

Central American cloud forest, a magical ecosystem where everything is alive

By Rosa Alicia Jiménez

The exuberance of the tropics is evident in the cloud forest of Guatemala. It is the month of June when we arrive at the Biological Corridor of the Cloud Forest (BCCF). Even when it is summer in the northern hemisphere and sunlight shortens the night, it is the time of the sunset when we get there at 6 pm. Three undergraduate students come with me – Andrea Aguilera and Andrid Ramírez from the Biology School in Guatemala, and Sabrina Horrack from UC Berkeley. They are enthusiastic volunteers for conducting fieldwork research. Rain is unavoidable during this time of the year, the Brown-backed Solitaire and the Highland Guan seem to celebrate it with the clamor of their melodic songs. The landscape is far from being homogeneous, the distribution of different kinds of trees, conifers or broadleaved, seems to be influenced by the amount of clouds that are formed in the different slopes of the mountains. Additionally, there are different uses that are given to the land, from areas of preserved forests, through cultivation of timber trees, to areas totally transformed into crops of ferns and tomatoes.

The Reserve for the Conservation of the Quetzal, which is the national bird of Guatemala, welcomes us. In the absence of light, because rain damages the electrical connection, we talk about the new experiences that fieldwork will provide us. The research we will execute aims to study the genetic diversity of montane birds. The information obtained about the structural and functional connectivity of the BCCF will support the conservation and management of biodiversity. The corridor was established 20 years ago to connect the Reserve for the Conservation of the Quetzal and the Biosphere Reserve Sierra de las Minas. In order to achieve that connectivity goal, state reserve managers and private land owners integrated a partnership and since then, they have been working for the conservation of the area. Despite all that encouraging effort, there has been no evaluation of the connectivity this corridor provides. The development of this evaluation will offer information to improve the connectivity in the area, and to encourage government and private land owners in the conservation work they do.

Early next morning, we start setting mist-nets, which we use to capture wild birds from the understory (*i.e.*, the lower level of the forest). Most of the species are just finishing their breeding season, taking advantage of the abundance of insects and the absence of migratory bird species

during this time of the year. That explains the presence of juveniles and post-breeding adults in the area. During our first week of fieldwork, we capture 20 different species of birds, all of them restricted to the montane cloud forest habitat. It is our surprise to recapture two banded individuals, each one of a different species. These two birds were banded by Bianca Bosarreyes, a field biologist working on bird conservation in the area. We are astonished when she tells us that the birds were banded on 2004 and 2008 in exactly the same place! This information might suggest that tropical bird species, through their long lifespan, can be subjected to different environmental pressures and maybe, without the ability to move long distances.

The following week, two other Guatemalan Biology students join us in the field, Myrnamaría Galindo and Rosa Roldán. In the same way as the other three students, they are interested in obtaining fieldwork research experience, as well as academic and cultural exchange. We all get together at Country Delights Private Reserve, where a meeting with the board of the BCCF Partnership will be held. I was able to arrange this meeting beforehand, thanks to the support of one of the members of the board. The main goal of this meeting is to personally meet the board and introduce them my research objectives and its implications on conservation. Fourteen people are present, including state reserves managers and private reserves owners. It is very pleasant that even some owners' children are at the meeting, the new generation is starting to learn about biodiversity conservation. They are essential for the conservation of the cloud forest in the long term. The meeting was very successful as at the end of the meeting, they express interest on my research and their willingness to allow us to work on their land.

During the season, we are able to conduct research in two private reserves, Country Delights and Posada Montaña del Quetzal. While at Posada Montaña del Quetzal, it is a surprise to meet with my old friend Rob Cahill. We know each other since a few years, when we attended to a Christmas Bird Count in northern Guatemala. He is native from the US and works in Guatemala for the organization "Community Cloud Forest Conservation". He is accompanied by fifteen more people, who were volunteers in that organization the week before. We have dinner together and we get to know each other. They all come from Minnesota with the aim of contributing with community development and tropical forest conservation. It is good to hear that they enjoyed their time in Guatemala and it really warms my heart to listen that they learnt from Guatemalans to have less

barriers in interpersonal relationships. I definitely learnt from them to appreciate our cultural diversity and get the best of it to be a better person each day.

The cloud forest has the ability to capture water and with that, the ability to sustain an incredible diversity of life, from diminutive mushrooms to towns full of people. Research based on genetic and environmental data provide us with essential information to understand our surrounding world and to find the best tools to preserve it. The people I met during summer 2017 and the preliminary data I gathered will be very useful for my dissertation development, but most importantly, for the conservation of our environment.