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Piliocolobus badius ssp. temminckii, Temminck's Red Colobus

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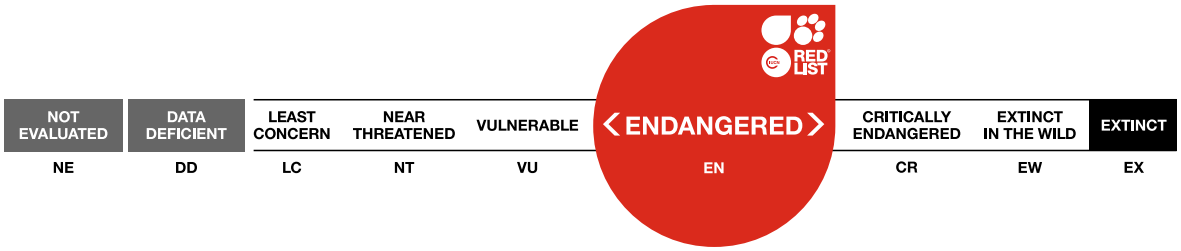

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Primates	Cercopithecidae

Scientific Name: *Piliocolobus badius ssp. temminckii* (Kuhl, 1820)

Synonym(s):

- *Colobus temminckii* Kuhl, 1820
- *Colobus temminkii* Kuhl, 1820 [orth. error]
- *Piliocolobus temminckii* (Kuhl, 1820)
- *Procolobus badius* ssp. *temminckii* (Kuhl, 1820)

Parent Species: See *Piliocolobus badius*

Common Name(s):

- English: Temminck's Red Colobus, Temminck's Bay Colobus
- French: Colobe de Temminck
- Spanish; Castilian: Colobo Rojo de Senegal
- Creoles and pidgins, Portuguese-based (Other): Fatangu
- Portuguese: Colobo-vermelho-de-Temminck

Taxonomic Source(s):

Groves, C.P. 2007. The taxonomic diversity of the Colobinae of Africa. *Journal of Anthropological Sciences* 85: 7-34.

Taxonomic Notes:

Rahm (1970) placed all the 14 red colobus that he recognised as subspecies of *Colobus badius*. Napier (1985) did likewise except for *Colobus kirkii*, considered as a distinct species. Groves (2007) treated most of the geographically separated populations of red colobus monkeys (variously regarded by different authors as subspecies or species) as distinct species, but he made an exception for the forms *badius* and *temminckii* in West Africa, treating them as subspecies of *Piliocolobus badius* on the grounds that they show a gradual transition in pelage colour from north to south. Oates (2011) followed Groves' treatment in this case. While Groves and Ting (2013) treated *P. badius* and *P. temminckii* as separate species, here we follow Groves (2007) and Oates (2011) in regarding *badius* and *temminckii* as subspecies of *P. badius*.

Assessment Information

Red List Category & Criteria: Endangered A2bcd ver 3.1

Year Published: 2020

Date Assessed: January 20, 2020

Justification:

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Piliocolobus badius temminckii populations are patchily distributed and most are small, isolated and in decline. The loss of 22% of the total habitat of this taxon combined with unsustainable levels of hunting and reports of extirpation at some locations have caused a decline suspected to exceed 50% of the population over the last 30 years (three generations for this taxon). The demand for natural resources has increased with the doubling of the human population in the four range countries since 1990. Bushmeat trade estimates strongly suggest unsustainable levels of exploitation that, if not controlled, could lead to further extirpations (Minhós, Wallace *et al*. 2013). Therefore, this subspecies is listed as Endangered under criterion A2bcd.

Previously Published Red List Assessments

2016 – Endangered (EN)
https://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T18247A92646945.en

2008 – Endangered (EN)
https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T18247A7892526.en

2000 – Endangered (EN)

1996 – Endangered (EN)

1994 – Rare (R)

1990 – Rare (R)

1988 – Rare (R)

1986 – Insufficiently Known (K)

Geographic Range

Range Description:

Piliocolobus badius temminckii occurs to the west of the principal Upper Guinea rainforest block in southwest Senegal, the Gambia, much of Guinea-Bissau and northwest Guinea (Gippoliti and Dell'Omo 1996, Groves 2007, Oates 2011). This subspecies was reported from northwest Sierra Leone by Harding (1984).

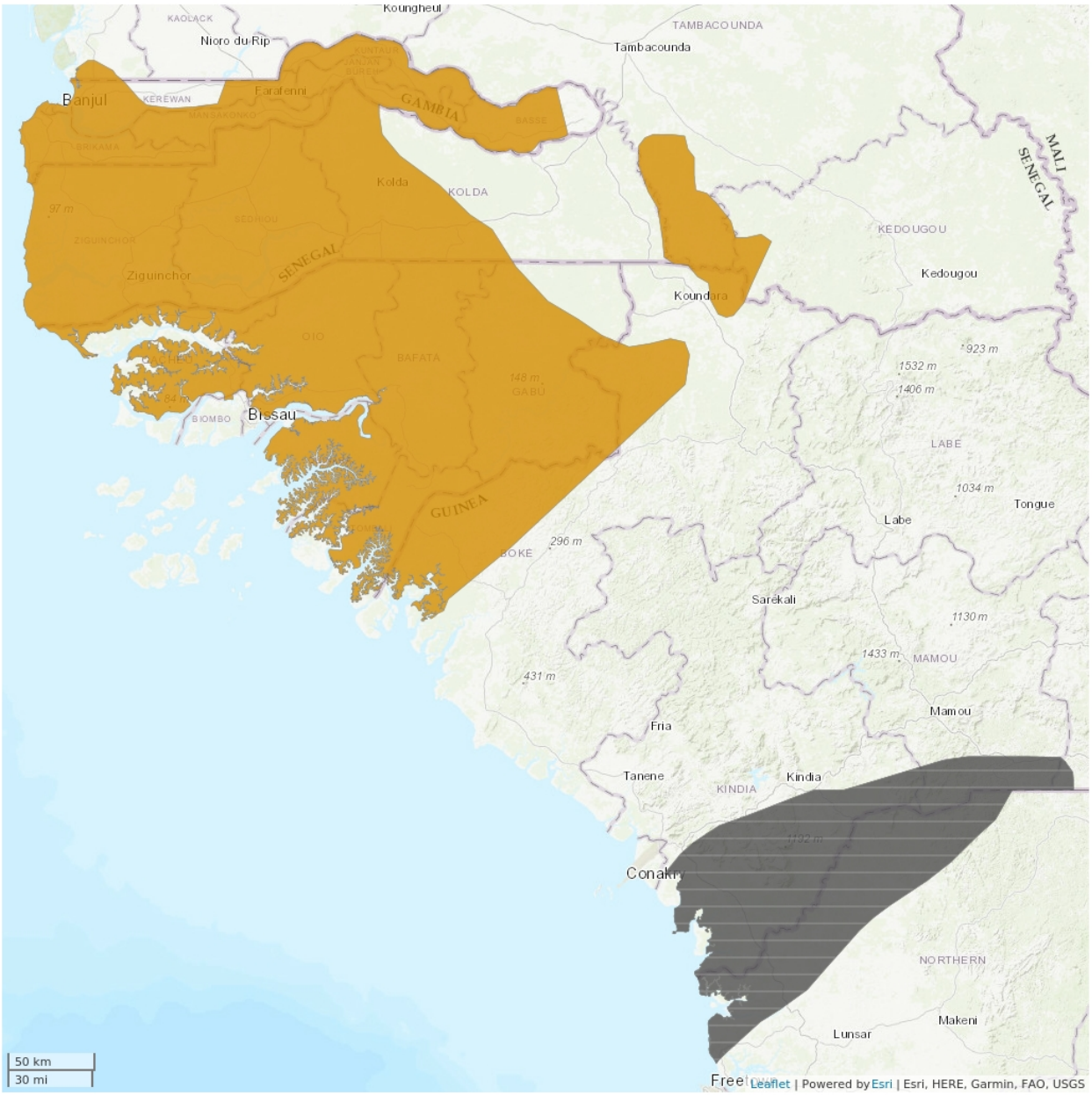
The northernmost population is in Senegal, in the Sangako Forest (Galat *et al*. 2009). Although mapped from the Fouta Djallon in Guinea (Booth 1958), no published records are available to confirm this, but a small group has been observed north of Fouta Djallon in Lebekere sub-prefecture (A. Hernansaiz and C. Alonso pers. comm. 2014).

Country Occurrence:

Native, Extant (resident): Gambia; Guinea; Guinea-Bissau; Senegal

Native, Presence Uncertain: Sierra Leone

Distribution Map



Legend

- EXTANT (RESIDENT)
- PRESENCE UNCERTAIN

Compiled by:

Red Colobus (Piliocolobus) Conservation Action Plan, 2020–2025 2020

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

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Population

Surveys in the four range countries have reported significant population declines, and extirpation from some locations, due mainly to the following: (1) loss of suitable habitat (e.g., WCF 2015), (2) unsustainable exploitation for bushmeat and a trade in body parts for use in cultural practices (Sá *et al*. 2012, Minhós, Wallace *et al*. 2013) and (3) increasing demand for natural resources driven by growth in the human population, which has doubled since 1990 (Worldometer 2020).

Gambia: The rapid disappearance of known groups and suitable habitats was reported 30 years ago (Starin 1989). Surveys of forest areas in 2019, revealed that the range of *P. b. temminckii* extends to all five regions of Gambia. However, all populations in the Lower River, North Bank and Western regions are fragmented or locally extinct, and in decline due to a combination of factors, including deforestation, hunting and persecution for crop protection, disease and predation by feral dogs. Annual surveys in Abuko Nature Reserve and Pirang Forest Park between 2015 and 2019 have estimated >50% decline in these populations (M. Mayhew pers. obs. 2015–2019). Additional surveys are needed in the Upper River Region.

Guinea: *Piliocolobus b. temminckii* has been recorded in the Ndama Forêt Classée along the Koliba River gallery forest, and in Badiar National Park along the Koulountou gallery forest (Galat *et al*. 2009). The subspecies is close to extirpation in the Lebekere sub-prefecture (north of Fouta Djallon), where only four individuals were observed in 2014 (A. Hernansaiz and C. Alonso pers. comm. 2014). In the northwestern Boké Prefecture, it has disappeared from the most disturbed areas (Wright *et al*. 2006).

Guinea-Bissau: Once widely distributed (Gippoliti and Dell'Omo 2003), *P. b. temminckii* has become rare in some protected areas (e.g., Cufada Lagoons Natural Park). Cantanhez Forest National Park is one area where Temminck's Red Colobus still exists in relatively large but decreasing numbers, and appears to have suffered a strong recent demographic bottleneck (Minhós *et al*. 2016). Groups have disappeared from areas where they were previously observed and reported by local communities to have been hunted (T. Minhós unpubl. data 2010). It is also found in riverine forests of the newly-established Dulombi National Park, although likely in very low densities (0.07 groups/km walked in savanna-grassland/woodland/riverine forest mosaic in the core area of the park: Bersacola *et al*. 2018); and in Boé National Park and outskirts (Ferreira da Silva 2017), where groups of 2-20 individuals (Binczik *et al*. 2019) have been observed in patches of gallery forest along the Féfiné River and in "sacred forests". Its presence in northern Guinea-Bissau was last confirmed 30 years ago (Limoges 1989 cited in Bersacola *et al*. 2018).

Senegal: Occurs in the isolated Niokolo Koba National Park and nearby gallery forests. Known populations in the Saloum Delta are: Fathala and Bandiala mangrove, Patako Bolon Koular, Sangako (where only four individuals remain), and the isolated Soutouto-Niabéla group (A. Galat-Luong and G. Galat pers. obs. 1974–2002). In the northwest, only Fathala Forest Reserve harbours an apparently viable population (approximately 500 individuals; Galat-Luong and Galat 2005). In the south, distribution is patchy and the only dedicated refuge – Basse Casamance National Park – has been closed since 1992.

Based on surveys conducted over the last 20 years, the known populations of *P. b. temminckii* are estimated to total approximately 2,500 individuals. Relatively large populations still exist in: Abuko Nature Reserve (Starin 2017) and the forest around Sambel Kunda, Central River Region (Mayhew *et al*.

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2019) in Gambia; Cantanhez Forest National Park, Guinea-Bissau (Minhós *et al*. 2016); and Delta du Saloum National Park (Fathala Forest Reserve and nearby mangroves) and Niokolo Koba National Park, Senegal (A. Galat-Luong and G. Galat pers. obs. 2000, Galat-Luong and Galat 2005). All other known populations are each estimated to contain fewer than 60 individuals.

Current Population Trend: Decreasing

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

This predominantly arboreal taxon is found in a variety of forest types including primary, secondary, dry and gallery forest (Starin 1991, Galat-Luong and Galat 2005, Struhsaker 2010). The northern-most populations in Senegal use more open habitats, including savanna woodland, mangroves, residential gardens and occasionally farmland and residential gardens (Starin 1991). In mature forest, they use the main canopy at 20-40 m height (50% of time, Galat-Luong 1983); however, the northern populations also spend time travelling, resting, playing, feeding and grooming on the ground (Starin 1991). They have an eclectic diet dominated by fruits, seeds and young leaves (Starin 1991, Galat and Galat-Luong 1985). In Abuko Nature Reserve, they live in one, two and multimale groups, with an average size of 26 individuals (Starin 1991). There is no detailed information on size and composition of groups observed in Guinea-Bissau.

Historical habitat loss

Gambia: between 1940 and 2001, woodland ecosystems were reduced from 80% to 42% landcover (Jaiteh and Sarr 2011). In the 1970s, few areas had not been cultivated or modified by fire (Rains and Johnson 1976). Between 1972 and 1988, 80% of the area of closed forest was lost (Republic of the Gambia 1992). Njassang Forest Park has been subject to illegal tree cutting for commercial timber export, and 30% of the Bijilo Forest Park was cleared for the construction of a convention centre.

Guinea: in 1964, the total area of humid and dense dry forests was ~2,400 km². In 1991, there were only a few shreds of classified forests totalling less than 1,140 km² – a decrease of more than 50% (FAO 1991).

Senegal: decreasing rainfall in this region of West Africa is leading to habitat loss (Starin 1989, Galat-Luong and Galat 2005). This is the main factor causing decline of the forest in Fathala Forest Reserve.

Systems: Terrestrial

Use and Trade

Hunting for bushmeat is a major threat to Temminck's Red Colobus, particularly in the south of its range.

Gambia: rarely hunted for meat, but killed as a crop-protection measure. They are also hunted for body parts to be used in traditional practices (Starin 2007).

Guinea: bushmeat increasingly flows to serve heightened demand in Conakry and other urban areas (A. Galat-Luong and G. Galat pers. obs. 1983-2000).

Guinea-Bissau: hunted for meat in rural areas, to trade in urban bushmeat markets, for sale and

consumption in dedicated bushmeat restaurants in the capital city (Minhós, Wallace *et al*. 2013), and for trade in body parts used in animistic practices (Sá *et al*. 2012).

Senegal: hunted in Casamance, but rarely hunted north of the Gambia River (A. Galat-Luong and G. Galat pers. obs. 1974–2002). No known trade.

Threats (see Appendix for additional information)

One of two major threats to this subspecies is habitat loss as a result of forest conversion through agriculture, overgrazing, fires and tree-cutting. As an example, between 2001 and 2018, Guinea-Bissau lost 13.3% of tree cover and 5.4% of primary forest. The region of Tombali (where one the largest populations of Temminck's Red Colobus persists in Cantanhez Forest National Park) has lost 17% of its forest in the past 20 years, and rates of primary forest loss and tree cover loss are increasing (all data GFW 2019).

A result of habitat fragmentation is that many subpopulations have become small, widely scattered and isolated. Dispersing animals often have to pass through fields and even villages (Starin 1991). The fact that larger groups of *P. b. temminckii* require larger areas of undisturbed forest (Minhós *et al*. 2016), and that in addition dispersal in this species is usually conducted by females (Minhós, Nixon *et al*. 2013), will hinder the establishment of these monkeys in disturbed areas. Also, with loss of natural habitat, increases in agricultural lands and increasing human and livestock populations, the frequency of wildlife-human conflicts will increase (Starin 1998), and escalating wildlife-human conflicts could exacerbate negative attitudes towards conservation efforts.

The second major threat is hunting for bushmeat, particularly in the south of the range. In Guinea-Bissau, hunters described red colobus as a species that is easy to hunt, and reported that large numbers of individuals from the same social group could be killed during the same hunting event (Ferreira da Silva 2012). It is estimated that almost 200 red colobus are hunted during each dry season to supply two urban bushmeat markets and the meat is consumed in bushmeat-dedicated restaurants (Minhós, Wallace *et al*. 2013). In Guinea, the intensity of hunting has increased since 2000, with bushmeat also coming from Niokolo Koba in Senegal to supply the city of Conakry and large towns (Galat-Luong and Galat pers. obs. 1983–2000).

In Gambia, red colobus are rarely hunted for meat, but are often killed as a crop-protection measure (Starin 1989). Their body parts are used for traditional practices (Starin 2007). Similarly, in Guinea-Bissau, dried skins are traded in dedicated markets to be used in animistic practices (Sá *et al*. 2012).

The region where Temminck's Red Colobus occurs has been impacted by civil conflict. Consequently, Basse Casamance National Park in Senegal has been without rangers since 1992, and therefore its wildlife has had no protection against poaching for two decades (Galat-Luong and Galat pers. obs. 1998–2002).

Red colobus are particularly vulnerable to wildfires in open habitats. Groups have been observed seeking refuge in trees instead of running away from fire. If the trees are not tall enough to allow them to escape, the monkeys die, suffocated by smoke or burned by the flames. They are also vulnerable to predation by Seba's Python (*Python sebae*), Nile Crocodiles (*Crocodylus niloticus*), Spotted Hyena (*Crocuta crocuta*) and feral dogs (Starin 1989, Starin and Burghardt 1992, Galat-Luong and Galat 2005).

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Conservation Actions (see Appendix for additional information)

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

Piliocolobus badius temminckii has been recorded in a number of IUCN category I-IV protected areas, including: Abuko Nature Reserve, Kiang West and River Gambia national parks, and Tanji Bird Reserve in The Gambia; Badiar National Park and the Forêt classée de N'dama in Guinea; Cantanhez Forest National Park, Cufada Lagoons Natural Park and Dulombi-Boé-Tchetche Complex in Guinea-Bissau; and Niokolo Koba and Saloum Delta national parks in Senegal (they may no longer survive in Basse Casamance National Park).

The first conservation action plan for red colobus monkeys will be published in 2020. The plan identifies priority areas for conservation and recommends range-wide and taxon based actions to prevent red colobus extinctions. Range-wide conservation priorities include actions that aim to improve government investment in wildlife conservation, expand and improve protected areas, determine taxon-specific distribution and abundance, engage with local human populations and integrate them into conservation activities, remove barriers that prevent local access to human healthcare and family planning, and raise awareness of the plight of red colobus.

Up-to-date surveys are needed to locate small populations persisting in islands of natural habitat to establish the levels of functional connectivity between the confirmed populations in the south of the range (e.g., Cantanhez-Dulombi-Boé in Guinea-Bissau) and those in the north (e.g., northern Boké in Guinea) (Bersacola *et al*. 2018).

Credits

Assessor(s): Minhós, T., Ferreira da Silva, M.J., Bersacola, E., Galat, G., Galat-Luong, A., Mayhew, M. & Starin, E.D.

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Authority/Authorities: IUCN SSC Primate Specialist Group

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External Resources

For Supplementary Material, and for Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

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

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	Resident	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	Resident	Marginal	-
1. Forest -> 1.8. Forest - Subtropical/Tropical Swamp	Resident	Suitable	Yes
2. Savanna -> 2.1. Savanna - Dry	Resident	Suitable	Yes
2. Savanna -> 2.2. Savanna - Moist	Resident	Suitable	Yes

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. 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. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7
	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

https://dx.doi.org/10.2305/IUCN.UK.2020-1.RLTS.T18247A92648587.en

	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
6. Human intrusions & disturbance -> 6.2. War, civil unrest & military exercises	Ongoing	Minority (50%)	Very rapid declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		

Conservation Actions in Place

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

Conservation Action in Place
In-place research and monitoring
Action Recovery Plan: Yes
In-place land/water protection
Conservation sites identified: Yes, over part of range
Occurs in at least one protected area: Yes
In-place species management
Harvest management plan: No
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: No
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)

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
2. Land/water management -> 2.1. Site/area management

Research Needed

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends

Research Needed
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): No
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): 900
Population
Continuing decline of mature individuals: Yes
Extreme fluctuations: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 10
Movement patterns: Not a Migrant

The IUCN Red List Partnership

The IUCN Red List of Threatened Species™ is produced and managed by the IUCN Global Species Programme, the IUCN Species Survival Commission (SSC) and The IUCN Red List Partnership.

The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.