

BIODIVERSITY



Priorities in Science and Technology for Latin America and the Caribbean Planning Future Action Brazilian Academy of Sciences

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Latin American and Caribbean

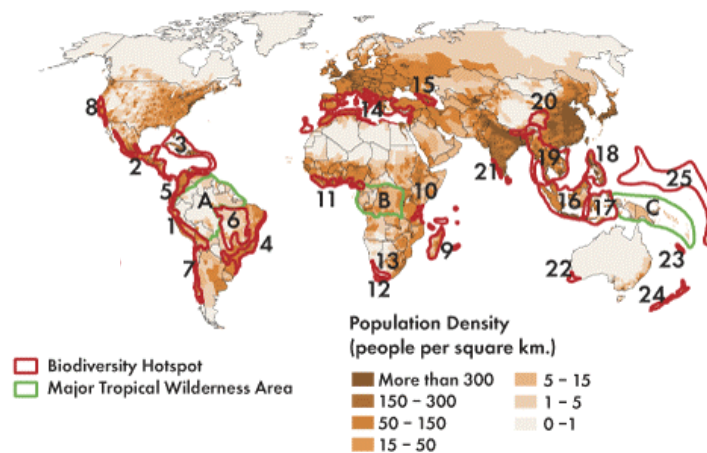
- ♦ The Latin America and Caribbean (LAC) region has five of the world's ten most biodiverse countries – Brazil, Colombia, Ecuador, Mexico, and Peru
- ♦ The most biologically diverse area in the world is found on the eastern slope of the Andes

Latin American and Caribbean

♦ The region contains an estimated 27 percent of the world's mammals, 34 percent of its plants, 37 percent of its reptiles, 43 percent of its birds, and 47 percent of its amphibians.

Forty percent of plants in the Caribbean is found nowhere else on earth.

Latin American and Caribbean



Latin American and Caribbean

IPCC Report (2007) – About 20-30% of plant and animal species studied are likely to be at increased risk of extinction if the global temperature rises between 1.5-2.5°C



DILAC – Priority research areas

(DIVERSITAS) Latin American and the Caribbean

- ◆ **Molecular diversity and phylogenetics**
- ◆ **Ecosystem impacts of invasive species**
- ◆ **Critical analysis and complementation of protected areas for biodiversity conservation**
- ◆ **Impact of global climate change (including El Niño) on biodiversity**



DILAC

(DIVERSITAS) Latin American and the Caribbean

◆ **Molecular diversity and phylogenetics**

- Contribution to discovery of biodiversity
- Mainstream high impact research
- Potential to discover genes of economic value in agriculture, fishing, forestry, etc



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◆ **Ecosystem impacts of invasive species**

- Assessment of rates of invasion and degree of threat of invasive species
- Development of an electronic Regional data base and an early warning system
- Strong contributions in theoretical ecology
- Mainstream research with medium to high impact
- Revert huge and often unpredictable negative economic impacts in agriculture, forestry and tourism



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◆ **Analysis and complementation of protected areas**

- Critical analysis of existing protected areas
- Incorporation of protective measures in the managed matrix
- Development of theoretical models for selecting new protected areas
- Middle stream research of high to medium impact
- Contribution of a wider variety of stakeholders in society industry to biodiversity protection



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◆ **Impact of global climate change (including El Niño) on biodiversity**

- Experimental assessment of impact of simulated climatic change
- Upscaling to the regional level
- Contributions in ecophysiology and global change biology
- Mainstream research with medium to high impact
- Huge economic connotations for resource management in agriculture and fisheries

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An international
program of biodiversity science
under the auspices of
ICSU and UNESCO

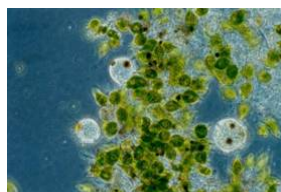


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DLAC- Molecular diversity and phylogenetics

bioGENESIS

- ◆ Develop new technologies, such as molecular tools, to speed up exploration of the Earth's biodiversity and discover new values



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Ecosystem impacts of invasive species

Impact of global climate change (including El Niño) on biodiversity

- ◆ Large-scale experimental systems and models to understand and predict the multiple effects of biodiversity changes on ecosystem processes and services



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Critical analysis and complementation of protected areas for biodiversity conservation

- ◆ Management and protection of biodiversity





- ◆ **Inventoring biodiversity of forests, lakes, rivers and coasts >30 sites in 20 countries**
- ◆ **Discovering many species new to science - 30% in some taxonomic groups**
- ◆ **Published standardized protocols as a book**
- ◆ **Trained >50 young scientists from Indonesia, Japan and Malaysia**

- ◆ **Carbon and biodiversity**
- ◆ **Enhancing and protecting indigenous biodiversity in oil palm agroecosystems**
- ◆ **Changing landscapes and biodiversity**

DIWPA

- ◆ 1995 - Workshop "Biodiversity and Dynamics of Ecosystems" (Singapore)
- ◆ 1997 - Symposium "Biodiversity in Island and Marine Ecosystems" (Suva, PSC)
- ◆ - Symposium /Workshop "Monitoring and Inventorying of Biodiversity in Western Pacific and Asia" (Taipei)
- ◆ 1998 - BICER, BDP and DIWPA Joint International Symposium on Lake Baika (Yokohama)
- ◆ 1999 - Symposium "Biodiversity and Ecosystem Process: Spatial and Trophic Considerations" (Kyoto)
- ◆ 2000 - Workshop "Standardization of IBOY Protocol" (Kyoto)
- ◆ - 日本学術会議シンポジウム「生物多様性科学の現状と展望（東京）
- ◆ 2001 - Workshop on Identification and Data Management (Tokyo)
- ◆ - IBOY記念シンポジウム（苫小牧）
- ◆ - IBOY記念シンポジウム（草津）
- ◆ 2002 - Joint Symposium "New Frontiers in Biodiversity Science – From Microbes to Landscape" (Kyoto)
- ◆ - Workshop "Specimen and data management system for IBOY" (Sapporo)
- ◆ 2003 - Symposium "Perspectives of the Biodiversity Research in the Western Pacific and Asia in the 21st Century" (Kyoto)
- ◆ 2004 - Workshop "Synergy between Carbon Management and Biodiversity Conservation in Tropical Rain Forests" (Sandakan, Malaysia)