



3rd Meeting of the AEWA White-winged Flufftail International Working Group

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REPORT ON THE LATEST RESEARCH FINDINGS

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Ethiopian Surveys

compiled by Dr Bruktawit Abdu, EDGE Fellow of Zoological Society of London (ZSL)

1.1 Berga

During the surveys in 2018, 63 sites with three 100m long transects each were placed within an area of 10 km². The transects were repeated three times and we flushed 13 individuals whilst two birds were heard during the surveys. Eleven nests (five of them had eggs) were found during surveys and seven other nests were found outside of the surveys. In 2019, a smaller area having 42 sites with similar-sized transects were used for surveys at Berga. A smaller area was selected to exclude unsuitable areas where birds were not seen last year. We found 9 nests two of which had chicks in them. Ten adult individuals were either flushed or found near their nests during the survey.

1.2 Bilacha and Weserbi

In 2017 and 2018 at Bilacha, one nest was found during each year and at least four adult individuals in 2018. In 2019, the vegetation was grazed very short and the survey team could not find any nests nor adult birds.

Weserbi was checked in 2019 and we were not able to find any White-winged Flufftails although there were areas with similar types of grasses as that of Berga but with very sparse coverage.

1.3 Behaviour

Defensive behaviour was observed in two adults that were found in two different nests with eggs. When approached, the birds would start making a hissing sound and tried to chase away the intruder by charging forward. While charging it would also spread its wings and show its white wing patches.

1.4 Threats

The habitat in some parts of the wetland at Berga is very degraded. Soil erosion is changing the structure of the land and composition of the vegetation making it more unsuitable for the species.

The level of awareness of the children as well as adults is still very low regarding the identification of the White-winged Flufftail. Some individuals know that Berga is an important site for the bird but more individuals need to be made aware of the gravity of the situation. This would really help to increase the survival rate of the species as people may be careless or reluctant to protect the nest in case they encounter it.

Not having regular surveys at Berga can also be a threat as we will not be aware of the situation on the ground. However, if regular annual surveys can be done at Berga it will help locate nests and it will help to make greater efforts to protect the nesting sites at least till the chicks have fledged. This can be done by talking to the community, the state farm and individuals depending on where the nests are found.

1.5 Opportunities for conservation

Five nests were found in the private grazing land of three individuals at Berga. They took their own initiative to tell us and show us the nests as well as to protect the nests from disturbance. These individuals had very little awareness about the species and were willing to help, which we (EDGE team along with Middelpunt Wetland Trust and former Ethiopian Wildlife and Natural History Society (EWNHS) employees) later

awarded and encouraged. If more awareness-raising campaigns are undertaken it would likely improve the nesting success of the species.

I have contributed towards a textbook that recently came out called Conservation Biology in Sub-Saharan Africa where I wrote about the threats the White-winged Flufftail is facing and what has been done and needs to be done as a box in one of the chapters (PDF can be downloaded from this link: <https://www.openbookpublishers.com/product/1013>).

South Africa: Camera traps, breeding record and other findings

compiled by Robin Colyn, KEM-JV Fellow of Conservation, BirdLife South Africa

BirdLife South Africa has been conducting camera trap studies for White-winged Flufftail across core highland wetland sites within South Africa for the past five consecutive summer seasons (2015-2019). The first reliable, non-invasive and accurate method of surveying for White-winged Flufftail and other elusive wetland rallids was developed (Colyn et al. 2017; Colyn et al. 2019a). This method was employed to understand the habitat use, activity patterns and site occupancy of White-winged Flufftail in 2016-2017 (Colyn et al. 2019a). Further refinement of this method in 2017-2018 allowed for a significant increase in detection probability and subsequent collection of data related to the species. This refinement also yielded the first undisputed evidence of the species breeding in South Africa during the 2017-2018 season (Colyn et al. 2019b). These breeding events have subsequently been recorded again during the 2018-2019 season.

- Colyn, RC., Campbell, AM., Smit-Robinson HA. 2017. The application of camera trapping to assess rallidae species richness within palustrine wetland habitat in South Africa. *Ostrich: Journal of African Ornithology* 88 (3), <https://DOI:10.2989/00306525.2017.1292562>.
- Colyn, RB., Campbell, A., Smit-Robinson, HA. 2019a. Camera-trapping successfully and non-invasively reveals the presence, activity and habitat choice of the Critically Endangered White-winged Flufftail *Sarothrura ayresi* in a South African high-altitude wetland. *Bird Conservation International*, <https://doi:10.1017/S0959270918000400>.
- Colyn, RB., Campbell, A., Smit-Robinson, HA. 2019b. The use of a camera trap and acoustic survey design to ascertain the vocalisation and breeding status of the highly elusive White-winged Flufftail *Sarothrura ayresi*. *In review*

Acoustics and vocalisation of species

compiled by Robin Colyn, KEM-JV Fellow of Conservation, BirdLife South Africa

The further refinement of the survey method designed by BirdLife South Africa (dubbed the BirdLife South Africa Rallidae Survey Method) allowed for the inclusion of acoustic recorders into the survey design. By synchronising passive acoustic monitoring with a specifically designed camera placement grid, allowed for the assessment of the vocalisation status of White-winged Flufftail. Over the past two seasons, BirdLife South Africa successfully recorded the first robust and undisputed datasets of White-winged Flufftail vocalisations (Colyn et al. 2019b). These findings refute the belief that the call was a soft “ooping” or the postulation that the species was largely silent and lacked auditory cues.

- Colyn, RB., Campbell, A., Smit-Robinson, HA. 2019b. The use of a camera trap and acoustic survey design to ascertain the vocalisation and breeding status of the highly elusive White-winged Flufftail *Sarothrura ayresi*. *In review*.

Genetics

compiled by Dr Hanneline Smit-Robinson, Head of Conservation, BirdLife South Africa

The sequencing of nine Toll-like receptor (TLR) genes described a low genetic variation in the innate immune regions of the White-winged Flufftail, similar to that observed in other bird species that have undergone population bottlenecks. The low TLR diversity indicates that the White-winged Flufftail is likely to be negatively influenced by changes in the environment. Any stochastic events, such as potential exposure to new diseases, could have hazardous impacts on the species' survival and it is of critical importance to protect pristine habitat for the species (Dalton et al. 2016).

The migratory connection, if any, has been poorly understood between the Ethiopian and South African White-winged Flufftail populations. Analyses of mitochondrial and nuclear gene regions of White-winged Flufftail samples from South African and Ethiopian birds, confirms that the populations are not different species or subspecies (Dalton et al. 2017). The genetic results could support the hypothesis of one migrating population with two seasonally occupied ranges and does not exclude the possibility of additional breeding and non-breeding sites.

1. Dalton DL, Vermaak E, Smit-Robinson HA, Kotzé, A. 2016. Lack of diversity at innate immunity Toll-like receptors genes in the critically endangered White-winged Flufftail (*Sarothrura ayresi*). *Scientific Reports*. 6: 36757–63665. <https://DOI:10.1038/srep36757>
2. Du Plessis M, Dalton DL, Smit-Robinson HA, Kotzé A. 2017. Next generation sequencing yields the mitochondrial genome of the critically endangered *Sarothrura ayresi* (White-winged Flufftail). *Mitochondrial DNA Part B: Resources* 2: 236–237.
3. Dalton DL, Smit-Robinson HA, Vermaak E, Jarvis E, Kotzé A. 2017. Is there genetic connectivity among the Critically Endangered White-winged Flufftail (*Sarothrura ayresi*) populations from South Africa and Ethiopia?. *African Journal of Ecology* 56: 28-37.

Ethiopia visit 2018 and outcomes of the trip

compiled by Robin Colyn, KEM-JV Fellow of Conservation and Dr Melissa Howes-Whitecross, acting Terrestrial Bird Conservation Programme Manager, BirdLife South Africa

In July 2018, BirdLife South Africa in collaboration with the EWNHS and Bruktawit Abdu (ZSL), conducted a study in the Berga, Bilacha and Weserbi wetlands. The study focused on collecting habitat covariate data for assessing the state and availability of habitat for White-winged Flufftail across the respective wetlands. Furthermore, surveys focused on ascertaining nesting densities at wetlands, which were then applied to the habitat availability analyses to provide estimates of the potential population size across the given region (Colyn et al. 2019c). The work also highlighted the sensitivity of breeding White-winged Flufftail to the presence of both human observers and potentially camera traps monitoring nest sites (Whitecross et al. 2019).

- Colyn, RB., Whitecross, MA., Howes, CA., Smit-Robinson, HA. 2019c. The conservation implications of the selection, density and availability of nesting habitat for a Critically Endangered rallid in Ethiopia. *In press*.
- Whitecross, MA., Howes, C., Colyn, RB., Smit-Robinson, HA. 2019. Challenges experienced and solutions presented regarding the monitoring of a Threatened breeding rallid in Ethiopia *In press*.

Niche modelling (African distribution)

compiled by Robin Colyn, KEM-JV Fellow of Conservation, BirdLife South Africa

BirdLife South Africa has been leading ecological niche modelling studies on White-winged Flufftail over the past two years. The study aims to model the distribution of viable sites for the species across its' global range. Remote sensing analyses aim to further quantify the state and availability of wetland habitat within these biogeographically suitable areas (Colyn et al. 2019d). Better understanding of the distribution and state of core sites across the global range from Ethiopia to South Africa will allow for more efficient direction of conservation efforts and surveys.

- Colyn, RB., Campbell, A., Smit-Robinson, HA. 2019d. The distribution, state and flux of available wetland habitat for a Critically Endangered rallid in Africa. *In prep*.

Habitat Management Guidelines (South Africa)

compiled by Dr Melissa Howes-Whitecross, acting Terrestrial Bird Conservation Programme Manager, BirdLife South Africa

As directed by the International Single Species Action Plan (ISSAP), BirdLife South Africa has finalised a document to synthesise the best available science to inform the management of suitable habitat for the species. In August 2019 the 'Best practice guidelines for the management of White-winged Flufftail habitat' was finalised and will be released at the 3rd AEWA WwF IWG meeting. This document will be used in conjunction with stewardship initiatives to inform landowners on how to best manage their wetlands for White-winged Flufftails in South Africa.

- Howes-Whitecross, M.A., Colyn, R. & Smit-Robinson, H.A. 2019. Best Practice Guidelines for the Management of Suitable Habitat for the Critically Endangered White-winged Flufftail in South Africa. BirdLife South Africa, Johannesburg.