

## Integrated Biodiversity Assessment Tool

# SPECIES REPORT (ESTIMATED)

## UDZUNGWA MOUNTAINS LANDSCAPE

### Report Details

Country: **United Republic of Tanzania**

Location: **36.42, -7.96**

Date of Analysis: **16 October 2025 08:59**

Report version: **1.0**

Red List version: **2025-1**

Area of site and buffer: **8225.33 km<sup>2</sup>**

Buffer: **5.0 km**

Area of STAR analysed: **8652.79 km<sup>2</sup>**

Mean STAR percentile: **99.7%**

Max STAR percentile: **99.9%**

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### 1. Definitions

#### **Area of STAR analysed**

The total area of all STAR cells analysed in this report. This can differ from the area of the site and buffer because any STAR cells that are overlapped (wholly or partly) by the site and buffer will be included in the report analysis. Marine and freshwater areas will be excluded.

#### **Area of Habitat**

Habitat available to a species, that is, habitat within its range. Also known as Extent of Suitable Habitat (ESH). This is consistent with the definition of habitat itself as 'the area, characterized by its abiotic and biotic properties, that is habitable by a particular species'.

#### **Range**

The geographical area within which a species is known to occur. This includes all the known, inferred or projected sites of present occurrence, but does not include cases of vagrancy.

### **Rapid High-Integrity Nature-positive Outcomes (RHINO)**

The purpose of IUCN's RHINO approach is to provide pathways for the delivery of rapid, high-integrity contributions to the Kunming-Montreal Global Biodiversity Framework (KMGBF) and the Sustainable Development Goals (SDGs).

### **STAR Threat abatement (STAR<sub>T</sub>)**

The sum of STAR<sub>T</sub> values across all species represents the global threat abatement effort needed for all species to become Least Concern.

### **STAR Restoration (STAR<sub>R</sub>)**

The STAR restoration (STAR<sub>R</sub>) score reflects the proportion that restorable habitat at the site and buffer represents of the global area of remaining habitat for a given species. Importantly, a multiplier is applied to STAR<sub>R</sub> scores to reflect the slower and lower success rate in delivering benefits to species from restored habitat compared with conserved existing habitat. Again, STAR<sub>R</sub> scores can be disaggregated by threat and summed across species within the location.

### **Threat**

Direct threats are the proximate human activities or processes that have impacted, are impacting, or may impact the status of the species being assessed (e.g., unsustainable fishing or logging, agriculture, housing developments, etc.) Direct threats are synonymous with sources of stress and proximate pressures.

## **2. Executive Summary**

This report evaluates the potential to reduce species extinction risk by abating threats to named species at a site and buffer in United Republic of Tanzania, covering 8225.33 km<sup>2</sup>. Using the IUCN Species Threat Abatement and Restoration (STAR) metric, the report estimates threats and identifies species for targeted conservation action\*. This analysis supports strategic conservation planning and disclosure by identifying where threat reduction efforts could have the greatest impact on reducing global extinction risk.

The mean STAR percentile for this site and buffer is greater than 99.7% of STAR cells globally, with the highest-scoring cell being greater than 99.9% of cells globally.

The threats that are estimated to contribute the most to the site and buffer STAR score (with percentage contributions) are Annual & perennial non-timber crops (35.2%), Logging & wood harvesting (30.8%), Wood & pulp plantations (10.4%), Hunting & trapping terrestrial animals (7.1%), and Fire & fire suppression (5.7%).

The site and buffer contains Area of Habitat (AoH) for 93 globally threatened or Near Threatened amphibian, bird, mammal or reptile species. The top 10 species contributed 49.4% of the total estimated STAR threat abatement score.

The next step is to calibrate the report by confirming which species and threats are present within the site and buffer using local data. This estimated species report represents only the first step of the STAR process.

## **3. STAR (Species Threat Abatement and Restoration) Metric Introduction**

The Species Threat Abatement and Restoration (STAR) metric is a science-based approach developed by IUCN to quantify how conservation actions can reduce species extinction risk. STAR draws on data from the IUCN Red List of Threatened Species to assess the relative contribution of specific threats to a species' extinction risk. When a site and buffer is analysed using STAR, it measures overlaps between the site and buffer with the Areas of Habitat (AoH) of threatened and Near Threatened species of amphibian, bird, mammal and reptile. Each species is weighted by its IUCN Red List category and the proportion of its global AoH within the site and buffer. STAR supports decision-making by helping identify locations where the greatest reductions in extinction risk can be achieved.

This Species report makes some assumptions to estimate STAR scores for species and threats within the site and buffer using global data:

- Species' global Area of Habitat maps accurately reflect the species' true distribution.
- Species are evenly distributed within their global Area of Habitat.
- The same threats impact the species within the site and buffer as within their global population, with the same intensity.

Some species may be present within the site and buffer that are not included in this report (false negatives). Meanwhile, some species may be included in this report that are not present within the site and buffer (false positives). The same is true of threats, and threat intensity (how much the threat impacts the species). The estimated Species report can help with initial screening and planning and should be calibrated before planning actual threat abatement measures. The next step is to generate a calibrated Species report by confirming which species and threats are present within your site and buffer using local data, as described in [RHINO calibrated - Step A2](#).

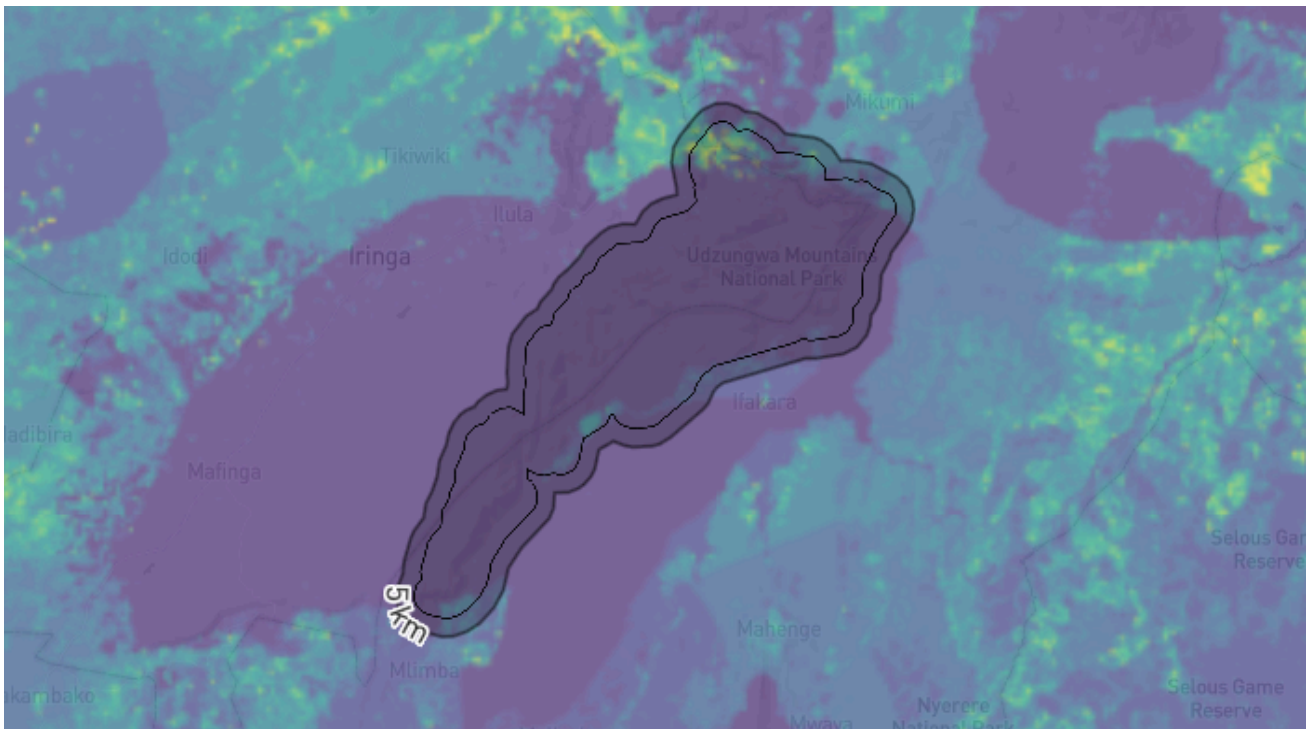
#### 4. Site in National and Global Context

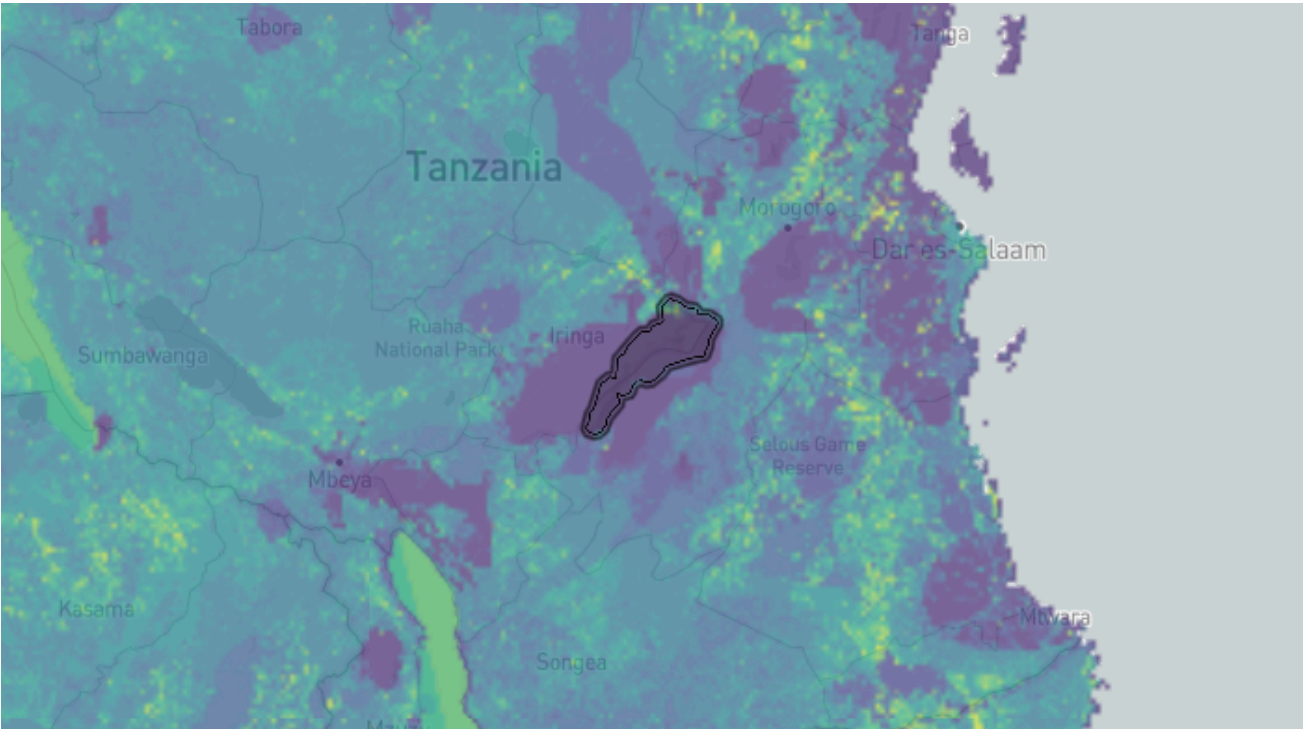
This section compares the mean estimated STAR score to both national and global values, highlighting its relative potential in terms of species extinction risk reduction through threat abatement. The mean STAR score is the average score of all the 1 km<sup>2</sup> cells overlapped (wholly or partly) by the site and buffer. Higher mean STAR scores have more potential to deliver species extinction risk reductions.

The mean STAR score for this site and buffer is greater than 99.7% of cells globally and greater than 99.0% of cells nationally within United Republic of Tanzania. The maximum STAR score within the site and buffer is greater than 99.9% of cells globally and greater than 99.5% of cells nationally. This site and buffer covers 0.9% of United Republic of Tanzania's terrestrial area and contains 14.775% of its STAR score.

When the mean and maximum STAR values are similar, this suggests that the conservation value of the site and buffer is relatively uniform across its area. Where they differ substantially, it indicates that certain parts of the site hold higher conservation importance than others, often due to the presence of particular threatened species in those high-scoring locations.

\*If your site and buffer covers more than one country, you can split the site along the international boundary and run a STAR report for each part.

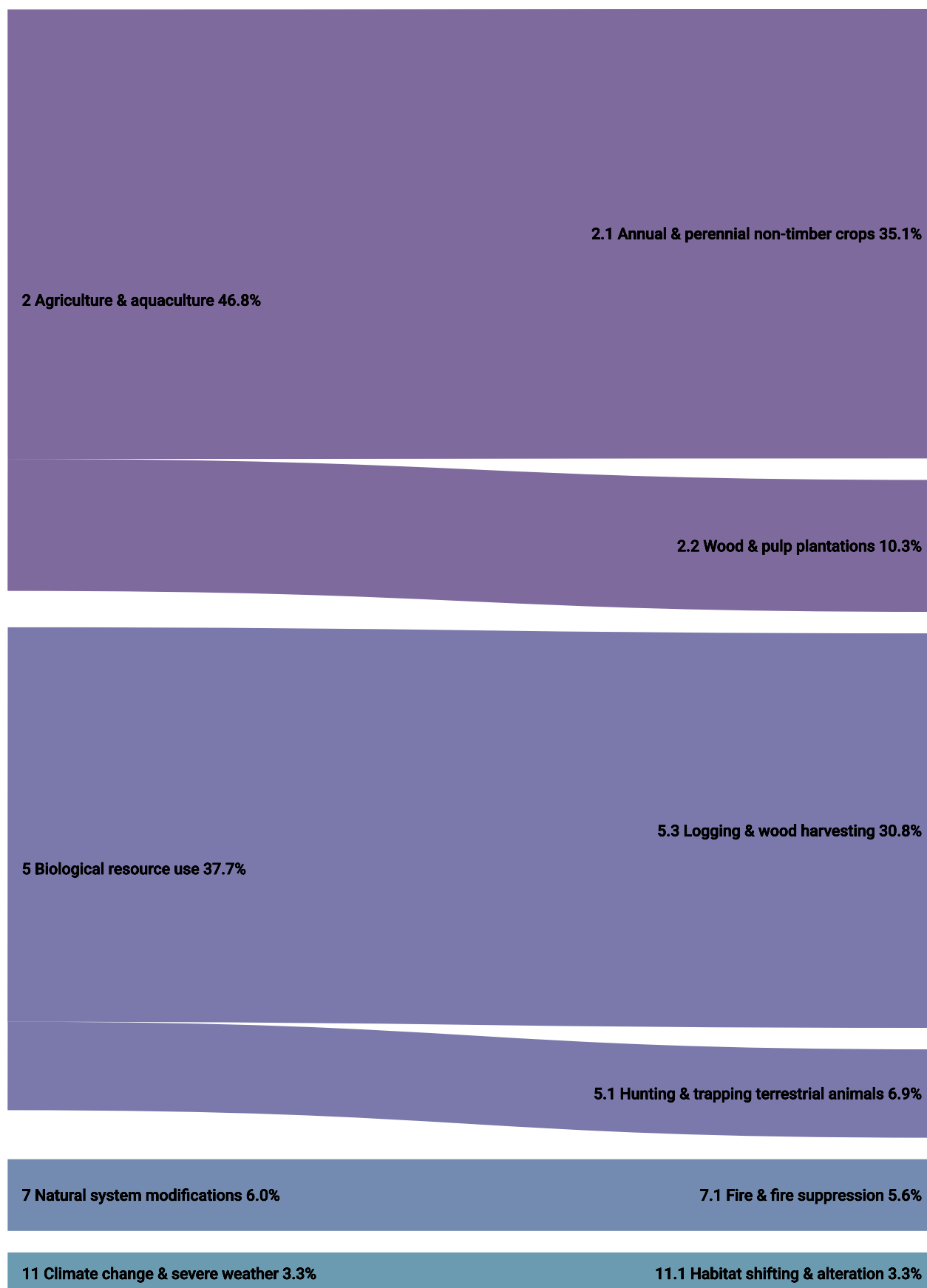




0<sup>th</sup> 10<sup>th</sup> 20<sup>th</sup> 30<sup>th</sup> 40<sup>th</sup> 50<sup>th</sup> 60<sup>th</sup> 70<sup>th</sup> 80<sup>th</sup> 90<sup>th</sup> 100<sup>th</sup>

Site and buffer overlaid with the STAR values.

**5. Threat Breakdown**



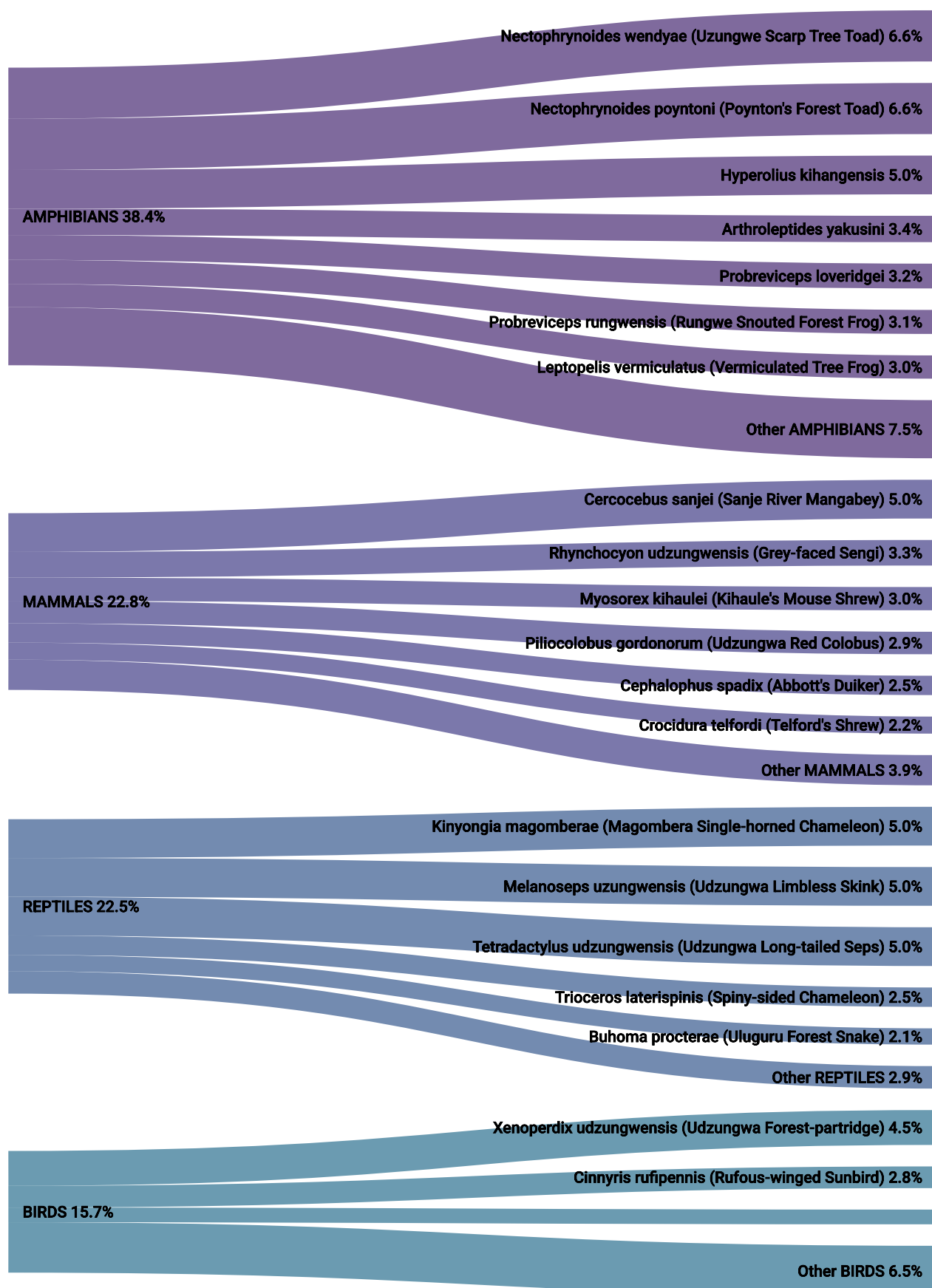
Breakdown of estimated STAR Threat Abatement scores within the site and buffer by threat type.

Threat Level 1	Percentage of STAR score	Threat Level 2	Percentage of STAR score
2 Agriculture & aquaculture	46.8	2.1 Annual & perennial non-timber crops	35.1
		2.2 Wood & pulp plantations	10.3
5 Biological resource use	37.7	5.3 Logging & wood harvesting	30.8
		5.1 Hunting & trapping terrestrial animals	6.9
7 Natural system modifications	6.0	7.1 Fire & fire suppression	5.6
11 Climate change & severe weather	3.3	11.1 Habitat shifting & alteration	3.3
Threats of minor impact	7.1	Threats of minor impact	7.1

## 6. Species Breakdown

This section presents a breakdown of the species contributing most to the site's and buffer STAR score. It highlights those species which have the greatest estimated extinction risk reduction potential within the site and buffer, based on the proportion of their habitat within the site and buffer and weighted by their IUCN Red List Category. This analysis helps identify species for targeted conservation actions to maximise extinction risk reduction.

\* Taxonomic nomenclature. Scientific names are provided for all species throughout the report. Where the IUCN Red List of Threatened Species records a common name, this is also given.



Breakdown of estimated STAR Threat Abatement scores within the site and buffer by species. Higher scoring species are more threatened and/or have a larger proportion of their global Area of Habitat within the site and buffer. A full species list is included in the supplementary materials.

Taxonomic group	Scientific name	Common name	Red List category	Percentage of global AoH	Percentage of STAR score
AMPHIBIANS	Nectophrynoides wendyae	Uzungwe Scarp Tree Toad	Critically Endangered	100.0	6.6
AMPHIBIANS	Nectophrynoides poyntoni	Poynton's Forest Toad	Critically Endangered	100.0	6.6
REPTILES	Kinyongia magomberae	Magombera Single-horned Chameleon	Endangered	100.0	5.0
MAMMALS	Cercocebus sanjei	Sanje River Mangabey	Endangered	100.0	5.0
REPTILES	Melanoseps uzungwensis	Udzungwa Limbless Skink	Endangered	100.0	5.0
AMPHIBIANS	Hyperolius kihangensis		Endangered	100.0	5.0
REPTILES	Tetradactylus uzungwensis	Udzungwa Long-tailed Seps	Endangered	100.0	5.0
BIRDS	Xenoperdix uzungwensis	Udzungwa Forest-partridge	Endangered	90.2	4.5
AMPHIBIANS	Arthroleptides yakusini		Endangered	67.7	3.4
MAMMALS	Rhynchocyon uzungwensis	Grey-faced Sengi	Vulnerable	100.0	3.3
AMPHIBIANS	Probreviceps loveridgei		Endangered	64.7	3.2
AMPHIBIANS	Probreviceps rungwensis	Rungwe Snouted Forest Frog	Endangered	62.5	3.1
AMPHIBIANS	Leptopelis vermiculatus	Vermiculated Tree Frog	Endangered	59.4	3.0
MAMMALS	Myosorex kahaulei	Kihaule's Mouse Shrew	Endangered	60.3	3.0
MAMMALS	Piliocolobus gordonorum	Udzungwa Red Colobus	Vulnerable	88.2	2.9
BIRDS	Cinnyris rufipennis	Rufous-winged Sunbird	Vulnerable	84.5	2.8
REPTILES	Trioceros laterispinis	Spiny-sided Chameleon	Endangered	50.0	2.5
MAMMALS	Cephalophus spadix	Abbott's Duiker	Endangered	50.0	2.5
MAMMALS	Crociodura telfordi	Telford's Shrew	Vulnerable	67.5	2.2
REPTILES	Bufo procerus	Uluguru Forest Snake	Vulnerable	63.3	2.1
BIRDS	Sheppardia lowei	Iringa Akalat	Vulnerable	57.9	1.9

## 7. Species Highlights

This section provides more details, extracted from the IUCN Red List of Threatened Species, of the five species that contribute most to the estimated STAR score. These species are estimated to hold the greatest potential for reducing extinction risk through targeted threat abatement. Each species' contribution is calculated based on the proportion of its Area of Habitat (AoH) that overlaps with the site and buffer weighted by its IUCN Red List Category. These results are estimated (see assumptions in [Section 3](#)) and should be calibrated before planning threat abatement measures.

### *Nectophrynoides wendyae*

#### Uzungwe Scarp Tree Toad



This site and buffer contains 100.0% of the estimated Area of Habitat for *Nectophrynoides wendyae*. This amphibian species accounts for 6.6% of the estimated STAR score within the site and buffer. This species is assessed as **Critically Endangered** under Red List criterion [B1ab\(iii\)](#).

#### Assessment information

This species is listed as Critically Endangered because its extent of occurrence (EOO) is limited to 15 km<sup>2</sup>, it is known from a single threat-defined location, and there is ongoing decline in the quality and extent of its habitat in the Udzungwa Mountains.

#### Threats

Anthropogenic forest disturbance to this species' habitat has been reported to be ongoing, and includes tree and pole cutting, charcoal burning sites, human trails and pit sawing sites from felling of large trees (Rovero *et al.* 2012).

Threat level 1	Threat level 2	Percentage of species threats
5 Biological resource use	5.3 Logging & wood harvesting	100.0

#### Conservation actions

##### Conservation actions needed

Conservation actions level 1	Conservation actions level 2	Note
Land/water management	Site/area management	

##### Conservation actions in detail

This species occurs in the Udzungwa Scarp Forest Reserve which is soon to be included in a nature reserve (see Marshall *et al.* 2007), but is not currently a well-protected area. The species is listed on CITES Appendix I. Since 2009, it has been monitored by the Whitley Wildlife Conservation Trust, Science Museum of Trento (Italy), Paignton Zoo and the Tanzania Forest Conservation Group (TFCG) (Seki *et al.* 2011).

### *Nectophrynoides poyntoni*

#### Poynton's Forest Toad



This site and buffer contains 100.0% of the estimated Area of Habitat for *Nectophrynoides poyntoni*. This amphibian species accounts for 6.6% of the estimated STAR score within the site and buffer. This species is assessed as **Critically Endangered** under Red List criterion [B1ab\(iii\)+2ab\(iii\)](#).

#### Assessment information

This species is listed as Critically Endangered because both its extent of occurrence (EOO) and area of occupancy (AOO) are 2-3 km<sup>2</sup>, it is known from a single threat-defined location, and the quality and extent of its habitat in the Udzungwa Mountains is declining. It has not been found since it was described in 2003, despite recent targeted searches and therefore is flagged as Possibly Extinct.

#### Threats

The species' forest habitat is declining due to wood extraction (poles and firewood).

Threat level 1	Threat level 2	Percentage of species threats
5 Biological resource use	5.3 Logging & wood harvesting	100.0

#### Conservation actions

##### Conservation actions needed

Conservation actions level 1	Conservation actions level 2	Note
Land/water protection	Resource & habitat protection	
Land/water management	Site/area management	

##### Conservation actions in detail

This species occurs in the Uzungwa Scarp Forest Reserve, which has been proposed as a Nature Reserve, but in view of present threats additional habitat protection is needed. This species is listed on CITES Appendix I. The presence of this species needs to be assessed and monitored.

#### *Kinyongia magomberae*

##### Magombero Single-horned Chameleon



This site and buffer contains 100.0% of the estimated Area of Habitat for *Kinyongia magomberae*. This reptile species accounts for 5.0% of the estimated STAR score within the site and buffer. This species is assessed as **Endangered** under Red List criterion [B1ab\(i,ii,iii\)+2ab\(i,ii,iii\)](#).

#### Assessment information

This species is listed as Engangered B1ab(i,ii,iii,iv)+2ab(i,ii,iii,iv) due to its small distribution (105 km<sup>2</sup>) which is fragmented into two threat localities, resulting in a restricted distribution. The smaller locality (Magombera Forest, 11 km<sup>2</sup>) is under heavy pressure due to encroachment and resource extraction, is completely surrounded by transformed land, and is not protected. At the larger locality (Udzungwa Mountains National park, 94 km<sup>2</sup>), the species is confined to wet submontane forest in ravines and wet slopes, and is subject to stochastic events.

### Threats

Threats include heavy anthropogenic impacts (*i.e.* logging, clearing, resource extraction) within Magombera Forest, which is not formally protected (Menegon *et al.*, 2009) and is under threat of being lost entirely. The distribution within the Udzungwa Mountains National Park is not under heavy threat, but its small size results in this species being confined to the remaining fragments of submontane forest, making it subject to stochastic events.

Threat level 1	Threat level 2	Percentage of species threats
2 Agriculture & aquaculture	2.1 Annual & perennial non-timber crops	50.0
	2.2 Wood & pulp plantations	50.0

### Conservation actions

#### Conservation actions needed

Conservation actions level 1	Conservation actions level 2	Note
Land/water protection	Resource & habitat protection	Protection of Magombera Forest fragment is urgently needed in order to ensure the population at this locality does not become locally extinct.

#### Conservation actions in detail

Formal protection of Magombera Forest is needed, tied to monitoring to determine whether deforestation is mitigated (Menegon *et al.* 2009). Should this location be lost, the species would only occur at a single location in a 95 km<sup>2</sup> forest fragment in the Udzungwa Mountains National Park. The estimate of its Udzungwa distribution may be an overestimate because the species only utilises the submontane forest on wet slopes and ravines, and not the deciduous dry forest that forms a matrix with the wet submontane forest. Research and surveys are urgently required to better estimate this species distribution within the Udzungwa Mountains National Park, in terms of both elevation, and extent on the east facing slopes.

### *Cercocebus sanjei*

#### Sanje River Mangabey



This site and buffer contains 100.0% of the estimated Area of Habitat for *Cercocebus sanjei*. This mammal species accounts for 5.0% of the estimated STAR score within the site and buffer. This species is assessed as **Endangered** under Red List criterion [B1ab\(ii,iii,v\)+2ab\(ii,iii,v\)](#).

### Assessment information

This species is listed as Endangered based on its small extent of occurrence (EOO = 1,873 km<sup>2</sup>), small area of occupancy (AOO = *ca* 300 km<sup>2</sup>), its fragmented population (in two isolated subpopulations, one of them residing in an area of limited protection), and ongoing threats that are resulting in a continuing decline in both habitat and numbers of mature individuals. This taxon qualifies as Endangered under criteria B1 and B2.

### Threats

This species is threatened by continuing deforestation for timber and charcoal production. It is also threatened by hunting, including hunting with dogs.

Threat level 1	Threat level 2	Percentage of species threats
2 Agriculture & aquaculture	2.1 Annual & perennial non-timber crops	33.3
5 Biological resource use	5.1 Hunting & trapping terrestrial animals	33.3
	5.3 Logging & wood harvesting	33.3

### Conservation actions

#### Conservation actions needed

Conservation actions level 1	Conservation actions level 2	Note
Land/water management	Site/area management	

#### Conservation actions in detail

This species is listed on Appendix II of CITES and on Class B of the African Convention on the Conservation of Nature and Natural Resources.

It is present in the Udzungwa Mountains National Park and Uzungwa Scarp Nature Reserve, Tanzania (Ehardt *et al.* 1999, 2005, Ehardt 2001, Ehardt and Butynski 2006, McCabe *et al.* 2013). Efforts in the early 2000s to expand the National Park boundaries to improve the level of protection in the Uzungwa Scarp forest have been unsuccessful. The USNR was recently elevated from a Forest Reserve to a Nature Reserve, which goes with a management plan for the forest and intentions by the Tanzania Forest Service to increase protection, develop ecotourism and promote community awareness and education; however, threats to the subpopulation, including habitat loss and hunting, remain (Rovero *et al.* 2012, Hegerl *et al.* 2015). A robust camera trapping assessment is ongoing and demographic surveys are planned. There is a need to enforce laws prohibiting hunting in the nature reserves, and to increase prevention of habitat alteration.

### Melanoseps uzungwensis

#### Udzungwa Limbless Skink



This site and buffer contains 100.0% of the estimated Area of Habitat for *Melanoseps uzungwensis*. This reptile species accounts for 5.0% of the estimated STAR score within the site and buffer. This species is assessed as **Endangered** under Red List criterion [B1ab\(iii\)](#).

#### Assessment information

Listed as Endangered on the basis that this species has an extent of occurrence just below 5,000 km<sup>2</sup>, it is provisionally considered to occur as a severely fragmented population as it is thought to be a forest obligate, and there is a continuing decline in the extent and quality of its habitat as a result of agricultural expansion,

#### Threats

This species may be at risk from forest clearance for agriculture (Spawls *et al.* 2002).

Threat level 1	Threat level 2	Percentage of species threats
2 Agriculture & aquaculture	2.1 Annual & perennial non-timber crops	100.0

#### Conservation actions

##### Conservation actions needed

Conservation actions level 1	Conservation actions level 2	Note
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##### Conservation actions in detail

This species is found in some forest reserves in the Udzungwa Mountains (W. Ngalason pers. comm. 2015).

## 8. Additional Resources

**STAR Business User Guidance:** <https://app.ibat-alliance.org/pdf/star-business-user-guidance.pdf>

**STAR Industry Briefing Note:** <https://app.ibat-alliance.org/pdf/star-industry-briefing-note.pdf>

**STAR Issues Brief:** <https://iucn.org/resources/issues-brief/measuring-contributions-towards-terrestrial-and-marine-biodiversity-targets>

**Mair, L., Bennun, L.A., Brooks, T.M. et al. A metric for spatially explicit contributions to science-based species targets. Nat Ecol Evol 5, 836–844 (2021):** <https://doi.org/10.1038/s41559-021-01432-0>

**IUCN-CMP Threats Classification Scheme (version 3.3):** <https://www.iucnredlist.org/resources/threat-classification-scheme>

**IUCN-CMP Conservation Actions Classification Scheme (version 2.0):**  
<https://www.iucnredlist.org/resources/conservation-actions-classification-scheme>

**IUCN. (2012). IUCN Red List Categories and Criteria: Version 3.1. Second edition. Gland, Switzerland and Cambridge, UK: IUCN. iv + 32pp.:** <https://www.iucnredlist.org/resources/categories-and-criteria>

**Red List Criteria Summary Sheet:** <https://www.iucnredlist.org/resources/summary-sheet>

## 9. Supplementary Data

Workbook includes the following sheets (tabs):

**ReadMe:** Definitions and explanations for each column

**STAR Threat Breakdown:** A list of all threats contributing STAR score

**STAR Species Breakdown:** A list of each species contributing to the STAR score

**STAR Species × Threats Matrix:** A complete list of species × threats and STAR scores