

Deletion of *Tillandsia kautskyi* from Appendix II

Proponent: Brazil

Summary: *Tillandsia kautskyi* is an epiphytic bromeliad plant known from only a few specimens collected in the State of Espírito Santo in Brazil. It is found singly or in small clumps on the mountainous slopes of the Atlantic Forest. Very little is known about the species, its population size, structure or trends. The habitat of the species has been severely affected by logging and habitat conversion for agriculture and livestock-raising. Only 10% of the State's original Atlantic Forest currently remains, and the forest around Domingo Martins where the species was first located was logged for timber in the 1990s. It is listed as endangered in the List of Threatened Species of the State of Espírito Santo. It was also listed as Endangered in the 1997 IUCN Red List of Threatened Plants; this designation is noted as in need of updating. Remaining populations are reported to be relatively secure, being found in protected areas or in inaccessible rocky outcrops, although potential risks remain, such as bushfires caused by crashing hot air balloons released in village festivals.

Tillandsias in general feature in the horticultural plant trade. Some forms are artificially propagated in very large numbers and widely sold as ornamental plants. Others are grown largely by enthusiasts. *Tillandsia kautskyi* was included in Appendix II in 1992 owing to concerns regarding the possible impact on it of wild-collection for international trade. The original listing proposal at CoP8 covered all *Tillandsia* spp. At the CoP it was agreed to include only seven species, including three endemic to Brazil: *T. kautskyi*, *T. sprengeliana* and *T. sucrei*. All three species are the subject of proposals for deletion from the Appendices (see CoP16 Prop. 55 and Prop. 56).

Tillandsia kautskyi is in international trade. However all trade reported in the CITES trade database has been reported to be in artificially propagated specimens. Exporters reported trade in nearly 600 artificially propagated live plants between 1992 and 2010, the majority of which were exported directly from Brazil to the US, Hong Kong and Germany before 1997. Exports from non-range States have also been reported, the majority of these (115) specimens originated in Hungary between 2005 and 2010. Artificial propagation of this species from seed is known to occur in Germany and Hungary; artificially propagated plants are offered for sale on the internet. Demand for this species by enthusiasts continues, however it appears that this demand is fully supplied by artificially propagated specimens. No exports of wild specimens have been reported since the species was listed and there is no evidence of ongoing wild collection or illegal trade. The remaining sub-populations are considered safe from harvesting.

Tillandsia kautskyi is said to be similar in appearance to *T. brachyphylla*, which is not listed in the Appendices. It is similar in appearance to *T. sprengeliana*, which is also proposed for removal from the Appendices (CoP 16 Prop. 55), both being miniature plants. It can be easily distinguished from all the Central American species of *Tillandsia* listed in the Appendices.

This proposal has resulted from the Plants Committee's Periodic Review process.

Analysis: This species has a restricted range and is unlikely to be able to withstand large scale harvest for export. The remaining sub-populations are considered safe from harvesting as most plants are found in two protected areas and/or on inaccessible rocky outcrops. All reported international trade in this species since listing in Appendix II has been in artificially propagated specimens, with the majority (several hundred specimens) having been exported directly from Brazil before 1997. Demand for this species by enthusiasts continues, and artificial propagation is reportedly the only source of specimens now in trade. There is no evidence of ongoing wild collection or illegal trade.

It would appear that *T. kautskyi* no longer fulfils the criteria for inclusion in Appendix II as regulation of trade is not required to ensure harvesting of specimens from the wild does not threaten the survival of the species. No exports of wild harvested plants has taken place in the 20 years since the species was listed in Appendix II and it seems unlikely that its removal from the Appendices would stimulate trade in wild specimens such that it would meet the criteria for listing in

Appendix II in the near future, as outlined in the precautionary measures, Annex 4 A4 of *Resolution Conf. 9.24 (Rev. CoP15)*.

The three *Tillandsia* species being proposed for removal from the Appendices are among dozens that are in trade, the vast majority of which are not included in the Appendices. They appear to be easily distinguished from the species that would remain in the Appendices, all of which occur in Central America.

Supporting Statement (SS)	Additional information
<p>Brazil.</p> <p>Not evaluated.</p>	<p style="text-align: center;"><u>Range</u></p> <p style="text-align: center;"><u>IUCN Global Category</u></p> <p><i>Listed as Endangered in the IUCN Red List of Threatened Plants in 1997 (Walter and Gillett, 1998); this category is in need of updating.</i></p>

Biological and trade criteria for retention in Appendix II (Res. Conf. 9.24 (Rev. CoP15) Annex 2 a)

A) Trade regulation needed to prevent future inclusion in Appendix I

Biological criteria

Tillandsia kautskyi is a rare species which is only found in the sierra of the State of Espírito Santo on mountainous slopes of the Atlantic Forest and the dense montane rainforest, at altitudes between 700 and 1200 m above sea. To date only a few specimens have been found in the wild. It lives in isolation or in small clumps.

No specific information on population size, structure or trends is provided in the proposal. The species is listed “endangered” in the List of Threatened Species of the State of Espírito Santo, owing to the degradation of its habitat. It has been assessed as Data Deficient in Brazil’s National List of Threatened Species of Flora.

Trade criteria

Proponents note there has only been one shipment of 55 artificially propagated specimens since listing the species in Appendix II in 1992 and that international trade does not appear to be affecting the species. According to the Periodic Review there is also no evidence of illegal trade.

Tillandsia kautskyi It was originally found in the vicinity of Domingo Martins and also in the State Rio de Janeiro, near the border the Espírito Santo (Ehlers, 1996). However, Ehlers noted that the forest around Domingo Martins where this species was growing was cut down for timber.

It was rated as vulnerable on the Brazilian National List in 2005 (Martinelli et al., 2008).

According to the CITES Trade Database (download 13 November 2012) there are 19 importer and 33 exporter records of live plants of Tillandsia kautskyi between 1990 and 2010 (although the species was only listed in 1992), and one reported import of seeds. According to importers/exporters, 479/690 artificially propagated live plants were traded for commercial purposes during this period. Another 17 plants were traded for personal, artificial propagation or unknown purposes.

354/549 live plants were imported/exported directly from Brazil. The majority of this trade occurred between 1990 and 1997, after which there was a gap in reported trade until 2004. During this period the principal destinations were the United States (204/210 plants), Hong Kong (107), Germany (40/50), Spain (40) and Australia (27). Only 56/58 live plants were reportedly imported/exported from Brazil between 2004

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	<p>and 2006, these were destined for the Czech Republic, Switzerland, Netherlands and the Russian Federation.</p> <p>142/165 live plants were imported/exported from other non-range States - Brazil was not declared the country of origin in any of these cases. Between 1994 and 1999 the United States (US) and Germany exported 48 live plants. In 2002, Japan exported two plants to the US and from 2005 to 2010 Hungary was the sole exporter/ source (in some cases re-exported from Switzerland) of all specimens in trade – 140/115 reportedly imported/exported.</p> <p>The CITES Trade Database also includes five records of Tillandsia spp. exported from Brazil in 1990 – 275 specimens of unknown source and 20 artificially propagated specimens. There are also two reported exports from Brazil of non-Brazilian Tillandsia species: in 1994, 30 live T. kammii were exported to the UK and in 2007, 100 live T. harrisii were exported to the US (see look-alike issues below).</p> <p>The CoP8 proposal stated that in Brazil T. kautskyi was under severe collecting pressure. It was offered for sale by specialist dealers for prices up to USD 20 each and by a Brazilian nursery for USD0.80 per plant. T. kautskyi is still in demand by enthusiasts (Gouda in litt., 2012). It is known to be propagated from seed and by division (of shoots) in a number of European nurseries, including ones in Hungary and Germany (Schmitz-Kretschmer in litt., 2012; Czirák in litt., 2012). Examples of offers for sale on the internet include http://www.orchideen-holm.de/563.0.html?&no_cache=1&L=5&categorie=10&product=772 (Germany) and http://marczikakertblog.blogspot.hu/2010/12/most-viragzik-novenyhazban-tillandsia.html (Hungary, blog showing plant in flower in 2010).</p> <p>Orchideen Holm in Germany produces about 500 T. kautskyi per year, with most being sold to enthusiasts in the Czech Republic, Poland and Russia (however, there are no records of this trade in the CITES trade database), as the market in Germany for high price Tillandsias is very low. Production figures are constant as there is a stable wholesale market for high quality specimens, which can only produced by artificial propagation. T. kautskyi take five years to flower and propagated plants are sold as young plants (3 years, EUR 3 each) and adult plants (5 years, EUR 6). Retail prices for this species are under EUR 20 (Schmitz-Kretschmer in litt., 2012).</p>

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<p>Retention in Appendix II to improve control of other listed species</p> <p><u>A) Specimens in trade resemble those of species listed in Appendix II under Res. Conf. 9.24 (Rev. CoP15) Annex 2 a or listed in Appendix I</u></p> <p><i>Tillandsia kautskyi</i> is closely related to <i>T. brachyphylla</i> and <i>T. sprengeliana</i>. It can be differentiated from <i>Tillandsia brachyphylla</i> because of the concrescence of the sepals and from <i>Tillandsia sprengeliana</i> because of its compound inflorescence and glabrous scales.</p>	<p>Seven species of <i>Tillandsia</i> are currently listed in CITES Appendix II. Apart from the three species endemic to Brazil that are being proposed (this proposal, CoP16 Props 55 and 56) for removal from the Appendices the remaining species are: <i>T. harrisii</i> endemic to Guatemala; <i>T. kammii</i> endemic to Honduras; <i>T. mauryana</i> endemic to Mexico; and <i>T. xerographica</i> which occurs in El Salvador, Guatemala and Mexico. The three Brazilian <i>Tillandsias</i> are small; <i>T. kautskyi</i> and <i>T. sprengeliana</i> are both fairly compact, with <i>T. sucrei</i> slightly less so. These <i>Tillandsia</i> species are among dozens that are in trade, the vast majority of which are not included in the appendices. They appear to be easily distinguished from the species that would remain in the appendices which occur in Central America.</p> <p><i>Tillandsia harrisii</i> endemic to Guatemala is also listed in Appendix II. One online <i>Tillandsia</i> seller notes that as <i>T. harrisii</i> is similar in appearance to a number of other species it is therefore widely traded without the proper documentation. This may also be an issue for <i>T. kautskyi</i> that is similar in appearance to <i>T. brachyphylla</i>, a non-CITES listed species. http://www.rainforestflora.com/tillandsia/species/harrisii/</p>
<p><u>B) Compelling other reasons to ensure that effective control of trade in currently listed species is achieved</u></p>	<p>Difficulties in distinguishing wild-taken from artificially propagated specimens in trade were raised as a concern in the original CoP8 proposal. A number of characteristics of wild-taken plants were listed, in order to help identification of such plants, however it was also noted that if prior to export the plants are cleaned intensively (removing roots and old leaves) and grown under nursery conditions for some months, it is very difficult to distinguish them from artificially propagated material. At the time mother plants were commonly collected from the wild and cultivated for a few months to produce one generation of offsets. In these cases the offsets cannot be distinguished from offsets of artificially propagated plants. Problems with differentiating wild-taken and artificially propagated specimens of <i>Tillandsia xerographica</i> resulted in the EU introducing a stricter measure in 2010, only permitting imports of artificially propagated specimens with cataphylls.</p> <p>Since 1992, all international trade in <i>T. kautskyi</i> has reportedly being composed of artificially propagated specimens. The Hungarian Management Authority regularly carries out inspections of a nursery producing <i>T. kautkyi</i> for export and they are satisfied that the plants for sale are artificially propagated (Czirák in litt., 2012). Plants being grown by Orchideen Holm in Germany are derived from mother-plants obtained from the Hamburg Botanical Garden and other collectors over 40 years ago. However,</p>

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	<p>as <i>Tillandsias</i> must be cross-pollinated, occasionally new mother plants must be purchased to ensure genetic variation is maintained (Schmitz-Kretschmer in litt., 2012). It is not necessary for mother plants to be wild collected (Jenkins in litt., 2012).</p>
Other information	
Threats	
<p>The Atlantic Forest of the State of Espírito Santo has become degraded as a result of agriculture and livestock-raising. At the present time the State retains only about 10% of the original forest. Many of the remaining well-preserved plants are located within protected areas or on rocky outcrops, which prevents their use and gathering by humans.</p>	<p>According to the CoP8 proposal, such inaccessibility did not prevent harvesting: “The Serra de Orgaos, for example, near to Rio de Janeiro is known for its <i>Tillandsia</i> endemics growing “inaccessibly” on steep rocks. Recently also these localities were stripped with the help of alpinists and helicopters”.</p> <p>The forest where <i>T. kautskyi</i> was growing in Domingos Martins in Espírito Santo was cut down for timber (Ehlers, 1996).</p> <p>Ehlers (1996) noted that the lithophatic <i>Tillandsia</i> species grow on near perpendicular rocks, and although almost inaccessible and therefore well protected from collection, these populations can be damaged or destroyed by fires getting out of control in grass- and bushlands or caused by crashing of hot air balloons, which are flown in village competitions.</p>
Conservation, management and legislation	
<p>The species is found in the Environmental Protection Area of the Pico Goiapaba-Açu and the Augusto Ruschi Biological Reserve and plants around the Ecological Station of Santa Lucía are being studied.</p>	<p>According to Plant Search, specimens are held in seven Botanical Gardens across the globe, including the bromeliad collection of São Paulo State University in Brazil. No seeds are stored in the Millennium Seed Bank.</p> <p>In the 1990s, Mr. Kautsky transferred many <i>Tillandsia</i> specimens, including specimens of <i>T. kautski</i>, from timer trees to his private land in Brazil (Ehlers, 1996).</p>
Captive Breeding/Artificial Propagation	
	<p>See information under trade criteria and difficulties in distinguishing wild-taken from artificially propagated specimens.</p>

References:

- Czirák, Z. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.
 Ehlers, R. (1996). *The Red-Flowered Tillandsias from Brazil*. Deutsche Bromelien-Gesellschaft, 66p.
 Gouda, E. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.
 Jenkins, M. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.

- Martinelli, G., Viera, C.M., Gonzalez, M., Leitman, P., Piratininga, A., Costa, A.F. and Forzza, R.C. (2008). Bromeliaceae da Mata Atlântica brasileira: lista de espécies, distribuição e conservação. *Rodriguésia* 59(1):209-258
- Schmitz-Kretschmer, H. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.
- Walter, K.S. and Gillett, H.J (eds) (1998). 1997 IUCN Red List of Threatened Plants. Compiled by WCMC. IUCN, Switzerland and UK.