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BIRDS IN A CHANGING ENVIRONMENT: Report on the Pan African Ornithological Meeting 13 in Arusha, Tanzania

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The thirteenth Pan African Ornithological Congress (PAOC) was held in Arusha, Tanzania in October 2012. The PAOC is held every four years and is one of the only Pan African conferences dedicated to a taxon. The conference gives opportunity for those working on birds in Africa to meet and get an overview of current research and discuss possible important future areas of research. There were more than 160 presentations.

With the human population now over seven billion there is continued and increased pressure on the environment. Land transformation for urban sprawl, agriculture and biofuels continues at high rates. The effects of accelerated climate change further exacerbate the situation. Despite all this there is a need to understand and conserve biodiversity and sustain ecosystem function. Africa is possibly the continent that is undergoing the greatest change and that has the most to lose. It is not surprising then that many of the presentations at PAOC 13 dealt with the effects of changing ecosystems (including savannah, forests and wetlands), and the effects of accelerated climate change on bird diversity and persistence in Africa. In

particular the effects on migration of avian species and on raptors were highlighted. Also, the effects of changing land use and urban environments on bird diversity and survival were shown. In comparison little on the general biology and taxonomy of African birds was presented. The symposia included: Bird responses to ecosystem changes; Monitoring change in bird populations and habitats in Africa; Cranes responses to ecosystem changes; Human-wildlife conflict; African birds and climatic change; Ethno-ornithology; Drivers of change: climate vs habitat; Drivers of change - a landscape approach to bird conservation; Wetlands and waterbirds in a changing environment; Continent-wide raptor conservation; Conserving birds and biodiversity across landscapes in Africa; Owls, who gives a hoot?; Weavers; and Life on the move.

With technological advances, particularly in global positioning system telemetry, movements, spatial use and presence of birds in Africa is advancing and some of this was presented. The involvement of the general public in monitoring birds in Africa was highlighted, especially as people gain greater access to the internet. The negative effects of disease and invasive species were shown by a few but may be important for future research. The Round Table Discussions included: Afring; Shoebill: Development of a Single Species Action Plan; Action for migratory birds in the Africa-Eurasia Flyway - waterbirds (AEWA) & landbirds (AEML); Attracting, retaining and supporting conservation scientists in biodiversity-rich resource-poor countries - key problems and potential solutions; Coordinating waterbird monitoring in Africa; Citizen science, bird monitoring and free data access for all; Vultures and vulture conservation in Africa; Weavers; Technical development of the International Waterbird Census. The outstanding plenary speakers (A. Sinclair, K. Martin, J. Wingfield, W. Goymann, I. Tieleman, J. Arnatiwe, R. Davies, W. Cresswell, and L. Underhill) kindly gave of their time and monies to attend and present at the congress. Monies raised from sponsors were used to allow deserving postgraduate students and members of local communities and NGOs to attend PAOC.

A format of one main session with an occasional parallel session was followed. One benefit of this was that most delegates got an overview of current avian research in Africa. It is hoped that from the presentations and discussion future directions for research and management that further the ability to conserve and understand African birds were highlighted as well as the need for inter- and intra-continental collaborations.

Bird responses to ecosystem changes -Anthony Sinclair, W. Goymann and Colin Beale (Chairs)

This session commenced with a plenary by A. Sinclair on the responses of the Serengeti avifauna to long-term changes in the ecosystem. The importance of agriculture, relatively slow and fast changes, and other disturbances were emphasised. This was followed by several presentations on the effects of changing land use on birds as well as further sessions dealing with specific taxa (e.g. cranes (chaired by K. Morrison), weavers (Co-chairs D. Oschadleus and L. Underhill), and vultures respectively), and particular habitats, and across landscapes (e.g. the Sahel (Co-chairs B.de Bruijn and D. Sheehan).

Monitoring change in bird populations and habitats in Africa symposium - Doug Harebottle (Chair)

The impact of global climate and landscape changes on biodiversity are well known and well documented. Species and habitats are under constant threat from development and coupled with long-term climatic variation these threats may have greater impacts on populations over the medium-long-term. This symposium dealt with numerous monitoring programmes that have assisted in identifying and quantifying changes to bird populations and habitats in various parts of Africa. There was a strong focus on citizen science and the role that volunteers and amateur naturalists play in collecting the data that underpins the science and conservation action of conservation programmes and initiatives. Topics covered during this symposium included overviews of BirdLife International's Common Bird Monitoring and IBA programmes in various African countries, progress and outcomes of the second Southern African Bird Atlas Project, the Niger bird database as a monitoring tool in West Africa, large terrestrial bird monitoring and conservation in South Africa and applied conservation work through monitoring bird interactions with powerlines through bird collision mitigation experimentation in South Africa. Overall the symposium highlighted the success of volunteer-based programmes, long-term datasets and experimental approaches in documenting changes to bird populations and habitats in Africa.

Wetlands and waterbirds in a changing environment symposium - Tim Dodman & Abdoulaye Ndiaye (Co-chairs)

With a total of 15 oral presentations, this symposium covered a range of wetlands and waterbirds issues from across Africa, including monitoring, colonial breeding birds and community hunting. For the flyway level, a new method to assess waterbird importance was proposed, which could have long-term practical applications. An assessment was also presented of the conservation status of migratory waterbirds in the African-Eurasian flyway. An ambitious initiative for the White Nile set out a framework for integrating this region better into waterbird monitoring schemes – vital for this important flyway used by both Palearctic and intra-African migrants.

At the national level, the usefulness of a national waterbird monitoring programme was demonstrated from Uganda, drawing on 20 years of participation in the African Waterbird Census (AfWC). This was followed during a related Round Table Discussion on the practical lessons learned from Kenya in carrying out the AfWC. The importance of regular monitoring, especially in a changing environment, was highlighted from the Sanaga River in Cameroon, where waterbird numbers were found to be directly linked to sand bank area and rainfall.

At the site level, seasonal variations in resource availability were found to influence waterbird composition and abundance at two lakes in Zimbabwe, where avian influenza virus risk is likely higher in drought years when the lakes receive large numbers of birds. The seasonal abundance and diversity of waterbirds at Dinder National Park in Sudan was also shown to be linked to climate, with disturbance being a key issue in periods of drought. This was also a key message from Lake Chilwa in Malawi, where the dependence on bird harvesting is extremely high, especially when the lake dries up, which it does periodically. The role of communities in local site management was also highlighted, as was the case for the Manambolomaty wetlands of Madagascar, where communities are actively engaged in a local biodiversity conservation programme through sustainable resource use. At Lake Victoria, where the introduced Nile perch has had a dramatic effect on the lake's fish fauna and ecology, a low competition for fish was demonstrated between birds and man at the Mwanza Gulf in Tanzania.

At the species level, it was encouraging to note that the recent International Single Species Action Plan (ISSP) for the Madagascar Pond-heron is being implemented in Madagascar, though stronger action may still be needed in its continental non-breeding areas. In Morocco, the importance of two IBAs was demonstrated for the conservation of the

White-headed Duck. The Shoebill is another threatened species, and the challenges for its conservation in Zambia's Bangweulu Swamps were illustrated. There were two presentations focused on colonial nesting waterbirds, one from Eastern Uganda, where many colonies have suffered due to the removal of favoured tree species, and one from KwaZulu-Natal in South Africa; recommendations for future monitoring and securing these sites were made.

African Birds and Climatic Change- Phoebe Barnard & Brian Huntley (co-chairs)

It may not be too vivid prose to describe the impacts of rapid environmental change on African birds as tantamount to a natural disaster with multiple causes. Climate change, land use change, overharvesting and habitat pollution collectively confront birds with harsh challenges from many directions. Evolutionarily, most are not well equipped to face multiple drivers of environmental change at once, and adaptation may not be fast enough to keep up with much of today's extremely rapid change. African birds, perhaps even more than in much of the world, face severe challenges if they are to persist over the next two centuries. Our two sessions highlighted the pressures which African birds face from climate change as a serious additional stressor, on and around a continent already highly transformed by human habitat management and burgeoning populations.

Following on from the stimulating plenary talk by J. Wingfield on interactions between organisms and their environment in a rapidly changing world, we featured talks on climate change impacts on birds of the southern African global biodiversity hotspots (Huntley et al. and Barnard et al.), Madagascar forests (Andriamasimanana), Kalahari desert (Cunningham), Kilimanjaro and Bwindi Impenetrable Forest altitudinal gradients (Ferger; Gottschalk), miombo woodlands of Zimbabwe (Cizek) and South African pelagic environments (Crawford). Other talks highlighted the multiple apparent reasons for range changes in South Africa (Hockey et al.), the importance of identifying resource bottlenecks for birds (Maron & Barnard), and the critical nature of protected area networks in maximizing species' persistence over time (Beale). Two of the talks (Cunningham; Thompson) particularly highlighted how understanding of physiology and behaviour is essential for understanding species' vulnerability to climate change. It is clear that stronger and more direct interactions between scientists, planners, policymakers and managers will be a prerequisite for effective and pre-emptive conservation action.

Continent-wide raptor conservation- Munir Z. Virani and Rob Simmonds (co-chairs)

This session commenced with a plenary by Rob Davies where he highlighted the need for continent wide raptor conservation and introduced a monitoring system. This was followed by a day of presentations with several presentations on vultures as well as other raptor species. Several emphasised the need for further ecological information for effective conservation of raptors in Africa. There was also a plenary by D. Ogada titled "Dropping dead: causes and consequences of vulture declines". It highlighted the decline in vultures in Africa.

African Vultures -Munir Z. Virani and André Botha (co-chairs)

Eleven species of vulture occur on the African continent and the range and populations of these species have declined considerably. The range and extent of threats facing these species is varied, but include poisoning, habitat loss, energy infrastructure and unsustainable harvesting. The need for a Pan-African approach to the conservation and monitoring of these highly mobile birds has been acknowledged as a critical to prevent the continued decline and possible extinction of these birds in Africa.

To achieve this, a Pan-African Vulture Summit was convened in the Masai Mara, Kenya from April 16-20, 2012. Input was received from a wide range of vulture specialists, researchers, conservationists and government representatives from across the continent to develop and publish a Pan-African Vulture Conservation Strategy. A follow-up Round Table Discussion was arranged as part of the programme of the 13th Pan-African Ornithological Congress to further promote this initiative

This Round Table Discussion aimed to promote the implementation of the Pan-African Vulture Conservation Strategy across the continent and to achieve the following:

- Provide information on the rationale and background to the establishment of the Pan-African Vulture Strategy
- Identify critical and address gaps in terms of representation from West and North Africa.
- Discuss existing and emerging threats facing vultures in Africa and how to address them as contained in the PAVS
- Discuss appropriate next steps in which to ensure that the PAVS is implemented across the continent.

The Resolution passed at the Pan-African Vulture Summit in Kenya in April 2012 was also circulated and a motion for its support by the delegates of the PAOC was met with unanimous support on the last day of the Congress.

Owls, who gives a hoot? symposium- Darcy Ogada and Andre Botha (Co-Chairs)

No group of birds in Africa elicits more feelings of fear, loathing and hatred than owls. Because of this African owls face widespread condemnation and are associated with perverse spiritual beliefs that have led to an inordinate level of human-induced threats including persecution and collection of eggs and body parts for witchcraft. Ironically, owls are widely adored in many western countries and this has resulted in the illicit exploitation of African owls for the pet trade. Sadly, owls are one of the most misunderstood group of birds in Africa and to quote Leslie Brown, 'they are almost entirely beneficial to mankind'. As avian predators they remain some of the most understudied on the continent.

The owl symposium featured five presentations: two on Sokoke Scops Owls, one on Pemba Scops Owl, one on Mackinder's Eagle Owl, and one on Crowned Eagles. A. Monadjem presented on the effects of climate on future populations of Sokoke Scops Owls. It was predicted that climate change may result in 64% reduction of this species from areas of high environmental suitability. These changes compounded by human encroachment on the remaining small areas of suitable habitat for this species mean that the future is bleak for this species. D. Ngala presented on threats to Sokoke Scops Owl habitat in the Arabuko-Sokoke Forest, Kenya. The major threat to the forest habitat of this species is illegal tree harvesting. Regular monitoring as well as awareness-raising and income-generating activities are ongoing and there are plans for their expansion. M. Virani presented on preliminary estimates on density, population and home range size of Pemba Scops Owls. The owls are primarily resident in two small indigenous forests and clove plantations on Pemba Island. It is unlikely that their population exceeds 1250 pairs. D. Ogada presented on the breeding ecology of Mackinder's Eagle Owls. While the density of this species is very high in the Kenyan highlands, the breeding success is only 50% and this is likely due to human-related causes. D. Ogada also raised the serious issue of the poaching of owl eggs that are being harvested throughout Kenya and sold at a high price to middle men for use in witchcraft purportedly in Tanzania and the Middle East. Unfortunately, no one in the audience appeared to know about this illicit trade.

Ethno-ornithology symposium - Fleur Ng'weno (Chair)

Many of the PAOC presentations on bird conservation emphasized the importance of engaging with local communities and learning about indigenous knowledge and traditions concerning birds. As a result, the symposium on Ethno-Ornithology was well attended (standing room only in the smaller room) and extremely lively. E. Ole Reson was in full Maasai dress as he discussed the contradictions of a generally favourable traditional Maasai attitude towards vultures, contrasted with the use of poisoned carcasses to kill lions that have killed livestock, which result in heavy vulture deaths from secondary poisoning. A. Asamoah's presentation on the White-necked Picathartes drew the most questions. In his study he found that neighbouring communities hardly knew this remarkable bird and had no cultural significance attached to it, except for one instance of a very complicated folk tale. The audience found this hard to accept, although in conservation there is often a problem of lacking simple names or even photographs for many of our most endangered species.

J. Brouwer, F. B. Muigai, J. Mwachongo and J. M. Wambura gave fascinating glimpses into the many ways that birds are part of our lives, our livelihoods, our languages and our cultures. N. Jacobs took a different approach in her two presentations. Jali Makawa, who worked for white ornithologists in east-central Africa, was both a servant and most knowledgeable about birds; how did he reconcile this? And what is the historical route by which we see birds as being "European" migrants while they spend more than half the year in Africa? R. Gosford of the EthnoOrnithology Research and Study Group was unfortunately unable to attend, but K. Bobo kindly assisted F. Ng'weno to chair the session. F. Ng'weno's parting advice to researchers: Remember that people who live with birds know birds through their songs, habits and habitats; avoid asking local informants to identify birds from the field guides we use, which are an entirely different "way of knowing".

Life on the move symposium- U. Ottosson, K. Thorp and S. Iwajomo (co-chairs)

This symposium highlighted the movements of avifauna in Africa. W. Cresswell presented a plenary titled "How resilient are Afrotropical-Palearctic migrants to environmental change?". This was followed by a number of presentations on African migratory bird species. Several showed the use of technology in determining migration patterns and again highlighted the effects of changing land use and accelerated climate change on several species.

Closing Remarks- T. Dodman

Those that have deceased since the last congress were highlighted. This was a poignant memory of those lost, especially as some died while doing their bird research. The "wonderful and successful' congress was highlighted and those involved thanked. It was announced that the PAOC 14 would be in Senegal, West Africa in 2016.