AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

Other Proposals

A. PROPOSAL


B. PROponent

The Federal Republic of Germany.

C. SUPPORTING STATEMENT

1. Taxonomy

   11. Class: Monocotyledonae
   12. Order: Bromeliales
   13. Family: Bromeliales
   14. Species:

   T. aizoides Gardner
   T. argentina C. H. Wright
   T. atroviridipetala Matuda
   T. balsasensis Rauh
   T. brachyphylla Baker
   T. bulbosa Hooker
   T. butzii Mez
   T. cacticola L. B. Smith
   T. califanii Rauh
   T. caput-medusae E. Morren
   T. carminea Till
   T. chiapensis Gardner
   T. copanensis Rauh & Rutschmann
   T. dexteri Luther
   T. edithae Rauh
   T. ehlersiana Rauh
   T. filifolia Schlechtendal & Chamisso

   T. kammii Rauh
   T. kautskyi Pereira
   T. klausii Ehlers
   T. magnusiana Wittmack
   T. matudae L. B. Smith
   T. mauryana L. B. Smith
   T. muhrii Rauh
   T. myosura Grisebach ex Baker
   T. nuptialis Braga & Sucre
   T. propezana L. Hromadnik
   T. plagiotropica Rohweder
   T. plumosa Baker
   T. pruinosa Swartz
   T. reclinata Pereira & Martinelli
   T. seideliana Pereira
   T. sprengeliana Klotzsch ex Mez
   T. streptophylla Scheidweiler ex Morren
and the remaining taxa of the genus *Tillandsia* on account of look-alike-problems.

15: Common Names: English:
French: Spanish: Clavela del aire
German: Luftnelke

16. Code Numbers:

2. Biological Data

21. **Distribution:** The genus *Tillandsia* comprises about 550 species. Their distribution ranges from the Southern USA to Argentina and Chile. A few species are widely distributed, but for the rest of the genus a high degree of endemism is characteristic. For example, of the 153 Mexican species 88 are restricted to Mexico, of the 154 Peruvian species 62 are endemic in Peru (see 22. and Appendix, table 1). Centres of diversity are located in Southern Mexico and Peru and to a certain degree in northern Argentina or the Serra de Orgaos in southern Brazil.

22. **Population:** Population data are scarce. A lot of species are endemic to southern Peru or the Serra de Orgaos in southern Brazil (see also Appendix, Fig. 1). Some species are widespread and common but for most of the species population data are not available.

The populations of the following taxa have already been depleted in a way that they have to be regarded as endangered or threatened with extinction (see also 34. and list of taxa in Appendix): *T. argentina*, *T. atrovirdipetala*, *T. balsasensis*, *T. brachyphylla*, *T. cacticolae*, *T. califanii*, *T. dexteri*, *T. edithae*, *T. ehlersiana*, *T. filifolia*, *T. fuchsii*, *T. grazielae*, *T. hildae*, *T. hondurensis*, *T. ignesiae*, *T. ionantha* var. *vanhynqii*, *T. ixioides*, *T. kamii*, *T. kautskyi*, *T. klausii*, *T. magnusiana*, *T. matudae*, *T. nuptialis*, *T. oropezana*, *T. plagiotropica*, *T. plumosa*, *T. pruinosa*, *T. reclinata*, *T. sprengeliana*, *T. sucrei*, *T. tectorum*, *T. werdermannii*, *T. xerographica*, *T. xiphioides*, *T. zecheri*

23. **Habitat:** Most of the species are epiphytic, sometimes saxicolous, rarely terrestrial. The favourite habitat of the xerophytic *Tillandsia* species with grey indumentum are dry seasonal woodlands and other semi-arid areas. The green *Tillandsia* species prefer more humid regions. Avoiding lowland rain forests they show a high diversity in cloud forests (Zizka, 1988).
31. **National Utilization and Economic Importance:** Green bromeliads have been cultivated as ornamental plants on a large scale for more than 30 years. Of the genus *Tillandsia* a few green species have been in use since then (*T. cyanea, T. flabellata, T. leiboldiana, T. lindenii*). In 1985 in Germany, some years earlier in the USA, the gray-leaved *Tillandsia* species became fashionable. These species are sold as unpretentious plants, frequently combined in bizarre arrangements (glued on wood of wine, stones, lava, shells, etc.). In the wholesale trade some 20 species are in use. On the other hand, a large demand by specialized *Tillandsia* lovers exists. In special price lists far more than 200 species in a large number of varieties are offered, rare ones exceeding prices of US$ 25.00 per plant (Read, 1989).

32. **Legal International Trade:** In most of the countries of origin, trade in the genus *Tillandsia* is not prohibited by law. So the export from Guatemala which represents the turntable of international *Tillandsia* trade, is unrestricted and legal. The amount of annual *Tillandsia* export of this country sums up to at least 160-180 t. The main importer of the *Tillandsia* species exported by Guatemala is Germany, followed by the Netherlands, France, USA and Canada.

For the years 1986 to 1988, Guatemalan export lists (Datex de Guatemala) show the following average export per month:

<table>
<thead>
<tr>
<th><em>Tillandsia</em> exports (in tons) from Guatemala to:</th>
<th>1986</th>
<th>1987</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>8.05</td>
<td>7.15</td>
<td>7.04</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1.85</td>
<td>0.59</td>
<td>2.79</td>
</tr>
<tr>
<td>USA</td>
<td>1.66</td>
<td>1.59</td>
<td>1.34</td>
</tr>
<tr>
<td>Total</td>
<td>11.37</td>
<td>13.58</td>
<td>14.13</td>
</tr>
</tbody>
</table>

33. **Illegal Trade:** Actually there is no prohibition on trade in *Tillandsia* species at an international level. Only in a few Latin American countries (see 41.) like Mexico the commercial export of wild flora is forbidden. But nevertheless in Mexico, where about 30% of all *Tillandsia* species are represented, the threat by trade is enormous. In southern Mexico (Chiapas), known for its *Tillandsia* endemics, the populations of attractive *Tillandsia* species are severely damaged by professional collectors ("planteros") from Guatemala. With hardly any control at the border, they supply Guatemalan nurseries. Additionally, the Mexican *Tillandsia* populations are exploited from the north by collectors supplying US nurseries (Ehlers, Rauh, pers. comm.).

34. **Potential Trade Threats:** The small (up to 25 cm) and xerophytic *Tillandsia* species are of highest commercial importance. The population of these species in Guatemala have already decreased in a drastic way (Rauh, 1990). On one hand this leads to an increasing interest in artificial propagation in this country. But another obvious consequence is that the populations in
the neighbouring countries, like El Salvador, Honduras and Mexico, are being more exploited than before. If this pressure continues some species like *T. xerographica* or *T. matudae* will be extinct soon.

A lot of other *Tillandsia* species with very restricted distribution areas are exposed to an additional threat: the demand produced by specialized *Tillandsia* lovers. The Serra de Orgaos, for example, near to Rio de Janeiro is known for its *Tillandsia* endemics growing "inaccessibly" on steep rocks. Recently also these localities were stripped with the help of alpinists and helicopters (Ehlers, Hromadnik, Rauh, pers. comm.).

For further information on trade impacts see taxa list in 22.

4. **Protection Status**

41. **National:** In the following Latin American countries commercial export of wild flora is prohibited: Chile, Ecuador, Dominican Republic, Guyana, Mexico, Nicaragua, Paraguay, Suriname, Uruguay and Venezuela. Apart from these general prohibitions there is no restriction on commercial collection and export of *Tillandsia* species in the source countries.

42. **International:** None.

43. **Additional Protection Needs:**

5. **Information on Similar Species**

51. **How to Recognize the Species:** *Tillandsia* is a big genus, comprising about 550 species. Every year a number of new species are described. The main characteristics for the specific determination are found in the inflorescences (Smith & Downs, 1977). However, *Tillandsia* material leaving the countries of origin is usually not in flower. Therefore, the identification of specimens is very problematic, in some cases impossible even for specialists. Further information on species resemblances are given in 22.

H. Luther (*in litt.*) lists six species as possible CITES candidates which "are fairly distinctive vegetatively and could probably be identified by non-specialists. These are: *T. carminea*, *T. fuchsii*, *T. reclinata*, *T. sprengeliana* and *T. xerographica*.

Because of these enormous difficulties in identification, the only practicable solution for protection of *Tillandsia* is the control of trade in the whole genus.

52. **How to Recognize Habitat-Collected Plants:** Characteristics of habitat-collected material, which is exported without meantime cultivation or cleaning are:

- irregular growth,
- damaged leaves (scraped indumentum!),
- if roots are present: with rests of the original substrate persistent (bark, rock chips); the rigid root system reflecting the relief of the original substrate,
- deposition of organic material in the leaf rosettes,
- remains of ant-colonization in Tillandsia species with a hollow pseudobulb.

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. Quite a common method is to collect motherplants from nature and to cultivate them for some months only for producing one generation of offsets. In this case the offsets cannot be distinguished from offsets of artificially propagated motherplants.

53. **Information on Similar Species:** A lot of species are very similar especially in vegetative state. In the list of species in the Appendix, such similar taxa are listed for each Tillandsia species.

Also, in some cases, species of the closely related genus Vriesea can be mistaken for Tillandsia species.

6. **Comments from Countries of Origin**

See Appendix.

7. **Additional Remarks**

**Possibilities of Artificial Propagation:** A lot of Tillandsia species, especially those in wholesale trade, are quite easy to propagate by seeds or offsets. There are already efforts made in artificial reproduction in Guatemala. However, at the present price level this production cannot compete with habitat-collected material on an economic scale. As a consequence, these Tillandsia nurseries are running a mixed business with habitat collecting and artificial propagation. An inclusion of Tillandsia spp. in Appendix II would encourage artificial propagation on a large scale.

8. **References**


Reitz, R. (1983): Bromeliaceae e a Malaria - Bromelia endemica (Flora Illustrada Catarinense) - Itajai, Santa Catarina, Brazil.


Other sources:

R. Ehlers (pers. comm.)

L. Hromadnik (pers. comm.)

H. Luther (in litt. to N. Marshall)

N. Marshall (in litt.)

D. E. Mora (in litt.)

W. Rauh (pers. comm.)

W. Till (in litt.)

B. Vollmer (in litt.)

Wels (pers. comm.)

WWF Germany (in litt.)
LIST OF SPECIES

In the following list, the Tillandsia species are listed that were found to be Endangered or Vulnerable (for the status assessments the IUCN threat categories have been used). The assessments are based on interviews and correspondence with Tillandsia taxonomists and experts (W. Rauh, R. Ehlers, W. Till, L. Hromadnik), tradesmen (in source and consumer countries) and public authorities. Information on similar species, distribution and the impacts of trade are also given for every species.

In the distribution field the ISO country codes are used. In the status field "E" stands for Endangered, "V" for Vulnerable.

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**Tillandsia aizoides** Gardner
Distribution: AR
Status: V
Similar species: *T. bryoides*
This small *Tillandsia* is only offered for specialists.
Nevertheless it is potentially endangered because its distribution is restricted to NW-Argentina (Rauh, pers. comm.)

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**Tillandsia argentina** C. H. Wright
Distribution: AR
Status: E
The distribution area of this grey-leaved, slowly growing species is limited to NW-Argentina. It is offered in lists for specialist growers and is considered Endangered by IUCN.

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**Tillandsia atroviridipetala** Matuda
Distribution: MX
Status: E
Similar species: *T. ignesiae, T. magnusiana, T. plumosa*
This very attractive and extremely variable small, bulbous species is regularly sold to specialist growers.

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**Tillandsia balsasensis** Rauh
Distribution: PE
Status: E
Similar species: *T. tectorum*
The cultivation of this saxicolous species with feathery scales is quite difficult. Its localities are strongly exploited by commercial collectors (Rauh, pers. comm.).

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**Tillandsia brachyphylla** Baker  
**Distribution:** BR  
**Status:** E  
The distribution of this small, grey-leaved *Tillandsia* is limited to the Serra de Orgaos. Like all saxicolous species of this region it is offered for fancy prices and is in danger of extinction (Hromadnik, Rauh, pers. comm.)

**Tillandsia bulbosa** Hooker  
**Distribution:** MX, BR, CO, EC, PE, Central America, West Indies  
**Status:** V  
**Similar species:** *T. pseudobaileyi*  
In spite of its wide distribution range, this attractive, grey-green, bulbous species is under collecting pressure (Rauh, pers. comm.). *T. bulbosa* is known to be exported in large quantities from Guatemala, Honduras and Costa Rica. It is offered as a wholesale item and forms part of almost any arrangement.

**Tillandsia butzii** Mez  
**Distribution:** MX, GT, HN, NI, PA, SV  
**Status:** V  
*T. butzii* is a grey-green, slow-growing species with a pseudobulb. There is great demand for this attractive plant on the wholesale market. Guatemala, Honduras and Costa Rica are exporting it on a large scale.

**Tillandsia cacticola** L. B. Smith  
**Distribution:** PE  
**Status:** E  
**Similar species:** *T. purpurea, T. straminea*  
This grey-leaved, attractive species is restricted to the Peruvian Andes (1,800-2,000m). One Peruvian commercial collector offers it mainly for the fancy market.

**Tillandsia califanii** Rauh  
**Distribution:** MX  
**Status:** E  
**Similar species:** *T. achyrostachys, T. makoyena*  
According to W. Rauh, *T. califanii* localities are severely exploited by Mexican and US-American commercial collectors (Rauh, pers. comm.). It is a slow-growing, rather big species (up to 80cm) which is widespread in JS nurseries.
Tillandsia caput-medusae E. Morren
Distribution: GT, MX, SV, HN, CR
Status: V
Similar species: T. paucifolia, T. pruinosa, T. seleriana
This small, bulbous Tillandsia is one of the four most heavily traded grey-leaved species in the genus. As an attractive wholesale item it is frequently used in arrangements. As a consequence of the demand and the immense exports from Guatemala, Honduras and Costa Rica the populations of this species are decreasing rapidly (Rauh, pers. comm.).

Tillandsia carminea Till
Distribution: BR
Status: E
T. carminea is one of the very endangered, saxicolous Tillandsia species of the Serra de Orgaos (Luther, Till, in litt.; Hromadnik, Rauh, pers. comm.). Offered for specialist growers it reaches prices up to US$ 18.00 each.

Tillandsia chiapensis Gardner
Distribution: MX
Status: V
Similar species: T. carlsoniae
This slender, endemic, saxicolous species is found in a lot of sales lists for enthusiasts. The populations are considered as at least vulnerable by Ehlers and Till (in litt. & pers. comm.)

Tillandsia copanensis Rauh & Rutschmann
Distribution: HN
Status: E
This rather tall Tillandsia is known only from two localities (Rauh, pers. comm.). A commercial collector in Honduras is offering it and probably going to sell 1,000 specimens of this species to the USA.

Tillandsia dexteri Luther
Distribution: CR
Status: E
According to its author T. dexteri is an attractive, odd-formed species with a very limited distribution area (Luther, in litt.). In the USA it is offered in some lists for specialist growers.
**Tillandsia edithae** Rauh  
Distribution: BO  
Status: E  
This very attractive species with grey- and green-leaved varieties is offered for fancy prices (US$13.00 each). According to its author all known populations of this species are in danger of extinction (Rauh, pers. comm.).

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**Tillandiaehtersiana** Rauh  
Distribution: MX  
Status: E  
Similar species: *T. caput-medusae*  
*T. ehlersiana* is small, grey-leaved, pseudo-bulbous and difficult in artificial propagation. The distribution of this commercially interesting plant is restricted to Chiapas. The populations undergo severe collecting pressure (US nurseries) (Ehlers, Rauh, pers. comm.).

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**Tillandsia filifolia** Schlechtendal & Chamisso  
Distribution: GT, MX, HN?, CR  
Status: E  
This small, grey-green-leaved, bulbous *Tillandsia* is a standard species in the supply of nurseries in Guatemala and Honduras. Because its propagation rate is quite low, the majority of the plants offered have to be considered as wild-collected.

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**Tillandsia fuchsii** W. Till  
Distribution: GT, MX  
Status: E  
Similar species: *T. argentea*  
Next to *T. ionantha*, *T. fuchsii* is the most important wholesale species of the genus. As "*T. argentea*", it is exported in immense quantities from Guatemala. One of the largest Guatemalan nurseries exports 5,000,000 specimens of "*T. argentea*" a year. Offered by every dealer, it is rarely missing in any arrangement. The populations are considered by Luther, Rauh and Till to be endangered.

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**Tillandsia grazielae** Sucre & Braga  
Distribution: BR  
Status: E  
*T. grazielae* is restricted to the Serra de Orgaos. It is very small, grey-leaved and difficult in cultivation. Specialist growers are especially fond of this species, paying up to US$ 26.00 each. In spite of their growing on steep walls of rock, recently some 1,000 specimens were collected with the help of alpinists and helicopters (Ehlers, Hromadnik, Rauh, pers. comm.).
Tillandsia hildae Rauh
Distribution: PE
Status: E
Similar species: Billbergia sp.
T. hildae is a very attractive, quite large species, offered only in lists for specialist growers. According to its author, the area of distribution of T. hildae is very limited and the populations are facing extinction (Rauh, pers. comm.).

Tillandsia hondurensis Rauh
Distribution: HN
Status: E
Similar species: T. harrissii
With the expansion of commercial collecting of Tillandsia species from Guatemala to Honduras, this endemic species is now already offered on a large scale. According to the author, natural populations of T. hondurensis are very small (Rauh, pers. comm.).

Tillandsia ignesiae Mez
Distribution: MX
Status: E
Similar species: T. atroviridipetala, T. magnusiana, T. plumosa
As very attractive, small, grey-leaved species T. ignesiae is regularly offered for specialist growers. Its distribution area is restricted to the oak forests of southern Mexico.

Tillandsia ionantha Planchon
Distribution: GT, MX, NI, SV, HN
Status: V
T. ionantha is the most important wholesale Tillandsia. One of the largest Guatemalan nurseries exports 15,000,000 specimens of this species annually. Without doubt T. ionantha is artificially propagated on a large scale. One reason for this is that natural populations, especially the attractive forms, were excessively depleted. Still, there is probably a great collecting pressure remaining from the demand for "mother-plants". A very narrow endemic variety is T. ionantha var. vanhynaii M. B. Foster. It is known from a single locality in Mexico and should be considered endangered (Ehlers, Rauh, pers. comm.).

Tillandsia ixooides Grisebach
Distribution: AR, BO, PY, UY
Status: E
Similar species: T. didisticha, T. meridionales
This small, grey-leaved species is easily artificially propagated. Nevertheless, the natural populations of T. ixooides are still exploited by Argentine commercial collectors (Rauh, pers. comm.).
**Tillandsia kammii** Rauh
Distribution: HN
Status: E
Like *T. hondurensis* this endemic species is suffering from the extension of commercial *Tillandsia* collection from Guatemala to neighbouring countries. Not yet frequent on the international market, the wild populations of this small, grey-leaved species are already endangered (Rauh, pers. comm.).

**Tillandsia kautskyi** Pereira
Distribution: BR
Status: E
Similar species: *T. sprengeliana*
*T. kautskyi* is a very small and attractive, grey-leaved species with a pseudo-bulb. It is offered by special dealers with fancy prices up to US$ 20.00 each. In Brazil it is narrow endemic and under severe collecting pressure (recently offered for US$ 0.80 by a Brazilian orchid nursery).

**Tillandsia klausii** Ehlers
Distribution: MX
Status: E
Recently described, this small, grey-leaved, bulbous species is in danger of extinction. The main factor of threat is habitat destruction. But besides this *T. klausii* is a commercially interesting species, although offered in a few fancy lists (Ehlers, pers. comm.).

**Tillandsia magnusiana** Wittmack
Distribution: GT, MX, NI, SV, HN
Status: E
Similar species: *T. atroviridipetala, T. ignesiae, T. plumosa*
This small, grey-leaved, pseudo-bulbous *Tillandsia* is a wholesale species, frequently used in arrangements. Actually it has a wide distribution range. However, because of high collecting pressure, the populations in Guatemala have nearly completely vanished. As a consequence *T. magnusiana* is stripped by Guatemalan commercial collectors on a large scale in Mexico now (Rauh, pers. comm.). Also a nursery in Honduras is exporting this species in large quantities.

**Tillandsia matudae** L. B. Smith
Distribution: GT, MX
Status: E
Similar species: *T. feldhoffii, T. oaxacana, T. velickiana*
*T. matudae* is an attractive, grey-leaved species, very common in wholesale and fancy lists. Like *T. magnusiana*, this plant is over-collected in Guatemala. As a consequence Guatemalan commercial collectors started to exploit the Mexican population (Rauh, pers. comm.).
**Tillandsia mauryana** L. B. Smith  
Distribution: MX  
Status: V  
This very attractive, saxicolous Tillandsia is regularly offered in a lot of lists for specialist growers. Its populations are restricted to Central Mexico and potentially threatened by trade (Rauh, pers. comm.; Till, *in litt.*).

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**Tillandsia muhrii** Rauh  
Distribution: AR  
Status: V  
*T. muhrii* is a small, grey-leaved, saxicolous Tillandsia, which is offered in lists for specialist growers. According to the author of this species the wild populations are narrow endemic and exploited by Argentine commercial collectors (Rauh, pers. comm.; Till, *in litt.*).

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**Tillandsia myosura** Grisebach ex Baker  
Distribution: AR, BO, PE, UY  
Status: V  
In spite of its rather wide distribution range, the populations of this small, grey-leaved Tillandsia are considered vulnerable (Rauh, pers. comm.). Especially in Argentina it is collected commercially and offered exclusively for specialist growers.

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**Tillandsia nuptialis** Braga & Sucre  
Distribution: BR  
Status: E  
Similar species: *T. stricta*  
This saxicolous, grey-leaved Tillandsia is endemic to Brazil. Suffering severely from habitat destruction it is facing extinction (Ehlers, Hromadnik, pers. comm.). Additionally it is offered in lists for specialist growers.

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**Tillandsia oropezana** L. Hromadnik  
Distribution: BO  
Status: E  
According to the author of this species it is endemic to a small area in Bolivia. Only a short time after the description it was offered by a Peruvian commercial collector (Hromadnik, pers. comm.).
**Tillandsia plagiotropica** Rohweder
Distribution: SV, GT?
Status: E
This small, epiphytic, grey-leaved *Tillandsia* is offered on a large scale. *T. plagiotropica*, being endemic to El Salvador and perhaps small parts of Guatemala, is exclusively exported from Guatemala. Because of the combination of clearing and intensive collecting this *Tillandsia* is considered nearly extinct (Wels, pers. comm.). Only a few inaccessible populations in El Salvador remain (Vollmer, pers. comm.).

**Tillandsia plumosa** Baker
Distribution: MX
Status: E
Similar species: *T. atroviridipetala, T. ignesiae, T. magnusiana*
With a limited area of distribution north of Oaxaca the populations of this very attractive, small, grey-leaved *Tillandsia* are endangered (Rauh, pers. comm.). *T. plumosa* is regularly offered in a lot of lists for enthusiasts.

**Tillandsia pruinosa** Swartz
Distribution: BO, BR, CO, CR, CU, DO, EC, GT, JM, MX, SV, US
Status: E
Similar species: *T. caput-medusae, T. paucifolia, T. seleriana*
Although rather widespread, the localities of the quite sensitive *T. pruinosa* are diminishing rapidly. One reason may be the decrease of atmospheric humidity caused by clearing (Hromadnik, pers. comm.). The other one is the excessive demand by nurseries (Rauh, pers. comm.). *T. pruinosa* is a small, grey-leaved species with a pseudo-bulb, frequently sold as a wholesale item.

**Tillandsia reclinata** Pereira & Martinelli
Distribution: BR
Status: E
Similar species: *T. grazielae*
Specialist growers pay more than US$ 20.00 for each specimen of this plant, which is said to be extremely difficult in cultivation. *T. reclinata* is one of the very narrow endemic, saxicolous species of the Serra de Orgaos (Luther, in litt.). Recently some 1,000 *T. reclinata* were stripped by a Brazilian orchid nursery (Ehlers, Hromadnik, pers. comm.).
**Tillandsia seideliana** Pereira  
**Distribution:** BR  
**Status:** V  
**Similar species:** *T. stricta*  
The distribution of this very attractive, grey-leaved *Tillandsia* is restricted to a small area in Santa Catarina (Reitz, 1983). It is offered on a large scale by a Brazilian orchid nursery.

**Tillandsia sprengeliana** Klotzsch ex Mez  
**Distribution:** BR  
**Status:** E  
Due to habitat loss this very attractive, narrow endemic *Tillandsia* is facing extinction (Ehler, pers. comm.; Luther, *in litt.*). On the fancy market up to US$ 21.00 is paid for a single specimen of this grey species.

**Tillandsia streptophylla** Scheidweiler ex Morren  
**Distribution:** GT, MX, JM, HN  
**Status:** V  
This grey-leaved, pseudo-bulbous species is offered on the wholesale market, often as quite big specimens. Formerly widespread, the populations have suffered from collecting pressure (Rauh, Wels, pers. comm.)

**Tillandsia sucrei** Pereira  
**Distribution:** BR  
**Status:** E  
The distribution of *T. sucrei*, a small, grey, saxicolous species, is limited to the urban district of Rio de Janeiro. These populations are extremely threatened (Hromadnik, Rauh, pers. comm.) because specialist growers are very keen on this attractive species, paying up to US$ 15.00 for each specimen. A Brazilian orchid nursery offers it for US$ 1.00 each (artificial propagation for this price is impossible).

**Tillandsia tectorum** E. Morren  
**Distribution:** EC, PE  
**Status:** E  
*T. tectorum* is a variable complex of mostly yet undescribed subspecies. Formerly widespread in Peru and some parts of Ecuador, especially attractive forms of this species (e.g. the Ecuadorian ones) are facing extinction (Ehlers, Rauh, pers. comm.). *T. tectorum* is in stock at nearly every *Tillandsia* dealer and exported from Peru in large quantities.
Tillandsia velickiana L. B. Smith
Distribution: GT
Status: V
Similar species: T. feldhoffii, T. matudae, T. oaxacana
The distribution of this very small, grey-leaved Tillandsia is restricted to Guatemala. It is offered mainly for specialist growers.

Tillandsia werdermannii Harms
Distribution: CL, PE
Status: E
According to IUCN the populations of this grey-leaved species are endangered. The main reason for its threat is probably a climatic change in its habitat, the coastal deserts. Additionally a Peruvian commercial collector offers them on a large scale.

Tillandsia xerographica Rohweder
Distribution: GT, MX, SV
Status: E
This very attractive, slow-growing Tillandsia is the most popular example for extreme threat by trade. It is offered in large quantities, frequently in quite big, flowering specimens. T. xerographica takes 12-18 years to mature! The populations in Guatemala and in El Salvador are totally depleted by Guatemalan commercial collectors (Rauh, pers. comm.; Vollmer, in litt.). The Mexican form of T. xerographica is not as attractive as the former ones. As a consequence in southern Mexico some populations still exist (Hromadnik, pers. comm.). One of the big Guatemalan nurseries is exporting 30-40,000 specimens of T. xerographica annually. Because of the slow growth rate, exclusive artificial propagation seems unlikely.

Tillandsia xiphioide Ker-Gawler
Distribution: AR, BO, BR, PY
Status: E
Both varieties of this very attractive, small grey-leaved Tillandsia species are offered in nearly every list for specialist growers. Especially in Argentina, its populations are exploited by commercial collectors (Rauh, pers. comm.; Till, in litt.).

Tillandsia zecheri Till
Distribution: AR
Status: E
The author of this species considers it as endangered (Till, in litt.). Commercial collectors visit localities especially for this species (Hromadnik, pers. comm.). It is offered exclusively for specialist growers.
Appendix

<table>
<thead>
<tr>
<th>Category</th>
<th>PE</th>
<th>MX</th>
<th>GT</th>
<th>BR</th>
<th>AR</th>
<th>HN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species Number</td>
<td>154</td>
<td>153</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>47</td>
</tr>
<tr>
<td>Endemic Species</td>
<td>62</td>
<td>88</td>
<td>62</td>
<td>24</td>
<td>54</td>
<td>47</td>
</tr>
<tr>
<td>Rare Species &amp; Species with Indeterminate State of Threat</td>
<td>7</td>
<td>18</td>
<td>5</td>
<td>12</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Endangered &amp; Vulnerable Species</td>
<td>11</td>
<td>10</td>
<td>19</td>
<td>25</td>
<td>25</td>
<td>11</td>
</tr>
</tbody>
</table>

Legend:
- SPECIES NUMBER
- ENDEMIC SPECIES
- RARE SPECIES & SPECIES WITH INDETERMINATE STATE OF THREAT
- ENDANGERED & VULNERABLE SPECIES

FLORA (1)
MINISTERIO DE AGRICULTURA
SERVICIO AGRICOLA Y GANADERO

Santiago, 10.5.1991.

Dr. Blanke
Head of Scientific Authority
CITES
Adickesalles 40
6000 Frankfurt Am Main
Germany

Estimado Dr. Branke:

El Servicio Agrícola y Ganadero ha visto con agrado la propuesta de considerar a una serie de especies del género Tillandsia dentro del Apéndice II de la Convención CITES.

En Chile existen 5 especies, una de ellas aún no descrita. Ninguna de dichas especies aparece en el listado que Uds. han elaborado. Desearíamos saber si las especies chilenas podrían ser incluidas en la lista, ya que, ellas son consideradas vulnerables por los especialistas nacionales.

Las especies que viven en Chile son:

1.- T. capillaris
2.- T. geissei
3.- T. landbeckii
4.- T. usneoides
5.- T. sp. (En diciembre de 1988 se ha encontrado una nueva especie en la localidad chilena de Paposo, II Región, 1.800 Km. al Norte de Santiago).

Todas las especies de este género que habitan en Chile viven en áreas muy reducidas del desierto costero y en ecosistemas muy frágiles. La regulación de su comercio por medio del convenio CITES, resultaría importante para su protección.

Esperando haber respondido a su consulta, lo saluda atentamente.

AIW/pac
cc: Diporren
Dear Dr. Blanke:

This letter is to express the support of the office CITES-PARAGUAY concerning the proposal to include the genus Tillandsia on Appendix II of CITES.

We have no comments on items 3.1, 3.2 or 4.1 other than to express our agreement. Placing this genus on Appendix II, along with several legislations recently passed or currently under review by the Paraguayan Parliament, will allow the office of CITES-Paraguay to better control the traffic of this genus, as well as control breeding programs and initiate the studies necessary to: 1) determine the extent of the trade in Paraguay, and 2) help determine the taxonomic status of the species found in Paraguay.

If you have any further questions, please feel free to contact me at the number below.

Aida Luz Aquino-Shuster
Scientific Authority
CITES-Paraguay
Tel: (595-21) 497074
FAX: (595-21) 497074

c.c.: Archives CITES-PY
Dr. Blanke  
Autoridad Científica de CITES  
Bundesamt fur Ernährung und 
forstwirtschaft  
Alemania

Estimado señor:

En respuesta a carta y copia de propuesta a presentar por ustedes sobre la inclusión de algunas bromelias y tillandisias en la próxima convención a celebrarse en April, Tokio 1992, le aportamos los siguientes comentarios en los puntos por usted solicitados.

3.1 En Costa Rica se comercian actualmente las siguientes especies.

- Tillandsia bulbosa
- Tillandsia caput medusa
- Tillandsia usneoides
- Tillandsia brachycaulos
- Tillandsia fasciculata
- Tillandsia xerográfica
- Tillandsia ionantha
- Tillandsia juncea
- Tillandsia tricolor
- Tillandsia punctulata
- Tillandsia cirrhata
- Tillandsia shiedeana

Estas son reproducidas por medio vegetativo, estimulación de hormonas. Los viveros reproductores se encuentran debidamente inscritos y son supervisados por las Autoridades Científicas y Administrativa de CITES.

MINISTERIO DE RECURSOS NATURALES, ENERGÍA Y MINAS
DIRECCIÓN GENERAL FORESTAL

3.2 En nuestro país la comercialización internacional de enero a agosto de 1991 por país fue:

<table>
<thead>
<tr>
<th>PAÍS</th>
<th>TOTAL TILLANDSIAS EXPORTADAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alemania</td>
<td>23751</td>
</tr>
<tr>
<td>USA</td>
<td>23079</td>
</tr>
<tr>
<td>Suiza</td>
<td>21912</td>
</tr>
<tr>
<td>Holanda</td>
<td>19105</td>
</tr>
<tr>
<td>Japón</td>
<td>2100</td>
</tr>
<tr>
<td>Taiwán</td>
<td>100</td>
</tr>
<tr>
<td>Bélgica</td>
<td>2870</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>94917</strong></td>
</tr>
</tbody>
</table>

4.1 A principios de enero de 1990 se atendieron varios inversionistas con interés de conocer los trámites para la colecta y exportación de Tillandsias, por lo que nos avocamos a crear un decreto para la exportación de plantas de vida silvestre de lo cual se le adjunta copia.

Atentamente,

[Signature]

Sandra Ma. Arrate Castro
AUTORIDAD ADMINISTRATIVA FLORA CITES

SMAC/mcva

c: Archivo

APARTADO POSTAL 8-5810-1000 SAN JOSE - TELEFONO: 21-9533