

# Research Agenda June 1<sup>st</sup> 2006 – May 30<sup>th</sup> 2011.

May 2006

The research agenda at the Firestone Reserve is designed to (a) promote the efficient regeneration of native vegetation, (b) to contribute to time-longitudinal, quantitative biodiversity datasets, and (c) to provide data relevant to watershed management.

## 1. GIS Project.

**Goal:** to establish a professional-grade GIS framework for the “Greater Barú” area (10 km radius centered on the FCRE with an emphasis on

- (a) water resources (location; volume, seasonal behavior), water rights/ownership, water quality (bacteriological, sediment loads), and watershed delineation and ground cover.
- (b) Mapping and monitoring of landslides.
- (c) Small scale range mapping of vertebrate species, and movements thereof (i.e. feeding ranges of monkeys, bird flight paths, etc) that will help with determining where (at the community level) more restoration efforts are needed.

## 2. Biodiversity Inventory Project

**Goal:** to establish what we have, and what our neighbors (esp. Hacienda Barú) have, in a rigorously quantitative and repeatable manner so that we can:

- (a) monitor the trajectory of the local biodiversity capital, and
- (b) plan strategies to achieve defined goals through restoration initiatives, and
- (c) continuously assess progress towards these goals.

## 3. Hydrology/water Quality Project.

**Goal:** to determine and monitor water flow and quality at critical streams, year round, and more specifically to acquire;

- (a) fecal coliform counts
- (b) long term flow measurements
- (c) sediment load measurements
- (d) short term flow behavior (24 hour monitoring in relation to rainfall).

## 4. Restoration Project.

**Goal:** to determine, through rigorously designed and documented experiment, the most appropriate strategies for restoring degraded lands in the Barú area to natural, primary forest.