

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES  
OF WILD FAUNA AND FLORA



Twentieth meeting of the Plants Committee  
Dublin (Ireland), 22-30 March 2012

Periodic Review of plant species included in the CITES Appendices

Overview

REPORT OF MEXICO

1. This document has been submitted by the Scientific Authority of Mexico\*.

Introduction

2. The Periodic Review of the Appendices forms part of the mandate of the scientific committees (Plants Committee and Animals Committee), as stated in Annex 2 of Resolution [Conf. 11.1 \(Rev. CoP15\)](#) (*Establishment of committees*). Its purpose is to review the species that are included in the CITES Appendices with the objective of determining whether their listings are still appropriate, on the basis of recent biological data and information on international trade, and the provisions of the Convention on the *Criteria for amendment of Appendices I and II* [Resolution [Conf. 9.24 \(Rev. CoP15\)](#)].
3. Resolution [Conf. 14.8](#) (*Periodic Review of the Appendices*) describes the process for the selection of species, and its paragraph b) states that the Animals and Plants Committees shall establish a schedule for the Periodic Review of the Appendices and identify a list of taxa they propose to review during the next two intersessional periods between meetings of the Conference of the Parties. The list should be established at their first meeting after the meeting of the Conference of the Parties that initiates the review period.

Background

4. At the 19th meeting of the Plants Committee (PC19, Geneva 2011), the Chair of the Working Group on the Periodic Review presented document [PC19 Doc. 13.1 \(Rev. 1\)](#) on *Overview of species under review*, including a report on the progress made in the reviews of some of the species selected for review between CoP13 (Bangkok, 2004) and CoP15 (Doha, 2010). This report noted that 40 % of the periodic reviews had been concluded, 47 % were still in progress and for 13 % no one had yet committed to undertake the review.
5. During the same meeting, Mexico presented the results of the periodic review of *Agave victoria-reginae* ([PC19 Inf. 15](#)), with the suggestion that the species should remain in Appendix II. In turn, TRAFFIC India presented the results of the periodic review of *Saussurea costus*, which suggested that it should remain in Appendix I ([document PC19 Inf. 7](#) and [summary record, page 22](#)).
6. The species that were selected for review between CoP13 and CoP15 and whose reviews are still in progress [[PC19 Doc. 13.1 \(Rev. 1\)](#)], with the corresponding reports still to be submitted, are shown in Table 1.

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\* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

Table 1. Species selected for review between CoP13 and CoP15, and their range States.

Species	Range States
<i>Balmea stormiaae</i>	Costa Rica and Guatemala
<i>Platymiscium pleiostachyum</i> and <i>Peristeria elata</i>	Costa Rica
<i>Tillandsia kautskyi</i> , <i>T. sprengeliana</i> and <i>T. sucrei</i>	Brazil
<i>Welwitschia mirabilis</i>	Namibia

#### Progress and Activities

7. On 21 September 2011, the Secretariat issued Notification to the Parties [No. 2011/038](#) on *Periodic review of species included in the CITES Appendices*. By way of this Notification, the Parties responsible for the periodic reviews of the species in the table above were asked to submit an updated review report to the Chair of the Working Group by 31 December 2011, to enable the Chair to include them in the present report.

#### Responses to the Notification

8. On 10 October 2011, the regional representative of Central and South America and the Caribbean, Ms Dora Ingrid Rivera, sent an email to the Chair of the Group containing the following information:
- With regard to *Balmea stormiaae*: neither Costa Rica nor Guatemala has any information on the species; however, given that there are no trade movements, it could be considered for deletion from the Appendices.
  - With regard to *Platymiscium pleiostachyum*: there is no record of this species being present in Costa Rica and, apparently, it may be an alternative name for *P. pinnatum*, which is indeed present in the country. Nonetheless, this information still remains to be verified.
  - With regard to *Peristeria elata*: information had been requested from the Management Authorities of Costa Rica and Panama on trade movements, in order to evaluate whether the species still satisfied the criteria for inclusion in the Appendices, but no response had been received.
9. Reports were received from Brazil and Namibia on the periodic reviews that they were coordinating:
- Brazil submitted reports on *Tillandsia kautskyi*, *T. sprengeliana* and *T. sucrei*, which are included in Appendix II, recommending that the three species should be delisted, since there was no international trade in them. Additional information is given in Annex 1 to the present report.
  - Namibia submitted a report on *Welwitschia mirabilis*, which is listed in Appendix II. The report states that there are no threats to this species from international trade, since there were no records of trade between 2005 and 2009, and no cases of illegal trade have been reported. However, the information on population size and status is limited. Additional information is given in Annex 2 to the present report.

#### Recommendations to the Plants Committee

10. The Committee is invited to take note of the progress made and to consider the reports submitted by Brazil and Namibia.

## PERIODIC REVIEW OF PLANT SPECIES INCLUDED IN THE CITES APPENDICES

### Periodic Review of *Tillandsia kautskyi* E. Pereira

1. This document has been submitted by the Scientific Authority of Brazil.
2. At its 15th meeting (Geneva, 2005) the Plants Committee agreed on a list of taxa to be included in the Periodic Review, and to be reviewed between the 13th and the 15th meetings of the Conference of the Parties (Bangkok, 2004, and Doha, 2010, respectively). Within that list, *Tillandsia kautskyi* (Appendix II, 1992) appears in the category "Ornamental plants (small taxa)". This study covers *Tillandsia kautskyi* E. Pereira, Appendix II – annotation #4 – which falls under the heading of "ornamental plants".
3. After the 19th meeting of the Plants Committee (Geneva, Switzerland, 2011), the Chair of the Working Group on the Periodic Review requested Brazil to carry out the periodic review of *Tillandsia kautskyi* Appendix II (1992), a species endemic to Brazil which is listed in Annex 3 to document PC19 Doc. 13.2.
4. The Scientific Authority of Brazil, in the person of Mr Marcus Nadruz, a researcher at the Rio de Janeiro Botanical Garden, drew up the present report.
5. The objective of the research work was to evaluate the situation of the population and the threats facing the species, analysing its taxonomy, present and potential geographical distribution, habitat, population status, biology and threats. Additionally, information was compiled and summarized on its utilization and trade (legal and illegal), look-alike species and conservation.
6. Using the information collected, a supporting statement was drawn up on the basis of the various parts of Annex 6 to Resolution Conf. 9.24 (Rev. CoP15) (*Criteria for amendment of Appendices I and II*), including range maps and photographs. A summary of the supporting statement is given in the Annex to the present report.
7. The range map was drawn up on the basis of a publication on the list of plant species of Brazil (Forzza, R.C., Costa, A., Siqueira Filho, J.A. Martinelli, G., 2010. Bromeliaceae in *Lista de Espécies da Flora do Brasil*. Jardim Botânico do Rio de Janeiro. [<http://floradobrasil.jbrj.gov.br/2010/FB000066>]) that was validated in cooperation with specialists.
8. There were no records of international trade in *T. kautskyi*, and there is no evidence of illegal trade.

## SUMMARY OF THE SUPPORTING STATEMENT ON *Tillandsia kautskyi* E. Pereira

### 1. Taxonomy

1.1 **Class:** Monocotyledons

1.2 **Order:** Poales

1.3 **Family:** Bromeliaceae

1.4 **Species:** *Tillandsia kautskyi* E. Pereira

1.5 **Scientific synonyms:** None

1.6 **Common names:** Tilandsia

1.7 **Code number:** Not applicable

### 1.8 Taxonomic review:

The taxonomic review based on the plant morphology, geographical distribution and ecology concludes that the species *Tillandsia kautskyi* is different from *Tillandsia brachyphylla* because of the concrescence of the sepals and from *Tillandsia sprengeliana* because of its compound inflorescence and glabrous scales.

### 2. Overview

See the introductory section of the document.

### 3. Characteristics of the species

#### 3.1. Distribution

*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 level, and extending as far as the border with the State of Rio de Janeiro. To date only a few specimens have been found (Figure 1).

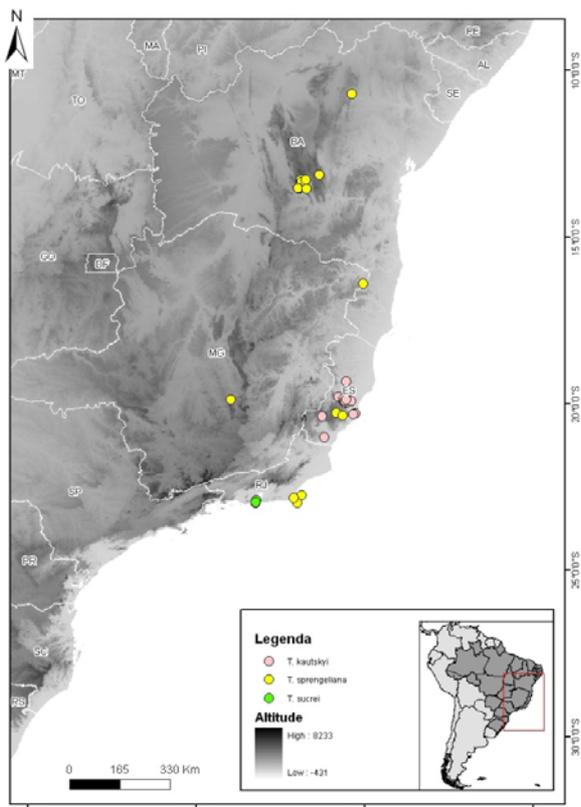


Figure 1: Distribution of the species *T. sucrei*, *T. kautskyi* and *T. sprengeliana*

#### 3.2. Habitat

A plant of mesophytic habit, it lives as an epiphyte, either in isolation or in small clumps. In the area around the Ecological Station of Santa Lucía, in the State of Espírito Santo, the species is primarily found growing on large-sized trees around clearings giving them more exposure to the wind. It is also found on rocky outcrops.

### 3.3. Biological characteristics

In the Atlantic Forest, bromeliads contain most of the sources of food for hummingbirds. Pollination of the genus *Tillandsia* is primarily by butterflies, whilst seed dispersal is by birds. Studies carried out in the Ecological Station of Santa Lucía showed an annual flowering period extending from May to September.

### 3.4. Morphological characteristics

**Plants** with flowers 8-8.5 cm in height, single or forming clusters, heliophilous epiphyte, mesophytic. **Roots** present in the adult plant. **Rhizome** short, 4-10 cm long, simple, without lateral stems. **Leaves** 50-60, approx. 4-6 cm long, densely imbricate, generally curved; base of the leaf 0.8 to 1.4 cm wide, elliptical, slightly caniculate, fleshy, densely lepidote, asymmetrical absorbent trichomes, covering the edge of the leaf. **Main stems** 2.5-6 cm long, equivalent to the size of the rosette leaf, delicate, slightly curved, glabrous; bracts of the main stem 3-4, upper ones 0.2 cm long, lower ones 3 cm long, non-laminar, larger than the joints, imbricate, elliptical, pink in colour. **Paniculate inflorescence** 4 cm long, 3 cm in diameter, 4-12 branches, with 2-4 flowers, erect or slightly spreading. **Floral bracts** 0.8 to 1.5 cm long, extending beyond the sepals, 0.6 to 1.2 cm wide, elliptical, pointed, carinate, membranous, pinkish or reddish, densely lepidote. **Flowers** 1.8-2 cm long, sessile; **Sepals** 0.9 to 1.5 cm long, 0.3 cm wide, lanceolate, acuminate, free ends, scarcely lepidote, not carinate, but bearing the greenish or pinkish central nerve. **Petals** 1.6 to 2.2 cm long, 0.25 to 0.30 cm wide, elliptical, unbroken edge, blunt, reflexed at anthesis, forming an open corolla, upper part carmine red or dark red, part towards the base white. **Stamens** 1.5 to 1.8 cm long, almost matching the total length of the petals, included, filaments 1.3 to 1.5 cm long, flat, straight or slightly protruding under the anthera, white, antheras 0.2 cm long, 0.03 cm wide, linear, dorsifixed, not versatile, yellowish-brown in colour. **Ovary** 0.3 cm long, 0.2 cm in diameter, oval, style 0.8-1 cm long, white, red towards the apex, stigma 0.1 cm long, trilobate, simple, erect.

### 3.5. Function of the species in its ecosystem

No data.

## 4. Status and trends

### 4.1. Habitat trends (*No data*)

### 4.2. Population size (*No data*)

### 4.3. Population structure (*No data*)

### 4.4. Population trends (*No data*)

### 4.5. Geographic trends (*No data*)

## 5. Threats

The Atlantic Forest of the State of Espírito Santo has been degraded over the years as a result of agriculture and stock-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.

## 6. Utilization and trade

No data on utilization, nor on legal or illegal trade.

## 7. Legal instruments

### 7.1 National

The species is included in the List of Threatened Species of the State of Espírito Santo, with the status "at risk of extinction" owing to the degradation of its habitat. It is also referred to by the Regulatory Instruction controlling the National List of Threatened Species of Flora, under the heading "Insufficient Data". This category has to do with those species for which there are not sufficient data to categorize the risk of extinction, with priority being assigned to research to obtain such data.

### 7.2 International

International trade in the species is regulated by the provisions of CITES, as it has been included in Appendix II since 1992. In 1992, it was listed with Annotation #1 (which excludes seeds, spores, pollen, tissue cultures and seedlings) and, since 2010, it has been listed with Annotation #4.

## 8. Control measures

### 8.1 International

The international control measures are implemented by the Institute for the Environment and Renewable Natural Resources (IBAMA), which is the CITES Management and Enforcement Authority of Brazil and which

issues export permits and certificates and enforces the law relating to CITES in Brazil. IBAMA also issues export authorizations for Brazilian native flora.

## 8.2 Domestic

IBAMA, through a federal technical registry, has records on all dealers in Brazilian native flora.

## 8.3 Artificial propagation (No data)

## 8.4 Habitat conservation

The species is protected in the Conservation Units of the National System of Nature Conservation Units (known by the Portuguese acronym SNUC) of the Environmental Protection Area of the Pico Goiapaba-Açu and the Augusto Ruschi Biological Reserve.

## 8.5 Safeguards

It is recommended that the species be deleted from Appendix II since it is not in international trade and grows in protected natural areas.

## 9. Information on similar species (No data)

## 10. Consultations

There is no need to consult other Parties since the species is endemic to Brazil only.

## 11. References

Clara P Esgario, André P Fontana & Ary G Silva. A flora vascular on rocha no Alto Misterioso, uma área prioritária para a conservação da Mata Atlântica no Espírito Santo, Sudeste do Brasil. *Natureza on line* 7 (2): 80-91. [online].

MARTINELLI, G., VIEIRA, C.M., GONZALEZ, M., LEITMAN, P., PIRATININGA, A., COSTA, A.F. & FORZZA, R.C. 2008. Bromeliaceae da Mata Atlântica brasileira: lista de espécies, distribuição e conservação. *Rodriguésia* 59(1):209-258

MARTINELLI, G.; VIEIRA, C. M.; [LEITMAN, P.](#); [COSTA, A.](#); [FORZZA, R. C.](#) Bromeliaceae. Plantas da Floresta Atlântica. In: João Renato Stehmann; Rafaela Campostrini Forzza; Alexandre Salino; Marcos Sobral; Denise Pinheiro da Costa e Luciana H. Yoshino Kamino. (Org.). Plantas da Floresta Atlântica. 1 ed. Rio de Janeiro: Jardim Botânico do Rio de Janeiro, 2009, v. 1, p. 186-204.

Tardivo, R.C. Inéd. Revisão taxonômica de *Tillandsia* L. subgênero *Anoplophytum* (Beer) Baker (Bromeliaceae). Tese de doutorado, Universidade de São Paulo, São Paulo, 2002.

Varassim, I.G. 2002. Estrutura espacial e temporal de uma comunidade de Bromeliaceae e seus polinizadores em Floresta Atlântica no Sudeste do Brasil. Tese de Doutorado. Universidade Estadual de Campinas, Campinas, São Paulo.

[WANDERLEY, M.G.L.](#); [LOUZADA, R. B.](#); SOUSA, G. M.; LIMA, T. T.; VERSIEUX, L. M. Bromeliaceae. In: Ana Maria Giulletti; José Maria Cardoso da Silva; Alessandro Rapini; Luciano Paganucci de Queiroz & Maria José Gomes de Andrade. (Org.). Catálogo das espécies de plantas raras do Brasil. Belo Horizonte: Conservação Internacional do Brasil, 2009, p. 103-114.

## PERIODIC REVIEW OF PLANT SPECIES INCLUDED IN THE CITES APPENDICES

### Periodic Review of *Tillandsia sucrei* Pereira

1. This document has been submitted by the Scientific Authority of Brazil.
2. At its 15th meeting (Geneva, 2005) the Plants Committee agreed on a list of taxa to be included in the Periodic Review, and to be reviewed between the 13th and the 15th meetings of the Conference of the Parties (Bangkok, 2004, and Doha, 2010, respectively). Within that list, *Tillandsia sucrei* Pereira (Appendix II, 1992) appears in the category “Ornamental plants (small taxa)”.
3. After the 19th meeting of the Plants Committee (Geneva, Switzerland, 2011), the Chair of the Working Group on the Periodic Review requested Brazil to carry out the periodic review of *Tillandsia sucrei* Appendix II (1992), a species endemic to Brazil which is listed in Annex 3 to document PC19 Doc. 13.2.
4. The Scientific Authority of Brazil, in the person of Mr Marcus Nadruz, a researcher at the Rio de Janeiro Botanical Garden, drew up the present report.
5. The objective of the research work was to evaluate the situation of the population and the threats facing the species, analysing its taxonomy, present and potential geographical distribution, habitat, population status, biology and threats. Additionally, information was compiled and summarized on its utilization and trade (legal and illegal), look-alike species and conservation.
6. Using the information collected, a supporting statement was drawn up on the basis of the various parts of Annex 6 to Resolution Conf. 9.24 (Rev. CoP15) (*Criteria for amendment of Appendices I and II*), including range maps and photographs. A summary of the supporting statement is given in the Annex to the present report.
7. The range map was drawn up on the basis of a publication on the list of plant species of Brazil (Forzza, R.C., Costa, A., Siqueira Filho, J.A. Martinelli, G. 2010. Bromeliaceae in *Lista de Espécies da Flora do Brasil*. Jardim Botânico do Rio de Janeiro. [<http://floradobrasil.jbrj.gov.br/2010/FB000066>]) that was validated in cooperation with specialists.
8. There were no records of international trade in *T. sucrei*, and there is no evidence of illegal trade.

## SUMMARY OF THE SUPPORTING STATEMENT on *Tillandsia sucrei* Pereira

### 1. Taxonomy

1.1 **Class:** Monocotyledons

1.2 **Order:** Poales

1.3 **Family:** Bromeliaceae

1.4 **Species:** *Tillandsia sucrei* Pereira

1.5 **Scientific synonyms:** none

1.6 **Common names:**

1.7 **Code number:** not applicable

1.8 **Taxonomic review:**

The taxonomic review based on the plant morphology, geographical distribution and ecology concludes that the species *Tillandsia sucrei* resembles *T. brachyphylla* because of its caniculate leaves and pinkish corolla, with sinuous ribbing. However, it can be differentiated from the latter species by the wide base of the broad rosette, which is not bulbiform, and by the stamens with protruding filaments.

### 2. Overview

See the introductory section of the document.

### 3. Characteristics of the species

#### 3.1. Distribution

*Tillandsia sucrei* is endemic to Brazil, being found only in the biome of the Atlantic Forest of the State of Rio de Janeiro (Figure 1).

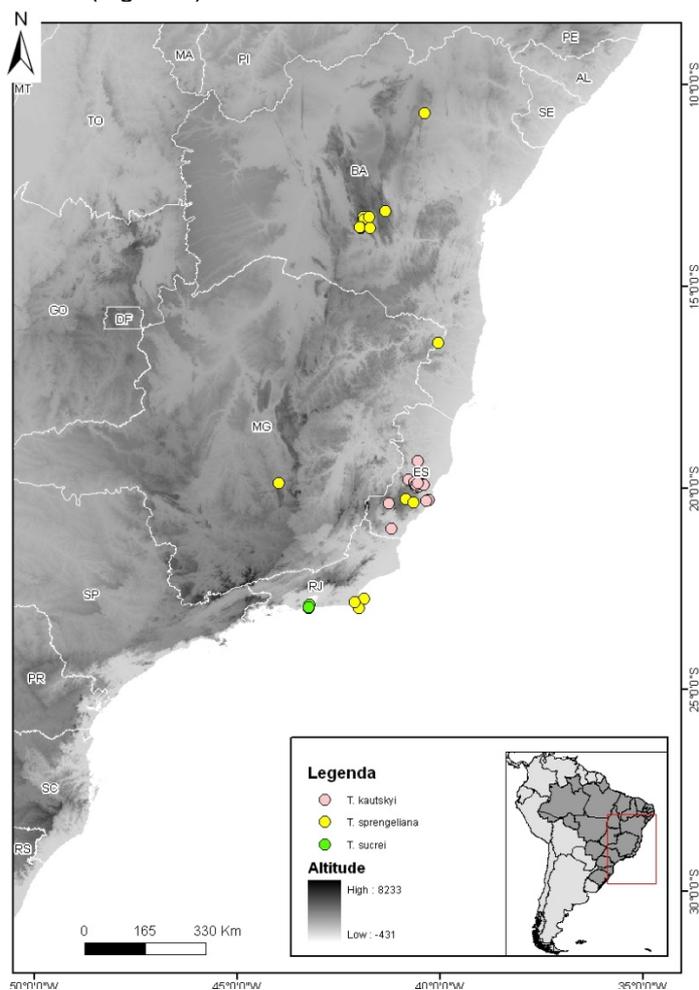


Figure 1: Distribution of the species *T. sucrei*, *T. kautskyi* and *T. sprengeliana*.

#### 3.2. Habitat

The species is found from sea level to 500 m above. It grows amongst rocks, either in isolation or in small clumps on sheer rock walls which are difficult to reach. Consequently it is reasonably well protected from efforts to harvest it.

### 3.3. Biological characteristics

Flowers from October to February.

### 3.4 Morphological characteristics

**Plants** with flowers 3-6 cm high, growing among rocks in isolation or in small clumps. **Roots** present in the adult plant, 0.1 cm in diameter, dark brown in colour. **Rhizome** 1-3 cm long, 0.3 cm in diameter, dark brown in colour. **Leaves** 20-24, 4 to 8 cm long, erect or slightly curved, with the outer leaves strongly reflexed, colour silvery green; base of the indistinct leaf 0.1 cm long, 0.6 to 1.0 cm wide, broadly triangular, lepidote with white scales, glabrous at the base, lamina 3 to 5 cm long, 0.4 to 0.7 cm wide, narrowly triangular, acute or attenuated. **Main stem** 2-3 cm long, erect, generally shorter than the leaves. **Bracts** 3-4, 3 to 5 cm long, 2-3 cm wide, subfoliaceous, imbricate, pink in colour. **Paniculate inflorescence** 1.0 to 3, 5 cm long, 2.5 to 3 cm in diameter, comprising 3-9 branches. **Primary bracts** 2.3 to 3 cm long, 0.2 cm wide, slightly shorter than or the same length as the ears, elliptical or oval, acute, lepidote with dense white scales, pink. **Branches** 2.5 to 3 cm long, 2-5 flowers, generally with a sterile terminal bud. **Floral bracts** 0.8 to 1.4 cm long, 5-8 cm wide, acuminate, oval, carinate, lepidate with thick white scales, pink. **Flowers** 2.8-3 cm long, pedicellate, pedicle 0.4 cm long. **Sepals** 1.2 to 1.5 cm long, 0.3 to 0.4 cm wide, lanceolate, acute, the first one free-ended, the rest carinate over 0.4 to 0.5 cm at the base, lepidate with white scales, pink. **Petals** 1.5 to 2.3 cm long, 0.6 cm wide, spoon-shaped at the apex, reflexed at anthesis, sinuous ribbing, dark pink. **Stamens** 1.6 cm long, included, equal in length to the basal part of the petals, free-ended, filaments 1.2 cm long, protruding under the anthera, protruding area 0.2 cm long, antheras 0.3 cm long, linear; **Ovary** 0.4 cm long, 0.3 cm in diameter, style 1.2 cm long, longer than the stamens, stigma 0.1 cm long, trilobate, simple, erect.

### 3.5. Function of the species in its ecosystem

No data.

## 4. Status and trends

### 4.1. Habitat trends (No data)

### 4.2. Population size (No data)

### 4.3. Population structure (No data)

### 4.4 Population trends

No estimate was made regarding population trends.

### 4.5. Geographic trends

There is no accurate information on geographic trends over time of *T. sucrei*.

## 5. Threats

Because this is a species of a very restricted occurrence, any change in its habitat might mean its complete disappearance from the wild. Its occurrence within units of strictly protected areas, and the difficulty of access to the current population, mean that the species does not face any immediate threats.

## 6. Utilization and trade

No data on utilization, nor on legal or illegal trade.

## 7. Legal instruments

### 7.1 National

The species is included in the List of Threatened Species of the State of Espírito Santo, with the status "at risk of extinction" owing to the degradation of its habitat. It is also referred to by the Regulatory Instruction controlling the National List of Threatened Species of Flora, under the heading "Insufficient Data". This category has to do with those species for which there are not sufficient data to categorize the risk of extinction, with priority being assigned to research to obtain such data.

### 7.2 International

International trade in the species is regulated by the provisions of CITES, as it has been included in Appendix II since 1992. In 1992, it was listed with Annotation #1 (which excludes seeds, spores, pollen, tissue cultures and seedlings) and, since 2010, it has been listed with Annotation #4.

## **8. Control measures**

### **8.1 International**

The international control measures are implemented by the Institute for the Environment and Renewable Natural Resources (IBAMA), which is the CITES Management and Enforcement Authority of Brazil and which issues export permits and certificates and enforces the law relating to CITES in Brazil. IBAMA also issues export authorizations for Brazilian native flora.

### **8.2 Domestic**

IBAMA, through a federal technical registry, has records on all dealers in Brazilian native flora.

### **8.3 Artificial propagation**

No data.

### **8.4 Habitat conservation**

The species is protected in the Conservation Unit of the National System of Nature Conservation Units (SNUC) of the Tijuca National Park, located in an urban area of the State of Rio de Janeiro.

### **8.5. Safeguards**

It is recommended that the species be deleted from Appendix II since it is not in international trade and grows in protected areas.

## **9. Information on similar species (No data)**

## **10. Consultations**

There is no need to consult other Parties since the species is endemic to Brazil only.

## **11. References**

David H. Benzing. Bromeliaceae: Profile of an adaptive radiation. Cambridge University Press. 2000.

MARTINELLI, G., VIEIRA, C.M., GONZALEZ, M., LEITMAN, P., PIRATININGA, A., COSTA, A.F. & FORZZA, R.C. 2008. Bromeliaceae da Mata Atlântica brasileira: lista de espécies, distribuição e conservação. *Rodriguésia* 59(1):209-258

MARTINELLI, G. ; VIEIRA, C. M.; [LEITMAN, P.](#); [COSTA, A.](#); [FORZZA, R. C.](#) Bromeliaceae. Plantas da Floresta Atlântica. In: João Renato Stehmann; Rafaela Campostrini Forzza; Alexandre Salino; Marcos Sobral; Denise Pinheiro da Costa e Luciana H. Yoshino Kamino. (Org.). Plantas da Floresta Atlântica. 1 ed. Rio de Janeiro: Jardim Botânico do Rio de Janeiro, 2009, v. 1, p. 186-204.

Tardivo, R.C. Inéd. Revisão taxonômica de *Tillandsia* L. subgênero *Anoplophytum* (Beer) Baker (Bromeliaceae). Tese de doutorado, Universidade de São Paulo, São Paulo, 2002.

## PERIODIC REVIEW OF PLANT SPECIES INCLUDED IN THE CITES APPENDICES

### Periodic Review of *Tillandsia sprengeliana* Klotzsch ex Mez, Mart.

1. This document has been submitted by the Scientific Authority of Brazil.
2. At its 15th meeting (Geneva, 2005) the Plants Committee agreed on a list of taxa to be included in the Periodic Review , and to be reviewed between the 13th and the 15th meetings of the Conference of the Parties (Bangkok, 2004, and Doha, 2010, respectively). Within that list, *Tillandsia sprengeliana* Klotzsch ex Mez, Mart. (Appendix II, 1992) appears in the category “Ornamental plants (small taxa)”.
3. After the 19th meeting of the Plants Committee (Geneva, Switzerland, 2011), the Chair of the Working Group on the Periodic Review requested Brazil to carry out the periodic review of *Tillandsia sprengeliana* Appendix II (1992), a species endemic to Brazil which is listed in Annex 3 to document PC19 Doc. 13.2.
4. The Scientific Authority of Brazil, in the person of Mr Marcus Nadruz, a researcher at the Rio de Janeiro Botanical Garden, drew up the present report.
5. The objective of the research work was to evaluate the situation of the population and the threats facing the species, analysing its taxonomy, present and potential geographical distribution, habitat, population status, biology and threats. Additionally, information was compiled and summarized on its utilization and trade (legal and illegal), look-alike species and conservation.
6. Using the information collected, a supporting statement was drawn up on the basis of the various parts of Annex 6 to Resolution Conf. 9.24 (Rev. CoP15) (*Criteria for amendment of Appendices I and II*), including range maps and photographs. A summary of the supporting statement is given in the Annex to the present report.
7. The range map was drawn up on the basis of a publication on the list of plant species of Brazil (Forzza, R.C., Costa, A., Siqueira Filho, J.A. Martinelli, G. 2010. Bromeliaceae in *Lista de Espécies da Flora do Brasil*. Jardim Botânico do Rio de Janeiro. [<http://floradobrasil.jbrj.gov.br/2010/FB000066>]) that was validated in cooperation with specialists.
8. There were no records of international trade in *T. sprengeliana*, and there is no evidence of illegal trade.

## SUMMARY OF THE SUPPORTING STATEMENT ON *Tillandsia sprengeliana* Klotzsch ex Mez, Mart.

### 1. Taxonomy

1.1 **Class:** Monocotyledons

1.2 **Order:** Poales

1.3 **Family:** Bromeliaceae

1.4 **Species:** *Tillandsia sprengeliana* Klotzsch ex Mez, Mart.

1.5 **Scientific synonyms:** none

1.6 **Common names:** Tilandsia

1.7 **Code number:** not applicable

### 1.8 Taxonomic review:

The taxonomic review based on the plant morphology, geographical distribution and ecology concludes that the species *Tillandsia sprengeliana* resembles *T. brachyphylla*. However, it is characterized by its oval floral bracts which are cuspidate, carinate and glabrous, and by its posterior sepals which are slightly concrescent and glabrous.

### 2. Overview

See the introductory section of the document.

### 3. Characteristics of the species

#### 3.1. Distribution

*Tillandsia sprengeliana* is endemic to Brazil, being 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 (Figure 1).

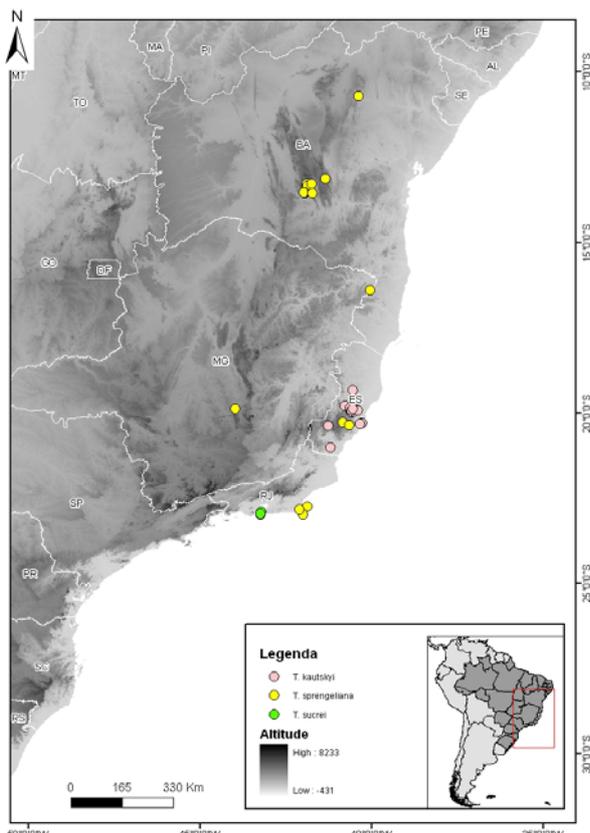


Figure 1: Distribution of the species *T. suerei*, *T. kautskyi* and *T. sprengeliana*.

#### 3.2. Habitat

The species is epiphytic or rock-dwelling, and mesophytic. Historical records indicate that the species was primarily present in the coastal vegetation of the State of Rio de Janeiro. However, the recent history of the species in the montane subtropical savannah regions of Bahia, demonstrates a high plasticity in relation to its habitat.

### 3.3. Biological characteristics

Flowers from October to January.

### 3.4 Morphological characteristics

**Plants** with flowers 8.5-11 cm high, growing alone or in small clusters, epiphytic, mesophytic. **Roots** present in adult plants. **Rhizome short**, 1 to 2.5 cm long, no stems. **Leaves** 4.5 to 6.5 cm long, 0.6 cm wide, densely imbricate, base of the leaf 0.8 to 1.2 cm wide, not very distinct, orbicular. Lamina 3-6 cm long, 0.5 to 0.7 cm wide, narrowly triangular, acuminate, fleshy, slightly caniculate, lepidote, asymmetrical absorbent trichomes, covering the edges of the leaves, grey, giving the plant a greyish-green colour. **Main stem** 2.5 to 5.0 cm wide, equivalent to the rosette, thin, straight or slightly curved, glabrous. **Bracts** 2 cm long, 0.7 cm wide, elliptical, longitudinally acuminate, pale red in colour, the lower foliage larger than the joints, imbricate, densely lepidote. **Inflorescence** 2.5 to 3.5 cm long, 3 cm in diameter, reaching above the rosette of leaves, elliptical or rounded, simple, spiky, with 10 clustered flowers or panicles, with 4-10 branches with 1-3 flowers, with one rudimentary, sterile and erect flower at the upper or slightly spreading part, glabrous spine. **Primary bracts** 2 cm long, equal to or longer than the branches, acuminate, oval, inflated, pink in colour, glabrous or lepidote towards the apex. **Floral bracts** 1.0 to 1.8 cm long, 0.8 to 1.0 cm wide, extending beyond the sepals, oval, cuspidate, the lower ones distinctly carinate, membranous, glabrous, red or salmon pink in colour. **Flowers** 1.8 to 2.0 cm long, sessile. **Sepals** 0.9 to 1.3 cm long, 0.3 cm wide, lanceolate, those in the posterior part slightly concrescent at the base, acuminate, but with a thick central nerve, glabrous, greenish coloured. **Petals** 1.5 to 2.0 cm long, 0.25 cm - 0.35 cm wide, elliptical, upright at anthesis, forming a closed corolla, base coloured white, pink or purple towards the apex. **Stamens** 1.6 cm long, almost equal to the total size of the petals, included, filaments 1.2 to 1.4 cm long, free-ended, flat, not protruding, erect, white, anthers 0.2 cm long, 0.03 cm wide, linear, dorsifixed, ochre yellow in colour. **Ovary** 0.2 cm long, 1 cm in diameter, style 0.8 cm long, white, stigma 0.1 cm long, trilobate, red in colour.

### 3.5 Function of the species in its ecosystem

No data

## 4. Status and trends

### 4.1. Habitat trends (No data)

### 4.2. Population size (No data)

### 4.3. Population structure

*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.

### 4.4 Population trends

No estimate was made regarding population trends.

### 4.5. Geographic trends

There is no accurate information on geographic trends over time of *T. sprengeliana*.

## 5. 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.

## 6. Utilization and trade

No data on utilization, nor on legal or illegal trade.

## 7. Legal instruments

### 7.1 National

The species is included in the List of Threatened Species of the State of Espírito Santo, with the status "at risk of extinction" owing to the degradation of its habitat. It is also referred to by the Regulatory Instruction controlling the National List of Threatened Species of Flora, under the heading "Insufficient Data". This category has to do with those species for which there are not sufficient data to categorize the risk of extinction, with priority being assigned to research to obtain such data.

## 7.2 International

International trade in the species is regulated by the provisions of CITES, as it has been included in Appendix II since 1992. In 1992, it was listed with Annotation #1 (which excludes seeds, spores, pollen, tissue cultures and seedlings) and, since 2010, it has been listed with Annotation #4.

## 8. Control measures

### 8.1 International

The international control measures are implemented by the Institute for the Environment and Renewable Natural Resources (IBAMA), which is the CITES Management and Enforcement Authority of Brazil and which issues export permits and certificates and enforces the law relating to CITES in Brazil. IBAMA also issues export authorizations for Brazilian native flora.

### 8.2 Domestic

IBAMA, through a federal technical registry, has records on all dealers in Brazilian native flora.

### 8.3 Artificial propagation (No data)

### 8.4 Habitat conservation

The species is protected in the Conservation Unit of the National System of Nature Conservation Units (SNUC) of 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.

### 8.5. Safeguards

It is recommended that the species be deleted from Appendix II since it is not in international trade and grows in protected areas.

## 9. Information on similar species (No data)

## 10. Consultations

There is no need to consult other Parties since the species is endemic to Brazil only.

## 11. References

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20 December 2011

To: Ms P. Davila-Aranda  
The Chair  
Intercessional Working Group for the Periodic Review of CITES Appendices (PC19)  
Facultad de Estudios Superiores Iztacala (FES Iztacala)  
Av. De los Barrios #1  
Col. Los Reyes Iztacala  
Tlanepantla  
MEXICO, 54090

Dear Madam,

**RE: Update Report on Periodic Review of *Welwitschia mirabilis***

1. Kindly find herewith the report for *Welwitschia mirabilis* to PC19's intercessional working group for the periodic review of species included in the CITES Appendices.
2. The report was initially submitted to PC18.
3. It has been revised for the present reporting, with only minor changes.
4. The conclusion remains the same, that:
  - i) CITES records show low trade in the species since listing.
  - ii) No trade has been recorded from 2006 to present. *ged*
  - iii) The Namibian CITES Management Authority is not aware of any cases of illegal trade since listing.
  - iv) Available information on wild population status and trend is not enough to fully assess threats.

Yours Sincerely,

K. Nghidinwa  
Principal Conservation Scientist  
CITES Management Authority - Namibia



**Welwitschia mirabilis**

**A) Data from CITES documents and UNEP sources**

**1. Rationale for present listing in the Appendices (whenever available)**

No information available pertaining to rationale for initial listing. The species was first listed in CITES Appendix I in 1975 before Namibia became a member state of CITES. In 1990 it was downlisted to Appendix II, its current listing.

**2. Trade data** (Source: <http://www.unep-wcmc-apps.org/citestrade/report.cfm>, accessed 20Dec2011)

Year	Importer	Exporter	Origin	Imp Quantity	Imp Unit	Imp Term	Imp Purpose	Imp Source	(Re-)Exp Quantity	(Re-)Exp Unit	(Re-)Exp Term	(Re-)Exp Purpose	(Re-)Exp Source
2000	JP	US							3		live	B	A
2000	TH	US		2		live		A					
2000	TH	US							2		live	B	A
2000	TW	US							8		live	B	A
2000	AU	ZA							1		seeds	T	A
2000	DE	ZA							1		seeds	T	A
2000	FR	ZA							100		seeds	T	A
2000	NL	ZA							100		seeds	T	A
2001	GB	ZA							3		timber pieces	Q	A
2001	ZA	GB		1		timber pieces	Q	A					
2001	ZA	GB	ZA						1		dried plants	Q	A
2001	AW	US							2		live	B	A
2001	JP	US		30		live	T	A					
2001	JP	US							33		live	B	A
2002	JP	US							9		live	B	A
2003	JP	ZA							155		live	T	A
2004	DE	ZA		30		live	T	A	30		live	T	A
2004	JP	ZA		130		live	T	A					
2004	JP	ZA							155		seeds	T	A
2005	ZA	NA		1		stems	P	U					
2005	ZA	NA							1		stems	P	W
2009	DE	NA		55		dried plants	S	W					
2009	DE	NA							55		specimens	S	W
2009	US	NA							0.1	KIL	roots	S	W
2009	SG	TH							2		live	T	A
2010	US	NA		50		specimens	S	W					

**B) Data from national CITES sources or other sources**

**3. Evidence of illegal trade**

*Welwitschia mirabilis* Hook.f. (Gnetales; Welwitschiaceae) is biologically unique and a tourist attraction. There are however no cases of illegal trade reported to the Namibian CITES Authority.

**4. Population status and trend**

The species is not listed on the IUCN Red List, but is protected in Namibia by the Nature Conservation Ordinance number 4 of 1975.

*W. mirabilis* is endemic to the Namib Desert, which encompasses western Namibia and south-western Angola. Its occurrence is limited to small, disjunct areas of the central and northern Namib Desert, ranging from near Homeb in Namibia's Kuiseb river valley to just south of Mossamedes in Angola. At the local scale the species has been described as uncommon to common, forming the dominant woody species in some localities. *W. mirabilis* has a very low regeneration rate, being maintained mainly by longevity.

Although the biology of *W. mirabilis* has been much researched (see Henschel and Seely 2000 for a comprehensive bibliography), the literature addressing population status and trend is limited. Henschel and Seely (2000) report on a long-term study conducted 1985 – 1998 on a population in the central Namib. They indicate that this population seems to be growing eastwards, since younger plants were consistently found on the eastern side – probably a result of seed dispersal by the western wind. The data from the study also show a more or less constant growth rate of individual plants over the study period, after taking into consideration the seasonal and annual fluctuations which appear to be driven by rainfall. There is however no indication in the paper whether as a whole the population studied decreased or grew over the 14-year period.

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- Loots, S (2005) *A Red Data Book of Namibian Plants*. Southern African Botanical Diversity Network Report 38. SABONET, Pretoria.

#### 5. Impact of international trade on natural population(s)

The Namibian CITES authorities have not recorded significant international trade in *W. mirabilis* or any illegal trade since listing of the species. Hence threats to natural populations may more likely come from other aspects, such as habitat disturbance, rather than from trade.

#### 6. Evaluation

Application of Criteria Conf. Res. 9.24 (Rev. CoP 13), see Annex 1 of this document.

#### 7. Conclusions (final report)

Over the period of the CITES listing there has been insignificant legal trade in *Welwitschia mirabilis* and no trade was recorded between 2005 and 2009. There is no illegal trade recorded by CITES in Namibia. Information on the population status and size is limited.

**Criteria Conf. Res. 9.24 (Rev. CoP 13)**

Definitions, explanations and guidelines see <http://www.cites.org/eng/res/09/09-24R13.shtml>

**Evaluation of taxa listed in Appendix II**

Appendix II shall include:

(a) all species which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival; and

(b) other species which must be subject to regulation in order that trade in specimens of certain species referred to in sub-paragraph (a) of this paragraph may be brought under effective control.

**Criteria for the inclusion of species in Appendix II in accordance with Article II, paragraph 2 (a), of the Convention**

The following criteria must be read in conjunction with the definitions, explanations and guidelines listed in Annex 5 of the Resolution.

A species should be included in Appendix II when, on the basis of available trade data and information on the status and trends of the wild population(s), **at least one** of the following criteria is met:

Criterion	Application to taxon under review	Conclusion		
		met	not met	unclear
It is known, or can be inferred or projected, that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.				√
It is known, or can be inferred or projected, that regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences.			√	

**Criteria for the inclusion of species in Appendix II in accordance with Article II, paragraph 2 (b), of the Convention**

Species may be included in Appendix II in accordance with Article II, paragraph 2 (b), if **either one** of the following criteria is met:

Criterion	Application to taxon under review	Conclusion		
		met	not met	unclear
("look-alikes") The specimens of the species in the form in which they are traded resemble specimens of a species included in Appendix II under the provisions of Article II, paragraph 2 (a), or in Appendix I, such that enforcement officers who encounter specimens of CITES-listed species, are unlikely to be able to distinguish between them (is CITES Identification Material available?)			√	
There are compelling reasons other than those given in criterion A above to ensure that effective control of trade in currently listed species is achieved.			√	

*g.e.l.*

