



Forestry Department

Food and Agriculture Organization of the United Nations

**GLOBAL FOREST RESOURCES
ASSESSMENT 2005**

**THREATENED, ENDANGERED AND
VULNERABLE TREE SPECIES:
A COMPARISON BETWEEN FRA
2005 AND THE IUCN RED LIST**

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The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. The Global Forest Resources Assessment 2005 (FRA 2005) is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site (www.fao.org/forestry/fra2005).

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1 Introduction

The main report of the Global Forest Resources Assessment 2005 (FRA 2005) was published in 2006 (<http://www.fao.org/forestry/site/fra2005/en>). The FRA 2005 covers status and trends for about 40 variables related to forests and forestry. As part of the FRA 2005, FAO requested countries to provide information on total number of identified native forest tree¹ species and forest tree species considered threatened. Precise status categories were suggested for the terms “Critically endangered”, “Endangered” and “Vulnerable”, using the ranking system of the IUCN red list categories and criteria.

The categories listed above were adopted by IUCN in 1994 and have since then become an internationally recognized standard for classifying endangered species. The “red lists” maintained by IUCN include all plants but for the purpose of FRA 2005, countries were asked to report only on number of native forest tree species. When/if national data on endangered tree species were different from the IUCN list, the countries were asked to provide the national list of endangered tree species in the appropriate comment section in the country report. The country reports can be found at: <http://www.fao.org/forestry/site/28701/en>.

The purpose of this working paper is to compare national lists of endangered species with the IUCN Red List.

2 Findings

Information on vulnerable, endangered and critically endangered forest trees was provided by 192 countries out of 229 countries and areas included in FRA. Information was missing primarily from some of the smaller Pacific and Caribbean islands and some countries in Western and Central Africa. Nevertheless, 57 countries and areas reported discrepancies with the IUCN list (see Annex 1). In some cases information provided by countries also included non-tree species with the aim of enriching and integrating information for other reporting processes.

Region	Number of countries presenting differences with the IUCN red List
Africa	16
Asia	16
Europe	15
North and Central America	6
Oceania	1
South America	3
Total	57

Table 1: Number of countries by region having national information on threatened species which differed from the information provided by IUCN

¹ The definition of a “Tree” used in FRA is “A woody perennial with a single main stem, or in the case of coppice with several stems, having a more or less definite crown”. A tree should under normal conditions be able to reach a height of 5 metres at maturity. For the purpose of the Global Forest Resources Assessment, the term tree includes bamboos, palms and other woody plants meeting the above criteria.

3 Conclusions

FAO has always recognized the importance of international efforts on harmonizing forest related definitions and information requirements of various international processes that will contribute to reduce the reporting burden of countries. In FRA 2005 the IUCN figures were used for display in the report but countries were encouraged to provide national lists of endangered species with the aim to generate a possibility to integrate this information, whenever possible, and to harmonize national and international lists with new and updated information.

Annex 1

Number of critically endangered, endangered and vulnerable forest tree species based on national reports - where these differ from the IUCN Red List

AFRICA

Algeria

The IUCN Red List refers to 1 **vulnerable species** which is the *Abies numidica*, while at national level, the country report mentions in a comment also the following vulnerable species:

Juglans regia (Noyers), *Castanea sativa* (Châtaigniers), *Carya* spp (Pacancier), *Persea gratissima* (Avocatiers), *Punica granatum* (Grenadiers), *Prunus avium* (Cerisiers).

Burkina Faso

The country report lists the following species not mentioned by the IUCN Red List:

Critically endangered: *Celtis integrifolia*, *Adenium obesum*

Endangered: *Acacia senegal*, *Dalbergia melanoxylon*, *Pterocarpus lucens*, *Vitex doniana*, *Ximenia americana*

Vulnerable: *Adansonia digitata*, *Bombax costatum*, *Ceiba pentandra*, *Anogeissus leiocarpus*, *Prosopis africana*, *Parkia biglobosa* and *Vitellaria paradoxa*.

Congo

Congo did not want to refer to the IUCN list arguing that no national surveys have been carried out so far to validate the IUCN information.

Chad

The IUCN Red List reports 2 vulnerable species, whereas at national level, the country report lists the following:

Critically endangered : *Borassus aethiopum*, *Anogeissus leiocarpus*, *Acacia nilotica*

Endangered : *Acacia seyal*, *Bulyrospermum parkii*, *Combretum* sp, *Khaya senegalensis*, *Prosopis africana*, *Salvadora persica*, *Terminalia* sp., *Acacia sieberiana*, *Piliostigma riticulatum*

Vulnerable: *Ziziphus* sp., *Ximenia americana*

Egypt

None of the species mentioned in the IUCN Red List (*Medemia argun* and *Dracaena ombet*) can be classified as a tree.

The country report mentions the national red list which includes the following seven tree species as endangered: *Ficus sycamorus*, *Zizyphus spina christi*, *Acacia seyal*, *Acacia ihrenbergina*, *Balanites aegyptiaca* and *Salvadora persica*.

Ethiopia

IUCN provides a list with one endangered species and 21 vulnerable plant species. The FRA 2005 report lists 23 vulnerable plant species, without providing a list of these.

Gambia

The country report states that the IUCN Red List does not list any tree species as endangered or vulnerable for Gambia, while the national list contains 10 critically endangered trees species, 5 endangered and 20 vulnerable tree species, which are not specified.

Mauritius

The IUCN Red List reports 41 critically endangered species, 14 endangered species and 9 vulnerable tree species.

At national level the following tree species are known as endangered and vulnerable.

Critically endangered tree species:

Acanthophoenix rubra (also in IUCN list), *Casearia tinifolia*, *Chionanthus broomeana*, **var.** *broomeana*, *Croton vaughanii* (also in IUCN list), *Dictyosperma album* **var.** *album*, *Dictyosperma album* **var.** *conjugatum*, *Diospyros angulata* (also in IUCN list), *Diospyros hemiteles*, *Diospyros nodosa*, *Dombeya populnea*, *Drypetes caustica*, *Elaeocarpus bojeri* (also in IUCN list), *Elaeocarpus integrifolius* (also in IUCN list), *Eugenia bojeri*, *Eugenia crassipetala* (also in IUCN list), *Ficus laterifolia* (also in IUCN list), *Gaertnera truncate* (also in IUCN list), *Gastonia mauritiana* (also in IUCN list), *Hibiscus boryanus*, *Hibiscus columnaris*, *Hyophorbe amaricaulis* (also in IUCN list), *Hyophorbe lagenicaulis* (also in IUCN list), *Hyophorbe vaughanii* (also in IUCN list), *Latania loddigesii*, *Monimia ovalifolia*, *Ochrosia borbonica*, *Ocotea obtusata*, *Olax psittacorum* (also in IUCN list), *Pandanus microcarpus* (also in IUCN list), *Pandanus palustris* (also in IUCN list), *Polyscias Combo* sp., *Polyscias gracilis* (also in IUCN list), *Polyscias paniculata* (also in IUCN list), *Poupartia borbonica* (also in IUCN list), *Sideroxylon boutonianum*, *Sideroxylon grandiflorum*, *Syzygium bijouxii*, *Syzygium cymosum* **var.** *cymosum*, *Syzygium guehoii* (also in IUCN list), *Syzygium populifolium*, *Syzygium vaughanii*, *Tambourissa cocottensis* (also in IUCN list), *Tambourissa pedicellata* (also in IUCN list), *Tambourissa tetragonal*, *Tectiphiala ferox* (also in IUCN list), *Tetraxis salicifolia* (also in IUCN list), *Trochetia uniflora*, *Weinmannia tinctoria* (also in IUCN list), *Zanthoxylum heterophyllum* (also in IUCN list).

Endangered tree species:

Casearia mauritiana, *Chionanthus ayresii*, *Diospyros egrettarum*, *Diospyros neraudii*, *Dracaena concinna* (also in IUCN list), *Dracaena floribunda* (also in IUCN list), *Gaertnera hirtiflora*, *Memecylon cordatum*, *Ocotea mascarena*, *Pandanus vandermeerschii*

Vulnerable tree species:

Canarium paniculatum, *Coffea macrocarpa* (also in IUCN list), *Coffea myrtifolia*, *Diospyros chrysophyllos*, *Diospyros leucomelas* (also in IUCN list), *Erythroxylum laurifolium*, *Eugenia vaughanii*, *Foetidia mauritiana*, *Hornea mauritiana*, *Labourdonnaisia calophylloides*, *Labourdonnaisia glauca*, *Labourdonnaisia revolute*, *Macaranga mauritiana*, *Memecylon myrtiforme*, *Mimusops erythroxylum*, *Pandanus barklyi*. **var.** *barklyi*, *Pandanus eydouxia*, *Pandanus glaucocephalus*, *Pisonia costata*, *Polyscias dichroostachya*, *Polyscias mauritiana*, *Poupartia pubescens*, *Pyrostria cordifolia* **var.** *polymorpha*, *Pyrostria cordifolia* **var.** *cordifolia*, *Sideroxylon sessiliflorum*, *Tambourissa "Mondrain"*, *Tambourissa ficus*, *Tambourissa sieberi*, *Tarenna borbonica*, *Terminalia bentzoe*, *Trochetia triflora*, *Xylopiia richardii* (also in IUCN list)

Morocco

The IUCN list reports on one critically endangered tree species which is *Cupressus dupreziana*.

At national level the following tree species are known:

Critically endangered:

Juniperus communis subsp. *Hemisphaerica*, *Betula fontqueri*, *Rhamnus serpyllacea*, *Pyrus communis* subsp. *mamorensis*- subsp., *Sorbus domestica*.

Endangered:

Abies maroccana, *Pinus nigra* subsp. *mauretanic*, *Acer opalus*, *Acacia farnesiana*, *Olea maroccana*, *Rhamnus fangula*, *Amelanchier ovalis*, *Populus euphratica*

Vulnerable:

Cupressus atlantica, *Juniperus thurifera*, *Taxus baccata*, *Argania spinosa*.

Niger

The IUCN list reports two vulnerable species which are *Afzelia africana* and *Khaya senegalensis*. The country report adds a comment to this, listing the following species which are known to be endangered, although the degree of danger is not further specified;

Combretum glutinosum, *Pterocarpus erinaceus*, *Khaya senegalensis*, *Cassia singuinea*, *Boswellia odorata*, *Prosopis africana*, *Anogeissus leiocarpus* *Daniella oliveri*, *Terminalia avicennioides*, *Burkia Africana*.

Reunion

The IUCN list reports 8 critically endangered tree species, 5 endangered tree species and 1 vulnerable species.

The country report also adds the following lists as a complement to the information provided by the IUCN:

Critically endangered:

Hibiscus liliiflorus, *Xylopi* *richardii boivin*, *Scolopia heterophylla*, *Dombeya blattiolens*, *Vepris lanceolata*, *Olax psittacorum* (also in the IUCN list), *Apodytes dimidiata*, *Eugenia bosseri*, *Polyscias borbonica*, *Polyscias coriacea*, *Polyscias sessiliflora*, *Tarenna borbonica*, *Diospyros borbonica* *Chionanthus broomeana*, *Tournefortia acuminata*.

Endangered:

Hibiscus columnaris, *Dombeya populnea*, *Zanthoxylum heterophyllum*, *Poupartia borbonica* *indigofera ammoxylum*, *Terminalia bentzoe*, *Foetidia mauritiana*, *Gastonia cutispongia*, *Polyscias aemiliguineae*, *Polyscias rivalsii*, *Badula fragilis*, *Pisonia lanceolata*, *Hernandia mascarenensis* (also in the IUCN list), *Tillingia lineate*, *Dictyosperma album*, *Latania lontaroides* (also in the IUCN list).

Vulnerable:

Hibiscus boryanus, *Dombeya umbellate*, *Erythroxylum hypericifolium*, *Sophora denudate*, *Eugenia mespiloides*, *Sideroxylon majus*, *Ochrosia borbonica*, *Drypetes caustica*, *Acanthophoenix rubra*, *Hyophorbe indica*, *Cyathea excelsa*, *Cyathea glauca*.

Senegal

IUCN reports 4 vulnerable species, but among these the FRA 2005 national report states that the following are not existing in Senegal:

Baphia heudelotiana, *Hallea stipulosa* and *Milicia regia*.

Sierra Leone

IUCN lists 4 endangered species and 42 vulnerable plant species on its Red List for Sierra Leone. All of these, except the following five vulnerable species are included in the book Trees of Sierra Leone:

Bafodeya benna

Eribroma oblonga

Hallea stipulosa

Pararistolochia goldieana

Pavetta lasioclada

However, it is assumed that they also exist in Sierra Leone.

Togo

The IUCN list reports 10 vulnerable species, and no endangered species. At national level the country report, adds the following tree species:

Critically endangered and endangered: *Ancistrophyllum secundiflorum*, *Balanites wilsoniana*, *Chrysobalanus icaco*, *Chrysophyllum welwitschii*, *Conocarpus erectus*, *Conyza aegyptiaca* var. *lineariloba*, *Cordia platythyrsa*, *Diospyros ferrea*, *Dodonea viscosa*, *Dostenia walleri*, *Ensete gillettii*, *Garcinia afelii*, *Khaya grandifoliola*, *Milicia excelsa*, *Phyllanthus dolichofolius*, *Scaveola plumieri*, *Shrebera arborea*.

Tunisia

The IUCN list does not report or any endangered or vulnerable tree species. At national level the following information is available:

Critically endangered species: *Acacia tortilis*, *Celtis australis*, *Acer monspessulanum*

Endangered species: *Quercus canariensis*, *Quercus ilex*, *Quercus afares*, *Aulus* sp., *Fraxinus* sp.

Vulnerable species: *Quercus suber*, *Pinus pinaster*, *Salix* sp., *Ceratonia Siliqua*.

Less Vulnerable: *Quercus coccifera*, *Pinus halepensis*, *Cupressus* sp., *Tetraclinis articulata*, *Populus alba*, *Olea europea*.

Zambia

The IUCN reports 8 vulnerable plant species while the FRA 2005 National Report list 11 endangered tree species and 14 vulnerable tree species, without specifying the name of the tree species.

ASIA**Bangladesh**

The IUCN list reports 4 critically endangered species, 2 endangered species and 6 vulnerable species but national publications indicate about 106 endangered forest species (it is not specified whether these includes all plants or only tree species) in Bangladesh, which are not further specified in the country report.

Cambodia

The IUCN list reports 10 critically endangered, 13 endangered and 9 vulnerable tree species. At national level the following information is available on vulnerable species:

List of « Priority Tree Species for Gene Conservation »: (Threatened species)

Dalbergia oliveti, *Aquilaria crassa*, *Dalbergia cochinchinensis*, *Gardenia ankorensis*, *Afzelia xylocarpa*, *Pterocarpus macrocarpus*, *Dysoxylum loureiri*, *Diospyros cruenata*, *Lasianthus kamputensis*, *Diospyros bejaudii*, *Fagraea fragrans*, *Dasydaschalon lementaceum*, *Shorea cochinchinensis*, *Hopea helferi*, *Pinus merkusii*, *Garcinia hanburyi*, *Cinnamomum cambodianum*, *Sterculia lychnophora*, *Cananga latifolia*, *Albizia lebbek*, *Hopea odorata*, *Tarrietia javanica*, *Diospyros pilosanthera*, *Hopea ferrea*, *Xylia dolabriformis*, *Fibraurea tinctoria*, *Shorea hypochra*, *Shorea vulgaris*, *Diospyros nitida*.

Georgia

The IUCN list does not report any endangered neither vulnerable tree species.

At national level the country report lists the following information:

List of tree species threatened by extinction:

Pinus eldarica, *Pinus Pithyusa*; *Taxus baccata*; *Acer ibericum*, *Pistacia mutica*; *Betula medwedevii*; *Betula megrelica*; *Betula raddeana*; *Buxus colchica*; *Celtis caucasica*; *Celtis glabrata*; *Diospyros lotus*; *Castanea sativa*; *Quercus dschorochensis*; *Quercus hartwissiana*; *Quercus imeretina*; *Quercus macranthera*; *Quercus pedunculiflora*; *Quercus pontica*; *Juglans regia*; *Pterocarya pterocarpa*; *Punica granatum*; *Amigdalus georgica*; *Pyrus demetrii*; *Pyrus sachokiana*; *Populus euphratica*; *Ulmus elliptica*; *Ulmus georgica*; *Ulmus glabra*; *Ulmus minor*; *Ulmus suberosa*; *Zelcova carpinifolia*.

Iran

The IUCN Red List contains only one vulnerable species for I.R. of Iran: *Aquilaria malaccensis* (Agarwood), while the national list contains 2 endangered species and 7 vulnerable species, which are not further specified.

Iraq

The IUCN list does not report any endangered or vulnerable species but according to national information, there is one critically endangered tree species (poplar) and two vulnerable tree species (*Populus* sp and *Platanus* sp).

Israel

The IUCN list does not report any endangered or vulnerable species but according to the Society of the Protection of Nature in Israel there are 28 endangered species and 13 critically endangered species.

Jordan

The IUCN Red List does not list any endangered or vulnerable tree species in Jordan.

However, information based on country reports lists the following:

Critically endangered tree species: *Pistacia atlantica* and *Celtis australis* .

Endangered tree species: *Acacia seyal*, *Juniperus phoenicea* and *Pistacia palaestina*

Vulnerable tree specie: *Quercus aegilops*

This information is based on country monitoring of natural species and their regeneration

Nepal

The IUCN list reports on 3 vulnerable species, but at national level the following information is available:

Vulnerable species: *Dalbergia latifolia*, *Elaeocarpus sphaericus*, *Oroxylum indicum*

Endangered species: *Acacia catechu*, *Butea monosperm*, *Michelia champaca*, *Taxus wallichiana*

Critically endangered species: *Pterocarpus marsupium*; Rare species: *Alstonia sholaris*, *Crateva unilocularis*

Oman

The IUCN list reports on 1 endangered tree species and 5 vulnerable tree species. At national level the following information is available:

Critically endangered tree species include:

Boswellia sacra- *Euphorbia balsamifera* – *Euphorbia smithii* – *Acacia Senegal* – *Acacia tortilis* – *Acacia Arabica*

Endangered tree species include:

Euclea schimperi – *Dracaena serrulata* (also in IUCN list) – *Acacia etabica* – *Jatropha dhofarica*

Vulnerable tree species include:

Acacia Senegal – *Acacia Arabica* – *Anogeissus dhofarica* (also in IUCN list) – *Commiphora* spp.

Pakistan

The IUCN list reports 2 vulnerable species. At national level the country maintains the following list of important threatened species, which is quite long and is classified based on the level and nature of threats to the integrity of populations of these species (FAO, 2003).

Abies pindrow, *Acacia albida*, *A. catechu*, *A. nilotica* var. *cupressiformis*, *A. Senegal*, *A. tortilis*, *A. ampliceps*, *A. victoriae*, *Acer caesium*, *Aelagnushortensis*, *Alnus nitida*, *Atropa acuminata*, *Avicinia officinalis*, *Azadirachta indica*, *Bombacopsis quinata*, *Casuarina equisetifolia*, *C. glauca*, *C. obesa*, *Celtis eriocarpa*, *Ceratonia siliqua*, *Dalbergia sissoo*, *Diospyrus kaki*, *Eucalyptus camaldulensis*, *E. citriodora*, *E. microtheca*, *E. torelliana*, *Fraxinus xanthoxyloides*, *Grewia asiatica*, *Juglans regia*, *Juniperus macropoda*, *Morus alba*, *Paulownia tomentosa*, *Pinus greggii*, *P. gerardiana*, *P. wallichiana* var. *karakorama*, *Pistacia khinjuk*, *Populus alba*, *P. ciliate*, *P. deltoids*, *P. euphratica*, *P. nigra*, *Prosopis chilensis*, *Prunus amygdalis*, *P. pallida*, *P. padis*, *Pyrus communis*, *P. pashia*, *Quercus dilatata*, *Q. ilex*, *Q. incana*, *Q. semicarpifolia*, *Rhizophora mucronata*, *Rhododendron* spp., *Salix babylonica*, *S. tetrasperma*, *Saussuria lappa*, *Taxus baccata*, *Zizyphus jujube*.

Republic of Korea

The IUCN does not report any vulnerable neither endangered species. At national level the national classification of endangered species in Korea is expressed as “Rare and endangered plant species” which includes about 240 plant species, not further specified.

Saudi Arabia

The IUCN list reports 2 endangered tree species and 1 vulnerable species. At national level the Department of Range and Forests of lists three tree species as critically endangered two as endangered and one as vulnerable as follows:

Critically endangered species:

Dracaena ombet (also in the IUCN list), *Rizophora mucronata*, *Hyphaene thebaica*

Endangered species:

Juniperus procera, *Cupressus arizonica*.

Vulnerable species :

Albizia lebbeck.

Timor Leste

The IUCN does not list Timor Leste. The national report lists 1 critically endangered species which is *Santalum album*.

Turkmenistan

The IUCN does not provide any endangered or vulnerable tree species, while the national list of endangered species has listed 6 species as critically endangered, 1 species as endangered and 3 species as vulnerable, which are not further specified.

Uzbekistan

The IUCN lists 1 vulnerable species, while at national level the following information is available:

Apparently disappeared species (these are species that have not been seen for several years but they are likely to exist in some inaccessible places or within the culture): *Pyrus asiamediae* (M. Pop) Mallev.

Disappearing species (species that are on the verge of becoming extinct and their further existence is impossible without special measures of protection.): *Platycladus orientalis* (L.) Franco.

Rare species (species that are not under direct menace of disappearance but being in such a small amount or such limited territories or specific places of dwelling that they can disappear very soon. Careful observations are required.): *Diospyros Lotus* L.; *Ficus carica* L.

Reducing species (Species, the amount and area of which are being decreased for a definite time due to natural reasons or because of man's interference or due to both mentioned reasons. Regular estimation of their state is necessary.): *Ziziphus jujuba* Mill.; *Platanus orientalis* L.; *Phus coriaria* L.

Yemen

The IUCN list has not been used for the compilation of table 9 of the country report, since it is commented, it includes all plant species. The IUCN list reports 3 critically endangered plant species, 28 endangered plant species and 50 vulnerable plant species.

According to a national list, 8 species are considered critically endangered and 11 species endangered. These species not further specified and include both tree and shrub species.

EUROPE

Albania

The IUCN List does not list endangered or vulnerable tree species.

At national level the following information is available:

Extinct tree species: *Aesculus hyppocastanum* (Horse chestnut)

Probably Extinct-(Ex?): *Berberis vulgaris* (Barberry), *Quercus robur* (Common oak), *Taxus baccata* (Common yew);

Endangered-E: *Acer hyrcanum*, *Arbutus andrachne* (Oriental strawberry-tree), *Betula pendula* (Birch), *Corylus colurna*, *Fraxinus excelsior* (Ash), *Jasminum fruticans* (Yellow jasmine), *Juglans regia* (Walnut-tree), *Juniperus communis* (Common juniper), *Juniperus excelsa* (Crimean juniper), *Juniperus foetidissima* (Stink juniper), *Juniperus oxycedrus* (Prickly cedar), *Laurus nobilis* (Sweetbalm-tree), *Lycium europium* (European box-thorn), *Picea abies* (Common spruce), *Pinus peuce* (Macedonian pine), *Pinus silvestris* (Scotch fir, Common pine), *Prunus cerasifera*, *Prunus webbii*, *Quercus ilex* (Holly oak), *Salvia officinalis* (Shop-sage), *Sambucus nigra* (Elder), *Sambucus racemosa* (Grape-elder), *Sarcopoterium spinosum*,

Tilia platyphyllos (Large-leaved lime), *Vaccinium uliginosum* (Bogbilberry), *Viburnum tinus* (Laurestine)

Vulnerable-V : *Salix fragilis* (Crack willow), *Salix triandra* (Almond-leaved willow)

Rare-R , *Celtis tournefortii*, *Crataegus heldreichii*, *Daphne gnidium* (Spurge flax), *Euphorbia dendroides* (Treespurge), *Malus florentina*, *Petteria ramentacea* (Petteria), *Rhamnus intermedius*, *Salix hastata*, *Salix reticulata*, *Salix waldsteiniana*., *Styrax officinalis*, *Teucrium fruticans* .

Insufficiently known-K: *Rosa andegavensis*.

Not threatened: *Forsythia europaea* (European forsythia)

Austria

The national Red List differs from the IUCN Red List. It contains 5 endangered and 6 vulnerable tree species (which are not further specified), while the IUCN Red List includes 2 endangered and 2 vulnerable plant species.

Belarus

The IUCN Red List, does not contain any endangered or vulnerable species for Belarus. However, the Republic of Belarus applies the classification of endangered tree species according to the IUCN Red List standards

The native critically endangered tree species:

Abies alba (Silver White Fir).

Quercus spp. 1 (one) species (Oak)

The native endangered tree species:

Ulmus spp. 3 (three) species (Elm)

Belgium

The IUCN List is not providing any endangered or vulnerable species. At national level 5 species are considered as endangered:

Ulmus laevis, *Juniperus communis*, *Populus nigra*, *Quercus pubescens*, *Taxus baccata*.

Denmark

On the IUCN Red List the species *Betula Oycoviensis* is mentioned for Denmark. However that species is a hybrid and it is not native to Denmark and is not known to exist in Denmark. Hence there seem to be an error in the IUCN Red List concerning Denmark.

Greece

The IUCN Red List reports *Zelkova abelicea* as vulnerable species which is not given in the national report.

Hungary

The IUCN does not list any endangered nor vulnerable tree species while the country report shows the following:

Critically endangered: *Pyrus magyarica* (Hungarian pear),

Endangered: *Salix pentandra* (bay willow) and *Pyrus nivalis* (crass-snub pear)

Vulnerable species: *Carpinus orientalis* (eastern hornbeam), *Sorbus aria* agg. (common whitebeam) and *Taxus baccata* (common yew).

Poland

According to IUCN list there is 1 vulnerable species in Poland which is *Betula oycoviensis*. According to the "Polish red book of plants" there are 2 endangered species which are *Sorbus intermedia* and *Quercus pubescens*, and 1 vulnerable species which is *Betula x oyconviensis*.

Russian Federation

IUCN is reporting 2 endangered species (which are not tree species) and 5 vulnerable species (only 1 tree species which is *Betula oycoviensis*). The country report is referring to information available at national level which is the following:

Vulnerable species:

Juniperus excelsa, *Larix olgensis*, *Pinus brutia* subsp. *pityusa*, *Pinus densiflora*, *Taxus baccata*, *Corylus colurna*, *Buxus colchita*, *Ostrya carpinifolia*.

Endangered species:

Juniperus excelsa, *Pinus sylvestris* var. *cretacea*, *Betula maximowicziana*, *Acer japonicum*, *Tilia maximowicziana*.

Rare species: *Juniperus sargentii*, *Taxus cuspidata*, *Betula raddeana*, *Betula schmidtii*, *Quercus dentata*, *Ilex sugerokii*, *Populus balsamifera*.

Serbia and Montenegro

IUCN is not providing information on endangered and vulnerable species. At national level the following information is available:

At risk species: *Populus alba*, *Prunus avium*, *Pyrus pyraister*, *Pyrus malus*, *Sorbus torminalis*, *Sorbus aria*, *Populus tremula*, *Acer heldreichii*, *Pinus mugo*.

Endangered: *Picea omorica*, *Pinus heldreichii*, *Taxus baccata*, *Trollius europaeus*, *Ilex aquifolium*.

Rare species: *Populus canescens*, *Ulmus montana*, *Ulmus effusa*, *Sorbus aucuparia*, *Acer platanoides*, *Platanus* sp (*orientalis*), *Quercus petraea*.

Rare-endangered : *Ulmus minor* (*glabra*), *Juglans regia*, *Celtis australis*, *Prunus pseudarmeniaca*, *Aesculus carnea*, *Quercus pubescens*, *Quercus virgiliana*, *Betula pendula*, *Corylus colurna*, *Fraxinus excelsior*, *Pinus peuce*.

Slovakia

The IUCN list reports 1 vulnerable species (*Betula oycoviensis*) while at national level the following information is available:

Vulnerable species:

Betula oycoviensis, *Quercus pedunculiflora*, *Quercus frainetto*, *Pinus cembra*, *Sorbus pekarovae*, *Sorbus hazslinskyana*, *Sorbus margittiana*, *Sorbus scepusiensis*.

Endangered species:

Cotinus coggygria

Critically endangered species:

Pinus x rotundata, *Sorbus graeca*

Slovenia

IUCN is not reporting any endangered or vulnerable species. At national level the following species are considered endangered:

Acer tataricum, *Arbutus unedo*, *Celtis australis*, *Cercis siliquastrum*, *Ilex aquifolium*, *Laburnum alschingeri*, *Laurus nobilis*, *Phillyrea latifolia*, *Pistacia terebinthus*, *Pyrus spinosa*, *Quercus crenata*, *Quercus ilex*, *Taxus baccata*.

Switzerland

The IUCN Red List 2002 stated no critically endangered, endangered or vulnerable tree species in Switzerland. However, the national Red List listed 2 endangered and 1 vulnerable tree species as follows:

Endangered trees species: *Sorbus domestica* and *Ulmus laevis*.

Vulnerable species: *Sorbus latifolia*

Ukraine

IUCN list reports 1 vulnerable species which is *Betula oycoviensis*. At national level the following information is available.

Vulnerable species;

Pinus stankeviczii, *Juniperus excelsa*, *Juniperus foetidissima*, *Tilia dasystyla*, *Pistacia mutica*, *Arbutus andrachne*,

Endangered species:

Larix colonica, *Quercus austriaca*, *Betula klokovii*, *Fraxinus ornus*,

Rare species:

Taxus baccata, *Pinus cembra*, *Betula borysthenica*, *Betula obscura*

United Kingdom

IUCN reports 3 critically endangered, 1 endangered and 6 vulnerable species. At national level the following information is available:

Vulnerable species: *Sorbus minima* (Lesser whitebeam) and *Salix lanata* (Woolly willow).

Critically endangered: *Sorbus domestica*, (service tree).

NORTH AND CENTRAL AMERICA**Canada**

The IUCN Red List does not list any trees species in Canada as being endangered or vulnerable. At national level the following information is available:

Species of special concern: Blue ash *Fraxinus quadrangulata*, Shumard oak *Quercus shumardii*.

Endangered or threatened species: Butternut *Juglans cinerea*, Red Mulberry *Morus rubra*, Chestnut, American *Castanea dentate*, Dwarf hackberry *Celtis tenuifolia*, Kentucky Coffee-tree *Gymnocladus dioicus*.

Costa Rica

The IUCN is reporting 4 critically endangered plant species, 33 endangered plant species and 74 vulnerable plant species. At national level the following species are considered as critically endangered.

Ajo Negro *Anthodiscus chocoensis*, Bálsamo *Myroxylon balsamun*, Camíbar *Copaifera camibar*, Caoba *Swietenia macrophylla*, Cedro *Cedrela salvadorensis*, Cedro Real *Cedrela fissilis*, Cipresillo *Podocarpus costarricensis*, Cola de Pavo *Hymenolobium mesoamericanum*, Copo *Couralari scottimorii*, Cristóbal *Platymiscium pinnatum*, Guayacán Real *Platymiscium parviflorum*, Laurel Negro *Guaiacum sanctum*, Pimillo *Cordia gerascanthus*, Quira *Podocarpus guatemalensis*, Sandrillo *Caryodaphnopsis burgerii*, Tamarindón *Parkia pendula*, Tostado *Sclerolobium costaricense*, Almendro *Dipterix panamensis*.

Cuba

The IUCNB list is providing 23 critically endangered plant species, 50 endangered and 50 vulnerable plant species. At national level the information varies slightly with 21 critically endangered tree species, 40 endangered and 50 vulnerable tree species. The tree species are not listed.

Jamaica

IUCN is reporting 15 critically endangered, 27 endangered and 62 vulnerable plant species. The number of national reported threatened tree species reported is 39, which include species listed on the Critically endangered tree species, Endangered tree species and the vulnerable tree species lists from the IUCN red listings but which are not further specified in the report.

Nicaragua

IUCN is reporting 3 critically endangered, 16 endangered and 20 vulnerable species while at national level fewer species (also listed by IUCN) are considered as endangered and are the following:

Critically endangered species:

Lonchocarpus phaseolifolius

Endangered species:

Eugenia salamensis, Guaiacum sanctum, Lonchocarpus miniflorus, Lonchocarpus phlebophyllus, Machaerium nicaraguense, Ocotea jorge-escobarii, Platymiscium pleiostachyum, Terminalia bucidoides, Zanthoxylum belizense.

Vulnerable species:

Bombacopsis quinata, Cedrela odorata, Dalbergia retusa, Nectandra mirafloris, Swietenia humilis, Swietenia macrophylla, Tiodendron incognitum.

Panama

The IUCN list is reporting 19 critically endangered plant species, 71 endangered plant species and 106 vulnerable plant species (not only tree species). At national level the following information is available:

Vulnerable plant species:

Astronium graveolens, Camptosperma panamensis, Tabebuia guayacan, Tabebuia rosea, Caryocara costaricensis, Calophyllum brasiliensis, Terminalia amazonia, Cornus disciflora, Hyeronima alchorneoides, Mora oleifera, Peltogyne mexicana, Samanea saman, Centrolobium yarrizanum, Dipteryx oleifera, Vatairea erythrocarpa, Lecythis ampla, Lecythis tuyrana, Carapa guianensis, Cedrela fissilis, Cedrela tonduzii, Brosimum guianense, Chlorophora tinctoria, Rhizophora harrisonii, Rhizophora mangle, Rhizophora racemosa, Rhizophora samoensis, Pelliceria rhizophora

Endangered species:

Aspidosperma darienensis, Dalbergia retusa, Centrolobium paraense, Quercus humelioides, Quercus corrugata, Quercus davidsoniae, Quercus gulielmi-treleasei, Quercus humboldtii, Quercus insignis, Quercus oocarpa, Quercus pilarius, Quercus rapurahuensis, Quercus seemannii, Quercus seibertii, Nectandra bicolor, Ocotea insulares, Ocotea viridiflora, Persea obtusifolia, Magnolia sororum, Virola megacarpa, Ulmus mexicana

Threatened species:

Copaifera panamensis, Peltogyne purpurea, Prioria copaifera, Paramachaerium gruberi, Platymiscium pinnatum, Cedrela odorata, Swietenia macrophylla, Brosimum utile, Podocarpus oleifolius, Podocarpus costaricensis, Podocarpus guatemalensis, Podocarpus magnifolius.

OCEANIA

New Zealand

The IUCN list reports 1 critically endangered tree species, 2 endangered and 4 vulnerable tree species. At national level 3 critically endangered species are known, 2 endangered and 24 vulnerable tree species, which are not further specified.

SOUTH AMERICA

French Guyana

IUCN is reporting 3 critically endangered plant species, 2 endangered plant species and 11 vulnerable plant species. At national level it is believed that there are no endangered tree species.

Peru

The country report is providing the following list of threatened tree species:

Critically endangered:

Ambrosia dentata, *Ambrosia panosa*, *Buddleja bullata*, *Buddleja coriacea*, *Buddleja incana*, *Buddleja longifolia*, *Buddleja montana*, *Bursera graveolens*, *Capparis eucalyptifolia*, *Capparis scabrida*, *Carica candicans*, *Carica quercifolia*, *Carica stipulata*, *Ceroxylum parviphrons*, *Ceroxylum weberbaueri*, *Eugenia quebradensi*, *Hesperomeles heterophylla*, *Iochroma nitidum*, *Iochroma schjellerupii*, *Iochroma stenanthum*, *Loxopterygium huasango*, *Mircia fallas*, *Mircianthes discolor*, *Mircianthes ferreyrae*, *Kageneckia lanceolata*, *Miroxylum peruiferum*, *Otholobium mexicanum*, *Otholobium muyensis*, *Podocarpus oleifolius*, *Podocarpus sprucei*, *Polylepis incana*, *Weimmania piurensis*, *Polylepis racemosa*.

Endangered species :

Cochlospermum vitifolium, *Cedrela lilloi*, *Crysophyllum contumacensis*, *Manilkara saccifera*, *Polylepis microphylla*, *Polylepis multijuga*, *Polylepis subsericans*, *Polylepis tomentella*, *Prosopis chilensis*, *Prosopis juliflora*, *Prunus ruizina*, *Ruagea glabra*, *Tabebuia impetiginosa*, *Zanthoxylum mantaro*.

Vulnerable species :

Amburana acreana, *Amburana cearensis*, *Aniba rosaeodora*, *Caesalpinia spinosa*, *Caraipa utilis*, *Cedrela fissilis*, *Cedrela montana*, *Cedrela odorata*, *Ceroxylum crispum*, *Cinchona calisaya*, *Clitoria woytkowskii*, *Copaifera paupera*, *Cyathea caracasana*, *Cyathea delgadii*, *Cyathostegia mathewsii*, *Cybistax antisiphilitica*, *C. Martius*, *Escallonia micrantha*, *Escallonia myrtilloides* L. f. var. *myrtilloides*, *Escallonia pendula*, *Escallonia resinosa*, *Escallonia salicifolia*, *Geonoma andicola*, *Geonoma densa*, *Geonoma weberbaueri*, *Haploclathra cordata*, *Haploclathra paniculata*, *Jacaranda acutifolia*, *Jacaranda mimosifolia*, *Lomatia hirsuta*, *Manilkara bidentata*, *Mauria heterophylla*, *Mauria killipii*, *Mauria simplicifolia*, *Mauritia carana*, *Mezilaurus ita-uba*, *Mutisia wurdacki*, *Myrcianthes quinqueloba*, *Pachira brevipes*, *Parahancornia peruviana*, *Podocarpus elatior*, *Polylepis besseri*, *Polylepis pepeii*, *Polylepis rugulosa*, *Polylepis sericea*, *Polylepis tarapacana*, *Polylepis weberbaueri*, *Prosopis pallida*, *Psidium rutidocarpum*, *Rhizophora mangle*, *Schinus pearcei*, *Swietenia macrophylla*, *Tabebuia incana*, *Tabebuia serratifolia*, *Tecoma arequipensis*.

Venezuela

The IUCN is reporting 3 critically endangered species, 6 endangered species, 50 vulnerable species. At national level the critically endangered species are known to be 6, the endangered 13 and the vulnerable 64, which are not further specified.