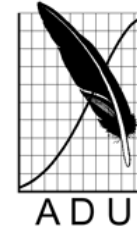


# Ornithological Observations



An electronic journal published by BirdLife South Africa and the Animal Demography Unit at the University of Cape Town



Ornithological Observations accepts papers containing faunistic information about birds. This includes descriptions of distribution, behaviour, breeding, foraging, food, movement, measurements, habitat and plumage. It will also consider for publication a variety of other interesting or relevant ornithological material: reports of projects and conferences, annotated checklists for a site or region, specialist bibliographies, and any other interesting or relevant material.

**Editor: Arnold van der Westhuizen**

---

## ANNOTATED CHECKLIST OF THE BIRDS OF BANHINE NATIONAL PARK, SOUTHERN MOZAMBIQUE

**DW Pietersen and EW Pietersen**

Recommended citation format:

Pietersen DW, Pietersen EW 2010. Annotated checklist of the birds of Banhine National Park, Southern Mozambique. *Ornithological Observations* 1: 7-37

URL: <http://oo.adu.org.za/content.php?id=4>

Published online: 21 October 2010

- ISSN 2219-0341 -



## ANNOTATED CHECKLIST OF THE BIRDS OF BANHINE NATIONAL PARK, SOUTHERN MOZAMBIQUE

Darren W Pietersen<sup>1\*</sup> and Errol W Pietersen<sup>2</sup>

<sup>1</sup>Department of Zoology and Entomology, University of Pretoria, Pretoria, 0002

<sup>2</sup>PO Box 293, Upington, 8800

\*Corresponding author: [dwpietersen@zoology.up.ac.za](mailto:dwpietersen@zoology.up.ac.za)

### ABSTRACT

Banhine National Park, situated in Gaza Province, Mozambique, covers an area of 700 000 ha of near-pristine landscapes. Within the park borders, 11 plant communities have been identified, which can be broadly grouped into five major landscape types, *viz.* wetland, grassland, Mopane, sandveld and *Androstachys* landscapes. These landscapes support a wealth of bird species, with 318 species being confirmed in the park to date and many additional species believed to still occur in the park. Of the species recorded to date, 76 are significant range expansions for southern Mozambique, six species were previously subject to confirmation from southern Mozambique, two species have not previously been recorded from southern Mozambique and nine species are considered to be regionally or globally threatened. Of the five landscapes, the wetland boasts by far the greatest diversity and greatest numbers of species, and is probably the most important, and most threatened, landscape in the park.

### KEYWORDS

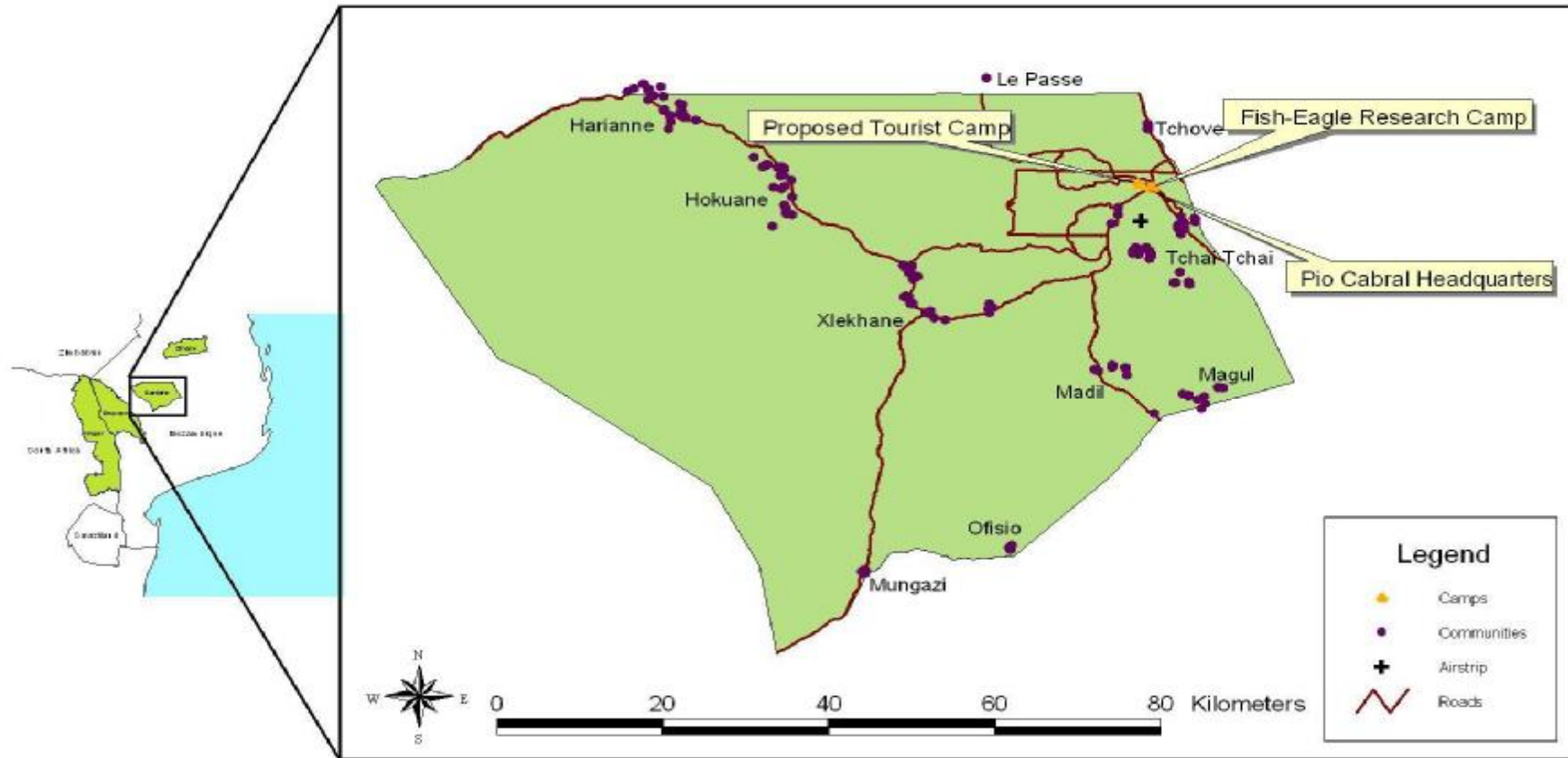
Banhine National Park, avifauna, annotated checklist

### INTRODUCTION

The Banhine National Park is situated in the Gaza Province of southern Mozambique, between 22° 30' – 23° 20'S and 32° 15' – 33° 25' E. The park covers 700 000 ha of near-pristine habitat that is

typified by deep sandy soils overlying calcrete, with the calcrete only rarely becoming visible on the surface as broken lines which extend for a few hundred metres (Stalmans and Wishart 2005; *pers. obs.*). The topography is remarkably flat, rising from 69 m asl in the south-east to 181 m asl in the north-west (McNamara and Larsen 2006; Stalmans and Wishart 2005).

Eleven plant communities have been identified, which can be broadly grouped into five major landscape types, *viz.* wetland, grassland, Mopane, sandveld and *Androstachys* landscapes (Stalmans and Wishart 2005). The sandveld and mopane landscapes are by far the biggest, covering 47% and 34% of the park respectively (Stalmans 2003). The grassland landscape covers 14% of the park, while *Androstachys* woodlands and the wetland cover the smallest areas at 5% and 1% respectively (Stalmans 2003). The most distinct feature in the park is undoubtedly the wetland, which despite covering only 1% of the surface area is virtually the only source of permanent water in the entire region. Resultantly it also supports a disproportionately large portion of the birdlife in this area. The wetland covers an area of 6 588 ha in the north-eastern part of the park (Stalmans and Wishart 2005), and is fed by water running eastwards off the Zimbabwe plateau (McNamara and Larsen 2006). The wetland is of a converging endorheic delta-type system with limited overflow (Stalmans and Wishart 2005). The water enters the Banhine wetland in the east, from which it spreads out and inundates the swamps. The alluvial fan formed from deposits of the Changane River in the east controls the water level in the wetland, with water flowing out of the wetland once the water exceeds the level of this plug (McNamara and Larsen 2006; Stalmans and Wishart 2005). In addition to the main wetland, there are also seasonal streams and a number of smaller temporary and permanent wetlands scattered throughout the park (McNamara and Larsen 2006), including a salt pan below the alluvial fan on the eastern extremity of the wetland (*pers. obs.*). A detailed vegetation map can be found in Stalmans and Wishart (2005).



**Figure 1** - Map of Banhine National Park showing the camps, major roads and communities.



Avifaunal observations were made on a near-monthly basis between November 2006 and May 2008, with trips averaging 10-21 days. Owing to a prolonged drought, the wetland was initially reduced to a number of small isolated permanent ponds, while the rest of the wetland was dominated by tall grass and sedges. A handful of permanent pans, both natural and man-made by digging into the water table, were present in the vicinity and away from the main wetland. Following good rains, the wetland flooded again for the first time in five years during December 2007. Virtually overnight the wetland was transformed as a cacophony of bird and frog calls resonated from the wetland both day and night, as thousands of birds made use of the windfall.

Very little is known about the avifauna of Mozambique, with the most recent surveys being done by Clancey (1996) and Parker (1999). Even these surveys only marginally surveyed the Banhine National Park and at a time when the wetland was dry (S Munthali, *pers. comm.*). This then represents the first checklist for the birds of Banhine National Park, spanning a period both preceding and subsequent to the inundation of the wetland. (See Figure 1 for localities mentioned in the text).

## SPECIES ACCOUNTS

### CLASS: AVES STRUTHIONIFORMES

#### Struthionidae

##### **Common Ostrich** *Struthio camelus*

Birds were commonly seen throughout the reserve, but showed a distinct preference for grasslands and the open areas adjoining the extensive wetland. Subjectively, the birds occurring here appear to be a lot bigger and heavier than those occurring in South Africa. This is most probably due to this population still being genetically pure and uninfluenced by hybridisation between the southern African race *S. c. australis* and domesticated birds originating from North and West Africa (Parker 1999; Harrison *et al.* 1997; Freitag and Robinson

1993). This genetic purity emphasises the importance of this population and highlights the need for effective conservation thereof. During the 2004 aerial census, 210 Ostriches were counted in nine census squares distributed throughout the park (Stalmans 2004), while in 2007 213 birds were counted (excluding chicks). The extrapolated data from the 2004 census estimates the population in the park to be between 500 and 800 individuals (Stalmans 2004). This is significant as Parker (1999) estimated the entire population in southern Mozambique at fewer than 200 individuals. This species has also been recorded breeding in the park.

## GALLIFORMES

#### Phasianidae

##### **Coqui Francolin** *Peliperdix coqui*

Fairly common resident. Birds were heard and seen all through the park, but appeared to show a preference for sandveld and the region around the wetland.

##### **Crested Francolin** *Dendroperdix sephaena*

Relatively common breeding resident throughout the reserve.

##### **Shelley's Francolin** *Scleroptila shelleyi*

A single individual was seen near Pio Cabral headquarters, although this species is likely to be more common than this single record suggests.

##### **Red-necked Spurfowl** *Pternistis afer*

Uncommon, only recorded in the vicinity of the wetland. Parker (1999) recorded this species mainly from coastal regions, with the handful of inland records occurring mainly up large rivers. This represents a westward range expansion for this species in southern Mozambique.

##### **Swainson's Spurfowl** *Pternistis swainsonii*

A common breeding resident in the park. Although Parker (1999) reports the ranges of this species and the previous species to be



mutually exclusive in southern Mozambique, both species were found occurring sympatrically in Banhine National Park.

#### **Common Quail** *Coturnix coturnix*

A fairly common species, being found at scattered localities throughout the park. Birds tended to prefer more open environs, and were flushed from cover in the dry wetland on a number of occasions. These records are further north-west than those recorded by Parker (1999).

#### **Harlequin Quail** *Coturnix delegorguei*

Fairly common summer visitor, with birds being recorded at scattered localities throughout the park. Birds tended to prefer more open areas with dense grass cover, and were regularly flushed from cover in the dry wetland. These records are further north and west respectively than those recorded by Parker (1999).

#### **Numididae**

##### **Crested Guineafowl** *Guttera edouardi*

Fairly common resident throughout the park, although more common in the south where it frequents Lebombo Ironwood *Androstachys johnsonii* thickets. Breeding was recorded in January.

##### **Helmeted Guineafowl** *Numida meleagris*

Fairly common and widespread throughout the park, chicks were observed in April.

### **ANSERIFORMES**

#### **Dendrocygnidae**

##### **Fulvous Duck** *Dendrocygna bicolor*

Fairly common resident after the wetland flooded. Flocks of up to 17 birds were seen flying over the wetland in the afternoons. Breeding was recorded in April.

##### **White-faced Duck** *Dendrocygna viduata*

This species was commonly seen in the few ponds remaining in the wetland before it flooded, and over the entire wetland post flood. Breeding was recorded in March and April.

##### **White-backed Duck** *Thalassornis leuconotus*

A fairly common species on the wetland after it flooded. Ducklings were recorded in April.

#### **Anatidae**

##### **Maccoa Duck** *Oxyura maccoa*

Birds were seen in the wetland during February 2008. This represents a new species for Mozambique. Despite this single record, it is believed that this species occurs more frequently in southern Mozambique. In April 1998, birds were present on a floodplain near the coastal lodge of Paindane, near Inhambane, following exceptionally good rains (*pers. obs.*). It is possible that this species may occur more frequently following above-average rainfall.

##### **Egyptian Goose** *Alopochen aegyptiacus*

Fairly common. Seen on the remaining ponds in the wetland prior to flooding, and throughout the wetland post flooding.

##### **Spur-winged Goose** *Plectropterus gambensis*

Common on the ponds remaining in the wetland prior to flooding, as well as throughout the wetland after it flooded.

##### **Comb Duck** *Sarkidiornis melanotos*

Fairly common on ponds before the wetland flooded, and common on the wetland after it flooded.

##### **African Pygmy-Goose** *Nettapus auritus*

Birds were first recorded after the wetland had flooded, at which point they were common. Birds were seen to favour ponds and stretches of open water that were covered in, or surrounded by, emergent vegetation.

**Red-billed Teal** *Anas erythrorhyncha*

Fairly common resident, birds were seen breeding in March.

**Hottentot Teal** *Anas hottentota*

Birds were first recorded on the wetland in March 2008 after it had flooded, and were recorded breeding here during May 2008.

**Southern Pochard** *Netta erythrophthalma*

This species was commonly seen on open water in the wetland after it flooded. This represents a north-west range expansion for this species in southern Mozambique.

## TURNICIFORMES

## Turnicidae

**Kurrichane Buttonquail** *Turnix sylvaticus*

A common species that was frequently recorded throughout the park.

## PICIFORMES

## Indicatoridae

**Lesser Honeyguide** *Indicator minor*

An uncommon species, occasionally recorded from sandveld throughout the park. This record fills the central gap in the distribution of this species in southern Mozambique.

**Brown-backed Honeybird** *Prodotiscus regulus*

An uncommon species, recorded sporadically from sandveld and woodland habitat in the park. Most records were recorded in winter.

## Picidae

**Bennett's Woodpecker** *Campethera bennettii*

A single bird was observed during March 2008. This species is likely to be more common than this single record suggests.

**Golden-tailed Woodpecker** *Campethera abingoni*

Commonly recorded throughout the park from sandveld and woodland habitats.

**Green-backed Woodpecker** *Campethera cailliautii*

A single bird was present at Fish-Eagle Research Camp during July 2007. It is believed that this species is more common south of the Save River than currently believed, as birds were regularly recorded from the San Sebastian peninsula during 2002 and 2003 (*pers. obs.*). This species is possibly a rare to uncommon visitor to woodlands in the park, being more common along the coast (Parker 1999; *pers. obs.*). Its inconspicuous nature is also likely to contribute to its low recording rate (Parker 1999).

**Cardinal Woodpecker** *Dendropicos fuscescens*

A common breeding resident in woodland in the park. Breeding was recorded in November.

**Bearded Woodpecker** *Dendropicos namaquus*

Uncommon resident in the park, this species is also likely to breed here.

## Lybiidae

**Yellow-fronted Tinkerbird** *Pogoniulus chrysoconus*

A common resident in woodland habitats throughout the park.

**Acacia Pied Barbet** *Tricholaema leucomelas*

A common and conspicuous resident of woodland habitats throughout the park.

**Crested Barbet** *Trachyphonus vaillantii*

Uncommon visitor. The occurrence of the species is likely to be influenced by the limited amount of available food, but the population is likely to increase during spring and summer and when the wetland is flooded, due to an associated increase in available food.



## BUCEROTIFORMES

### Bucerotidae

#### **Southern Yellow-billed Hornbill** *Tockus leucomelas*

This species was commonly found in woodland throughout the park.

#### **Crowned Hornbill** *Tockus alboterminatus*

A common species in woodland habitats throughout the park.

#### **African Grey Hornbill** *Tockus nasutus*

Commonly seen in woodland habitats throughout the park.

#### **Trumpeter Hornbill** *Bycanistes bucinator*

An uncommon species recorded from mature woodlands in the park, especially those lining the wetland. The occurrence of this species is most likely to be limited by food availability.

### Bucorvidae

#### **Southern Ground-Hornbill** *Bucorvus leadbeateri*

Ground hornbills were heard and seen fairly frequently throughout the park. Breeding was recorded in January. During the 2004 aerial census 29 Southern Ground-Hornbills were recorded from the census squares (Stalmans 2004), while during the 2007 aerial census 26 birds were recorded in these same squares. The actual number of birds in the park is likely to be higher than these figures indicate, as both censuses only sampled a representative portion of the park and not the entire park.

## UPUIFORMES

### Upupidae

#### **African Hoopoe** *Upupa africana*

Common resident, breeding was observed in September.

### Phoeniculidae

#### **Green Wood-Hoopoe** *Phoeniculus purpureus*

A common breeding resident in the park, breeding was observed in October.

### Rhinopomastidae

#### **Common Scimitarbill** *Rhinopomastus cyanomelas*

Common resident, this species is also likely to breed here.

## CORACIIFORMES

### Coraciidae

#### **European Roller** *Coracias garrulus*

Common summer migrant. Birds were first recorded in late November and all birds had left by mid-April.

#### **Lilac-breasted Roller** *Coracias caudatus*

Common resident, birds were recorded throughout the park. This species most probably breeds here.

#### **Purple Roller** *Coracias naevius*

A rare visitor to the park.

### Alcedinidae

#### **Malachite Kingfisher** *Alcedo cristata*

This small kingfisher was commonly seen in waterside growth in the wetland after it had flooded.

#### **African Pygmy-Kingfisher** *Ispidina picta*

Rare visitor, single birds were seen in woodland during July 2007 and March 2008. This species is likely to be more common than these records suggest. Parker (1999) describes this species as a rare breeding summer migrant to southern Mozambique, although the winter record suggests that it may be a rare resident.

**Dacelonidae****Woodland Kingfisher** *Halcyon senegalensis*

Uncommon summer migrant. Birds were first recorded in late November and all birds had left by the end of March. Within the park, this species is largely confined to the vicinity of the wetland.

**Brown-hooded Kingfisher** *Halcyon albiventris*

Common breeding resident, breeding occurred in October and November.

**Striped Kingfisher** *Halcyon chelicuti*

Common breeding resident, breeding was observed in November.

**Cerylidae****Giant Kingfisher** *Megaceryle maxima*

Rare visitor. This species may be resident in suitable habitat in Southern Mozambique, but been overlooked to date. A single bird was seen flying over the wetland after it had flooded. This represents a substantial north-eastward range expansion for this species in southern Mozambique.

**Pied Kingfisher** *Ceryle rudis*

An uncommon visitor, birds were seen foraging in the wetland after it had flooded. This species is probably resident as long as there is water in the wetland. This represents a substantial north-eastward range expansion for this species in southern Mozambique.

**Meropidae****Little Bee-eater** *Merops pusillus*

Common breeding resident throughout the park. Breeding occurred in October and November.

**Swallow-tailed Bee-eater** *Merops hirundineus*

Uncommon resident, most often recorded from sandveld in the vicinity of Fish-Eagle Research Camp. Birds were more common prior to the wetland flooding. No birds were observed here during

winter, although this may be an observation oversight as it has been suggested that birds migrate from the arid western portions of southern Africa eastwards during winter, and there should thus be an influx of birds here during winter (Parker 1999; Herremans and Barnes 1997).

**Blue-cheeked Bee-eater** *Merops persicus*

Common summer resident, birds were most often seen in the vicinity of the wetland. This species was first recorded by late October and all individuals had left by the end of April.

**European Bee-eater** *Merops apiaster*

Common summer resident, birds were present in this region from late October to the end of March.

**Southern Carmine Bee-eater** *Merops nubicoides*

Uncommon summer migrant, birds were present from mid-January until the end of March. This species was most common in the dry wetland, and in the vicinity of the wetland after it had flooded. These records extend the known distribution of this species in southern Mozambique further north-west.

**COLIIFORMES****Coliidae****Speckled Mousebird** *Colius striatus*

Common breeding resident throughout the reserve.

**Red-faced Mousebird** *Urocolius indicus*

Common breeding resident throughout the reserve.

**CUCULIFORMES****Cuculidae****Jacobin Cuckoo** *Clamator jacobinus*

An uncommon summer migrant, birds were recorded in this region from late October until the end of February.





**Levaillant's Cuckoo** *Clamator levaillantii*

Uncommon summer migrant, birds were present from mid-November until the end of February.

**Great Spotted Cuckoo** *Clamator glandarius*

A rare visitor to the park, a bird was present at the end of March 2007. Although this species is probably more common than this single record suggests, it is unlikely to be common and is considered to be rare in southern Mozambique (Parker 1999). This record represents an eastward range expansion for this species in this region.

**Red-chested Cuckoo** *Cuculus solitarius*

This species is an uncommon summer visitor to the park, only being recorded in November 2006 and January 2008.

**Black Cuckoo** *Cuculus clamosus*

Uncommon summer visitor, birds were recorded from mid-November to the end of February.

**Common Cuckoo** *Cuculus canorus*

An uncommon summer visitor, birds were recorded between January and March. Although very similar to the next species, the two species were separated by the extent of yellow on the bill and the undertail pattern. This species has previously been recorded from southern Mozambique (Clancey 1996; McLachlan and Liversidge 1978), although Parker (1999) listed it as a species that requires confirmation, believing that at least some of these earlier records actually refer to the African Cuckoo.

**African Cuckoo** *Cuculus gularis*

Uncommon summer migrant, birds were recorded from woodland within the park between November and January.

**Klaas's Cuckoo** *Chrysococcyx klaas*

Common summer resident, birds were recorded from September to April. A juvenile was seen in March.

**Diderick Cuckoo** *Chrysococcyx caprius*

A common summer migrant, birds were recorded from November to May.

**Centropodidae**

**Black Coucal** *Centropus grillii*

A rare species, birds were recorded in the wetland between March and May 2008. This species is likely to be more common than these records suggest, as their numbers rapidly increase following favourable climatic conditions (heavy rains) (*pers. obs.*). Birds are likely to be uncommon to fairly common in the wetland when there is sufficient water to create the marshy conditions favoured by this species. These records represent a large north-westward range expansion for the species in southern Mozambique.

**Burchell's Coucal** *Centropus burchellii*

Common resident in the park, birds were regularly seen in the vicinity of the wetland, both before and after it flooded. These records represent a slight northward range expansion for this species in southern Mozambique.

**PSITTACIFORMES**

**Psittacidae**

**Grey-headed Parrot** *Poicephalus fuscicollis*

An uncommon resident in the park, birds were most often seen in sandveld and at the periphery of the wetland, often in association with Baobab *Adansonia digitata* trees, in which they breed (Symes 2005; Symes and Perrin 2004).

**Brown-headed Parrot** *Poicephalus cryptoxanthus*

Common resident.



## APODIFORMES

### Apodidae

#### Common Swift *Apus apus*

Rare summer visitor, birds were seen in the park from November to January.

## MUSOPHAGIFORMES

### Musophagidae

#### Purple-crested Turaco *Gallirex porphyreolophus*

A rare visitor to the park, birds were recorded in the vicinity of Harianne in February 2008. This species is likely to be an uncommon resident in the park, with its distribution mainly limited by food sources.

#### Grey Go-away-bird *Corythaixoides concolor*

Common resident throughout the park.

## STRIGIFORMES

### Tytonidae

#### Barn Owl *Tyto alba*

Common breeding resident throughout the park. Active nests were found between February and July. One nest was in an abandoned underground water tank at the park headquarters.

### Strigidae

#### African Scops-Owl *Otus senegalensis*

Common resident. This species is likely to occur in suitable woodland throughout the park.

#### Southern White-faced Scops-Owl *Ptilopsis granti*

Common resident. Birds were mainly recorded from mature woodland at the edge of the wetland, but this species probably occurs in suitable woodland throughout the park.

#### Spotted Eagle-Owl *Bubo africanus*

Fairly common resident. Birds were recorded from woodland throughout most of the eastern portions of the park, but this is an observation bias and the species is likely to occur in suitable woodland throughout the park.

#### Verreaux's Eagle-Owl *Bubo lacteus*

Uncommon to fairly common breeding resident. This species prefers more mature woodland, especially that lining the wetland. An active nest was found in a Baobab tree *Adansonia digitata* during July.

#### Pel's Fishing-Owl *Scotopelia peli*

This species was not recorded by ourselves, but has been recorded from this area by the previous park warden, Armando Uleva Guenha (*pers. comm.*). Ample suitable habitat occurs along the wetland, and it is possible that this species is a rare to uncommon breeding resident when the wetland has got sufficient water. If this area proves to be a stronghold for this species, it confers an even greater conservation importance on this wetland, as this species is regarded as threatened in this region (Parker 1999) and the population is also believed to be decreasing in South Africa and Botswana (Kemp 2005). This record extends the known range of this species in southern Mozambique substantially north-east.

#### African Wood-Owl *Strix woodfordii*

A rare to uncommon resident, birds were heard calling from mature woodland bordering the wetland. This species is likely to occur in suitable habitat throughout the park.

#### Pearl-spotted Owlet *Glaucidium perlatum*

A rare species, having been recorded only once in mature woodland bordering the wetland in March 2008. This species is probably more common than this single record suggests, and is likely to occur in suitable habitat throughout the park.



### **African Barred Owlet** *Glaucidium capense*

An uncommon species recorded from mature woodland lining the wetland. This species is likely to be fairly common in the park, especially in mature woodland along the wetland periphery.

### **Marsh Owl** *Asio capensis*

A rare to uncommon species recorded from the wetland periphery. This species is likely to be fairly common in the park, given the extent of the wetland and thus the ample suitable habitat. Parker (1999) postulates that the species is declining in southern Mozambique, largely owing to anthropogenic disturbance of marshes. The Banhine wetland is likely to provide an important stronghold for this species in southern Mozambique and is worthy of conservation. This record represents a large northward expansion of the known distribution of the species in southern Mozambique.

### **Caprimulgidae**

#### **Fiery-necked Nightjar** *Caprimulgus pectoralis*

Common resident, likely to occur throughout the entire park.

#### **Square-tailed Nightjar** *Caprimulgus fossii*

A common resident, most probably occurring throughout the entire park.

#### **European Nightjar** *Caprimulgus europaeus*

Uncommon summer visitor. These records extend the known range of this species in southern Mozambique further east.

#### **Pennant-winged Nightjar** *Macrodipteryx vexillarius*

A female was observed in the park in November 2008. This represents the first record of this species in southern Mozambique (Parker 1999). This species is likely to be more common than this single record suggests, as it occurs in similar sandveld habitat in north-eastern South Africa (Spottiswoode and Jackson 2005; *pers. obs.*).

## **COLUMBIFORMES**

### **Columbidae**

#### **Laughing Dove** *Streptopelia senegalensis*

Common breeding resident, breeding occurred in November.

#### **African Mourning Dove** *Streptopelia decipiens*

A common breeding resident mostly recorded from mature woodland bordering the wetland. Breeding was recorded in November.

#### **Cape Turtle-Dove** *Streptopelia capicola*

Very common resident, occurring throughout the park.

#### **Red-eyed Dove** *Streptopelia semitorquata*

Fairly common resident throughout the entire park.

#### **Emerald-spotted Wood-Dove** *Turtur chalcospilos*

Very common resident, especially around waterholes and isolated pans where large flocks may congregate.

#### **Tambourine Dove** *Turtur tympanistria*

An uncommon bird, probably breeding within the park. Small numbers of birds were seen in sandveld and mature woodland.

#### **Namaqua Dove** *Oena capensis*

Fairly common resident, probably occurring throughout the park.

#### **African Green-Pigeon** *Treron calvus*

Uncommon resident, birds were recorded in the vicinity of Tchove and Pio Cabral. This species is likely to be more common than these records suggest, most probably occurring along the wetland where *Ficus* sp. and other fruiting trees occur.



## GRUIFORMES

### Otididae

#### **Kori Bustard** *Ardeotis kori*

Fairly common resident. Groups of up to six birds were seen in grassland and open woodland habitats. This area is likely to support a fairly large population of these birds, and this species most probably breeds in the park. Parker (1999) estimated the southern Mozambique population to number fewer than 100 birds, while it is estimated that this park supports between 30 and 50 individuals (*pers. obs.*). This species is threatened in southern Mozambique, mainly due to hunting pressures (Parker 1999) and habitat transformation. These records represent a large north-eastward expansion of the known distribution of this species within southern Mozambique.

#### **Red-crested Korhaan** *Lopotis ruficrista*

Common breeding resident, recorded throughout most of the park. Chicks were observed in September.

#### **Black-bellied Bustard** *Eupodotis melanogaster*

An uncommon species, with only a handful of records from the park. This species may also be declining due to human pressures (Parker 1999). These records extend the known distribution of this species in Mozambique further eastward from the nearest population.

### Gruidae

#### **Grey Crowned Crane** *Balearica regulorum*

This species was recorded in Banhine by Tinley (1972), who records these birds roosting in the company of the next species beside a small pond left in the wetland during a drought. This species was not recorded in the park subsequently by either ourselves or Parker (1999).

#### **Wattled Crane** *Bugeranus carunculatus*

Uncommon to fairly common, probably a breeding resident. Stalmans (2004) reported seeing three birds, one of which was an

immature bird, during the 2004 aerial census. Up to 6 birds were regularly seen (*pers. obs.*), although the population may exceed this. This is the only site in southern Mozambique where this endangered species is known to occur regularly (Parker 1999; *pers. obs.*), and if it is confirmed to breed here then this is the only site in southern Mozambique where this species has been confirmed breeding (there are unsubstantiated reports of birds breeding at the Save River mouth, Clancey 1996). This represents only the second record of this species in southern Mozambique (Parker 1999).

### Rallidae

#### **African Crane** *Crecopsis egregia*

Common summer resident, probably breeding here. Birds were regularly seen along the periphery of the wetland after it had flooded, and were flushed in great numbers from the surrounding marshy areas. These records extend the known distribution of this species greatly north-west, and represent only the second record of this species in southern Mozambique (Parker 1999).

#### **Corn Crane** *Crex crex*

Fairly common summer resident, a number of birds were flushed from marshy conditions around the wetland after it had flooded, as well as at a perennial waterhole away from the main wetland before the latter flooded. These records represent only the second record of this species in southern Mozambique, and extend the known distribution of this species in southern Mozambique greatly north-west (Parker 1999).

#### **Black Crane** *Amauornis flavirostris*

Common breeding resident, recorded from the wetland as well as permanent and seasonal pans. Breeding was recorded in February.

#### **Spotted Crane** *Porzana porzana*

A single bird was flushed from the wetland in January 2008. This bird is likely to be a rare summer visitor to the wetland, possibly occurring



more frequently than this single record suggests. This represents the first record for this species in southern Mozambique (Parker 1999).

**African Purple Swamphen** *Porphyrio madagascariensis*

Fairly common resident, moderate numbers were observed in the wetland after it flooded. This species is likely to be a breeding resident in the wetland as long as the latter has sufficient water with fringing dense vegetation. These records represent a large north-west range expansion for this species in southern Mozambique, Parker (1999) having recorded this species mainly near the coast.

**Allen's Gallinule** *Porphyrio alleni*

Common summer breeding migrant. Large numbers were present in the wetland after it had flooded, and their cacophony of calls continued throughout the day and night. Small numbers of nests containing eggs were found singly in dense vegetation in January, but many more nests undoubtedly remained undiscovered. Birds were present from January until March. In January 2008, the population on the wetland was estimated to number 1000 individuals (*pers. obs.*). Parker (1999) described this species as a rare migrant, and estimated the entire population in southern Mozambique to number 200 birds. These records represent only the fourth known location of this species in southern Mozambique (Parker 1999).

**Common Moorhen** *Gallinula chloropus*

Rare to uncommon resident, most probably breeding here. Small numbers were observed on the wetland after it had flooded. This record extends the known distribution of this species in southern Mozambique further north-west.

**Lesser Moorhen** *Gallinula angulata*

Uncommon summer visitor, most probably breeding here. A small number of birds were present on the wetland after it had flooded, and were present from January until April. This species could be more common on the extensive wetland, and was probably overlooked quite regularly due to its secretive habits. This species has previously

only been recorded from near Lake Chuali (Parker 1999) and the Futi Channel (Tello 1973) in southern Mozambique.

**Red-knobbed Coot** *Fulica cristata*

Uncommon resident. A loose group of birds was seen on brackish water below the alluvial plug. These birds may breed here, but this has not yet been confirmed. These records are further north-west than those recorded by Parker (1999) in southern Mozambique.

## CHARADRIIFORMES

### Pteroclididae

**Double-banded Sandgrouse** *Pterocles bicinctus*

Fairly common resident, occurring throughout the reserve.

### Scolopacidae

**African Snipe** *Gallinago nigripennis*

A single bird was recorded in the wetland in March 2008. This species is most probably a rare to uncommon breeding resident in the wetland, being more common than this single record suggests. This record is further north-west than those of Parker (1999) who mainly recorded this species in the vicinity of the coast.

**Marsh Sandpiper** *Tringa stagnatilis*

Uncommon summer migrant. This record extends the known distribution of this species in southern Mozambique further north (Parker 1999).

**Common Greenshank** *Tringa nebularia*

Common summer migrant, birds were present from October until April.

**Green Sandpiper** *Tringa ochropus*

Rare summer migrant, a single bird was recorded in the wetland in March 2008. This bird has previously only been recorded on Bazaruto Island (Parker 1999) in southern Mozambique.

**Wood Sandpiper** *Tringa glareola*

Fairly common summer migrant. Birds were present from August until April

**Common Sandpiper** *Actitis hypoleucos*

Uncommon to fairly common summer visitor to the park.

**Little Stint** *Calidris minuta*

Uncommon summer migrant to the park, birds were recorded from October until April.

**Curlew Sandpiper** *Calidris ferruginea*

Rare summer visitor, individual birds were seen between October and April. This species may be an uncommon summer visitor, with its occurrence dependant on the water level of the wetland.

**Ruff** *Philomachus pugnax*

Uncommon summer visitor, recorded in flocks numbering up to 20 birds on the periphery of the wetland in October and January. These records are further north than any recorded by Parker (1999).

**Rostratulidae****Greater Painted-snipe** *Rostratula benghalensis*

Fairly common resident, pairs were recorded in the wetland as well as at permanent pans prior to the wetland flooding.

**Jacanidae****African Jacana** *Actophilornis africanus*

Common breeding resident, numbers greatly increased after the wetland flooded. Breeding was recorded on a temporary pan adjoining the main wetland in January, when eggs were present.

**Lesser Jacana** *Microparra capensis*

Dutton (1972) records this species as being "quite common" in the park. It is believed that that this species still occurs here, and may have been overlooked by ourselves.

**Burhinidae****Spotted Thick-knee** *Burhinus capensis*

Common resident.

**Recurvirostridae****Black-winged Stilt** *Himantopus himantopus*

Fairly common resident, recorded from both perennial water bodies and the main wetland after the latter had flooded. Breeding was recorded here in April.

**Charadriidae****Kittlitz's Plover** *Charadrius pecuarius*

Common breeding resident.

**Three-banded Plover** *Charadrius tricollaris*

Common resident of wetlands.

**Blacksmith Lapwing** *Vanellus armatus*

Common resident recorded in the vicinity of water.

**African Wattled Lapwing** *Vanellus senegallus*

Rare visitor to the park, birds were present in the wetland in May 2007. This record represents an extensive northward expansion of the known range of this species in southern Mozambique.

**Black-winged Lapwing** *Vanellus melanopterus*

A small flock of birds was recorded on the airstrip in April 2008. This species has previously been recorded from Inhambane and Chokwe (Clancey 1996; Herdam 1994). Parker (1999) did not record this species during his survey and listed it as a species requiring confirmation, believing that the previous records may have arisen from confusion with the Senegal Lapwing *V. lugubris*.

**Crowned Lapwing** *Vanellus coronatus*

A common species, recorded throughout most of the park.

**Glareolidae****Bronze-winged Courser** *Rhinoptilus chalcopterus*

An uncommon species found throughout the park.

**Temminck's Courser** *Cursorius temminckii*

An uncommon species recorded throughout most of the park.

**Collared Pratincole** *Glareola pratincola*

Common resident along the wetland. Flocks of up to 50 birds were seen flying along the wetland in the evening, with total numbers flying past the camp estimated at 200 individuals.

**Laridae****Whiskered Tern** *Chlidonias hybridus*

Fairly common resident, individuals and small flocks numbering up to 14 birds were seen in the wetland after it had flooded.

**FALCONIFORMES****Accipitridae****Osprey** *Pandion haliaetus*

A single bird was observed in the wetland in March 2008. This species is likely to be an uncommon summer visitor to the park, being most numerous when the wetland is full. This record represents a large northward and westward range expansion for this species in southern Mozambique (Parker 1999).

**Black-shouldered Kite** *Elanus caeruleus*

Common resident, recorded from most habitats throughout the park.

**Black Kite** *Milvus migrans*

Fairly common summer visitor, birds arrived in August and left in January. All the birds seen in the park can be referred to the subspecies *M. m. parasitus*.

**African Fish-Eagle** *Haliaeetus vocifer*

Common resident, especially occurring along the wetland but recorded at most water bodies large enough to support this species.

**White-backed Vulture** *Gyps africanus*

Rare breeding visitor and may possibly be resident in the park depending on availability of food. Active nests were found in October. As with the rest of the vulture species, the occurrence of this species in the park is mainly limited by the relatively low mammal numbers, which result in little carrion being available.

**Lappet-faced Vulture** *Aegypius tracheliotos*

Uncommon breeding visitor, may possibly be resident depending on food sources in or near the park. Active nests were found in October. This species is regarded as threatened in southern Mozambique (Parker 1999).

**White-headed Vulture** *Aegypius occipitalis*

Rare breeding visitor, active nests were seen in October.

**Black-chested Snake-Eagle** *Circaetus pectoralis*

Fairly common resident.

**Brown Snake-Eagle** *Circaetus cinereus*

Common resident.

**Bateleur** *Terathopius ecaudatus*

Common resident.

**African Marsh-Harrier** *Circus ranivorus*

Uncommon resident, frequenting the wetland. These records extend the known distribution of this species in southern Mozambique greatly northward.

**Pallid Harrier** *Circus macrourus*

Rare to uncommon summer visitor. Birds were seen hunting over open grassland with scattered trees. This is the first record of this species in southern Mozambique.

**African Harrier-Hawk** *Polyboroides typus*

Rare visitor, a handful of sightings were made in summer. This species is likely to be more common than these records suggest.

**Lizard Buzzard** *Kaupifalco monogrammicus*

Uncommon resident. Birds were recorded from scattered localities throughout the park.

**Dark Chanting Goshawk** *Melierax metabates*

Fairly common resident, recorded from most habitat types throughout the park.

**Gabar Goshawk** *Melierax gabar*

Fairly common to common resident, recorded throughout the park.

**African Goshawk** *Accipiter tachiro*

Rare visitor to the park, probably resident in small numbers.

**Shikra** *Accipiter badius*

Fairly common resident, recorded almost throughout the park.

**Little Sparrowhawk** *Accipiter minullus*

Uncommon resident, recorded at scattered localities throughout the park.

**Black Sparrowhawk** *Accipiter melanoleucus*

Rare visitor, a single bird was present in Fish-Eagle Research Camp throughout May 2008. Parker (1999) lists this species as subject to confirmation in southern Mozambique, with a single unconfirmed sighting from the Maputo Elephant Reserve.

**Steppe Buzzard** *Buteo vulpinus*

A rare summer visitor, birds were only recorded in January 2007.

**Tawny Eagle** *Aquila rapax*

Uncommon resident, occurring throughout most of the park. Although Parker (1999) most frequently recorded this species in the winter months, birds were recorded during all seasons in the park. This species has probably declined in number in the region due to a scarcity of carrion, which it includes in its diet (Parker 1999). This species is regarded as threatened in southern Mozambique (Parker 1999).

**African Hawk Eagle** *Aquila spilogaster*

Fairly common resident, recorded throughout most of the park. Breeding was recorded in July.

**Booted Eagle** *Aquila pennatus*

Rare visitor. Two separate birds were recorded at Madil and Magul during February 2008.

**Wahlberg's Eagle** *Aquila wahlbergi*

Fairly common summer visitor, recorded throughout most of the park. Nest-building was seen in January.

**Martial Eagle** *Polemaetus bellicosus*

Fairly common resident, recorded throughout most of the park. This species is considered to be threatened in southern Mozambique (Parker 1999).

**Sagittariidae****Secretarybird** *Sagittarius serpentarius*

Uncommon resident, observed in open habitat around the wetland. Six birds were seen in a single day in the northern and eastern portions of the park, although the population is likely to be a lot larger than this. These records extend the known distribution of this species





in southern Mozambique further north. This species is considered to be threatened in southern Mozambique (Parker 1999).

### Falconidae

#### Lesser Kestrel *Falco naumanni*

Fairly common summer visitor. Birds were frequently seen feeding over open grassland near Xlekhane, and were present from January to May (although they probably arrive earlier). This species has previously only been recorded from the vicinity of Massingir in southern Mozambique, and these records represent a large north-east range expansion for this species in southern Mozambique (Parker 1999). Lesser Kestrels are considered to be vulnerable globally (IUCN 2010b; Collar *et al.* 1994).

#### Red-necked Falcon *Falco chicquera*

Uncommon to fairly common resident. Birds were most often seen in open grassland with scattered trees, especially in open thornveld surrounding the wetland. This species has previously only been recorded on the Save River near Nova Mambone (Parker 1999), and these records represent only the second record for southern Mozambique.

#### Eurasian Hobby *Falco subbuteo*

Rare summer visitor, birds were observed near the wetland in November 2007 and February 2008. These records extend the known distribution of this species in southern Mozambique further north-east.

#### Peregrine Falcon *Falco peregrinus*

Rare visitor, a single bird was seen in March 2007. This record lies midway between the western border and coastal records of Parker (1999).

## CICONIIFORMES

### Podicipedidae

#### Little Grebe *Tachybaptus ruficollis*

Common resident, although not seen in the park prior to the wetland flooding. Chicks were seen in April.

#### Great Crested Grebe *Podiceps cristatus*

Dutton (1972) recorded adults and chicks of this species from Banhine. Parker (1999) records this species from Chongoene, while this species was also seen on seasonally flooded pans near Inhambane after above-average rainfall (*pers. obs.*).

### Anhingidae

#### African Darter *Anhinga rufa*

Fairly common breeding resident. Birds were first recorded a month after the wetland flooded, and were seen breeding in a reed cormorant colony in February. This represents a large north-west range expansion for the species in southern Mozambique.

### Phalacrocoracidae

#### Reed Cormorant *Phalacrocorax africanus*

Fairly common breeding resident. Small numbers were present on permanent water bodies prior to the wetland flooding, with an influx of individuals after the wetland flooded. Breeding was observed in February.

#### White-breasted Cormorant *Phalacrocorax lucidus*

Fairly common resident, observed on perennial pans but more common on the main wetland after it had flooded.

### Ardeidae

#### Little Egret *Egretta garzetta*

Uncommon resident, birds were seen on a permanent pan prior to the wetland flooding, and in the wetland after it had flooded. This represents a northward expansion of the known range of this species in southern Mozambique.

**Yellow-billed Egret** *Egretta intermedia*

Fairly common resident, recorded at both perennial pans and in the main wetland after it had flooded.

**Great Egret** *Egretta alba*

Fairly common resident. Birds were first observed in the park after the main wetland had flooded.

**Grey Heron** *Ardea cinerea*

Fairly common resident, recorded on permanent water bodies as well as in the main wetland after it had flooded.

**Black-headed Heron** *Ardea melanocephala*

Fairly common resident. This species was first recorded in the park after the main wetland flooded. Flocks of up to 18 individuals were seen flying the course of the wetland, especially in the late afternoons.

**Goliath Heron** *Ardea goliath*

Fairly common resident. Birds were first observed after the main wetland flooded, and were always seen in association with this wetland. This represents an eastward range expansion for the species in southern Mozambique.

**Purple Heron** *Ardea purpurea*

Fairly common resident. Birds were seen on perennial water bodies as well as at the main wetland. This represents a northward range expansion for the species in southern Mozambique.

**Cattle Egret** *Bubulcus ibis*

Fairly common resident, upward of 60 birds were counted flying past Fish Eagle Research Camp in the late afternoons.

**Squacco Heron** *Ardeola ralloides*

Fairly common resident, becoming more numerous after the wetland had flooded. These records represent a substantial northward expansion of the known range of this species in southern Mozambique.

**Rufous-bellied Heron** *Ardeola rufiventris*

This species was recorded in the park by Dutton (1972), and is likely to still be present here in small numbers when the wetland floods.

**Green-backed Heron** *Butorides striata*

Rare visitor, probably an uncommon resident. A single bird was observed at a perennial pan in July 2007. This species is likely to prove more common than this single record suggests.

**Black-crowned Night-Heron** *Nycticorax nycticorax*

Fairly common resident, birds were first recorded after the wetland flooded. Flocks of up to 20 birds were regularly counted flying along the wetland in the late afternoons. This species is likely to breed here. This represents a substantial north-west range expansion for this species in southern Mozambique.

**Little Bittern** *Ixobrychus minutus*

Rare visitor, a single bird was observed in the wetland in April 2008. This record is further north-west than any previous record in southern Mozambique (Parker 1999).

**Dwarf Bittern** *Ixobrychus sturmii*

Fairly common summer breeding visitor, birds were first recorded after the wetland flooded. Birds were first observed in January, and the last birds were observed in April. Breeding was recorded here in March.

**Scopidae****Hamerkop** *Scopus umbretta*

Fairly common breeding resident, frequenting perennial pans and the main wetland. Breeding was observed here in July and August.

**Threskiornithidae****Glossy Ibis** *Plegadis falcinellus*

Fairly common resident, becoming more abundant after the wetland flooded.

**Hadeda Ibis** *Bostrychia hagedash*

Fairly common resident.

**African Sacred Ibis** *Threskiornis aethiopicus*

Fairly common resident.

**African Spoonbill** *Platalea alba*

Uncommon resident, frequenting the main wetland. These records represent a northward expansion of the known range of the species in southern Mozambique.

**Pelecanidae****Pink-backed Pelican** *Pelecanus rufescens*

Rare visitor, probably an uncommon seasonal resident. Birds were observed in the wetland during April 2008, after it had flooded. There are also photos of this species displayed in Fish-Eagle Research Camp, indicating that this species is probably an uncommon to fairly common resident on the wetland as long as there is sufficient water. This species was also photographed in the park by Tinley (1972). These records represent a northward range expansion for the species in southern Mozambique.

**Ciconiidae****Yellow-billed Stork** *Mycteria ibis*

Uncommon resident. Birds were observed in the vicinity of permanent pans, but were more numerous in the main wetland after it had flooded.

**African Openbill** *Anastomus lamelligerus*

Fairly common resident, recorded from the flooded wetland as well as perennial pans. These records are further east than those of Parker (1999).

**Abdim's Stork** *Ciconia abdimii*

Rare visitor, a flock of ca. 150 birds was seen circling the wetland in January 2007. This species is likely to be an uncommon summer visitor, occurring sporadically in suitable habitats in suitable years. These records are further east than any previous records in southern Mozambique.

**Woolly-necked Stork** *Ciconia episcopus*

Rare resident, individuals were sporadically seen in the vicinity of the wetland after it had flooded.

**White Stork** *Ciconia ciconia*

Rare summer visitor, a small flock was seen circling the wetland in January 2008. This species is likely to be an uncommon summer visitor to the park.

**Saddle-billed Stork** *Ephippiorhynchus senegalensis*

This species was seen fairly frequently in the main wetland as well as at smaller seasonal and permanent pans. During the 2004 aerial census 23 birds were counted in the park (Stalmans 2004), although the actual number may be higher as only a representative portion of the park was censused. This species is threatened in southern Mozambique, with fewer than 30 breeding pairs estimated to occur in this region (Parker 1999). This area therefore represents an important stronghold for this species in southern Mozambique,



potentially harbouring upwards of 25% of the breeding population, and as such is worthy of conservation. These records fill the central gap in the range of this species in southern Mozambique (Parker 1999).

**Marabou Stork** *Leptoptilos crumeniferus*

Small numbers of birds were recorded in the wetland during April 2008, although it is believed that this species is likely to be more common here. These records bridge the gap between the southern records and the single record in the extreme north-east of southern Mozambique (Parker 1999).

**PASSERIFORMES**

**Oriolidae**

**Eurasian Golden Oriole** *Oriolus oriolus*

Fairly common summer migrant, recorded in the park from November to April. Birds were most often seen in broad-leaved woodland and sandveld throughout the park.

**African Golden Oriole** *Oriolus auratus*

A rare to uncommon summer visitor to the park. Three individuals were seen in the vicinity of Madil and Magul during February 2008, and a fourth individual was seen at Hokuane a few days later. Parker (1999) listed this as a species whose presence in southern Mozambique required confirmation, while Clancey (1996) was of the opinion that it almost certainly occurred in Inhambane province.

**Black-headed Oriole** *Oriolus larvatus*

Common breeding resident, most often recorded from broad-leaved woodland and sandveld throughout the park. Breeding was observed here in November.

**Dicruridae**

**Fork-tailed Drongo** *Dicrurus adsimilis*

Common resident, recorded throughout the entire park.

**Monarchidae**

**African Paradise-Flycatcher** *Terpsiphone viridis*

Common summer breeding resident. Breeding was observed here in November. No birds were present between May and August. Parker (1999) suggested that part of the population leaves southern Mozambique after breeding, while finding no evidence for birds from further south overwintering here, as was suggested by Clancey (1996). The lack of winter records for the park supports Parker's suggestion, although it is not known whether these birds left southern Mozambique or just migrated to moister regions.

**Malaconotidae**

**Brubru** *Nilaus afer*

Common resident, recorded throughout the park.

**Black-backed Puffback** *Dryoscopus cubla*

Commonly recorded throughout the park during all months.

**Black-crowned Tchagra** *Tchagra senegalus*

Common resident, occurring in woodlands throughout the park.

**Brown-crowned Tchagra** *Tchagra australis*

Commonly recorded from woodlands throughout the park.

**Southern Boubou** *Laniarius ferrugineus*

Common throughout the park.

**Orange-breasted Bush-shrike** *Telophorus sulfureopectus*

Common resident. Most records of this species are from the vicinity of the wetland, but this is likely largely an observational oversight, and it is believed that this species is common in woodland throughout the park.

**Grey-headed Bush-shrike** *Malaconotus blanchoti*

A common resident in woodlands throughout the park.

**White-crested Helmet-Shrike** *Prionops plumatus*

A common resident in woodlands throughout the park, including Mopane woodland.

**Retz's Helmet-Shrike** *Prionops retzii*

A fairly common resident in woodlands throughout the park.

**Chinspot Batis** *Batis molitor*

Common breeding resident. Breeding was observed in the park during January.

**Corvidae****Pied Crow** *Corvus albus*

An uncommon visitor to the park, birds were recorded intermittently at Fish-Eagle Research Camp.

**Laniidae****Red-backed Shrike** *Lanius collurio*

Common summer resident. Birds arrived in the park during November, and left again in April.

**Lesser Grey Shrike** *Lanius minor*

A rare visitor to the park, a single bird was observed in March 2007. This species may prove to be more common than this single record suggests. This record is further east than any previous records in southern Mozambique.

**Southern White-crowned Shrike** *Eurocephalus anguitimens*

Fairly common resident, frequenting woodlands throughout the park.

**Campephagidae****White-breasted Cuckooshrike** *Coracina pectoralis*

Rare visitor. Birds were recorded in Fish-Eagle Research Camp during March and April 2008. This species may prove to be a regular visitor to the park, and may have been under-recorded due to its relative inconspicuousness.

**Black Cuckooshrike** *Campephaga flava*

Uncommon resident, likely to occur throughout the entire park.

**Paridae****Grey Penduline-Tit** *Anthoscopus caroli*

Uncommon resident.

**Southern Black Tit** *Parus niger*

Common resident.

**Hirundinidae****Grey-rumped Swallow** *Pseudhirundo griseopyga*

Uncommon resident.

**Barn Swallow** *Hirundo rustica*

Common summer visitor. Birds were seen throughout the park between October and April.

**Wire-tailed Swallow** *Hirundo smithii*

A rare visitor to the park. A pair of birds was seen near the wetland during May 2007. This species is likely to be more common than this single record suggests. This record is further north-east than those recorded by Parker (1999).

**Common House-Martin** *Delichon urbicum*

Uncommon summer migrant. Birds were recorded in the park from November to March.

**Pycnonotidae****Dark-capped Bulbul** *Pycnonotus tricolor*

Commonly recorded throughout the park.

**Sombre Greenbul** *Andropadus importunus*

Common breeding resident, recorded in woodland throughout the park. Breeding was recorded here in October.

**Yellow-bellied Greenbul** *Chlorocichla flaviventris*

Fairly common resident, recorded in woodlands throughout the park.

**Terrestrial Brownbul** *Phyllastrephus terrestris*

A common resident in woodlands throughout the park.

**Eastern Nicator** *Nicator gularis*

Uncommon resident, recorded from scattered localities in woodlands throughout most of the park.

**Sylviidae****Long-billed Crombec** *Sylvietta rufescens*

Common resident throughout the park.

**Yellow-bellied Eremomela** *Eremomela icteropygialis*

Uncommon resident, recorded from woodlands around the wetland. This species is likely to occur in woodlands throughout the park.

**Green-capped Eremomela** *Eremomela scotops*

Fairly common resident, small parties were often seen foraging in the taller trees around the wetland. These records are significantly further south than Parker's (1999) records from near the Save River.

**Sedge Warbler** *Acrocephalus schoenobaenus*

Rare summer visitor, a single bird was recorded in the wetland in April 2008. This species is likely to be more common than this single record suggests, and was probably largely overlooked due to its inconspicuous nature (Parker 1999). This record is significantly further north than the previous records by Parker (1999).

**African Reed-Warbler** *Acrocephalus baeticatus*

A rare summer visitor, a single bird was recorded in the wetland during April 2008. This species is likely to be more common than this single record suggests, and may have been largely overlooked. This record is midway between Parker's (1999) Limpopo River and Save River records.

**Great Reed-Warbler** *Acrocephalus arundinaceus*

An uncommon summer visitor. Birds were recorded from perennial pans as well as the main wetland after it had flooded, and were present between January and April.

**Lesser Swamp-Warbler** *Acrocephalus gracilirostris*

Fairly common resident, recorded from perennial pans as well as the main wetland.

**Icterine Warbler** *Hippolais icterina*

Rare summer visitor, a single bird was seen at the Pio Cabral headquarters during February 2008. This species may be more common than this single record suggests, and may have been largely overlooked. This record extends the known distribution of this species in southern Mozambique further north.

**Willow Warbler** *Phylloscopus trochilus*

A very common summer resident, birds were recorded in the park from October to March. Loose flocks frequented sandveld habitat, where very large swarms of gnats were also present, especially frequenting Small False Mopane *Guibourtia conjugata* trees.

**Southern Hyliota** *Hyliota australis*

Rare resident, a group of three birds were observed in a mixed bird party in Fish-Eagle Research Camp during March 2007. It is likely that this species is an uncommon resident in the park, frequenting woodland habitat throughout, but which has been largely overlooked. These records extend the known distribution of this species in southern Mozambique further north-west.

**Arrow-marked Babbler** *Turdoides jardineii*

Common resident, recorded in woodland habitats throughout the park.

**Garden Warbler** *Sylvia borin*

Uncommon summer visitor, recorded in the park from November to January.

**Zosteropidae****African Yellow White-eye** *Zosterops senegalensis*

Uncommon resident, recorded from sandveld in the vicinity of the wetland.

**Cape White-eye** *Zosterops virens*

Rare visitor, a small flock was observed in sandveld near Fish-Eagle Research Camp in January 2007. This species has previously only been recorded in the extreme south of southern Mozambique in the Libombo Mountains (Parker 1999).

**Cisticolidae****Red-faced Cisticola** *Cisticola erythrops*

Uncommon resident, recorded from rank grass surrounding perennial pans as well as the main wetland. These records are further east than the Limpopo River records of Parker (1999).

**Rattling Cisticola** *Cisticola chiniana*

Very common resident.

**Rufous-winged Cisticola** *Cisticola galactotes*

Common resident, recorded from reed beds and rank grass throughout most of the eastern portions of the park, but believed to occur throughout the park.

**Croaking Cisticola** *Cisticola natalensis*

Common resident, regularly recorded in dry reed beds in the main wetland before it flooded. These records extend the known distribution of this species in southern Mozambique further north and west.

**Zitting Cisticola** *Cisticola juncidis*

Rare visitor, there is a single record from the vicinity of the main wetland in January 2007. This species is likely to be more common than this single record suggests.

**Desert Cisticola** *Cisticola aridulus*

Common resident, recorded from open grassy areas throughout the park.

**Tawny-flanked Prinia** *Prinia subflava*

Common resident.

**Yellow-breasted Apalis** *Apalis flavida*

Common resident of woodlands throughout the park.

**Green-backed Camaroptera** *Camaroptera brachyura*

Very common resident, recorded from woodlands throughout the park.

**Stierling's Wren-Warbler** *Calamonastes stierlingi*

Very common resident of woodland habitats throughout the park.

**Alaudidae****Rufous-naped Lark** *Mirafra africana*

Fairly common resident of savannas and grasslands throughout the park.

**Flappet Lark** *Mirafra rufocinnamomea*

Uncommon resident.

**Sabota Lark** *Calendulauda sabota*

Fairly common resident of woodlands throughout the park.

**Fawn-coloured Lark** *Calendulauda africanoides*

Fairly common resident.

**Dusky Lark** *Pinarocorys nigricans*

Rare summer visitor, a single bird was observed in the vicinity of Fish-Eagle Research Camp in April 2007. This species is likely to be a rare to uncommon late summer visitor to the park. This record is further east than the nearest record on the Limpopo River (Parker 1999).

**Chestnut-backed Sparrowlark** *Eremopterix leucotis*

Uncommon resident, small flocks were seen in arid grasslands in the eastern parts of the park, but it is believed to occur in suitable habitat throughout the park. Birds were still recorded in the park in November, *contra* Parker (1999) who did not record this species in southern Mozambique during the period October-December. These records extend the known distribution of this species in southern Mozambique substantially north-east.

**Red-capped Lark** *Calandrella cinerea*

Uncommon resident, recorded from grasslands in the eastern portion of the park.

**Muscicapidae****Groundscraper Thrush** *Psophocichla litsitsirupa*

Common resident, most often recorded in sandveld.

**Kurrichane Thrush** *Turdus libonyana*

Common breeding resident, recorded from woodlands throughout most of the park. Breeding was recorded here in November.

**Pale Flycatcher** *Bradornis pallidus*

Fairly common woodland resident.

**Southern Black Flycatcher** *Melaenornis pammelaina*

Common resident.

**Spotted Flycatcher** *Muscicapa striata*

Common summer migrant, birds were recorded in the park from January until March.

**White-throated Robin-Chat** *Cossypha humeralis*

Common resident. Birds were most frequently recorded from dense woodland habitat surrounding the main wetland, but this is believed to be an observation oversight and this species probably occurs in suitable habitat throughout the park.

**Bearded Scrub-Robin** *Cercotrichas quadrivirgata*

Fairly common resident, only being recorded from dense woodland habitat surrounding the main wetland. This is believed to be an observation oversight, however, and this species is likely to occur in suitable habitat throughout the park. This population is slightly further west than the closest locality recorded by Parker (1999).

**White-browed Scrub-Robin** *Cercotrichas leucophrys*

Common resident, recorded from woodland and sandveld habitats throughout the park.

**African Stonechat** *Saxicola torquatus*

Uncommon winter visitor, birds were recorded in the vicinity of Fish-Eagle Research Camp between May and August. These records represent a north-east range expansion for this species in southern Mozambique.

**Sturnidae****Greater Blue-eared Starling** *Lamprotornis chalybaeus*

Common breeding resident, birds have been recorded widely throughout the park. Breeding was observed here in September.

**Violet-backed Starling** *Cinnyricinclus leucogaster*

Common summer visitor, recorded throughout most of the park between October and March.



**Wattled Starling** *Creatophora cinerea*

Uncommon visitor. This species is somewhat nomadic (Craig 2005; Parker 1999; Craig and Herremans 1997), and was recorded in the park from January to August. These records are further north and west, respectively, than those recorded by Parker (1999).

**Nectariniidae****Amethyst Sunbird** *Chalcomitra amethystina*

Uncommon visitor, probably resident. This species was recorded in well-wooded regions surrounding the wetland. To date all records are from the summer months.

**Scarlet-chested Sunbird** *Chalcomitra senegalensis*

Fairly common resident. It was most frequently recorded in the vicinity of the main wetland, but this is believed to be a sampling oversight and this species probably occurs throughout the park.

**Collared Sunbird** *Hedydipna collaris*

Rare visitor, probably an uncommon resident. A pair of birds were recorded from Fish-Eagle Research Camp during November 2006. This species is likely to be more common than this single record suggests, and probably occurs throughout the park.

**Neergaard's Sunbird** *Cinnyris neergaardi*

Rare visitor, possibly a resident. A pair of birds was resident in the Fish-Eagle Research camp during August 2007.

**Variable Sunbird** *Cinnyris venustus*

Rare visitor. A single bird was observed in the northern portion of the park in May 2007. The only previous published record for southern Mozambique also comes from the Banhine National Park (Parker 1999), although this species has also been recorded along the coast just south of Inhambane (*pers. obs.*).

**White-bellied Sunbird** *Cinnyris talatala*

Very common resident, recorded throughout the park.

**Marico Sunbird** *Cinnyris mariquensis*

Common breeding resident, recorded from woodland habitats throughout the park. Breeding was recorded here during September.

**Purple-banded Sunbird** *Cinnyris bifasciatus*

Common resident. Birds were recorded in woodland habitats between August and November, but despite this it is believed that this species is an inconspicuous resident in the park (see also Parker 1999).

**Ploceidae****Red-billed Buffalo-Weaver** *Bubalornis niger*

Uncommon breeding resident, occurring at low densities throughout the park. Breeding was observed here in November.

**Lesser Masked-Weaver** *Ploceus intermedius*

Common breeding resident. All of the present records come from the vicinity of the main wetland, owing to the dependence on open water (Oschadleus 2005; Parker 1999). It is possible that this species occurs at low densities near permanent pans throughout the park. Breeding was observed here from October to January. These records represent a northward range expansion for the known range of the species in southern Mozambique.

**Spectacled Weaver** *Ploceus ocularis*

Common breeding resident. Birds were observed throughout the park, with breeding being observed in September and April.

**Southern Brown-throated Weaver** *Ploceus xanthopterus*

Rare visitor. A pair of birds were seen in the vicinity of the wetland in November 2006. This record is substantially further north than any of Parker's (1999) records, although this species has previously been recorded at Mapinhane (Clancey 1996) and the San Sebastian Peninsula (*pers. obs.*).

**Southern Masked-Weaver** *Ploceus velatus*

Common breeding resident. Most records come from the vicinity of the wetland, although this is possibly an observation oversight. Breeding was observed here in January and April.

**Village Weaver** *Ploceus cucullatus*

Rare visitor, possibly a rare to uncommon resident. A single bird was observed in the vicinity of the wetland during February 2008.

**Red-headed Weaver** *Anaplectes melanotis*

Common breeding resident, recorded widely throughout the park. Breeding was observed between September and January.

**Red-billed Quelea** *Quelea quelea*

A very common breeding resident, recorded widely throughout the park. Breeding was observed in January.

**Southern Red Bishop** *Euplectes orix*

A common breeding resident, only recorded from the main wetland. Breeding was observed here in January.

**Fan-tailed Widow-bird** *Euplectes axillaris*

An uncommon resident, recorded in small numbers from the main wetland. These records are further inland than those of Parker (1999).

**Estrildidae****Orange-breasted Waxbill** *Sporaeginthus subflavus*

Uncommon resident, recorded from pans and wetlands between January and August 2007. This species is likely to be resident here. These records are substantially further north than those of Parker (1999), who indicated that this species occurs only marginally north of the Limpopo River.

**African Quailfinch** *Ortygospiza atricollis*

Common resident recorded from wetlands and short grassland throughout most of the park.

**Cut-throat Finch** *Amadina fasciata*

Uncommon breeding resident. A pair of birds were seen breeding in a Red-headed Weaver nest in Fish-Eagle Research Camp during February.

**Common Waxbill** *Estrilda astrild*

A common resident, recorded from the main wetland and smaller wetlands and reed beds.

**Violet-eared Waxbill** *Granatina granatina*

Uncommon resident. Pairs were recorded in Fish-Eagle Research Camp, in sandveld and in thornveld habitats.

**Blue Waxbill** *Uraeginthus angolensis*

A very common breeding resident, recorded throughout the park. Breeding was observed here in August.

**Green-winged Pytilia** *Pytilia melba*

Uncommon resident, this species occurs at low densities throughout most of the park.

**Red-billed Firefinch** *Lagonosticta senegala*

Uncommon resident. Small numbers were observed in sandveld and riverine vegetation around the main wetland.

**African Firefinch** *Lagonosticta rubricata*

Rare visitor, a small group was recorded in the eastern part of the park during April 2008. This species may be more common than this single record suggests. This record is further east than those of Parker (1999).



**Jameson's Firefinch *Lagonosticta rhodopareia***

An uncommon breeding resident, recorded throughout most of the park. Breeding was observed here in April.

**Viduidae**

**Pin-tailed Whydah *Vidua macroura***

Uncommon resident. All records for this species are in summer, but this is owing to its conspicuousness and distinct plumage at this time of the year. This species parasitizes the Common Waxbill, and to a lesser extent the Orange-breasted Waxbill and other waxbill species (Dean and Payne 2005a; Parker 1999). These records are further west than those of Parker (1999).

**Long-tailed Paradise-Whydah *Vidua paradisaea***

A common resident, recorded from sandveld and woodland habitats throughout most of the park. All records for this species are in summer, owing to its conspicuousness and distinct plumage at this time of the year. This species parasitizes the Green-winged Pytilia (Dean and Payne 2005b; Parker 1999).

**Shaft-tailed Whydah *Vidua regia***

Rare visitor, probably an uncommon resident. Males were observed in November 2007. This species parasitizes the Violet-eared Waxbill (Dean and Payne 2005c; Parker 1999).

**Village Indigobird *Vidua chalybeata***

Rare visitor, possibly a rare to uncommon resident. Single males were observed in Fish-Eagle Research Camp and at Harianne. This species parasitizes the Red-billed Firefinch (Dean and Payne 2005d; Parker 1999). These records represent a north-eastward range expansion for the species in southern Mozambique.

**Passeridae**

**House Sparrow *Passer domesticus***

Common resident, being recorded at most villages and houses throughout the park. These records are further east than the closest locality recorded by Parker (1999).

**Southern Grey-headed Sparrow *Passer diffusus***

A species which was commonly recorded throughout the park.

**Yellow-throated Petronia *Petronia supercilialis***

Common breeding resident, recorded in woodlands throughout the park. Breeding was observed here in November.

**Motacillidae**

**Cape Wagtail *Motacilla capensis***

Rare visitor, possibly a rare to uncommon resident. Small numbers of birds were seen feeding at permanent ponds in the main wetland during July and August 2007. These records are further north-east than those of Parker (1999).

**Yellow Wagtail *Motacilla flava***

Rare summer visitor. A single bird was observed feeding on muddy ground around a permanent pond in the main wetland during January 2007. This record is substantially further north than the records of Parker (1999).

**Yellow-throated Longclaw *Macronyx croceus***

Common resident, most often seen in the vicinity of the main wetland and the smaller permanent wetlands.

**African Pipit *Anthus cinnamomeus***

A common resident, recorded from grasslands throughout the park, including the short grassland surrounding the main wetland.

**Buffy Pipit** *Anthus vaalensis*

Rare visitor. Single birds were recorded in July 2007 and January 2008. These records represent the first report of this species in southern Mozambique.

**Fringillidae****Yellow-fronted Canary** *Crithagra mozambicus*

A common breeding resident, recorded throughout the park. Breeding was observed here in January.

**Lemon-breasted Canary** *Crithagra citrinipectus*

A common resident. Birds were regularly seen in mopane woodland on the fringe of the wetland, from where they foraged on the grassy plains between the woodland and the wetland. Birds were also seen in grasslands with Lala-palms *Hyphaene coriacea* as well as in sandveld and woodlands throughout most of the park.

**Streaky-headed Seedeater** *Crithagra gularis*

An uncommon resident, recorded from woodlands near the main wetland. This is largely an observation oversight, however, and this species is likely to occur throughout the park.

**Black-eared Seedeater** *Crithagra mennelli*

A rare visitor, a small flock was seen in riparian woodland surrounding the main wetland during March 2007. This record is further north-west than those of Parker (1999).

**Cinnamon-breasted Bunting** *Emberiza tahapisi*

Common, very localised resident. A pair of birds was regularly recorded at Le Passe waterhole, just north of the park. The presence of this species here is rather surprising, as it usually frequents stony ground (Dean 2005; Parker 1999). This record is further east than those of Parker (1999).

**Golden-breasted Bunting** *Emberiza flaviventris*

Common resident, recorded from sandveld and woodland throughout most of the park.

**DISCUSSION**

To date, a total of 318 bird species have been recorded in Banhine National Park. This includes 76 significant range expansions for southern Mozambique, six species previously subject to confirmation from southern Mozambique as well as two species not previously recorded from southern Mozambique. A number of additional species are, however, still believed to occur in the park, with the relatively poor road infrastructure being the main limiting factor to a more comprehensive survey.

Banhine is an important area for many bird species, both resident and migrant. It provides habitat for nine threatened species, while also supporting one of the last populations of what are believed to be genetically pure **Common Ostrich** in southern Africa. The presence of a potentially genetically pure population of Common Ostrich has important conservation implications as Banhine forms part of the Greater Limpopo Transfrontier Park (Stalmans and Wishart 2005). As such, the fences between sections of the Kruger National Park and the Limpopo National Park in Mozambique have been removed. As there are no fences between the Limpopo Transfrontier Park and Banhine National Park, genetically “impure” Ostriches could potentially migrate to the Banhine National Park, effectively contaminating this population as well.

The **Pel's Fishing-Owl** is arguably one of the most enigmatic and sought-after of the threatened species. This species had a much greater historical distribution in South Africa, potentially as far south as the South-East coast (Kemp 2005; Steyn 1982). This early distribution compared to current distributions may indicate that this species has undergone a substantial decrease in its historical range (Kemp 2005). Even at present, it is believed that the population size



of this species is decreasing in northern Botswana and north-eastern South Africa, with the probable cause for the demise being anthropogenic (Kemp 2005). Banhine has large expanses of suitable habitat for this species, and may prove to be a stronghold for this species when flooded.

The **Kori Bustard** population is believed to be decreasing in southern Africa, with major threats being direct persecution, habitat transformation and collisions with power lines and fences (Allan and Osborne 2005; Parker 1999). Banhine National Park supports a large proportion of the estimated population of southern Mozambique, and owing to its largely secluded location this species has the potential to persist and thrive in this region if afforded proper protection.

**Wattled Cranes** are another enigmatic threatened species which is globally vulnerable (IUCN 2010a). This species appears to be nomadic in Mozambique, being present most regularly at the Zambezi River Delta in central Mozambique (Parker 1999). Parker (1999) is of the opinion that birds visiting southern Mozambique are likely to be non-breeding visitors. Our observations suggest that birds are present in Banhine during late autumn and winter, *contra* West (1976), who indicated a late summer/early autumn influx into this area. Also, the observation by Stalmans (2004) of an immature bird accompanying two adults suggests that this species breeds in this wetland.

**Lappet-faced Vulture, Tawny Eagle and Martial Eagle** are all large diurnal scavengers and raptors of which populations are all believed to be declining in southern Mozambique as a result of little available carrion and game birds (Parker 1999). The Banhine National Park still maintains fair numbers of large mammal and game bird species, as well as small numbers of mammalian carnivores. Thus there is likely to be sufficient food available to sustain these threatened species, provided that anthropogenic threats such as direct persecution and poisoning are prevented or managed sufficiently in this region.

**Secretarybirds** appear to be fairly common in this park, which also has ample suitable habitat for this species. The most likely reason for the low population estimates in the rest of southern Mozambique is likely attributable to direct persecution (Parker 1999). The population size of Secretarybirds is believed to be decreasing in South Africa (Dean and Simmons 2005).

**Lesser Kestrels** are evaluated as globally Vulnerable (IUCN 2010b) while in southern Mozambique they have only previously been recorded from the vicinity of Massingir Dam (Parker 1999). Although Parker (1999) was of the opinion that this species only occurs peripherally and rarely in southern Mozambique, we are of the opinion that there is sufficient suitable habitat in the Banhine National Park to regularly support a non-breeding population. Continual observations in this park would be enlightening as to the status of this species in subsequent years.

**Saddle-billed Storks** are considered to be threatened in southern Mozambique and Endangered in adjacent South Africa (Parker 1999; Anderson 2005). The Banhine National Park appears to support a large portion of the estimated breeding population of this species in southern Mozambique, with numbers possibly being augmented by both breeding and non-breeding pairs from adjacent countries.

The number of range expansions, species newly confirmed as occurring in southern Mozambique and the new additions to this subregion again highlight the need for a subsequent national bird survey to be undertaken in this country. Vincent Parker did a sterling job at establishing baseline distributions for all the bird species just after the civil war in a time when treading on a landmine at any instant was still a very real threat (Parker 1999). The landscapes of Mozambique have changed a great deal since then, however. A great deal of what used to be pristine woodland is now used for agricultural purposes, there are many new developments along the coastline and weather patterns are changing. In addition, a number of nomenclatural and vernacular name changes have also occurred,



further necessitating a revision of the regional bird atlas (see for example Hockey *et al.* 2005). On the positive side, however, the post-war period has also resulted in substantially more visitors to this region, and thus a larger observation base exists for a follow-up survey.

In addition to the threatened species, many of which are believed to breed in the park, the wetland also supports vast numbers of water birds and at times a large proportion water of the bird population of southern Mozambique. It would be very interesting to determine where these birds suddenly appeared from after the wetland flooded, as well as where they disperse to when the wetland dries up during extended droughts.

With its diversity of landscapes, Banhine remains an outstanding birding destination, and a number of additional species will no-doubt still be recorded from this region as more visitors visit the area. In addition to the bird diversity, there are also fair populations of small and large mammals, as well as great floral diversity, including potentially undescribed species (*pers. obs.*). As such the Banhine wetlands and the Banhine National Park as a whole are an important habitat and definitely worthy of conservation. Many more interesting discoveries undoubtedly remain to be found in the jewel that is Banhine.

#### ACKNOWLEDGEMENTS

We thank Dr Simon Munthali and Armando Uleva Guenha for their valuable discussions. Marina Faber and the Peace Parks Foundation provided some of the data used in the compilation of the map. Ray Jansen is thanked for commenting on an earlier draft of this manuscript.

#### REFERENCES

- Allan DG 2005.** Wattled Crane *Bugeranus carunculatus* In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of Southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 311-313.
- Allan DG, Osborne TO 2005.** Kori Bustard *Ardeotis kori*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of Southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 295-296.
- Anderson MD 2005.** Saddle-billed Stork *Ephippiorhynchus senegalensis*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of Southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 625-626.
- Clancey PA 1996.** The Birds of Southern Mozambique. African Bird Book Publishing, Durban.
- Collar NJ, Crosby MJ, Stattersfield AJ 1994.** Birds to Watch 2: The World List of Threatened Birds. BirdLife Conservation Series No. 4. BirdLife International, Cambridge, U.K.
- Craig AJFK 2005.** Wattled Starling *Creatophora cinerea*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of Southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 970 - 971.
- Craig AJFK, Herremans M 1997.** Wattled Starling *Creatophora cinerea*. In: Harrison JA, Allan DG, Underhill LG, Herremans M, Tree AJ, Parker V, Brown CJ (eds). The Atlas of Southern African Birds Vol. 2. Passerines. BirdLife South Africa, Johannesburg: 458-460.
- Dean WRJ 1997.** Ostrich *Struthio camelus*. In: Harrison JA, Allan DG, Underhill LG, Herremans M, Tree AJ, Parker V, Brown CJ (eds).



The Atlas of Southern African Birds Vol. 1. Non-passerines. BirdLife South Africa, Johannesburg: 2-3.

**Dean WRJ 2005.** Cinnamon-breasted Bunting *Emberiza tahapisi*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 1134.

**Dean WRJ, Payne RB 2005a.** Pin-tailed Whydah *Vidua macroura*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 1070-1071.

**Dean WRJ, Payne RB 2005b.** Long-tailed Paradise-Whydah *Vidua paradisaea*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 1073 - 1074.

**Dean WRJ, Payne RB 2005c.** Shaft-tailed Whydah *Vidua regia*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 1074-1075.

**Dean WRJ, Payne RB 2005d.** Village Indigobird *Vidua chalybeata*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 1076-1077.

**Dean WRJ, Simmons RE 2005.** Secretarybird *Sagittarius serpentarius*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 542-543.

**Dutton P 1972.** Banhine in the wet. African Wildlife 30(3): 31.

**Freitag S, Robinson TJ 1993.** Phylogeographic patterns in mitochondrial DNA of the Ostrich (*Struthio camelus*). The Auk 110(3): 614-622.

**Herdam H 1994.** Beobachtungen zur Vogelwelt von Mozambique. Ornithologischen Jahresberichte des Museum Heineanum 12: 1-160. As cited by Parker (1999).

**Herremans M, Barnes KN 1997.** Swallowtailed Bee-eater *Merops hirundineus*. In: Harrison JA, Allan DG, Underhill LG, Herremans M, Tree AJ, Parker V, Brown CJ (eds). The Atlas of Southern African Birds Vol. 1. Non-passerines. BirdLife South Africa, Johannesburg: 669-671.

**Hockey PAR, Dean WRJ, Ryan PG (eds) 2005.** Roberts Birds of Southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town.

**IUCN 2010a.** *Grus carunculatus*. IUCN Red List of Threatened Species. Version 2010.2. Available from: [www.iucnredlist.org](http://www.iucnredlist.org) (Accessed on 18 August 2010).

**IUCN 2010b.** *Falco naumanni*. IUCN Red List of Threatened Species. Version 2010.2. Available from: [www.iucnredlist.org](http://www.iucnredlist.org) (Accessed on 18 August 2010).

**Kemp AC 2005.** Pel's Fishing-Owl *Scotopelia peli*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 259-260.

**McLachlan GR, Liversidge R 1978.** Roberts' Birds of South Africa. Trustees of the John Voelcker Bird Book Fund, Cape Town.



**McNamara M, Larsen EJ 2006.** Banhine National Park, Gaza Province, Mozambique – Watershed assessment. Report 10/2006, 38 pp.

**Oschadleus D 2005.** Lesser Masked-Weaver *Ploceus intermedius*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 1010-1011.

**Parker V 1999.** The Atlas of the Birds of Sul do Save, Southern Mozambique. Avian Demography Unit and Endangered Wildlife Trust, Cape Town and Johannesburg.

**Spottiswoode CN, Jackson HD 2005.** Pennant-winged Nightjar *Macrodipteryx vexillarius*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 274-276.

**Stalmans M, Wishart M 2005.** Plant communities, wetlands and landscapes of the Parque Nacional de Banhine, Moçambique. Koedoe 48(2): 43-58.

**Stalmans M 2004.** Parque Nacional de Banhine – Wildlife census 2004. Technical report commissioned by the African Wildlife Foundation. Unpublished report.

**Steyn P 1982.** Birds of Prey of Southern Africa. Creda Press, Cape Town: 284-286.

**Symes CT 2005.** Grey-headed Parrot *Poicephalus fuscicollis*. In: Hockey PAR, Dean WRJ, Ryan PG (eds). Roberts Birds of southern Africa, VII<sup>th</sup> ed. The Trustees of the John Voelcker Bird Book Fund, Cape Town: 222-223.

**Symes CT, Perrin MR 2004.** Breeding biology of the Greyheaded Parrot (*Poicephalus fuscicollis suahelicus*) in the wild. Emu 104: 45-57.

**Tello JLP 1973.** Reconhecimento Ecológico da Reserva dos Elefantes do Maputo. Veterin. Moçamb. 6: 19-76. As cited by Parker (1999).

**Tinley L 1972.** Banhine in the dry. African Wildlife 30(3): 28-30.

**West O 1976.** Notes on the distribution and status of the southern population of Wattled Crane in Africa. In: Lewis JC (ed). Proceedings of the 1973 International Crane Workshop. Oklahoma State University, Stillwater, Oklahoma: 347-349. As cited in Allan (2005).