**Leontopithecus rosalia**, Golden Lion Tamarin


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Taxonomy

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animalia</td>
<td>Chordata</td>
<td>Mammalia</td>
<td>Primates</td>
<td>Callitrichidae</td>
</tr>
</tbody>
</table>

**Taxon Name:** *Leontopithecus rosalia* (Linnaeus, 1766)

**Common Name(s):**
- English: Golden Lion Tamarin
- French: Singe-lion, Tamarin Soyeux

**Taxonomic Notes:**
The lion tamarins, *Leontopithecus*, are listed as separate species following Della Serra (1951), Rosenberger and Coimbra-Filho (1984), Mittermeier *et al.* (1988), Natori (1989), and Rylands *et al.* (1993). They have been listed as subspecies of *L. rosalia* by Coimbra-Filho and Mittermeier (1972, 1973), Hershkovitz (1977), Mittermeier and Coimbra-Filho (1981), Forman *et al.* (1986) and Seuánez *et al.* (1988), the latter two publications on the basis of identical chromosome morphologies.

**Assessment Information**

**Red List Category & Criteria:** Endangered A3cde ver 3.1

**Year Published:** 2019

**Date Assessed:** January 26, 2015

**Justification:**
*Leontopithecus rosalia* is considered Endangered under criteria EN A3ce, an anticipated population reduction of 50% over the course of the next three generations (2019-2039) due to a loss of habitat quality (i.e., impacts of urbanization and fragmentation due to an expanding road network), resource competition with introduced *Callithrix jacchus*, hybridization with introduced *L. chrysomelas*, and the negative impacts of stochastic events (e.g., recent yellow fever outbreak).

**Previously Published Red List Assessments**
- 2008 – Endangered (EN)
  http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T11506A3287321.en
- 2003 – Endangered (EN)
- 2000 – Critically Endangered (CR)
- 1996 – Critically Endangered (CR)
- 1994 – Endangered (E)
- 1990 – Endangered (E)
- 1988 – Endangered (E)
- 1986 – Endangered (E)
1982 – Endangered (E)

**Geographic Range**

**Range Description:**
The centre of the range of *L. rosalia* is the basin of the Rio São João, state of Rio de Janeiro. The original distribution was first clarified by Coimbra-Filho (1969, 1976) and Coimbra-Filho and Mittermeier (1973, 1977). It covered the majority of the lowland coastal region of the state of Rio de Janeiro, up to 300 m asl. The easternmost record for the species is Mangaratiba, on the coast in the south-east of the state. The original distribution included all or parts of the following municipalities: Mangaratiba, Itaguai, Nova Iguacu, Nilopolis, São João do Meriti, Duque de Caxias, Rio de Janeiro, Magé, São Gonçalo, Niterói, Itaborai, Maricá, Araruama, Silva Jardim, Saquarema, Rio Bonito, Cachoeiras de Macucu, São Pedro da Aldeia, Cabo Frio, Casimiro de Abreu, Macaé, Conceição de Macabu, Campos, and São João da Barra.

From his surveys carried out between 1962 and 1969, Coimbra-Filho concluded that *L. rosalia* was extinct in all but seven (Silva Jardim, Cabo Frio, Saquarema, Aruarama, Casimiro de Abreu, Rio Bonito, and São Pedro da Aldeia) of the 24 municipalities of its original range. The exhaustive survey by Kierulff (1993a,b; Kierulff and Procópio de Oliveira 1996; Kierulff and Rylands 2003) which covered the entire range of the species during 18 months between 1990 and 1992, showed that they remain in only 104.5 km² of forests in three regions: 1) near the coast (the Centro Hípico de Cabo Frio, with an estimated 29 individuals, and Campos Novos, with an estimated 36 individuals); 2) the Poço das Antas Biological Reserve and adjacent forests (with an estimated 360 individuals); and 3) on the hillsides of the Serra do Mar (with an estimated 74 individuals), there largely restricted to lowland forest patches. A further nine localities contained 12 isolated groups, totalling 60 individuals. These subpopulations were registered in just four of the municipalities reported by Coimbra-Filho (1969): Silva Jardim, Cabo Frio, Saquarema, and Aruarama, the latter two, however, maintaining only a single group each (Kierulff 1993a).

Burity et al. (2007) reported the occurrence of *L. rosalia* in the municipality of Duque de Caxias, near the Rio Taquara, in the Taquara Municipal Natural Park (19,000 ha), Rio de Janeiro, a westward extension of its current known range. During 2014, the Golden Lion Tamarin Association, in collaboration with researchers from the Universidade Estadual do Norte Fluminense (M de Morais and CR Ruiz-Miranda) carried out an intensive survey on the São João River watershed (covers the Biological Reserves and the Federally Protected region were 90% of the population is presumed to be) using an improved playback technique and a single-season occupancy model (MacKenzie et al. 2002). The results estimate a total population of 3400 tamarins and detected the presence of tamarins in several fragments were they had not previously been detected. The survey provided an accurate estimate of GLT occurrence over the whole region, pointing out areas of low probability of occurrence or gaps in the distribution. In 2014, the AMLD team counted an additional 106 tamarins in the Cabo Frio Municipal Park. The extent of occurrence of *L. rosalia* was calculated using the MCP (Minimum Convex Polygon) taking into account only the occupied fragments, then excluding areas with local extinction (Pissinatti A., personal communication). Therefore, the calculated extent of occurrence was 6106.23 km² and the estimated area of occupancy was less than 500 km² (337.55 km²) (Traylor-Holzer 2006).

**Country Occurrence:**

**Native:** Brazil (Rio de Janeiro)
Distribution Map

Leontopithecus rosalia

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kartastar NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Range

- Extant (resident)

Compiled by:

IUCN (International Union for Conservation of Nature)
Population

In 2003, the species was downlisted from Critically Endangered to Endangered, as a result of nearly thirty years of conservation efforts, involving numerous institutions, through the Golden Lion Tamarin Conservation Program (GLTCP) of the National Zoological Park, Smithsonian Institution, Washington, DC, and the Associação Mico-Leão-Dourado, Rio de Janeiro. Conservation efforts have included the establishment of a new population through translocation of 47 individuals in six groups, each isolated and evidently otherwise doomed in tiny isolated forests elsewhere, to a new protected area, the União Biological Reserve. Currently, about one-third of the wild population are descendants of a reintroduction programme. The reintroduction of captive-born Golden Lion Tamarins has contributed significantly not only to the numbers living in the wild, but also to the protection of 3,100 ha of forests within their range (Beck et al. 1986, 1991, 1994; Stoinski et al. 1997; Beck and Martins 1999, 2001).

Early estimates of population size ranged from 200-600 (Coimbra-Filho 1969; Coimbra-Filho and Mittermeier 1973, 1977), but it was only in 1991-1992 that a full and thorough census was carried out by Kierulff (1993a,b; Kierulff and Procópio de Oliveira 1996). Not including the population in the Poço das Antas Biological Reserve, the total number of individuals estimated was 272 in 55 groups. They were divided amongst 14 forests - four main subpopulations with six or more groups each and 12 groups isolated in 10 forest fragments each of 200 ha or less in area. The total area of forest containing Golden Lion Tamarins was 104.5 km². The majority of groups (29) were located in the municipality of Silva Jardim (53%), 24 groups were located in Cabo Frio (43%), and one group each were found in the municipalities of Saquarema and one in Araruama. At the time, the Poço das Antas Biological Reserve was known to harbour about 290 lion tamarins (Kierulff 1993a), giving a total population of 562 (range 470-631), close to the estimate of Coimbra-Filho in 1969.

During Kierulff’s (1993) census, the population of reintroduced lion tamarins was 118 individuals, but by December 2000, the number had risen to 359 (Kierulff et al. 2002a, b). A translocation programme, begun in 1994, established a new and thriving population in the União Biological Reserve, with six introduced groups resulting in a population of over 120 lion tamarins in the Reserve by mid-2001 (Kierulff et al. 2002a). The forests targeted for re-introduction are now believed to be at carrying capacity. Kierulff and Procópio de Oliveira (1996) estimated that the União Biological Reserve (at 2,400 ha the second largest single block of lowland forest in the state, after the marginally larger Poço das Antas Biological Reserve, with 2,760 ha of forest) can hold no more than about 158 lion tamarins (33 groups).

From 1997 to 2000 the numbers in the Poço das Antas Biological Reserve declined due to predation to just 220 animals (see Franklin and Dietz 2001), but since the population has recovered to an estimated 408 animals (AMLD, unpublished data).

Based on Kierulff’s 1993 census, the population of reintroduced golden lion tamarins was 118. By December 2000 the number had risen to 359 (Kierulff et al. 2002a, b). A translocation programme, begun in 1994, established a new and thriving population in the União Biological Reserve; six introduced groups yielded a population of >120 lion tamarins by mid-2001 (Kierulff et al. 2002a). The forests targeted for re-introduction are now believed to be at carrying capacity. Kierulff and Procópio de Oliveira (1996) estimated that the 2,400-ha União Biological Reserve (the second largest single block of lowland forest in the state) can hold no more than about 158 lion tamarins (33 groups).
recent population estimate for *Leontopithecus rosalia*, based on 3,200 individuals in the Sao Joao and Macae River Basins (AMLD 2018), would be just above 3,700 (Ruiz-Miranda et al. 2019). Based upon an average group size of five for the genus *Leontopithecus*, with two mature individuals per group, the total number of mature individuals would be approximately 1,400. However, subsequent to data collection for the most recent population estimate, GLT populations were hit by yellow fever. Replicated surveys in each of 13 forest fragments holding *L. rosalia* yield an overall population loss of 32% (J. Dietz unpublished data).

**Current Population Trend:** Decreasing

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

An inhabitant of lowland seasonal rainforest of the Atlantic coast of Brazil, with an average annual rainfall of around 1,500 mm a year (Rylands 1993). Golden lion tamarins are an adaptable species well able to live in degraded and secondary forests, depending only on sufficient year round food sources and foraging sites, along with the tree holes they use as sleeping sites (see Coimbra-Filho 1969, 1976; Coimbra-Filho and Mittermeier 1973).

Marmosets and tamarins are distinguished from the other monkeys of the New World by their small size; modified claws rather than nails on all digits except the big toe; the presence of two as opposed to three molar teeth in either side of each jaw, and by the occurrence of twin births. They eat fruits, flowers, nectar, plant exudates (gums) and animal prey (including frogs, snails, lizards, spiders and insects).

A book edited by Kleiman and Rylands (2002) contains chapters that extensively review behavioural ecology, reproductive biology, mating systems, infant care, vocal communication, conservation status and reintroduction biology. A more recent book edited by Oliveria *et al.* (2008) reviews information on habitat fragmentation, invasive species and conservation strategies for golden lion tamarins. Lion tamarins are an insectivore-frugivore species, with opportunistic consumption of tree exudates. They differ from other callitrichids in having long fingers and hands, which allow them to forage for prey efficiently in nooks and crannies and in epiphytic tank bromeliads. Lion tamarins live in extended family groups of usually 4 to 8 individuals. For *L. rosalia*, Dietz and Kleiman (1986) recorded a mean group size of 5.8 (range 3-11, n=21) at the Poço das Antas Biological Reserve. Recently, Hankerson and Dietz (2014) compared group sizes in two different predation periods. Average group size (excluding infants) was 4.4 individuals during high predation periods and 6.0 individuals during low predation periods (Hankerson and Dietz 2014). Generally, only one female per group breeds during a particular breeding season. They breed once or twice a year. There is cooperative care of the young. Both sexes disperse. Average dispersal distance is 847 meters (Mickleberg, 2011). The groups defend home ranges of 40 to more than 100 ha. Hankerson & Dietz (2014) reported home ranges sizes based on different group sizes (small (<4.5 individuals), medium (4.5 to 7.9 individuals) or large (>8 individuals) in Poço das Antas Biological Reserve. The authors found home ranges varying from (mean ± SE) 66.9 ± 3.71 ha for large groups (N =17), 49.7 ± 1.96 ha for medium-sized groups (N=66) and 46.7 ± 1.99 ha (N=62) for small size groups. Important determinants of home range size were predation and future reproductive needs. At the União Biological Reserve, home ranges average 150 ±72 ha (range 65-229 ha) (Kierulff 2000).

**Systems:** Terrestrial
Threats (see Appendix for additional information)

Historically, *Leontopithecus rosalia* has been threatened by severe forest loss and fragmentation, as well as live capture for the pet trade. Today, the most severe threats facing this species are the urbanization of former forests and pastureland, an expanding road network (e.g., BR 101) that further fragments remaining forest blocks and conservation management units, the potential for stochastic events such as a recent yellow fever outbreak, competition with introduced *Callithrix jacchus*, and hybridization with introduced *Leontopithecus chrysomelas* (Bicca-Marques et al. 2017, Ruiz-Miranda et al. 2019, J. Dietz unpublished data). An overall population estimated at 3,700 (1,400 mature individuals) is spread among nearly 20 sub-populations; 60% of these inhabit patches of 1,000 ha or less, 96% of which are less than 100 ha (Kierulff and Procópio de Oliveira 1996). Many of the sub-populations are believed to have reached carrying capacity and are potentially non-viable in the long-term due to the potential for inbreeding depression (Kierulff and Procópio de Oliveira 1996, Dietz et al. 2000). A documented reduction of *L. rosalia* of greater than 50% in the Poco das Antas Biological Reserve in the 1990s gives cause for concern regarding the potential for significant population fluctuations (Franklin and Dietz 2001), including a decline of more than 30% recently documented due to an outbreak of yellow fever (J. Dietz unpublished data).

Conservation Actions (see Appendix for additional information)

Included on the Brazilian Official List of Species Threatened with Extinction (Lista Nacional Oficial de Espécies da Fauna Ameaçadas de ExtinçãoMMA, 2014), and likewise on the regional threatened species list of the state of Rio de Janeiro (Bergallo et al. 2000). It is listed on Appendix I of CITES.

The conservation project for the golden lion tamarins has been considered successful (Kierulff et al. 2012). The first conservation initiatives for *Leontopithecus rosalia* began with field surveys and initiation of a breeding programme for the species by Adelmar Coimbra-Filho and Alceo Magnanani in the late 1960s (Coimbra-Filho and Magananini 1972; Magnanini and Coimbra-Filho 1972; Coimbra-Filho 1976a,b). Kleiman (1972) set up an international breeding programme and studbook for the captive populations in 1972, and initiated The Golden Lion Tamarin Conservation Program (GLTCP) of the National Zoological Park, Smithsonian Institution, in 1983. The GLTCP, subsumed by the Brazilian NGO-the Golden Lion Tamarin Association (AMLD),-in 1993, remains active and includes field research, reintroduction, environmental education, and habitat restoration programmes. Today the conservation efforts are centred on the São João River Watershed which includes the Poço das Antas Biological Reserve, created in 1972 (Magnanini 1978), the União Biological Reserve (created in 2008), and the São João river-golden lion tamarin Federal Environmental Protection Area (created in 2002).

Golden Lion Tamarins occur in the Poço das Antas Biological Reserve (5,500 ha, of which 2,760 ha is forested), União Biological Reserve (3,260 ha, of which 2,400 ha is forested), Bacia do Rio São João / Mico-leão-dourado Environmental Protection Area (150,700 ha), Petropólis Environmental Protection Area (5900 ha) (Burity et al. 2007,) and Taquara Municipal Natural Park (19,000 ha) (Burity et al. 2007). The Golden Lion Tamarin Association, a Brazilian NGO, founded in 1993 has a strong and active strategic management plan for the conservation of the species in its habitat. A recent strategic planning meeting (2015) identified the key strategies for long term conservation of the species, and has a plan for forming 4 major viable populations connected as a meta-population. There is a managed population in captivity maintained at about 490 animals. There is some room for expansion for the population, but considering the extreme fragmentation there will be the need for active reforestation to increase forest connectivity. Current and future conservation efforts are attacking this problem with reforestation and the establishment of corridors. There are ongoing translocation efforts to seed a new population in the area.
of Lavras/Pirinameus. The small threat posed by the introduced GHLTs in Niteroi is being further reduced by the removal of these animals from the region through a collaborative project carried by the Instituto Pri-Matas, INEA (Rio de Janeiro State Environmental Institute) and ICMBio. The project has removed over 500 of these animals. Total removal is planned to end by 2016.

There was an International Committee for the Conservation and Management of Lion Tamarins, set up in 1990 by the Brazilian Government (Instituto do Meio Ambiente e dos Recursos Naturais Renováveis of the Ministry of the Environment) (see Rambaldi et al. 2002). It stopped working in 2005, approximately. The Instituto Chico Mendes de Conservação da Biodiversidade (of the Ministry of the Environment) incorporated the functions of that committee within its National Action Plan for the Mammals of Central Atlantic Forest.

Historical reviews of the conservation measures and programmes for the lion tamarins are provided by Rylands et al. (2002), Rambaldi et al. (2002), Kierulff et al. (2002b), Beck et al. (2002), Valladares-Padua et al. (2002), Padua et al. (2002), and Kleiman and Rylands (2002a).

Credits


Reviewer(s): Cotton, A., Molur, S. & Schwitzer, C.

Facilitators(s) and Compiler(s): Angelico, M. & Konstant, W.R.
Bibliography


Brazil, Paraná, SEMA. 1995. Lista Vermelha de Animais Ameaçados de Extinção no Estado do Paraná. Secretaria de Estado do Meio Ambiente (SEMA), Deutsche Gesellschaft für Technische Zusammenarbeit - GTZ (GmbH), Curitiba, Brazil.

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Secretaria de Estado do Meio Ambiente (SMA), São Paulo, Brazil.


http://dx.doi.org/10.2305/IUCN.UK.2019-3.RTLS.T11506A17935211.en


management for the conservation of black lion tamarins. In: D. G. Kleiman and A. B. Rylands (eds), The Lion Tamarins of Brazil, pp. 301-314. Smithsonian Institution Press, Washington, DC, USA.

Citation

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External Resources
For [Images and External Links to Additional Information, please see the Red List website](http://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T11506A17935211.en).
Appendix

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

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<thead>
<tr>
<th>Habitat</th>
<th>Season</th>
<th>Suitability</th>
<th>Major Importance?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Forest -&gt; 1.6. Forest - Subtropical/Tropical Moist Lowland</td>
<td>-</td>
<td>Suitable</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

<table>
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<th>Threat</th>
<th>Timing</th>
<th>Scope</th>
<th>Severity</th>
<th>Impact Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Residential &amp; commercial development -&gt; 1.1. Housing &amp; urban areas</td>
<td>Ongoing</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stresses:</td>
<td></td>
<td>1. Ecosystem stresses -&gt; 1.1. Ecosystem conversion</td>
<td>1. Ecosystem stresses -&gt; 1.2. Ecosystem degradation</td>
<td></td>
</tr>
<tr>
<td>2. Agriculture &amp; aquaculture -&gt; 2.1. Annual &amp; perennial non-timber crops -&gt; 2.1.2. Small-holder farming</td>
<td>Ongoing</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stresses:</td>
<td></td>
<td>1. Ecosystem stresses -&gt; 1.1. Ecosystem conversion</td>
<td>1. Ecosystem stresses -&gt; 1.2. Ecosystem degradation</td>
<td></td>
</tr>
<tr>
<td>2. Agriculture &amp; aquaculture -&gt; 2.1. Annual &amp; perennial non-timber crops -&gt; 2.1.3. Agro-industry farming</td>
<td>Ongoing</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stresses:</td>
<td></td>
<td>1. Ecosystem stresses -&gt; 1.1. Ecosystem conversion</td>
<td>1. Ecosystem stresses -&gt; 1.2. Ecosystem degradation</td>
<td></td>
</tr>
<tr>
<td>2. Agriculture &amp; aquaculture -&gt; 2.2. Wood &amp; pulp plantations -&gt; 2.2.2. Agro-industry plantations</td>
<td>Future</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stresses:</td>
<td></td>
<td>1. Ecosystem stresses -&gt; 1.1. Ecosystem conversion</td>
<td>1. Ecosystem stresses -&gt; 1.2. Ecosystem degradation</td>
<td></td>
</tr>
<tr>
<td>2. Agriculture &amp; aquaculture -&gt; 2.3. Livestock farming &amp; ranching -&gt; 2.3.3. Agro-industry grazing, ranching or farming</td>
<td>Ongoing</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Stresses:</td>
<td></td>
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<td>1. Ecosystem stresses -&gt; 1.2. Ecosystem degradation</td>
<td></td>
</tr>
<tr>
<td>4. Transportation &amp; service corridors -&gt; 4.1. Roads &amp; railroads</td>
<td>Ongoing</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Stresses:</td>
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<td>1. Ecosystem stresses -&gt; 1.1. Ecosystem conversion</td>
<td>1. Ecosystem stresses -&gt; 1.2. Ecosystem degradation</td>
<td></td>
</tr>
<tr>
<td>7. Natural system modifications -&gt; 7.1. Fire &amp; fire suppression -&gt; 7.1.3. Trend Unknown/Unrecorded</td>
<td>Ongoing</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Stresses:</td>
<td></td>
<td>1. Ecosystem stresses -&gt; 1.2. Ecosystem degradation</td>
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Conservation Actions in Place
(http://www.iucnredlist.org/technical-documents/classification-schemes)
### Conservation Actions in Place

<table>
<thead>
<tr>
<th>In-Place Land/Water Protection and Management</th>
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</thead>
<tbody>
<tr>
<td>Occur in at least one PA: Yes</td>
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</table>

<table>
<thead>
<tr>
<th>In-Place Species Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successfully reintroduced or introduced beningly: Yes</td>
</tr>
<tr>
<td>Subject to ex-situ conservation: Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In-Place Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject to recent education and awareness programmes: Yes</td>
</tr>
<tr>
<td>Included in international legislation: Yes</td>
</tr>
<tr>
<td>Subject to any international management/trade controls: Yes</td>
</tr>
</tbody>
</table>

### Conservation Actions Needed

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

<table>
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</tr>
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<tbody>
<tr>
<td>2. Land/water management -&gt; 2.1. Site/area management</td>
</tr>
<tr>
<td>2. Land/water management -&gt; 2.3. Habitat &amp; natural process restoration</td>
</tr>
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### Research Needed

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

<table>
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<tbody>
<tr>
<td>1. Research -&gt; 1.1. Taxonomy</td>
</tr>
<tr>
<td>1. Research -&gt; 1.2. Population size, distribution &amp; trends</td>
</tr>
<tr>
<td>1. Research -&gt; 1.3. Life history &amp; ecology</td>
</tr>
<tr>
<td>1. Research -&gt; 1.5. Threats</td>
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<tr>
<td>1. Research -&gt; 1.6. Actions</td>
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</table>

### Additional Data Fields

<table>
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<th>Distribution</th>
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<tbody>
<tr>
<td>Estimated area of occupancy (AOO) (km²): 337.55</td>
</tr>
<tr>
<td>Continuing decline in area of occupancy (AOO): Yes</td>
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<td>Estimated extent of occurrence (EOO) (km²): 6106.23</td>
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http://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T11506A17935211.en
<table>
<thead>
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<th>Distribution</th>
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<tbody>
<tr>
<td>Lower elevation limit (m): 0</td>
</tr>
<tr>
<td>Upper elevation limit (m): 800</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of mature individuals: 1400</td>
</tr>
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<td>Continuing decline of mature individuals: Yes</td>
</tr>
<tr>
<td>No. of subpopulations: 18</td>
</tr>
<tr>
<td>Continuing decline in subpopulations: No</td>
</tr>
<tr>
<td>Extreme fluctuations in subpopulations: No</td>
</tr>
<tr>
<td>All individuals in one subpopulation: No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Habitats and Ecology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuing decline in area, extent and/or quality of habitat: Yes</td>
</tr>
<tr>
<td>Generation Length (years): 7</td>
</tr>
</tbody>
</table>
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.