

IUCN – THE WORLD CONSERVATION UNION /  
BIRDLIFE INTERNATIONAL / WETLANDS INTERNATIONAL  
***SPECIALIST GROUP ON STORKS, IBISES  
AND SPOONBILLS***

NEWSLETTER

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### **A Renewed Newsletter**

We are bringing back the SIS Newsletter. This was popular many years ago. It allowed people to share their results and to communicate with others interested in these birds.

The Newsletter was suspended, in part because of the tremendous cost of sending it by mail. It is now much easier and more affordable over the web. We hope to allow the same wonderful communication.

We intend to provide this twice a year but if we receive more submissions, we would like to make it available more frequently. This depends on you.

THIS IS AVAILABLE AT THE WETLANDS INTERNATIONAL WEBSITE:

<http://www.wetlands.org>

**Send in your activity report! We want to report on projects and publications on research, protection, education and management of Storks, Spoonbills and Ibises all over the world.**

**We ask contributors to submit:**

- **Articles describing observations, projects or publications preferably in no more than 2000 characters.**
- **The contributor's name, address and e-mail should be added at the end of the article.**
- **Place names in the article should be noted with longitudes and latitudes.**

**We encourage to mention websites of the project or publication.**

**PLEASE LET OTHERS KNOW ABOUT THIS NEWSLETTER. IT IS FREE. WE LOOK FORWARD TO WORKING WITH YOU**

### **WE ALSO LOOK FORWARD TO YOUR CONTRIBUTIONS TO THE NEWSLETTER!**

#### **SIS Specialist Group**

The Specialist Group is primarily interested in the conservation of storks, ibises and ibises throughout the world.

We do this by facilitating communication among conservationists and researchers. We have maintained a library and make articles available to everyone. We would appreciate a copy. But if you can send us the reference we can make others aware of your contribution.

We follow the status of these birds throughout the world. If the situation changes, let us know so we can be aware of these changes and make contributions.

We cannot do this just from the Specialist Group, but depend on your help. So, please contact us and we will send you information and keep you in touch with others working with the same species or similar efforts.

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## Botulism epidemic kills Black-faced Spoonbills in Tainan County, Taiwan

The TsengWen Estuary in Tainan, Taiwan, provides critical wintering habitat for the endangered Black-faced Spoonbill. Over 66% of the world's population of just over 1000 birds spend the winter in this area. They are vulnerable to catastrophes such as weather and disease.

From December 9<sup>th</sup> 2002 through February 5<sup>th</sup> 2003, one of the first botulism epidemics documented in Asia was detected in this area. During four episodes, 90 birds suffered: 73 died and 17 were rehabilitated.

Domestic scientists quickly identified toxin C1 of *Clostridium botulinum* as the cause. There was a large effort from different agencies and conservation groups in Taiwan to contain the epidemic. There was also much international cooperation from many countries, including Japan, Korea and the United States. Antitoxin serum from the US Geological Survey Wildlife Health Laboratory helped save some intoxicated birds.

Tainan County developed protocols for all emergency operations: emergency rescue, identifying causes of outbreaks and tracing toxins, medical attention to the birds, releasing rehabilitated birds and habitat management.

An International symposium was convened by the Taiwan Government in early April to evaluate this outbreak, discuss how to deal with future outbreaks and increase cooperation among Asian countries. Future meetings will develop a specific Action Plan for the Black-faced Spoonbill in Taiwan.

The Tainan County Government continues to develop its program to prevent botulism outbreaks in the coming winter and how to deal with possible outbreaks, bases on the discussions at the symposium.

Chris Weng  
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## Website on Black-faced Spoonbill

The Hong Kong Bird Watching Society Limited has recently produced a website on "Black-faced Spoonbill", the URL is:

<http://www.hkbws.org.hk/bfs/index.html> (English)  
<http://www.hkbws.org.hk/bfs/indexc.html> (Chinese)

It gives an introduction to this globally threatened species, distribution, recent conservation actions and figures. It also has a newsgroup which provide an interactive means for exchange of information.

The report for the International Black-faced Spoonbill Census (24-26 January 2003) is available for download from this website.

If you have related information or suggestion to links of websites, please feel free to contact [hkbws@hkbws.org.hk](mailto:hkbws@hkbws.org.hk) and [bfspoonbill@hkbws.org.hk](mailto:bfspoonbill@hkbws.org.hk)

## Census

The White Stork is one of the most well known bird species and is more than other wild animals related to human life. The decline of the White Stork population has often been used to highlight problems in the environment, notably the loss of wetlands and the changes in agriculture. White Storks have been intensively studied in the past. Their worldwide population has been followed through five international censuses, 1934, 1958, 1974, 1984 and 1994. After completion of the 1994 census, the national coordinators agreed to aim for the next international census in 2004, to be coordinated again by NABU.

NABU (BirdLife in Germany) with its Institute for Bird Protection in Bergenhusen is ready to undertake this task. The coordinator will be Kai-Michael Thomsen. For many good reasons, the project will be run under the umbrella of BirdLife International and its partnership. Besides knowing the actual size of the worldwide White Stork

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population and following up the tradition of international censuses every ten years, there are further important reasons for the Census. The Census will take place almost exactly on the date when probably 10 new member states will access the EU, among these are countries hosting major stork populations. Agriculture policies in the new member states will change and with them the habitats for White Storks and many other farmland birds. The White Stork census will take place at point zero and can be used to monitor the changes following the accession. Furthermore, White Storks are very popular birds. The census can be used by partner organisations to attract media, to activate their membership and to recruit new members.

What is the White Stork census? The aim of the project is to census the worldwide population of White Storks in 2004. Ideally, each single nesting pair of White Storks should be counted by field workers in 2004. These field workers should be coordinated by the national BirdLife partner, and the national coordinators should report back the sizes of the White Stork population in their countries by the end of the year. In a few countries this will not be possible and alternative methods have to be investigated.

Once the network of national coordinators is established, most of the contacts will be done through an E-mail group and on the web. There will be several newsletters to update the progress of the project. These will be sent to the national coordinators and other persons interested in the project.

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## **Newsletter Northern Bald Ibis**

The International Advisory Group for Northern Bald Ibis has produced a newsletter on the species. You can read about new and existing projects and new literature. Contact chairman Chris Bowden for a copy of the newsletter at <[chris.bowden@rspb.org.uk](mailto:chris.bowden@rspb.org.uk)>

## **Publications**

A) The BirdLife partner in the Netherlands produced a report, analysing the mortality of White Storks. Title: White Stork conservation in The Netherlands: annual survival and powerline mortality, written by Blandine Doligez e.a. (2001). You can get a digital English summary from <[hans.kruse@vogelbescherming.nl](mailto:hans.kruse@vogelbescherming.nl)>

B) The NABU Institute for Bird Conservation published national action plan for the White Stork conservation in Germany. Since the early 1930's the breeding population of the White Stork in Germany has had a decline continuously from more than 9000 pairs to 2949 pairs in the year 1988. Since 1989 the population has recovered and in the year 1999 4282 pairs were again breeding in Germany. This recovery of the population is mainly due to the fact that birds immigrated from central populations in eastern Europe. The long-term success of reproduction is not sufficient in many regions of Germany to maintain the population. Comprehensive conservation measures are necessary in the living space of the White Stork in order to transform the positive development during the latest years into a long-term positive trend. For this reason a national action plan for the conservation of the White Stork was worked out in the "NABU Institute for Bird Conservation" in Bergenhusen. This action plan has the task to help to spend the limited available means for the White Stork and moist area protection efficiently and systematically. The project was supported financially by the "Michael Otto Stiftung für Umweltschutz". The action plan includes the evaluation of the existing material of data about the population and the reproduction success of the White Stork throughout Germany. Elaborates on reasons for the different population size and the varying success of reproduction in the single

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regions of Germany. Identifies and describes important habitats of the White Stork. Outlines the fundamental objectives and measures for the conservation of the White Stork. Identifies “Areas of Special Conservation Importance” for White Stork in Germany.

The national action plan for the White Stork conservation in Germany has been published as a book and can be ordered at the “NABU Institute for the Protection of Birds” in Bergenhusen. Address to contact: Kai-Michael Thomsen, NABU Institut für Vogelschutz, Goosstroot 1, D-24861 Bergenhusen <[nabu-inst.thomsen@t-online.de](mailto:nabu-inst.thomsen@t-online.de)>

C) The results of tracking tagged White Storks from Europe to Africa have been published in a report. This publication ‘Eastern European White Stork Populations: Migration Studies and Elaboration of Conservation Measures’ was possible thanks to the support of the German Federal Agency for Nature Conservation.

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## Conferences:

### Announcement 4th International Black Stork Conference.

The Hungarian Ornithological and Nature Protection Society will host the 4th International Black Stork Conference in Hungary, April 2004. Exact location will be determined according to the number of registrations. The official languages of the 4th IBSC will be English and Hungarian. The homepage of the 4th IBSC will be continuously updated. Pls. find it at:  
<<http://ciconianigra.tripod.com/IBSC2004/IBSC2004index.html>>

## Question: Investigations of dietary calcium requirements in growing storks

Dr. Ellen Dierenfeld, (Wildlife Conservation Society, USA) and Dr. Andrea Fidgett, (Chester Zoo, UK) have been awarded a research grant from the Waltham Foundation to investigate the dietary calcium requirements of growing storks. Storks are semi-aquatic carnivorous birds that have historically not bred well in captivity; nutritional factors may well underlie health and successful reproduction in these altricial, rapidly growing species. Although rather catholic in choice of food items in nature much of the year, following hatching, storks have been anecdotally reported to feed frogs almost exclusively to growing chicks. Whole frogs analysed by our research group contain up to 5% Ca (DM basis). Field data may thus provide a clue to Ca (and other nutrient) requirements of growing storks and we hope to better clarify the information available regarding food items eaten by storks in nature from observations. To date, there are few investigations that quantify nutrient needs of altricial avian species.

We hypothesize: 1) Ca needs of altricial chicks are higher than those of precocial species, thus poultry do not provide an appropriate physiological model – although a combination of domestic carnivore and poultry data may; 2) growth rates and deposition of Ca are higher in altricial, long-legged bird species compared with poultry species, and 3) prey consumed by storks in nature varies in Ca content on a seasonal basis, corresponding with the nutrient needs of growing chicks. This integrative study will evaluate Ca nutrition of storks, evaluating data both directly and indirectly. Growth and development of stork chicks hatched at the Bronx Zoo fed a high-Ca (4-5 %) diet will be compared to a retrospective summary of medical records from those fed typical diets containing 2-2.5 % Ca. In addition, we propose to collate growth and diet records from captive storks in US zoos, as well as zoos and stork centres in northern Europe in collaboration with EAZA and IUCN counterparts. We will shortly be circulating a questionnaire seeking captive diet and growth information, and

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look forward to your assistance in compiling this data.

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## NOTES FROM AFRICA

### East Africa: Ethiopia

East Africa along with South America has the highest diversity of SIS in the world. The poor state of our knowledge of the Ethiopian Avifauna and the presence of an endemic ibis may make my records worth recording. Classification follows Urban and Brown (1971).

Nairobi to Isiolo was green and cultivated. Isiolo to Moyale was drier and reminiscent of Matabeleland in western Zimbabwe with isolated kopjes and Acacia scrub. From Moyale on the Ethiopian border (26/3/96) the first ten days and the last four (to 27/4) were spent travelling up to the Rift Valley (less than 2000m) to Addis Ababa with sidetrips to Arba Minch (west) and Ginsha (east) at nearly 3000m (in the Bale Mts). The dominant vegetation was gumtrees and Acacias in peasant farmland, much of which was overgrazed even in the National Parks. Three of the Rift Valley Lakes were visited:

1. Lake Awasa (29/3) Around 2 kms of reedy edge in shallow water viewed from an embankment immediately west of town.

2. Lake Hora (9/4): a complete circuit of a deep volcanic lake surrounded by hills and woodlands and only a few reeds.

3. Zwaii Lake (26/4) Flooded grassland and acacia to the east of town.

Ginsha; streams in overgrazed valley in Bale National Park. The trees were few and relatively short and the highest perches were electricity pylons.

Abbis Ababa to Fanote Salam; many gums and grassland.

Fanote Salam to Gondar: Houses area forested with gums. Large areas were devoid of grass; just low shrubs and umpteen goats.

Gondar to Aksum: more hills; less livestock more bushy and more species. Flatter areas have more livestock and are barer.

Aksum: bare stock dam in woodland near town.

Aksum to Mahake: much drier. Most vegetation Euphorbia, aloes and acacia.

Mahake to Dessie: more trees especially Acacia and gums.

Dessie to Addis Ababa: greener.

The largest trees in Ethiopia are those found in the towns and villages where they may be partially protected as compared with those in the rural areas where they are all too liable to be used for firewood. Its taboo for Ethiopians to eat any birds except chickens. During the previous regime, everything was nationalized so people did not feel that trees and wildlife belonged to them. Once freedom came, they moved in and much destruction of the remnants occurred.

In order to make some comparisons with 85 years ago at about the same time of year in Ethiopia, the data given in Friedmann (1930) in the form of number of localities and number seen (this last is not given for two species so I have just listed the number collected) is listed as referring to a trip made in the winter 1911/12 covering the southeastern plateau and the Rift Valley and out into Kenya.

### Species Observed

Abdims Stork *Ciconia abdmii*

F: 5 localities and 6 collected.

In the Ethiopian Rift Valley the first and second towns south of Zwaii each had two nests with birds on them. In the town north of Zwaii a bird was seen landing on a mosque. In the town north of Shashamene two birds in a tree were probably on a nest. At Lake Hora there was one bird in a tree. They were seen in Gondar and Aksum and three were seen in wet grassland between these two

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towns, At Orata (on the road between Fanote Salam and Gondar) two adults were seen carrying straw to a nest 15m up in the street. There were no mutes and the birds were probably building. At Rajo (between Mahake and Dessie) one bird on a stick nest in a tree. With six nests seen and one probable they are clearly widespread breeders in the towns of the Ethiopian Rift Valley and less so on the Plateau.

Saddle-billed Stork *Ephippiorhynchus senegalensis*

F: no records.

One seen at Lake Awasa is my only record.

Marabou *Leptoptilos crumeniferus*

F: 11 localities with over 600 birds seen, including over 100 around Lake Abaya.

In the Ethiopian Rift Valley

Hundreds were seen at Zwaii and Awasa with three birds on three separate nests in the latter place though Urban and Brown (1971) record breeding only in September and October. Only one bird seen on the plateau between Gondar and Aksum. None were seen in Kenya but in Uganda (5/5 to 13/5) they were seen in Kampala (15), Fort Portal, Kasese (c20 roosting north of town appeared to be the total population), Mbarara and Masaka, where there were nine nests in pinetrees, some with big chicks exercising their wings on Entrance Rd between the Caltex and Total Petrol Stations in pinetrees c10 to 15m up. The estimated laying date would be the first week in January. This colony was not known to Pomeroy (1977) but is in line with the increase of this species in Uganda. The only ones seen outside towns were two groups of two and three between Mbarara and Kabale. In Tanzania between Mwanza to Nzega one was seen on a rubbish tip and six in a village. Nzega was the most southerly record. In Uganda and Ethiopian Rift Valley they were common in villages and town with larger numbers in Ethiopia but few were seen outside settlements.

Yellow-billed Stork *Mycteria ibis*

F: 1 locality: 12 birds seen.

The only records from Ethiopia was of two adults on an unvegetated reservoir near Aksum and ten in

flooded grassland on Lake Zwaii. Four were seen on Lake Baringo (2/4) in Kenya. On the lakeside by Mwanza and in flooded grassland towards Nzega singles were seen.

Hammerkop *Scopus umbretta*

F: 6 localities: 31 birds.

Birds were seen at Lakes Awasa and Zwaii (15), Aksum Stock Dam and a dam between Mwanza and Masaka.. Further birds were seen by the roadside in this last locality, Addis Ababa, between Eldoret and Tororo and between Mbarara and Masaka. More birds in transient habitats in the rains parallels my Zimbabwe experience. Zimbabweans are very superstitious about this bird whereas in Ethiopia they do not appear to be.

Sacred Ibis *Threskiornis aethiopia*

F: 3 localities: c30 birds seen.

One bird was seen in a field between Nairobi and Isiolo. On the return journey, between there and the border at Moyale, on rain pools, which were present but unused (by any waterbirds) a month earlier. twenty were seen. In the Ethiopian Rift Valley five were present on Lake Hora, twenty on Lake Zwaii. Between Zwaii and Shashamene four were seen on bare ground. Between Addis Ababa and Fanote Salam and between Addis Ababa and Dessie birds were seen in grassland. At Naivasha (30/4) they were seen on the lake and fifteen were seen on a rubbish tip. Ten were seen on Lake Baringo and one was seen between Eldoret and Tororo. One was seen in Kabale in Uganda. Between Mwanza and Nzega five were seen on a rubbish tip and twenty five in flooded grassland. Two were seen further south between Nzega and Tabora. Clearly more birds were seen between Nairobi and Addis Ababa on the return journey than on the outward journey. It appears quite widespread in Kenya and Tanzania (but not in Uganda ) on lakes, grassland and rubbish tips.

Wattled Ibis *Bostrychia carunculata*

F: 5 localities: 8 collected.

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On the northward journey the first birds seen were a roost of six birds in Dilla. Their call sounded like an old car being cranked up and refusing to start. Thereafter usually 1/day in the Rift Valley in fields even around house or in a tree. It was locally common at Awasa 1 April with nine birds on the lake and a nest c4m up near the Administration Offices with two branchers being attended by a flying adult. There were many weaver's (*Ploceus baglafaecht*) nests in the tree. Assuming similar incubation and fledging period to the similar-sized Hadedah Ibis, these birds may have laid in the week around 15 Feb. Going south, Addis Ababa to Moyale (2 days) two pairs and three singles were seen most in field, one pair with cattle. The last was seen some 50kms south of Dilla. Between Addis Ababa and Gondar (a two day journey) fifteen sightings with an average flock size of 4.5 with a maximum of fifteen usually in grassland. On the Gondar - Aksum - Dessie - Addis Ababa circuit (a three day journey) only five sightings usually just one or two birds with a maximum of three. At Ginsha four flocks of between ten and twenty birds were seen feeding in the grassland and flying up to roost in the hills above. My guide said they bred in the river canyon some 20m deep in a colony. They appear to prefer the wetter western side of the plateau and Ginsha with a preference for feeding in grassland even in villages where the larger trees may attract them to roost. It is possible that the larger flock sizes observed in the west of the Western Highlands as compared with other areas may be related to different breeding seasons. This endemic species is clearly not in any danger in its limited area of occurrence and can adjust to modified environments.

#### Hadedah Ibis *Bostrychia hagedash*

F: 3 localities: 6 birds seen.

Between Nairobi and Isiolo this bird was seen in grassland, four with Pied Crow (*Corvus albus*). Five were seen on Lake Hora and one on Lake Naivasha. Three records of birds on streams between Addis Ababa and Fanote Salam, Shashamene and Dilla and near Nakuru. In Uganda it is a town bird with four calling over the campsite

in Kampala and further seen in Bunyoro, Mbarara and Kabale.

#### Glossy Ibis *Plegadis falcinellus*

F: no records.

Two flocks (of four and five respectively) of this bird were seen on Lakes Zwai and Naivasha. One was seen between Tororo and Kampala in flooded grassland and three on a rock near Mwanza. Clearly not a common bird in the parts of East Africa I visited at this time of year and most of the population appears to be northern migrants.

#### African Spoonbill *Platalea alba*

F: no records.

One record of fifteen from Lake Baringo, Kenya.

#### Discussion

In these parts of Eastern Africa a total of fourteen species are believed to be present. Of these I saw a total of ten species; two other species had moved north before my arrival and the other two are uncommon. In Ethiopia four species were common during my visit: Marabou, Adbims Stork, Hammerkop and the endemic Wattled Ibis though the first species is less common in the highlands. The rarity of the Marabou in the highlands is surprising because vultures (especially *Necrosytes monachus*) are still common there but today they are more or less restricted to livestock carrion.

It is clear that in Friedmann's time, Marabou and Hammerkop were as abundant in the Rift Valley (the former around habitations) as they are today. The data is less clear about the other two species but the endemic Wattled Ibis adapts well to modified habitats and is not endangered. However its distribution appears patchy being more common in some areas than in others. It seems that the Sacred Ibis may have increased in the last 85 years. With only a few recent (post 1960) breeding records (Urban and Brown 1971), it seems probable that this increase was achieved by immigration. The three Afrotropical species (Openbill *Anastomus lamelligerus*, Glossy Ibis and African Spoonbill)

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that I did not see or saw at only one locality in Ethiopia were not seen by Friedmann; so there appears to have been no change in their status since then. Urban and Brown (1971) regard the Woollynecked Stork *Ciconia episcopus* as uncommon i.e. less than ten records a year in suitable habitat whereas Friedmann saw 31 birds in 7 localities in 7 months not specifically in its habitat (and I saw none). This implies some decline perhaps associated with tree destruction and the failure to colonise towns.

Three of the common species (not Hammerkop) use the larger trees in villages and towns for breeding and the Marabou also gets its sustenance in towns. Friedmann does not report finding any nests of these species: so it appears that the use of habitations for reproduction has increased in recent years with the size of the settlements.

In Uganda the Hadeda and Marabou were widespread in the towns. Yet in Ethiopia the Hadeda was only seen on streams, why does this species not frequent towns in Ethiopia? In the Marabou this is a feature of the northern half of the eastern side of Africa with the last urban Marabou being seen in Central Tanzania. In Zambia on a number of visits in the eighties I have seen no SIS in the towns and fields. In Zimbabwe, as I have previously described in the SIS Newsletter, the Marabou is now nearly restricted to wildlife areas and Adbim\’s Stork is a migrant using the wetter pastures including those to be found in towns like golf courses. It did not appear to my untrained eye that Ethiopian and Ugandan towns appear to have more waste food around than other towns in Eastern and Southern Africa. More exact analysis may reveal that the trees in Ethiopian and Ugandan towns are larger than those elsewhere on the continent and I feel this is likely to be explanation. This is clearly the case in Spain (as I saw on a visit in June 1997) where church towers and other tall buildings offer secure nesting sites for the White Stork \’i *Ciconia ciconia*, which feed outside town in the pastures.

In conclusion then, four species, including the one endemic, appear common in Ethiopia today

and one other species having increased and another decreased since Friedmann (1930). It appears likely that with tree destruction outside the town, three species have colonised the towns to use the larger trees in the absence of persecution.

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- D.A.Ewbank, c/o Burgoynes House, Burgoynes Lane. Impington, CB4 4NB, Britain.  
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### **Saddlebill Stork in Zimbabwe**

Storks are a declining group with more palaeospecies than neospecies (Fisher and Patterson 1964). They are also in trouble in South Africa with seven species in the Red Data Book (Brooke 1984) though not all of these appear endangered in Zimbabwe (Hustler et al. 1990). This note attempts to bring together what data there is particularly breeding data for the Saddlebill *Ephippiorhynchus senegalensis* .).The rainfall recorded at Goetz Observatory, Bulawayo averages 500mm thus defining wet & dry years (November - October ) as above & below this figure respectively

#### Breeding data

1. Distribution :Saddlebill have appeared in many areas of Zimbabwe with suitable habitat viz pans or reservoirs with shallows and have been recorded breeding a total of thirty nine times in fifteen areas



of Zimbabwe. It is noticeable that the only dry year breeding records are from Hwange National Park and the Limpopo & Zambezi Valleys, Breeding records from the plateau (with month & year of laying) are Kwekwe (laid February 1952). Doddieburn (January 1972- area visited every year until 1976 & no further breeding recorded), Raiunham (Feb 1974, March 1976, Harare (Feb 1986 & Jan 1987) Chivhu (April 1985, Jan 1999) - all these records are for wet years at Bulawayo. (N.R.C records). Birds are present on the Zimbabwe plateau in dry years (Hustler et al 1990).

There is more breeding in wet years (average 1,6 records per year 1950-1986 in the NRC records) than dry years (average 0,7 records per year). The only localities with breeding reported in more than one year is Hwange N.P., Lake Kariba (Pitman 1965, Donnelly and Donnelly 1983) and Rainham Dam (Vernon 1975; Tree 1987). Hwange N.P. is the Zimbabwean headquarters with at least ten breeding sites known (Hustler 1986). There are no records of breeding from the Communal Lands, which may be linked to woodland destruction and the lack of tall trees, which this species utilizes for nesting.

2. Nesting data : Nests are placed in the crown of trees at an average height of 14,5 m (range 6 - 23m, n=15) away from water. Nest diameter ranges from 1 - 3,5m. There are 25 reports in the N.R.C. collection of the tree species used. Of these, Acacia sp is the commonest with eleven records. Figs (Ficus sp) and boababs (Adansonia sp) account for four records each with another five tree species recorded as utilized. Old nests of Tawny Eagle *Aquila rapax*, eagles and Secretary Bird *Sagittarius serpentarius* have also been reported as being used by this species. I presume that any suitable nest in the crown of a tree for instance vultures may be used. There are no records of breeding in the exotic woodlands like Eucalyptus.

3. Breeding Season :

	Jn	Fb	Mr	Ap	My	Jn	Jy	Ag	Sp
Or Nr Dc									
Hwange N.P.	3	7	4	2					
Elsewhere	1	8	7			1	1	1	

It appears that laying occurs earlier in Hwange than in the rest of the country. It seems possible that in this area, in the absence of fish in the transient pans, amphibians may be more important and it would be necessary to rear the chick before frogs became less available in the cold weather whereas fish would become easier to catch as the dry season progresses.

4. Clutch and Brood Size :Broods & eggs laid in Jan/Feb (average 2,8) appear no different to those in laid in Mar/May (av 3,0). Clutches laid in Hwange (av 3,0) appear no different to those elsewhere (av 3,0). Clutches laid in wet years (v 3,7) appear larger than those reported in dry years (av 2,4). Nine clutches average 3,4 eggs and twenty three broods average 2,8 young giving an estimate of breeding success,

Feeding records

This bird is reported as feeding on fish in Zimbabwe: two *Gnathonea macrolepidotis* of total length 24 and 25 cms which were apparently impaled by one of the mandibles taken near Harare (Bell-Cross 1974). In Hwange it has been reported as taking *Tilapia* sp of over 250 gms in mass stranded in pools (Howells 1978). Similar events have been seen on the Umzingwane River above West Nicholson by the author. In Matusadona N.P. it was observed fishing for 25 out of 45 minutes of observation in which time it caught four barbel (*Clarias* sp) and despined them, two of length 20 cms, the others almost 30 cms plus some smaller items (Morris 1979). Mouritz (1915) reports 15 small barbel in a bird shot to the south of Plumtree. Rockingham-Gill, D.V. (1997) reports the taking of a Red-billed Teal *Anas erythrorhyncha*. On Lonsdale Dam in the Matobo area, which has no fish, it was most abundant between 1974 and 1976 when amphibians reached their maximum abundance levels (Macdonald et al . 1983), it is presumed to take amphibians. Although this has been reported elsewhere, this are no actual records for Zimbabwe (Broadley 1973).

Status

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Saddlebill have been recorded in many areas of Zimbabwe (see the map in Hustler et al. 1990). There does not appear to have been any change in its status in the Zambezi Valley this century (Alexander 1900; Cooper 1972). In the past it was probably just a vagrant onto the plateau (Brooke 1963; Mouritz 1915). It was not reported in the lower rainfall areas of Bulawayo & Matobo until 1948. It is possible it may have increased in the drier areas of the plateau with dam construction and stocking with fish but it is still vagrant in most areas. There is little or no early ornithological data from the Hwange area and the southern lowveld: so changes, if any, in these areas are unknown. The provision of more permanent water for wildlife in Hwange N.P. may have made this area more attractive to this species. Aisleby Farm near Bulawayo has been surveyed from 1962 to date but it was only common in the mid-nineties with some suggestion of breeding.

Few figures are available: but 26 birds were reported between Kariba and Kanyemba (Mundy and Feather 1990) and 15 birds between Kariba and Mana Pools (Ewbank 1991). It is apparently resident on Lake Kariba (Donnelly and Donnelly 1983) where a density of one bird in two kms of shoreline was reported in one area (Eriksson 1989). Mouritz (1915) reported 16 birds in eight kms on the Shashi River but this was a temporary phenomenon. I found it to be more regular on the Umzingwane River above West Nicholson than on the Matobo Dams. Tree (1989) reports only small numbers from the Manyane Lakes.

Important areas elsewhere for this bird appear to be the Okavango Delta: where else in Southern Africa can one see more Saddlebills than Little Egrets *Egretta garzetta*? (Utschick and Brandl 1986) and various areas of Zambia (Pitman 1965; Howard and Aspinall 1984). An aerial census from the Jonglei Canal area of the southern Sudan covering around 68,000 sq. kms. recorded between 3640 and 4158 birds in three censuses at different times of the year (Havell et al. 1988) giving 1 bird to 15 sq. kms which is comparable to Bangweulu figures of 1 bird to 7 sq. kms. (Howard and Aspinall 1984). In Zimbabwe it is more likely to be 1 bird to 500-1000

sq. kms. This bird has been recorded breeding in 21 areas of East Africa (Hancock et al. 1992)

## Conclusion

Dr Ian Macdonald (pers. comm.) and I have independently assessed the total population in Southern Africa at under a thousand birds. In Zimbabwe dry year breeding is reported only from Hwange N.P. and the Limpopo & Zambezi Valleys. The increased availability of suitable habitat on the plateau (over 900 m) has probably led to increased populations but woodland destruction may mean less nest-sites are now available. More widespread breeding and larger clutch / brood sizes are reported for wet years. The current run of dry years make it difficult to determine if this bird is actually declining as a breeding bird or just going through a dry year cycle. It does not appear particularly endangered by human activities in Zimbabwe. This is just a species with low population levels which is therefore vulnerable: one might for instance imagine pesticides having a disastrous effect if misapplied for instance in Hwange N.P.. This bird appears commonest in wildlife areas with a low tolerance of human activities.

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