

# Status of the population of Karamoja Apalis *Apalis karamojae* in north-eastern Uganda

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The distribution of the Karamoja Apalis *Apalis karamojae*, an East African endemic, has been sparsely documented in Uganda. In October 2011, a survey of the species was carried out near Iriiri in north-eastern Uganda. The main aim was to find out if there is a viable population of the species and to highlight the threats to its population. Sixteen 1-km transects in four sites were surveyed. The survey recorded nine individuals including a pair at an occupied nest, which is not conclusive for determining the viability of the population. The main threats to the species were cutting of the dominant shrub *Vachellia drepanolobium* (*Acacia drepanolobium*) in the area, farming and grazing. When we attempted luring the birds using the recorded song of the Karamoja Apalis from Tanzania, these individuals did not respond. We therefore recommend (1) to undertake a more detailed GIS survey to discover the extent of the suitable habitat, (2) to repeat the survey with improved effort to better estimate the viability of this population, (3) to conduct a study to ascertain the successful breeding of the species in the area, (4) to conduct a DNA analysis to compare the Iriiri population with the Tanzanian population, and (5) to record the song of the Ugandan birds for song analysis and to determine the response of Tanzanian birds.

**Keywords:** Karamoja Apalis, nest record, range extension, Uganda, voice calls

## Introduction

The Karamoja Apalis *Apalis karamojae* is a species in the Cisticolidae family found mainly in north-eastern Uganda, northern Tanzania and southern Kenya, north of the Masai Mara (Shaw 2007). Its distribution has been described by Urban et al. (1997), Stevenson and Fanshawe (2002) and Carswell et al. (2005). Its population is generally declining in many of its major habitats due to reduction in the size and quality of its preferred *Vachellia drepanolobium* (*Acacia drepanolobium*) habitat, therefore this species is listed as Vulnerable in the IUCN Red List. The rate of habitat loss at one of its two main sites in Tanzania is reportedly high as it is being severely fragmented by encroaching cultivation and livestock farming (BirdLife International 2015). However, there are no available population estimates of this species for Uganda. There has also been no documentation of nest records of the species (Urban et al. 1997). However, the food, calls and song have been recorded by Shaw et al. (2004). During a Bird Population Monitoring (BPM) survey on 31 January and 1 February 2011, conducted by members of *NatureUganda* in the Iriiri Region of eastern Uganda, approximately 70 km south-west of Moroto town, at a grid reference of 02°07' N, 34°13' E, the team recorded six individuals of the Vulnerable and range-restricted Karamoja Apalis in an area of dwarf Whistling Thorn Scrub *V. drepanolobium*. This sighting was totally unexpected as the species had not been recorded in the 23 previous surveys carried out in the same area, several times in 1985 and annually since 2004 (D Pomeroy

pers. comm.). According to Carswell et al. (2005), the few Ugandan records of this species are of specimens collected from Mt Moroto in 1962 and Mt Napak in November 1919 and sight records from Kidepo Valley National Park (Byaruhanga et al. 2001), most recently in 1998. This therefore may be an extension of the range of this species, unless the sighting was only due to a local movement. The aim of this survey therefore was to conduct an extensive survey to find out if there is a viable population of the species within the Iriiri area and to highlight the threats that are faced by this population.

## Methods

The targeted area was the region around the Iriiri BPM sites where the reports of the sightings of this species were initially made. An extensive survey was conducted in four sites in this Iriiri area between 23 and 27 October 2011. The survey was done primarily in the area dominated by the dwarf acacia shrub *V. drepanolobium* and surrounding areas. A total of 16 transects, each of length 1 km and width 400 m (200 m on either side of the transect mainly in open habitat with a few stands of the dwarf acacia shrub), were surveyed. The transects were randomly established following guidelines by Bibby et al. (2000) ensuring a distance of 200 m between transects traversing each of the four sites. Transects were more or less straight lines except when there was an obstacle such as an impassable thicket, in which case the

transect would divert from that obstacle but later return to the initial straight route. Transect counts were conducted on all these transects and any Karamoja Apalis seen was recorded (Bibby et al. 2000). Each transect was surveyed once during this period. Although the areas found to hold the species in the January/February monitoring surveys took priority, three habitat types were considered: impeded drainage (*V. drepanolobium* and tall grass), cultivated area (*V. drepanolobium* and annual crops) and grazed area (*V. drepanolobium* and short grass). Impeded drainage I had eight transects, Impeded drainage II had two transects, Iriiri acacia (cultivated area) had four transects, and the Grazed area had 2 transects. This, however, covered areas beyond the BPM site boundaries. All individuals of the Karamoja Apalis seen or heard along the transects were recorded. In addition, any form of disturbance/threat at the site was recorded in terms of timing, severity and scope. Timing was described and scored as Low (whether it had happened in the past), Medium (likely to happen in the long term), High (likely to happen in the short term) or Very High (happening now). Severity was described and scored as Low (whether there was insignificant deterioration in habitat), Medium (slow deterioration), High (moderate deterioration) and Very High (rapid deterioration). Similarly, scope was described and scored as Low (whether it covers a small area <10%), Medium (moderate area <50%), High (most of the area 50–90%) and Very High (whole area >90%) (BirdLife International 2008). We also used playback from a tape of the song from the Tanzanian population of the species and observed the response of the birds. An attempt to catch the birds to take morphometric measurements and samples for DNA analysis was made by placing two 12 m nets in sites with suitable habitat of *V. drepanolobium*.

## Results

The results presented include records from the BPM regular surveys, opportunistic visits and our designated surveys in October 2011.

### **Bird Population Monitoring regular surveys and opportunistic visits**

During the BPM counts on 31 January and 1 February 2011, six individuals of Karamoja Apalis were recorded in the Iriiri area. The second regular BPM visit on 28 July 2011 recorded a pair within 1 h and photographs of the birds were taken (Figure 1). These findings laid the basis for conducting the systematic survey in October 2011.

### **Designated October survey**

The survey in October 2011 was centred on the Iriiri area at the southern end of Karamoja, below Mt Napak, north-eastern Uganda. This survey recorded nine individuals (Table 1) including a pair at an occupied nest (Figure 2). Among the three habitat types considered, impeded drainage had the highest number of individuals recorded, followed by cultivated area, with no individuals recorded in the grazed area along the transects surveyed (Table 1). In addition, five birds (two pairs and one individual) were offered playback of the Tanzanian *A. karamojae* song recording but showed no response (Table 1). Attempts to catch a Karamoja Apalis, using mist nets, in an area where we had located two individuals during the July visit were unsuccessful. However, a pair of Karamoja Apalis within 50 m of a net was seen. We were surprised to find them entering a nest (Figure 2) situated in *V. drepanolobium* about 2.5 m above the ground. The nest appeared to be resting on a branch and entwined in long thorns from the surrounding branches. The nest was constructed from fibres of cotton and cobweb and it looked delicate. The entrance was situated near the top of a closed cup.

### **Threats**

Threat types encountered in the area included cutting of *V. drepanolobium*, mainly for firewood and charcoal



**Figure 1:** Karamoja Apalis (photograph: © Achilles Byaruhanga, NatureUganda)

**Table 1:** Number of birds recorded in four different areas surveyed in October (see Appendix for details)

Survey and sites	Impeded drainage I	Impeded drainage II	Grazing area	Iriiri acacia cultivation	Total <sup>a</sup>
Number of transects	8	2	2	4	16
Number of birds	9	0	0	0	9
Nest record	1	0	0	0	1
Response to call	0 of 5	–	–	–	0 of 5

<sup>a</sup> In total, 16 transects were covered with a survey effort of 18 h



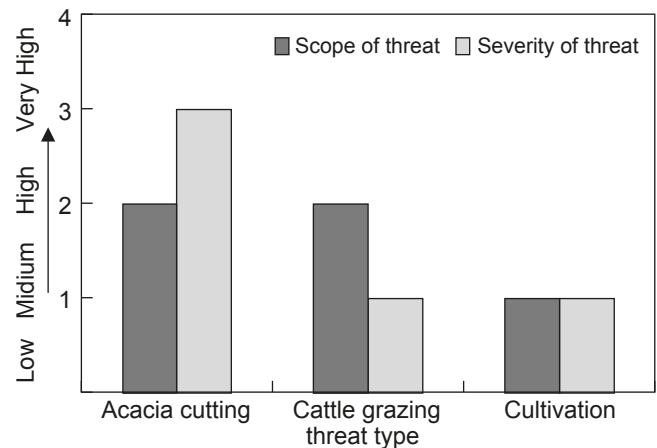
**Figure 2:** Karamoja Apalis nest at GPS point UTM 36N 0637398, 0241856 (photograph: © Michael Opige, NatureUganda)

production, cattle grazing and cultivation. Based on the scope and severity scales, threats were ranked with acacia cutting being the biggest threat for the species, followed by cattle grazing and then cultivation (Figure 3). Each of these threats highly affected the dominant *V. drepanolobium* shrub characterising the suitable habitat for the species.

### Discussion

Although all surveyed areas had habitats that were thought to be able to hold the species, we recorded individuals in only four out of 16 transects and recorded nine birds in total (Table 1). These individuals appeared extremely localised and were only found in an area of seasonally flooded grassland with the Whistling Thorn *V. drepanolobium* the dominant shrub. We surveyed suitable areas both 30 km east (Impeded drainage II) and 30 km west (Grazed area) of our base at Iriiri to gauge the distribution, but both areas were unsuccessful. These findings do not provide conclusive results on the viability of this population and require further surveys to obtain a better conclusion. The locations surrounding the transects surveyed were drier and are used by the Karamajong people for occasional farming, charcoal production and grazing. Cutting of the dominant shrub *V. drepanolobium*, which is the biggest threat to the species, may lead to detrimental habitat change if not controlled. This will, in turn, affect the population of the species, which seems to depend highly on this shrub given the number of individuals sighted feeding or sitting in the shrub, including the pair recorded on an active nest.

Usage of sound recordings of Karamoja Apalis from southern Tanzania (Shaw et al. 2004) gave interesting results. On three occasions we were able to offer playback and observed no response. One bird was approached to within 10 m, playing the tape constantly for more than 2 min. It barely turned its head and continued feeding and preening until we were close and it flew off. This was later confirmed when a pair gave a brief burst of song, although typically apalis-like, it was quite different to that of the



**Figure 3:** Major threat types, scope and severity in the surveyed areas. Severity: Low = insignificant deterioration in habitat, Medium = slow deterioration, High = moderate deterioration, Very High = rapid deterioration. Scope: Low = whether it covers a small area <10%, Medium = moderate area <50%, High = most area 50–90%, Very High = whole area >90%

Tanzanian birds, being sharper and faster than the song recordings we offered. Evidently, they do not respond to the unfamiliar Tanzanian songs. This pair was the birds on the nest and they were calling a double note 'teeeng-teeeng', higher pitched at the beginning. Although they were near the laid-out mist net and failed to enter it, we neither attempted to touch the nest nor to move the mist nets closer, due to the delicate nature of the nest and the fact that we estimate the population of this species to be extremely small and vulnerable (possibly 6–8 pairs). We considered the birds to be incubating eggs or feeding very young chicks judging by the change-over period at the nest, although this was not confirmed. This new discovery was very interesting and critical given that the rate at which Whistling Thorn was being cut down in the area poses a serious threat to the species.

### Conclusion and recommendations

At present the Karamoja Apalis in Uganda remains largely unknown with regard to its distribution and biology, including the size of the population. However, we have managed to establish that the range for the Karamoja Apalis in Uganda goes beyond the Kidepo, Mt Moroto and Mt Napak areas to include areas around Iriiri, about 10 km from Mt Napak and approximately 80 km from Kidepo and 102 km from Mt Moroto. We also believe that the calls for the race in Tanzania and that in Uganda are different, although this will be ascertained after recording of calls and tape luring of birds with calls from other populations. The most interesting finding was a first breeding record for the entire Ugandan population, but because we did not confirm fledglings or the success of this nest, it remains an uncertain breeding record and requires confirmation. We acknowledge that the population size may be underestimated because transects were only visited once. We therefore recommend (1) that a more detailed landscape

GIS survey be conducted to discover the extent of the suitable habitat, mainly following drainage lines, so that the distribution of the Karamoja *Apalis* population can be better assessed and the threats evaluated with greater certainty. (2) A repeat survey should estimate the viability of the population and also involve increased effort by visiting each transect at least twice, at different times of the day to account for variation in bird activity due to the time of day. (3) A study is needed to ascertain successful breeding of the species in the area and (4) at least one bird should be captured for DNA analysis to establish if the Iriiri population is divergent from the Tanzanian population. (5) It is also important to record calls of the Ugandan birds for song analysis and to determine how the Tanzanian (and Kenyan) birds respond to these calls.

*Acknowledgements* — The African Bird Club kindly donated funds that allowed this survey to go ahead. Professor Derek Pomeroy suggested that a follow-up survey of the area would be very useful. Phil Shaw kindly offered us sound recordings of Karamoja *Apalis* from Tanzania, and Achilles Byaruhanga provided technical support. *NatureUganda* ensured that the work was accomplished.

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**Appendix:** GPS fixes for starting points and activity for the surveyed transects

Site	Transect	GPS points (UTM) 36N		Birds seen	Activity <sup>a</sup>
Impeded drainage I	T1	0638043	0242086	0	–
	T2	0638001	0241763	0	–
	T3	0637953	0241566	3	F/P
	T4	0637911	0241386	2	F/P
	T5	0637853	0241182	0	–
	T6	0637789	0240949	0	–
	T7	0637713	0240388	1	P/F
	T8	0637701	0239914	3	F/P/C
Impeded drainage II	T1	0651236	0257713	0	–
	T2	0651223	0257515	0	–
Iriiri Acacia	T1	0636917	0234043	0	–
	T2	0637318	0234156	0	–
	T3	0637501	0234095	0	–
	T4	0637816	0233982	0	–
Grazing land	T1	0621810	0220622	0	–
	T2	0621681	0220479	0	–

<sup>a</sup> F = flying, P = perched, C = calling