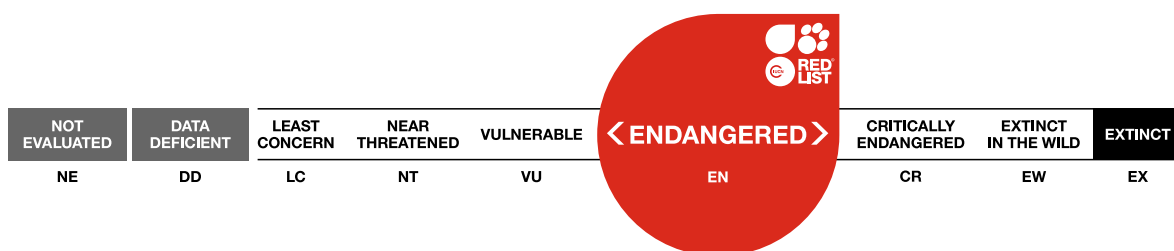


## *Cercopithecus erythrogaster*, Red-bellied Monkey

Assessment by: Matsuda Goodwin, R., Oates, J.F., Nobimè, G., Segniagbeto, G.H., Ikemeh, R. & Mittermeier, R.A.



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**Citation:** Matsuda Goodwin, R., Oates, J.F., Nobimè, G., Segniagbeto, G.H., Ikemeh, R. & Mittermeier, R.A. 2020. *Cercopithecus erythrogaster*. *The IUCN Red List of Threatened Species* 2020: e.T4217A17946182. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T4217A17946182.en>

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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Primates	Cercopithecidae

**Scientific Name:** *Cercopithecus erythrogaster* Gray, 1866

### Infra-specific Taxa Assessed:

- [Cercopithecus erythrogaster ssp. erythrogaster](#)
- [Cercopithecus erythrogaster ssp. pococki](#)

### Common Name(s):

- English: Red-bellied Monkey, Red-bellied Guenon, White-throated Guenon, White-throated Monkey
- French: Cercopithèque à ventre rouge, Cercopithèque à ventre roux
- Spanish; Castilian: Cercopiteco de Vientre Rojo
- Chinese: 赤腹長尾猴
- German: Rotbauchmeerkatze
- Japanese: アカハラグエノン

### Taxonomic Source(s):

Mittermeier, R.A., Rylands, A.B. and Wilson D.E. 2013. *Handbook of the Mammals of the World: Volume 3 Primates*. Lynx Edicions, Barcelona.

### Taxonomic Notes:

Groves (2001) and Grubb *et al.* (2003) recognize two subspecies: *Cercopithecus erythrogaster erythrogaster* and *C. e. pococki*. It belongs to the *Cercopithecus cephus* species group.

## Assessment Information

**Red List Category & Criteria:** Endangered A2cd+4cd [ver 3.1](#)

**Year Published:** 2020

**Date Assessed:** October 24, 2016

### Justification:

Red-bellied Monkey is listed as Endangered since populations of the species are estimated to have declined by  $\geq 50\%$  in the past three generations (27 years) as a result of habitat loss and intensive hunting across much of the species' distribution range. This rate of decline is inferred from forest loss data ( $\geq 50\%$  decline) in the last 25 years (almost three generations) and the declining encounter rates of the species in the Lama Forest of Benin (55.5% reduction), Okomu National Park (26.7% reduction), and in Niger Delta ( $> 50\%$  reduction) (see Population). A decline of at least 50% is also suspected based on the effects of high regional human population growth; the annual rate of increase in the human populations in Benin, Nigeria, and Togo between 1990 and 2016 was between 2.0 and 3.5% (World Bank Group 2019). This rising human population has increased habitat loss and hunting pressure. The rate of population decline in the *C. erythrogaster* population is expected to increase during the next decade unless major new conservation initiatives are taken.

## Previously Published Red List Assessments

2008 – Vulnerable (VU)

<https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T4217A10672698.en>

2000 – Endangered (EN)

1996 – Vulnerable (VU)

1994 – Endangered (E)

1990 – Endangered (E)

1988 – Endangered (E)

1988 – Endangered (E)

1986 – Vulnerable (V)

## Geographic Range

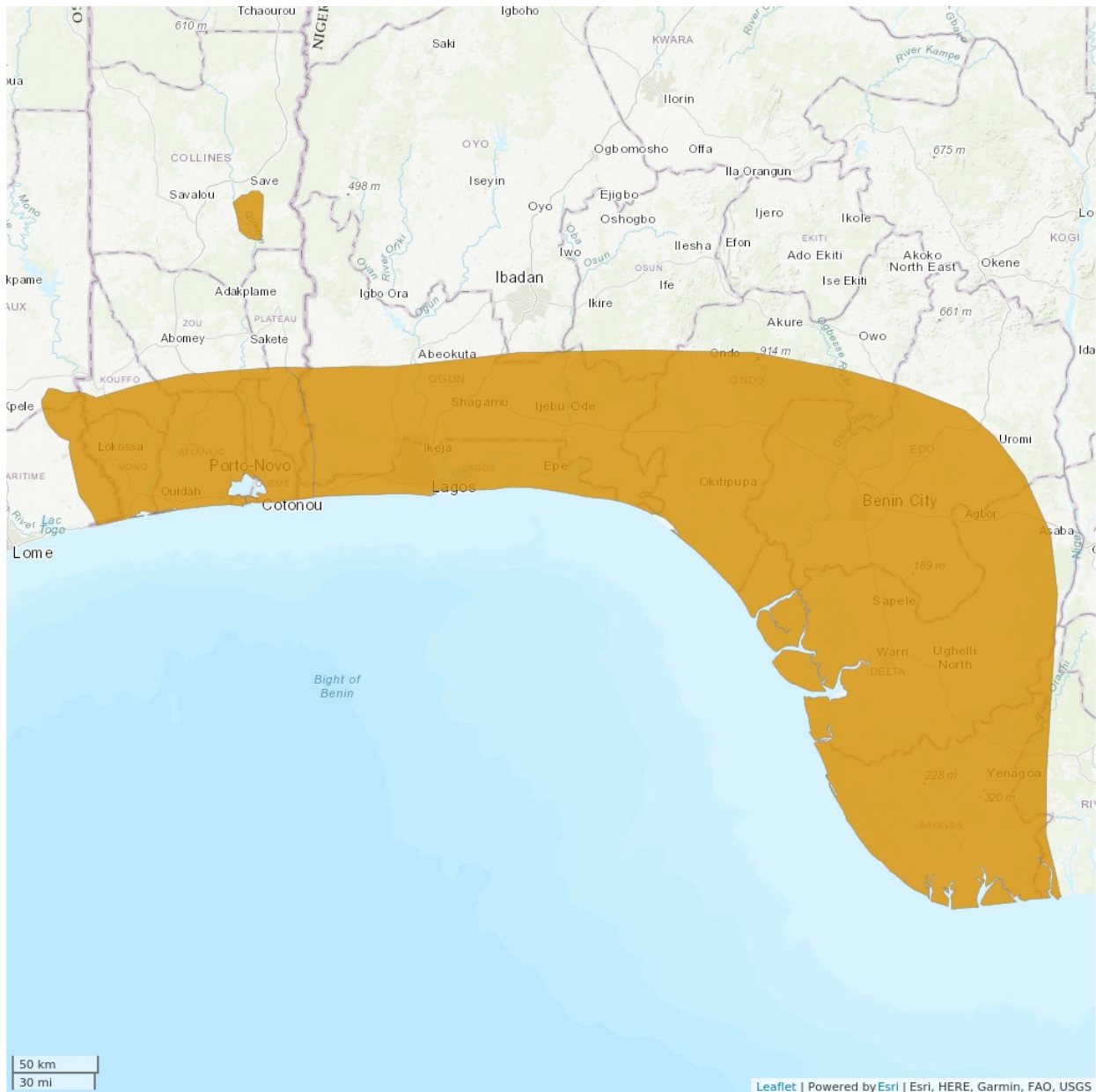
### Range Description:

This species occurs in scattered populations in isolated forest patches in southwestern Nigeria and the Niger Delta, in southern Benin perhaps as far as Banon at 8°29' N (Campbell *et al.* 2008), and in the Togodo Faunal Reserve and Godjin-Godjè sacred forest in Togo (Segniagbeto *et al.* 2017, 2018). In the Niger Delta, this species reaches east of the Orashi River where it has a narrow zone of hybridization and overlap with Sclater's Guenon (*Cercopithecus sclateri*) (Oates 2011). There are two subspecies: *C. e. erythrogaster* ranges from the southwestern-most corner of Nigeria close to the Nigeria-Benin border (Matsuda Goodwin *et al.* 2017a), southern Benin including the Lama Classified Forest (Fôret Classée), Lokoli, Bonou, and Togbota Forests (Nobimè *et al.* 2011), and in the Togodo National Park and Godjin-Godjè sacred forest in eastern Togo (Segniagbeto *et al.* 2017, 2018). *Cercopithecus e. pococki* is found only in the forest zone of southwestern Nigeria and in the Niger Delta. The boundary between the two subspecies and the extent of any admixture between them is unclear, and may now be difficult to determine given intensifying agriculture and expanding urbanization in the far southwestern corner of Nigeria where their populations meet.

### Country Occurrence:

**Native, Extant (resident):** Benin; Nigeria; Togo

# Distribution Map

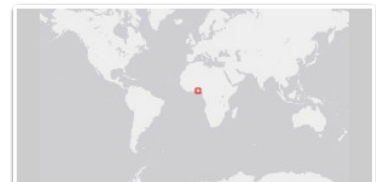


## Legend

EXTANT (RESIDENT)

Compiled by:

IUCN (International Union for Conservation of Nature) 2020



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



## Population

*Cercopithecus erythrogaster* has a scattered distribution throughout its range, but it can be locally abundant. In Nigeria, it is present in Okomu National Park and in low numbers in a number of forest reserves (e.g., Akure Ofosu, Gilli-Gilli, Ohosu, Omo, Oluwa, Idanre, Ifon, Sapoba, Taylor Creek, Udo and Taylor Creek). It is present in the Lama Forest in Benin and in the Togodo Forest in Togo, but law enforcement efforts against poaching are mostly weak (Nobime *et al.* 2011; Segniagbeto *et al.* 2017, 2018). Outside the protected areas and forest reserves, this species is able to persist in wetland forest where access by humans is limited (e.g., Lokoli Forest, Togbota Forest, Gnanhouizounmè Forest in Benin, and many parts of the Niger Delta), and in some seasonally inundated young forest/farm bush areas as long as hunting pressure is low (Nobimè *et al.* 2011, Oates 2011, R. Matsuda Goodwin pers. obs. 2015).

The rate of population decline in this species is inferred from forest loss data for 1990–2015: in Benin over this period there was a 25.4% decline of natural regenerating forest from 57,510 to 42,880 km<sup>2</sup> (there is almost no primary forest in Benin); in Togo, there was a 78.5% decline of natural regenerating forest (there is almost no primary forest in Togo) from 6,610 to 1,420 km<sup>2</sup>; and in Nigeria, regenerating forest was reduced from 154,270 to 65,530 km<sup>2</sup> (57.5% decline), and primary forest from 15,660 to 200 km<sup>2</sup> (98.7% decline) (FAO 2015). Furthermore, there has been an accelerating rate of forest loss in Nigeria, to 5% per year in 2010–2015 (FAO 2015). In particular, between 1987 and 2011, the Niger Delta lost 38.8%, 14.6%, and 15.4% of lowland rainforest, freshwater forest, and mangrove forest, respectively (Ayanlade and Drake 2016).

The steep rate of population decline in the species as a whole is reflected in the data from several sites. In the Lama Forest of Benin, where there has been continuing low-grade, but constant, hunting, there has been a 55.5% reduction in the encounter rate of the red-bellied guenon (*C. erythrogaster erythrogaster*) from 0.09 group/km in 1995–1997 to 0.04 group/km in 2014–2015 (Matsuda Goodwin *et al.* 2017b). In Okomu National Park in Nigeria, the encounter rate of the white-throated monkey (*C. erythrogaster pockocki*) declined by 26.7% between 1982 and 2010 (Oates 1985; Akinsorotan *et al.* 2011). Also, surveys conducted in the Niger Delta have shown continuous declines in encounter rates of primate species including *C. e. pockocki* (Oates *et al.* 2008; Ikemeh 2009, 2015).

Although *C. erythrogaster* is confined to quite small, scattered forest patches in southern Benin and Togo, it occupies a much larger total area of forest in Nigeria. It is estimated that the total loss of habitat for *C. erythrogaster* has been ≥50% in the last 25 years (almost three generations), and this rate of habitat loss is expected to increase during the next decade. It is suspected that the population is declining at a similar rate (at least 50% reduction over the past 25 years, which is expected to continue into the future).

**Current Population Trend:** Decreasing

## Habitat and Ecology (see Appendix for additional information)

This species is found in primary, secondary and riverine lowland moist forest, semi-deciduous forest, and in swamp forest (Oates 2011). The secondary forest it inhabits includes seasonally-inundated forest (e.g., Eggua Royal Forest and Bola Camp in Nigeria; Lama Forest) and wetland forest (e.g., Togbota Forest, Benin) (Matsuda Goodwin 2007, pers. obs. 2015). The habitat of this species in Togodo Forest in Togo is mainly the relic forest dominated by large trees and lianas (Segniagbeto *et al.* 2017, 2018). The

average group size is 5-9.6 in Benin (Campbell 2005, Kassa 2001, Matsuda Goodwin 2007), but was 10-20 (range 10-30) in southwestern Nigeria in the 1980s (Oates 1985); a more recent study in Okomu National Park, Nigeria by Akinsorotan et al. (2011) reported a smaller group size of 5-6. This species forms one-male multi-female groups. It is often found in mixed-species groups with *C. mona* and sometimes found with the Olive Colobus (*Procolobus verus*) in the Lama Forest (Matsuda Goodwin 2007) and *C. mona* and *C. nictitans* in Okomu NP (Oates 1985). Most of the locomotion of *C. erythrogaster* is a combination of quadrupedal walking, running, and leaping. This species uses lower canopy levels and small to medium-sized supports (Oates 2011). In the Lama Forest, this species mainly feeds on ripe fruits, but during the dry season, it incorporates more unripe fruits (Matsuda Goodwin 2007).

**Systems:** Terrestrial

## Use and Trade

As larger-bodied monkeys such as the Niger Delta Red Colobus (*Piliocolobus epieni*), the White-thighed Colobus (*Colobus vellerosus*), and the Red-capped Mangabey (*Cercocebus torquatus*) are being depleted in the forests within the distribution range of this species, this small-bodied primate is now increasingly hunted for meat, although its secretive nature and habit of lurking in thick growth, especially in wetland habitat, provide it with some protection. A substantial increase in human population in the last three decades in the range countries has led to an increasing demand for bushmeat. Between 1990 and 2018, human population size increased by 131 %, 106%, and 109%, in Benin, Nigeria, and Togo, respectively. The annual rate of increase in human population size in these countries between 1990 and 2016 varied from 3.5%-2.0% (World Bank 2019).

## Threats (see Appendix for additional information)

Most of the forest habitat in the range of this species has been heavily exploited and degraded, with much of it now converted to agricultural land (Sinsin *et al.* 2002, Oates 2011). Many of the forest areas where it still occurs are threatened by conversion in the relatively near future, and climate change could exacerbate the problem (FAO 2015). In the Niger Delta, forest degradation is mainly through large-scale artisanal extraction of commercial trees, rather than widespread conversion to farms. As larger-bodied monkeys such as the Niger Delta Red Colobus (*Piliocolobus epieni*), the White-thighed Colobus (*Colobus vellerosus*), and the Red-capped Mangabey (*Cercocebus torquatus*) are being depleted in the forests within the distribution range of this species, this small-bodied primate is now increasingly hunted for meat, although its secretive nature and habit of lurking in thick growth, especially in wetland habitat, provide it with some protection. A substantial increase in human population in the last three decades in the range countries has led to an increasing demand for bushmeat. Between 1990 and 2018, human population size increased by 131%, 106%, and 109%, in Benin, Nigeria, and Togo, respectively. The annual rate of increase in human population size in these countries between 1990 and 2016 varied from 3.5%-2.0% (World Bank 2019).

The 147 MW Adjarala storage hydropower project on the Mono River is now threatening the future of this species in Togodo Forest in Togo; approximately 2,315 hectares of the forest will be submerged underwater. Togolese Association for Nature Conservation (AGBO-ZEGUE) is currently making an effort to block this plan. In all areas, strict protection of remaining forest habitat and hunting restrictions are needed (G. Segniagbeto pers. comm. 2016).

## Conservation Actions (see Appendix for additional information)

Only a handful of Protected Areas harbour this species: In Nigeria, Okomu National Park, Ise Forest Reserve, Idanre Forest Reserve, Omo Forest Reserve, Oluwa Forest Reserve, Shasha Forest Reserve, Akure-Ofosu Forest Reserve, and the Akure Forest Reserve; in Benin, the Lama Forest and in Togo, Togodo National Park. This species is listed on Appendix II of CITES and Class A of the African Convention on the Conservation of Nature and Natural Resources. Within the distribution range of this species, forested areas have been either converted to agricultural lands or plantations and much of the remaining forests are fragmented and degraded. Throughout its distribution range, uncontrolled hunting – nowadays hunters’ groups organize large-scale hunting parties via social media on their cell phones to go hunting for any moving animals they can hunt (R. Matsuda Goodwin pers. obs. 2018 in Nigeria). In the southwestern edge of Nigeria, larger-bodied primates like the mangabey and the white-thighed colobus have already gone locally extinct so that smaller-bodied primates are increasingly hunted for meat, although its secretive nature and the preference for liana tangles provide it with some protection (Oates 1985). To protect the species. We recommend strengthening anti-poaching law enforcement in the protected areas in all three habitat countries and also the Lama Forest be elevated to the National Park status and financial assistance be provided.

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

## Credits

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**Contributor(s):** Gippoliti, S. & Bearder, S.

**Facilitator(s) and Compiler(s):** Reuter, K.E.

**Authority/Authorities:** IUCN SSC Primate Specialist Group

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## Citation

Matsuda Goodwin, R., Oates, J.F., Nobimè, G., Segniagbeto, G.H., Ikemeh, R. & Mittermeier, R.A. 2020. *Cercopithecus erythrogaster*. *The IUCN Red List of Threatened Species* 2020: e.T4217A17946182. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T4217A17946182.en>

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## Appendix

### Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	-	Suitable	Yes
1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland	Resident	Suitable	Yes
1. Forest -> 1.7. Forest - Subtropical/Tropical Mangrove Vegetation Above High Tide Level	-	Suitable	Yes
1. Forest -> 1.8. Forest - Subtropical/Tropical Swamp	-	Suitable	Yes
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	-	Suitable	Yes
5. Wetlands (inland) -> 5.2. Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers/Streams/Creeks	-	Suitable	Yes
14. Artificial/Terrestrial -> 14.6. Artificial/Terrestrial - Subtropical/Tropical Heavily Degraded Former Forest	-	Marginal	-

### Use and Trade

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

End Use	Local	National	International
Food - human	No	No	Yes

### Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.1. Shifting agriculture	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects		

2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.1. Nomadic grazing	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	Minority (50%)	Rapid declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	Minority (50%)	Rapid declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.3. Indirect species effects		
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.10. Large dams	Future	Majority (50-90%)	Very rapid declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects		

## Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Action in Place</b>
In-place land/water protection
Conservation sites identified: Yes, over entire range
Occurs in at least one protected area: Yes
In-place education
Included in international legislation: Yes
Subject to any international management / trade controls: Yes

## Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Action Needed</b>
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.3. Habitat & natural process restoration

<b>Conservation Action Needed</b>
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
4. Education & awareness -> 4.2. Training
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.1. Legislation -> 5.1.3. Sub-national level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.3. Sub-national level

## Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Research Needed</b>
1. Research -> 1.1. Taxonomy
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.4. Harvest, use & livelihoods
1. Research -> 1.5. Threats
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends
3. Monitoring -> 3.4. Habitat trends

## Additional Data Fields

<b>Distribution</b>
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km <sup>2</sup> ): 136250
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): No
Lower elevation limit (m): 0
Upper elevation limit (m): 400

<b>Population</b>
Continuing decline of mature individuals: Yes
Extreme fluctuations: No
<b>Habitats and Ecology</b>
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 9
Movement patterns: Not a Migrant

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