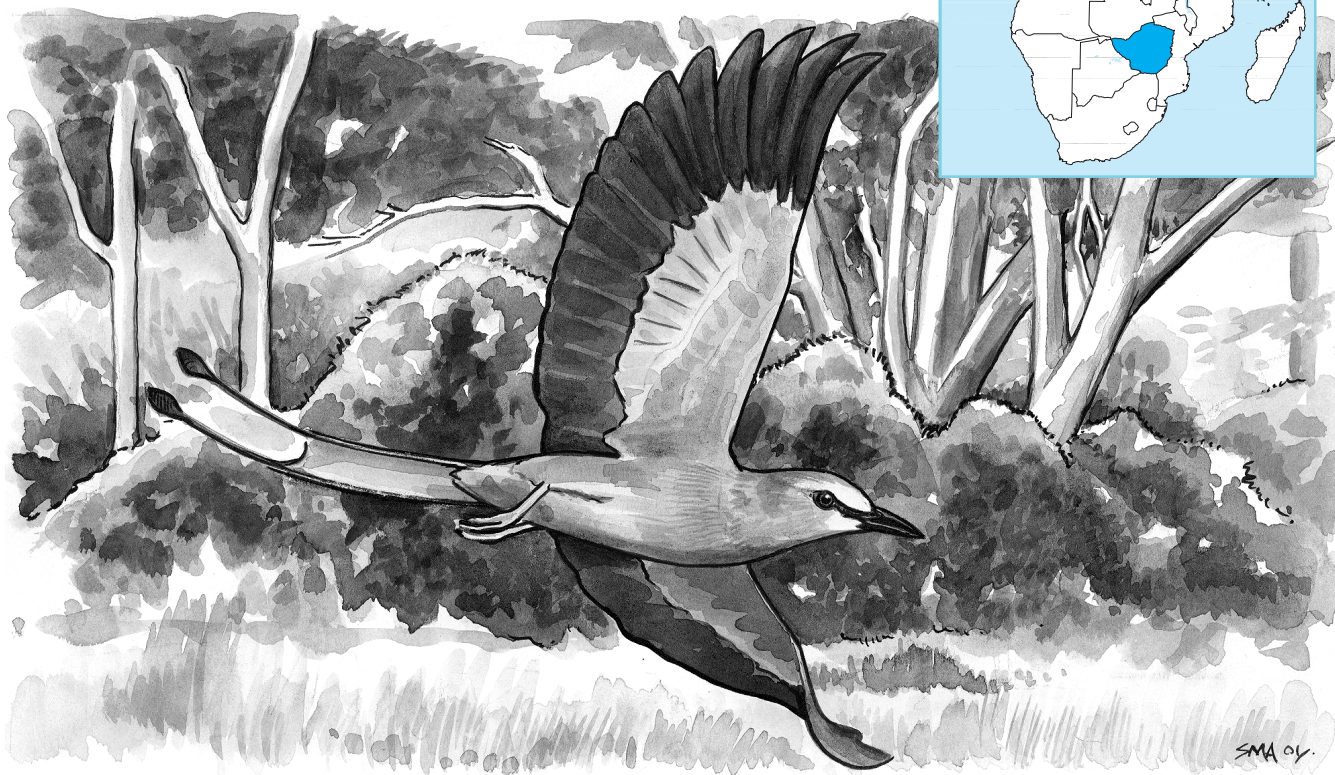


ZIMBABWE

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Racket-tailed Roller *Coracias spatulata*. (ILLUSTRATION: MARK ANDREWS)

GENERAL INFORMATION

The Republic of Zimbabwe is a landlocked country of 390,624 km², bounded by South Africa to the south, Botswana to the west, Mozambique to the east and Zambia to the north. It has a population of about 11 million people, of whom 27% live in urban areas and the remainder in rural areas, relying largely on subsistence farming as a livelihood. The average annual growth-rate in the population during 1982–1992 was 3.1%, which represents a doubling time of about 22 years (CSO 1992). However, both malaria and HIV/AIDS are major mortality and debilitatory factors in the country. There has been a migration of people out of the rural areas into the cities. For example, the population of Harare, the capital, increased at twice the rate of the rest of the country during the decade 1982–1992. About 1% of the total population is non-African, comprising Europeans, Asians and Coloureds.

Zimbabwe became an independent country in April 1980, after seven years of war that pitted freedom fighters of the black majority against the white minority Rhodesian regime, which itself had made a unilateral declaration of independence from Britain in 1965. Previous to independence there were 90 years of 'colonial' rule. Zimbabwe is still part of the British Commonwealth of Nations.

The larger towns and cities—Harare, Bulawayo, Gweru and Mutare—are situated along the central watershed. The country is linked by a well-developed road network. Administratively, it is divided into 10 Provinces, subdivided into Districts. Land is classified into Communal and Resettlement Land (which has no individual ownership), Commercial Farming Land (individual title), State Land and Protected Areas.

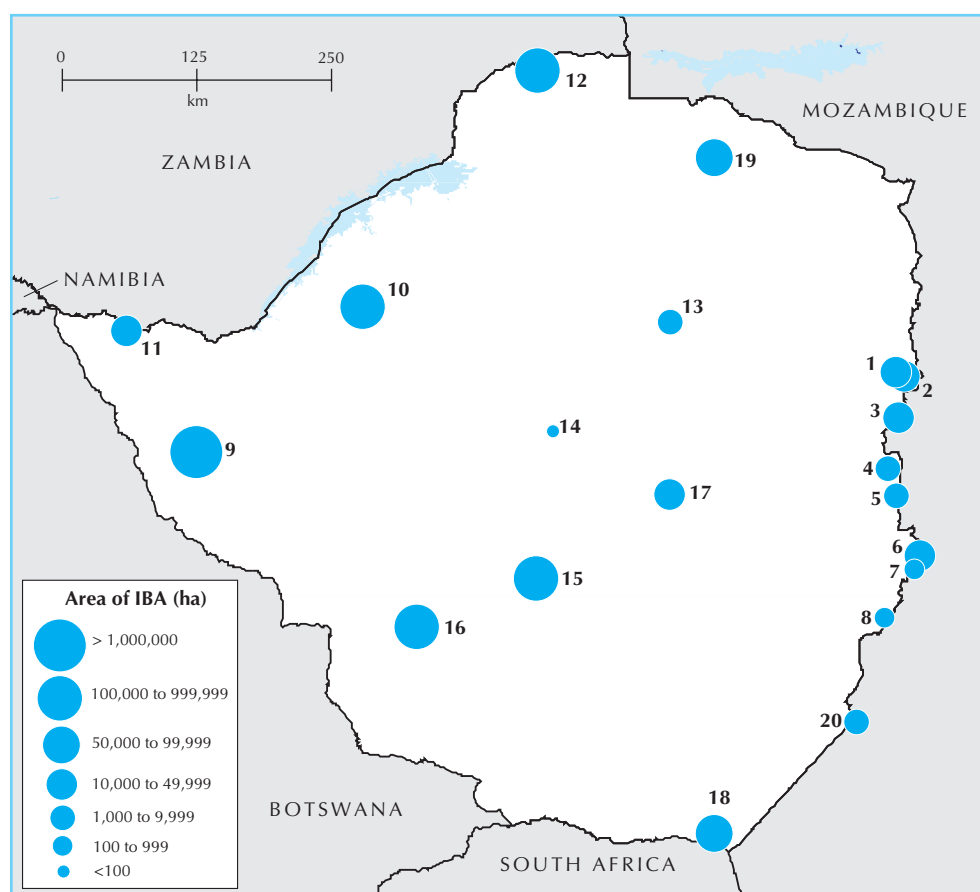
Geologically, Zimbabwe is part of the world's oldest rock formation, the Basement Complex. Large-scale faulting caused the Zambezi valley to form in the north and the Save–Limpopo valleys in the south-east. The average altitude in these valleys is less than 600 m. In the north-west, aeolian Kalahari Sands form a gently undulating landscape of low relief with scattered ephemeral pans.

Moving north and east, the sands give way to basalt rock—the basis of the well-known Victoria Falls and Zambezi river-gorges. An erosion-resistant granite shield forms a central elevated plateau of more than 1,000 m elevation. The plateau covers about one half of the country and cuts diagonally north-east from Bulawayo to Harare, extending eastwards to the Eastern Highlands. In places where the granite has been exposed, the bare rock forms large, rounded hills or 'dwalas'. The plateau forms the main watershed of the country, giving rise to numerous large rivers.

The Eastern Highlands consist of a 260-km-long highland chain running north–south from Nyanga to Chipinge. The Highlands exceed 2,000 m on several mountain peaks, the highest being Nyangani (2,592 m) and Rukotso (2,405 m) in the north and Kweza (2,437 m) in the south. They are broken in places by lower-lying fertile valleys: the Honde, Burma and Rusitu. The scenery is dramatic, with waterfalls and deep river gorges, interspersed with rolling hills.

Zimbabwe falls within the southern subtropics. The climate is highly seasonal and reflects the topographic features of the country. The hot, wet season extends from November to March, followed by a cool, dry season from April to July and a hot, dry season from August to October. The national average rainfall is 647 mm per year, but rainfall can be seasonally very variable and also varies with location. The Eastern Highlands can receive as much as 3,000 mm per year, while the south-east may get less than 400 mm. Summer maximum temperatures can vary from over 40°C in the low-lying areas, particularly Beitbridge and Kariba, to 25°C in the highlands. Winter frosts are common on the higher parts of the plateau, in the highlands and in the north-west on the Kalahari Sands, where occasional 'black' frosts (–7°C) occur. The long dry season may be interspersed with 'guti' (light rain/mist) periods.

There are 25 recognized vegetation-types within the country. Broadleaved deciduous 'mopane' woodlands (dominated by *Colophospermum mopane*), with patches of *Combretum* and *Acacia* and scattered *Adansonia* (baobab) trees, dominate the vegetation



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

Table 1. Summary of Important Bird Areas in Zimbabwe.

20 IBAs covering 30,050 km²

IBA code	National code ¹	Site name	Administrative region	Criteria (see p. 11; for A2/A3 codes, see Tables 2/3)									
				A1	A2	104	A07	A09	A10	A11	A4i	A4ii	A4iii
ZW001	Z006	Nyanga mountains	Manicaland	✓		✓	✓		✓				
ZW002	Z007	Nyanga lowlands/Honde valley	Manicaland	✓		✓	✓	✓	✓				
ZW003	Z008	Stapleford Forest	Manicaland	✓		✓	✓						
ZW004	Z011	Bvumba Highlands	Manicaland	✓		✓	✓						
ZW005	Z012	Banti Forest Reserve	Manicaland			✓	✓						
ZW006	Z014	Chimanimani mountains	Manicaland	✓		✓	✓	✓					
ZW007	Z015	Haroni-Rusitu junction and Botanical Reserves	Manicaland	✓		✓	✓	✓					
ZW008	Z017	Chirinda Forest	Manicaland	✓		✓	✓						
ZW009	Z010	Hwange National Park	Matabeleland North						✓	✓			
ZW010	Z003	Chizarira National Park	Matabeleland North	✓					✓				
ZW011	Z005	Batoka Gorge	Matabeleland North	✓									
ZW012	Z001	Middle Zambezi valley	Mashonaland West						✓		✓	✓	
ZW013	Z004	Robert McIlwaine Recreational Park	Mashonaland West						✓		✓		✓
ZW014	Z009	Sebakwe Poort	Midlands								✓		
ZW015	Z016	Wabai Hill (Debshan Ranch)	Matabeleland South	✓								✓	
ZW016	Z018	Matobo Hills	Matabeleland South						✓				
ZW017	Z013	Driefontein grasslands	Masvingo, Midlands	✓									
ZW018	Z020	Limpopo-Mwenezi flood-plain and pans	Masvingo		✓			✓					
ZW019	Z002	Mavuradonha mountains	Mashonaland Central						✓				
ZW020	Z019	Save-Runde junction	Masvingo, Manicaland		✓			✓					
Total number of IBAs qualifying:				11	2	8	8	5	8	1	3	2	1

1. Childes and Mundy (1998).

of the Zambezi and Save–Limpopo valleys. The rivers and watercourses are lined with riparian *Acacia* woodland. The middle Zambezi is characterized by a wide flood-plain with *Faidherbia* (*Acacia*) and *Trichilia* woodland. The Kalahari Sands are covered with a mosaic of dry deciduous *Baikiaea* woodland and *Terminalia* scrub.

‘Miombo’ woodland is the dominant vegetation-type on the central plateau, characterized by trees of *Brachystegia* and *Julbernardia*, the former at its southernmost limit in Africa. Such

woodland has been extensively degraded in Zimbabwe through human activity and expanding populations. The woodland is interspersed with numerous grassy ‘vleis’ or ‘dambos’ along drainage lines. Granite ‘kopjes’ rise above the woodland and are characterized by more drought-resistant species, e.g. *Ficus*, *Commiphora*, *Xerophyta*. There are also areas of natural grassland savanna with scattered *Parinari* trees.

The Eastern Highlands consist primarily of montane grassland and ericaceous shrubland, with patches of montane to submontane

moist evergreen forest (which occupies less than 0.5% of Zimbabwe's land area) on the wetter slopes. At lower, drier levels the forest gives way to *Uapaca* and *Julbernardia* woodland. Relict patches of submontane forest and thicket occur on the isolated mountain peaks—Hwedza (1,789 m), Buchwa (1,627 m), Mberengwa (1,637 m)—that extend in an arc from the south of the highlands westwards to the Matobo Hills south of Bulawayo. In the north, the Mafungabusi Plateau is an island of miombo/Kalahari woodland that rises above the surrounding mopane woodland.

ORNITHOLOGICAL IMPORTANCE

The current (1995) checklist of the Ornithological Association of Zimbabwe (OAZ) lists 674 bird species, including *Agapornis nigrigenis* which is certainly extinct (if it ever really occurred), and separate entries for *Milvus migrans* and *M. m. parasitus*, which may or may not be separate species, but are certainly different in ecology. Strictly then, there are 672 species, of which at least 80 are considered to be vagrants. The list is being added to at the rate of one or two species per year, and has been since the previous main list (Irwin 1981). About 450 species are known to breed.

Zimbabwe supports significant populations of 14 species of global conservation concern (Collar *et al.* 1994). Eight of these are globally threatened: *Sarothrura ayresii*, *Gyps coprotheres*, *Falco naumanni*, *Falco fasciinucha*, *Grus carunculatus*, *Crex crex*, *Hirundo atrocaerulea* and *Swynnertonia swynnertonii*. The first-mentioned is Endangered, and the rest are Vulnerable. The other six species are globally Near Threatened: *Ardeola idae*, *Phoenicopterus minor*, *Circaetus fasciolatus*, *Circus macrourus*, *Gallinago media* and *Anthreptes reichenowi*. In addition, there are various other species which are vulnerable in a national context and need conservation action, such as *Struthio camelus*, *Bucorvus cafer* and *Buphagus africanus*.

There are four restricted-range species in the country—*Swynnertonia swynnertonii*, *Apalis chirindensis*, *Prinia robertsi* and *Serinus citrinipectus*. The last-mentioned is a characteristic species of the South-east African coast Endemic Bird Area (EBA 092), while the first three are part of a smaller EBA, the Eastern Zimbabwe mountains (EBA 104), which lies mostly within the country. Zimbabwe has no true endemics, but these three species of EBA 104 are considered near-endemic to the country, together with a fourth, *Pinarornis plumosus* (Table 2). The lack of true endemics results from almost all of the country being covered in savanna woodland of one type or another (*Brachystegia*, *Colophospermum*, *Acacia*, *Baikiaea*)—generally representative of woodlands in neighbouring countries—within a relatively small range of altitudes (from 2,000 m down to 300 m). There are also no extensive tracts of forest, grassland, wetland or mountains. However, there are several subspecies which are restricted to Zimbabwe, for example *Turdus olivaceus swynnertonii*, *Telophorus zeylonus restrictus* and *Emberiza capensis smithersii*, and these need conservation for their contribution to biodiversity.

In terms of biome-restricted species, Zimbabwe holds 18 of the 228 species restricted to the Afrotropical Highlands biome (biome code A07), 11 of the 38 species restricted to the East African Coast biome (A09), 23 of the 67 species characteristic of the Zambezi biome (A10), and three of the 13 species of the Kalahari–Highveld biome (A11) (Table 3).

About 80 species of Palearctic migrant have been recorded in Zimbabwe. Considerable numbers of *Ciconia ciconia*, *Aquila nipalensis* and *Merops apiaster*, for example, occur in most years, visiting during the austral summer. Most of these migrants, being insectivorous, are spread throughout the country and only congregate when there are significant outbreaks of large-insect prey such as termites, army worms or mopane worms. From August onwards, Zimbabwe is also visited by about 60 species of Afrotropical migrants, such as *Aquila wahlbergi*, *Glareola nuchalis*, *Merops nubicoides* and *Hirundo atrocaerulea*, all of which come to breed.

Rainfall is the most important factor influencing bird distribution in Zimbabwe. The contrasts in climate and vegetation between the Zambezi and Save–Limpopo river valleys and the central plateau are important to avifaunal geography. Zimbabwe's

Table 2. The occurrence of restricted-range species at Important Bird Areas in Zimbabwe. Sites that meet the A2 criterion are highlighted in **bold**. Species of global conservation concern are highlighted in **bold blue**.

092 – South-east African coast Endemic Bird Area									
(one species in Zimbabwe; two sites meet the A2 criterion)									
IBA code:								018	020
<i>Serinus citrinipectus</i>								✓	✓
Number of species recorded:								1	1
104 – Eastern Zimbabwe mountains Endemic Bird Area									
(three species in Zimbabwe; eight sites meet the A2 criterion)									
IBA code:	001	002	003	004	005	006	007	008	
<i>Swynnertonia swynnertonii</i>			✓	✓					✓
<i>Prinia robertsi</i>		✓	✓		✓	✓			
<i>Apalis chirindensis</i>		✓	✓	✓	✓		✓	✓	✓
Number of species recorded:	2	2	3	3	1	2	1	2	

avifauna can be seen as part of a biological continuum, shared in varying degrees with all neighbouring countries. The species characteristic of the Zambezi biome (mainly confined to miombo woodland) have some links with the avifauna to the south, but their principal affinities are with the north.

The Eastern Highlands form another, separate entity, with affinities to the north and the south of the river valleys. They form the major part of the globally important Eastern Zimbabwe mountains EBA, shared with adjacent areas of Mozambique. The isolated mountain peaks in the centre and south of the country are important refugia and link the avifauna of the Eastern Highlands with that of the Matobo Hills, and up to Chizarira, via Mafungabusi. Riparian woodland and river valleys are important to the seasonal and dispersive movements of many bird species up, down and over the central plateau. Conservation of the riparian vegetation and the isolated mountain refuges should therefore be of primary concern. In addition to protecting the biodiversity of these areas, there are other advantages, for example, watershed protection—something that is vital to a country that suffers periodic droughts.

CONSERVATION INFRASTRUCTURE AND PROTECTED-AREA SYSTEM

Consolidated legislation for protected areas began with the Parks and Wild Life Act (1975), with the responsible agency being the Department of National Parks and Wild Life Management (now called the Parks and Wild Life Conservation Fund). Five categories of state-protected wildlife land are currently recognized: National Parks (11), Safari Areas (16) in which hunting occurs, Recreational Parks (15), Botanical Reserves and Gardens (15) and Sanctuaries (6). Together these areas amount to 49,900 km², or 12.8% of the country. Many plants and animals have been declared to be 'Specially Protected' and are under state supervision; among these are 44 species of birds, comprising pelicans, flamingos, storks, vultures, raptors, cranes and bustards.

Under the Act, wildlife is considered to be *res nullius*, but land-owners and land-holders have privileges over it when it is on their land. On privately owned land, commercial ranchers quickly saw the value of wildlife and started using it. Some grouped together to form 'conservancies'. Many thousands of square kilometres of private land are now under some form of wildlife management.

Meanwhile, in the communally owned lands, an innovative plan called CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) evolved in the 1980s, after independence. To date, 28 districts have applied for 'appropriate authority' under the Parks and Wild Life Act and can now use the wildlife when it is in their district. The key animal is still the elephant *Loxodonta africana*, and much of the success of CAMPFIRE projects depends on the use of this species. By encouraging the sustainable utilization of wildlife, the resource is now protected and effectively thousands more square kilometres have been added to the existing system of protected areas.

Currently, about one-third of the country is given over to wildlife, of which 24% is strictly protected and the rest is for

Table 3. The occurrence of biome-restricted species at Important Bird Areas in Zimbabwe. Sites that meet the A3 criterion are highlighted in **bold**. Species of global conservation concern are highlighted in **bold blue**. Any other species with a restricted range are highlighted in blue.

A07 – Afrotropical Highlands biome (18 species in Zimbabwe; eight sites meet the A3 criterion)													
IBA code:	001	002	003	004	005	006	007	008					
<i>Sarothrura affinis</i>	✓	✓		✓		✓							
<i>Schoutedenapus myoptilus</i>	✓	✓		✓		✓							
<i>Hirundo atrocaerulea</i>	✓	✓	✓	✓		✓							
<i>Coracina caesia</i>		✓		✓		✓	✓	✓					
<i>Andropadus milanensis</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓				
<i>Telophorus olivaceus</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓				
<i>Zoothera gurneyi</i>	✓	✓	✓	✓		✓	✓						
<i>Swynnertonia swynnertonii</i>			✓	✓					✓				
<i>Pogonochila stellata</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓				
<i>Prinia robertsi</i>	✓	✓	✓	✓	✓	✓							
<i>Apalis chirindensis</i>	✓	✓	✓	✓		✓	✓	✓	✓				
<i>Bradypterus barratti</i>	✓	✓		✓	✓	✓	✓	✓	✓				
<i>Phylloscopus ruficapilla</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓				
<i>Trochocercus albonotatus</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓				
<i>Nectarinia kilimensis</i>	✓	✓	✓	✓	✓	✓							
<i>Promerops gurneyi</i>	✓		✓	✓		✓							
<i>Cryptospiza reichenovii</i>	✓	✓	✓	✓		✓							
<i>Estrilda melanotis</i>	✓				✓	✓	✓	✓	✓				
Number of species recorded:	16	15	13	17	9	17	10	9					
A09 – East African Coast biome (11 species in Zimbabwe; five sites meet the A3 criterion)													
IBA code:	001	002	003	004	006	007	008	018	020				
<i>Circaetus fasciolatus</i>					✓	✓			✓				
<i>Poicephalus cryptoxanthus</i>								✓	✓				
<i>Phyllastrephus debilis</i>		✓											
<i>Telophorus quadricolor</i>	✓	✓	✓	✓	✓	✓	✓		✓				
<i>Prionops scopifrons</i>		✓				✓							
<i>Batis fratum</i>						✓							
<i>Batis soror</i>		✓			✓	✓							
<i>Anthreptes reichenowi</i>		✓				✓		✓					
<i>Serinus citrinpectus</i>								✓	✓				
<i>Pyrenestes minor</i>		✓				✓							
<i>Lamprotornis corruscus</i>						✓							
Number of species recorded:	1	6	1	1	3	8	1	3	4				
A10 – Zambezian biome (23 species in Zimbabwe; eight sites meet the A3 criterion)													
IBA code:	001	002	003	004	005	006	007	009	010	012	013	016	019
<i>Falco dickinsoni</i>	✓	✓					✓	✓	✓				✓
<i>Agapornis lilianae</i>										✓			
<i>Centropus cupreicaudus</i>													
<i>Coracias spatulata</i>								✓	✓	✓	✓		✓
<i>Tockus bradfieldi</i>								✓					
<i>Stactolaema whytii</i>	✓		✓	✓	✓				✓		✓		
<i>Monticola angolensis</i>		✓	✓	✓		✓	✓	✓	✓		✓		✓
<i>Cossypha humeralis</i>	✓	✓									✓	✓	
<i>Myrmecocichla arnotti</i>		✓						✓	✓	✓			✓
<i>Pinarornis plumosus</i>									✓		✓	✓	✓
<i>Turdus libonyana</i>	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓
<i>Cisticola pipiens</i>													
<i>Calamonastes undosus</i>								✓	✓		✓		✓
<i>Parus rufiventris</i>		✓		✓	✓	✓	✓						
<i>Parus griseiventris</i>	✓			✓	✓	✓			✓		✓		✓
<i>Nectarinia talatala</i>		✓				✓	✓	✓	✓	✓		✓	✓
<i>Nectarinia manoensis</i>	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓
<i>Nectarinia shelleyi</i>										✓			
<i>Serinus mennelli</i>	✓	✓	✓			✓	✓	✓	✓		✓		✓
<i>Lagonosticta nitidula</i>													
<i>Vidua codringtoni</i>													
<i>Vidua obtusa</i>	✓							✓	✓	✓	✓	✓	✓
<i>Lamprotornis mevesii</i>								✓	✓	✓			✓
Number of species recorded:	8	9	5	6	4	7	6	12	13	7	11	6	13
A11 – Kalahari–Highveld biome (three species in Zimbabwe; one site meets the A3 criterion)													
IBA code:										009			
<i>Pterocles burchelli</i>										✓			
<i>Cercotrichas paena</i>										✓			
<i>Calamonastes fasciolatus</i>										✓			
Number of species recorded:										3			

sustainable utilization. Most of the wildlife occurs in areas that are unsuitable for intensive agriculture. A major deficiency of the state-owned protected areas is that the miombo woodlands on the central granite plateau are insufficiently represented. These woodlands have been cut out and fragmented by agriculture, particularly by tobacco farming.

Zimbabwe also has a Forest Act (1949) and 34 demarcated forests, covering 9,006 km² or 2.3% of the country. Many of these are plantations of non-native softwoods. In the Eastern Highlands these exotic plantations have engulfed small scattered patches of indigenous montane forest. The only extensive areas of protected indigenous forest are the dry *Baikiaea* woodlands in north-west Matabeleland. These have been heavily exploited for railway sleepers and furniture and are degenerating.

Another piece of conservation legislation is the Natural Resources Act (1941), which is presently being rewritten. It allows for the proclamation of 'defined areas' that have conservation value, for example, Dichwe Lemon Forest. This Act is intended to prevent overgrazing, soil erosion, tree-cutting and so on, but has little effect and is often ignored by many authorities.

Most of the protected areas are acknowledged and respected, though many have poaching problems. Fortunately for birds, most of the poachers hunt large mammals. In farming areas, however, many waterfowl and gamebirds are poisoned with agricultural pesticides. Raptors are poisoned through carcass baits left for 'problem animals' such as jackal and hyaena.

Zimbabwe has a thriving network of traditional healers or n'gangas who use animal and plant products, often including bird parts, in their medicines. They are therefore interested and concerned about the survival of these species. In addition, many families have an animal as their totem and this animal is effectively protected and not eaten. Unfortunately, with the movement of people through eviction and resettlement, both before and after independence, some of the land is occupied by strangers who do not care for the environment as those who were born there.

In the late 1980s a National Conservation Strategy was published, but nothing further came of it. Present debate focuses around legislation for environmental impact assessments, and a new Environment Act.

INTERNATIONAL MEASURES RELEVANT TO THE CONSERVATION OF SITES

Zimbabwe is a party to the Convention on Biological Diversity, CITES, the Convention to Combat Desertification, the Convention on Climate Change and the World Heritage Convention, under which the Victoria Falls and the middle Zambezi flood-plain at Mana Pools have been declared World Heritage Sites, and efforts for the designation of the Matobo Hills are now being made. Zimbabwe also participates in UNESCO's Man and Biosphere Programme.

OVERVIEW OF THE INVENTORY

A total of 20 sites in Zimbabwe have been identified as Important Bird Areas (IBAs) at the global level (Map 1, Table 1), covering 30,050 km² or 7.7% of the national land surface area. In the original, national inventory (Childes and Mundy 1998), one of the 20 sites was treated as of only subregional importance—it has, however, been upgraded in this inventory. During early discussions on the IBA project, an initial list of 33 sites was compiled, but it became apparent that although these sites were considered important nationally, some were not as significant in the wider context as had been thought. Of the final list of 20 sites, the first eight sites cover the most important biodiversity areas (for restricted-range and/or endemic birds, mammals, reptiles, amphibians, plants and insects) in the Eastern Highlands (Tables 1 and 2). The remaining 12 sites were chosen for the presence of bird species of global conservation concern, for supporting significant congregations of one or more bird species, or for holding a good selection of species that are characteristic of a particular biome (Table 3).

The Eastern Highlands contain globally threatened and restricted-range birds, such as *Hirundo atrocaerulea*, *Prinia robertsi*,

Apalis chirindensis and *Swynnertonia swynnertonii* (Table 2). All 18 species of the Afrotropical Highlands biome present in Zimbabwe occur in one or more IBAs, and all eight sites in the Eastern Highlands meet the A3 criterion for this biome, as well as meeting the A2 criterion for the Eastern Zimbabwe mountains EBA (Tables 2 and 3). Nyanga was split into mountain and lowland sites (IBAs ZW001 and ZW002 respectively) on the basis of altitude, vegetation and land-use. Stapleford Forest (ZW003) was chosen on historical data and anecdotal evidence, but has not been surveyed recently. The Bvumba Highlands (ZW004) are one of the best documented bird areas in the country and contain a wide range of species restricted to the Afrotropical Highlands biome. Banti Forest Reserve (ZW005) was also chosen on historical grounds (collection data) and was briefly surveyed for this inventory. Its isolation, botanical importance and past (and probably present) avian importance made it a valid inclusion. The Chimanimani mountains (ZW006) are the area of greatest plant endemism in Zimbabwe, and home to an endemic subspecies of *Telophorus zeylonus*. Haroni-Rusitu (ZW007) is well known amongst birdwatchers and represents one of the few areas of lowland forest (East African Coast biome) in Zimbabwe. It also encompasses a wide range of altitudes and habitats—an important factor in protecting forest birds' summer and winter grounds. Two globally near-threatened species, *Circaetus fasciolatus* and *Anthreptes reichenowi*, occur here. Chirinda Forest (ZW008) represents the southernmost part of the highland chain. It is the type-locality for *S. swynnertonii* and nine subspecies of birds, as well as for several rare mammals, reptiles and amphibians.

Hwange National Park (IBA ZW009) contains a system of about 40,000 shallow pans that attract a wide variety of waterbirds. While individual pans are too small to carry large numbers of birds, the total for the whole park is significant. Hwange is also important for its raptors and other nationally vulnerable species such as *Buphagus africanus* and *Bucorvus cafer*. It contains three species representing the eastern extremity of the Kalahari-Highveld biome, but most of its biome-restricted birds belong to the Zambezi biome (Table 3).

Chizarira (IBA ZW010) is well known for its raptor populations, and the globally threatened *Falco fasciinucha* breeds there. The avifauna is Zambezi, with some lowland forest species in the gorges and ravines. Batoka Gorge (ZW011) is a major breeding site for cliff-nesting raptors and contains one of the largest populations of *Falco fasciinucha*. The gorge also holds 35 other raptor species, *Ciconia nigra*, and large numbers of *Glareola nuchalis*. The gorge is under imminent threat from flooding by a hydroelectric dam. The Middle Zambezi valley (ZW012) contains significant numbers of *Agapornis lilianae*, a rich variety of waterbirds (90 species) and 52 species of raptors, and is the only known locality for *Nectarinia shelleyi* in Zimbabwe.

Manyame Lake and Robert McIlwaine Recreational Park (IBA ZW013) are in the centre of the miombo woodlands and support 22 species of the Zambezi biome (Table 3). The lakes can host over 100 species of waterbirds, totalling up to 27,000 individuals. In 1995, numbers of *Netta erythrophthalma* and *Charadrius pecuarius* exceeded the 1% threshold for their respective populations. Wabai Hill (ZW015) on Debshan Ranch is the daily roost-site for up to 150 *Gyps coprotheres*. The surrounding grasslands are habitats for *Ardeotis kori*, *Grus carunculatus* (rarely), *Falco naumanni* and *Circus macrourus*.

The Matobo Hills (IBA ZW016) are well known for their high density and species richness of raptors, including at least 75 pairs of *Aquila verreauxii*. The hills support a considerable population of *Pinarornis plumosus*, and other Zambezi-biome species. The Driefontein grasslands (ZW017) were chosen for their significant breeding population of *Grus carunculatus* (25–40 pairs). The Limpopo-Mwenzi flood-plains and pans (ZW018) are sites for the restricted-range species *Serinus citrinipectus* and the near-threatened *Anthreptes reichenowi*. The Mavuradonha mountains (ZW019) represent fairly undisturbed miombo woodland along the eastern Zambezi Escarpment. The site was included as being a good example of Zambezi-biome habitat (holding 13 characteristic species), for its raptors, and because it is at the southern extremity of the range of some *Brachystegia* species. The Save-Runde junction (ZW020) has affinities with the East African Coast biome, holding four of the characteristic species.

Three Zambezi-biome species are found very marginally within Zimbabwe, only at Kazungula—*Centropus cupreicaudus*, *Cisticola pipiens* and *Lagonosticta nitidula*—and, although this site is nationally significant, it is not included in this international inventory.

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SITE ACCOUNTS

Nyanga mountains

Admin region Manicaland

Coordinates 18°20'S 32°50'E

Area 40,000 ha Altitude 1,650–2,592 m

ZW001

A1, A2 (104), A3 (A07, A10)

National Park

Site description

The Nyanga mountains form the northernmost extent of the Eastern Highlands in Zimbabwe. They lie about 70 km north-east of Mutare in two rural Districts, Nyanga and Mutasa. The mountains are a popular tourist destination, attracting large numbers of visitors. Nyanga National Park (440 km²) forms the core of this site and also part of an adjacent, contiguous IBA, Nyanga lowlands/Honde valley (IBA ZW002). The park is surrounded by privately owned commercial farms, forestry plantations, tea estates and communal lands.

The Nyangani massif peaks at 2,592 m. The topography is very diverse, with a rolling hilly plateau in the west and north giving rise to several large rivers: the Kairezi, Nyangombe and Pungwe. The plateau is deeply bisected by the gorges of the Pungwe and Nyazengu rivers in the south. There are numerous high waterfalls, with the Mutarazi waterfall being one of the highest in Africa, dropping 380 m. The eastern slopes of the mountains, particularly Nyangani mountain, form a steep-sided escarpment, dropping down to 900 m into the Honde valley. The west side has an escarpment that drops from Rukotso (2,405 m) and World’s View to the Nyanga North Communal Land (1,400 m).

The eastern slopes are often covered in mist. Above 1,800 m the temperatures are cool and relatively temperate. Frost (-4°C) is common in winter. The mountains have extensive Afromontane vegetation at high altitude (1,800–2,400 m), comprising fine-leaved dwarf shrubland with a large variety of herbaceous plants, including some Afro-alpine species. Afromontane rainforests are found on the eastern (windward) slopes (the IBA is defined as extending down to the 1,650 m contour, the boundary of the montane forest) and in kloofs on the leeward slopes. *Syzygium* is dominant in this undisturbed forest. *Afrocrania* montane forest occurs on wet boulder-screes and in high valleys. These forests have affinities with those further north in Malawi and East Africa. There are small patches of drier *Widdringtonia* coniferous forest in fire-protected sites. In the drier, flatter west, the grasslands are interspersed with dwarf *Brachystegia* woodland. *Acacia* woodlands occur in isolated patches at the base of granite kopjes. There are also extensive plantations and forests of non-native *Acacia* and *Pinus* throughout the area. Fire is an important ecological factor, particularly in the grassland environment.

Birds

See Box and Tables 2 and 3 for key species. Because of its accessibility and popularity with tourists, the Nyanga avifauna is relatively well known and includes 246 species. With respect to the species of global conservation concern, Nyanga’s grasslands are an important breeding ground for *Hirundo atrocaerulea*. An unpublished field survey in Nyanga National Park estimated the population to be at least 400 birds. Since there are areas of suitable habitat outside

GLOSSARY

- BLZ** BirdLife Zimbabwe.
- dambo/vlei** a circumscribed, open marshy area, with rushes and sedges.
- dwa** see ‘kopje’.
- inselberg** see ‘kopje’.
- kloof** a deep gully or ravine.
- kopje/dwa/inselberg** a rounded hill, rising from a surrounding plain.
- miombo** broadleaved deciduous woodland dominated by trees of *Brachystegia* and *Julbernardia*.
- mopane** broadleaved deciduous woodland dominated by the tree *Colophospermum mopane*.
- veld** vegetation.
- vlei** see ‘dambo’.

the park, the total population could be at least 600 birds. *Grus carunculatus* (four pairs) breed in the national park and adjacent farms. *Circus macrourus* is an occasional visitor, and *Falco fasciinucha*, although seen rarely, may breed in the area. Nyanga is a breeding area for two restricted-range species, *Apalis chirindensis* and *Prinia robertsi*.

Key species		
A1	<i>Circus macrourus</i>	<i>Grus carunculatus</i>
	<i>Falco fasciinucha</i>	<i>Hirundo atrocaerulea</i>
A2 (104)	Eastern Zimbabwe mountains EBA: Two of the three species of this EBA that occur in Zimbabwe have been recorded at this site; see Table 2.	
A3 (A07)	Afrotropical Highlands biome: 16 of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.	
A3 (A10)	Zambezi biome: Eight of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.	

Other threatened/endemic wildlife

The extensive grasslands contain many herbs and shrubs with restricted/localized distributions. There are five or six endemic plants and a further six species with very localized distributions: *Aloe inyangensis*, *Moraea inyangani*, *Erica simii*, *Scadoxus pole-evansii*, *Aloe rhodesiana*, *Dierama inyangensis*, *Euphorbia citrina*, *E. crebifolia* and *Protea inyangensis*. The unusual grassland species are linked to the northernmost limits of the Drakensberg flora. There are several endemic or restricted-range species of amphibian: *Bufo gariepensis inyangae*, *Probreviceps rhodesianus*, *Arthroleptis xenodactylodes*, *Leptopelis flavomaculatus*, *Afraxalus fornasinii* and *Hyperolius tuberilinguis*. The snake *Bitis atropos* occurs in the montane grasslands.

Conservation issues

Much of the grassland and high-altitude forest is contained within the Nyanga National Park. The single most important environmental threat to the Nyanga grasslands, both inside and outside the national park, is invasion by alien wattle and pine. An unpublished survey in 1988 showed that 40% of the national park had been invaded by alien trees, largely unchecked by Parks authorities, and the situation has worsened since then. At present, commercial forestry companies, national parks and the general public do not recognize the extent and severity of the problem. The avifauna and other species are adversely affected as the highly diverse grasslands change into mono-specific, sterile thickets. Wattle and pine change the soil nutrients and pH and cause a decrease in groundwater. The bird under greatest threat is *Hirundo atrocaerulea*.

High-altitude grasslands outside the park, such as Rukotso, World’s View, Kwaraguza, Bende Gap, Nyafaru and Chingamwe, are included in the IBA, but their present low conservation status needs to be improved. A clear policy and action on the removal of invasive alien plants from these grasslands, inside and outside the national park, is urgently needed.

Further reading

Childes (1989), Childes (1997a), Douglas (1993), Lambiris (1989), Muller (1994), Timberlake and Muller (1993).

Nyanga lowlands/Honde valley		ZW002
Admin region Manicaland		
Coordinates 18°22'S 32°53'E	A1, A2 (104), A3 (A07, A09, A10)	
Area 11,000 ha	National Park,	
Altitude 950–1,650 m	Private Nature Reserves	

■ Site description

This site extends from the montane forests on the slopes of Nyangani mountain down to the lowland rainforests (below 1,000 m) in the Honde valley. It is contiguous with the eastern boundary of the Nyanga mountains (IBA ZW001) and has been split from that site on the basis of its warmer and more tropical environment, with consequently different vegetation and avifauna. The site is bounded in the east and south by the Holdenby Communal Land, part of Mutasa District and two large tea-estates. It is important to note that these two Nyanga IBAs (ZW001 and ZW002) encompass an extensive chain of rainforest spanning 1,000 m of elevation. Forest birds are thus protected in both their high-altitude summer habitat and their lower-altitude winter grounds.

The rainforests on the south and eastern slopes of Nyangani form the largest block of rainforest in Zimbabwe. The area immediately below Mutarazi Falls is one of the few examples of relatively pristine mid-altitude forest, dominated by *Aningeria adolfi-friedericii*—the only area where this tree species is found in Zimbabwe. The mid-altitude forests, characterized by *Chrysophyllum* and *Croton*, and low-altitude forest, dominated by *Newtonia*, *Maranthes* and *Xylopia*, extend along river courses into the two large commercial tea-estates: Aberfoyle and Eastern Highlands. The forests merge into *Brachystegia* woodland on the lower slopes. The past range of the forests has been severely reduced through clearing of land for tea plantations. The Communal Land is heavily settled and all of the forest cleared except for two very small patches: Pungwe Bridge Forest and Rumbise Hill Forest. The latter is dominated by *Newtonia* and *Aidia*.

■ Birds

See Box and Tables 2 and 3 for key species. There are small patches of grassland at 1,600 m, interspersed among the forests, which contain *Hirundo atrocaerulea*. This species occurs regularly in the upper Kairezi river valley within the national park. Other species of interest in these forests are *Smithornis capensis*, *Cercococcyx montanus*, *Cuculus poliocephalus*, *Bias musicus*, *Indicator meliphilus*, *Pitta angolensis*, *Apaloderma narina* and *Gypohierax angolensis*. There is an unsubstantiated report of *Telophorus zeylonus*.

Key species	
A1	<i>Hirundo atrocaerulea</i> <i>Anthreptes reichenowi</i>
A2 (104)	Eastern Zimbabwe mountains EBA: Two of the three species of this EBA that occur in Zimbabwe have been recorded at this site; see Table 2.
A3 (A07)	Afrotropical Highlands biome: 15 of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.
A3 (A09)	East African Coast biome: Six of the 11 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.
A3 (A10)	Zambezian biome: Nine of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

There are two Specially Protected Plants that occur in this IBA: a cycad *Encephalartos manikensis* (Rare) and a staghorn fern *Platynerium alcinorne*. Rare species of orchid are known in the forests and are threatened by felling of the trees and by plant collectors.

■ Conservation issues

Much of the rainforest is protected within the Nyanga National Park, but there are significant areas on privately owned land: Nyazengu Nature Reserve (c.750 ha) and Gleneagles Mountain Reserve (c.1,800 ha). The present owner of Nyazengu appears to have a commitment to conservation of the forests and they are well protected for the moment. The national park is also protected, although poaching of small ungulates occurs along the boundaries. Cycads are probably being poached from the park, as most outside the park have already been removed and sold, and staghorn ferns are also sold illegally. The court authorities show little concern for these valuable Specially Protected Plants and offenders are given inappropriately low fines, if convicted at all.

The forests on Eastern Highlands Tea Estate have a fairly high level of protection as they occur in sites that are not suitable for planting tea. On Aberfoyle Estate the forests are being cleared for new coffee plantations. Trees are also being removed from the remaining patches of forest for curios and carvings. There is little chance of these forests ever regaining much of their past range. In the Communal Land there is no hope for the long-term survival of the Pungwe Bridge and Rumbise Hill forests. Riparian forest along the Pungwe and other large rivers is now virtually non-existent through illegal clearing for stream-bank cultivation. Reforestation projects in the Communal Land are limited to non-native species such as *Eucalyptus*, *Acacia* and *Pinus*.

■ Further reading

Jana and Igoe (1997), Muller (1994), Solomon *et al.* (1996), Tree (1997).

Stapleford Forest		ZW003
Admin region Manicaland		
Coordinates 18°42'S 32°50'E	A1, A2 (104), A3 (A07)	
Area 26,000 ha	Altitude 700–1,885 m	Demarcated Forest

■ Site description

Stapleford Forest is south of the Honde valley, c.50 km north-east of Mutare, near the village of Penhalonga and forms part of the eastern border of Zimbabwe with Mozambique. It is under commercial forestry plantations controlled by the Forestry Commission of Zimbabwe, and falls within the Mutasa Rural District Council. The Mutasa Communal Land forms the northern and western borders of Stapleford. The highest point of 2,030 m (Mt Rupere) in the west of Stapleford forms a watershed, with the Odzani river flowing south-west and the Nyamahwarara river flowing north-east.

The site includes the three areas of indigenous rainforest and *Brachystegia* woodland found within Stapleford. There is a fairly large patch of montane rainforest on the south-eastern slope of a steep-sided valley beneath Mt Rupere, next to the John Meikle Forest Research Station. It contains six different forest-types and many interesting species. The upper region consists of mainly *Syzygium*, with *Podocarpus* further down the slope and *Craibia* forest on boulder-scrree. The area has not been checked from the ground so the exact size and site descriptions are not known. From vegetation maps, the forest and *Brachystegia* woodland appear to cover an area of c.1,400 ha.

On the eastern border is a prominent mountain, Gurungwe, which peaks at 1,885 m and drops steeply to the Nyamahwarara valley at 700 m. This has a good example of mid-altitude forest with *Maranthes* and *Khaya*. *Breonadia* grows along stream banks. The top and eastern slopes of Mt Chinyamariro, to the south of Stapleford, have a well-developed *Syzygium* forest. Most of this forest belongs to Border Timbers, a commercial forest estate.

■ Birds

See Box and Tables 2 and 3 for key species. The area of Nyamahwarara valley has been a well-known site for past avifaunal collections. Stapleford is the type-locality for six subspecies of bird endemic to Zimbabwe. Stapleford supports six globally threatened or restricted-range species. About eight pairs of *Hirundo atrocaerulea* are known to breed on nearby Mountain Home Estate, but it is not known how many birds breed on Stapleford. One pair of *Grus carunculatus* was sighted in an aerial survey in 1983. There is no known checklist of birds for this estate and records have been taken from the Atlas Records.

Key species	
A1	<i>Grus carunculatus</i> <i>Hirundo atrocaerulea</i> <i>Swynnertonia swynnertoni</i>
A2 (104)	Eastern Zimbabwe mountains EBA: All of the three species of this EBA that occur in Zimbabwe have been recorded at this site; see Table 2.
A3 (A07)	Afrotropical Highlands biome: 13 of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

Little is known of the occurrence of non-bird species and this is clearly an area for more fieldwork and research. There are numerous specimens of the cycad *Encephalartos manikensis* (Rare) at the forest-edge.

■ Conservation issues

The Forestry Commission of Zimbabwe is entrusted with the protection of indigenous forests through the Forestry Act. Stapleford therefore has a fair level of protection. However, more insidious threats to the avifauna and general conservation of the area are: increased afforestation, cultivation and cattle-grazing; non-native trees invading montane grasslands and stream banks; and accelerated soil erosion following the felling of plantations.

■ Further reading

Irwin (1979), Muller (1994), Mundy *et al.* (1984).

Bvumba Highlands	ZW004
Admin region Manicaland	
Coordinates 19°07'S 32°45'E	A1, A2 (104), A3 (A07)
Area 3,000 ha Altitude 1,200–1,911 m	Botanical Reserve

■ Site description

The Bvumba Highlands are c.25 km south-east of Mutare and form the central section of the Eastern Highlands of Zimbabwe. The mountains are lower than at Nyanga, and the climate is generally warmer. Mists are common and provide an important source of moisture to the forests. Harwin *et al.* (1994) define the Bvumba Highlands as being land including and above the 1,200 m contour. This contour was chosen as it is the lower boundary for montane birds. The Bvumba mountains are separated from the next series of peaks in the Banti/Himalaya range by the Burma valley (600 m). The Bvumba drops down to the Chicamba Real Dam and Revue river in Mozambique to the east, and to the Save river valley in the west. Much of the Bvumba consists of privately owned farms and smallholdings. There are large commercial *Pinus* and *Acacia* plantations.

The eastern slopes are well forested, while the western sides are drier and merge into *Brachystegia* woodland. Bare granite cliffs and scree slopes with scattered *Strelitzia* occur along the edges of some mountains, with the tops covered in short montane grassland. Much of the forest has been disturbed through felling, some as recently as in the 1940s. The largest area is the well-known Bunga Forest, a mist-forest occurring along a mountain ridge. Bunga has been disturbed through logging in the past. *Syzygium* is the dominant tree in undisturbed parts, giving way to *Aphloia*, *Macaranga* and *Maesa* in regenerating areas. *Dracaena* is common in the shrub layer. Lower down and in the drier areas, *Albizia gummifera* and *A. schimperiana* are the dominant trees. The edges of the forests are surrounded by a dense bracken-briar scrub of *Pteridium*, *Smilax*, *Buddleia*, *Vangueria* and *Vernonia*.

■ Birds

See Box and Tables 2 and 3 for key species. The Bvumba avifauna has been well studied for the past 20 years. A total of 242 species has been recorded, including three species of global conservation concern and three restricted-range species, as well as species characteristic of three biomes. The Bvumba is the type-locality for *Prinia robertsi* and also for three subspecies of forest bird that are endemic to the Eastern Highlands.

Key species		
A1	<i>Hirundo atrocaerulea</i>	<i>Anthreptes reichenowi</i>
	<i>Swynnertonia swynnertonii</i>	
A2 (104)	Eastern Zimbabwe mountains EBA: All of the three species of this EBA that occur in Zimbabwe have been recorded at this site; see Table 2.	
A3 (A07)	Afrotropical Highlands biome: 17 of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.	

■ Other threatened/endemic wildlife

The chameleon *Rhampholeon marshalli* occurs in the Bunga Forest, and several species of regionally rare butterfly occur.

■ Conservation issues

Most of the Bunga Forest is protected within the Bunga Forest Botanical Reserve. As with other high-altitude grasslands in the Eastern Highlands of Zimbabwe, the Bvumba grasslands are threatened by the invasion of non-native wattle *Acacia* and pine *Pinus* trees. This has obvious implications for *Hirundo atrocaerulea*. There

is only a small population of these birds in the Bvumba, so every effort should be made to protect their grassland habitat. The forests on National Parks Estate are well protected, as are most of the forest patches occurring on private land. Regeneration and expansion of the forests are restricted by agriculture and pine and wattle plantations. The mid-altitude forests on the southern slopes down towards Burma valley are all on private land and worthy of protection as botanical reserves. The recent horticultural expansion of *Protea* plantations has been beneficial to *Promerops gurneyi* and probably to *Nectarinia kilimensis*.

■ Further reading

Harwin *et al.* (1994), Manson (1990), Muller (1994), Pringle *et al.* (1994).

Banti Forest Reserve	ZW005
Admin region Manicaland	
Coordinates 19°20'S 32°48'E	A2 (104), A3 (A07)
Area 2,000 ha Altitude 1,100–1,984 m	Forest Reserve

■ Site description

Banti Forest (22.2 km²) is south of the Bvumba Highlands, across the Burma valley. It forms part of the international boundary with Mozambique and is bounded by commercial farms and resettlement farms. It is not easily accessible, but can be reached via dirt roads from Himalaya Police Station, about 30 km east from the Mutare–Chimanimani road. There are landmines along the border, the exact placement of which is not known. Banti Forest is administered by the Forestry Commission. There is no infrastructure and the area is used only for cattle-grazing by nearby farmers. There are about five peasant families resident in the south-west corner of the Forest Land.

The mountains of Banti, Tsetsera and the Himalayas rise steeply from the Burma valley, peaking at 1,984 m and 2,211 m outside the forest, and give rise to rivers draining eastwards into Mozambique. There are several cliff-faces and an escarpment that run into Mozambique. The eastern slopes and highest points receive orographic rainfall, presumably similar in volume to that of the Bvumba.

The vegetation consists of montane short grassland, with patches of montane forest on scree slopes and in high valleys. There are a few small patches of wetter forest, where *Afrocrania* is co-dominant with *Ilex* and *Olea*. The drier forest contains *Podocarpus* with *Schefflera*, *Maesa* and *Ilex*. Banti was originally designated as Forest Land because it has the best population of *Podocarpus* in Zimbabwe. Towards the west, the grassland gives way to well-developed *Brachystegia* woodland.

■ Birds

See Box and Tables 2 and 3 for key species. Fifty-one species were collected here in 1962 and 1973. The area was also investigated in the 1970s. Since then there have been no extensive surveys, as the area was inhospitable during Zimbabwe's Independence War, and until the recent peace accord in Mozambique. A brief field trip (two days) in March 1997 listed 48 species, but did not record *Hirundo atrocaerulea*, although the habitat appeared suitable.

Key species	
A2 (104)	Eastern Zimbabwe mountains EBA: One of the three species of this EBA that occur in Zimbabwe has been recorded at this site; see Table 2.
A3 (A07)	Afrotropical Highlands biome: Nine of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

There is little information on other important montane species. The 1997 field trip identified 27 species of terrestrial and epiphytic orchid. There is an endemic butterfly, *Mylothris carcassoni*.

■ Conservation issues

The area does not appear to be under immediate threat of logging or agriculture. The grasslands are used for cattle-grazing. If the number of peasant families residing on the Forest Land (presumably illegally) increases, then the area will be affected through clearing of land for cultivation, cutting of trees, increased soil erosion along cattle paths, etc. The presence of landmines along the border undoubtedly acts as a deterrent to development. The Mozambican forests are more

extensive, and clearly any conservation programme should be run jointly in both countries.

■ Further reading

Childes (1997b), Irwin (1979), Muller (1994), Pringle *et al.* (1994).

Chimanimaní mountains

Admin region Manicaland

Coordinates 19°53'S 33°20'E

Area 17,100 ha

Altitude 320–2,400 m

ZW006

A1, A2 (104), A3 (A07, A09)

National Park

■ Site description

The Chimanimaní mountains form the southernmost part of the chain of mountains along the Zimbabwe–Mozambique border. The village of Chimanimaní lies c.125 km south of Mutare and is part of Chimanimaní District. The mountains are a series of parallel ridges, 19 km wide and running north–south for 40 km. The greater part of the mountains lie in Mozambique. Most of the Zimbabwean part lies within the Chimanimaní National Park (171 km²). The mountains are only accessible through a series of footpaths, and the area is popular with hikers and mountaineers.

The topography is extremely rugged, with ranges of jagged peaks and deep ravines. The main plateau is at an altitude of 1,500–1,800 m, with peaks reaching 2,400 m and dropping to 320 m in deep gorges and river valleys. The northern part of the mountains is deeply bisected by the Mussapa river flowing eastwards into Mozambique through the Mussapa Gap. The Haroni and Bundi rivers run north–south, joining with the Rusitu river before turning east to Mozambique at 312 m.

The mountains intercept warm moist air from Mozambique and the orographic rainfall can be in excess of 1,500 mm per year on windward slopes. There are frequent mists. Winter frosts are common on the plateau. The soils are white sands with a very low water-holding capacity and low fertility. The Chimanimanis form an important link between the Drakensberg mountains in South Africa through to Nyanga and the mountains in Malawi and East Africa.

The plateau is covered in grassland, with montane forest in the sheltered valleys where there is sufficient groundwater. The mid-altitude forests are best developed on the Mozambican side. Dry montane forests occur up to 1,500 m or higher in sheltered places and are characterized by trees of *Schefflera*, *Ilex*, *Macaranga*, *Maesa*, *Podocarpus*, *Widdringtonia* and *Syzygium*. *Strelitzia* and *Cyathea* occur along streams. The lower-altitude forests in the valleys have not been well studied.

The grasslands are natural, partly maintained through hydromorphic conditions and partly by wildfires. *Phillipia* and *Protea* scrub is interspersed among the grassland on the plateau. Fire is a major factor influencing the vegetation on the plateau.

On the drier slopes the grassland and forest change rapidly into miombo woodland with *Brachystegia* and *Uapaca* as the dominant trees. Part of the commercial farm bordering the west of the park has dense wattle *Acacia* thickets. There are extensive commercial forests of pine and wattle plantations throughout the district.

■ Birds

See Box and Tables 2 and 3 for key species. A total of 186 species are known from the site. The mountains hold three species of global conservation concern and two restricted-range species, as well as species characteristic of three biomes. *Nectarinia veroxii* was recently observed, but may just be a vagrant. The Chimanimanis are the type-locality for four montane or restricted-range subspecies.

Key species		
A1	<i>Circaetus fasciolatus</i>	<i>Hirundo atrocaerulea</i>
	<i>Falco fasciinucha</i>	
A2 (104)	Eastern Zimbabwe mountains EBA: Two of the three species of this EBA that occur in Zimbabwe have been recorded at this site; see Table 2.	
A3 (A07)	Afrotropical Highlands biome: 17 of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.	
A3 (A09)	East African Coast biome: Three of the 11 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.	

■ Other threatened/endemic wildlife

Recent collections have indicated that there are 50–60 endemic plants, including five species of endemic *Aloe*. The Chimanimanis contain

several endemic or restricted-range amphibian taxa: *Bufo fenoulheti grindleyi*, *Rana johnstoni*, *Strongylopus grayi*, *Arthroleptis troglodytes* and *A. xenodactyloides*. The snake *Bitis atropos* is fairly common in the montane grassland.

■ Conservation issues

In the national park, the Zimbabwean side of the Chimanimanis is under no particular threat, except through increased tourist use. This has resulted in litter, unwanted wildfires and soil erosion of footpaths. A second more insidious threat is to the aquatic ecosystems, through the past introduction of non-native trout (*Oncorhynchus mykiss*, *Salmo trutta*) to the Bundi river for sport fishing. Current research in the Cape suggests that these fish are highly detrimental to native aquatic animals. Given the high biological importance of the Chimanimaní mountains, these fish should be removed from the Bundi river system by Zimbabwean National Parks authorities.

On the Mozambican side there is formal protection in only two forest reserves. The high plateau containing many of the biologically important endemic species is not protected. An international national park was proposed in the 1970s and again in the 1990s, covering 850 km². It is not known whether the authorities in Zimbabwe and Mozambique will implement this plan.

■ Further reading

Beasley (1995), Lambiris (1989), Timberlake (1992), Wild (1964).

Haroni–Rusitu junction and Botanical Reserves

Admin region Manicaland

Coordinates 20°15'S 33°00'E

Area 500 ha

Altitude 300–600 m

ZW007

A1, A2 (104), A3 (A07, A09)

Botanical Reserves

■ Site description

This area falls within the Ngorima Communal Land and lies along the international boundary with Mozambique, south of the Chimanimaní National Park and the Tarka Forest Area, in the angle between the Haroni and Rusitu rivers. The Haroni and the Rusitu Botanical Reserves are administered by the Parks and Wild Life Conservation Fund.

The reserves were initially designated to protect one of the richest ecological complexes in Zimbabwe. The area has attracted ornithologists and naturalists since 1955. There were several expeditions in the 1960s, but the area remained largely inaccessible until a track was cut into the Rusitu/Vimba Forest in the early 1970s. The area was not visited during the independence war and there are landmines along the international boundary. Since the cessation of hostilities it has recently become a destination for birdwatching tourists.

The Haroni river drains the western slopes of the Chimanimaní mountains and flows south. It is a fast-flowing perennial river that is joined by the Chisengu and Mukurupini rivers before meeting the east-flowing Rusitu to become the Lucite in Mozambique. The topography is dramatic, with the rivers flowing through steep-sided valleys (up to 1,400 m) dropping to 312 m at the rivers' junction on the border.

The hot, wet climate is responsible for the 50-m-tall lowland forest, dominated by *Newtonia* with *Maranthes* and *Xylopia*. The forests can be considered as an extension of the low-altitude Mozambican coastal forests, with Congo forest affinities.

Most of the small (20 ha) Haroni Botanical Reserve has been illegally cleared for banana cultivation and hardly any forest remains. The 150 ha Rusitu Reserve, 3 km upstream of the confluence of the Haroni and Rusitu rivers is a fragment of a much larger forest. The remaining forest is still relatively intact, but is under threat from land clearance for cultivation. Within the Chimanimaní National Park is the Haroni–Mukurupini forest, the largest and best preserved lowland forest in Zimbabwe. Uphill into the Chimanimaní mountains it borders on *Brachystegia* woodland.

■ Birds

See Box and Tables 2 and 3 for key species. A total of 233 species has been recorded in the area, including *Cercococcyx montanus*, *Ceuthmochares aereus*, *Ceratogymna brevis*, *Campethera cailliautii*,

Smithornis capensis, *Bias musicus*, *Apalis melanocephala* and *Columba delegorguei*. The avifauna includes a rich mixture of species from three biomes.

Key species	
A1	<i>Circaetus fasciolatus</i> <i>Falco fasciinucha</i> <i>Anthreptes reichenowi</i>
A2 (104)	Eastern Zimbabwe mountains EBA: One of the three species of this EBA that occur in Zimbabwe has been recorded at this site; see Table 2.
A3 (A07)	Afrotropical Highlands biome: 10 of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.
A3 (A09)	East African Coast biome: Eight of the 11 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

The Mukurupini forest is the only known locality for several tree, fern and orchid species. *Galago granti* (DD) and *Myonycteris relicta* (VU) are rare mammals found in these lowland forests. Also special to the area are amphibians such as *Hyperolius argus*, *Leptopelis flavomaculatus*, *L. concolor*, *Afrixalus fornasinii*, *Hyperolius tuberilinguis* and *Ptychadena chrysogaster*.

■ Conservation issues

Since Haroni–Rusitu contains species of three distinct biomes in a relatively small area, as well as two globally threatened species and several endemic or restricted-range amphibians, mammals and plants, it deserves a high conservation priority. Haroni–Rusitu is thought to represent the winter range of some altitudinal migrant bird species. For bird conservation to be successful, the full habitat range of the species should be protected. Clearly further research is needed into specific habitat requirements for the more vulnerable species.

The major threat to the area is the encroachment of agriculture, with ever-increasing peasant populations along the periphery. At present the forests and associated fauna are probably fairly well represented in Mozambique, which has a comparatively lower peasant population. However this is changing as human populations and pressures on land increase. It is therefore vital for conservation efforts in Zimbabwe to link with those in Mozambique.

■ Further reading

Cotterill (1995), Lambiris (1989), Masterson (1992), Vernon *et al.* (1990).

Chirinda Forest		ZW008
Admin region Manicaland		
Coordinates	20°25'S 32°42'E	A1, A2 (104), A3 (A07)
Area	950 ha	Altitude 900–1,200 m
		Demarcated Forest

■ Site description

Chirinda Forest is the southernmost area of tropical rainforest in Africa, covering the two rounded hilltops of Mount Selinda. Chirinda is administered by the Forestry Commission. It is situated 30 km south of Chipinge town, and is easily accessible along a tar road. It is one of the best researched forests in Zimbabwe, with scientific collections of flora and fauna being made as early as 1900.

Mount Selinda rises to 1,200 m altitude from the surrounding plateau and Mozambican coastal plain. Being the only high ground from there to the Indian Ocean 200 km away to the east, it is frequently covered in cloud and mist and receives about 1,400 mm of orographic rain per year. The mists are important as the extra moisture, often occurring in the dry season, permits forest species to survive in an area which would otherwise be too dry for them. Chirinda Forest covers 950 ha, of which 606 ha is moist forest and the remainder bushland or woodland. The forest covers the south and south-eastern slopes that receive the moisture, being replaced by dense woodland on the drier northern slopes.

Chirinda is classified as a mid-altitude or submontane forest and is a representative of a type that was previously widespread throughout the Eastern Highlands. It is an island surrounded by a sea of agricultural land. The forest has a well-developed structure, with the canopy reaching 40–55 m high. The dominant trees are *Chrysophyllum*, *Craibia* and *Trichilia*, with occasional emergents of *Khaya*, *Lovoa* and *Ficus*. The shrub layer is dominated by *Dracaena*. The woody species represent largely a mixture of elements from Afromontane and East African coastal forests, with some West African and Congo forest affinities.

■ Birds

See Box and Tables 2 and 3 for key species. Chirinda's avifauna (73 species regularly occur) is unusual as it is a mixture of high- and medium/low-altitude forest species. Chirinda is the type-locality for the globally threatened *Swynnertonia swynnertoni* and also for 11 subspecies of forest/woodland bird.

Key species	
A1	<i>Swynnertonia swynnertoni</i>
A2 (104)	Eastern Zimbabwe mountains EBA: Two of the three species of this EBA that occur in Zimbabwe have been recorded at this site; see Table 2.
A3 (A07)	Afrotropical Highlands biome: Nine of the 18 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

Chirinda contains a giant specimen of *Khaya anthotheca* (VU), known as the Big Tree, measuring 54 m high and 5.25 m circumference around the base. The Big Tree is considered to be not less than 1,000 years old and is a National Monument. Notable mammals are *Aethomys silidensis*, *Uranomys ruddi*, *Mysorex cafer*, *Petrodomus tetradactylus swynnertoni* (type-locality) and *Paraxerus palliatus swynnertoni* (endemic race).

As with the birds, Chirinda is important in the distribution of forest reptiles and amphibians because it is intermediate between high and low altitudes. The montane forest herpetofauna is represented by *Rhampholeon marshalli* and *Strongylopus grayii*. The East African lowland herpetofauna is represented by *Bitis gabonica*, *Naja melanoleuca*, *Dendroaspis angusticeps*, *Natriciteres sylvatica*, *Dasypeltis medici*, *Stephopaedes anotis* (type-locality), *Arthroleptis xendactyloides* (type-locality) and *Leptopelis flavomaculatus*. Chirinda is also the type-locality for *Hyperolius marmoratus swynnertoni*.

Among butterflies, there is one known endemic, *Mimacrea neokoton*, and two species with very restricted ranges, *Anthene sheppardi* and *Pentila swynnertoni*.

■ Conservation issues

Chirinda Forest is threatened by the increasing number of people surrounding it. Poaching (of birds and *Cephalophus monticola*) and firewood collection are likely to have an increasingly adverse effect on the forest. The forest is too small for any sustainable utilization of the timber, although limited use of forest plants for traditional medicines could be sustained. The only long-term chance of conserving the forest (as with elsewhere in the Eastern Highlands) is through increasing its public profile. This could be done through promoting its educational and aesthetic values, thereby attracting greater numbers of visitors. The local community could then derive some direct economic benefits from the Forest.

■ Further reading

Briggs (1997), Timberlake and Shaw (1994).

Hwange National Park		ZW009
Admin region Matabeleland North		
Coordinates	19°00'S 26°30'E	A3 (A10, A11)
Area	1,460,000 ha	Altitude 950–1,100 m
		National Park

■ Site description

Hwange National Park covers 14,600 km² and is one of the largest protected areas in Africa. It lies in the west of Zimbabwe, bordering Botswana, and extends from 25°45'E to 27°30'E and from 18°30'S to 19°45'S. Hwange is bounded by the Matsi and Deka Safari Areas in the north, by Forestry Areas and private farms in the east, and by Tsholotsho Communal Land in the south. The park falls within Hwange District of Matabeleland North Province. It is the oldest national park in Zimbabwe, having been proclaimed in 1928. The park is readily accessed off the main Bulawayo–Victoria Falls road. There is an extensive network of tourist roads in the north and eastern parts, while the flatter, less appealing centre and west are a wilderness area with few roads.

Over much of the west and centre of the park, the topography is flat with gentle undulations. There are no surface perennial rivers, but there are numerous shallow calcrete pans. After heavy rains, some of these pans hold water naturally throughout the dry season, while

others are augmented by water supplied from deep underground boreholes. To the north and east, the topography is more broken with ridges and hills, rising to 1,000 m and more. The Deka, Sinamatella and Lukosi rivers drain north-east towards the Gwayi river; they shrink to a series of pools during the dry season. There are several man-made dams in the area, Mandavu Dam being the largest. The increase in artificially supplied water in the dry season has been one of the causes for the increase in herbivore populations, particularly elephant *Loxodonta africana*. The trees surrounding the pans are often damaged by elephants as the herds congregate during the late dry season.

The west and centre of the park are covered by a mosaic of dry deciduous *Baikiaea* woodland (the best-developed such woodland in Zimbabwe) with scrub of *Terminalia* and *Burkea*, and there is some *Brachystegia* woodland in the east, and perennial grassland along the fossil drainage lines (with *Acacia* woodland on the edges). In the north-east there is deciduous mopane woodland and mixed *Combretum*/*Terminalia* shrubland. There are several large vleis or marshes that are dominated by grassland and drain into the rivers.

The climate is hot (33°C in October) and dry, with an average of 620 mm of rain annually. There is a decrease in rainfall from east to west. Frosts of -5°C and lower are frequent during June and July. ‘Black’ frosts (below -7°C) occur every few years and can have a devastating effect on the vegetation.

■ **Birds**

See Box and Table 3 for key species. The dams and the pans form a vital network of aquatic ecosystems for migrant and resident birds. A total of 410 species have been recorded, of which 41 are vagrants. Nationally, Hwange is considered to be of conservation importance for 24 species, including *Ciconia episcopus*, *Oxyura maccoa*, *Gallinula angulata* and *Chlidonias hybridus*. Hwange contains possibly the largest protected populations of *Tockus bradfieldi* and *Buphagus africanus* in the southern African subregion. Other nationally uncommon or threatened species that breed in the park are *Ephippiorhynchus senegalensis*, *Ardeotis kori* and *Bucorvus cafer*. *Gyps coprotheres*, *Gallinago media*, *Circus macrourus* and *Glareola nordmanni* are occasional visitors. The park is also an important refuge for seven raptor species: *Trigonoceps occipitalis*, *Necrosyrtes monachus*, *Torgos tracheliotus*, *Terathopius ecaudatus*, *Aquila rapax*, *Polemaetus bellicosus* and *Hieraaetus spilogaster*. *Grus carunculatus* is a very rare vagrant; a number live fairly close to, but outside, the park.

Key species

- A3 (A10) Zambezi biome: 12 of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.
- A3 (A11) Kalahari-Highveld biome: All of the three species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ **Other threatened/endemic wildlife**

Hwange National Park is well known for its wide variety of mammals (105 species), including *Diceros bicornis* (CR; numbers are slowly increasing in the Intensive Protection Zone within the park) and the only substantial population in Zimbabwe of *Lycaon pictus* (EN).

■ **Conservation issues**

Outside the park, in the adjacent Forestry Areas, the woodlands have been exploited for lumber. On paper, Hwange is relatively well protected. However, the recent illegal felling and saw-milling of hardwood trees in the park by a timber company clearly demonstrates the vulnerability of the park to political pressures. There is poaching of the larger mammals, and in the early 1990s large numbers of both species of rhino were heavily poached, reducing their populations to low levels. Another major threat to the park is from the very high numbers of elephant *Loxodonta africana*. The consequent damage to the vegetation and reduction in habitat for other species, including birds, has significant implications for the maintenance of biodiversity. A clear policy on elephant management is vital and should be carried out promptly before the vegetation damage becomes irreversible.

■ **Further reading**

Bond (1948), Bond (1953), Bond (1955), Broadley and Blake (1979), Childes and Walker (1987), Childes (1988), Hustler (1986), Davies (1996), Rogers (1993), Smithers and Wilson (1979).

Chizarira National Park

Admin region Matabeleland North

Coordinates 17°45'S 28°00'E

Area 191,000 ha Altitude 500–1,434 m

ZW010

A1, A3 (A10)

National Park

■ **Site description**

Chizarira National Park lies on, and south of, the Zambezi Rift Valley escarpment, about 80 km south-east of the small town of Binga, on the southern shore of Lake Kariba. The park is bounded in the north, west and east by Binga, Gokwe and Manjolo Communal Lands, and in the south by the Chirisa Safari Area. It falls within Binga District of Matabeleland North Province and forms part of the Sebungwe region. It is accessible by dirt roads from Binga, Gokwe and Lusulu. The dramatic Chizarira escarpment rises up 500 m from the Zambezi valley, peaking at 1,434 m on Tundazi mountain, and drops gradually down to the Busi river in the south of the park (800 m). The escarpment is deeply dissected by gorges through which flow the Mucheni, Luzilukulu (Rhuziruhuru) and Sengwa rivers. The gorges are up to 460 m deep and form a spectacular sight. Tourists are attracted to the scenery and high wilderness quality of the park.

On the top of the escarpment the climate is cooler and wetter than the adjacent Zambezi valley. Rainfall is about 600 mm annually and temperatures can rise to 40°C in the hot dry season. During winter the temperature drops to below 0°C in the river valleys. Along the escarpment the north-facing scree slopes are sparsely vegetated. In contrast, the gentler south-facing slopes are covered with miombo woodland of *Brachystegia* and *Julbernardia*. Fire and elephants help to keep the woodlands open. There are numerous grassy vleis, springs (e.g. Manzituba, Muchininga) and streams originating from the central watershed in the park. Other vegetation-types include mopane *Colophospermum* woodland, ‘sidaga’ grassland, *Combretum*/*Commiphora* thickets (‘jesse’), and riparian woodland/forest of *Acacia*/*Trichilia* (also containing elements of the Eastern Highlands vegetation).

■ **Birds**

See Box and Table 3 for key species. Chizarira provides a wide variety of habitats for birds, with nearly 400 species having been recorded. The escarpment cliffs and gorges provide nesting sites for *Ciconia nigra*, *Falco peregrinus*, *Falco fasciinucha*, *Aquila verreauxii* and numerous swifts. The area is well known for its large variety of raptors, particularly *Hieraaetus ayresii* and *Spizaetus coronatus*. The riverine forest and thickets in the gorges are a major breeding area for *Apaloderma narina*, *Smithornis capensis* and *Guttera pucherani*. Chizarira has the only nest record to date for *Erythrocerus livingstonei* and is a known regular breeding site for *Pitta angolensis*. There are regular sightings of *Cercococcyx montanus*. Species of interest in the vleis in the central part of the park are *Rostratula benghalensis* and *Sarothrura rufa*. Along the Busi river, the oxbow lakes and sandy riverbanks provide suitable nesting sites for a variety of swallows, martins and bee-eaters.

Key species

- A1 *Falco fasciinucha*
- A3 (A10) Zambezi biome: 13 of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ **Other threatened/endemic wildlife**

Chizarira has a good variety of large mammals. It was previously well known for its healthy population of *Diceros bicornis* (CR), but these are now absent through the combined effects of poaching and recent translocations to other national parks.

■ **Conservation issues**

Although Chizarira has a high level of protection through its National Park status, there is a continual poaching threat, particularly in the east and west of the park. The high elephant numbers have resulted in the degradation of large areas of miombo woodland, reducing the available habitat for the associated bird species. Extensive hot fires are often uncontrolled and contribute to the loss of woodland. The development of coal mines in the nearby Sengwa Coalfields will undoubtedly have an adverse effect on the park through increased poaching and disturbance.

■ **Further reading**

Alexander (1993), Arnott (1975), Thomson (1972, 1973, 1975).

Batoka Gorge
Admin region Matabeleland North
Coordinates 17°59'S 25°52'E
Area 12,000 ha Altitude 500–900 m

ZW011
A1
National Park

Site description

After crashing over the spectacular Victoria Falls, one of the natural wonders of the world, the Zambezi river hurtles through many gorges on its way to the quieter waters of Lake Kariba. From the falls at 17°56'S 25°52'E, the Batoka Gorge system is about 120 km long, reaching to Sidinda Island (just west of the Matetsi river mouth) at 18°00'S 26°34'E, where the plateau drops below 600 m. The river has carved through the basalt rock here, to make a gorge up to 140 m deep, characterized by cliffs and screes. The landscape and the views are stunning.

The Batoka Gorge system lies within the Hwange Communal Land, apart from the first c.12 km below the falls which lies within the Victoria Falls National Park. The flat plain on top supports mopane *Colophospermum* woodland. Riparian forest occurs in parts along the Zambezi and some of the gorges formed by tributaries, with trees of *Diospyros*, *Trichilia* and *Rhus* among others. The screes are clothed in thick mixed woodland (*Commiphora*, *Entandrophragma*, *Sterculia*, etc., often dominated by *Triplochiton*), interspersed with grassland. There is virtually no usage of the gorge itself, except for white-water rafting and kayaking along the river.

Birds

See Box for key species. The Batoka Gorge is a haven for cliff-nesting birds, in particular *Falco fasciinucha*. A pair can usually be seen in the fifth gorge. In the 1990s, it was estimated that Batoka Gorge hosted up to 10 pairs of this small falcon. In addition, there are about 18 pairs of *Falco peregrinus*, and another 34 species of raptor occur or have been seen there (including owls). At least four pairs of *Ciconia nigra* nest in the gorge. A rafting survey counted 103 *Glareola nuchalis*. No other threatened or restricted-range species occur in the Gorge. No checklist of birds exists for this section of the Zambezi river, except for a list of raptors.

Key species	
A1	<i>Falco fasciinucha</i>

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The area around Victoria Falls was declared a World Heritage Site in 1989. The overriding issue is the proposed Batoka Dam, with the wall being built below the Moemba Falls, at 17°56'S 26°06'E. The dam wall would be 196 m in height, and produce a lake of about 50 km in length and entirely within the gorge. The lake would severely constrain the breeding opportunities for cliff-nesting raptors, and given the reduced space (upstream) and the competitive dominance shown by *Falco peregrinus*, it is debatable whether *F. fasciinucha* would survive there. In addition, if Batoka Gorge held a lake rather than a rushing river, then tourism to the site would be bound to increase, with the consequence of greater disturbance (upstream) to the remaining raptors. In the meantime, the lip of the gorge from the falls to its end, on the Zimbabwe side, is a minefield, though this is being cleared.

Further reading

Du Toit (1982), Hartley (1993), Hartley *et al.* (1996), Pollard (no date), Williams *et al.* (1989).

Middle Zambezi valley
Admin region Mashonaland West
Coordinates 15°45'S 29°35'E
Area 682,500 ha
Altitude 300–1,288 m

ZW012
A3 (A10), A4i, A4ii
National Park, Safari Areas, World Heritage Site

Site description

The Zambezi river, one of Africa's four great rivers, is 2,700 km long;

draining a huge basin of 1.4 million km². For almost its entire length along Zimbabwe's northern border it lies in a rift valley, which is called the Gwembe trough at Lake Kariba, and the Zambezi valley downstream of the Kariba gorge. From the northern exit of the Kariba gorge at Nyamuomba Island (16°22'S 28°51'E) to the western entrance of the Mupata gorge (15°38'S 30°02'E), the river flows eastwards through 178 km of flat wildlife country, and forms the international border with Zambia to the north. The rift valley consists of a flat plain (at an altitude of 350–600 m) flanked by rugged escarpments that run parallel to the river, nearby in Zambia (highest point 1,286 m) and far to the south in Zimbabwe (highest point 1,288 m). The valley floor is much more extensive on the Zimbabwean side, where it covers an area of c.6,825 km². In some places the Zambezi river is 2 km wide or more, and it flows around many sandy islands. The river water is considered to be very clean, if rather nutrient-poor.

There are three main vegetation-types in the valley. Most of the valley floor supports mopane woodland, which in places can reach impressive proportions. The river's alluvial deposits support riparian woodland, dominated by *Faidherbia* but including many other trees such as *Kigelia*, *Lonchocarpus* and *Trichilia*. The third main vegetation-type is colloquially known as 'jesse' bush, but is correctly labelled as mixed-species layered dry forest. This is deciduous and has a thicket-like understorey. It is rich in both tree and shrub species, for example *Pterocarpus*, *Xeroderris*, *Commiphora*, *Berchemia*, *Combretum* and *Acacia* among many others. The whole of the middle Zambezi valley on the Zimbabwe side is under Parks and Wild Life Estate, except for about 50 km² of commercial land around Chirundu.

Birds

See Box and Table 3 for key species. Among globally threatened species, *Gyps coprotheres* is only very rarely recorded, as too are *Ardeola idae*, *Phoenicopterus ruber* and *P. minor*. A few of the Zambezian-biome birds live in the valley (although miombo woodland as such does not occur on the valley floor), for example *Coracias spatulata*, *Nectarinia talatala*, *Vidua obtusa* and *Lamprolornis mevesii*. The valley is home to more than 400 species of birds, and among terrestrial species it is the only locality so far known in Zimbabwe for *Nectarinia shelleyi*, and is particularly important for *Agapornis lilianae* (many thousands; more than 1% of the global population), *Bucorvus cafer* (occurring at a very high density), *Erythrocerus livingstonei* and *Guttera pucherani*.

Among waterbirds, the species richness in the valley is very high, at c.90 species, although relative abundances are lower. The banks of the Zambezi provide nesting habitat for c.10,500 *Merops nubicoides*, with unknown extra numbers in tributaries along the valley floor. The sandbanks and sandy islands form equally essential habitat for *Rynchops flavirostris*, and in 1986 a survey estimated 136 birds on the stretch of river in the valley. In the same year, about 320 *Glareola nuchalis* were counted in the Kariba and Mupata gorges (strictly outside the presently-defined area). Also of special interest are *Ardeola rufiventris*, *Ciconia episcopus*, *Vanellus albiceps*, *Plegadis falcinellus*, *Nettapus auritus* and *Burhinus vermiculatus*. Numbers of the first three species exceed the 1% threshold of their global populations.

Also, at least 52 species of raptor (including owls) have so far been recorded in the valley, including large numbers of *Haliaeetus vocifer* (c.1 pair per 3 km frontage) and an unknown number of *Scotopelia peli*. Being such a huge wildlife area, there is a good representation of vultures (six species) and eagles (12 species).

Key species		
A3 (A10)	Zambezian biome: Seven of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.	
A4i	Breeding (pairs)	Non-breeding
	<i>Glareola nuchalis</i>	— 320
	<i>Rynchops flavirostris</i>	— 136
A4ii	<i>Merops nubicoides</i>	10,500 birds —

Other threatened/endemic wildlife

All individuals of *Diceros bicornis* (CR) in the valley were either killed by poachers or translocated between 1984 and 1994. A small amount of poaching continues, on elephants and antelopes; it is thought that there is considerable poaching of fish from the Zambian side. The valley supports a full range of predators, including wild dog *Lycaon*

pictus (EN). The river is famous for its huge numbers of hippos *Hippopotamus amphibius* (several thousands) and crocodiles *Crocodylus niloticus*.

Conservation issues

The whole of the valley floor within this site lies in the Parks and Wild Life Estate. In the centre is the Mana Pools National Park, flanked on its west by the Hurungwe Safari Area, and on its east by the Sapi and Chewore Safari Areas. Controlled hunting on quota is permitted in the safari areas. The valley, particularly along the Zambezi river, is fully patrolled, and has been protected for a very long time, not only by legislation but also by inaccessibility and by tsetse fly *Glossina*. However, the fly was eradicated a few years ago. The Zambezi valley on both sides of the river is a World Heritage Site.

There are two main threats to the integrity of the area. The fundamental one is that the Zambezi river no longer floods in its original regime due to the Kariba Dam upstream, and to a lesser extent the Kafue Dam upstream on that tributary. Indeed, apart from in 2000, the last time that Kariba’s flood-gates were opened was in 1981. Thus the sandy islands in the river are no longer scoured by floods and are becoming consolidated and grown over by invasive *Acacia*.

Secondly, the protection of the valley has resulted in population explosions of elephants *Loxodonta africana* and impalas *Aepycerus melampus*, in particular in the national park. Undergrowth and grass are removed, regeneration is prevented and trees are damaged, resulting in open areas and greatly increased water run-off, leading to flash floods and collapse of banks. Wild-fires also occur annually in the dry season.

Further reading

Coppinger *et al.* (1988), Du Toit (1982), Harrison *et al.* (1997), Mundy *et al.* (1994), Mundy and Rockingham-Gill (no date), Williams *et al.* (1989).

Robert McIlwaine Recreational Park

Admin region Mashonaland West
Coordinates 17°52'S 30°46'E
Area 6,180 ha Altitude 1,370–1,515 m

ZW013
A3 (A10), A4i, A4iii
Recreational Park

Site description

Situated 30 km west of Harare, in the middle of the Mashonaland plateau, nearly half of this park comprises Lake Chivero (26.3 km² when full; formerly Lake McIlwaine), a water reservoir for the capital which was created by damming the Manyame river. The lake is 9.5 m deep on average and has a triangular shape, with the river entering at the south-east end and leaving at the north-west.

The park has a very attractive appearance, being a mixture of lake, natural woodland, grassland, and some granite kopje outcrops. These culminate in Bushman’s Point at the eastern end. There are many islands in the lake. Several of the kopjes have San (Bushman) paintings on their sheltered surfaces. The topography, however, is basically flat or slightly undulating, except at the north-western side where the Hunyani Hills rise.

The vegetation is almost entirely miombo woodland. The original woodland, particularly on the north bank, was cleared for tobacco farming in the past, but has been regenerating for the past 50 years. Interspersed among the woodlands are many large wooded anthills and areas of grassland. The lake-margins have many patches of reed *Phragmites*. The waters of the lake have been invaded by several weeds, including the non-native *Eichhornia*, and also *Pistia*, *Myriophyllum*, *Lagarosiphon*, *Azolla* and blue-green algae. At times the water seems to be a ‘soup’.

The park is given over mainly to water-sports and activities, in particular motorboats, yachts, skiing, canoeing and fishing. Many sites on the banks are clubs that service these activities. There is a research centre and bird sanctuary on the north bank, and a game park with many introduced game species on the opposite south bank. Both north and south banks have tourist chalets and lodges. Many day-trippers are subsistence fishers, who buy a cheap daily permit. There are 26 species of fish in the lake, including five exotics. Much of the water is drawn off from the lake for the city, and there are tributaries (Marimba, Mukuvisi and Nyatsime) flowing into the Manyame river or the dam itself which have major sewage works on

them. Also, the Mukuvisi flows right through the industrial sites of Harare.

Birds

See Box and Table 3 for key species. No threatened or restricted-range species depend on the park for survival, although *Egretta vinaceigula*, *Falco naumanni* and *Grus carunculatus* do occur very rarely, and *Phoenicopterus minor* and *Circus macrourus* may occasionally be seen. There are also c.75 of the nationally vulnerable *Struthio camelus*. *Buphagus erythrorhynchus* was successfully translocated to the park in 1991.

The park is on the tourist route for the miombo (Zambezian-biome) specials. Apart from the 11 species in the park that are globally restricted to this biome, another 12 species occur that are restricted to miombo in Zimbabwe at least: *Pseudhirundo griseopyga*, *Coracina pectoralis*, *Salpornis spilonotus*, *Hyliota australis*, *Chloropeta natalensis*, *Sylvietta whytii* (rare), *Cisticola brunnescens cinnamomea*, *Anthus similis*, *Lamprotornis chloropterus*, *Nectarinia cuprea*, *Anthreptes longuemarei* and *Euplectes macrourus*.

Lake Chivero hosts many waterbirds, and c.100 species are on the checklist. At times, thousands occur, as in July 1995, when 15,467 of 52 species were counted, including 2,991 *Phalacrocorax africanus*, 138 *Platalea alba*, 3,430 *Anas erythrorhyncha*, 830 *Netta erythrophthalma*, 614 *Himantopus himantopus* and 1,085 *Charadrius pecuarius*. In the austral winter, many ducks loaf on the dam during their flightless moult. Immediately downstream of Lake Chivero is the larger but shallower Lake Manyame (formerly Robertson) in another recreational park; Manyame usually supports more waterbirds than does Chivero, and in October 1987, for example, 27,077 individuals of 71 species were counted on the two dams, respectively 20,554 and 6,523.

More bird species have been recorded in the park than at any other locality in the country—c.450 species, or two-thirds of Zimbabwe’s avifauna. This is partly because birdwatching has been done there on a regular basis since 1952, and because of its proximity to Harare so that the bird club visits every month. In addition, part of the Ornithological Research Unit of the Parks and Wild Life Conservation Fund has been based at the research centre since 1973.

Key species		
A3 (A10)	Zambezian biome: 11 of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.	
A4i	Breeding (pairs)	Non-breeding
	<i>Netta erythrophthalma</i>	830
	<i>Charadrius pecuarius</i>	1,085
A4iii	More than 20,000 waterbirds occur	

Other threatened/endemic wildlife

Among mammals, several *Ceratotherium simum* (LR/cd) occur in the park, and confiscated *Manis temminckii* (LR/nt), a Specially Protected Species, are usually released into the game park. There is also a wildlife conservancy on the south side which, among other species, supports *Alcelaphus lichtensteinii* (LR/cd).

Conservation issues

The park is fully protected and patrolled under the Parks and Wild Life Act, and has been since 1952 when a then-smaller area was declared a National Park. The fishery operations and the birdlife are monitored by research staff of the Parks and Wild Life Conservation Fund.

The big problem for the park, or rather the lake, is pollution—from sewage effluent which accelerates eutrophication, industrial waste, and fertilizer and pesticide run-off from farms in the catchment area (2,136 km²). With the ever-increasing populations of Harare, and Chitungwiza to the south, the eutrophication is seen as the main problem for the lake and its amenities, although it will probably also benefit some bird species, at least in the short term. The shore-loving birds, however, in particular ducks and waders, decline in the face of any increase in weeds. Invasive water hyacinth *Eichhornia* can soon cover much of the lake, and so from time to time efforts at removing it are attempted. Perhaps a long-term solution is biocontrol by the weevil *Neochetina* sp., which was released a few years ago.

Further reading

Couto and Couto (1999), Marshall (1994), Mhlanga and Madziva (1990), Thornton (1982), Tree (1988).

Sebakwe Poort

Admin region Midlands

Coordinates 18°51'S 29°44'E

Area 3 ha Altitude 1,150–1,283 m

ZW014

A4i

Private Nature Reserve

Site description

Downstream by 10 km from the town of Kwekwe (which is in the geographical centre of Zimbabwe), and to its north-west, the Sebakwe river flows westwards through a 300-m-long gorge in a small range of hills, with cliffs up to 100 m in height. The river is up to 40 m wide, and there are almost no screes. The gorge is several kilometres downstream of the Lancashire Steel factory. Very close by on the east side are several small gold-mines, so that there is a certain amount of traffic on foot. The area is completely wooded in miombo, with *Acacia* lining the riverbanks. There is quite a diversity of tree species on the range of hills.

Birds

See Box for key species. *Ciconia nigra* nest on the cliffs, all but one pair being on the south cliff and facing north-east. This is the largest ‘colony’ in Zimbabwe. Also nesting on the cliffs are one pair of *Falco peregrinus* (in 1997 for the first time in several years) and one pair of *Falco biarmicus*.

Key species		
A4i	Breeding (pairs)	Non-breeding
<i>Ciconia nigra</i>	6–9	—

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The land belongs to Sebakwe Farms (Pvt) Ltd., a subsidiary of Sable Chemical Industries Ltd. The poort itself and a surrounding area are leased to the National Trust as a nature reserve, and are under the local supervision of the estates manager. Some patrolling is done. Illegal wood-cutting and probably snaring occur. Undoubtedly there is pollution of the Sebakwe river, and not just from the factory. The Sebakwe, and its main tributary the Bembezana, flow through a major barley-growing area to the east of Kwekwe, with consequent run-off of fertilizer and pesticides likely.

Wabai Hill (Debshan Ranch)

Admin region Matabeleland South

Coordinates 20°04'S 29°34'E

Area 100,000 ha Altitude 1,200–1,461 m

ZW015

A1, A4ii

Private Nature Reserve

Site description

Debshan Ranch (c.10,000 ha) is situated south of Shangani. It is primarily a cattle ranch, with up to 30,000 head, and therefore has vast areas of grassland. In recent years the ranch has also promoted wildlife utilization, namely sport-hunting of antelopes and leopard *Panthera pardus*. On one of its sections is a large granite inselberg called Wabai Hill (c.100 ha), which grades into a long ‘whaleback’ to the west. The Wabai is a beautiful and rather symmetrical dome, visible from far and wide on the surrounding plain, and has near-vertical slopes on three sides. The soils in the area are sandy, and there are many granite outcrops. Miombo woodland occurs in patches.

Birds

See Box for key species. Wabai Hill is a daily roost-site for *Gyps coprotheres*. Up to 225 birds (in March 1983) have been counted on the south-east faces, but the usual number is 100–150. Most are immatures. Wabai is the only known site for this species in Zimbabwe, and is the most northerly site (just) for the species in southern Africa. Sometimes in the rainy season, *Grus carunculatus* (rarely), *Falco naumanni* and *Circus macrourus* use the grasslands. At least 50 species of raptor (including owls) have been sighted on the ranch, which is also a haven for *Ardeotis kori*. In siNdebele, Wabai means crow, i.e. *Corvus albus*, but *Corvus albicollis* actually lives on the hill.

Key species			
A1	<i>Gyps coprotheres</i>		
A4ii		Breeding (pairs)	Non-breeding
	<i>Gyps coprotheres</i>	—	100–225

Other threatened/endemic wildlife

The ranch has the largest herd of *Damaliscus lunatus* (LR/cd) in the country.

Conservation issues

The ranch is owned by De Beers of South Africa, and for many years the management has been fully supportive of wildlife conservation measures. For *Gyps coprotheres*, Wabai Hill is protected, and a vulture ‘restaurant’ has been established. The ranch is patrolled by scouts, in addition to the cattle-hands. In November 1997, the government announced a list of farms and ranches to be compulsorily acquired for resettlement purposes, and 82% of Debshan Ranch is on the list, thus its future at the moment is uncertain. Then, in 2000, along with many other commercial properties, it suffered land invasions.

Further reading

Dale (1990), Edwards and Swanepoel (1992), Mundy and Steyn (1977), Mundy (1995).

Matobo Hills

Admin region Matabeleland South

Coordinates 20°30'S 28°30'E

Area 300,000 ha

Altitude 1,150–1,549 m

ZW016

A3 (A10)

National Park, Recreational Park

Site description

The granite rocks, inselbergs (locally called ‘dwala’ or ‘whaleback’) and castle kopjes, with their intervening flat grassy plains and vleis, of the Matobo Hills (also known locally as the Matopos) lie 25 km south of Bulawayo. They stretch for 90 km from beyond Mangwe Pass (c.28°E) in the west to Umzingwane Dam (c.29°E) in the east, and for c.30 km from Fort Usher (20°24'S) in the north almost to the Mtshabezi Mission (20°42'S) in the south. The catchment areas of 10 rivers are found in the hills, from the Mangwe and Simukwe in the west to the Chabezi and Lumani in the east. These rivers all flow north–south, and have created the spectacular Lumani falls as well as, in some stretches, gorges. Due to the run-off from the rocks in the rainy season, some grasslands become marshy vleis and ‘sponges’, late into the dry season.

The granitic sandy soils support three main vegetation-types: kopje woodlands (and other vegetation), flat woodlands, and grasslands. Water run-off from the dwalas results in forests and thickets at their bases, producing a wonderful diversity of flora. Cohabiting with the usual *Azelia*, *Commiphora*, *Kirkia* and *Pterocarpus* are woody species of Zimbabwe’s eastern forests. The flat woodlands are open, consisting of sandveld woodland of *Terminalia*, *Burkea*, *Pterocarpus* and *Acacia*, with scattered smaller areas of mopane woodland and *Brachystegia* woodland. The grassland is composed of more than 100 plant species; sedges, reeds *Phragmites* and *Pennisetum* are dominant in wetter areas. Approximately half of the area is bare granite. The remainder is classified as suitable for grazing and cultivation. The National Park (424 km²) itself supports a thriving non-consumptive tourism, and allows neighbouring villagers to collect thatching grass. Cattle are grazed illegally in the park. The Umzingwane Rural District Council on the east is trying to set up tourism initiatives. Most of the Matobo Hills fall within Communal Lands and a minority into commercial farmland.

The beautiful hills are steeped in the country’s history, and hold the highest density of San (Bushman) rock paintings in Africa. Historic sites and caves connected with the San, Rozwi, Kalanga, Matabele and Europeans abound in the hills, and many are National Monuments.

Birds

See Box and Table 3 for key species. No threatened or restricted-range species depend on the Matobo Hills, but *Gyps coprotheres* overfly the area and *Crex crex* have occasionally been seen in vleis. The national park and its immediate surrounds are world-famous among ornithologists for the raptor assemblage that uses them—59 species

have been recorded so far (including owls), of which 32 are known to breed, with a 1978 estimate of 76 pairs per 100 km². The combined richness of species and density of individuals is possibly the highest in the world, and includes 75 pairs of *Aquila verreauxii*. Many of the raptors nest on rock-faces, as do c.20 pairs of *Ciconia nigra*. The hills support a considerable population of *Pinarornis plumosus*, and a few other characteristic species of the Zambebian biome such as *Cossypha humeralis* and *Nectarinia manoensis*. In 1975 *Buphagus africanus* was successfully introduced to the park, and now *B. erythrorhynchus* is naturally expanding its range there.

Key species

A3 (A10) Zambebian biome: Six of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

Other threatened/endemic wildlife

The shrub *Strychnos matopensis* and the herb *Barleria matopensis* are found nowhere else in the country, and the tree *Turraea fischeri ehlersii* is endemic to the hills. The national park is an Intensive Protection Zone for both species of rhino, *Diceros bicornis* (CR) and *Ceratotherium simum* (LR/cd).

Conservation issues

In November 1926 a National Park and Game Reserve was declared within the hills, covering c.97,300 ha. It was re-proclaimed in 1930, and in 1953 was enlarged to c.102,080 ha, with families being evicted. There was then a change in policy, and in 1963 a smaller Matobo National Park was re-proclaimed, reduced to c.38,200 ha, the balance being declared ‘tribal trust land’. But soon, by Act of Parliament in 1965, the Rhodes Matopos National Park was declared; it was enlarged to c.45,100 ha, by the addition of two farms from the Rhodes Matopos Estate on the northern boundary. Currently, the national park covers 42,400 ha, and the Lake Matopos Recreational Park on its northern side occupies 2,900 ha. Both are controlled by the Parks and Wild Life Conservation Fund. Moves are being made to obtain World Heritage Site status for the hills (or part of them). Outside the national park, the hills are unprotected in communal land, where there is widespread illegal cutting of trees, and poaching of small animals such as the dassies (hyrax) and antelope (several raptor species depend on dassies as their main food supply).

Further reading

Ashton (1981), Barry and Mundy (1998), Coates Palgrave (1977), Cooke (1986), Donnelly (1985), Gargett (1990), Lightfoot (1981), Mundy (in press).

Driefontein grasslands

Admin region Masvingo, Midlands

Coordinates 19°23'S 30°47'E

Area 20,000 ha Altitude 1,500 m

ZW017

A1

Unprotected

Site description

The site is an isolated patch of Kalahari Sands on the watershed, a little to the east of the geographical centre of Zimbabwe. Within it lies the Driefontein Mission with the two Driefontein dams, and close by to the east is the commercial farming community of Felixburg. The vistas are flat and seemingly endless. Most of the landscape is under natural highveld grassland, dominated by the thatching grass *Hyparrhenia* which can grow to a height of 3 m. Soaks, seeps, and depressions collect water and form many dambos/vleis in the area, due to the flat terrain. There are a few streams, such as the Nyororo and Shashe, and scattered patches of miombo woodland. Due to the general sufficiency of rainfall, there are areas of rain-fed maize agriculture in summer and irrigated wheat in the austral winter. Temperatures are very equable, and frosts in winter are common. The area is largely divided into commercial ranches which specialize in cattle. There are several mines around Felixburg itself, and Driefontein Mission has a church, a hospital and school, and agricultural crops.

Birds

See Box for key species. The area supports a large number of *Grus carunculatus*. In October 1989, a roost of 87 birds was present at one of the Driefontein dams, the largest flock seen in the country in recent

decades. More recent winter surveys of the District have located 25 pairs and a flock of ‘floaters’ (1996), after a good 1995/96 rainy season. Up to 40 pairs have been located in the larger area of the central watershed, Chivhu–Mvuma–Felixburg, which includes this site. Generally the cranes form pairs when the conditions are marshy, and flock together during times of drought. They may then glean in old maize and wheat lands.

The grassland and cattle-ranching environment is benign for raptors, and more than 30 species (excluding owls) have been recorded, including occasional sightings of *Gyps coprotheres*, *Circus macrourus* and *Falco naumanni*. Due to the extent of dambos, culminating in the large Widgeon Pan on the eastern edge of the area (19°23'S 30°56'E), there is a good likelihood of *Crex crex* and *Gallinago media* (and even, perhaps, *Sarothrura ayresii*). *Chlidonias hybridus* was recorded breeding there in 1993.

Key species

A1 *Grus carunculatus*

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

Almost the whole area is privately owned, except for some resettlement of peasants north of the dam. However, most if not all commercial farmers/ranchers are sympathetic to wildlife and would consider themselves conservationists. A check is kept on poaching and snaring. Fortunately birds are of little interest to the local population. *G. carunculatus* would only suffer from drought, any residual pesticides on cereals, and also possibly from disturbance by small boys. For the last, a poster has been printed for display at schools in the area (and nationwide). In November 1997, the government designated some of the commercial ranches for compulsory acquisition, and so the immediate future is now uncertain. In 2000, many properties suffered land invasions.

Further reading

Couto and Couto (2000), Francis (1990), Masterson and Parkes (1994), Mundy *et al.* (1984).

Limpopo–Mwenezi flood-plain and pans

Admin region Masvingo

Coordinates 22°15'S 31°10'E

Area 70,000 ha Altitude c.300 m

ZW018

A2 (092), A3 (A09)

Unprotected

Site description

The Limpopo river forms the southern border of Zimbabwe with South Africa, and flows west–east. The Mwenezi river is a major tributary and flows north–south. They do not meet in Zimbabwe, but converge to a distance of 20 km apart. In between is the Sengwe Communal Land in Chiredzi District of Masvingo Province, mostly a flat and undulating area around 300 m in altitude. The border between Zimbabwe and Mozambique is a straight line across country, marked with a game fence. The three countries meet on the Limpopo river, just north of Pafuri, at 22°25'S 31°19'E. The Mwenezi river forms a boundary between the Gonarezhou National Park and the Malapati Safari Area, and has formed the Manjinji Pan (a sanctuary under the Parks and Wild Life Act) from an old oxbow. The pan is at 22°07'S 31°24'E and is in the Communal Land. There is some development of a flood-plain downstream from the pan. Towards Chikwarakwara, to the west on the Limpopo river, are more flood-plain areas. The natural vegetation of the area is mopane woodland and *Terminalia* woodland. Manjinji Pan is surrounded by thick woodland, dominated by fever-tree *Acacia*. There are many palms *Hyphaene* in the area. The local people practise subsistence agriculture and pastoralism with cattle and goats. They regard Manjinji Pan as a sacred area.

Birds

See Box and Tables 2 and 3 for key species. *Serinus citrinipectus* is common in the area, apparently associated with *Hyphaene* palm-savanna. Flocks of hundreds were seen in 1990. *Anthreptes reichenowi* has also been seen, but it is considered to be much rarer than *Serinus*

citrinipectus. *Gyps coprotheres* flies over the District and is likely to feed on dead animals there. When full, the Manjinji Pan attracts hundreds of waterbirds.

Key species

A2 (092) South-east African coast EBA: The single species of this EBA that occurs in Zimbabwe has been recorded at this site; see Table 2.

A3 (A09) East African Coast biome: Three of the 11 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

None known to BirdLife International.

■ Conservation issues

The District Council protects the Manjinji Pan, but the local people are already in the habit of doing so. The *Hyphaene* palms are used to make cane furniture and the stems cut to collect sap for wine-making. Over-exploitation of the palms could threaten *S. citrinipectus*. Any threats to the area in general are likely to come from overgrazing and trampling by cattle.

■ Further reading

Harland (1974), Harrison *et al.* (1997), Hustler (1991), Irwin (1995).

Mavuradonha mountains

Admin region Mashonaland Central

Coordinates 16°30'S 31°10'E

A3 (A10)

Area 57,500 ha Altitude 600–1,628 m Private Nature/Game Reserve

■ Site description

The Mavuradonha mountains form the eastern part of the Zambezi Escarpment in Zimbabwe, rising over 1,000 m above the Zambezi valley and peaking at Banirembizi. The mountains lie north of the town of Centenary, falling within the Muzarabani District. The mountains intercept the north-east winds and have a cooler, moister climate than the valley below. ‘Mavuradonha’ refers to the rain and mist. There are numerous streams and rivers rising in the mountains, flowing north to the Zambezi. The terrain is steep and rocky with elephant trails winding up and down the mountain. In the east, the Musengezi river has cut a gorge through the mountains, creating attractive scenery. The area holds a great deal of well-developed miombo woodland, with most of the representative species of *Brachystegia* and *Julbernardia*. There are also gully, ravine or ‘kloof’ woodlands, with higher soil moisture and nutrients, providing a greater range of microhabitats. Large forest trees such as *Khaya anthotheca* occur, but are scattered and in low numbers.

■ Birds

See Box and Table 3 for key species. The mountains are known for their variety and density of raptors; atlas records show 38 species (including owls). Of particular interest are *Hieraaetus ayresii*, *Stephanoaetus coronatus*, *Circetus cinerascens*, *Falco peregrinus* and *F. naumanni*. The Zambezi biome species (particularly those of the miombo) are well represented.

Key species

A3 (A10) Zambezi biome: 13 of the 23 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

The Wilderness Area is a refuge for *Loxodonta africana* (EN), *Syncerus caffer* (LR/cd), *Panthera leo* (VU) and a variety of antelope. The vegetation is poorly studied but it may hold some unusual species dependent on a high-moisture regime.

■ Conservation issues

The Mavuradonha Wilderness Area covers c.575 km², forming a protected area between the Muzarabani Communal Land to the north and the Centenary Commercial Farming and Resettlement Areas to the south. The Muzarabani District Council, in conjunction with the Wildlife Society of Zimbabwe, run a small tourist camp. Revenues accrue to the Council through a CAMPFIRE project. The Wilderness Area is relatively well protected, and wildlife numbers are increasing.

Elsewhere, the rugged terrain prevents access and exploitation, although there is felling of the larger trees and limited poaching. The CAMPFIRE initiative will hopefully assist in protecting the mountains from uncontrolled settlements and reduce the poaching.

■ Further reading

Timberlake (1996), Timberlake *et al.* (1993).

Save–Runde junction

Admin region Masvingo, Manicaland

Coordinates 21°19'S 32°28'E

A2 (092), A3 (A09)

Area 5,000 ha Altitude 180–300 m

National Park

■ Site description

Draining a huge part of eastern and south-eastern Zimbabwe are two important rivers, the Save (formerly Sabi) on the east, rising on Charter Estate about 70 km due south of Harare, and the Runde (previously Lundi) in the south, rising at Gweru. Eventually, these two rivers meet in south-east Zimbabwe, to continue through Mozambique as the Rio Save. By the time the two rivers join, each is about 1 km wide, consisting of sandy riverbeds between terraces of riparian woodland. The Save river, in particular, is heavily silt-laden from its journey through the Communal Lands of the Buhera District. The junction is the lowest point in the country, lying at c.180 m.

Between the two rivers, and close to their junction, is the Tamboharta Pan which, in wet years, can flood to a diameter of 2 km or more. Tamboharta Pan is fringed by *Acacia* trees. South of the Runde and 8 km west of the junction is Machiniwa Pan, which is not a permanently marshy area like Tamboharta, and is fringed by baobabs *Adansonia*. The rivers flow between terraces (two on each bank) which support a narrow belt of riparian woodland, comprising species such as *Trichilia*, *Diospyros*, *Kigelia* and a lower storey of *Combretum* and *Acacia*. The junction is set in woodland and scrub of mopane *Colophospermum*. Close to the rivers are large numbers of Ilala palms *Hyphaene*, many of which show the impact of elephants. The Save river holds a long island (5 km by 1.5 km), which is longitudinally divided into national park to the west and communal land to the east.

■ Birds

See Box and Tables 2 and 3 for key species. *Serinus citrinipectus* occurs in the Ilala palm veld and it is suspected that *Anthreptes reichenowi* is also regularly present. *Falco fasciinucha* has been claimed from the area, but the nearest known breeding site is at Mount Rudd, 150 km due north, so these records need confirmation. Other species of global conservation concern that occasionally pass through this site are *Gyps coprotheres*, *Falco naumanni*, *Crex crex* and *Circetus fasciolatus*.

To date, the Mahenya Safari Lodge (at the rivers’ junction) has at least 357 species on its checklist for the area. The junction area has affinities with the East African Coast biome. For example, *Poicephalus cryptoxanthus*, *Vanellus lugubris*, *Telophorus quadricolor* and *Ploceus xanthopterus* occur here. In addition, *Tauraco livingstonii*, *Pyrenestes minor*, and possibly even *Cercococcyx montanus* and *Lamprolornis corruscus*, may occur.

Key species

A2 (092) South-east African coast EBA: The single species of this EBA that occurs in Zimbabwe has been recorded at this site; see Table 2.

A3 (A09) East African Coast biome: Four of the 11 species of this biome that occur in Zimbabwe have been recorded at this site; see Table 3.

■ Other threatened/endemic wildlife

None known to BirdLife International.

■ Conservation issues

The Runde river and west bank of the Save river are in the Gonarezhou National Park, and the east bank of the Save is in the Ndowoyo Communal Land of the Chipinge District, under the control of Chief Mahenya. The Communal Land is also devoted to sustainable utilization of wildlife under the CAMPFIRE scheme and has hunting quotas for *Loxodonta africana*, *Syncerus caffer* and *Panthera leo*. The junction is well protected on one side under the Parks and Wild Life

Act, and by the wildlife-conservation attitude in the Communal Land on the other. There is a safari lodge on the island devoted to non-consumptive tourism.

The major issues are the silt load in the Save river and the high elephant density in the national park. Poaching occurs—*Diceros bicornis* was eliminated and there has been heavy poaching of elephant

in the past. The international border with Mozambique is fenced and has a minefield along it.

■ Further reading

Douglas (1997), Sharp (1986).

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