Project Update: February 2013

During the six weeks of field work on the Masoala peninsula (November – December 2012), we carried out several activities, all of which revolved around the detection of selective logging, measurements of its effects on the rest of the forest, and the general understanding of mechanisms behind the land use in Masoala. A considerable amount of time was also invested in training the team in field navigation, measurement methods, and discussion of important concepts in conservation. We also had several occasions to discuss conservation issues with local inhabitants.

Extensive sampling of ant communities, serving us as indicator taxa, was carried out both in the more pristine western Masoala, and in the highly disturbed eastern part of the peninsula. We sampled ants along 250 m long transects in pristine and lightly disturbed rainforest in Tampolo and Ambanizana area, in order to get a good idea about how the ant diversity and community composition changed over the last 15 years. We will compare our results to samples taken at the same sites by a team from the California Academy of Science in mid 1990s.

Further, we sampled ants at 15 different sites in the watershed of the Onive (Ianobe) river. Beginning close to the coast, in the park's detached parcels, we sampled in sites where forest had been entirely transformed into grassland due to cyclones and burning. Further inland, we sampled in a mosaic of secondary forest and small plots used for the cultivation of rice and cash crops. Along the park border, our sample sites were in a mosaic of newly established plots and lightly degraded forest. Eventually, we were able to also sample in a relatively undisturbed forest in the interior of the Masoala National Park.

At each site, we not only sampled ants, but also took measures that best characterize the state of the vegetation. We quantified, in small plots, the abundance of invasive and introduced plants, the overall above ground biomass, and the primary forest species regeneration. These measures were analysed with regards to the history of each plot: all of the 15 sites were meticulously described in 2001 by a team from Missouri Botanical Garden. Particularly interesting to us was the type of human and natural pressure present at the time at each size, for example cyclones, or selective logging.

Finally, we were able to test a new methodology of surveying the forest canopy, by using a conservation drone (see http://www.ConservationDrones.org). This low-cost technology enables the collection of high resolution aerial photographs and videos of the forest canopy. The main advantage of this technology is its low cost (even compared to the cost of satellite images) and the flexibility of its deployment. Nevertheless, the difficult meteorological conditions in Masoala, and many logistic complications caused by the remoteness of our field sites prevented us from achieving all of our goals. A sample of the material that we were able to collect with the conservation drone can be seen in the video (http://www.youtube.com/watch?v=rZGiTQmkM1o).

Next steps: during the next few months we hope to identify the ant specimens to genus level, analyse botanical data and feed them to a theoretical model that simulates interactions between different land uses in Masoala, and finish a GIS analysis of our field data.