



Green Status of Species: Supplementary information

Zanzibar Red Colobus (*Piliocolobus kirkii*)

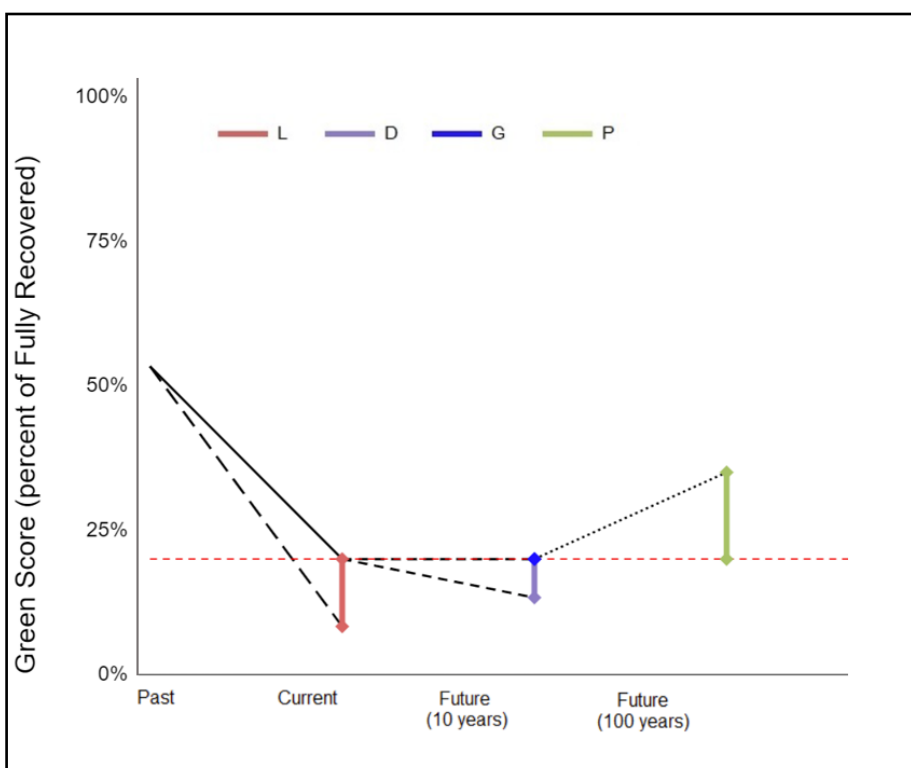


Figure S1. Graphical representation of the conservation metrics based on the Green Scores. Key: Vertical arrows represent the four conservation metrics: L – Conservation Legacy (may not appear if current and counterfactual states are the same); D – Conservation Dependence (may not appear if current and future-without-conservation states are the same); G – Conservation Gain (may not appear if current and future-with-conservation states are the same); P – Recovery Potential (may not appear if current and potential states are the same). Horizontal red dashed line represents the Current Green Score. Solid black line: observed change in the Green Score of the species (ignore it if "Former" state is not specified). Long-dashed black line: (counterfactual) past change expected in the absence of past conservation efforts. Dashed black lines: future scenarios of change expected with and without current and future conservation efforts. Dotted black line: long-term potential change expected with future conservation innovation and efforts.

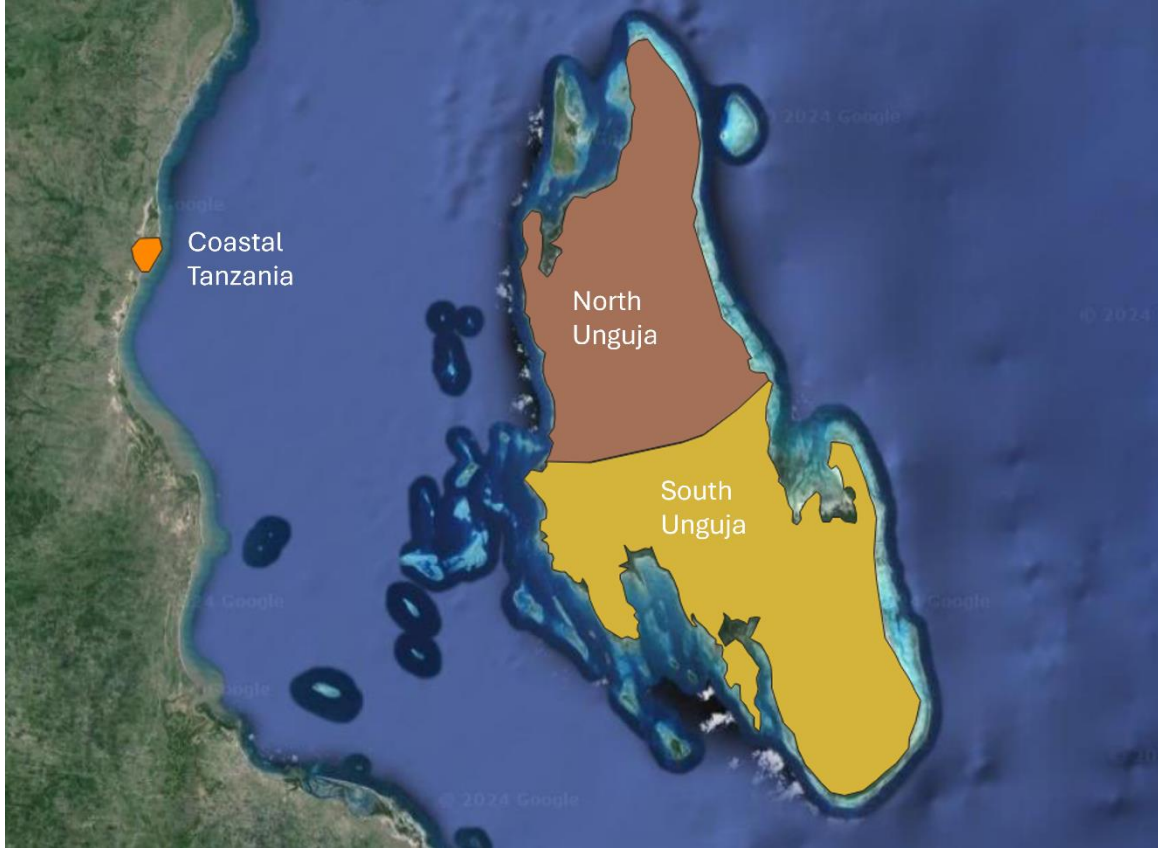


Figure S2. Approximate indigenous range of Zanzibar Red Colobus, based on Davenport (2019) and including the historical population in coastal Tanzania, divided into spatial units. There is no evidence that the species was found on the west coast of Unguja at the benchmark year, but this area incorporates more recent populations of Masingini, which was introduced in the 1980s, and the small population in Maji Mekundu which are likely escapees from the introduced population.

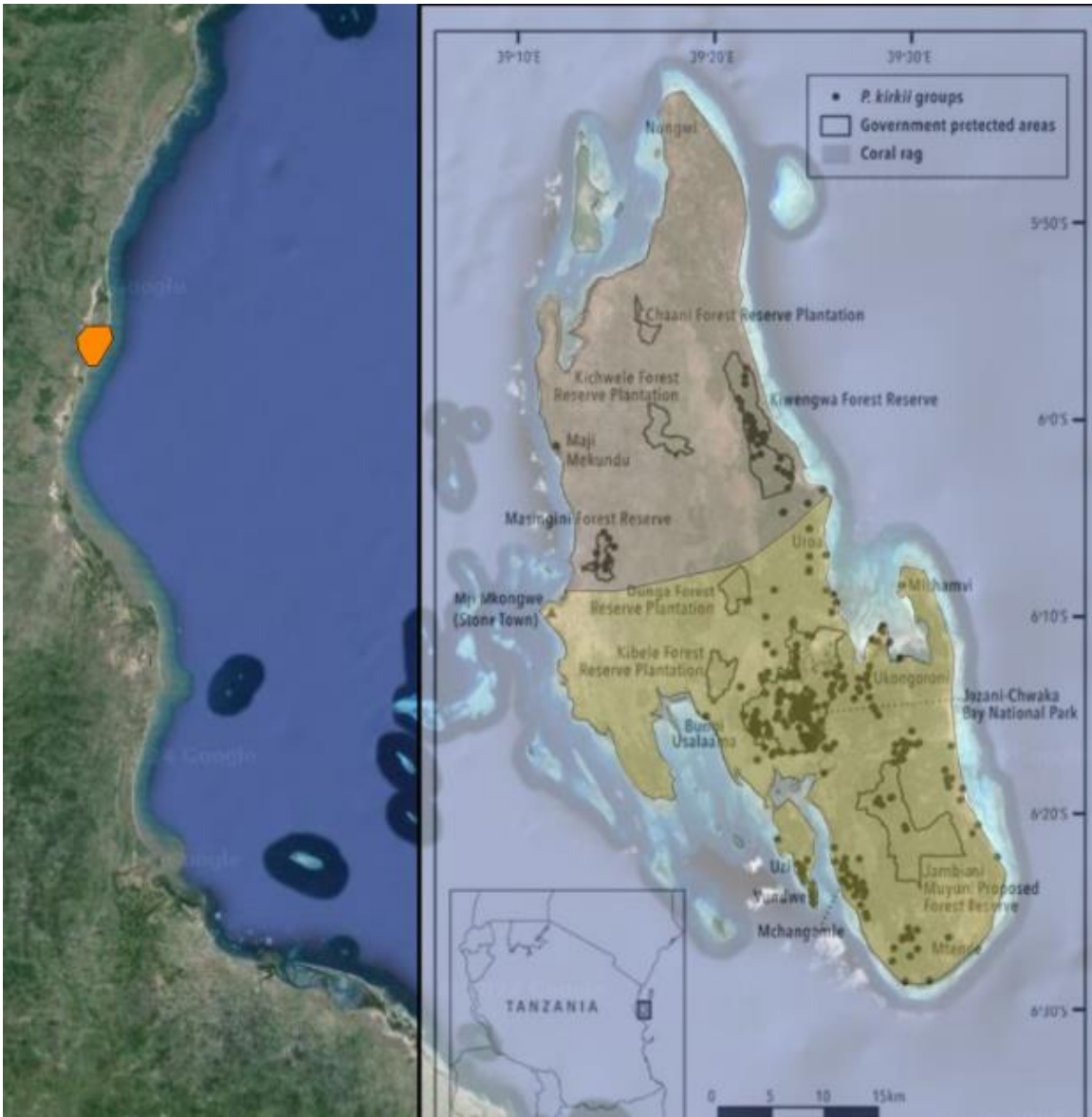


Figure S3. Spatial units with map showing distribution of Zanzibar Red Colobus groups taken from Davenport *et al.* (2019).

Table S1. Conservation Actions ([list of action codes](#)).

Classification	Full Description	Past actions (no longer occurring)	Current actions	Actions planned within 10 years	Actions that could be implemented in the long-term aspiration scenario
1.1.	1.1. Land/water protection: Site/area protection	x (established sites)	x (new sites being established)	x (ongoing work establishing new protected areas)	
1.2.	1.2. Land/water protection: Resource & habitat protection	x (established sites)	x (new sites being established)	x (ongoing work establishing new protected areas)	
2.1.	2.1. Land/water management: Site/area management		x	x	x
2.2.	2.2. Land/water management: Invasive/problematic species control				
2.3.	2.3. Land/water management: Habitat & natural process restoration		x	x	x
3.1.1.	3.1.1. Harvest management				
3.1.2.	3.1.2. Trade management				
3.1.3.	3.1.3. Limiting population growth				
3.2	3.2 Species recovery		x	x	x
3.3.1.	3.3.1. Species re-introduction: Reintroduction			x (Introduced population in Masingini is doing quite well. This suggest that re-	x

Classification	Full Description	Past actions (no longer occurring)	Current actions	Actions planned within 10 years	Actions that could be implemented in the long-term aspiration scenario
				introduction in the future may have a place as part of overall plan for conservation of the species across its range.)	
3.3.2.	3.3.2. Species re-introduction: Benign introduction				
3.4.1.	3.4.1. Ex-situ conservation: Captive breeding/artificial propagation				
3.4.2.	3.4.2. Ex-situ conservation: Genome resource bank				
4.1.	4.1. Education and Awareness: Formal education		x	x	x
4.2.	4.2. Education and Awareness: Training		x	x	x
4.3.	4.3. Education and Awareness: Awareness & communications		x	x	x
5.1.1.	5.1.1. Legislation, International level				
5.1.2.	5.1.2. Legislation, National level		x	x	x

Classification	Full Description	Past actions (no longer occurring)	Current actions	Actions planned within 10 years	Actions that could be implemented in the long-term aspiration scenario
5.1.3.	5.1.3. Legislation, Sub-national level				
5.1.4.	5.1.4. Legislation, scale unspecified				
5.2.	5.2. Policies and regulations				
5.3.	5.3. Private sector standards & codes		x	x	x
5.4.1.	5.4.1. Compliance and enforcement- International level				
5.4.2.	5.4.2. Compliance and enforcement- National level		x	x	x
5.4.3.	5.4.3. Compliance and enforcement- Sub-national level				
5.4.4.	5.4.4. Compliance and enforcement- Scale unspecified				
6.1.	6.1. Livelihood, economic & other incentives: Linked enterprises & livelihood alternatives		x	x	x
6.2.	6.2. Livelihood, economic & other incentives: Substitution				

Classification	Full Description	Past actions (no longer occurring)	Current actions	Actions planned within 10 years	Actions that could be implemented in the long-term aspiration scenario
6.3.	6.3. Livelihood, economic & other incentives: Market forces				
6.4.	6.4. Livelihood, economic & other incentives: Conservation payments				
6.5.	6.5. Livelihood, economic & other incentives: Non-monetary values				

Table S2. Threats ([list of threat codes](#)).

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
1.1	1.1 Residential & commercial development: Housing & urban areas		x	x	x
1.2	1.2 Residential & commercial development: Commercial & industrial areas				
1.3	1.3 Residential & commercial development: Tourism & recreation areas		x	x	x
2.1.1	2.1.1 Agriculture & aquaculture: Annual & perennial non-timber crops: Shifting agriculture		x	x	x
2.1.2	2.1.2 Agriculture & aquaculture: Annual & perennial non-timber crops: Small-holder farming		x	x	x
2.1.3	2.1.3 Agriculture & aquaculture: Annual & perennial non-timber crops: Agro-industry farming				
2.1.4	2.1.4 Agriculture & aquaculture: Annual & perennial non-timber crops: Scale Unknown/Unrecorded				
2.2.1	2.2.1 Agriculture & aquaculture: Wood & pulp		x	x	x

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
	plantations: Small-holder plantations				
2.2.2	2.2.2 Agriculture & aquaculture: Wood & pulp plantations: Agro-industry plantations				
2.2.3	2.2.3 Agriculture & aquaculture: Wood & pulp plantations: Scale Unknown/Unrecorded				
2.3.1	2.3.1 Agriculture & aquaculture: Livestock farming & ranching: Nomadic grazing				
2.3.2	2.3.2 Agriculture & aquaculture: Livestock farming & ranching: Small-holder grazing, ranching or farming				
2.3.3	2.3.3 Agriculture & aquaculture: Livestock farming & ranching: Agro-industry grazing, ranching or farming				
2.3.4	2.3.4 Agriculture & aquaculture: Livestock farming & ranching: Scale Unknown/Unrecorded				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
2.4.1	2.4.1 Agriculture & aquaculture: Marine & freshwater aquaculture: Subsistence/artisanal aquaculture				
2.4.2	2.4.2 Agriculture & aquaculture: Marine & freshwater aquaculture: Industrial aquaculture				
2.4.3	2.4.3 Agriculture & aquaculture: Scale Unknown/Unrecorded				
3.1	3.1 Energy production & mining: Oil & gas drilling				
3.2	3.2 Energy production & mining: Mining & quarrying				
3.3	3.3 Energy production & mining: Renewable energy				
4.1	4.1 Transportation & service corridors: Roads & railroads		x	x	x
4.2	4.2 Transportation & service corridors: Utility & service lines				
4.3	4.3 Transportation & service corridors: Shipping lanes				
4.4	4.4 Transportation & service corridors: Flight paths				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
5.1.1	5.1.1 Biological resource use: Hunting & collecting terrestrial animals: Intentional use (species being assessed is the target)		x	x	x
5.1.2	5.1.2 Biological resource use: Hunting & collecting terrestrial animals: Unintentional effects (species being assessed is not the target)				
5.1.3	5.1.3 Biological resource use: Hunting & collecting terrestrial animals: Persecution/control		x	x	x
5.1.4	5.1.4 Biological resource use: Hunting & collecting terrestrial animals: Motivation Unknown/Unrecorded				
5.2.1	5.2.1 Biological resource use: Gathering terrestrial plants: Intentional use (species being assessed is the target)				
5.2.2	5.2.2 Biological resource use: Gathering terrestrial plants: Unintentional effects (species being assessed is not the target)				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
5.2.3	5.2.3 Biological resource use: Gathering terrestrial plants: Persecution/control				
5.2.4	5.2.4 Biological resource use: Gathering terrestrial plants: Motivation Unknown/Unrecorded				
5.3.1	5.3.1 Biological resource use: Logging & wood harvesting: Intentional use: subsistence/small scale (species being assessed is the target [harvest])				
5.3.2	5.3.2 Biological resource use: Logging & wood harvesting: Intentional use: large scale (species being assessed is the target)[harvest]				
5.3.3	5.3.3 Biological resource use: Logging & wood harvesting: Unintentional effects: subsistence/small scale (species being assessed is not the target)[harvest]		x	x	x
5.3.4	5.3.4 Biological resource use: Logging & wood harvesting: Unintentional effects: large scale (species being				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
	assessed is not the target)[harvest]				
5.3.5	5.3.5 Biological resource use: Logging & wood harvesting: Motivation Unknown/Unrecorded				
5.4.1	5.4.1 Biological resource use: Fishing & harvesting aquatic resources: Intentional use: subsistence/small scale (species being assessed is the target)[harvest]				
5.4.2	5.4.2 Biological resource use: Fishing & harvesting aquatic resources: Intentional use: large scale (species being assessed is the target)[harvest]				
5.4.3	5.4.3 Biological resource use: Fishing & harvesting aquatic resources: Unintentional effects: subsistence/small scale (species being assessed is not the target)[harvest]				
5.4.4	5.4.4 Biological resource use: Fishing & harvesting aquatic resources: Unintentional				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
	effects: large scale (species being assessed is not the target)[harvest]				
5.4.5	5.4.5 Biological resource use: Fishing & harvesting aquatic resources: Persecution/control				
5.4.6	5.4.6 Biological resource use: Fishing & harvesting aquatic resources: Motivation Unknown/Unrecorded				
6.1	6.1 Human intrusions & disturbance: Recreational activities				
6.2	6.2 Human intrusions & disturbance: War, civil unrest & military exercises				
6.3	6.3 Human intrusions & disturbance: Work & other activities				
7.1.1	7.1.1 Natural system modifications: Fire & fire suppression: Increase in fire frequency/intensity				
7.1.2	7.1.2 Natural system modifications: Fire & fire suppression: Suppression in fire frequency/intensity				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
7.1.3	7.1.3 Natural system modifications: Fire & fire suppression: Trend Unknown/Unrecorded				
7.2.1	7.2.1 Natural system modifications: Dams & water management/use: Abstraction of surface water (domestic use)				
7.2.2	7.2.2 Natural system modifications: Dams & water management/use: Abstraction of surface water (commercial use)				
7.2.3	7.2.3 Natural system modifications: Dams & water management/use: Abstraction of surface water (agricultural use)				
7.2.4	7.2.4 Natural system modifications: Dams & water management/use: Abstraction of surface water (unknown use)				
7.2.5	7.2.5 Natural system modifications: Dams & water management/use:				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
	Abstraction of ground water (domestic use)				
7.2.6	7.2.6 Natural system modifications: Dams & water management/use: Abstraction of ground water (commercial use)				
7.2.7	7.2.7 Natural system modifications: Dams & water management/use: Abstraction of ground water (agricultural use)				
7.2.8	7.2.8 Natural system modifications: Dams & water management/use: Abstraction of ground water (unknown use)				
7.2.9	7.2.9 Natural system modifications: Dams & water management/use: Small dams				
7.2.10	7.2.10 Natural system modifications: Dams & water management/use: Large dams				
7.2.11	7.2.11 Natural system modifications: Dams & water				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
	management/use: Dams (size unknown)				
7.3	7.3 Natural system modifications: Other ecosystem modifications				
8.1.1	8.1.1 Invasive & other problematic species, genes & diseases: Invasive non-native/alien species/diseases: Unspecified species				
8.1.2	8.1.2 Invasive & other problematic species, genes & diseases: Invasive non-native/alien species/diseases: Named species				
8.2.1	8.2.1 Invasive & other problematic species, genes & diseases: Problematic native species/diseases: Unspecified species				
8.2.2	8.2.2 Invasive & other problematic species, genes & diseases: Problematic native species/diseases: Named species				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
8.3	8.3 Invasive & other problematic species, genes & diseases: Introduced genetic material				
8.4.1	8.4.1 Invasive & other problematic species, genes & diseases: Problematic species/diseases of unknown origin: Unspecified species				
8.4.2	8.4.2 Invasive & other problematic species, genes & diseases: Problematic species/diseases of unknown origin: Named species				
8.5.1	8.5.1 Invasive & other problematic species, genes & diseases: Viral/prion-induced diseases: Unspecified "species" (disease)			x	x
8.5.2	8.5.2 Invasive & other problematic species, genes & diseases: Viral/prion-induced diseases: Named "species" (disease)				
8.6	8.6 Invasive & other problematic species, genes & diseases: Diseases of unknown cause				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
9.1.1	9.1.1 Pollution: Domestic & urban waste water: Sewage				
9.1.2	9.1.2 Pollution: Domestic & urban waste water: Run-off				
9.1.3	9.1.3 Pollution: Domestic & urban waste water: Type Unknown/Unrecorded				
9.2.1	9.2.1 Pollution: Industrial & military effluents: Oil spills				
9.2.2	9.2.2 Pollution: Industrial & military effluents: Seepage from mining				
9.2.3	9.2.3 Pollution: Industrial & military effluents: Type Unknown/Unrecorded				
9.3.1	9.3.1 Pollution: Agricultural & forestry effluents: Nutrient loads				
9.3.2	9.3.2 Pollution: Agricultural & forestry effluents: Soil erosion, sedimentation				
9.3.3	9.3.3 Pollution: Agricultural & forestry effluents: Herbicides & pesticides		x	x	x
9.3.4	9.3.4 Pollution: Agricultural & forestry effluents: Type Unknown/Unrecorded				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
9.4	9.4 Pollution: Garbage & solid waste				
9.5.1	9.5.1 Pollution: Air-borne pollutants: Acid rain				
9.5.2	9.5.2 Pollution: Air-borne pollutants: Smog				
9.5.3	9.5.3 Pollution: Air-borne pollutants: Ozone				
9.5.4	9.5.4 Pollution: Air-borne pollutants: Type Unknown/Unrecorded				
9.6.1	9.6.1 Pollution: Excess energy: Light pollution				
9.6.2	9.6.2 Pollution: Excess energy: Thermal pollution				
9.6.3	9.6.3 Pollution: Excess energy: Noise pollution				
9.6.4	9.6.4 Pollution: Excess energy: Type Unknown/Unrecorded				
10.1	10.1 Geological events: Volcanoes				
10.2	10.2 Geological events: Earthquakes/tsunamis				
10.3	10.3 Geological events: Avalanches/landslides				

Classification	Full Description	Past threats (no longer occurring)	Current threats	Threats expected to emerge or continue over next 10 years	Threats that would be relevant in the long-term aspiration scenario
11.1	11.1 Climate change & severe weather: Habitat shifting & alteration		x	x	x
11.2	11.2 Climate change & severe weather: Droughts				
11.3	11.3 Climate change & severe weather: Temperature extremes				
11.4	11.4 Climate change & severe weather: Storms & flooding				
11.5	11.5 Climate change & severe weather: Other impacts				
12.1	12.1 Other threat				

References

- Davenport, T. 2019. *Piliocolobus kirkii* (errata version published in 2020). *The IUCN Red List of Threatened Species* 2019: e.T39992A168568335. DOI: [10.2305/IUCN.UK.2019-3.RLTS.T39992A168568335.en](https://doi.org/10.2305/IUCN.UK.2019-3.RLTS.T39992A168568335.en)
- Davenport, T.R., Fakih, S.A., Kimiti, S.P., Kleine, L.U., Foley, L.S. and De Luca, D.W. 2019. Zanzibar's endemic red colobus *Piliocolobus kirkii*: First systematic and total assessment of population, demography and distribution. *Oryx* 53(1): 36–44.

Appendix 1. Assessor Self-Review

- 1. Disclose any potential conflicts of interest which could bias the assessment.**
I have been involved in Zanzibar Red Colobus research and conservation for many years, including having led the only taxon-wide census. Whilst much involved still with this species and its habitat, I do not believe it represents a conflict of interest.
- 2. Is there any discrepancy between this assessment and the Red List assessment for the species? If so, comment on the likely reason for this discrepancy.**
No
- 3. Review the impact that you assigned to the various threats and conservation actions. Would the trajectory of the species be very different if other choices were made? If so, review your justification for these choices. If appropriate, widen the bounds on tabs 4 and 5-8 (change the lower and upper plausible values) to reflect the uncertainty introduced by the possibility of these other choices. How, if at all, did this review question cause this assessment to change? If no changes were needed, please write "no changes".**
No changes.