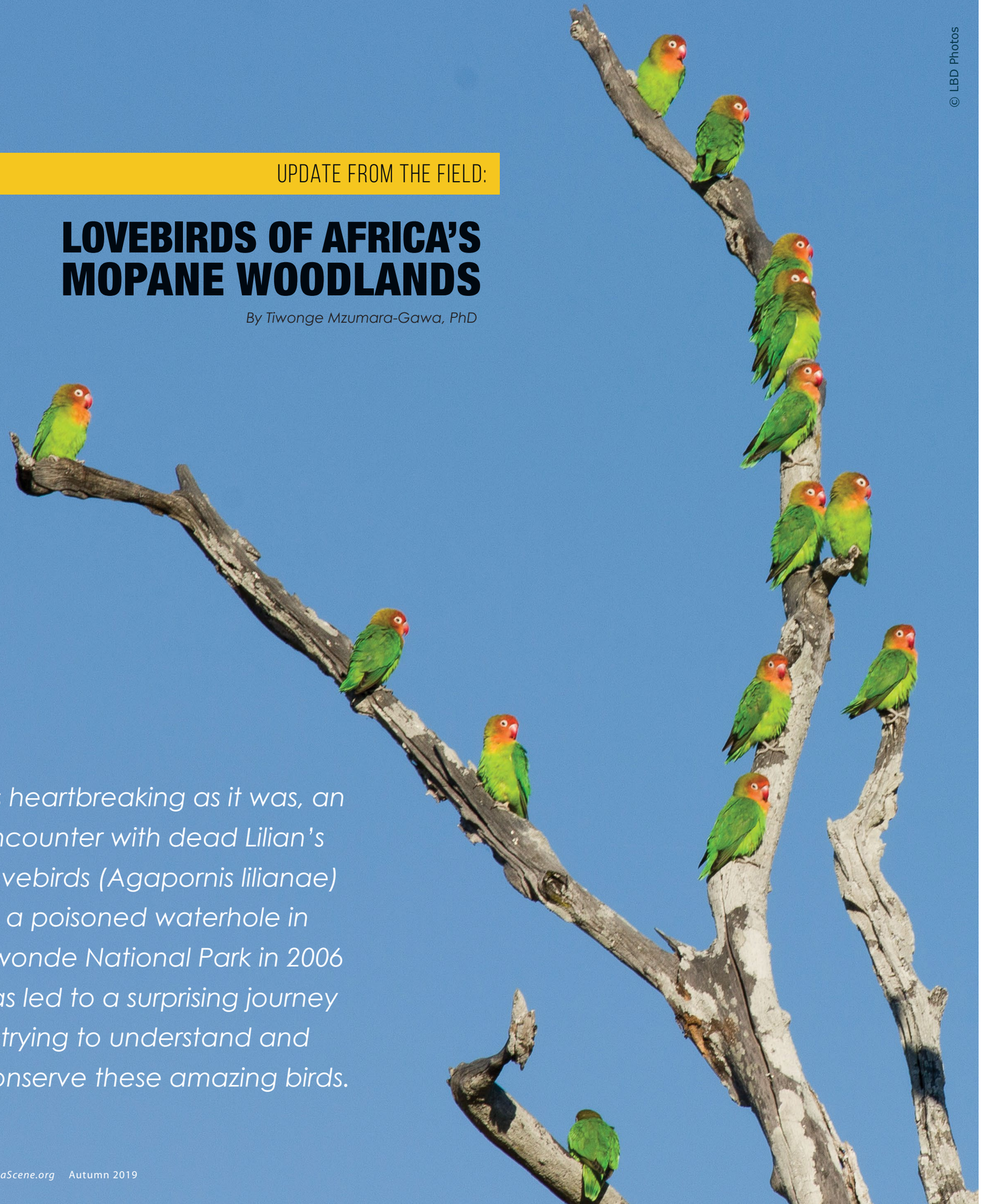
UPDATE FROM THE FIELD:

LOVEBIRDS OF AFRICA'S MOPANE WOODLANDS

By Tiwonge Mzumara-Gawa, PhD



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As heartbreaking as it was, an encounter with dead Lilian's Lovebirds (Agapornis lilianae) at a poisoned waterhole in Liwonde National Park in 2006 has led to a surprising journey in trying to understand and conserve these amazing birds.

Cathedral mopane forest, Lilian's Lovebird preferred habitat
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Now over 10 years later we have a good understanding of their biology, what they eat, where they forage, when they breed and their preferred habitats. For example, we now know that they breed almost exclusively in Mopane woodlands, and during their breeding season feed mainly on grass seeds.

There is a large variety of grasses that grow in Mopane woodlands that are rich in nutrients. During the dry season, their diet is more varied; they will feed on different types of fruit and also on dry seeds on the ground. Our studies have also shown that the lovebirds are not the only species that use nest holes in Mopane woodlands; we have learned that other species such as the Grey-headed Sparrow, Brown-headed Parrots and Rollers (another type of bird) also use them. This understanding provides a chance to explore just how much suitable areas are still available and determine the critical actions needed for their conservation.

In 2015, in partnership with the World Parrot Trust's Africa Programme and with financial support from the Isdell Family Foundation and the British Ecological Society, range wide surveys were initiated. Starting in the core of their range in Zambia, a month-long survey expedition found that the lovebirds were largely restricted to protected areas, notably the Lower Zambezi National Park and the North and South Luangwa National Parks and had disappeared from much of the Zambezi valley area.

Detailed assessments of woodland structure revealed that Lilian's lovebirds have very specific habitat requirements and are strongly associated with a type of woodland referred to as 'Cathedral' Mopane. These are forests that have large Mopane trees that are widely spaced out. The roost/breeding cavities can be between 6 and 20 meters above the ground.

We suspect that areas suitable for breeding and roosting are those which have a sufficient number of natural cavities in close proximity to each other. These roosting/breeding sites are spread out in clusters across the woodlands. At each cluster there are 4 - 8 roosts; in the dry season up to 5 birds use one roost cavity, while in the wet (breeding) season most nests will have only two birds.

This work has led to two recently published papers describing their habitat requirements and the impact of disturbance by people and elephants on the woodland structure *(see further reading sidebar on Page 21).*

Upper left: *The author and a ranger walk to a roost site.* **Lower left:** *Lunchtime in the field.* **Upper right:** *The team measures habitat in Mozambique*. **Lower right:** *Evidence of illegal logging. Photos © Upper left: Dirk Van del Abeele, others Hemant Tripsthi.*

Sadly, these large trees are also the target for timber and charcoal production. Throughout our travels in Zambia we noticed these large Mopanes being cleared out by both legal loggers (with concession permits), and illegal loggers and charcoal burners. The methods that the illegal loggers used to clear trees were most worrying. We observed on many occasions the trees being burned at the root, which leaves no chance of any future coppicing (new growth).

After the findings in Zambia, we realized the importance of doing a general survey in the other countries where the species occurs (Mozambique & Zimbabwe), to better understand how much habitat is still available for the species. In 2018 surveys were initiated in Mozambique, targeting areas where they have been recorded in the past and it is thought suitable habitat still exists.. As we had a better understanding of the birds and were confident of our model, we did not think we needed much time to locate the birds in Mozambique.

However, after four days of looking for the lovebirds, we saw nothing. Again, we observed large areas of Cathedral Mopane woodland that were cleared, with shrubs now growing in its place.

Much of this clearing was from legal concessions, and when illegal harvesting is added to this the results are most disturbing. Finally, on the fifth day we sighted our first lovebirds in the Saladza area in Mozambique in a habitat that was similar to where they occur in Malawi and in Zambia. The lovebirds were, interestingly, often seen in the busy fishing village coming down to the ground to feed. The area is also within a protected area, however the fishing villages are within the park. This lovebird population is possibly the only one that is living close to people.

A second sighting was along the Caborra Bossa dam where there have been historic sightings, but the area was found to be owned by a private fishing company and was difficult to explore. We are hoping to build partnerships with our Mozambique counterparts so that we can have access to this area and do some detailed surveys.

A reconnaisance was also made to Zimbabwe where a collaboration was formed with a local NGO. Surveys in Zimbabwe will commence in September 2019 meaning we will have covered the Lilian's Lovebird's full historical range. We already know that in Zimbabwe the lovebirds are restricted to protected areas as well (Mana Pools NP).

Data collected to date have been feeding into the development of computer models being developed in collaboration with the University of Edinburgh Department of Geosciences. These models use satellite images of land cover to determine the distribution of suitable habitat both in the past and under future scenarios. Preliminary results already show clearly that across their range, Lilian's Lovebirds are facing their biggest threat from habitat loss caused by both legal and illegal harvesting of Mopane woodland. Mopane is one of a few indigenous trees in this region that form natural cavities to host cavity dwellers. Thus the removal of large/old growth Mopane is surely threatening other species that are cavity dwellers.

The status of Lilian's Lovebirds is much more critical than previously recognized and it is important that the governments of the four countries come together and agree on a plan to conserve this habitat. This year will see the start of a new long-term project to explore how the loss of natural nest-holes can be mitigated through the use of nest boxes. The initiative is funded by the International Foundation for Science and the World Parrot Trust, and will be the first of its kind for any lovebird species. Clusters of nest boxes will be installed in Malawi (and later possibly Zambia) to help establish new breeding areas. As well as boosting populations of Lilian's lovebirds it will inform conservation approaches for other threatened lovebirds in the region including Black-cheeked Lovebirds.

Even though Lilian's Lovebird populations are in danger from the continued clearing of their critical breeding and roosting trees, there are solutions that can be put into practice to help mitigate the threat. Ongoing work with governments and local partner organisations will see to the species' protection and hopefully, the recovery of their wild populations.

About the Author

Tiwonge Ivy Mzumara-Gawa, PhD is a conservation Biologist/Ecologist currently working as a Lecturer in Ecology at the Malawi University of Science and technology. She is also the National Chair for the Wildlife and Environmental Society of Malawi, the BirdLife Partner in Malawi.

Tiwonge's passion for birds and Conservation was sparked during a Tropical Biology Association field course in Kibale, Uganda.

Lilian's Lovebird *(Agapornis lilianae)*

World population: unknown

IUCN Red List: Near Threatened
CITES: Appendix II

Further reading:

Tiwonge I Mzumara, Mike R Perrin, Colleen T Downs. (2018) ***Feeding ecology of Lilian's Lovebird Agapornis lilianae in Liwonde National Park, Malawi.*** Ostrich 89:3, pages 233-239.

Tiwonge I Mzumara, Michael R Perrin, Colleen T Downs. (2016) ***Comparative performance of four survey methods for assessing Lilian's Lovebird abundance in Liwonde National Park, Malawi.*** Ostrich 87:3, pages 247-253.

Tiwonge I. Mzumara, Mike R. Perrin, Colleen T. Downs. (2016) ***The drinking habits of the Lilian's Lovebird and incidents of poisoning at waterholes.*** African Journal of Ecology 54:3, pages 289-298.

Tiwonge I Mzumara, Michael R Perrin, Colleen T Downs. (2016) ***Comparative performance of four survey methods for assessing Lilian's Lovebird abundance in Liwonde National Park, Malawi.*** Ostrich 87:3, pages 247-253.

Tripathi, H.G., Mzumara, T.I., Martin, R.O., Parr, C.L., Phiri, C. and Ryan, C.M. 2019. ***Dissimilar effects of human and elephant disturbance on woodland structure and functional bird diversity in the mopane woodlands of Zambia.*** Landscape Ecology 34 (2), 357-371.

Mzumara, T.I., Martin, R.O., Tripathi, H., Phiri, C., and Amar A. 2019. ***Distribution of a habitat specialist: Mopane woodland structure determines occurrence of Near Threatened Lilian's Lovebird Agapornis lilianae.*** Bird Conservation International.

Thank You to our Supporters

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