

Comments by Ira Rubinoff

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“Tropical rainforests, home to more than half the world's species, cover less than 7% of the Earth's land area. Forests everywhere provide clean water, food, timber and climate control.

But the way we use forests is changing. Local land use is driven by the desires of people around the world. Decisions made by furniture companies in Sweden and the United States impact the forests of Papua New Guinea and Malaysia.

How do tropical forests respond to changing climate and elevated greenhouse gasses?

At the Smithsonian Tropical Research Institute, or "STRI" these questions are taken seriously. The scientists at STRI know tropical forests intimately, having worked in the remarkable open-air laboratory of the tropics for nearly one hundred years.

Over the next five years, through this remarkable partnership created by HSBC, STRI will embark upon an ambitious project-the first experiment to quantify and build predictive models for large-scale environmental services like water quality and quantity, carbon budgets and biological diversity supported by forests.

The project will link forest dynamics studies at sites in 17 tropical countries including Latin America, Asia and Africa.

Some of these studies have been going on for as long as 27 years.

The critical scientific research we plan to conduct with HSBC's support has three components.

The first dimension of our research will be a study of the Panama Canal watershed, and how different land-use practices impact water availability, water quality and sedimentation rates in the Canal. The Panama Canal, a strategic crossroads for global commerce, depends entirely on rainwater and is surrounded by tropical forest and growing urban centers.

Currently, 68% of the cargo going to and from the United States passes through the Panama Canal, and within the last year the Republic of Panama has initiated an expansion project that will increase its importance to world commerce and the world's economy.

Every Canal transit saves an expensive, energy-consuming and sometimes dangerous trip around the tip of South America. It is essential that we have better climate models to help us predict the future rainfall of this region.

The second component of our partnership with HSBC will examine and document changes in the flows of carbon through forest ecosystems.

We need to understand how forests contribute, quantitatively, to local and global carbon budgets by absorbing atmospheric carbon and storing it as plant tissue. Obtaining this information is key to understanding and predicting how forests respond to global change.

What drives carbon flow? What causes differences between forests? Forests around the world are composed of species that make different contributions to the carbon cycle. Certain types of species, such as fast-growing trees or lianas may become more abundant in response to climate change. The carbon uptake of forests could change if their composition changes.

In five years this project will give us a totally new perspective on carbon dynamics in forests, worldwide.

As a third aspect of our study, we want to ask whether temperate forests and tropical forests differ in the way they store and release carbon. Does climate change impact temperate and tropical forests differently? The only way to answer these questions is to extend our work beyond the tropics to examine temperate forests employing the same protocols as used in the tropics.

Through this project, three new temperate plots will be established, in the United States, in the United Kingdom, and in China. New temperate forest sites will allow comparisons to determine whether temperate and tropical forests respond in the same ways to global change.

In summary, by capturing real statistics on carbon, water and forest dynamic changes worldwide, we will be able to separate the human footprint of climate change from the longer-term climate change that our planet experiences.

We are honored to join World Wildlife Fund, The Climate Group and Earthwatch in the HSBC climate partnership to achieve these critical goals for humankind.”