

## CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

**Other proposals**A. Proposal

Transfer from Appendix II to Appendix I of the Argentine population of monkey puzzle tree (*Araucaria araucana*), in accordance with the criteria specified in Resolution Conf. 9.24.

B. Proponent

Argentina

C. Supporting Statement1. Taxonomy

- |                         |  |
|-------------------------|--|
| 1.1 Class:              | Coniferopsida  |
| 1.2 Order:              | Coniferales  |
| 1.3 Family:             | Araucariaceae  |
| 1.4 Genus, species:     | <i>Araucaria araucana</i> (Molina) K. Koch   |
| 1.5 Scientific synonyms | <i>Araucaria imbricata</i> Ruiz and Pavón<br><i>Pinus araucanax</i> Molina   |
| 1.6 Common names:       | English: Monkey puzzle tree, Chilean pine, Parana pine<br>French: Pin du Chili<br>Spanish: Pehuén, araucaria, araucaria de Neuquén, pino de Neuquén, pino hachado, pino solo |

2. Biological Parameters

- 2.1, 2.2,  
2.3 Distribution, Habitat availability, Population status

In Argentina, monkey puzzle forests are found in a narrow strip along the border with Chile in the province of Neuquén approximately between Lake Aluminé and Lake Lolog. The total north-south length of the area is more than 200 kilometres. The most important forests are 30 to 50 kilometres wide and 150 kilometres long, between the two lakes mentioned. The monkey puzzle tree is found in Argentina in humid depressions in association with *Nothofagus dombeyii*, *N. obliqua*, *N. procer* and *N. pumilio*. Farther east, it is associated with *Austrocedrus chilensis*. The distribution of this species in Argentina extends from 37° 43' to 40° 23' south latitude. To the east on the Patagonian steppe, the farthest specimens are found in the locality of Primeros Pinos.

A rather large population, which is well known to Argentine botanists, is found in Pino Hachado (38° 30' south latitude). Farther south, on the shore of Lake Nahuel-Huapi, there are isolated monkey puzzle trees with considerable regeneration. The altitudinal limitation of these forests ranges between 600 and 1800 metres in altitude. The presence of this species on the shore of Lake Nahuel-Huapi, located at a considerable distance from Lake Lácar (approximately 75 kilometres in a straight line), on the shore of which there are still important stands, leads us to believe that in the forests still poorly known and of difficult access between these lakes, there could be other monkey puzzle tree forests.

Outside these areas, several isolated stands are found on the neighbouring Patagonian steppe. They are probably remnants of an earlier, wider distribution.

Most of the populations of this species are protected, especially in the Lanín and Nahuel-Huapi national parks.

2.4 and

## 2.5 Population and geographic trends

Although no population data exists, it could be said that in light of the atrophic activities being carried out near the protected areas where these forests are found and in light of fires that have occurred there during the past few years, in most cases intentional, it is suspected that the area of distribution and some populations have been significantly reduced. In addition, because of the traditional gathering of seeds for subsistence and sale, the regenerative capacity of the populations of monkey puzzle tree has probably decreased in some areas, affecting the quality of the stands.

## 2.6 Role of the species in its ecosystem

In Argentina, the monkey puzzle tree is the main arboreal component of the area north of the sub-Antarctic forests. In this sector, it forms Andean forests, growing in pure stands associated primarily with Fagaceae of the genus *Nothofagus* (*N. lenga* and *N. coihue*).

The production of seeds of this species has been and continues to be an important resource for the indigenous population in the area and, because of the important nutritional properties of the seeds rich in carbohydrates, they play an important role in the ecosystem's food chain.

## 2.7 Threats

With reference to the criteria listed in Annex 1 of Resolution Conf. 9.24, (Biological Criteria for Appendix I), the Argentine populations of monkey puzzle tree meet at least two of the criteria laid out in section B of that Annex.

The wild population in question has a limited area of distribution and presents the following characteristics of those mentioned in section A, paragraph iv) of Annex 1:

- **A decrease in distribution:** In the areas outside the jurisdiction of the Sistema Nacional de Areas Protegidas (national parks), wood of this species is used locally for construction and the manufacture of furniture. In addition, some areas of monkey puzzle tree forests are used for reforestation with pines.

- **Decrease in reproductivity capacity:** The seeds of this species are collected with provincial and national park permits by local inhabitants for use as food and as handicrafts. Several attempts to export hundreds of kilos of seeds have been detected, contrary to provincial and national regulations (see section on illegal trade). These shipments were destined for European nurseries for production of ornamental plants.

Outside of the Parque Nacional Lanín and along its northern border near the settlements of Moquehue and Aluminé up to the town of Primeros Pinos, populations of *Araucaria araucana* are not protected. Their seeds are gathered by local inhabitants and tourists, and even very old specimens are cut down to expand areas for commercial purposes (for example, hotels and camp sites). Commercial exploitation is compounded by the fact that this region forms part of a very popular tourist circuit during the summer season.

Steps have been taken to limit exploitation in order to prevent any decrease in the natural regeneration of these forests (see section on national legislation).

The monkey puzzle tree has been intensively exploited for its high-quality wood by the owners of saw mills near these forests, who have not hesitated to cut specimens that were growing in reserves of the Parque Nacional Lanín, alleging the presence of disease caused by mushrooms (unconfirmed data) that required the cutting of the diseased specimens in order to stop the

spread of the disease. The Ley Forestal 1890 of the province of Neuquén states that "authorization may be given for the cutting of diseased specimens, specimens beyond maturity or those affected by fire, only after submission of a technical report prepared by the forestry service justifying this step and its acceptance."

The monkey puzzle tree is a slow-growing species, and its seeds, called "piñones," are protected by scaled carpels, which need between one and a half to two years to mature.

Taking into account what is mentioned in the previous paragraphs, conservation measures should be tightened, primarily in order to ensure the regenerative capacity of these forests, through the permanence of the seeds in the forest soil.

### 3. Utilization and Trade

#### 3.1 National utilization

**Timber:** This species provides light, soft, medium-weight wood (specific weight: 0.600 kg/dm<sup>3</sup>). It is of excellent quality, with whitish-yellow sapwood and heartwood; although the heartwood is more reddish. In the longitudinal axis, there is light grain. It is used for lumber, flooring, paper pulp and masts.

**Ornamental:** It is a highly valued ornamental species of outstanding beauty, although it is grown very little in Argentina (some cultivated specimens can be seen in the province of Buenos Aires) in comparison to the United States of America and the United Kingdom.

**Medicinal:** The bark secretes a resin used in folk medicine.

**Food source:** The seeds are very rich in carbohydrates and proteins and were once an essential part of the diet of the indigenous people living in this area. These people were called the *pehuenches* or the "monkey-puzzle-tree people." Today, the seeds are still eaten by local inhabitants, both the indigenous people and settlers. The seeds are boiled or roasted, and their taste is similar to that of chestnuts.

#### 3.2 Legal international trade

At the present time, there is no international trade in timber of this species from Argentina. According to data provided by WCMC, between 1990 and 1997 there were several recorded exports from Chile, apparently owing to an incorrect interpretation of the listing of timber, seeds and live specimens of this species in the CITES Appendices.

#### 3.3 Illegal trade

**Seeds:** An important volume of trade in monkey puzzle seeds has been identified. The largest shipment (600 kg of seeds) was confiscated during 1998 by staff of the Policía Aeronáutica Nacional, because at the time of loading for shipment to Belgium shipping documents were missing.

### 4. Conservation and Management

#### 4.1 Legal status

##### 4.1.1 National

Given that Argentina has a federal political structure, regulations covering the management and conservation of natural resources are determined both at the national and provincial levels.

1948 - National law 13.273 on conservation of forestry resources, passed on 25 September 1948, declares of public interest the protection, improvement and expansion of forests. It stipulates the exercise of rights to forests and public or private land with forests of both parts and derivatives.

1991 - Forestry law 1890 of the province of Neuquén declares of provincial interest the wise use, protection, improvement, enrichment, expansion and use of forestry resources. It makes provision for primal forests held as private property, natural public forests and protection of the species *Araucaria araucana*.

1996 - Disposition 391/96 of the province of Neuquén updates quotas and other provisions.

1998 - Disposition 91/98 of the province of Neuquén establishes a season for the gathering of monkey puzzle seeds and regulates the conditions under which this may be done.

#### 4.1.2 International

Argentina ratified CITES in 1982 through Law 22.344.

At the present time, the Argentine populations of this species are listed in CITES Appendix II. For this reason, the seeds are exempt from regulation, in accordance with Article 1, paragraph B, subparagraph iii) of the Convention, Resolution Conf. 4.24 and Resolution Conf. 6.18. Annotation #4 to the CITES Appendices designates all parts and derivatives, except seeds and pollen. The Chilean populations of this species are listed in CITES Appendix I.

Convention on Biodiversity: Argentina ratified the 1992 Convention on Biodiversity with Law 24.375. The objectives of this Convention, according to Article 1, are the conservation of biodiversity, the sustainable use of the environment and just and equitable participation in the benefits derived from the use of genetic resources, through reasonable access to resources and appropriate technologies.

#### 5. Information on similar species

*Araucaria angustifolia* (Bert.) O. Kuntze (Parana pine or Brazilian pine), another species in this genus, occurs in northern Argentina in the phytogeographic province of the Parana forest (province of Misiones), on the Brazilian plateau and in Paraguay. Although this is a similar species, its area of distribution is very different, being separated by about 2000 kilometres from the *Araucaria araucana*.

This species is not listed in the CITES Appendices and at the present time there is trade in timber from plantations in both Argentina and Brazil.

#### 6. Other Comments

Because the population in the country (Chile) sharing distribution of this species is listed in Appendix I, it is not necessary to ask that country for comments on this proposal.

Nonetheless, inclusion of this species in Appendix I will unify the protection status of this species, avoiding the double listing that has prevailed to the present: Appendix I (Chile) and Appendix II (Argentina). Harmonization should contribute to better protection of this species. In addition, it should be possible to restrict international trade in seeds, for which there is significant demand.

It should be pointed out that in the particular case of the *Araucaria araucana*, the seeds are conspicuous, of rather large size and, as a result, easily identifiable.

#### 8. References

Erize, F. 1997. El Nuevo Libro del Arbol. Ed. El Ateneo, Madrid, España. 1: 120 pp.

Santos Biloni, J. 1990. Arboles Autóctonos Argentinos. Tipográfica Editora Argentina, Buenos Aires. 335 pp.

Hueck, K. 1978. Los Bosques de Sudamérica. Sociedad Alemana de cooperación Técnica (GTZ). 476 pp.