



2010 Año Internacional de la Diversidad Biológica

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**REPORT ON NATIONAL EVENTS AND ACTIVITIES OF THE  
INTERNATIONAL YEAR OF BIODIVERSITY  
COLOMBIA**

**Prepared for  
Instituto Alexander von Humboldt**



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## REPORT ON NATIONAL EVENTS AND ACTIVITIES OF THE INTERNATIONAL YEAR OF BIODIVERSITY

The planet is becoming increasingly vulnerable to climate change effects because the pressure generated by people on ecosystems. It causes them to lose the capacity of resilience following a reduction in number of species both flora and fauna present at the earth.

In this month, as part of the celebration of World Environment Day was unveiled several initiatives to conserve biodiversity. In these alternatives, importance of generating awareness regarding ecosystem services was highlighted. The main cause of negative impacts on the environment is lack of knowledge of the goods and services provided by ecosystems.

*Ecological Footprint* is one of the best tools to measure the impact on the environment generated at individual, local, national and global level. This parameter allows a quantitative view of ecological pressure that people make on ecosystems, through the use of natural resources for industry, food and household chores, among others.

It is necessary to know and understand how ecosystems work, and what is the biophysical capacity of each of them. In this way, people would not exceed the supply of ecosystems, achieving with this a sustainable management of natural resources.

*IYB Academic Calendar – Instituto de Investigación de Recursos Naturales Alexander von Humboldt*

**Thursday, June 24, 2010**

**Conference: Climate change and endangered species**

By: Stuart Pimm

PhD Conservation - Ecology - Policy and environmental sciences – Conservation and marine science

*Guest Commentator*

Carlos Jaramillo

PhD Paleobotany - Smithsonian Tropical Research Institute

To understand how species behave today and what we can do for them, it is necessary to take into account aspects such as, species extinction, deforestation of tropical forests and climate change effects. Thus, it is possible to have a greater impact on the conservation of different species of flora and fauna.

*Extinction of species*

The tropics are the most biodiverse region, where it concentrates a large number of species producing a small distribution range, which causes a high level of vulnerability, where these species are more prone to extinction, compared with those who have a greater range of distribution.

It is assumed that extinction events happen in places that have a high richness of species with a narrow distribution range.

### *Deforestation*

Deforestation has been very great, greater than 100,000 km<sup>2</sup> per year and has been excessive in places where diversity is greatest. It has recorded the highest rate of deforestation in Central America, northern part of the Andes and Madagascar, leading to a drastic reduction in tropical forests.

### *Climate change*

The effects of climate change are most dramatic in those species that have adapted to living at high altitudes. An example of this is the bird species *Tijuca atra* and *Tijuca condita*, which inhabit such heights, where the temperature reaches 2 ° C. After a temperature increase this type of fauna is in great danger of extinction as habitat for the maintenance of these is lost.

For this reason it is necessary to emphasize that the effects of climate change has a greater impact at altitudinal level than latitudinal level, in other words, there isn't a latitudinal temperature gradient but if altitude temperature gradient.

### *What can we do?*

First, we must stop deforestation and to advance connectivity processes fragmented forests, especially those found in low areas with high altitude.

On the other hand, it is necessary to encourage investment in research, monitoring of species and ecosystems, as well as the incorporation of land acquisition programs that are used in livestock and other production systems, in order for activities in conservation and reduction habitat fragmentation.

A very important factor, climate change is the inclusion of government in the creation of laws to condemn indiscriminate deforestation of forests. Given that deforestation is a major cause of species loss.

Comentator

Carlos Jaramillo

### *How the rain forest has responded to climate change in the last 140 million years?*

Most forests do not exceed a temperature of 28 ° C, however, in the forests of tropical rainfall maintain a maximum temperature of 27 ° C, creating the right environment for plant maintenance.

In the Cretaceous are the first flowering plants, angiosperms, in response to high CO<sub>2</sub> levels that made the atmosphere at that time. Angiosperms have a higher photosynthetic capacity, which regulates levels of CO<sub>2</sub> in the atmosphere, in compliance with this a very important role in climate stability.

The oldest tropical rainforest is known after the meteorite impact in the Yucatan peninsula, is from the Paleocene epoch, which was recorded a temperature of 29 ° C, this has been deduced according to the fossil record found belonging to that era. *Titanoboa cerrejonensis*, Paleocene own boa, found in the Cerrejón, Guajira, Colombia; reveals morphological characteristics, which highlights a body with 1 meter in diameter. Such features not only gives evidence of the size of the fauna belonging to the time, but, taking into account the physiological relationship of the reptiles to keep the heat and

size of these animals, it is possible to infer the high temperature characterizing the geological era

In the geological history there have been two global warming, one in very fast time scale and a very slow. In the Paleocene-Eocene warming occurred first, which took place in a fast time scale, lasting 100,000 years, in which the temperature rose 5 ° C, while increased rainfall, making room for more biodiversity. Global warming is presented in this era happened 10 times slower than the current warming.

In the early Eocene period, the second heating occurs, this is done in a longer time, 10 million years, in which warming as the temperature rises above 5 ° C, leading to larger rainfall and explosion in diversity.

In these two global warming has been the land, the ecosystem has been able to balance generating large benefits in terms of biodiversity . Most plants that are abundant in the tropics today, evolved during times of global warming, with temperatures up to 4 degrees warmer than today. Unlike the warming that is being done now to prevent deforestation of tropical forests to cope with temperature change, endangering the majority of plant species, since the characteristic flora of this region can only live in maximum temperature at 27 ° C.

### ***5 June 2010***

#### ***Biodiversity: Welfare and life***

As part of the celebration of World Environment Day, we tried to exalt the biodiversity and environmental services that is provide to humanity. Drawing attention to the ecological impact that the earth has suffered because of the demand generated by people on the planet, in order to meet their needs

In the International Fair of Environment, it was established a cycle of conferences dedicated to publicizing the negative environmental impacts at individual, national, and global level. Similarly, it sets out the conservation efforts and alternatives in front of climate change impacts.

The presentations were:

#### ***Conference: Ecological footprint in Colombia***

By: Dr. Andrés Etter

Biologist. Msc Landscape Ecology. PhD Ecology. Professor, Department of Ecology and Territory, Faculty of Environmental and Rural Studies at the Pontificia Universidad Javeriana

#### ***Conference: Importance of ecological services in Colombia***

By: Dr. Julio Tresierra

Master of Science. Global coordinator of payments for environmental and hydrological hydrological - Peru Advisor of WWF on REDD programs.

#### ***Conference: Global ecological footprint***

By: Dr. Brad Swing

Research Department of Global Footprint Network. Carbon Sequestration Researcher.  
Economy and Ecology Specialist

***Conference: Sistemas silvopastoriles; manejo de ecosistemas y pago por servicios ambientales***

By: Adriana Soto

World Bank Consultant

***Conference: Proceso de actualización de la Política Nacional de Biodiversidad***

By: Carlos Costa Posada

Minister of Environment, Housing and Territorial Development

*IYB events in Colombia - Cycle of conferences in the international Fair of Environment*

***03 June 2010***

***New paradigms for water management***

During the week of the International Fair of Environment is presented several topics relating to the management of water resources. These topics were:

***Conference: Water, a global challenge that requires the mobilization of all sectors of society.***

By: Francois Münger.

Head of the Division of Water initiatives in the Swiss Agency for Development and Cooperation.

***Conference: National Policy on Integrated Water Resource Management in Colombia: Radical Change or logical step for the future.***

By: Michael E. McClain.

Head Department of Water Engineering UNESCO-IHE Netherlands

***Conference: Adaptation to Climate Change: Impact on various river basins***

By: Ricardo Lozano.

General Director of the Institute of Hydrology, Meteorology and Environmental Studies in Colombia, Ideam

***Monday May 31, 2010***

***Conference: Páramo: conservation and management of disputed territories***

By: Carlos Tapia

Sociologist at the Universidad Nacional de Colombia, MSc in Sustainable Farming Systems Development at the Pontificia Universidad Javeriana (PUJ) and PhD Candidate in Geography at the University of Georgia, USA Andean Páramo Project Manager of the Institute Humboldt

Páramo ecosystems are designed as spaces to be protected from human intervention; therefore, they must stay without presence of people. This concept has brought difficulties to generate and put into action management plans on Páramos. Carlos Tapia, Andean Páramo Project Manager of the Alexander von Humboldt Institute (IAvH), explains “*Some of the problems that we have to deal with its management are the wrong image or perception we have of the páramos. It should be noted that the páramos are built spaces that are part of the established relationship between society and nature*”.

Therefore, there are different ways of looking at páramo ecosystems and built according to different cultures.

A holistic perception of páramos is essential to incorporate conservation strategies in these ecosystems. It is necessary to understand how human beings are related with each other and the environment because the value or significance of a páramo differs from one researcher, a rural population, and an indigenous population. In this way, ensures that management plans are consistent with communities that habit in them, making the community to appropriate conservation initiatives.

The Andean Páramo Project of the Alexander von Humboldt Institute (IAvH) seeks to maintain biodiversity and global importance of the Andean paramos through the support of conservation and sustainable use of this ecosystem promoting community participation. This project extends into Colombia, Venezuela, Ecuador and Peru. In Colombia, four areas were prioritized for working: Páramo de Rabanal, Páramo de Chiles, Páramo de Belmira y Páramo del Duende. Integrating the community in this project is a key factor because it allows incorporation of alternatives of conservation and sustainable use of their lifestyles. Finally, they are who give a use for this ecosystem.

*Special event of the Environmental Day in the International Fair of Environment*

*Meetings and Activities*

The International Year of Biodiversity presents as an objective joint efforts of different public and private entities nationwide. There was established many contacts, and they were follow by meetings with different entities with the purpose to contribute to the dissemination of AIB in Colombia and also, spread the knowledge of fauna, flora and ecosystems of Colombia.