



EVOLUTIONARILLY DISTINCT  
& GLOBALLY ENDANGERED

# Survival Blueprint

## Du Toit's Torrent Frog, *Arthroleptides dutoiti*

Compiler: Jacob Mueti Ngwava

Contributors: Ngwava, J.M, Malonza, P.K.; Bwong, A.B.

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## 1. STATUS REVIEW

### 1.1 Taxonomy:

Animalia> Chordata> Amphibia> Anura> Petropedetidae> *Arthroleptides*> *dutoiti*

**Loveridge 1937**

Common names: Du Toit's torrent frog; Mt Elgon Torrent frog

### 1.2 Distribution and population status:

#### 1.2.1 Global distribution:

Country	Population estimate (plus references)	Distribution	Population trend (plus references)	Notes
Kenya	Not seen for 50+ years	Known to exist only in Mt Elgon, Kenya	<p>Declining; Lötters, S., Rotich, D. &amp; Veith, M. (2003): Non-finding of the Kenyan endemic frog <i>Arthroleptides dutoiti</i>. FrogLog 60: 3-4.</p> <p>Stuart, S.N., M. Hoffmann, J.S. Chanson, N.A. Cox, R.J. Berridge, P. Ramani and B.E. Young (Eds.) (2008). Threatened amphibians of the world. Lynx Editions, Barcelona, Spain; IUCN, Gland, Switzerland; and Conservation International, Arlington, Virginia, USA; Channing, A. &amp; Howell, K. 2006. Amphibians of Eastern Africa. Ithaca, Cornell University Press.</p>	Despite repeated searches, the species has not been spotted, indicating its existence in very low numbers or even having gone extinct. Our searches during the 2 years EDGE fellowship yielded not even a single specimen of the species.



## 1.2.2 Local distribution:

Country	Region / province	Site	Level of Protection	Population size	Reference(s)	Notes
Kenya	Western	Mt Elgon	The Mt is co-protected by the Kenya Wildlife Service and Kenya Forest Service as a National Park and forest reserve respectively	Not known	Lötters, S., Rotich, D. & Veith, M. (2003): Non-finding of the Kenyan endemic frog <i>Artholeptides dutoiti</i> . FrogLog 60: 3-4.	There is need for concerted efforts to do searches even in the Ugandan side of the Mountain.

## 1.3 Protection status:

The species is currently listed as Critically Endangered in the IUCN.

### Justification:

*It is listed as Critically Endangered because its Area of Occupancy is probably less than 10km<sup>2</sup>, all individuals are in a single sub-population, and the extent of its forest habitat, and possibly the number of mature individuals, on Mount Elgon are declining.*

There is currently no formal protection accorded to the species. However if the species occurs within the National Park, then it is adequately protected in the umbrella of the Protected Area. However, if its distribution is outside the park, the species exposed to a number of threats and is not given adequate protection.

## 1.4 Ecology, behaviour and habitat requirements:

*A. dutoiti* is a small frog that exists in rocky areas on fast flowing torrential streams. The documented altitude for the species is 7000 ± 3000 ft but it is now difficult to tell where the species could be occurring. Its breeding behaviour is largely unknown (Channing & Howell, 2006) but is presumably similar to other species in the genus, with eggs laid on wet rocks close to torrential streams and waterfalls, and the larvae developing on the rocks out of the water.

*A. dutoiti* was originally found in the rapids and fast flowing waters of Mt Elgon. It is now not possible to tell where the remaining populations could occur, so the status of the species current habitat is also unknown. Several suitable habitats exist within the Mt. Elgon National Park and the Kenya Forest Service managed land. According to our assessments during the study, such habitats, especially those existing within the park are in a relatively pristine and undisturbed condition. The habitats within forest land managed by the Kenya Forest Service are not stable due to continual commercial logging and permitted clearing of land for crop cultivation.

## 1.5 Threat analysis:

Other than the possible infestation by the deadly *Batrachochytrium dendrobatidis* (which is still being investigated) the second most important threat to *A. dutoiti* is habitat loss. Due to increasing human population in the area, there has been increasing need for farming land which has led to encroachment of the forestland by the local communities. The Kenya Forest



Service has also over the years been permitting commercial logging in the Mt Elgon forest. After logging, local communities are allowed to do farming for some time before new exotic tree seedlings are planted. Farming normally stops when the planted trees reach a certain height and shade out the crops. The presence of farming in the area is a threat since the farmers use agrochemicals which have adverse effects on amphibians.

Negative effects of climate change over the last 52 years since *A. dutoiti* was last seen cannot be ruled out. The remaining populations if not made to succumb to imminent climate change pressures, such as increased rainfall or conversely drought, could have been pushed up the mountain.

## 1.6 Stakeholder analysis:

Country	Stakeholder	Stakeholder's interest in the species' conservation	Current activities	Impact (positive, negative or both)	Intensity of impact (low, medium, high or critical)
Kenya	Kenya Wildlife Service (KWS)	Conservation and Management of the Mt Elgon National Park	Conservation research, community out-reach programmes.	Positive	Critical
Kenya	Herpetology Section of National Museums of Kenya (NMK)	Conservation research	Herpetology section has been in the forefront of research and conservation of amphibians and reptiles in Kenya including <i>A. dutoiti</i> .	Positive	Critical
Kenya	Kenya Forest Service (KFS)	Management and Conservation of the Mt Elgon forests	Forest management and enhancement	Positive	High
Kenya	Kenya Forest Service (KFS)	Commercial	Logging	Negative	Critical
Kenya	Local Communities	Agricultural land and wood products	Farming, collection of wood fuel, illegal logging	Negative	Critical



## 1.7 Context and background information that will affect the success of any conservation action for this species:

	Description	Barriers to conservation	Opportunities for conservation
<b>Socio-cultural effects and cultural attitudes</b>	The local communities have no attachment yet to the species.	There is therefore no attachment to the species, and limited concern about whether their activities harm the frog.	The species, if still existing plays an important role in ecosystem balance.
<b>Economic implications</b>	No economic implications.	-	If found to exist, it could become a touristic attraction.
<b>Existing conservation measures</b>	One EDGE fellowship project was conducted for 2 years on <i>A. dutoiti</i> , aiming to document the conservation status of the species. Not even a single individual of the species was spotted during the research period.	The EDGE project was limited due to low level of funding which consequently affected the effective number of fieldwork days to search across a large area .	The EDGE fellowship is a stepping stone for future <i>A. dutoiti</i> research work. The project created awareness not only at the local level but also on the global scene.



<b>Administrative/political set-up</b>	<p>Fitting into administrative framework of the Kenya Wildlife Service and the Kenya Forest Service. A stakeholder workshop conducted in December 2014 brought the Kenya Wildlife Service, Kenya Forest Service and local community conservation groups together to discuss the fate of the critically endangered <i>A. dutoiti</i> and the ecosystem at large.</p>	<p>-</p>	<p>All the stakeholders showed great positivity in contributing towards conservation of the remnant populations of the species and its habitat.</p>
<b>Local expertise and interest</b>	<p>No one has had experience with the species in the area but the Kenya Wildlife Service management and rangers showed great interest in getting involved in monitoring and conservation work for the species hoping there are still chances of discovering the remnant populations.</p>	<p>-</p>	<p>This is a great opportunity since these are the people who are involved in daily conservation of the biodiversity within the Protected Area.</p>
<b>Cultural attitudes</b>	<p>Most local people do not have any cultural attachments to the species since they have never seen it.</p>	<p>People may not be interested in conserving the species.</p>	<p>It is easier to positively influence the people when they do not have pre-formed ideas.</p>



<b>Appeal of species</b>	<p>The species has not been seen for the last 52 years. It is an appealing species due to both its visual appeal and the story of the extinct frog itself.</p>	<p>-</p>	<p>The mention of a species that almost became extinct coming back into existence is a story that everyone wants to hear. This is a great opportunity to harness support of funders and to pull tourists to the area.</p>
<b>Resources</b>	<p>No particular resources have been set aside by the government targeting the species.</p>	<p>This means that the species is not accorded adequate protection</p>	<p>-</p>



## 2. ACTION PROGRAMME

<b>Vision (30-50 years)</b>	
Effective conservation of <i>A. dutoiti</i> in the Mt Elgon ecosystem for the benefits of present and future generation.	
<b>Goal(s) (5-10 years)</b>	
To assess the current distribution range of <i>A. dutoiti</i> , identify threats to the species and consequently to develop workable conservation strategies for the species.	
<b>Objectives</b>	<b>Prioritisation</b> (low, medium, high or critical)
Assessment of the effective distribution range of the species in the Mt Elgon ecosystem	Critical
Know the conservation status of the species in the ecosystem	Critical
Mitigate threats to the species and its associated habitats	Critical
Involve all relevant stakeholders towards effective conservation of the species	Critical
Develop effective action plans for conservation of <i>A. dutoiti</i>	Critical



Activities	Country / region	Priority (low, medium, high or critical)	Time scale	Responsible stakeholders	Indicators	Risks	Activity type
<b>Objective 1: Assessment of the effective distribution range of the species in the Mt Elgon ecosystem</b>							
Carry out field surveys to establish the distribution range for the species	Kenya	Critical	2016	Relevant research scientists (NMK, KWS)	Surveys Reports		Improving knowledge
Develop species distribution map	Kenya	Critical	2016	Relevant research scientists (NMK, KWS, KFS)	Distribution map generated		Improving knowledge
<b>Objective 2: Know the conservation status of the species in the ecosystem</b>							
Doing more surveys to understand the conservation status of the species	Kenya	Critical	2016	NMK, KWS, KFS	Reporting on threats to the species and habitat	-	Improving knowledge
<b>Objective 3: Mitigate threats to the species and its associated habitats</b>							
Campaigning for halting of logging in the Mt Elgon ecosystem	Kenya	Critical	2016	NMK, KWS, KFS, Local Communities	Reduced logging pressure	-	Land management



Activities	Country / region	Priority (low, medium, high or critical)	Time scale	Responsible stakeholders	Indicators	Risks	Activity type
Advocating on environmentally friendly farming methods	Kenya	<b>Critical</b>	2016	NMK, KWS,KFS, Local Communities	No use of agrochemicals near the habitats for the species	-	Livelihood, Economic and Other Incentives
<b>Objective 4: Involve all relevant stakeholders towards effective conservation of the species</b>							
Involving all the relevant stakeholders in conservation of the species	Kenya	<b>Critical</b>	2016	NMK, KWS,KFS, Local Communities, and relevant NGO's	All relevant stakeholders involved, number of events attended by stakeholders	-	Education and awareness
<b>Objective 5: Develop effective action plans for conservation of <i>A. dutoiti</i></b>							
Developing effective species conservation action plan	Kenya	<b>Critical</b>	2016	NMK, KWS,KFS, Local Communities, and relevant NGO's	Action Plan document	-	Species management



### 3. LITERATURE CITED

Channing, A. & Howell, K.M. (2006) *Amphibians of East Africa*. Edition Chimaira, Frankfurt am Main and Cornell University Press, Ithaca, 404 pp.

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