



WRL reference	M04 D02
Module	M04 Ecosystems – Tropical Rainforests
Data set	D02 Quantifying forest disturbance in cloud forest

Background to the research:

Cloud forests are one of the most threatened habitats in Central America, large gaps remain in the knowledge of these habitats and many established National Parks in Honduras lack effective protection. Loss of forest and biodiversity may be due to many reasons such as deforestation from illegal logging, agriculture development (coffee production) and biodiversity loss due to hunting. The health of the forest is also threatened by many outside threats such as climate disruption, poorly organized ecotourism, invasive species and ever increasing local populations.

Since a reconnaissance expedition on 2004, Operation Wallacea has established an annual research project in the cloud forests of Cusuco National Park (CNP) in Honduras that centers around a monitoring program of selected cloud forest habitat plots and selected taxa.



Figure 1. Study sites within the Cusuco National Park.

(for further information about CNP look at the Research Site information in the resources folder)

The project strives towards documenting the remaining biodiversity and undertaking selected projects to increase understanding of the ecosystem. Monitoring data is collected on sampling points situated along transects starting in seven camps. Sites are selected to cover as broad a range of habitats in CNP as possible, but with the main focus on the mid to high elevation forests. Monitored taxa include dung beetles, jewel scarab beetles, Spingidae and Saturnidae moths,





amphibians, reptiles, birds, bats, Baird's tapir and other large mammals, plants and small mammal populations.

Additional projects focusing on biodiversity surveys include bromeliad associated aquatic invertebrates, Odonata, Arachnida, Decapoda and epiphytes. In addition to these monitoring studies there are further specialised studies that will generate data to assist with the management of the Park. These include a wide range of projects, such as the development of an aquatic biotic index that can be used in the Merendon mountain range to monitor water quality. Another project is focused on the incidence and possible methods of transmission of Chytrid fungus in the Park's amphibians.

The monitoring data, up to 2010, have been combined with information gathered from buffer zone communities, collected during the 2008-2012 field seasons, and remote sensing data to produce a Climate, Community and Biodiversity Alliance (CCB) project design document for Cusuco National Park. This document will not only report the state of CNP in terms of carbon tonnage and biodiversity, but will also outline plans and associated budgets for forest patrols to protect the remaining forest and biodiversity as well as a sustainable development project with buffer zone communities, aimed at combating poverty and reducing community reliance on forest resources.



Habitat Surveys:

Seven camps are being used in the Cusuco National Park (figure 1), two in the 'buffer zone' and five within the core area of CNP. At each of the camps three transects have been installed and sample sites positioned along these routes. The steep terrain posed limitations on the sample site locations, so sites were installed wherever possible as long as they were a minimum of 200m apart.

The transects are numbered and on each of the routes the habitat sites are numbered sequentially starting from the camp. Thus BA3 SS3 is the third site along transect 3 at Buenos Aires. The GPS locations of each of the sites have been recorded on the database kept at Base Camp.





wallace resource library

brought to you by Operation Wallacea

Along these transects 120 habitat plots (20mx20m) have been established and are surveyed every year measuring variables such as the characteristics of the soil, the vegetation type, canopy cover etc. (details of this are covered in the instruction section).

Up until 2012, the main reason for monitoring these habitat plots was to provide data for the REDD+ Carbon Assessment scheme. Details of this can be found in the key papers located in the resource folder for this data set. In 2013 the existing habit plot protocols were altered so that forest disturbance could be monitored in CNP. Over the last few years there has been increasing concern about the effects of human disturbance on this vulnerable cloud forest site. It is hoped to run this monitoring project for the foreseeable future although it will take a number of years until any trends can be observed.

The purpose of this data set is to see how any disturbance can be quantified and used for the future protection of CNP.

Additional reading:

Cusuco National Park, Honduras. 2012 Status Report - located in the Resource Folder under Key Papers.

