

# Size categories of *Leopoldinia piassaba* W. (Arecaceae) for sustainable management in North-West Amazon

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## Abstract

*Leopoldinia piassaba* is an endemic palm of the north-west Amazon region that provide several ecosystem services to local and indigenous communities; however, the management strategies based on scientific criteria are scarce. We have measured *L. piassaba* populations in Guainia, Colombia. Following physiologic and structure features we have identified 7 size classes with different abundance in the two places of natural distribution. Moreover, we found susceptible categories under harvest practices.

## Introduction



*Leopoldinia piassaba* locally known as chiqui-chiqui is an endemic palm of North-West Amazon in Brazil, Colombia and Venezuela covering more than 700.000 Ha in soils type gley and podzol. This palm plays a crucial role in the ecology of the forest that inhabits and also in the economy of the local and indigenous communities, mainly as a source of Non-Timber forest products (e.g. Roofing, handicrafts, food and spiritual beliefs) hence can be exposed to overharvesting. Although, there is a lack of detailed information regarding ecology and structure of their populations which is highly important to promote sustainable usage.



## Methods & Materials

Together with the ingenuous and local groups, we have searched for forest with presence of *L. piassaba* populations in the north of the department of Guainía; specifically forest under gley soil in the community of Sabanitas and under podzol soil Cacahual near the city of Inírida were selected; subsequently, we have established 7 sampling plots that account to 5 ha where we census chiqui-chiqui palm individuals.



Chiqui-chiqui forest



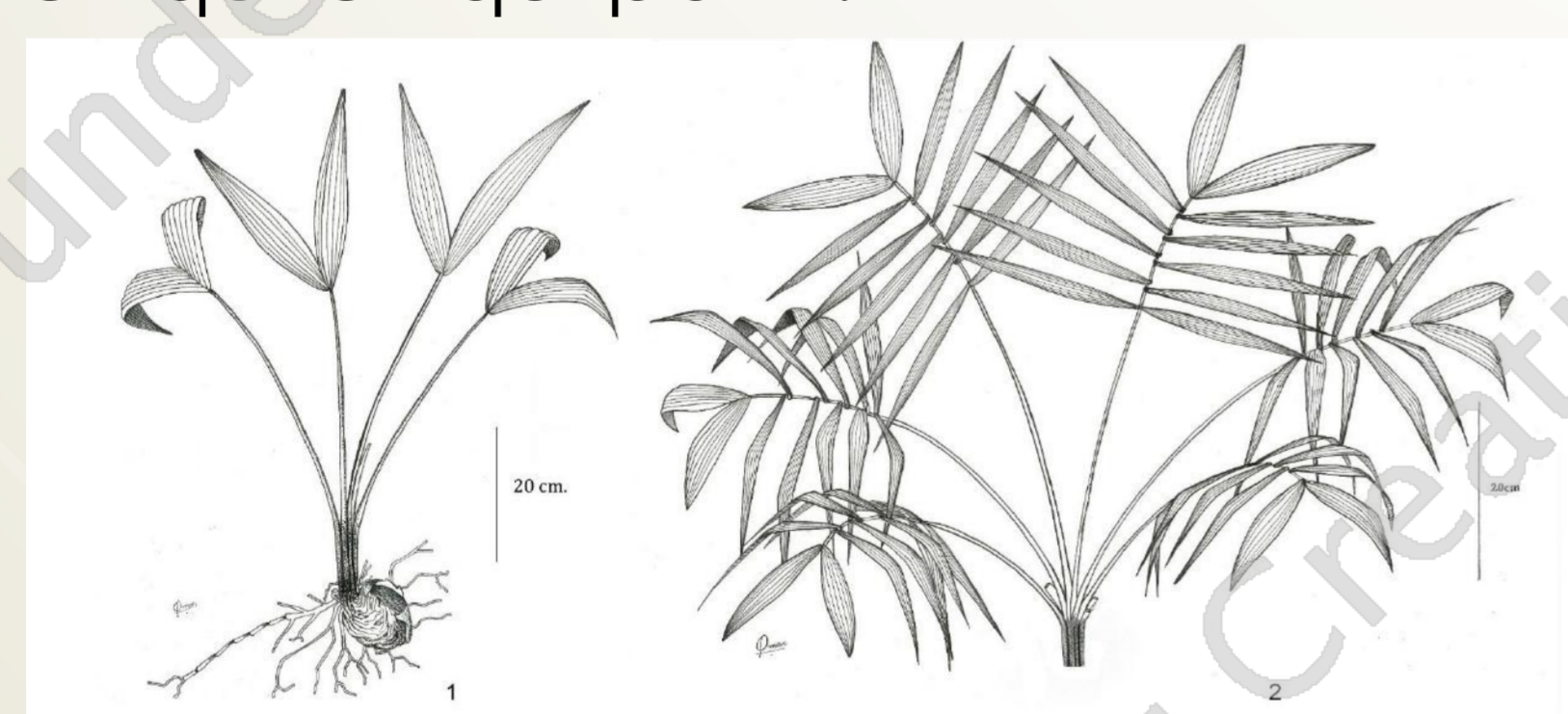
Field work



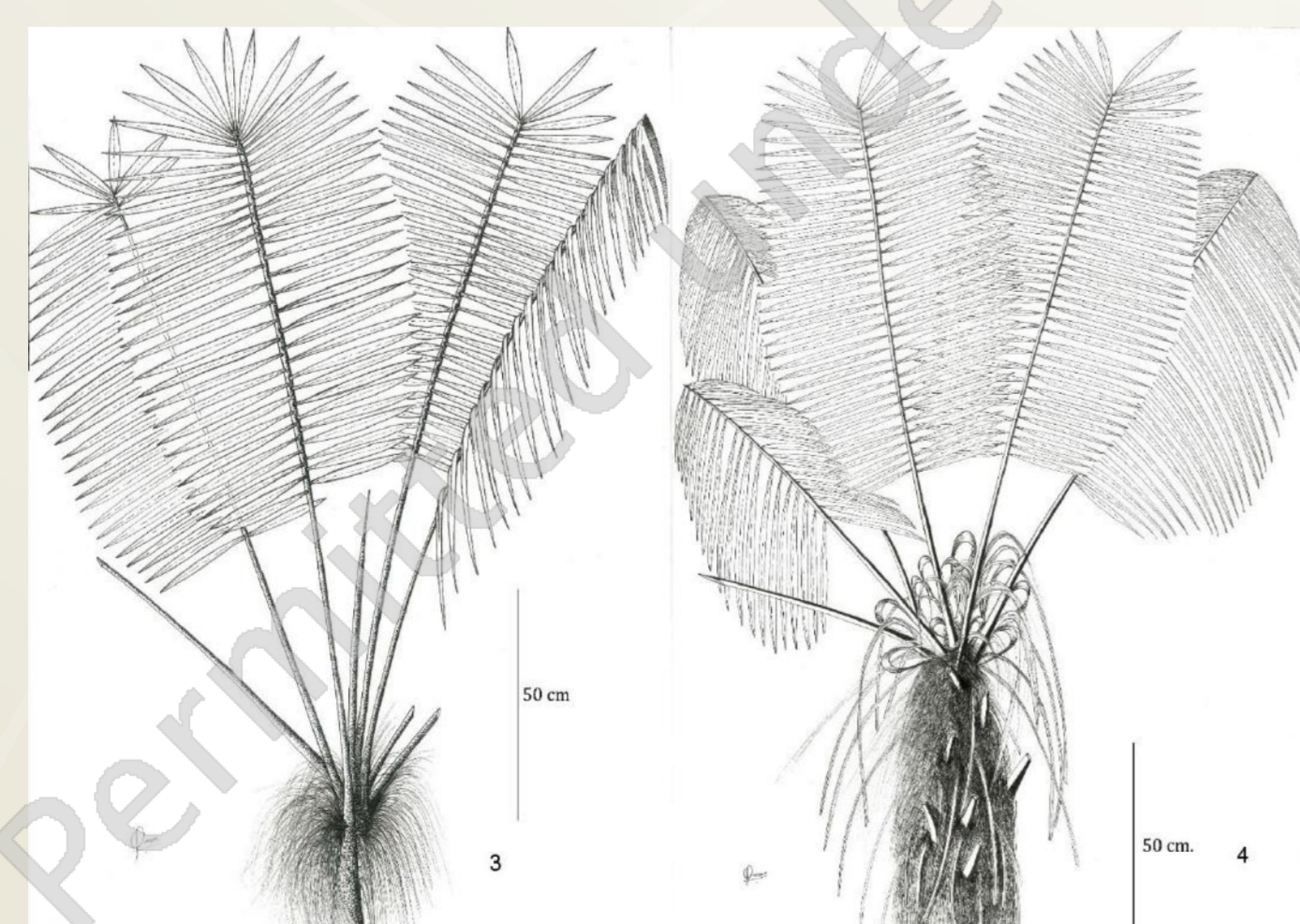
Furthermore, following the natural history and morphologic criteria suggested in the literature, (Bernal 1992, Galeano et al., 2010) such as number of leaves, pinnae, folds, veins and height we study the individuals in order to differentiate several stages.

## Results

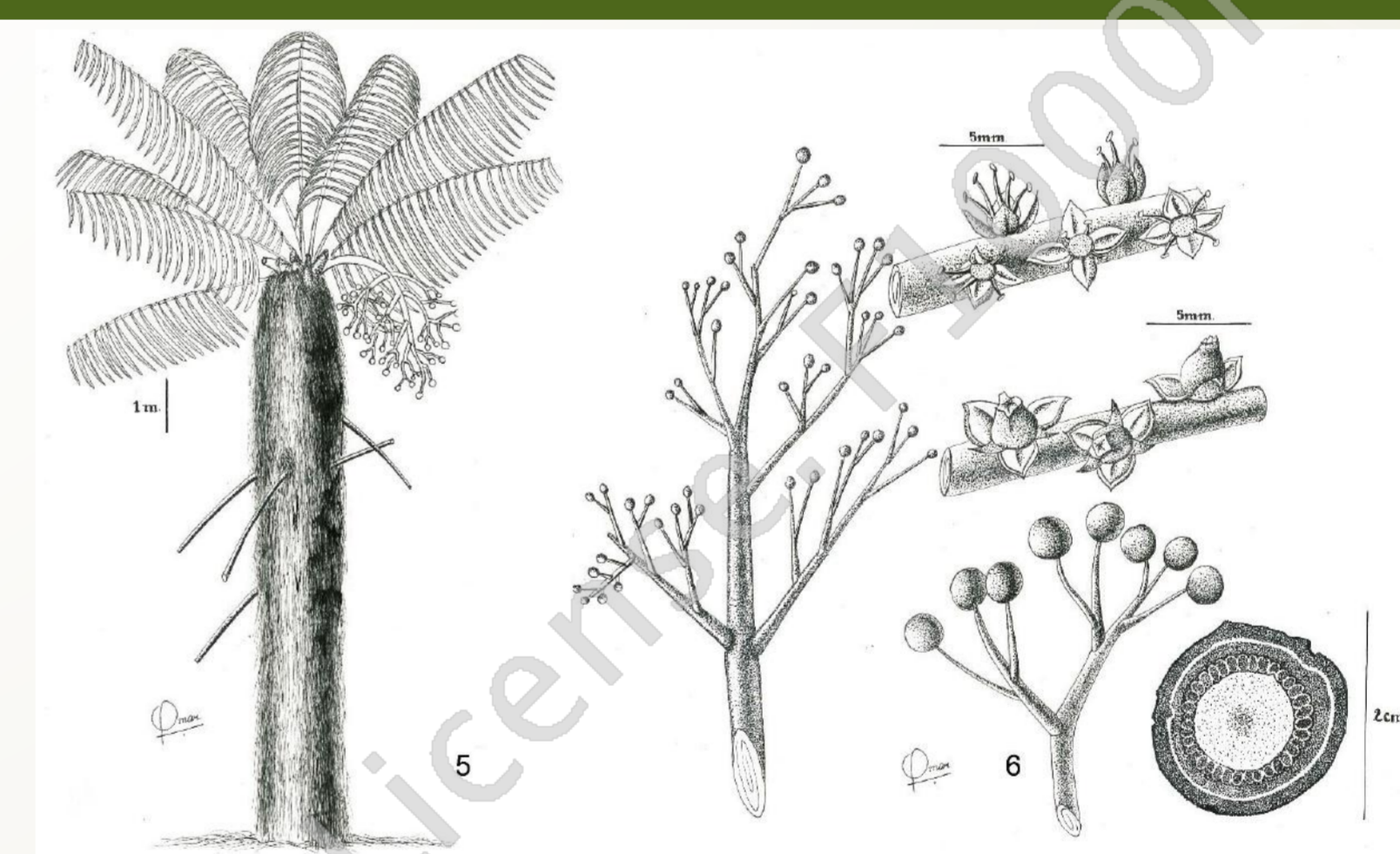
After a complete census of *L. piassaba* individuals inside the study plots, we made a structural analysis; firstly, we divided the population in the three big categories: Seedlings, juveniles and adults. Subsequently, a refined classification following morphologic criteria was made, finding a total of 7 size classes for chiqui-chiqui palm.



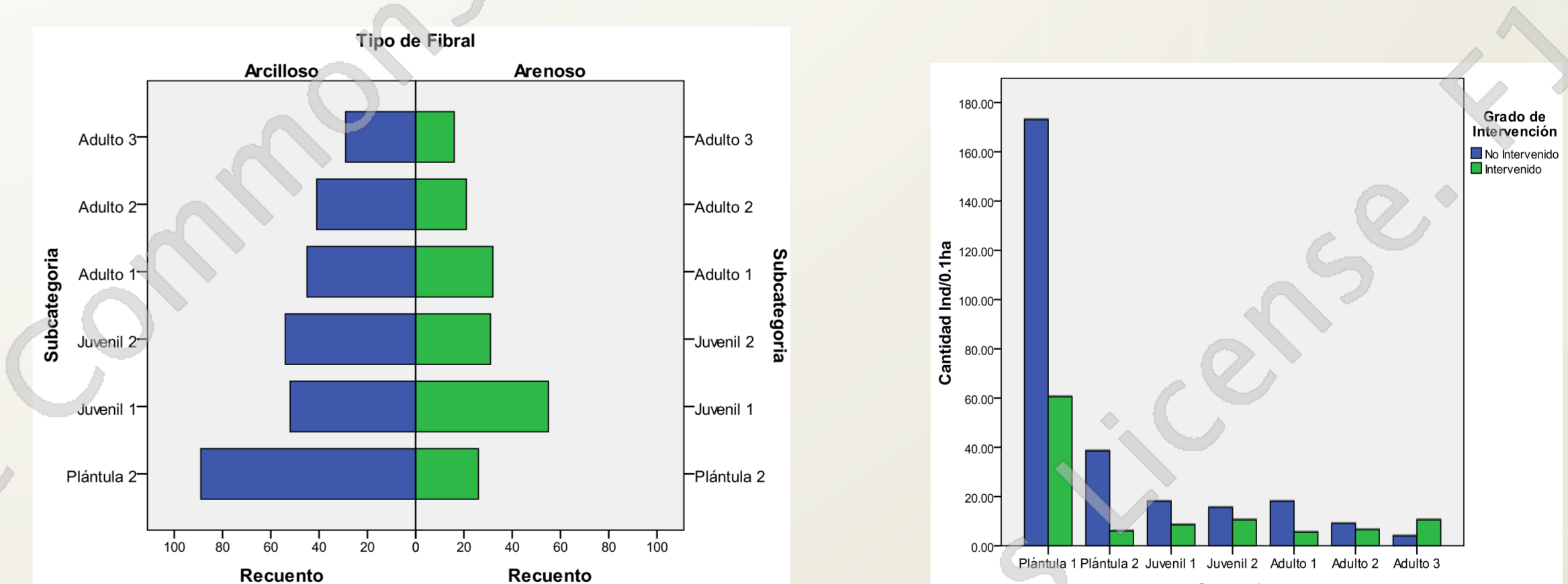
Seedlings



Juveniles



Adult, inflorescences and fruit



Frequency distribution of categories by forest type and intervention

Furthermore, similarly to previous literature (e.g. Lescure et al. 1992, Etter & Imamoto, 2001) we noticed that there is a clear difference in the structure in the two places of natural distribution. Therefore, we identify more susceptible stages

## Conclusion

This is the first time that a detailed study of the size categories is made for *Leopoldinia piassaba*, also shown a marked difference between the both types of forests. What is more, this approach can allow to monitor impacts in each stage and also enhance sustainable usage of the specie in the region

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