

**Title:** The potential of global climate change to affect the nature-based income of developing countries in the tropics.

**Summary:** Wildlife-based tourism (WBT) is now a major component of global tourism and provides resources for local communities and for the conservation management of sites. This is especially true in developing countries across the tropics. However, the drivers of such tourism remain poorly understood. Also, given projections of future climate changes, it is imperative to understand how the changing distribution of species might affect WBT.

**The Research Question:** This project has two main research questions: (1) which species act as WBT attractants in the developing countries of the tropics, and (2) how might visitors to WBT sites change under projections of future climate changes in these areas.

**The Objectives of the Research:** Our objectives will be firstly to collate data on the species that are tourism attractors. We will then use state of the art mathematical modelling processes, developed at Durham, to relate the distribution of these species to climate and habitat, and to then predict how much species might alter their ranges in the next 50-years in response to regional climate change.

**Project Summary:** In year one of my placement I will focus on compiling data on the distribution of key species that attract wildlife tourism. I will focus my work on sub-Saharan Africa as there are many developing countries in this region for which wildlife tourism contributes substantially to GDP, or which have the potential to develop wildlife tourism income in future. For this, I will extract data from wildlife tourism guide-books and will liaise with global leaders in wildlife conservation and tourism, including the NGOs Conservation International, BirdLife International and the World Wide Fund for Nature, all of whom already collaborate with staff in Durham's biology department on related issues. I will also take advantage of links between Durham and two leading national zoos (Chester Zoo and London Zoo) to obtain data on the popularity of species in zoos for visitors, and of the traits that make species attractive. During the second year of my placement I will obtain data on the distribution of the key species identified in year one and will produce mathematical models to relate their distribution to climate and habitat data. I will then apply these models to future climate and land-cover projections to identify areas that will lose or gain groups of species that have the potential to affect tourism income.

My intention is to then produce a report summarising the findings of my scholarship which I will distribute to the relevant NGOs working in the region. Furthermore, working with Professor Willis in Biosciences I aim to synthesise my findings in a scientific paper.