

## IS PRINCE RUSPOLI'S TURACO THREATENED BY HYBRIDIZATION WITH THE WHITE-CHEEKED TURACO?

by Luca Borghesio, Tolera Kumsa, Jean-Marc Lernoùld and  
Afework Bekele

The Ethiopian plateau is home to two endemic species of turaco, the widespread White-cheeked Turaco *Tauraco leucotis*, with two subspecies *T. l. leucotis* and *T. l. donaldsoni*, and Prince Ruspoli's Turaco *T. ruspolii*, which has a small and restricted range on the southern part of the plateau. The ranges of *T. ruspolii* and *T. l. leucotis* abut along a narrow strip of land along the north-western edge of the former's distribution (see Fig.1). While the White-cheeked Turaco remains relatively abundant and is therefore not considered to be a threatened species, Prince Ruspoli's Turaco has for many years been on the Red List of globally threatened species.

In 1995, one of us carried out a survey of *T. ruspolii* and concluded that it remained reasonably common (population about 10,000 mature individuals) and was most abundant in the north of its small range of just 7,700sq km (approx. 2,975sq miles) (Borghesio & Massa, 2000). Although *T. ruspolii* and the closely related *T. leucotis* both occur in the same region, they were separated by their choice of habitat (*T. ruspolii* choosing woodland and the forest edge, with *T. leucotis* preferring closed-canopy forest); no evidence was found of hybridization.

In 2002, however, the first observations were reported of *T. ruspolii* x *T. leucotis* hybrids (Lernoùld & Seitre, 2002), whose hypothesis was that hybridization might have been the result of habitat barriers separating the two species having become blurred due to rapidly occurring habitat destruction. Hybridization might, therefore, be a new threat to the survival of one of Ethiopia's most charismatic endemic birds.

In 2007-2008, Tolera Kumsa (a student at Addis Ababa University) undertook a pilot survey of the northern part of the range of Prince Ruspoli's Turaco, to investigate the co-existence and hybridization of these two species of Ethiopian turacos. Here we briefly summarize his results and highlight the need for further research:

1. November 2007-March 2008 a total of 374 points were surveyed in an area of approximately 50km x 10km (roughly 30 miles x 6 miles), where the ranges of the two species abut (Fig.2).
2. At each point, recordings of vocalisations of Prince Ruspoli's Turaco and the White-cheeked Turaco were played for 10 minutes. The recorded

Fig. 1. Distribution of turacos on the Ethiopian plateau.

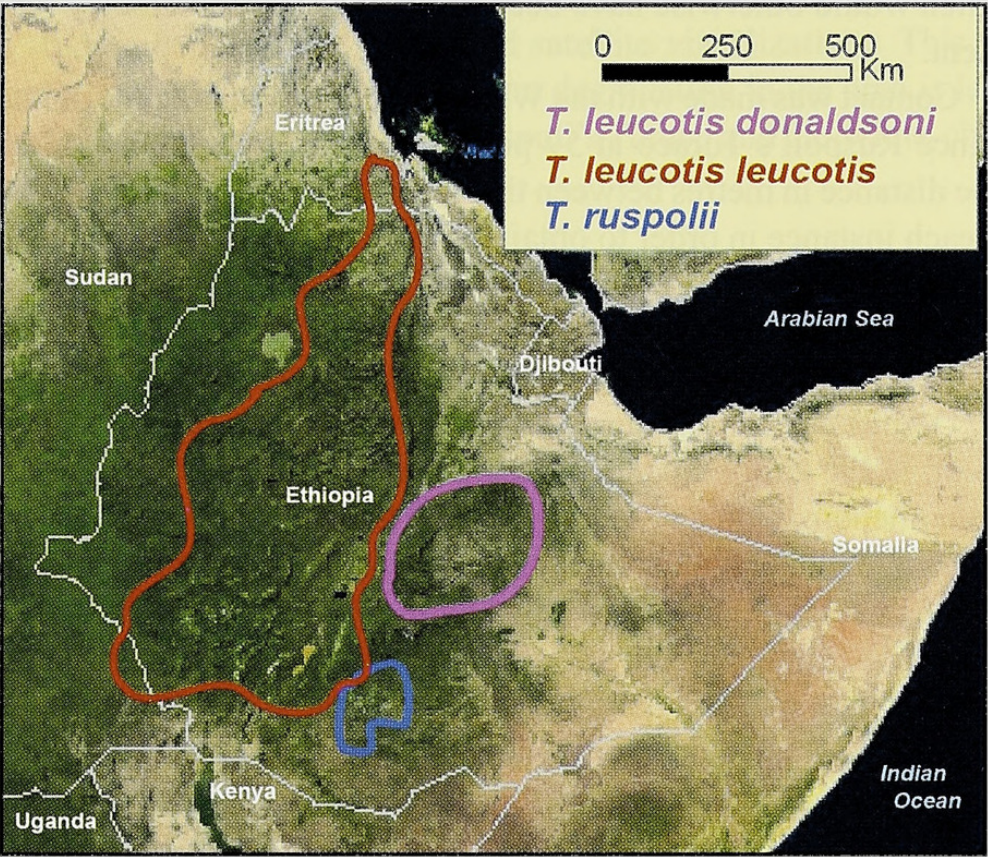
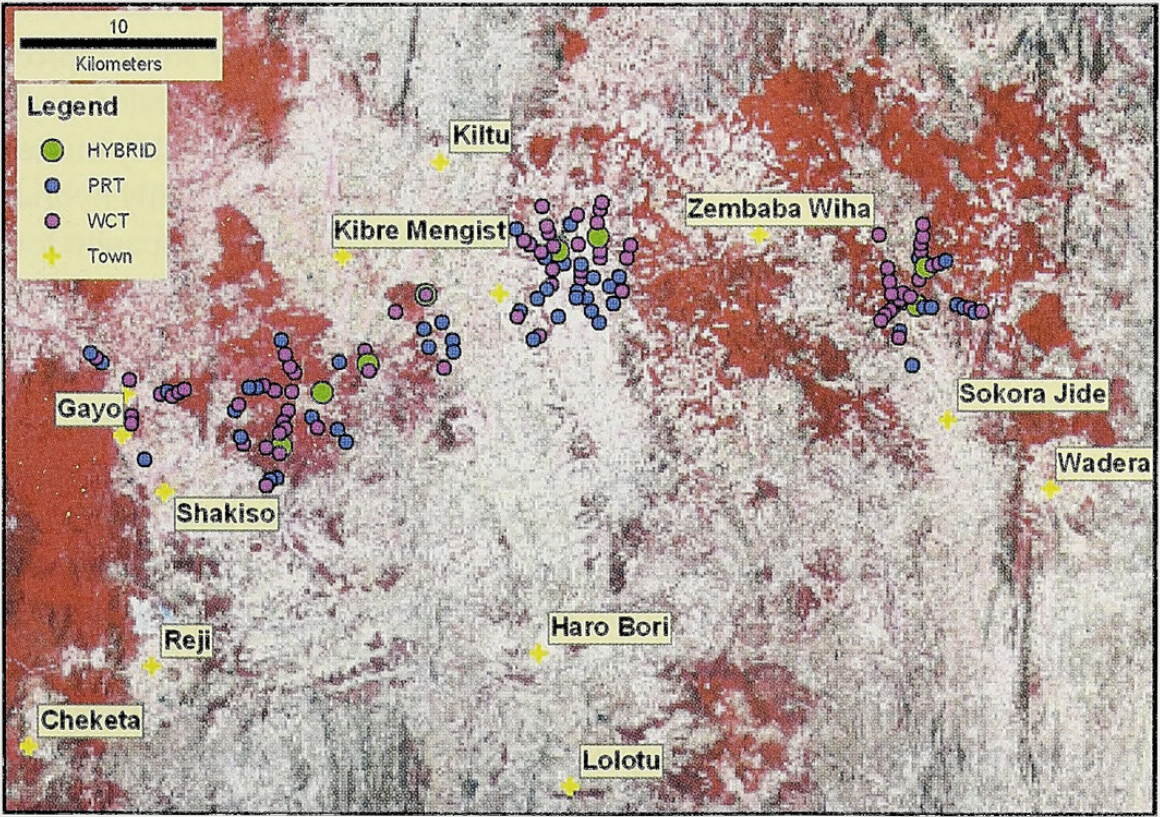


Fig. 2. On this satellite image of the survey area, forest appears as deep red, mainly agricultural areas are pinkish and bush/woodland is pale grey.



calls elicited the vocal responses of nearby turacos, the presence of which would otherwise have been difficult to detect, had they remained silent.

3. Contact was made with the White-cheeked species at 112 points, with Prince Ruspoli's Turaco at 59 points and with hybrids at eight points. The distance in metres between the observer and the birds was measured in each instance in order to obtain an estimate of the abundance of each of the turacos (for a given number of observed individuals, estimated density per unit area increases if detection distances decrease, because the same number of individuals are located in a smaller area).

4. Despite the relatively low number of observations, hybrid turacos were found in the entire area, suggesting that hybridization is a widespread phenomenon.

5. The White-cheeked Turacos were usually a greater distance from the observer (average distance 125m (approx. 400ft)) than the Prince Ruspoli's Turacos (average distance 52m (approx. 170ft)). This was a consequence of the much louder calls of the White-cheeked Turacos, compared to those of Prince Ruspoli's Turacos, and suggests that the apparent greater abundance of the White-cheeked Turaco (as indicated by the higher number of birds detected) was a consequence of the larger area ( $(125/52)^2=5.8$  times larger) around the census point, in which White-cheeked Turacos could be detected. In synthesis, Prince Ruspoli's Turaco and the White-cheeked Turaco remain widespread and numerous in the study area.

6. Hybrids had by far the shortest detection distances (only 36m (approx. 118ft)). This suggests that hybrids are more difficult to detect and identify. As a consequence a substantial number of hybrids were probably missed or mistaken for pure individuals of one of the parent species. Only hybrids seen at close distances can be reliably identified. Thus, the apparent low prevalence of hybrids (eight individuals at 374 sample points) is, judging by other evidence, a substantial under underestimate.

7. There are differences in the habitat preferences of the White-cheeked Turaco, Prince Ruspoli's Turaco and hybrids. The White-cheeked species occurs in more forested habitat than Prince Ruspoli's Turaco, which reaches high densities in woodland and along the edges of forest. Hybrids tend to occur in similar habitats to Prince Ruspoli's Turaco but usually with a greater preponderance of crops and plantations, which suggests that human-driven habitat change might be one of the causes of hybridization between *T. ruspolii* and *T. leucotis*. Unfortunately, due to the small sample size - only eight hybrids were observed - this is at present a very weak hypothesis and much more fieldwork is needed to test

it properly. The differences in habitat selection between Prince Ruspoli's Turaco, the White-cheeked and hybrids can be seen in Fig.2, in which the study area is shown in infrared satellite visualization. This offers support to the hypothesis that habitat degradation in the area is leading to hybridization between Prince Ruspoli's Turaco and the White-cheeked species.

The survey yielded a number of interesting - albeit preliminary - findings. Firstly, the suggestion that hybrids are widespread and probably abundant in the study area is worrying and might call for a revision of the conservation status of Prince Ruspoli's Turaco. Secondly, the data seem to suggest that habitat degradation is indeed increasing the chances of hybridization between Prince Ruspoli's Turaco and the White-cheeked species. Thirdly, it is unusual for a forest species to apparently be invading the range of a non-forest relative. We would have expected the reverse to happen. The questions arise: how is this happening and what is the role of human-driven habitat change in this process? A possible explanation is that increasing afforestation with exotic trees (*Eucalyptus* spp. and *Curpressus lusitanica*) may be providing *T. leucotis* with the 'stepping stones' by which it can invade the range of its relative Prince Ruspoli's Turaco.

Unfortunately, the importance of these preliminary findings is reduced by the fact that they are based on such a low data sample - just eight hybrids - which means that no definite conclusions can be reached on the prevalence of hybrids and their habitat selection. Therefore, a follow-up survey is a high priority. We are now in the process of selecting a new Ethiopian student at the University of Addis Ababa, to continue the work begun by Tolera. The task of the new student will be to undertake a survey of the areas around Kibre Mengist, Zembaba Wiha, Haro Bori and Lolotu that Tolera was unable to visit. These sites vary from those in which the natural vegetation remains largely untouched (Haro Bori and Lolotu) to others where there has been a marked human impact (the vicinities of Kibre Mengist and Zembaba Wiha). This will allow us to test the hypothesis that hybridization between these two species of turacos in southern Ethiopia is driven by human impact on their habitats. Based on this hypothesis, we expect that the prevalence of hybrids will be greatest in man-modified habitats, especially those in which large plantations of exotic trees are found, and lowest in areas in which the natural vegetation remains dominant.

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*Luca Borghesio, Department of Biological Sciences, University of Illinois at Chicago, 60607 Chicago, IL, USA. E-mail: lborgh2@uic.edu*

*Tolera Kumsa and Afework Bekele, Biology Department, Addis Ababa University, PO Box 1176, Addis Ababa, Ethiopia. E-mail: afeworkbekele@hotmail.com*

*Jean-Marc Lernould, CEPA-Conservation des Espèces et des Populations Animales- 17 rue de l'étang, 68440 Schlierbach, France. E-mail: lernould@association-cepa.org*

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## FORTHCOMING INTERNATIONAL PARROT CONVENTIONS

In 2010, the Loro Parque Fundación is organising the 1st International Convention on the Conservation of Psittacidae - Science, Policy and Practise, which will be held September 20th- September 22nd, followed by the VII International Parrot Convention, which will take place September 22nd-September 25th, both at Tenerife, Canary Islands, Spain. To learn more about these events, including the objectives of the conventions, the speakers, registration and accommodation information, etc., you can visit the Loro Parque Fundación Website: [www.loroparque-fundacion.org](http://www.loroparque-fundacion.org) or E-mail: [congreso2010@loroparque.com](mailto:congreso2010@loroparque.com)

## SEARCHING FOR THE BLACK-COLLARED LOVEBIRD *Agapornis swindernianus* IN UGANDA

by René Wuest

I have for more than 15 years been keeping and breeding virtually all of the *Agapornis* species occurring in aviculture, although it must be said, not all at the same time. I have tried all the various ways of keeping them – in pairs, in flocks and in breeding colonies. I have also harboured an interest in the countries of origin of the birds in my care. However, it was to other continents that I travelled, even though I always had the desire to travel to Africa one day.



**Black-collared Lovebirds live high in the trees and are rarely photographed.**

The only *Agapornis* species about which there is very little information is the Black-collared Lovebird *A. swindernianus*. Lovebird enthusiasts will readily understand why the Black-collared Lovebird has such a special allure. After a lengthy preparation time spent reviewing the sparse literature that is



Borghesio, Luca et al. 2009. "Is Prince Ruspoli's Turaco Threatened By Hybridization With The White-cheeked Turaco?" *The Avicultural magazine* 115(3), 138–143.

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