



Distribution and conservation status of *Galagoides rondoensis* in Saadani National Park, Tanzania

W.Ntongani¹P.Nyinondi² and J.Keyyu³

¹Sokoine University of Agriculture, P.O.Box 3011, Morogoro; ²Sokoine University of Agriculture P.O. Box 3022, Morogoro; ³Tanzania Wildlife Research Institute P.O.Box 661, Arusha



Abstract

The endangered *Galagoides rondoensis* is the smallest of all galago species. The main objective of the study was to study the distribution and conservation status of *G.rondensis* in the Saadani Nation Park. The study focused on the presence or absence of *G. rodensis* in the Park and identified possible threats to the species. The galagos survey used vegetation types and nature of terrain in setting study sites. Surveys were conducted at night between 18.30 and 23.00 hours and early morning 3.30 to 6.00 hours. The *Galagoides rondoensis* advertising calls were heard and tape recorded only in Zaraninge forest at Kiono hill. The presence of *G. rondoensis* in Zaraninge forest makes the park unique. However, the park management develops tourism facilities like trail, campsites and hotels. Thinking in this line any park development in the closed canopy of Kiono Hill (Zaraninge) forests may interfere or destroy the only available habitat of the species in the park. The conservation move should be to sensitize park authority to design the current sites where the *G. rondoensis* has been sited as no use zone, until population size, status and viability has been established. This may require more scientific evidence to justify the site as no use zone for specified time. Increasing human population this claims for more fertile land for agricultural. In clearance of land for agriculture on the park border was evident. The possibility of wildfire that may come from agricultural field or intentional, may indeed damage large part of the park, Zaraninge forest and Kwamsisi forest in particular. Currently, the effect of fire to *G. rondoensis* is unknown, but from ecological view the burn of nests and food sources may negatively affect the species. Monitoring of the species in the occurring habitats is important in order to quantify population size and viability. We need to know if *G. rondoensis* can adapt and survive in other forests found in Saadani National Park like Kwamsisi and Askari forests, or any other moist coastal forest along the Tanzania coast.

Objectives of Study

The main goal of the project

The main objective was to study the distribution and conservation status of

Galagoides rondoensis in Saadani National Park

Specific objectives

- 1.To map the presence or absence of *Galagoides rondoensis* in Park,
2. To increase our understanding on distribution of *Galagoides rondoensis* in park,
3. To provide information of *Galagoides rondoensis* to conservation actors,
4. To increase awareness on conservation need of *Galagoides rondoensis*

Study Site

The study was located in The Saadani National Park ecosystem (Figure 1). This ecosystem is an old one (Hawthorne 1993; Clarke and Karoma 2000) having a rich vegetation mosaic composed of various terrestrial and aquatic ecosystems (Bloesch and Klötzli 2002) found along the Indian Ocean dominated with costal forests. The coastal forests have a characteristic feature of savanna landscape consisting of highly heterogeneous and diverse assemblages of forest types (Clarke and Robertson 2000; Clarke *et al.* 2000), this characteristic make Saadani to be a very high diverse habitat that support a range of wildlife and avifauna species (Perkin, 2000). According to the topographical position Saadani has various types of coastal forests from hilltop to valley floor.

Results

Results

Galagos

Four galagos species were recorded in Saadani National Park. These are: - Large Eared Greater galago, Matundu galago, Garnett's Galago and Rondo Galago.

The Large Eared Greater galago

The species unique advertising calls of "baby cry" were recorded wooded grassland area, in the central part of the park



Matundu galago

This species was identified by their distinctive advertisement call called the 'single unit rolling call'. The calls were recorded in Zaraninge forests and in thicket along the coast.

Garnett's Galago

The Garnett's Galago is the most common species in Zaraninge Forests and other parts of the park. Its 'trailing calls' and 'cackle calls' were heard every part of Zaraninge and some parts of Askari forests.

Introduction

Galagoides rondoensis weighs approximately 60g, is the smallest of all galago species (Honest 1996). It is unique from other dwarf galagos because of its diminutive size, a bottle-brush-shaped tail, reproductive anatomy, and its distinctive double unit rolling call (Bearder *et al.* 1995; Honest 1996). The species was formerly described as *Galagoides demidovii* phasma after the collection of specimens from Rondo Plateau in 1955, and Nambungu on Makonde Plateau in Newala District in 1953. The IUCN classifies Rondo dwarf galago (*Galagoides rondoensis*) as endangered. Also the species is among the top 25 most endangered primates. Reasons for this classification are that it has an extremely limited and fragmented range. Its entire forests habitat except in Saadani national parks are subjected to agriculture and charcoal burning.

In all its known range, *G. rondoensis* is found with a number of other galagos, such as Garnett's galago (*O. garnettii*), and the thick-tailed galago (*O. crassicaudatus*). The Rondo galago is sympatric with the Zanzibar galago (*Galagoides zanzibaricus*) in the northern parts of its range, for example, in Zaraninge forest, Pugu-Kazimzumbwi Forest Reserve and Pande Game Reserve. *G. zanzibaricus* is classified as Lower Risk (Near Threatened) in the 2006 IUCN Red List (IUCN 2006) due to threats to its habitat.

In the southern parts of its range for instance, at Rondo, Litipo and Ziwani Forest Reserves, the Rondo galago is sympatric with Grant's galago (*Galagoides granti*) which is listed as Data Deficient (IUCN 2006). The Mountain dwarf galago (*Galagoides orinus*) ranked as Data Deficient (IUCN 2006), is restricted to areas of sub-montane and montane forest in the Eastern Arc Mountains further inland in Tanzania.

There is no detailed study carried out and specific targeting *G. rondoensis*, however, some biodiversity surveys provides relevant information on this species (Honest 1996, Honest and Bearder 1996; Perkin, 2000, 2003, 2004). The report of Honest, *et al.* (2007) provides general review of this species and point out the need of specific study on the species. Because of limited study and information deficit on *G. rondoensis* no special attention has been conferred to this species. It is difficult for conservation organization to develop feasible conservation actions like protecting the remaining habitats. Therefore, *G. rondoensis* populations which are lucky to be in strictly protected areas are the ones.

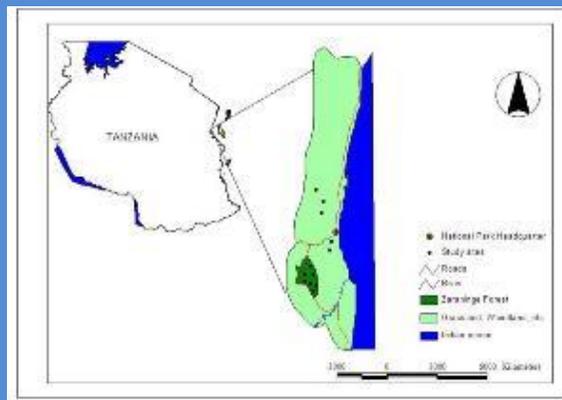


Figure 1. Saadani National Park

Methods

The galagos surveys used vegetation types and nature of terrain in setting study sites. *Galagoides rondoensis* is nocturnal so survey was conducted at night between 18.30 and 23.00 hours and early morning 3.30 to 6.00 hours. Materials used include torches, binoculars and tape recorders, and tapes. A number of methods for data collection were employed. Researchers' walked along existing paths to record galagos and other animals heard or seen. These methods have been established as a reliable means of recognizing cryptic species (Bearder *et al.*, 1995; Perkin 2000). The vocalisation data was analysed by computer using a digital sound analyser programme. Ecological data was used to map the distribution of *G. rondoensis* in the park and correlate them with habitat types.

Rondo Galago

Galagoides rondoensis advertising call called the 'the double unit rolling call', an alarm call called 'buzz and shivering twitters' and another called 'buzz and rapid chatter', were heard and tape recorded only in Zaraninge forest. The calls were heard at Kiono hill. Although interactive interview with communities reported to have rarely seen *G. rondoensis* in thicket out the park, no call was recorded in the mentioned locality. Probably the species was confused with Matundu galago (*Galagoides zanzibaricus*).

This study proves that Saadani National Park is very critical habitat of galagos, with four species confirmed to be present in the area. More important the presence of *G. rondoensis* in Zaraninge forests makes the park unique. According to Perkin (2000) it makes the park one of diverse and rich habitat, in the coastal forests of eastern and southern Africa with three galago species occurring sympatrically in Zaraninge locality, while one more occurring outside closed canopy forest.

Other primates recorded and observed in the park are:

Black and White Colobus *Colobus angolensis*,
Blue Monkey *Cercopithecus mitis*
Yellow baboon *Papio cynocephalus*



Discussions

Zaranninge forest is part of Saadani National Park, where consumptive utilization is total prohibited.



Non consumptive utilization ensures the promising future of *G. rondoensis* in the park. However, the park management develops tourism facilities like trail, campsites and hotels. Presently, we know and agree with Perkin (2000) that “*G. rondoensis* is more insectivorous than frugivorous and hunts its prey in the leaf litter....

These specific factors require ecologically stable closed canopy habitat that maintain a deep leaf litter layer to provide the necessary amounts of insects and reptiles. The disturbance of forests by either fire or logging will allow too much light and heat in and reduce the leaf litter cover that this species require. *G. rondoensis* is therefore a conservative species with the specific habitat requirements”. Thinking in this line any park development in the closed canopy of Kiono Hill (Zaranninge) forests may interfere or destroy the only available habitat of the species in the park.

The conservation move should be to sensitize park authority to design the current sites where the *G. rondoensis* has been sited as no use zone, until population size, status and viability has been established. This may requires more scientific evidence to justify the site as no use zone for specified time.

The main conservation issues that threat *G. rondoensis* habitats are:

Increasing human population this claims for more fertile land for agricultural. In fact agricultural clearance on the park border is evident. The park staff reported that the park is experiencing pressure from politicians, who want to win popular support from local communities pressuring the government to give them piece land from the park.

The possibility of wildfire that may come from agricultural field or intentional, may indeed damage large part of the parks, Zaranninge forests and Kwamsisi forests in particular. Currently, the effect of fire to *G. rondoensis* is unknown, but from ecological view the burn of nests and food sources may negatively affect the species.

This study has confirmed that *G. rondoensis* is occurring in a small area of Zaranninge forest in Saadani National Park. Furthermore a total of seven (7) species were observed and/or recorded in the park. This understanding disapproves assumption that the *G. rondoensis* may be distributed whole over the park. Monitoring of this species in the occurring sites is important to understand its population size and viability,, establish possible ecological and non ecological factors limiting or favouring the species..

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