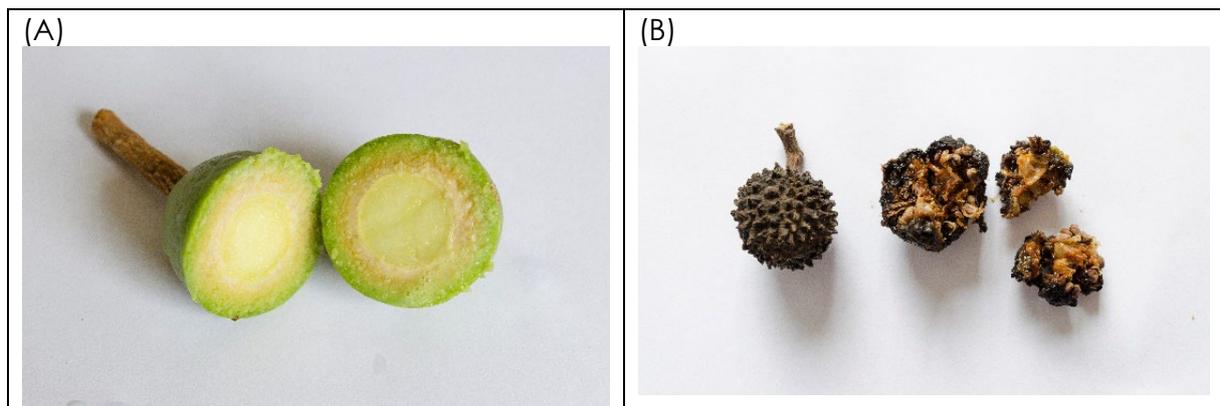


Project Updates: August 2023

We finished observations of fruit consumption by birds on fruiting plants in December 2022. The data associated with morphological attributes of fruits, important for consumption by animals (such as length, diameter, and crop size) are already digitalised. Beginning with the pilot study (in October 2020) to December 2022, we have recorded interactions involving 70 species of birds and 310 individuals of plants belonging to 84 species in 2065 frugivory events. The next step in this research is to generate interaction networks and extract indices (e.g., specialization H_2') from these, and indices of functional and phylogenetic diversity. At the same time, we are preparing the material for presenting our results to the general public, with our planned outreach activities.



Photos of some fruits consumed by frugivorous birds that will be used in the material for publicizing the results. (A) *Andira cujabensis*. (B) *Guazuma ulmifolia*.

Although plant identification took longer than expected, as some collected plants are from groups that are difficult to identify (such as from the families Myrtaceae and Fabaceae, as well as those from the genus *Ficus*). In August 2023, we finalised the identification of all material with the help of specialist botanist Dr. Flávio Macedo Alves and other collaborators. A total of 84 plant species were observed from October 2020 (pilot study) to December 2022, 81 of the plant species are identified at the species level, for three of them we know for now only their family. In the same month we also deposited all collected plant materials in the herbarium collection of the Federal University of Mato Grosso do Sul.

We encountered some difficulties in extracting land cover measures on a fine scale. We evaluated the different ways to measure and classify the landscape in terms of land use. The first two alternatives tested presented some problems: (i) one of the ways was based on manual procedure, but it is very time-consuming, and it would be difficult to reach the established deadlines to deliver the results; (ii) the other method provided a classification of the landscape on a very “coarse” scale, and for our purpose it would not serve. We continued to search for alternative ways to extract these measurements and found the called “supervised classification”. In this method of landscape classification is made extracting pixel samples for each class of land use (such as trees, streets, water bodies and others). However, the pixel size did not allow us to detect landscape details (such as the paved streets). The alternative that we are currently studying is to use indices, called NDVI (Normalized Difference Vegetation Index) and NDBI (Normalized Difference Built-Up Index), which are visually more promising.



Pictures in the field: Yellow-chevroned Parakeet (*Brotogeris chiriri*) consuming fruits of *Ficus obtusifolia*. © Maiara Vissoto.

See video recording of Toco Toucan (*Ramphastos toco*) consuming fruits of *Schefflera morototoni*: <https://youtu.be/GqI0qZvDStA>



Photo of the exsiccat of the species *Eugenia puniceifolia* deposited in the herbarium collection of the Federal University of Mato Grosso do Sul.