *Acacia arabica* is dominant. Common grasses include *Sorghum* spp. and *Cymbopogon nervatus*. Along Sudan’s south-western border, between c.9°N in the west to 5°N in the east, annual rainfall averages 800–1,200 mm. In parts, in particular close

Table 1. Summary of Important Bird Areas in Sudan. 22 IBAs covering 18,040 km²

IBA code	Site name	Administrative region	Criteria (see p. 11; for A3 codes, see Table 2)							A4i	A4iii
			A1	A02	A03	A3		A07	A08		
SD001	Wadi Halfa	Northern		✓							
SD002	Mukawwar island and Dunganab Bay	Red Sea	✓	✓						✓	
SD003	Khor Arba'at	Red Sea		✓							
SD004	Suakin archipelago	Red Sea								✓	
SD005	Gezira	El Gezira								✓	
SD006	Um Badr	Northern Kordofan	✓	✓	✓						
SD007	Jebel Marra	Northern Darfur, Southern Darfur	✓		✓						
SD008	En Nahud	Northern Kordofan	✓		✓						
SD009	Dinder	Blue Nile, Kassala				✓					
SD010	Lake Kundi	Southern Darfur			✓	✓				✓	
SD011	Lake Abiad	Southern Kordofan								✓	
SD012	Radom	Southern Darfur				✓					
SD013	Ashana	Bahr el Ghazal				✓					
SD014	Sudd (Bahr-el-Jebel system)	Jonglei, El Buheyrat	✓			✓				✓	
SD015	Boma	Jonglei	✓					✓			
SD016	Southern National Park	El Buheyrat, Western Equatoria				✓					
SD017	Bandingilo	Eastern Equatoria				✓			✓		
SD018	Bengangai	Western Equatoria	✓			✓	✓				
SD019	Juba	Eastern Equatoria				✓					
SD020	Imatong mountains	Eastern Equatoria	✓			✓	✓	✓	✓		
SD021	Kidepo	Eastern Equatoria				✓		✓	✓		
SD022	Nimule	Eastern Equatoria				✓					
Total number of IBAs qualifying:			8	4	4	12	2	2	4	6	4

to the frontier with the Democratic Republic of Congo, there are areas of dense woodland and tall grassland, while closed forest occurs as extensive galleries along rivers and in depressions. Forest also occurs at altitude on the Imatong and Dongatona mountains in the extreme south, where annual rainfall reaches 1,500 mm.

Sudan is one of the poorest and least-developed countries in the world, ranking 158 out of 175 on UNDP's Human Development Index for 1997. Its estimated Gross Domestic Product (GDP) in 1994 was US\$23.7 billion, equivalent to US\$870 per capita. Sudan has small reserves of petroleum, iron ore, copper, chromium ore, zinc, tungsten, mica, silver and gold, but the major exports are gum arabic (29% of export income), livestock (24%), cotton (13%), sesame and peanuts. Agriculture accounts for 35% of GDP, and 80% of the labour force is employed in agriculture, with only 10% in industry and commerce; 24% of the land area is used as meadows and pasture, with a further 5% under arable cultivation; only 18,900 km² is irrigated. There is 5,516 km of railway, 2,000 km of paved roads and 5,310 km of navigable waterways.

Sudan became independent from Egypt and Britain in 1956. Within Sudan there is a long-standing cultural divide between the Islamic north (which contains Khartoum, the national capital and centre of government) and the Christian south, which has resulted in calls for autonomy and the development of a secessionist movement in the south. In 1972 southern Sudan was given some measure of autonomy thanks to the passing of the Southern Provinces Regional Self-Government Act. However, this was not sufficient to appease the secessionist movement, and since the 1980s the Sudan People's Liberation Army has been waging a civil war against government troops in a fight for the south's independence.

ORNITHOLOGICAL IMPORTANCE

The avifauna of Sudan numbers 937 species of which 616 are resident and 312 are regular seasonal migrants, including 214 from the Palearctic. Seventeen species of global conservation concern have been recorded from the country. Eleven of these are Palearctic migrants, of which four, *Aquila clanga* (VU), *Crex crex* (VU), *Gallinago media* (NT) and *Acrocephalus griseldis* (NT), are rare or uncommon on passage, while a further five, *Aythya nyroca* (VU), *Aquila heliaca* (VU), *Vanellus gregarius* (VU), *Glareola nordmanni* (NT) and *Emberiza cineracea* (NT) may also winter in small numbers. Only two—*Circus macrourus* (NT) and *Falco naumanni*

(VU)—are at all common, in both cases during the northern winter and on passage. Of the resident species, *Larus leucophthalmus* (VU) breeds commonly on islands in the Red Sea while the swamps of the Sudd are the global stronghold of *Balaeniceps rex* (NT). *Columba albinucha* (NT) and *Zoothera guttata* (EN) (of the endemic race *maxis*) are each only known from single forest localities in the far south, while *Neotis nuba* (NT) is rare in the short grassland of the Sahel zone. The status of the remaining species, *Hirundo perditia* (VU), is obscure: it is only known from a single specimen, found dead on the Sanganeb atoll in the Red Sea, and it is not clear whether the species is resident in the Sudan, whether it was on migration or merely a vagrant.

H. perditia is considered also to be of restricted-range, belonging to the North-east Sudan Secondary Area (s066), the boundaries of which, due to uncertainty of the bird's status, are undefined. There are no other species of restricted range in Sudan. One species is endemic to the country, *Ploceus badius*.

As a result of the enormous range of latitudes covered by the country it supports elements of no fewer than six biomes. The Sahara–Sindian biome (A02) covers the northern quarter of the country and 17 of its characteristic (biome-restricted) species occur, while an approximately equivalent area is occupied by the Sahel biome (A03) and 15 of its species have been recorded. Much of the southern half of the country falls within the Sudan–Guinea Savanna biome (A04) and 36 species occur. The north-eastern extremity of the Guinea–Congo Forests biome (A05) reaches south-western Sudan (68 species) while the south-eastern part of the country lies within the Somali–Masai biome (A08) (49 species). Finally, parts of the southern mountains lie within the Afrotropical Highlands biome (A07) and 33 species occur.

The inland wetlands of Sudan, dominated by the Sudd, are enormously important for huge numbers of many species of waterbird—resident, wintering and on passage. In addition, the islands of the Sudanese Red Sea support important breeding populations of a number of seabirds.

CONSERVATION INFRASTRUCTURE AND PROTECTED-AREA SYSTEM

Wildlife conservation legislation dates back to 1935 when the Preservation of Wild Animals Ordinance was passed and followed, in 1939, by the National Parks, Sanctuaries and Reserves Regulations.

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

A02 – Sahara–Sindian biome (17 species in Sudan; four sites meet the A3 criterion)																	
IBA code:	001	002	003	006	008	IBA code:	001	002	003	006	008						
<i>Falco concolor</i>		✓	✓			<i>Hirundo obsoleta</i>	✓		✓								
<i>Ammoperdix heyi</i>			✓			<i>Oenanthe leucopyga</i>	✓	✓	✓								
<i>Pterocles senegallus</i>		✓	✓	✓		<i>Oenanthe monacha</i>			✓								
<i>Pterocles coronatus</i>	✓					<i>Oenanthe lugens</i>	✓										
<i>Pterocles lichtensteinii</i>			✓	✓		<i>Cercomela melanura</i>			✓	✓							
<i>Bubo ascalaphus</i>	✓					<i>Turdoides fulvus</i>	✓	✓	✓	✓							
<i>Ammomanes cincturus</i>		✓				<i>Rhodopechys githaginea</i>											
<i>Ammomanes deserti</i>		✓	✓			<i>Passer simplex</i>											
<i>Alaemon alaudipes</i>		✓	✓		✓	Number of species recorded:	6	7	11	4	1						
A03 – Sahel biome (15 species in Sudan; four sites meet the A3 criterion)																	
IBA code:	001	006	007	008	009	010	014	019	020	021							
<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>Spiloptila clamans</i>	✓	✓	✓	✓		✓											
<i>Anthoscopus punctifrons</i>		✓					✓										
<i>Passer luteus</i>		✓															
<i>Lamprotornis pulcher</i>		✓	✓	✓		✓											
Number of species recorded:	1	8	8	9	1	6	3	1	1	1							
A04 – Sudan–Guinea Savanna biome (36 species in Sudan; 12 sites meet the A3 criterion)																	
IBA code:	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022
<i>Falco alopex</i>		✓							✓		✓	✓		✓	✓	✓	✓
<i>Francolinus icterorhynchus</i>							✓	✓			✓		✓	✓		✓	✓
<i>Poicephalus crassus</i>													✓				
<i>Tauraco leucolophus</i>								✓			✓	✓	✓	✓	✓	✓	✓
<i>Merops bulocki</i>				✓	✓		✓	✓	✓		✓	✓		✓	✓		✓
<i>Coracias cyanogaster</i>																	✓
<i>Lybius rolleti</i>		✓				✓	✓	✓	✓		✓			✓	✓	✓	✓
<i>Dendropicos poecilolaemus</i>											✓			✓	✓		✓
<i>Galerida modesta</i>							✓	✓			✓	✓		✓	✓		✓
<i>Lanius gubernator</i>									✓					✓			✓
<i>Corvinella corvina</i>		✓			✓	✓		✓	✓		✓	✓		✓	✓	✓	✓
<i>Cossypha albicapilla</i>										✓							✓
<i>Myrmecocichla albifrons</i>									✓		✓	✓		✓	✓	✓	✓
<i>Turdoides tenebrosus</i>										✓		✓	✓				✓
<i>Turdoides leucocephalus</i>				✓													
<i>Cisticola rufigiceps</i>		✓	✓	✓	✓		✓	✓				✓		✓		✓	
<i>Cisticola troglodytes</i>			✓	✓	✓		✓	✓	✓		✓	✓		✓	✓	✓	✓
<i>Drymocichla incana</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>Euschistospiza dybowskii</i>													✓		✓		✓
<i>Lagonosticta rara</i>							✓		✓					✓	✓	✓	✓
<i>Lagonosticta larvata</i>				✓			✓	✓		✓				✓			✓
<i>Estrilda troglodytes</i>		✓		✓	✓	✓		✓	✓		✓	✓		✓		✓	✓
<i>Vidua interjecta</i>												✓	✓	✓	✓		✓
<i>Petronia dentata</i>				✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
<i>Plocepasser superciliosus</i>			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
<i>Ploceus heuglini</i>											✓	✓					✓
<i>Ploceus badius</i>	✓			✓					✓		✓			✓	✓		
<i>Lamprotornis purpureus</i>		✓					✓	✓			✓			✓	✓		✓
<i>Lamprotornis chalcurus</i>							✓	✓	✓		✓			✓	✓	✓	✓
<i>Ptilostomus afer</i>			✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Number of species recorded:	1	5	3	10	9	7	10	16	19	4	15	21	7	23	18	16	25

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

A05 – Guinea–Congo Forests biome (68 species in Sudan; two sites meet the A3 criterion)				A05 – Guinea–Congo Forests biome ... continued (68 species in Sudan; two sites meet the A3 criterion)						
IBA code:	018	020	021	IBA code:	018	020	021			
<i>Pteronetta hartlaubii</i>	✓			<i>Malimbus erythrogaster</i>	✓					
<i>Urotiorchis macrourus</i>	✓			<i>Malimbus nitens</i>	✓					
<i>Francolinus lathamii</i>	✓			<i>Malimbus rubricollis</i>	✓	✓				
<i>Sarothrura pulchra</i>	✓			<i>Onychognathus fulgidus</i>	✓					
<i>Columba unicincta</i>	✓			<i>Oriolus brachyrhynchus</i>	✓		✓			
<i>Columba albinucha</i>	✓			<i>Oriolus nigripennis</i>	✓	✓				
<i>Columba iriditorques</i>	✓			Number of species recorded:	57	23	3			
<i>Chrysococcyx flavigularis</i>	✓			A07 – Afrotropical Highlands biome (33 species in Sudan; two sites meet the A3 criterion)						
<i>Caprimulgus nigriscapularis</i>	✓			IBA code:	015	020	021			
<i>Ispidina lecontei</i>	✓			<i>Buteo oreophilus</i>		✓	✓			
<i>Halcyon badia</i>	✓			<i>Sarothrura affinis</i>						
<i>Merops breweri</i>	✓			<i>Streptopelia lugens</i>	✓	✓	✓			
<i>Tockus hartlaubi</i>	✓			<i>Asio abyssinicus</i>						
<i>Tockus camurus</i>	✓			<i>Caprimulgus poliocephalus</i>		✓	✓			
<i>Tockus fasciatus</i>	✓			<i>Schoutedenapus myoptilus</i>		✓				
<i>Ceratogymna fistulator</i>	✓			<i>Merops oreobates</i>		✓	✓			
<i>Ceratogymna subcylindricus</i>	✓			<i>Coracina caesia</i>		✓	✓			
<i>Ceratogymna atrata</i>	✓			<i>Chlorocichla laetissima</i>		✓				
<i>Tricholaema hirsuta</i>	✓			<i>Monticola rufocinereus</i>		✓	✓			
<i>Trachyphonus purpuratus</i>	✓	✓		<i>Zoothera piaggiae</i>	✓	✓	✓			
<i>Indicator maculatus</i>	✓	✓		<i>Pogonochila stellata</i>		✓	✓			
<i>Prodotiscus insignis</i>		✓		<i>Sheppardia aequatorialis</i>		✓				
<i>Campethera nivosa</i>	✓			<i>Cossypha semirufa</i>	✓					
<i>Campethera caroli</i>	✓	✓		<i>Pseudoalcippe abyssinica</i>		✓	✓			
<i>Dendropicos xantholophus</i>	✓			<i>Apalis pulchra</i>		✓				
<i>Andropadus curvirostris</i>	✓	✓		<i>Bradypterus cinnamomeus</i>		✓	✓			
<i>Baeopogon indicator</i>	✓	✓		<i>Chloropeta similis</i>		✓	✓			
<i>Phyllastrephus scandens</i>	✓			<i>Phylloscopus umbrovirens</i>		✓	✓			
<i>Phyllastrephus hypochloris</i>		✓		<i>Sylvia lugens</i>		✓	✓			
<i>Phyllastrephus albigularis</i>	✓	✓		<i>Nectarinia preussi</i>		✓	✓			
<i>Bleda syndactyla</i>	✓	✓		<i>Nectarinia tacaze</i>		✓	✓			
<i>Bleda notata</i>	✓			<i>Zosterops poliogaster</i>		✓	✓			
<i>Nicator chloris</i>	✓	✓		<i>Serinus striolatus</i>		✓	✓			
<i>Criniger calurus</i>	✓			<i>Linurgus olivaceus</i>		✓				
<i>Laniarius leucorhynchus</i>	✓			<i>Cryptospiza salvadorii</i>		✓	✓			
<i>Neocossyphus fraseri</i>	✓			<i>Estrilda melanotis</i>		✓	✓			
<i>Alethe diademata</i>	✓			<i>Ploceus baglafecht</i>	✓	✓	✓			
<i>Stiphornis erythrothorax</i>	✓			<i>Ploceus melanogaster</i>		✓	✓			
<i>Cossypha cyanocamptor</i>		✓		<i>Ploceus insignis</i>		✓	✓			
<i>Illadopsis albipectus</i>	✓	✓		<i>Poeoptera stuhlmanni</i>		✓				
<i>Illadopsis puvelli</i>	✓			<i>Onychognathus walleri</i>		✓	✓			
<i>Illadopsis fulvescens</i>	✓	✓		<i>Cinnyricinclus sharpii</i>		✓	✓			
<i>Apalis rufogularis</i>	✓			Number of species recorded:	4	30	24			
<i>Camaroptera chloronota</i>	✓		✓	A08 – Somali–Masai biome (49 species in Sudan; four sites meet the A3 criterion)						
<i>Eremomela badiceps</i>		✓		IBA code:	014	015	017	019	020	021
<i>Sylvietta virens</i>	✓	✓		<i>Francolinus leucoscepus</i>	✓				✓	✓
<i>Macrosphenus flavicans</i>	✓			<i>Eupodotis gindiana</i>					✓	✓
<i>Hylia prasina</i>	✓	✓		<i>Corythaixoides leucogaster</i>			✓	✓	✓	✓
<i>Muscicapa infuscata</i>				<i>Caprimulgus fraenatus</i>			✓			
<i>Muscicapa comitata</i>				<i>Caprimulgus donaldsoni</i>						
<i>Bias flammulatus</i>	✓	✓		<i>Caprimulgus stellatus</i>					✓	
<i>Platysteira castanea</i>	✓	✓		<i>Phoeniculus somaliensis</i>						
<i>Platysteira jamesoni</i>	✓	✓		<i>Rhinopomastus minor</i>		✓	✓	✓	✓	✓
<i>Trochocercus nigromitratus</i>	✓			<i>Tockus flavirostris</i>						✓
<i>Trochocercus nitens</i>	✓			<i>Tockus jacksoni</i>			✓		✓	✓
<i>Parus funereus</i>		✓	✓	<i>Tockus hemprichii</i>		✓	✓			✓
<i>Anthreptes rectirostris</i>				<i>Tricholaema melanocephala</i>						
<i>Nectarinia seimundi</i>	✓			<i>Trachyphonus erythrocephalus</i>			✓	✓	✓	✓
<i>Nectarinia rubescens</i>	✓	✓		<i>Trachyphonus darnaudii</i>	✓		✓	✓	✓	✓
<i>Ploceus nigerrimus</i>	✓			<i>Mirafrā hypermetra</i>			✓		✓	✓
<i>Ploceus tricolor</i>	✓			<i>Mirafrā poecilosterna</i>						✓
<i>Ploceus albinucha</i>										

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

A08 – Somali–Masai biome ... continued (49 species in Sudan; four sites meet the A3 criterion)						
IBA code:	014	015	017	019	020	021
<i>Eremopterix signata</i>						✓
<i>Tmetothylacus tenellus</i>		✓	✓			✓
<i>Lanius dorsalis</i>			✓			✓
<i>Lanius somalicus</i>						
<i>Tchagra jamesi</i>						✓
<i>Rhodophoneus cruentus</i>						
<i>Cercomela scotocerca</i>						
<i>Turdoides rubiginosus</i>	✓	✓	✓	✓	✓	✓
<i>Turdoides leucopygius</i>		✓				
<i>Cisticola bodessa</i>		✓				
<i>Cisticola cinereolus</i>						
<i>Cisticola nanus</i>						✓
<i>Prinia somalica</i>						✓
<i>Calamonastes simplex</i>			✓			✓
<i>Bradornis microrhynchus</i>						
<i>Batis perkeo</i>						
<i>Anthoscopus musculus</i>	✓				✓	

IBA code:	014	015	017	019	020	021
<i>Anthreptes orientalis</i>		✓	✓	✓	✓	✓
<i>Nectarinia hunteri</i>						
<i>Nectarinia habessinica</i>						
<i>Zosterops abyssinicus</i>						
<i>Emberiza poliopleura</i>						
<i>Serinus dorsostratus</i>						✓
<i>Uraeginthus cyanocephalus</i>						✓
<i>Uraeginthus ianthinogaster</i>					✓	✓
<i>Lonchura griseicapilla</i>				✓	✓	✓
<i>Vidua hypocherina</i>						✓
<i>Vidua fischeri</i>					✓	✓
<i>Dinemellia dinemelli</i>	✓		✓	✓	✓	✓
<i>Passer gongonensis</i>						
<i>Ploceus galbula</i>						
<i>Lamprotornis shelleyi</i>						✓
<i>Speculipastor bicolor</i>						
Number of species recorded:	5	7	14	8	16	28

Following the 1972 Southern Provinces Region Self-Government Act, wildlife conservation in the Southern Region was subject to the Wildlife Conservation and Parks Act (1975) of the Southern Regional Government. All these instruments were replaced, in 1986, by the ‘Wildlife Conservation and National Park Ordinance, Year 1406 Hegria’. Marine conservation is covered by the Marine Fisheries Act and Marine Environment Conservation Act. Natural forests are protected by the Central Forests Act and the Provincial Forests Act, both of 1932. In 1989 new forest law and forest policy were drafted which allow for the creation of a number of forest-reserve categories.

Environmental management in Sudan is the responsibility of the Ministry of Agriculture and Natural Resources. From 1972, however, responsibility for wildlife resources in the south fell to the Southern Region administration where, since 1977, it has been the remit of the Regional Ministry of Wildlife Conservation, Fisheries and Tourism. In the Northern Region, the Wildlife Conservation and National Park Forces of the Ministry of the Interior are responsible for executing wildlife policies and the establishment and management of terrestrial and marine protected areas. The management of forests comes under the National Forestry Corporation within the Ministry of Agriculture and Natural Resources. Its activities are currently almost exclusively confined to the north of the country due to the continuing civil war, but it has responsibility for the creation and management of forest reserves. Marine conservation work is undertaken by the Sudanese Marine Conservation Committee, a subcommittee of the National Committee for the Environment.

Protected-area categories include:

- National Parks—areas set aside for the conservation, propagation and management of wildlife and wild vegetation, or for the protection of sites, landscape and geological formations of particular scientific or aesthetic value, for the benefit and enjoyment of the general public. Currently, seven National Parks and one Marine National Park have been designated.
- Game Reserves—areas set aside for the conservation, propagation and management of wildlife and the protection and management of its habitat. Thirteen Game Reserves have been designated.
- Controlled Areas—areas set aside for the management and utilization of wildlife.

Constraints on the management of protected areas include lack of training, funding and equipment for forestry and parks staff, while inadequate road networks add to difficulties in management. In addition, some of the protected areas in the south, where the majority of the reserves are located, exist on paper only, due to the civil war.

INTERNATIONAL MEASURES RELEVANT FOR THE CONSERVATION OF SITES

Sudan has ratified the Convention on Biological Diversity, CITES,

the Convention to Combat Desertification, the Convention on Climate Change, the World Heritage Convention and the African Eurasian Waterbird Agreement. It also participates in the UNESCO Man and Biosphere Programme under which two sites, Dinder and Radom National Parks, have been designated Biosphere Reserves.

OVERVIEW OF THE INVENTORY

The inventory includes 22 sites covering an area of c.18,040 km², c.7.2% of the land surface, although the boundaries of one site (SD008) remain undefined. Of these, 10 are unprotected, three are partially protected and 10 have some form of legal protection, at least on paper. Sites have been selected that hold all of the resident and three of the migrant species of global conservation concern. The majority of the remainder are thought not to occur regularly enough or in sufficient numbers to justify the selection of sites for them. An exception to this is probably *Vanellus gregarius* for which there is, however, insufficient information with which to be able to identify sites. Sanganeb, the only known locality for *Hirundo perditia*, is not included in the inventory since, whatever the presence of the single specimen found dead at the foot of the lighthouse might imply, the atoll is not important for the species.

Nineteen sites have been identified as containing significant components of at least one biome-restricted assemblage. Four sites support significant elements of the Sahara–Sindian biome (A02) and include 15 of the 17 species of this biome known from Sudan. A further four IBAs qualify for the Sahel biome (A03), covering 14 of the 15 species of the biome recorded nationally. Twelve sites qualify for the Sudan–Guinea Savanna biome (A04) holding 33 of the 36 species, two for the Guinea–Congo Forests biome (A05) with 62 of the 68 species, two for the Afrotropical Highlands biome (A07), with 30 of the 33 species, and four for the Somali–Masai biome (A08) with 33 of 49 species.

Six sites contain important wetland elements, with three IBAs identified solely for wetland birds. The most important wetland in Sudan is the Sudd. The core of the Sudd, the Bahr-el-Jebel system, is treated here as a single site (SD014) since the whole area functions as a unit and all is potentially threatened by the development of the Jonglei canal.

This inventory should be seen as only an interim work, much of it based on information that is at least 15 years old. In addition, site-specific avifaunal data have been hard to come by. In some cases the presence of species at sites is inferred from what is known of species’ distributions in the region or from areas adjacent to the site; Niklaus’s 1987 atlas proved extremely useful in this regard. This is reflected in the wording used in the Box for key species within the site accounts. It is clear, however, that further survey work is needed to confirm the continuing importance of at least some of the sites, including definition of their boundaries in some cases, particularly in the light

of the civil war in the south, which necessarily means that much of the information is out of date, inaccurate or incorrect. Surveys would unquestionably identify additional sites; the current inventory is inadequate, for example, for *Neotis nuba* and *Vanellus gregarius*, while information is needed on the true status of *Hirundo perdit*. Additional sites which are likely to be found to qualify for congregatory waterbirds include the Rahad irrigation scheme, the Aweil rice scheme and the Kasim el Girba, Jebel Aulia and Er Roseires dams. Further sites are needed for the Sahara–Sindian and Somali–Masai biome-restricted assemblages while, with greater knowledge, it may prove sensible to treat the Sudd as something other than a single, extremely large site.

SITE ACCOUNTS

Wadi Halfa

Admin region Northern
Coordinates 21°55'N 31°19'E
Area 10,000 ha Altitude 185 m

SD001

A3 (A02)
Unprotected

Site description

Wadi Halfa is located in the north of Sudan close to the border with Egypt, on the east bank of Lake Nubia (as the southern, Sudanese, part of Lake Nasser is known). The site is located south of the town of Wadi Halfa and comprises an area of lake margin where the flora is dominated by *Tamarix nilotica*, and adjacent, largely barren, rocky desert. The site is adjacent to the Egyptian IBA of Lake Nasser (EG014).

Birds

See Box and Table 2 for key species. One species characteristic of the Sahel biome (A03) is also thought to occur (see Table 2). There is little information on waterbirds using Lake Nubia, but it is possible that some species will be found to exceed thresholds; *Rhynchops flavirostris* has been reported in the past in large numbers and was suspected of breeding.

Key species

A3 (A02) Sahara–Sindian biome: Six of the 17 species of this biome that occur in Sudan have been recorded at, or in the vicinity of, this site; see Table 2.

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

Part of the site has been proposed as a protected area.

Further reading

Hughes and Hughes (1992), Pettet *et al.* (1964), WCMC (1998).

Mukawwar island and Dunganab bay

Admin region Red Sea
Coordinates 20°50'N 37°17'E
Area c.12,000 ha Altitude c.0–10 m

SD002

A1, A3 (A02), A4i
Unprotected

Site description

Mukawwar, Mayetib and the Taila islets form a small archipelago lying offshore of the fishing town of Mohammed Qol, on the Red Sea coast north, of Port Sudan. A little to the north lies Dunganab bay, a body of shallow water partially enclosed by a long, narrow spit. There is a small area of mangrove within the bay which is backed by sparsely vegetated coastal dunes. The IBA includes a narrow coastal strip and the mangroves of the bay as well as the archipelago and the shallow coastal waters in between.

Birds

See Box and Table 2 for key species. In addition, the islands are used as a breeding site by *Sterna bengalensis*, *S. repressa*, *S. anaethetus* and *Larus hemprichii*. Some 800 pairs of *Sterna bengalensis*

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GLOSSARY

maya seasonally inundated mudflat in river channel.

mersa coastal lagoon.

breed on Mukawwar Island and 450 pairs on each of the two Taila islets.

Key species

A1 *Larus leucophthalmus*

A3 (A02) Sahara–Sindian biome: Seven of the 17 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

A4i	Breeding (pairs)	Non-breeding
<i>Larus leucophthalmus</i>	100	—
<i>Sterna bengalensis</i>	1,700	—

Other threatened/endemic wildlife

The islands are important for breeding turtles. *Equus africanus* (CR) and *Dugong dugon* (VU) have been recorded from the area.

Conservation issues

The area has been proposed as a protected area. There is some collection of eggs for food by local fishermen.

Further reading

Moore and Balzarotti (1983).

Khor Arba'at

Admin region Red Sea
Coordinates 19°48'N 37°03'E
Area c.20,000 ha Altitude c.100 m

SD003

A3 (A02)
Unprotected

Site description

This site is located c.15 km inland from the Red Sea, immediately east of the Red Sea Hills, c.25 km north-west of Port Sudan. The focus of the site is a 500-m-wide riverbed in which a water-pumping station has been built to provide water to Port Sudan. The pumping station is located on what has become an artificial island, surrounded by the only permanent water in the Red Sea Hills. There is a small garden on the island, with lemon and guava trees and date-palms, which provide the only concentrated green vegetation in a large area during the dry season. The site includes an area of the surrounding desert which, apart from a few scattered bushes along the riverbed, is largely barren.

Birds

See Box and Table 2 for key species. In addition, the site is an extremely important focus for a wide diversity of migrant Palearctic passerines during August–October, with estimates of up to 10,000 *Acrocephalus palustris* being seen in a single day. Other species recorded, albeit in much smaller numbers, include *Crex crex*, *Acrocephalus griseldis* and *Emberiza cineracea*.

Key species

A3 (A02) Sahara–Sindian biome: 11 of the 17 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

A large number of birds of prey, including vultures, have been recorded

killed by the overhead powerlines, supported by metal poles, which supply the station's electric water-pumps.

Further reading

Nikolaus (1983, 1984).

Suakin archipelago

Admin region Red Sea

Coordinates 18°50'N 38°00'E

Area 150,000 ha Altitude 0–10 m

SD004

A4i

Unprotected

Site description

The Suakin archipelago is the largest group of islets on the Red Sea coast of Sudan, extending south-eastwards from the former port of Suakin almost to the Ethiopian border. There are c.30 islets in the archipelago, all without fresh water and all uninhabited. Most of them are less than 1 km long, but two, Talla Talla Saghir and Talla Talla Kebir, are 5 km in length. Some of the larger, rocky islets, formed from raised coral reefs, reach a height of 10 m. All the islets are largely barren, with low vegetation growing only on the sandy fringes. Low, halophytic bushes grow on fossil reefs on some of the smaller islets which are usually fringed by coral reefs.

Birds

See Box for key species. The islets support breeding colonies of five species of tern: *Sterna bergii*, *S. bengalensis*, *S. repressa*, *S. anaethetus* and *Anous stolidus*, numbering c.3,500 pairs in total. Small numbers of *Sula leucogaster*, *Larus hemprichii* and *Dromas ardeola* also breed. *Sterna bergii* and *S. bengalensis* breed principally on the islets of Seil Ada, Barra Musa Saghir, Qad Eitwid, Eitwid, Two and Talla Talla Kebir.

Key species

A4i	Breeding (pairs)	Non-breeding
<i>Sterna bengalensis</i>	750	—
<i>Sterna bergii</i>	370	—

Other threatened/endemic wildlife

Four species of turtle have been reported to breed, including *Eretmochelys imbricata* (CR) on Seil Ada. The mammal *Dugong dugon* (VU) occurs.

Conservation issues

The site has been proposed as a National Park. There is some collecting of bird and turtle eggs by fishermen. There is, however, little enforcement of national legislation to control the collection of turtles, shells and corals. Commercial quantities of methane gas have been found, but remain unexploited. The area is an important fishery and also has considerable tourist potential.

Further reading

IUCN (1986a), Moore and Balzarotti (1983).

Gezira

Admin region El Gezira

Coordinates 14°30'N 33°10'E

Area c.850,000 ha Altitude 410 m

SD005

A4i, A4iii

Unprotected

Site description

The Gezira is a large area of flood-plain between the Blue and White Niles to the south of Khartoum. The area is intensively farmed and—particularly along the western bank of the Blue Nile south-eastwards to the town of Wad Medani and beyond—is criss-crossed with networks of irrigation channels.

Birds

See Box for key species. The site is important for wintering and passage waterbirds. It is likely that at least 20,000 waterbirds occur during most northern winters. Counts of 1,000 *Anas querquedula*, 3,000 *Philomachus pugnax* and 1,000 *Glareola pratincola* were made at single localities during the winters of 1959–1962. Other counts include up to

2,000 *Ciconia ciconia*. Birds forage widely across the grass plains while some congregate in large roosts, particularly on sandbanks in the Blue Nile at Wad Medani.

Key species

A4i	Breeding (pairs)	Non-breeding
<i>Grus virgo</i>	—	1,000 (1962)
<i>Chlidonias leucopterus</i>	—	4,000 (1961)
A4iii	More than 20,000 waterbirds are thought to occur regularly at this site.	

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The site is intensely cultivated. Although the site is important despite, or perhaps because of, current land-use practices, there are some threats. These include excessive disturbance, hunting and increased use of pesticides.

Further reading

Ledant *et al.* (1985)

Um Badr lake

Admin region Northern Kordofan

Coordinates 14°15'N 27°50'E

Area c.2,000 ha Altitude c.600 m

SD006

A1, A3 (A02, A03)

Unprotected

Site description

Um Badr Lake lies in sparsely vegetated country on the southern fringes of the Sahara desert, between the towns of El Obeid and El Fasher. The lake lies in a basin of rocky hills and high dunes of reddish sands. The lake basin is sparsely vegetated with *Acacia arabica*, *A. albida*, *A. seyal*, *A. tortilis* and *Balanites aegyptica*, while *A. mellifera*, *Leptadenia pyrotechnica* and grasses *Aristida* spp. predominate in the surrounding hills and dunes. Following rains, when it is c.6 km long by 2 km wide, the lake overflows from the northern end of the basin into Wadi El Milk. During drier periods the lake shrinks and becomes divided in two. Average annual rainfall is c.200 mm. The IBA includes the lake and the basin of rocky hills in which it sits.

Birds

See Box and Table 2 for key species. The site lies on the border between the Sahara–Sindian (A02) and the Sahel (A03) biomes. In addition, one species characteristic of the Sudan–Guinea Savanna biome (A04) has been recorded (see Table 2). It is also important as a staging-post for migrant waterbirds and passerines.

Key species

A1	<i>Neotis nuba</i>
A3 (A02)	Sahara–Sindian biome: Four of the 17 species of this biome that occur in Sudan have been recorded at this site; see Table 2.
A3 (A03)	Sahel biome: Eight of the 15 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

Large herds of domestic camels as well as sheep, goats and cattle water at the lake; overgrazing may, therefore, pose a threat.

Further reading

Mackenzie (1955).

Jebel Marra

Admin region Northern Darfur, Southern Darfur

Coordinates 13°04'N 24°21'E

Area 150,000 ha Altitude c.1,500–3,071 m

SD007

A1, A3 (A03)

Unprotected

Site description

Jebel Marra is an extinct volcano which rises out of the plains of Darfur

between the town of El Fasher and the international frontier with Chad. The lower slopes have some tree cover while in the centre of the crater lie two lakes surrounded by rolling hills covered with grass and bushes. The site is surrounded by rocky desert and sparse scrub dissected by a series of wadis.

Birds

See Box and Table 2 for key species. In addition to *Falco naumanni*, which occurs in significant numbers, *Circus macrourus* and *Aythya nyroca* have also been recorded on passage. Five species of the Sudan–Guinea Savanna biome (A04) have also been recorded (see Table 2).

Key species

A1 *Falco naumanni* *Neotis nuba*
 A3 (A03) Sahel biome: Eight of the 15 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The site is known to support an endemic flora. The tree *Olea chrysophylla* occurs, one of only two sites in Sudan from which it is known.

Conservation issues

The site has been proposed as a Natural Conservation Area. The vegetation of the massif is becoming degraded as a result of overgrazing and clearance for fuelwood.

Further reading

Wickens (1976).

En Nahud

Admin region Northern Kordofan
 Coordinates 12°30'N 28°30'E
 Area Undefined Altitude 600 m

SD008

A1, A3 (A03)
 Unprotected

Site description

This site is situated around the town of En Nahud, south-west of El Obeid. It is an area of old fixed red sand-dunes ('goz' soil), vegetated principally with shrubs and scattered trees in which *Acacia senegal* is dominant. The limits of this habitat are clearly defined by an abrupt change in soil-type and an accompanying change in vegetation; *Acacia senegal* disappears and *Dalbergia melanoxylon* becomes common. Although the limits of the IBA remain undefined, it includes the area west and south of En Nahud to Ghubeish and El Odaiya, and east towards El Obeid.

Birds

See Box and Table 2 for key species. Flocks of up to, and sometimes exceeding, 100 *Falco naumanni* overwinter; the species is particularly abundant in years when tree locusts *Anacridium* spp., which feed almost exclusively on *Acacia senegal*, are common. *Circus macrourus* also winters commonly in the area. Of particular interest is *Mirafra cordofanica*, a Sahel biome species which is restricted to grassy openings in bushy areas on 'goz' soil. It is one of the commonest birds in the area. One species characteristic of the Sahara–Sindian biome (A02) and three of the Sudan–Guinea Savanna biome (A04) have also been recorded (see Table 2).

Key species

A1 *Falco naumanni* *Circus macrourus*
 A3 (A03) Sahel biome: Nine of the 15 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

Bustards suffer a heavy hunting pressure in the area and *Ardeotis arabs* is likely to be under severe pressure. Clearance of woodland habitats and overgrazing are so far restricted to relatively small areas around En Nahud itself and the other major settlements in the area.

Dinder

Admin region Blue Nile, Kassala
 Coordinates 12°26'N 35°13'E
 Area 1,240,000 ha
 Altitude 700–800 m

SD009

A3 (A04)
 National Park, Game Reserve,
 Biosphere Reserve

Site description

The complex of reserves centred on Dinder National Park is situated east of the town of Ed Damazin against the Ethiopian frontier. The site includes the National Park, the buffer zone to the west and south, and the contiguous Rahad Game Reserve to the north. The park principally consists of a low-lying flood-plain sloping gently from the Ethiopian highlands with a few rocky hills in the southern corner. The Rahad and Dinder rivers flow north-westwards through the park. Tributary streams form seasonally flooded lowlands, known as mayas, in much of the area adjacent to the Ethiopian border. Along permanent and ephemeral streams the vegetation consists of *Hyphaene thebaica*, *Acacia sieberiana*, *Tamarindus indica* and *Ficus* species, with an understorey of *Ziziphus abyssinica* and *Mimosa pigra*, and a herbaceous layer of coarse grasses including *Sorghum* and *Brachiaria* spp. Thorn-bush savanna (*Acacia seyal*–*Balanites aegyptica*) with tall grasses dominates in the north, while *Combretum aculeatum* woodland is found in the moister south. *Nymphaea* and *Ipomoea* spp. are common in swampy areas and shallow lakes, while the open grass plains are composed of *Themeda triandra*, *Panicum*, *Hyparrhenia* and *Cynodon* spp. The mayas, which form the main source of water and green fodder during the dry season of November–June, are dominated by grasses such as *Echinochloa* spp. The park has a mean annual rainfall of 600–1,000 mm, falling between May and November.

Birds

See Box and Table 2 for key species. There are few detailed bird records for Dinder. Given, however, the extent and quality of the habitat, it is likely that more species characteristic of the Sudan–Guinea Savanna biome (A04) will be found to occur. One species of the Sahel biome (A03) has been recorded (see Table 2).

Key species

A3 (A04) Sudan–Guinea Savanna biome: 10 of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The following mammals of global conservation concern occur, or used to do so: *Loxodonta africana* (EN), *Panthera leo* (VU), *Acinonyx jubatus* (VU), *Hyaena hyaena* (LR/nt), *Crocota crocuta* (LR/cd), *Giraffa camelopardalis* (LR/cd), *Syncerus caffer* (LR/cd), *Redunca arundinum* (LR/cd), *Hippotragus equinus* (LR/cd), *Kobus ellipsiprymnus* (LR/cd), *Tragelaphus strepsiceros* (LR/cd), *Damaliscus lunatus* (LR/cd), *Ourebia ourebi* (LR/cd) and *Gazella rufifrons* (VU). The park provides only dry-season habitat for most of these species.

Conservation issues

Dinder National Park (650,000 ha) was legally established in 1935 and extended to include a buffer zone (277,300 ha) in 1980. The core area of the park was designated as a Biosphere Reserve in 1979. The Rahad Game Reserve covers a further 350,000 ha. Much of the buffer zone is now degraded as a result of mechanized farming and wood-cutting for charcoal production. An irrigation canal from the Roseiras dam across the south-western buffer zone, close to the park, has blocked the wet-season migration of wildlife. Annual burning, carried out in part by nomadic herds to make fresh grass growing available to their herds, affects up to 60% of the total area each year. Twelve villages exist within the park and there are large-scale farms around the periphery. Hunting pressure is high and the collection of firewood common. Domestic herds also graze within the park, nomadic pastoralists having been forced to concentrate on such areas of remaining natural habitat following the cultivation of much of the surrounding areas. In addition to creating competition for water and grazing, these domestic herds have been blamed for causing outbreaks of anthrax and rinderpest, particularly among *Syncerus caffer* and *Damaliscus lunatus*.

Further reading

Ernst and Elwasila (1985), IUCN/UNEP (1987), Whitney and Asim (1982).

Lake Kundi

SD010

Admin region Southern Darfur

Coordinates 10°27'N 25°16'E

A3 (A03, A04), A4i, A4iii

Area c.2,000 ha Altitude c.460 m

Unprotected

Site description

This site consists of an endorheic lake and surrounding habitat south of the town of Nyala, at the mouth of Wadi Ibra, the effluents of which drain the southern slopes of the Jebel Marra. Although the lake is permanent it contracts to c.100–200 ha in the dry season when the maximum depth is reduced from 3 m to 2 m. The vegetation of the lake includes water-lilies and submerged aquatics including *Ceratophyllum demersum* and *Najas pectinata*.

Birds

See Box and Table 2 for key species. The site is important for waterfowl: a total count of 20,795 was made in 1993, comprising 22 species of waterbird including *Sarkidiornis melanotos* and *Plectropterus gambensis*. *Haliaeetus vocifer* also occurs.

Key species

A3 (A03) Sahel biome: Six of the 15 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

A3 (A04) Sudan–Guinea Savanna biome: Nine of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

A4i	Breeding (pairs)	Non-breeding
<i>Mycteria ibis</i>	—	3,000 (1993)
<i>Ciconia abdimii</i>	—	5,000 (1993)
<i>Threskiornis aethiopicus</i>	—	3,000 (1993)
<i>Balearica pavonina</i>	—	5,000 (1993)
A4iii	More than 20,000 waterbirds have been recorded at this site.	

Other threatened/endemic wildlife

None known to BirdLife International

Conservation issues

The area has been proposed as a Bird Sanctuary. Threats include hunting.

Further reading

Hughes and Hughes (1992), Taylor (1993).

Lake Abiad

SD011

Admin region Southern Kordofan

Coordinates 10°17'N 29°59'E

A4i, A4iii

Area 500,000 ha Altitude c.450 m

Unprotected

Site description

Lake Abiad is a large permanent waterbody surrounded by open wooded savanna, located south of the town of Kadugli and south-west of the Nuba mountains.

Birds

See Box for key species. In addition, seven species characteristic of the Sudan–Guinea Savanna biome (A04) have been recorded from the area surrounding the lake; see Table 2.

Key species

A4i	Breeding (pairs)	Non-breeding
<i>Balearica pavonina</i>	—	3,500 (1983)
<i>Vanellus leucurus</i>	—	50 (1983)
<i>Philomachus pugnax</i>	—	20,000 (1983)
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 has been proposed as a Bird Sanctuary.

Further reading

WCMC (1998), Wetlands International (1998).

Radom

SD012

Admin region Southern Darfur

Coordinates 09°10'N 24°00'E

A3 (A04)

Area 1,250,970 ha

National Park,

Altitude c.450–1,000 m

Biosphere Reserve

Site description

Radom National Park is located to the south-west of Lake Kundi (site SD010) on the border with the Central African Republic, in the south-western corner of Southern Darfur. The park consists of an area of broken hilly country lying between two main rivers, the Adda and the Umbelasha, which form the park's northern and southern boundaries. The hills in the park are part of the range which forms the watershed that separates the Nile and Congo river systems. The vegetation is principally savanna woodland dominated by *Terminalia brownii*, *Combretum* spp., *Anogeissus leiocarpus* and *Isobertlinia doka*. Wet meadows (dahls) form in low-lying basins and hold water into the dry season, providing water and fodder for wildlife. Average annual rainfall varies from 630 mm in the north to 900 mm in the south, falling mainly between April and November. The site is contiguous with the reserve complex of the Parc Nationale d'André Felix (IBA CF001) in the Central African Republic.

Birds

See Box and Table 2 for key species. There is little information on the birds of Radom. However, given the size of the park and the relatively undegraded nature of much of the habitat, it is likely that many species characteristic of the Sudan–Guinea Savanna biome (A04) occur, although only a modest number are currently known to do so.

Key species

A3 (A04) Sudan–Guinea Savanna biome: 10 of the 36 species of this biome that occur in Sudan have been recorded at, or in the immediate vicinity of, this site; see Table 2.

Other threatened/endemic wildlife

The following mammals of global conservation concern occur, or used to do so: *Loxodonta africana* (EN), *Panthera leo* (VU), *Acinonyx jubatus* (VU), *Lycan pictus* (EN), *Giraffa camelopardalis* (LR/cd), *Alcelaphus busephalus* (LR/cd), *Kobus ellipsiprymnus* (LR/cd) and *K. kob* (LR/cd).

Conservation issues

Radom was declared a Biosphere Reserve in 1979. There is a problem of overgrazing within the park, possibly as a result of the decline of tsetse fly populations, allowing ingress of domestic herds. Commercial hunting operations have also been reported. There is an increasing human population within and on the periphery of the park.

Further reading

IUCN (1986b), IUCN/UNEP (1987).

Ashana

SD013

Admin region Bahr el Ghazal

Coordinates 08°54'N 26°22'E

A3 (A04)

Area 90,000 ha Altitude c.500–1,000 m

Game Reserve

Site description

This Game Reserve lies on the Lol river, an affluent of the Bahr el Ghazal, north-west of the town of Wau. The habitat is principally savanna woodland.

Birds

See Box and Table 2 for key species.

Key species

A3 (A04) Sudan–Guinea Savanna biome: 16 of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The following mammals of global conservation concern occur, or used to do so: *Loxodonta africana* (EN), *Syncerus caffer* (LR/cd), *Taurotragus derbianus* (LR/nt), *Hippotragus equinus* (LR/cd), *Alcelaphus bucephalus lelwel* (LR/cd) and *Kobus kob* (LR/cd).

Conservation issues

Likely threats include hunting.

Further reading

UNDP/FAO (1977).

Sudd (Bahr-el-Jebel system)

SD014

Admin region Jonglei, El Buheyrat

Coordinates 08°00'N 31°00'E

A1, A3 (A04), A4i, A4iii

Area c.5,500,000 ha

National Park, Game Reserves,

Altitude 380–450 m

Unprotected

Site description

The Sudd swamps of southern Sudan are among the most important wetlands for birds in Africa. Three protected areas exist within the Sudd: Shambe National Park and Fanyikang and Zeraf Game Reserves, all within the Bahr-el-Jebel system of the Sudd, the part of the swamps that will be most affected by the Jonglei canal, as and when completed. For current purposes, the core of the Sudd is treated as a single site; this includes the three protected areas and covers much of the Bahr-el-Jebel system between the towns of Malakal to the north and Bor to the south.

The Sudd swamps are the seasonally inundated flood-plain of the upper White Nile. They can be divided into four largely distinct sections, of which the Bahr-el-Jebel is the central system and thought to be the most important for birds. The other sections are the Bahr-el-Ghazal system to the west, the Sobat–Baro–Pibor river system to the east and the smaller Machar marshes to the north-east. The Bahr-el-Jebel system consists of two main rivers, the Bahr-el-Jebel, the main course of the White Nile, to the west and the smaller Bahr-ez-Zeraf to the east. The incomplete Jonglei canal lies a little further east. The area is extremely flat with an average slope of only 10 cm per km. The habitats of the area consist of a variety of wetlands, grasslands and woodlands. The wetland can be divided into flowing waters, lakes and permanent swamps. There are three swamp types: *Vossia cuspidata* swamps (which cover c.250 km²), *Cyperus papyrus* swamps (c.3,900 km²) and *Typha domingensis* swamps (13,600 km²). Grassland can be divided into seasonally river-flooded grassland (16,200 km²) and seasonally rain-flooded grassland (20,000 km²). There are areas of single-species woodland mainly of *Acacia seyal* (5,400 km²) or *Balanites aegyptiaca* (5,300 km²). Mixed woodland is characterized by *Ziziphus mauritiana*, *Combretum fragrans*, *Acacia seyal* and *Balanites aegyptiaca*. Average annual rainfall is c.900 mm and falls from late April to November.

Birds

See Box and Table 2 for key species. The Sudd swamps hold by far the largest population of *Balaeniceps rex*. Aerial surveys in 1979–1982 counted a peak of 6,407 individuals. The site is probably also important for *Aythya nyroca* and, on passage, for *Falco naumanni*. In addition to those listed below, three species characteristic of the Sahel biome (A03) and five of the Somali–Masai biome (A08) have also been recorded (see Table 2).

Key species

A1	<i>Balaeniceps rex</i>		
A3 (A04)	Sudan–Guinea Savanna biome: 19 of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.		
A4i		Breeding (pairs)	Non-breeding
	<i>Pelecanus onocrotalus</i>	—	5,643
	<i>Pelecanus rufescens</i>	—	11,187
	<i>Phalacrocorax africanus</i>	—	8,883
	<i>Casmerodius albus</i>	—	19,074
	<i>Ardea goliath</i>	—	3,819
	<i>Ardea purpurea</i>	—	5,049
	<i>Bubulcus ibis</i>	—	172,359
	<i>Ardeola ralloides</i>	—	18,414
	<i>Balaeniceps rex</i>	—	6,407
	<i>Mycteria ibis</i>	—	11,154
	<i>Anastomus lamelligerus</i>	—	344,487
	<i>Ciconia episcopus</i>	—	2,475
	<i>Ciconia ciconia</i>	—	16,500
	<i>Ephippiorhynchus senegalensis</i>	—	4,158
	<i>Leptoptilos crumeniferus</i>	—	359,719
	<i>Plegadis falcinellus</i>	—	1,695,240

A4i ... continued	Breeding (pairs)	Non-breeding
<i>Threskiornis aethiopicus</i>	—	17,688
<i>Dendrocygna bicolor</i>	—	8,775
<i>Dendrocygna viduata</i>	—	51,810
<i>Sarkidiornis melanotos</i>	—	9,611
<i>Plectropterus gambensis</i>	—	150,216
<i>Balearica pavonina</i>	—	36,823
A4iii	Well in excess of 20,000 waterbirds occur regularly at this site.	

Other threatened/endemic wildlife

Mammals of global conservation concern include *Loxodonta africana* (EN), *Panthera leo* (VU), *Giraffa camelopardalis* (LR/cd), *Damaliscus lunatus* (LR/cd), *Gazella thomsoni* (LR/cd), *Kobus megaceros* (LR/nt), *K. kob* (LR/cd), *K. ellipsiprymnus* (LR/cd), *Redunca redunca* (LR/cd), *Syncerus caffer* (LR/cd), *Ourebia ourebi* (LR/cd), *Hippotragus equinus* (LR/cd) and *Tragelaphus spekii* (LR/nt).

Conservation issues

The site includes Shambe National Park (62,000 ha) and its proposed extension, Fanyikang Game Reserve (48,000 ha) and Zeraf Game Reserve (970,000 ha). Since the start of the twentieth century there have been plans to increase the flow of water downstream of the Sudd swamps, principally to provide more water to Egypt, by reducing the amount of water lost by evapotranspiration in the Sudd. This resulted in the construction of the Jonglei canal, a diversion channel on an almost direct line from Bor in the south to Malakal in the north, a distance of 360 km, which began in 1978. It was, however, brought to a halt uncompleted in 1983, by civil unrest in the south of the country. The likely effects of the canal have been much studied, but, if it is ever completed, considerable effort needs to be devoted to monitoring its environmental impact on the Sudd and its important bird populations.

The Sudd is inhabited principally by the Nuer, Dinka and Shilluk peoples. In the central and southern parts there are small and widely scattered fishing communities, some on small areas of dry land within the permanent swamp, but most of the population is concentrated on the comparatively small areas of relatively high ground. Up to 1 million livestock (cattle, sheep and goats) are kept within the area. During the dry season, cattle-camps are set up on the banks of the main channels. Populations of larger mammals also congregate here, which leads to some competition for water and grazing. They are hunted and are an important food source. Sorghum, maize, cowpeas, ground-nuts, sesame, pumpkins, okra and tobacco are all cultivated. The heavy, impermeable, low-nutrient soils mean that crop yields are low.

Further reading

Howell *et al.* (1988), Hughes and Hughes (1992), Range Ecology Survey (1983).

Boma

SD015

Admin region Jonglei

Coordinates 06°26'N 34°00'E

Area c.4,000,000 ha

A1, A3 (A08)

Altitude 400–1,800 m

National Park,

Unprotected

Site description

The site includes Boma National Park and the adjacent Boma hills. The area is located in the south-east of Sudan close to the Ethiopian border, south-east of the town of Pibor Post. It lies between the rivers Kangen to the west and Oboth in the north-east and from the Kurun river and the provincial boundary in the south to the Guom swamps in the north. Two-thirds of the park is flat flood-plain, punctuated by a number of isolated hills, rising to undulating terrain in the east to reach the Boma plateau at c.1,100 m. In the south-east the Boma hills rise above the plateau and are drained eastwards into the Oboth and Akobo rivers and thence, eventually, into the Guom swamps. The western part of the park drains into the Kangen river. The western plains support open grassland of *Hyparrhenia*, *Pennisetum*, *Sporobolus* and *Echinochloa* spp., while eastern parts are covered with woodland dominated by *Combretum* and *Ficus* spp. In patches around the isolated hills are areas of dense thicket dominated variously by *Ziziphus* spp., *Acacia seyal*, *A. zanzibarica*, *A. drepanolobium* and *A. fistula*, while there are small areas of evergreen forest on the western slopes of the Boma hills. The site is located a little way south of Gambella National Park in Ethiopia (IBA ET035).

Birds

See Box and Table 2 for key species. *Balaeniceps rex* breeds in the Guom swamps. There are few bird records for the area but, in addition to those listed below, four species characteristic of the Sudan–Guinea Savanna biome (A04) and four of the Afrotropical Highland biome (A07) have been recorded (see Table 2). The former includes the only Sudan record of *Cossypha albicapilla* and the latter the only one of *C. semirufa*.

Key species

- A1 *Balaeniceps rex*
 A3 (A08) Somali–Masai biome: Seven of the 49 species of this biome that occur in Sudan have been recorded at, or in the immediate vicinity of, this site; see Table 2.

Other threatened/endemic wildlife

Up to one million *Kobus kob leucotis* (LR/cd) migrate through the park annually. Other mammals of global conservation concern that occur, or which used to, include *Loxodonta africana* (EN), *Acinonyx jubatus* (VU), *Damaliscus lunatus* (LR/cd), *Syncerus caffer* (LR/cd), *Hippotragus equinus* (LR/cd), *Giraffa camelopardalis* (LR/cd), *Redunca redunca* (LR/cd), *Gazella thomsoni* (LR/cd), *G. granti* (LR/cd), *Oryx beisa* (LR/cd) and *Alcelaphus buselaphus* (LR/cd).

Conservation issues

Boma National Park (2,280,000 ha) was established in 1977 but has not been gazetted. The Anyuak, Murle and Toposa peoples are the principal inhabitants of the area. The Anyuak and Murle traditionally hunt during the dry season while the Toposa hunt during the rains. Sustainable traditional hunting practices have, however, now been disrupted with the introduction of firearms resulting in increased hunting pressure. A further threat is the presence of large numbers of cattle in the park, creating conflict with game for water and grazing during the dry season and also resulting in overgrazing.

Further reading

Ipote (1983), IUCN/UNEP (1987), UNDP/FAO (1977), Wildlife Conservation and National Parks Forces (1991).

Southern National Park

Admin region El Buheyra, Western Equatoria
 Coordinates 06°25'N 28°25'E
 Area 2,300,000 ha Altitude c.800–1,000 m
 A3 (A04) National Park

SD016

Site description

Southern National Park is situated on an ironstone plateau in the south-west of the country, south of the town of Wau and west of Bor. The park is bounded to the west by the Sue river and to the east by the Maridi river, while the Ibba river bisects it north–south. It consists of gently undulating country with low ranges of hills separated by the three parallel northward-flowing rivers and mostly covered with savanna woodland. It is in an area of low human population, poor soils and a high incidence of tsetse fly.

Birds

See Box and Table 2 for key species.

Key species

- A3 (A04) Sudan–Guinea Savanna biome: 15 of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The following mammals of global conservation concern occur, or used to do so: *Loxodonta africana* (EN), *Panthera leo* (VU), *Lycan pictus* (EN), *Syncerus caffer* (LR/cd), *Giraffa camelopardalis* (LR/cd), *Alcelaphus buselaphus* (LR/cd), *Kobus ellipsiprymnus* (LR/cd), *K. kob* (LR/cd), *Redunca redunca* (LR/cd), *Damaliscus lunatus* (LR/cd), *Hippotragus equinus* (LR/cd), *Tragelaphus derbianus* (LR/nt), *T. spekii* (LR/nt) and *Cephalophus rufilatus* (LR/cd).

Conservation issues

The park, established in 1939, has benefited from little development. A management plan was prepared in 1981 but has not been implemented. The park has suffered from extremely high hunting pressure.

Further reading

IUCN/UNEP (1987), UNDP/FAO (1977).

Bandingilo

Admin region Eastern Equatoria
 Coordinates 05°20'N 32°08'E
 Area 1,650,000 ha Altitude c.200–500 m
 A3 (A04, A08) National Park

SD017

Site description

This site is located between the towns of Bor in the north and Juba in the south, to the east of the White Nile. The park is centred on a swamp c.40 km east of the town of Mongalla which provides a dry-season refuge for mammal populations. It also includes the large surrounding area of mostly waterless plains.

Birds

See Box and Table 2 for key species.

Key species

- A3 (A04) Sudan–Guinea Savanna biome: 21 of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.
 A3 (A08) Somali–Masai biome: 14 of the 49 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The following mammals of global conservation concern occur, or used to do so: *Giraffa camelopardalis* (LR/cd), *Syncerus caffer* (LR/cd), *Alcelaphus buselaphus* (LR/cd), *Redunca redunca* (LR/cd), *Tragelaphus derbianus* (LR/nt) and *Kobus kobus* (LR/cd).

Conservation issues

The relative proximity of the site to the town of Juba has resulted in intense hunting pressure.

Further reading

Lever (1984).

Bengangai

Admin region Western Equatoria
 Coordinates 05°00'N 27°30'E
 Area 17,000 ha Altitude c.500–1,000 m
 A1, A3 (A04, A05) Game Reserve

SD018

Site description

Bengangai is a small forested Game Reserve on the border with the Democratic Republic of Congo, west of the town of Yambio. The site is bounded to the west by the Biki river and to the east by the Ogo river, to the south by the border with DR Congo and to the north by the road linking Yambio with the international frontier of the Central African Republic, immediately to the north-west. The vegetation of the site is principally Guinea–Congolian forest.

Birds

See Box and Table 2 for key species. This is the only site in Sudan from which *Columba albinucha* is known.

Key species

- A1 *Columba albinucha*
 A3 (A04) Sudan–Guinea Savanna biome: Seven of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.
 A3 (A05) Guinea–Congo Forests biome: 57 of the 68 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The following mammals of global conservation concern occur, or used to do so: *Pan troglodytes* (EN), *Loxodonta africana* (EN), *Cephalophus sylvicultor* (LR/nt), *C. rufilatus* (LR/cd), *Tragelaphus euryceros* (LR/nt), *Syncerus caffer* (LR/cd) and *Kobus ellipsiprymnus* (LR/cd).

Conservation issues

The reserve was set up in 1939 principally to protect its population of *Tragelaphus euryceros*.

Further reading

Hillman (1983), Hillman and Hillman (1986), Kenyi (1988).

Juba

Admin region Eastern Equatoria

Coordinates 04°48'N 31°26'E

Area 20,000 ha

Altitude c.500–1,000 m

SD019

A3 (A04)

Nature Reserve,

Forest Reserve

Site description

This reserve, comprising Juba Nature Reserve and Jebel Kujur Forest Reserve, lies immediately south-west of the town of Juba in southern Sudan. The terrain is hilly, dominated by the rocky outcrops and sheer cliffs of Jebel Kujur. The vegetation is wooded grassland in which common tree species include *Balanites aegyptiaca*, *Combretum molle* and *Acacia hockii*, while common grasses comprise *Themeda triandra*, *Chrysopogon aucheri*, *Sporobolus*, *Andropogon* and *Hyparrhenia* spp.

Birds

See Box and Table 2 for key species. In addition, there are records of *Gallinago media* and *Glareola nordmanni* on passage, and one species characteristic of the Sahel biome (A03) and eight of the Somali–Masai biome (A08) have also been recorded (see Table 2).

Key species

A3 (A04) Sudan–Guinea Savanna biome: 23 of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

Few, if any, large mammals remain.

Conservation issues

Threats to the site are severe, due to its proximity to Juba town. They include tree-felling for charcoal production, overgrazing, clearance of land for agriculture and quarrying.

Further reading

Moilinga (1990), UNDP/FAO (1977).

Imatong mountains

Admin region Eastern Equatoria

Coordinates 04°06'N 32°51'E

Area 103,200 ha

Altitude 1,000–3,187 m

SD020

A1, A3 (A04, A05, A07, A08)

Forest Reserve

Site description

The Imatong Central Forest Reserve lies in the Imatong mountain range 190 km south-east of Juba on the Ugandan border. The mountains are sharply faulted and many perennial rivers arise within this upland region. The mountains are covered by a range of vegetation-types including *Albizia–Terminalia* woodland and mixed *Khaya* lowland semi-evergreen forest up to 1,000 m, and by *Podocarpus* and *Croton–Macaranga–Albizia* montane forest at 1,000–2,900 m. Above this, forest is replaced by *Hagenia* woodland, *Erica* thicket and areas of bamboo. Average annual rainfall is c.1,500 mm.

Birds

See Box and Table 2 for key species. The wide altitudinal range and the site's location at the meeting point of several biomes means that the Imatong mountains support a wide diversity of species. The site also includes the only known locality for *Zoothera guttata maxis*. One species of the Sahel biome (A03) has also been recorded (see Table 2).

Key species

A1 *Zoothera guttata*

A3 (A04) Sudan–Guinea Savanna biome: 18 of the 36 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

A3 (A05) Guinea–Congo Forests biome: 23 of the 68 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

A3 (A07) Afrotropical Highlands biome: 30 of the 33 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

A3 (A08) Somali–Masai biome: 16 of the 49 species of this biome that occur in Sudan have been recorded at this site; see Table 2.

Other threatened/endemic wildlife

The site holds a number of endemic plant taxa.

Conservation issues

A part of the area has been proposed as National Park in which much of the remainder of the Forest Reserve would be designated as a buffer zone. The Imatong mountains are inhabited by the Lotuko and the Lango peoples in the east and by the Acholi in the west. Generally they live on the plains at the foot of the mountains, but they are increasingly being forced to move into the highlands, at up to 2,300 m, in search of agricultural land. Within the Forest Reserve boundary there are c.100 settlements with a population of c.35,000 people. Cultivation on steep slopes has led to serious problems of erosion, and hunting pressure at the higher altitudes has increased.

Further reading

Nikolaus (1989), Sommerlatte (1985), Wildlife Conservation and National Parks Forces (1991).

Kidepo

Admin region Eastern Equatoria

Coordinates 04°04'N 33°28'E

Area c.200,000 ha

Altitude c.500–2,623 m

SD021

A3 (A04, A07, A08)

National Park,

Unprotected

Site description

The site is located to the east of the Imatong mountains (site SD020) on the Ugandan border, and is contiguous with the Kidepo Valley National Park in Uganda (IBA UG030). It includes the Dongotona mountains to the west and the southern part of the Didinga hills to the east, between which lies the Kidepo Game Reserve, in the valleys of the Kidepo and the Omoro rivers, and which extends north to the Torit–Kapoeta road. The Game Reserve consists principally of *Acacia* short-grass savanna with low ranges of rocky, scrub-covered hills, while the Dongotona mountains and Didinga hills support areas of forest and montane shrubland similar in composition to those of the Imatong mountains but much smaller in area.

Birds

See Box and Table 2 for key species. In addition, *Circus macrourus* has been recorded at this site, and one species characteristic of the Sahel biome (A03) and three of the Guinea–Congo Forests biome (A05) are also believed to occur (see Table 2).

Key species

A3 (A04) Sudan–Guinea Savanna biome: 16 of the 36 species of this biome that occur in Sudan have been recorded at, or in the vicinity of, this site; see Table 2.

A3 (A07) Afrotropical Highlands biome: 24 of the 33 species of this biome that occur in Sudan have been recorded at, or in the vicinity of, this site; see Table 2.

A3 (A08) Somali–Masai biome: 28 of the 49 species of this biome that occur in Sudan have been recorded at, or in the vicinity of, this site; see Table 2.

Other threatened/endemic wildlife

The following mammals of global conservation concern occur, or used to do so: *Acinonyx jubatus* (VU), *Loxodonta africana* (EN) and *Tragelaphus imberbis* (LR/cd).

Conservation issues

The area is heavily populated by the Didinga and other cattle-owning people, and consequently grazing pressure is high. Hunting pressure is also high. It has been reported that the Game Reserve is now full of human settlements. Plans for gold-mining in the Didinga hills are a potential threat.

Further reading

El Badawi and Hakim (1985), Wildlife Conservation and National Parks Forces (1991).

Nimule

Admin region Eastern Equatoria

Coordinates 03°50'N 31°30'E

Area 41,000 ha Altitude 650–700 m

SD022

A3 (A04)

National Park

Site description

Nimule National Park is located in the extreme south of the country on the border with Uganda. The White Nile forms the eastern border of the park for c.48 km. Beyond it, on the eastern bank, there is a buffer zone, bounded by the Assua river to the north and by the Juba–Nimule road to the east. The Kayu river flows through the park from the Uganda border to the White Nile. The topography is hilly and most of the park is covered with savanna woodland of *Acacia* spp., *Balanites aegyptiaca* and *Combretum aculeatum*. Riverine woodland, found along permanent and seasonal watercourses, is composed principally of *Acacia sieberiana* and *Borassus aethiopicum*. The site is contiguous with two IBAs in Uganda; Mount Kei Forest Reserve (UG022) and Mount Otzi Forest Reserve (UG023).

Birds

See Box and Table 2 for key species.

Key species

A3 (A04) Sudan–Guinea Savanna biome: 25 of the 36 species of this biome that occur in Sudan have been recorded at, or in the vicinity of, this site; see Table 2.

Other threatened/endemic wildlife

Populations of *Loxodonta africana* (EN) have been severely reduced by poaching. Other species of global conservation concern include *Kobus kob* (LR/cd), *Tragelaphus ellipsiprymnus* (LR/cd), *T. spekii* (LR/nt), *Ourebia ourebi* (LR/cd) and *Redunca redunca* (LR/cd).

Conservation issues

The park was established as a Game Reserve in 1935 and gazetted as a National Park in 1954. The park has suffered heavily hunting from poaching which has resulted in, among other things, the local extermination of *Ceratotherium simum*.

Further reading

IUCN/UNEP (1987), Kenyi (undated).

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