Geographic Information System (GIS) Projects

Ceiba Foundation has two options for GIS internship where participants will have the opportunity to develop essential data to support either the expansion of the Coastal Conservation Corridor (ACUS in Spanish) or the Wildlife Monitoring Program. Depending on the interns interests the internship can be remote or take place at the Lalo Loor Reserve in Ecuador. If the internship takes place in Ecuador, interns will also participate in other activities to support the supervisor such as environmental education and other conservation activities. While living in Ecuador, interns will learn about local culture as well as the experience of living in a rural setting.

Project 1: Coastal Conservation Corridor: Land Use Change Analysis

Description: Contribute to a large-scale conservation initiative located along the Ecuadorian coast to expand the Area of Conservation and Sustainable Use. Interns will use GIS to identify areas in threat of deforestation and determine change in forest cover over time, to assist Ceiba with the expansion of this biological corridor.

Project Background: The coastline of Ecuador harbors some of the last remnants of the threatened coastal dry forest (also known as the seasonal rainforest). Ceiba pioneered a legal framework in Ecuador for sustainable land management by collaborating with local municipalities to establish the Conservation and Sustainable Use Area (ACUS in Spanish). This biological corridor links over a quarter-million acres and spans more than 135 km. It encompasses a range of micro-climates and habitat types, providing critical connectivity for wildlife. With only 2% of coastal dry forests remaining, climate change will prove an obstacle for species if they do not have the option to migrate. Ceiba's goal is to continue expanding this corridor by connecting forest fragments to ensure biodiversity and habitat protection. The ultimate goal is to promote sustainable land uses that satisfy economic needs of landowners while also allowing local flora and fauna to flourish.

GIS data will shed light on changes in forest cover in the region to allow Ceiba to proceed with the ACUS project using a targeted strategy. By developing a robust data driven story of the link between human development and deforestation, Ceiba can provide tangible evidence when speaking with municipal governments and local landowners who are considering proactive conservation measures.

What will you do?

- GIS data collection
- Develop forest cover map
- Analyze change in forest cover over time for various locations

Project 2: Wildlife Monitoring Program: Land Use Mapping

Description: Extrapolate on findings from the Wildlife Monitoring Project Wildlife (such as wildlife mortality rates) by collecting data on land use type along roads in coastal Ecuador.

Project background: The coastal dry forest provides a variety of habitats where a wide range of species can be found, from those favoring wet tropics and others drier conditions. Unfortunately human development has infringed on this critical habitat and resulted in loss of biodiversity. One example of this

loss can be seen in the high wildlife mortality rates along the roads in coastal Ecuador. Ceiba is monitoring wildlife populations to assess the impacts of human activity and restoration of habitat on wildlife in the Lalo Loor Dry Forest Reserve and other forest remnants in the coastal ACUS (Conservation and Sustainable Use Area). A major goal of the project is to determine the areas of highest impact on animal species by correlating findings between types of land use and human features (ex: bridges) and impacts on animals. These findings will clarify measures that need to be taken to ensure biodiversity in the region and limit wildlife mortality from human development.

What will you do?

- Produce map layers representing land use and human development features as represented by polygons and points
- Measure distances between land use areas and development features
- Create a summary of land use/km of road and distances to development features
- Analyze and summarize the findings from the Wildlife Monitoring Project in relation to the distances between land use and human development features

(for both projects…)

What will you learn?

- GIS data collection and processing
- Data organization, management, and analysis
- Strengthen your GIS skills on a real life conservation project
- The many facets of a large scale conservation project
- Produce real time data that will influence conservation work in Ecuador

What do we seek?

We are looking forIndividuals who have experience and knowledge in GIS. Interns must have intermediate Spanish language ability for the ACUS project. Enthusiastic, self-motivated interns with attention to detail.