REPORT ON EXPEDITION/PROJECT/CONFERENCE

Expedition/Project/ Conference Title: Annual biodiversity survey in the Iwokrama Forest Reserve, Guyana

Travel Dates: 19/06/2017 – 18/07/2017

Location: Iwokrama Forest Reserve, Guyana

Group member(s): Juan Pablo Lobo-Guerrero

Aims: Contribute to the long-term monitoring study that aims to assess the impacts of implementing two different forest management strategies on the abundance and diversity of fauna and flora in the Iwokrama Forest Reserve.

OUTCOME (not less than 300 words):-

As part of an initiative from the Guyanese government, biodiversity surveys are conducted annually in 6 sites across the Iwokrama Forest Reserve. The reserve is located in the interior region of Guyana and spans 3,700 Km. The long-term surveying program, which has been running for over 5 years, is based on the implementation of two management strategies within the reserve: WP (Wilderness Preserve) and SUA (Sustainable Use Areas), the former corresponding to areas where there is no human intervention, and the latter where sustainable forestry is carried out. Figure 1 illustrates the spatial distribution of such sites across the reserve. These differing management conditions are used to observe and compare the effect of anthropogenic intervention on endemic flora and fauna abundance (and to some extent diversity). The biodiversity surveys aim to establish and identify the possible impact of climate change, climate fluctuations (in particular, the impact of El Niño Southern Oscillations) and anthropogenic disturbance on a long-term basis.The surveys are of particular importance due to the fact that some of the areas within the reserves inquired haven't been surveyed before. In some years, previously unknown invertebrate species have been recorded.

The expedition included both terrestrial and river-based surveys. Terrestrial surveys covered herpetofauna surveys, bird surveys, dung-beetle surveys, large fauna surveys (mammals), bat surveys, and forest structure and dynamics surveys. Some methods employed included catch-and-release traps for birds and bats, camera traps to detect large fauna species, and stratification of different areas of the forest into quadrats to calculate the carbon stock per plot.

Results from the survey carried out this summer will be available in the next few months and will be provided by Operation Wallacea in an annual report. Some preliminary evaluations by the experts on-site pointed towards an overall reduction in the diversity of identified species, something that could be accounted to the particularly wet conditions during the expedition. Whether such observations will be reflected on the actual data collected is yet to be seen.

Heavy precipitation falling on a daily basis is not only likely to have impacted our ability as surveyors to record data and collect samples, but also influence the behaviour of the animal species sampled. The techniques used to record the abundance of animal species rely on regular patterns of behaviour and ecophysiology which might have shifted or been disrupted as a result of wetter climatic conditions (e.g. ability of birds to fly, and thus end up trapped in

the mist nets is hindered under conditions of heavy precipitation). Our ability to accurately carry out the surveys could have been impacted in terms of the accessibility to sites (several sites from previous years were completely flooded), the adequacy of techniques to conditions of heavy rain (particularly regarding the bird and bat mist nets), among other logistical issues. The occurrence of this environmental condition is however important for the long-term component of this study, which suggests that climate fluctuations (e.g. ENSO) might have an impact on the ecology of the forest and the abundance of fauna within it. It is important to note that results from previous years have shown slight year-to-year annual variations in fauna abundance, but trends have overall remained relatively stable, and without following a specific direction.

As a concluding note, I feel the need to mention and highlight the positive impact that the presence of local guides had during the expedition and throughout the process of data collection. The guides very much played an active role during the surveys, aiding in the identification of flora and fauna species, as well as pointing out features that would otherwise be disregarded. Their help was especially significant for large mammal and herpetofauna transects, in which prints, paths and sounds were detected. Their knowledge – different to our own - is one mainly acquired through lived experiences in the forest environment, something that points out the importance of considering the fact that there are other means by which an understanding of ecosystems and their components is acquired, means which are not to be disregarded or considered less valid than our own.

Figure 1. Map of the Iwokrama Forest Reserve
Shows the location of the reserve within Guyana and the stratification of land within the reserve according to the management practices implemented (Wildlife Protected or Sustainable Use Areas).
(Anon, 2017)