Deletion of *Tillandsia sprengeliana* from Appendix II

Proponent: Brazil

Summary: *Tillandsia sprengeliana* is an epiphytic bromeliad plant known from four states in Brazil - Rio de Janeiro, Espíritu Santo, Minas Gerais and Bahia. It is found in a variety of habitats, ranging from coastal vegetation and forest to the cerrado and montane subtropical savannah. It has been described as being common and/or abundant on the island of Cabo Frio in Rio de Janeiro and in the Abaira region of Bahia, however very little else is known about the species, its population size, structure or trends. A number of sub-populations are known to occur in protected areas. Is listed as endangered in the List of Threatened Species of the State of Espíritu Santo, owing to the degradation of its habitat, in particular due to the large amount of settlement in the coastal regions of this state. It was also listed as Endangered in the 1997 IUCN Red List of Threatened Plants; this designation is noted as in need of updating.

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 sprengleriana* 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. sprengeliana, T. kautskyi* and *T. sucrei.* All three species are the subject of proposals for deletion from the appendices (see CoP16 Prop. 54 and Prop. 56).

Since the species was listed fewer than 140 specimens have been recorded in trade under CITES, all reported as artificially propagated specimens originating in non-range States, mainly Hungary. No trade from Brazil has been reported. Artificial propagation of this species from seed is known to occur in Germany and Hungary, and artificially propagated plants are offered for sale on the internet in a number of other countries, including the Czech Republic, United States and the Russian Federation. 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.

Tillandsia sprengeliana is said to be similar in appearance to *T. brachyphylla*, which is not listed in the Appendices. It appears to be similar in appearance to *T. kautskyi*, which is also proposed for removal from the Appendices (CoP16 Prop 54), 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: *T. sprengeliana* has been recorded in four Brazilian states, is found in a variety of habitats, ranging from coastal vegetation and forest to the cerrado and montane subtropical savannah and has been described as common or abundant in some locations. Since the species was listed in Appendix II in 1992 limited trade has been reported in artificially propagated specimens (fewer than 140) and there has been no reported export of the species from Brazil. It would appear that *T. sprengeliana* 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 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. It is unlikely that their removal from the Appendices would cause any enforcement issues.

Supporting Statement (SS)	Additional information
Range	
Brazil.	
IUCN Global Category	
Not evaluated.	*Listed as Endangered in the IUCN Red List of Threatened Plants in 1997 (*Walter *and Gillett (1998); this category is in need of updating.*
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 sprengeliana* is found in the States of Rio de Janeiro and Bahia. In the State of Rio de Janeiro, it occurs from the region of Macaé to Punta Negra, being most abundant on the island of Cabo Frio, where various specimens have been collected. It is also found in areas of the Atlantic Forest and the Cerrado. Historical records indicate that the species was primarily present in the coastal vegetation of the State of Rio de Janeiro. However, the recent discovery of the species in the montane subtropical savannah regions of Bahia, demonstrates a high plasticity in relation to its habitat.	*The distribution map presented with the proposal includes records of the species in Minas Gerais and Espiritu Santo. Renate Ehlers was unable to find this plant on trips in 1981 and 1986 to Rio Jucu, Vitoria, a location in Espiritu Santo cited by L.B. Smith. Brazilian Tillandsia enthusiasts also reported failing to find the species here despite many efforts (Ehlers, 1996).*
Tillandsia sprengeliana has an absolute frequency of 10.26 and an absolute density of 0.81 in the Morro do Pai Inácio, in the State of Bahia. In the coastal region of the State of Rio de Janeiro, the species demonstrated intermediate constancy, making it characteristic of the region.	*These figures are percentages and were derived from a study carried out within the Environmental Protection Area Marimbus-Iraquara, adjacent to the Chapada Diamantina National Park in 1997. Plants were counted in 78 patches ("soil islands") on two plateaus (39 patches on each) and* T. sprengeliana *was found in 10.26% of the patches, i.e. eight, on Plateau Cruz only.* Tillandsia sprengeliana *made up 0.81% of these patches (average percentage cover)* (*Conceição* et. al., *2007).* *Labels accompanying herbarium specimens collected in the Abaira region of Bahia in 1992 and 1994 note that "it was very abundant in the local area" and "common" (Source: Herbarium specimens, Kew).*
The species is listed "endangered" in the List of Threatened Species of the State of Espíritu 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 is no commercial international trade in this species.

According to the CITES Trade Database (download 13 November 2012) there are seven importer and eight exporter records of live plants of Tillandsia sprengeliana *between 1994 and 2010. According to importers/exporters, 140/129 artificially propagated live plants were traded for commercial purposes during this period.*

No plants were imported/exported directly from Brazil. In 1994, the United States exported two plants to Singapore and in 1999 and 2004 Germany exported two plants to Japan and Australia, respectively. From 2005, Hungary was the sole exporter/ source of all specimens in trade – 140/85 live plants were reportedly imported/(re-)exported to/from Hungary and Switzerland between 2005 and 2010.

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).*

The CoP8 proposal stated that T. sprengeliana *fetched prices up to USD 21 per plant in specialist markets.* Tillandsia sprengeliana *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 include:
Hungary:
http://www.fehernyirfa.hu/index.php?option=com_ponygallery&func=viewcategory&catid=14&startpage=6&Itemid=39
Czech Republic: *http://www.tillandsiaph.cz/index.php?nid=10892&lid=EN&oid=2593527&tabpage=30&taboffset=90&ts=-2&epc=KAKT-001479en*
Germany and Russia: http://www.orchideen-holm.de/563.0.html?&no_cache=1&L=5&categorie=10&product=859
US: http://plantoddities.com/cgi-bin/p/awtp-product.cgi?d=plant-oddities&item=2366
http://www.birdrocktropicals.com/detail.asp?product_ID=T205

Orchideen Holm in Germany produces about 500 T. sprengeliana *per year, with most being sold to enthusiasts in the Czech Republic, Poland and the Russian Federation (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. sprengeliana *take five years to flower and propagated plants are sold as young plants (3 years, EUR 8 each) and adult plants (5 years, EUR 12). Retail prices for adult plants of this species are around EUR 20 (Schmitz-Kretschmer* in litt., *2012).*

Retention in Appendix II to improve control of other listed species

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

Tillandsia sprengeliana is closely related to *T. brachyphylla* and *T. kautskyi.* However, it is characterized by its oval floral bracts which are cuspidate, carinate and glabrous, and by its posterior sepals which are slightly concrescient and glabrous.

Seven species of Tillandsia *are currently listed in CITES Appendix II. Apart from the three species endemic to Brazil that are being proposed (this proposal, CoP16 Props 54 and 56) for removal from the Appendices the remaining species are:* T. harrisii *endemic to Guatemala;* T. kammii *endemic to Honduras;* T. mauryana *endemic to Mexico; and* T. xerographica *which occurs in El Salvador, Guatemala and Mexico. The three Brazilian Tillandsias are small;* T. kautskyi *and* T. sprengliana *are both fairly compact, with* T. sucrei *slightly less so. These Tillandsia 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.*

Tillandsia harrisii *endemic to Guatemala is also listed in Appendix II. One online* Tillandsia *seller notes that as* T. harrisii *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* T. sprengeliana *that is similar in appearance to* T. brachyphylla*, a non-CITES listed species. http://www.rainforestflora.com/tillandsia/species/harrisii/* T. sprengeliana *is described by one on-line retailer as "An incredible miniature species that is seldom offered. Looks rather like a little miniature artichoke that produces an amazing red inflorescence that is almost as big as the entire plant." http://plantoddities.com/cgi-bin/p/awtp-product.cgi?d=plant-oddities&item=2366*

B) Compelling other reasons to ensure that effective control of trade in currently listed species is achieved

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 Tillandsia xerographica *resulted in the EU introducing a stricter measure in 2010, only permitting imports of artificially propagated specimens with cataphylls.*

Since 1992, all international trade in T. sprengeliana *has reportedly being composed of artificially propagated specimens. The Hungarian Management Authority regularly carries out inspections of a nursery producing* T. sprengeliana *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,*

	as Tillandsias 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).*

Other information

Threats

The principal threats to this species relate to the loss and degradation of its habitat. The coastal region of the State of Rio de Janeiro has a high degree of property speculation and illegal occupation of the land, which have a direct impact on the vegetation growing in these locations.	*One sub-population of* T. sprengeliana *was destroyed when holiday homes were built in Arraial do Cabo (Ehlers, 1996).*

Conservation, management and legislation

The species is found in six protected areas: the Chapada Diamantina National Park, the Environmental Protection Area of the Sierra del Barbados, the area of ecological significance for the Rio de Cuentas river, the Wildlife Refuge of the National Forest of Muriquis, the Fuente Grande State Park and the Marine Harvest Reserve of Arraial do Cabo.	*According to Plant Search, specimens are held in five Botanical Gardens across the globe. No seeds are stored in the Millennium Seed Bank.*

Captive Breeding/Artificial Propagation

.	*See information under trade criteria and difficulties in distinguishing wild-taken from artificially propagated specimens.*

References:

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