

APPENDIX 2

SITES OF HIGH PROTECTION VALUE FOR BIRDS IN THE OKAVANGO DELTA RAMSAR SITE

INTRODUCTION

The Okavango Delta Ramsar site embraces three Important Bird Areas (IBAs) as defined by BirdLife International (2000). They are the Okavango Delta, Chobe/Linyanti River system and Lake Ngami. Each of these areas individually meets the international criteria that define Important Bird Areas and therefore qualifies for this status. These IBAs, particularly the Okavango Delta and the Chobe/Linyanti River system, are huge - in Europe and most other African countries, IBAs are relatively small, confined sites. Consequently, within these IBAs, there are some sites of **particularly high value** for birds - in most cases for groups of birds comprising a variety of species. These sites deserve special protection. They are documented here so that they may be taken into account during the ODMP, and particularly during the formulation of the land use plan for the Okavango. These sites are additional to any high value Slaty Egret sites identified during this project.

The following list of high value sites is not exhaustive; it has been compiled to supplement the information on key sites for Slaty Egrets, but future ornithological research will undoubtedly identify further important sites. The sites have not been identified on the basis of fixed criteria as they vary considerably, but in each case a rationale is given based on current knowledge. The sites vary from specific small localities *e.g.* heronries that occupy a few hectares, to more extensive areas within the Ramsar site.

HERONRIES

There are several large heronries in the Ramsar site, where herons and egrets, storks, ibises, cormorants and darters all breed. Some, like those on the Maunachira in Moremi are well-known; less well-known is the fact that the numbers of breeding birds at these three sites have been diminishing over the past few decades. Other larger sites are not well-documented, and need to be taken into account during planning activities. The major heronries are the following:

1. Xakanaxa

Of the three well-known heronries on the Maunachira River, Xakanaxa would appear to be the least important; Marabou Storks traditionally breed here, as do Rufous-bellied Herons, Little Egrets and Purple Herons, but numbers are generally low (nevertheless the numbers of Purple Herons are significant). Black Herons also probably breed here in low numbers occasionally. However, the globally threatened Slaty Egret has been recorded breeding at this site in 1975, 1985 and 1988, and it is likely that they use this site regularly. The presence of several nests here in an inaccessible *Ficus verruculosa* Water Fig island during 2005 corroborates this hypothesis - the nests are easily overlooked in the interior of the Water Figs. The presence of breeding Slaty Egrets alone makes this an extremely important site.

For mapping purposes, the co-ordinates of this site are S19.1358° E23.3803°

2. Gadikwe

The heronry at Gadikwe is the largest of the three on the Maunachira with significant numbers of 13 species breeding here (Marabou Stork, Yellow-billed Stork, African Sacred Ibis, African Spoonbill, Grey and Purple Herons, Great, Yellow-billed and Little Egrets, Cattle Egret, Black Heron, African Darter, Reed Cormorant). Steyn (1996) notes that this is the largest breeding site for both Marabou and Yellow-billed Storks in Southern Africa, although numbers have decreased substantially over the past two decades. This heronry is located at S19.1506° E23.2507°

3. Gcobega

Gcobega heronry is probably a satellite of Gadikwe, with Marabou and Yellow-billed Storks breeding here partly as an overflow from Gadikwe. However, it is important in its own right as a breeding site for Purple Herons. It is also a very important roosting site for relatively large numbers of waterbirds. From a conservation perspective, this site together with its neighbours, is important to protect core breeding populations of a variety of waterbird species. Gcobega is located at S19.1770° E23.2101°

The above three sites are ostensibly protected within Moremi Game Reserve. However, there have been concerns in the past that

powerboats and photographers have caused heavy disturbance (Motalaote 1996, Bell 1987). It is not clear whether the decline in number and variety of birds breeding here is natural or related to human disturbance.

4. Xini

The *Phragmites* reedbeds at Xini Lediba are used for breeding by small numbers of Slaty Egrets, Squacco Herons and Rufous-bellied Herons. Due to the presence of Slaty Egrets breeding here, the area should be designated as a high protection value site. It is located within Moremi Game Reserve at S19.39673° E23.48910°, and is a focus of tourist activity since the South Gate-Third Bridge road was illegally rerouted via Xini Lediba in the late 1990s.

5. Lediba la Dinonyane

The heronry at Lediba la Dinonyane is the largest in Botswana (and possibly Southern Africa) in terms of number of birds breeding here. Ten different waterbird species breed here, with African Openbills dominating (about 600 nests of this species were counted in 2005, but almost certainly over 1,000 pairs bred here since some Openbills were still nest-building at the end of September when chicks were fledging from the first nests built). This is the only place in the Delta where Pink-backed Pelicans currently breed, and one of only three sites in Botswana. This heronry is in CHA NG 27a, and has the following coordinates: S19.50018° E22.85405°.

6. Xigera 1

There is a heronry just east of the Boro River in Moremi Game Reserve that apparently has no name; due to its proximity to Xigera Camp, it has been called Xigera heronry. It is located at S19.37200° E22.81792°. It is very important for Reed Cormorants, African Darters, and to a lesser extent African Spoonbills. This site is in Moremi Game Reserve and is currently relatively inaccessible.

7. Xigera 2

Like the preceding site, this one has no name, but is relatively close to Xigera Camp, at S19.40174° E22.77941°. It is one of the few known sites where Rufous-bellied Herons breed, and has been used for at least the past two years (J Mwanje pers. comm.).

8. JereJere

There is a relatively large breeding site for African Darters at this lagoon (M Muller pers. comm.). It is located just outside Moremi Game Reserve, in NG 21 at S19.10107° E23.00135°, not far from Xugana Camp.

9. Palm Island, Okavango River

This site is on the western side of the Okavango River, immediately downstream from Palm Island, at S18.43333° E21.98333°. Large numbers of African Openbills bred here in 2004 (Pryce *et al.* 2005). The site is currently unprotected, in CHA NG 10.

10. Kgaolothogo Channel

This heronry is in a reedbed near the lower junction of the Kgaolathogo Channel with the Okavango River, not far from Palm Island. The co-ordinates are S18.40178° E21.96014°. It is used by large numbers of Black and Squacco Herons, among others (E Pryce pers. comm.). It is currently unprotected, in CHA NG 10, and was burnt during late 2005 after birds started breeding.

11. Qequ Lediba, NG 25

This site, near Jacana Camp in NG 25 (S19.28908° E22.63734°), was used during 2004 as a breeding site for significant numbers of African Openbills and other waterbirds (G Atkinson pers. comm.). It is not clear why it was not used during 2005.

12. Mogogelo headwaters

At the headwaters of the Mogogelo in Moremi Game Reserve there is a heronry in a moribund *Phragmites* reedbed used intermittently by 'white' egrets since before 2001 (see Babbler 40: 22). This site was in used during February 2006 following good rains. It is located at S19.42351° E23.44757°.

13. North-east Chief's Island

There is a 'white' egret breeding colony in *Phragmites* reeds reported by S Tyler as being active in September, 2001 (see Babbler 40: 22). It is recorded as being situated at S19.45083° E22.97833° (see Babbler 40: 22), but these co-ordinates are not north-east of Chief's Island and therefore need to be checked.

14. Sitatunga Camp

This site, located in *Phragmites* reeds at S20.0759° E23.3625° is on private property in NG 36, and is used by significant numbers of breeding Cattle Egrets and Black-crowned Night-Herons, as well as a few Rufous-bellied Herons.

There should be no human disturbance at these heronries, and no activities permitted that would impact on the reedbeds that form the nesting habitat. The only form of land use permissible should be controlled photographic tourism, adhering to a strict Code of Conduct.

ROOSTS

Many of the heronries described above are used as roosting sites overnight, throughout the year, by the same birds that breed there during the breeding season. This makes them important year-round.

In addition, there are several sites that are used specifically for roosting only - these are mainly *Phragmites* reedbeds. The best-known are those in front of PomPom and Eagle Island Camps. There are several other reedbeds too, that are also used by thousands of birds. Some bird species such as the large egrets, African Darters and African Openbills prefer the riverine trees by the Okavango and side channels - for example, two trees at the Guma Lagoon inlet and trees between Shakawe Lodge and Mohembo are used for roosting by these species. These sites all deserve some protection status. They are described below:

1. PomPom

This reedbed is located in front of PomPom Camp at S19.5845° E22.8426°, in NG 27a, and is used regularly by 19 species of waterbirds, with numbers sometimes exceeding 6,000 individuals (Tyler 2005). Large numbers of Slaty Egrets use this site. It is likely that the presence of the camp has afforded this reedbed a measure of protection from fire and reed-cutters.

2. Eagle Island

Seventeen waterbird species roost here, with numbers fluctuating from a low in April to a peak in November, of a few thousand birds (Randall 1988, Tyler 2003). This reedbed, like the preceding one, is probably protected

from fire and reed-cutters through its proximity to Eagle Island Camp, in NG 27b at S19.5438° E23.0485°.

3. NG 30

This reedbed is located in the northern part of NG 30 at S19.59340° E22.92239° and is used by large numbers of egrets, in addition to many Slaty Egrets.

4. Nxaraga Lediba/HOORC field camp

Reedbeds between HOORC field camp at S19.55256° E23.18123° and Nxaraga Lediba at S19.5642° E23.2059° are used by many waterbirds, but especially Slaty Egrets for roosting throughout the year (Tyler 2005). These reedbeds are along the Boro River, and are therefore protected on the eastern side; on the west they are in NG 27b. The Boro is a major transit route for boats, and this could be a disturbance to this site.

5. Boro River near Ivory Camp

There used to be a heronry in a large reedbed on the Boro River at S19.38578° E23.12137°, used primarily by Great Egrets. Since the reedbed was burnt, no birds have bred here, but recently it has been used as a roosting site for Great Egrets and a variety of other waterbirds. It is located in NG 32, on a boat transit route, and this may be a disturbance factor.

6. Guma Lagoon

Trees at the inlet to the lagoon are used by significant numbers of African Darters, Great Egrets and African Openbills. This site is in NG 7 and is not currently protected.

7. Samedupi reedbed

There is a remnant of a reedbed on the upper Boteti River just upstream of Samedupi (at S20.1161° E23.5100°) that is the largest known roost for Cattle Egrets in Botswana. Small numbers of other *Ardeidae* also use the site. It is in NG 35, and is unprotected.

8. Okavango River, Shakawe Village

Trees lining the Okavango River near Shakawe (at S18.37131° E21.86883°) are used by numerous African Darters and Reed Cormorants for roosting. This site is in NG 10 and is unprotected.

9. Okavango River, Shakawe Fishing Camp

This site, a *Phragmites* reedbed near Shakawe Fishing camp in NG 10 (unprotected) is used by large numbers of Cattle Egrets for roosting. The co-ordinates of the site are S18.41505° E21.90130°.

No human disturbance should be permitted at these sites between sunset and sunrise. During the day, any activity that does not negatively impact on the roosting habitat (especially reedbeds) is permissible.

OTHER SITES

1. Jao/Kwetsani Flats

The Jao and Kwetsani Flats are located in NG 25, at approximately S19.28632° E22.57554° and S19.24996° E22.53856° respectively. These shallow floodplains are unique in the Delta, and are used for feeding and roosting by large numbers of Wattled Cranes (flocks of 100 to 350 are common), African Openbills (several thousand) and Spur-winged Geese (2,000 in April, 2005), as well as supporting the highest density of Slaty Egrets.

2. Okavango Panhandle

Sandbanks along the Okavango Panhandle are used by the near threatened African Skimmer for breeding. The decline in numbers of Skimmers breeding in this area is well documented, as are the causes (see for example Vial 1995, Aspinall 2005). The sites can be categorized as follows:

- Upper Okavango River
 - Ngarange Channel S18.42961° E22.00130°
 - Xaro Camp S18.42125° E22.93950°
 - Downriver of Shakawe Fishing Camp S18.42241° E21.96856° and S18.42808° E21.92012°
 - Upstream of Shakawe Fishing camp S18.28778° E21.82559°, S18.29382° E21.82061°, S18.29382° E21.81980°, S18.32610° E21.83460° and S18.34100° E21.83500°.
 - Above Drotsky's Camp S18.40300° E21.88320°
 - Upstream of Shakawe Village S18.42000° E21.89500°
 - Near Mohembo S18.29000° E21.81200°
- Okavango River near Sepupa
 - Sandbanks at S18.68632° E22.18900°, S18.70962° E22.21365°, S18.71328° E22.22232°, S18.71892° E22.23758°, S18.75198°

E22.26375°, S18.22300° E22.12500°, S18.42440° E22.13230°,
S18.45040° E22.15500°, S18.78587° E22.25125° and S18.78672°
E22.25000°.

There are also important breeding colonies of Carmine and White-fronted Bee-eaters along the Okavango Panhandle. The largest is in Shakawe Village, at S18.34188° E21.83573°; another is near L Wilmot's plot at S18.42924° E21.90569°; a third is at Red Cliffs.

3. Okavango floodplain near Seronga

The floodplains upstream and downstream of Seronga are important for concentrations of Slaty Egrets and African Openbills, especially when drying. Other important species found year round include Quail Finch and Rosy-throated Longclaw.

4. Xigera Lagoon

The sand deposited at the top end of Xigera Lagoon (S19.32507° E22.69695°) forms sandbanks that become exposed during years of low floods, and are now used by increasing numbers of African Skimmers for breeding sites. This is probably also related to a rise in disturbance at traditional sites along the Panhandle. This site is protected within Moremi Game Reserve, but may be affected by the activities of illegal fishermen.

5. Jao/Boro floodplain

The Jao/Boro floodplain from Jao Village down to the Buffalo Fence is the primary habitat for Wattled Cranes and Saddle-billed Storks (see Craig and Gibson 2001, Craig 2002, Motsumi *et al.* 2003). However, the distribution of only these two species has been intensively studied and documented; it is very likely that they are indicators for a variety of waterbird species that also feed mainly in this floodplain system. The eastern side of the Boro is largely within Moremi Game Reserve, but the western part falls in NG 24, NG 25, NG 27a, NG 27b and NG 32.

6. Thamalakane and upper Boteti Rivers

Regular biannual waterbird counts conducted by BirdLife Botswana throughout the Okavango Delta repeatedly highlight the importance of the Thamalakane and upper Boteti Rivers as areas with high numbers, density and diversity of waterbirds (see Tyler 2001). This is because the water in these rivers is relatively nutrient-rich compared to the oligotrophic waters of the Delta proper.

7. Lake Ngami

When Lake Ngami has water, as it did during 2004 and 2005, it is one of the most important bird areas in Southern Africa. Monitoring during 2004 by Hancock *et al.* (2004) showed that 58,550 waterbirds of 97 species were present, of which 16 exceeded the 1% population threshold (*i.e.* the lake supported >1% of the global population) and 25 bred there. Globally and nationally threatened bird species such as Wattled Crane, Slaty Egret, Black-winged Pratincole and Kori Bustard were also recorded. In light of the above, the whole of CHA NG 38 should be protected.

8. Khwai River

The Khwai River, east of Khwai Village (S19.15840° E23.54108°), is well-known for its raptor populations - it is not uncommon to see 15-20 Bateleurs drinking and loafing at one spot, together with numerous vultures, Tawny Eagles, African Fish Eagles and, during summer, Lesser Spotted and Steppe Eagles, Black Kites and Steppe Buzzards on passage. Bat Hawks are also frequently seen, as are Brown, Black-chested and Western Banded Snake-Eagles. The river valley is also important for storks such as the Woolly-necked Stork. The status of some of these species is of global and national concern, making this an important area to protect.

These sites should be treated on an individual basis, and monitored to determine if there are any negative human impacts. Some of them *e.g.* sandbanks used by African Skimmers for breeding, are in unregulated areas where human impact is high, and a specific action plan will be required to mitigate against negative impacts. Other areas *e.g.* Jao/Kwetsani Flats are well cared for since the birds are an important tourist attraction, and the area is currently leased to responsible concessionaires.

CONCLUSION

Many of these sites bear an importance for birds way out of proportion to their small size *e.g.* heronries and roosts. They should therefore be relatively easy to protect. Similarly with some of the larger areas such as the Jao Flats and Lake Ngami - the former is already well cared for in NG 25, and Lake Ngami is a unique area where bird protection can be compatible with other activities. In other areas however *e.g.* Okavango floodplain near Seronga, Thamalakane and upper Boteti Rivers, it will be much less easy to ensure that birds are adequately protected, due to conflicting land uses and the presence of considerable

numbers of people. In these cases, a consultative approach will need to be adopted where all stakeholders have an input, to identify positive solutions that benefit birds while at the same time providing opportunities for local communities.

REFERENCES

ASPINALL, T. 2005. African Skimmers on the Okavango River, 2004. *Babbler* 46: 18-24.

BELL, C. 1987. Interference at Heronries in the Okavango Delta. Letter to the Editor, *Babbler* 14: 2-3.

BIRDLIFE INTERNATIONAL 2000. *Threatened Birds of the World*. Lynx Edicions and BirdLife International: Barcelona and Cambridge, United Kingdom.

CRAIG G.C. & D. ST.C. GIBSON 2001. Aerial Survey of Wattled Cranes in the Okavango Delta, Botswana - August 2001. Report of DG Ecological Consulting to BirdLife Botswana Crane Working Group.

CRAIG, G.C. 2002. Aerial Survey of Wattled Cranes in the Okavango Delta - August, 2002. Report of DG Ecological Consulting to the BirdLife Botswana Crane Working Group.

HANCOCK, P, OAKE, K, TYLER, S AND BREWSTER, C. 2004. Monitoring waterbirds at Lake Ngami - an Important Bird Area. A report to Wetlands International.

MOTALAOTE, S. 1996. Nesting and boat disturbance of colonial birds in the Okavango Delta, Botswana. MSc thesis, South Dakota State University.

MOTSUMI, S, CRAIG, C and HANCOCK, P. 2003. Aerial survey of Wattled Cranes in the Okavango Delta - August, 2003. BirdLife Botswana Crane Working Group.

MULLER, M. Personal communication. PO Box 101, Maun. E-mail: muller@ngami.co.za

MWANJE, J. Personal communication. Great Explorations, Private Bag BO 43, Maun.

PRYCE, E., TYLER, L. & TYLER, S.J. 2005. African Openbills *Anastomus lamelligerus* nesting in the Okavango Delta. *Babbler* 45: 54-55.

PRYCE, E. Personal communication. Shakawe Fishing Camp, PO Box 12, Shakawe.

RANDALL, R.D. 1988. The Ardeidae at the Xaxaba Reed-bed. *Babbler* 15: 31-32.

STEYN, P. 1996. Nesting Birds. Fernwood Press, 240 pp.

TYLER, S.J. 2001. A Review of Waterbird Counts in Botswana, 1991 - 200. *Babbler Special Supplement* No. 1. 94 pp.

TYLER, S.J. 2005. Counts of herons, egrets, storks and ibises at some roost sites in the Okavango Delta, summer 2004/5. *Babbler* 46: 32-34.

VIAL, C. 1995. The influence and effects of disturbance on the distribution, nest ecology, breeding biology and reproductive success of the African Skimmer *Rhynchops flavirostris* in the Panhandle of the Okavango Delta. Unpubl. MS, Conservation International, Maun.