

## Project Update: November 2014

Hydroelectric dams are a major cause of habitat destruction and degradation in the Amazon. Damming a river decreases the habitat available for terrestrial species due to the huge forest area that is flooded. When that forested area is not previously removed, are originated land-bridge islands, corresponding to the hilltops. Those insular fragments are immersed in an aquatic matrix, which is then considered a very effective barrier against the migration of terrestrial species. Despite of the extensive literature on fragmentation, few studies have presented water as matrix type. Therefore, there is little information available about the impacts of such type of matrix on species persistence. Among the most affected vertebrate for such type of disturbance, particular attention should be paid for the less mobile animals to cross the aquatic matrix, as are the small mammals. Such taxon plays important roles as seed predators and, in some cases, dispersers, besides of being also an important food resources for other species. Therefore, given its central trophic position, small mammals are an appropriate target community of species to help to understand the ecosystem functioning within an archipelagic landscape. This project aims to evaluate the ecological impacts resulting from a dam building on the local communities of small mammals by: (1) comparing the structure of small mammals communities between archipelagic and continuous areas; (2) determining the variables that explain the observed patterns of that communities structure; and (3) figuring out the ecological and functional species traits that contribute to its persistence within an archipelagic landscape.

This project is being carried out in Balbina's reservoir in the Central Brazilian Amazon. Balbina is a 27-year old dam whose building flooded 4,437.63 km<sup>2</sup> of primary forest and where 3,525 land-bridge islands were originated. From April to November 2014, we sampled 28 of those land-bridge islands, with different sizes and degrees of isolation, and three mainland regions. Each site had been sampled during 16 consecutive nights. Due to the differences in behaviour, habitat use, diets, body size, and use of vertical strata of the small mammals that influence the effectiveness in its capture, this taxon communities we were using both live (Sherman and Tomahawk) and pitfall traps that were placed on the ground, understory and canopy.

So far, we captured 377 individuals belonging to more than 18 species (17 genera, including one unknown species). Data analysis are still undergoing, however, the number of individuals captured per site is not considered sufficient for most of the site and so further sampling is needed to allow conclusions about the impact of the archipelagic landscape on the small mammals communities.



Left - *Monodelphis brevicauda*, which is a fossorial marsupial only captured on pitfalls as presumably is not attracted by the baits used in the traps. This is considered a rare species. Right - *Marmosa demerarea*, which is an arboreal marsupial that does not has a proper pouch. This is the most abundant small mammal's species

throughout the archipelagic landscape of Balb