

## It's time for the Saddle-billed Stork to be on our radar

Jonah GULA<sup>1</sup>

<sup>1</sup>Graduate Student, Texas State University.  
E-mail: jonah.gula@yahoo.com

I dare say the Saddle-billed Stork *Ephippiorhynchus senegalensis*—or simply, Saddlebill—is Africa's most striking waterbird, a favorite of birders, safari-goers, and photographers alike. We are not the first people to be captivated by the Saddlebill, however. Ancient Egyptians of the Predynastic Period (pre-3150 BC) associated the Saddlebill with the religious concept of *ba*, which is related to divinity or manifestation of the divine (Janák 2014), and depicted them in hieroglyphs and artwork. It is no wonder why it was held in such high regard, for its stately beauty was unmatched among ancient Egyptian avifauna. Such cultural following has helped provide evidence of the susceptibility of the Saddlebill to a changing environment: following a period of known climate change, it apparently disappeared from northeastern Africa and significance in Egyptian culture (Janák 2014). Now, in the twenty-first century, as the Saddlebill's Africa continues to change in the midst of a myriad of threats, it is more important than ever to understand the dynamics of a species like this, which could potentially act as an early indicator of a degrading environment.

In a somewhat circular situation, the Saddlebill has stayed under the radar of researchers and conservationists thanks to a perpetuated lack of research attention. As early as the 1980s, a lack of scientific information led some authors to make presuppositions about its ecology in some authoritative pieces of literature, leading many to believe there is little to learn. Contrary to

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information in the literature, we are still missing data on the reproductive cycle, movement patterns, territoriality, and environmental requirements, to name the most basic knowledge gaps. To confound the dilemma, the IUCN status assessment of the Saddlebill is far from empirical—in fact, the data used in it are based on existing and additional unsubstantiated assumptions. This is not uncommon for birds that do not have adequate field data, and status assessments instead take a best-guess approach in which accuracy and authenticity are impossible to verify. This approach is particularly true for poorly-studied species that are assumed to be “common” due to widespread distributions. Such assessments are not useful and lead people to take categorizations such as the IUCN status “Least Concern” literally, diverting research attention and resources to species in higher IUCN categories suggestive of a greater level of threat. The Saddlebill—and many other large African waterbirds, I might add—suffers from this very scenario and has thus fallen by the wayside.

Recently, colleagues and I took a first step in addressing the paucity of information on Saddlebills in the first distribution assessment for the species (Gula *et al.* 2019). As the first empirical basis for assessing range-wide status, our findings merit repetition here. The Saddlebill is not as widespread and contiguous as has been assumed, and small peripheral populations are clearly sensitive to environmental changes. Similar responses to change are unclear in the core of the range, which is from Uganda and southern Kenya to western Zambia, northern Botswana, and northeastern South Africa. Additionally, South Sudan likely still holds a significant population: in



An adult female Saddle-billed Stork in Liuwa Plain National Park, 2019. Photographed by Jonah Gula.

1981, the last survey of the Sudd alone found approximately 4,000 (Howell *et al.* 1988). Occurrence and status in the Congo region remains mysterious, as it is unclear if the lack of recent records in comparison to historic records indicates population declines or a lack of recent ornithological coverage due to civil conflicts.

The apparent lack of stability of peripheral populations such as those in Somalia (although conflict has also prevented good coverage here more recently) and highly fragmented West Africa is a result of environmental degradation in the form of decades-long drought, nest-tree cutting (Somalia in particular), overfishing, and flood-altering dam construction. The Inner Niger Delta in Mali is perhaps the most telling example of the sensitivity to change: depletion of fisheries caused by the introduction of nylon fishing nets in the 1960s and subsequent dam construction in the 1980s resulted in extirpation of the isolated breeding population there (Zwarts *et al.* 2009). Habitat loss has also more recently caused Saddlebills to disappear from Togo. Therefore, the greatest concern is for the West African population—or metapopulations, as connectivity in the region is uncertain.

Currently, my Master's research is addressing the question of why Saddlebills occur where they do, now that we have established as much. I am using the program MaxEnt to model the climatic niches of the six endemic African storks so we can better

understand the conditions they require and how this may feed into sensitivities to climate changes. Although my results are still preliminary, the models consistently show annual precipitation as the single most important climatic variable in predicting Saddlebill distribution. It also has the narrowest tolerance for precipitation, which helps explain why a drought, such as the one beginning in the 1970s in the Sahel, can quickly impact a population.

Even with our growing knowledge of Saddlebill distribution, we still do not know how many Saddlebills remain in Africa—although it is clear from the range assessment alone that they are decreasing in many countries. As peripheral populations continue to decline or vanish, it is time to start becoming concerned about this species. Rather than continue to assume a “Least Concern” status based on inadequate data, given what the initial assessment has shown, I believe we should be putting resources and effort into developing a detailed, data-driven assessment of the Saddlebill. To address this need, we are in the beginning stages of establishing a Saddlebill Working Group, which will be a collection of people interested in helping in the development of a long-term research and conservation agenda for the species. In particular, we hope to address the immediate research needs: movement ecology (research in Zambia is ongoing at this time), breeding distribution, reproductive cycle, and population estimates, trends, and connectivity.



The Saddlebill's conservation scenario is by no means unique. Many species have similarly been victims of scientific and conservation neglect despite status assessments that seem otherwise. It is time we reconsider the way in which poorly-studied, widespread species are assessed on the IUCN Red List, and begin a discussion on how the data deficiency of such species relates to the actual Red List status of "Data Deficient." The decline of species long perceived as "common" has been a slow creep up to this point, but globally we are learning how rapidly populations can be extinguished. It is time for species that are truly data deficient to be on our radar lest their declines catch us off guard.

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