



Date: September 23, 2009

For Immediate Release

**GARDEN SCIENTISTS CONTRIBUTE TO RESEARCH SHOWING
HUMAN ACTIVITY AND CLIMATE CHANGE AFFECT FREQUENCY AND
SEVERITY OF LANDSLIDES**

Research Is Published in the September Issue of BioScience

(ST. LOUIS): In the September issue of *BioScience*, Missouri Botanical Garden scientists contribute to research that examines the consequences of landslides on ecosystems and human lives, and analyzes the possibilities for regeneration of impacted areas and the management of future landslide risks. Landslides constitute a major geologic hazard. In the summer of 2009, landslides killed thousands of people and caused millions of dollars in damage. According to the United States Geological Survey, landslides commonly occur in connection with major natural disasters like earthquakes, volcanoes, wildfires and floods. Landslides pose serious threats to highways and structures that support fisheries, tourism, timber harvesting, mining, energy production and general transportation. They also modify mountain landscapes, posing severe and sometimes long-lasting perceived negative effects on natural and human-dominated ecosystems.

Authors Dr. Carla Restrepo (University of Puerto Rico-Rio Piedras), Dr. Lawrence R. Walker (University of Alaska-Fairbanks), Aaron B. Shiels (University of Hawaii' at Manoa), and Dr. Rainer Bussmann (Missouri Botanical Garden), and their interdisciplinary research team indicate mounting evidence showing that the frequency and magnitude of landsliding is changing in many parts of the world in response to climate change. The research is not surprising, given that precipitation is one of the main external triggering mechanisms involved in the formation of landslides.

(over)

ADD ONE: Landslides

“Natural landslides are widespread in tropical mountain areas and are one of the factors for the high diversity,” said Dr. Rainer Bussmann, the director of the William L. Brown Center at the Missouri Botanical Garden. “However, we find clear indications that human activities like road construction and climate change have led to a higher frequency and more severe magnitude of slide events as recent landslide disasters in Taiwan, India and China clearly show. Our research provides tools for a better understanding of landslide dangers, and can have wide implications in disaster management and avoidance.”

According to researchers, evidence from the past clearly indicates that there have been cycles of elevated landslide activity followed by cycles of low activity and that these are correlated with climate fluctuations over geologic time scales. What sets current changes in landslide activity apart are likely factors of human activity acting alone, or in concert with climate that can further modify the process of landsliding and the nature of ecosystem responses. Among these factors, deforestation and land-use change have the potential to influence the frequency and magnitude of landsliding because of their direct effects on vegetation attributes known to influence slope stability. The extent and conditions under which mountain ecosystems are resilient to these changes are not known. Addressing this issue is crucial for the long-term conservation of mountain landscapes.

To learn more about landsliding and its influence on mountain landscapes visit www.mobot.org.

The Missouri Botanical Garden is the oldest continually operating botanical garden in the nation, celebrating its 150th anniversary in 2009. *Missouri Botanical Garden: Green for 150 Years*.

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NOTE: A digital color image is available by request. Download media materials at www.mobot.org/press.

The Missouri Botanical Garden’s mission is “to discover and share knowledge about plants and their environment, in order to preserve and enrich life.” Today, 150 years after opening, the Missouri Botanical Garden is a National Historic Landmark and a center for science, conservation, education and horticultural display. *Missouri Botanical Garden: Green for 150 Years*.