

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

First meeting of the Mahogany Working Group
Santa Cruz de la Sierra (Bolivia), 3-5 October 2001

National reports

COSTA RICA

1. Document prepared by the Management and Scientific Authorities of Costa Rica.

MINISTERIO DE AMBIENTE Y ENERGÍA
SISTEMA NACIONAL DE AREAS DE CONSERVACION

REPORT ON THE STATUS OF THE BIGLEAF MAHOGANY
(*SWITENIA MACROPHYLLA* KING) IN COSTA RICA, AUGUST 2001

Prepared by the CITES Management and Scientific Authorities for plants

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I BACKGROUND

In 1990, the CITES Management Authority for Plants for Costa Rica, at that time the *Ministerio de Agricultura y Ganadería* (Ministry for Agriculture and Livestock), and the CITES Scientific Authority for Costa Rica, the *Colegio de Biólogos* (Association of Biologists), prepared a proposal for listing mahogany *Swietenia macrophylla* King in Appendix II.

The proposal was drafted for submission at the ninth meeting of the Conference of the Parties to CITES, held in Kyoto in 1992, in order to protect this species in its area of distribution because of heavy international commercial demand leading to indiscriminate extraction and the resulting destruction of the forest habitat of a large number of species of wild fauna and flora through changes in land use, primarily for conversion to agriculture. This proposal was withdrawn at that meeting because of international political pressure exerted at the last moment.

The Costa Rican proposal sought to list *S. macrophylla* in Appendix II so that mahogany could be traded internationally only if it were cut in managed natural forests, with a ban on the export of logs but with provisions for the export of sawn timber, veneer and handicrafts.

In November 1994 during the 10th meeting of the Conference of the Parties (Fort Lauderdale, United States), the Netherlands presented a new proposal for listing mahogany (*Swietenia macrophylla* King) in Appendix II, which was not approved for lack of accurate data on trade. Because of this, Costa Rica argued at that time for inclusion of that species in Appendix III, given that Costa Rica is among the countries with a natural area of distribution of this species. That listing entered into force on 16 November 1995, thus obligating all countries in the area of natural distribution of this species to issue certificates of origin and contributing to the gathering of accurate data on international trade of this species from then on. Today, Bolivia, Brazil and Mexico have followed suit, listing their natural populations in Appendix III.

It is important to remember that *Swietenia humilis* was included in Appendix II in 1975 because its natural populations were endangered by an increase in international trade. The same circumstances led to the listing of *Swietenia mahagoni* in Appendix II in 1992 (Kyoto).

II GENERAL DESCRIPTION OF *Swietenia macrophylla* King

1. THE TREE

The tree grows to a height of approximately 30-40 metres and 60-80 centimetres DBH (diameter at breast height), usually with an open crown and extended branches, sometimes forming a thick crown with a trunk that has branches low on the trunk with broken grey-to-reddish-brown bark that peels in small pieces. The leaves are paripinnate, alternate, 16-30

centimetres long, and there are 3-6 pairs of opposite or sub-opposite, oblong to lanceolate-oblong follicles, 8-18 centimetres long and 3-5.5 centimetres wide and winged sub-terminal inflorescence 10-20 centimetres long. The flowers are yellowish white with erect elongated to elongated oval, greyish brown woody fruit capsules, 10-22 centimetres long and 6-10 centimetres wide. The shiny brown seeds are 7.5-12 centimetres long including the wing (Jiménez 1999).

2. NATURAL DISTRIBUTION

In Costa Rica, mahogany grows primarily in the dry tropical forest in the province of Guanacaste. It also grows in areas of transition between the wet and dry forests in the provinces of Puntarenas and San José, specifically in several cantons of the Central Pacific, such as Esparza, Orotina and Turrubares, plus along the Candelaria River between Puriscal and Acosta. In addition, it grows in the northern part of the country (Upala and Los Chiles) (Jiménez 1999).

3. ECOLOGY

A heliophyte characteristic of the dry forests and only occasionally found in wet forest, it usually grows in medium fertile soils with temperatures above 30° C and annual precipitation between 1500-3000 millimetres. It now grows in low deciduous forest, usually in secondary forest because most of the primary forest in the province of Guanacaste was exploited several decades ago. In addition, it grows in scrubland, on the edges of forest or at sites used for grazing (Jiménez 1999).

4. REPRODUCTION

In the Guanacaste conservation area, the *Proyecto de Restauración de Masas Arbóreas (Wood Restoration Project)* has planted seeds in a plant nursery, obtaining more than 90 per cent germination. Because it is a species attacked, like most of the Meliaceae, by the borer *Hypsiphyla grandella*, it is not used in forestation programmes in Costa Rica. Only in isolated cases are small plantations known to be carrying out improvement programmes in secondary forests, some of which have been successful, because until now they have not been attacked by the borer (Jiménez 1999).

III STATUS OF THE NATURAL MAHOGANY POPULATION IN COSTA RICA

According to Jiménez (1999), it is an endangered species, and furthermore, the use of its wood has been prohibited through MINAE executive decree number 25700 of January 1997.

Its population has greatly decreased because of overexploitation during the past. In addition, its populations are very fragmented, which considerably reduces its genetic variability.

Even though sufficient young plants are found in nature, these are attacked by the borer *Hypsiphyla grandella*, primarily new growth, sometimes causing them to die.

This species is protected in the Guanacaste Conservation Area (Santa Rosa National Park, Guanacaste National Park), the Tempisque Conservation Area (Biological Reserve Lomas Barbudal and the Palo Verde National Park), Central Pacific Conservation Area (Caño Negro Wildlife Refuge) and La Pacifica Ecological Centre.

The *Centro Agronómico Tropical de Investigación y Enseñanza (CATIE, Tropical Agricultural Research and Education Centre)* is carrying out DNA studies with genetic markers in order to evaluate possible hybridization of the two species in this region. This study is being made at the level of all the neotropical region.

IV PLANTATIONS

The area of plantations of *Swietenia macrophylla* King in Costa Rica is approximately 50 hectares, distributed in mixed plantations with native species, which are located in several regions, including the Pacífico Norte, Huetar Norte, Pacífico Central and Atlántica (Turrialba and Guápiles).

V DOMESTIC TRADE

In Costa Rica, small-scale trade in *S. macrophylla* exists, primarily of timber used mainly for handicrafts and that was cut before the imposition of a ban in 1997. There are reports of imports of wood from Nicaragua.

VI NATIONAL MANAGEMENT PLANS AND RECOVERY PROGRAMMES

There is no national management plan. Isolated measures are taken in several conservation areas.

VII JUSTIFICATION FOR THE COSTA RICAN PROPOSAL FOR INCLUSION OF THE BIGLEAF MAHOGANY (*S. macrophylla*) IN APPENDIX III

Demand on the international market for mahogany has led to substantial reduction of the wild populations of the three species in this genus to the point that they are considered endangered species.

Currently, there is uncertainty about the taxonomy of this genus because of possible hybridization among the species, which has been confirmed by Helgason et al. (1996) and Pennington (personal communication), specialists in Meliaceae, who at least for Costa Rica make no distinction between *S. humilis* and *S. macrophylla*.

From the point of view of wood anatomy, it is difficult to correctly identify the species of mahogany in tropical America, which, in turn, makes illegal trade of the species already listed in the CITES Appendices possible.

Furthermore, most of the countries in the specie's area of distribution have included their natural populations in Appendix III.

VIII ADVANTAGES OF LISTING THE SPECIES IN APPENDIX II

- Improvement in the monitoring and control of international trade in this species;
- Promotion of the sustainable management of natural forest, preventing any decrease in species of wild fauna and flora;
- Prevention of the genetic decline of this species, such as was the case for *S. mahagoni*;
- Improvement of the market for products through the use of forest certification.

IX RECOMMENDATIONS

It is proposed that the CITES Secretariat organize a workshop of specialists on the genetics, dendrology, taxonomy and wood properties in the area of distribution of the species in order to establish criteria for its identification.

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