
WILD FORESTS ‘LIVING MUSEUMS’ OF VIRTUALLY EXTINCT SPECIES

Urgent action needed to map and protect the world’s wild forests

- Monkey Puzzle trees from the time of Jesus Christ destroyed in forest fire
- New research reveals how fragmentation of wild forest prevents regeneration
- Researchers concerned many living tropical trees already ‘functionally’ extinct
- One in ten tree species at threat – concern that situation has worsened in last 5 years
- Funding urgently required for ‘World Atlas of Threatened Trees’

Cambridge 4th August 2003: Forests in Chile, made world famous by the series ‘Walking with Dinosaurs’, have been almost destroyed by fire, killing Monkey Puzzle trees up to 2,000 years old.*

This ecological disaster has been brought to international attention by researchers at UNEP World Conservation Monitoring Centre, (UNEP-WCMC) Cambridge. Groundbreaking work by Chevening Scholar, Cristian Echeverría, based at the Centre has revealed how fragmentation of wild forests is threatening the extinction of the charismatic Monkey Puzzle tree (*Araucaria araucana*) beloved by Victorian gardeners.

The Monkey Puzzle is among 8,000 tree species under threat of extinction in the wild. It is one of only a handful for which a conservation plan exists. Environmental organisations FFI (Fauna & Flora International) and UNEP-WCMC are collaborating on the Global Trees Campaign which aims to establish the management plans vital for the creation of sustainable forests. An important element of this is the development of a mapping programme leading to a proposed World Atlas of Threatened Trees.

The Department for Environment Food and Rural Affairs (Defra) are sponsors of a report ‘Towards a Global Tree Conservation Atlas’ published this week, which highlights the plight of five ‘flagship’ species which the Global Trees Campaign is working hard to save. Mark Collins, Director of UNEP-WCMC, is grateful for the support of Defra and Elliot Morley, Minister for the Environment and Agri-environment.

Mark Collins is concerned that the future of wild forests has worsened since the Centre published the first global assessment, the ‘World List of Threatened Trees’ 5 years ago. It showed that over 8,000 tree species are facing extinction in the wild, with 976 in a critical situation. He comments: ‘New research, such as that on the Monkey Puzzle, is revealing that fragmentation of wild forest and the re-plantation with potentially invasive foreign species are major threats, demonstrating the urgency of managing forests sustainably.’

Professor Peter Ashton of Harvard and The Royal Botanic Gardens, Kew, supports his concerns: ‘In the tropics many rare tree species are already functionally extinct. The high diversity of plants in tropical rainforests means that specimens are naturally widely spaced, if forest cover is further fragmented then the probability of a pollinator being within range decreases. Some forests are becoming living museums.’

Mark Collins comments that surprisingly little is known about the status and distribution of tree species, including important timber species such as mahogany ‘Our initial report demonstrates that conservation assessments are required for plant conservation targets to be achieved by 2010. In particular we need spatial data, which will help us to identify the most crucial areas for tree conservation and ensure that these ecoregions are managed effectively to provide the protection required.’

UNEP-WCMC and FFI are seeking public and private sector funding for a proposed ‘World Atlas of Threatened Trees’, which will provide photographs of the species, full colour maps showing their distribution and status reports compiled by workers in the field and an analysis of policy options to prevent extinctions.

Mark Rose, Executive Director of FFI, believes that further regulation of the timber trade is also required: ‘We estimate that almost 50 percent of the tropical timber in international trade has been illegally logged. 1,000 globally threatened trees are threatened in part by unsustainable levels of felling. Accurate, objective information is required to strengthen international trade control mechanisms such as CITES.’

The report ‘Towards a Global Tree Conservation Atlas’ provides new information about flagship species such as *Araucaria araucana* (Monkey Puzzle), *Swietenia macrophylla*, (Brazilian Mahogany) *Cinnamomum cebuense*, (Cebu Cinnamon) *Baillonella toxisperma*, (Moabi used for decorative timber, animal feed and cosmetics) *Caesalpinia echinata*, (Pau Brazil, national tree of Brazil).

Defra is funding a conservation programme for the Monkey Puzzle under its Flagship Species Fund which includes the development of a nursery with indigenous people to establish cultivation techniques. These endemic evergreen conifer species may reach 2m in diameter, 50m in height and live over 1,500 years. They also take over 200 years to reach seed bearing maturity. Cristian Echeverría delivers the first progress report on the project this month.

* see case-study below

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Notes for editors

Copies of the preliminary report ‘Towards a Global Tree Conservation Atlas’ are available on: <http://www.unep-wcmc.org/resources/publications/treatlas>

The report provides the case for a need to map the status and distribution of the world’s threatened tree species. The report is a joint collaboration between UNEP-WCMC and FFI. Financial support was provided by Defra with further support through the Flagship Species Fund.

The main authors are Adrian Newton, Sara Oldfield, Gerardo Fragoso, Paul Mathew, Lera Miles, Mary Edwards.

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Case-study: Monkey Puzzle tree under threat, research by Cristian Echeverría, Chevening Scholar, UNEP-WCMC

Research by Cristian Echeverría has revealed the far-reaching implications of a recent forest fire in Chile, which destroyed 71 percent of Monkey Puzzle forest in Malleco National Reserve - some trees were 2,000 years old.

Cristian is pioneering a technique for mapping the fragmentation of the forest. He is using remote sensing from satellite images of the last 25 years to assess the rate at which native forest is being removed. In one of the study areas 64% of the wild forest has been lost in 25 years and the continuous forest cover broken. Reconstructed maps show that in 1550, when the Europeans arrived, indigenous people had had little impact on the forest.

The South of Chile is known by tourists for its amazing landscape and temperate rainforests. 90 per cent of these trees are only found in Chile, including *Araucaria araucana*, the Monkey Puzzle tree, and *Fitzroya cupressoides*, which was named after the captain of Darwin’s ship.

‘After years of destruction the Monkey Puzzle tree is now found in two small areas in the Andes and on the coastal mountain range. Fires in the summer season (2001-2002) have destroyed 30,000 hectares of native forest, including 71 percent of the area of Monkey Puzzle and 61 percent of *Nothofagus* (native beech) in one of the three reserves affected. Many of the destroyed Monkey Puzzle trees were 2,000 years old.

In 1990 *A.araucana* was declared a protected species in Chile forbidding its logging. For other species such as *Fitzroya cupressoides* it is possible to gain a licence to exploit dead wood and as *A.araucana* is highly prized for its timber the government is under pressure to permit logging of the burnt forest. Cristian warns that if logging is allowed then man made fires may increase, as only a small proportion of the native forests are in protected areas. The Valdivian ecoregion, declared by the World Bank as being an area of outstanding biodiversity, currently has no protection.

Previously wooded private land has over the years been cleared and replaced with grazing or plantations of Monterrey Pine (*Pinus radiata*) and Eucalyptus. There are now 2 million hectares of pine compared to just one quarter of a million hectares of *A.araucana* forest.

A.araucana seeds are a source of concentrated carbohydrates for the Pehuenche people, whose culture is dependent upon the tree. A Defra funded project set up after the fires is helping the people of Villas de Araucana establish a tree nursery. However this involves experimentation to develop successful cultivation techniques and it will be 200 years before the trees mature and produce seed.

A.araucana forests in the Andes are adapted to survive in volcanic soils and support a unique community of other species such as the beautiful flowers of *Berberidopsis corilinla*, the Chilean lion, the small 'pudu' deer, and a species of woodpecker.

Cristian Echeverría believes that education of the private landowners is key to the survival of wild forest. 'Chile has a good transport infrastructure and is particularly inviting for ecotourists wanting to visit South America,' he explains. 'The country stretches from the desert in the North through every type of climatic zone to the Antarctic in the south. The forests of the Andes have a rare beauty and could be a considerable attraction for travellers.

'Government and landowners need information upon which to make informed decisions and it is hoped that this research, made possible by funding from Defra and the Foreign and Commonwealth Office through the Chevening Scholarship, will support this.'

In 1995 Defra supported a project in Chile to restore *Fitzroya cupressoides*, the second longest living species (3,625 years). The private landowner was at first bemused by the UK government's support for the project, but soon became evangelical when it was realised that he was himself a descendent of William Wallace from Darwin's voyage.



UNEP World Conservation Monitoring Centre
Press release – *Towards a Global Tree Conservation Atlas*

It is often the case that people do not fully appreciate the true significance of biodiversity on their own doorstep.

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Global Trees Campaign - www.globaltrees.org

Over 8000 tree species, 10% of the world's total, are threatened with extinction. Destruction of woodland and forest and unsustainable felling of valuable timbers are causing the loss of many important species. Very few of these endangered trees are being conserved in the wild. The Global Trees Campaign, developed by Fauna & Flora International in partnership with the UNEP World Conservation Monitoring Centre (UNEP-WCMC), is drawing attention to this global problem and finding solutions.

The Global Trees Campaign aims to save the world's most threatened tree species and their habitats through information, conservation and wise use. The campaign focuses on trees as flagship species for conservation of ecosystems and landscapes, and enables local people to carry out rescue and sustainable use operations. The Global Trees Campaign works in partnership with organisations around the world to save endangered trees.



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