

# Genetic diversity of aguaje (*Mauritia flexuosa*) in Peruvian and Ecuadorian Amazon

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## Introduction

*Mauritia flexuosa* (aguaje) is a dioecious indigenous species from the family *Arecaceae* important for local people and for Amazon forest as a whole. The specific environments along the banks of large rivers or inside the lowland jungle forest, where water is retained and where nutrients are slowly decomposed, are called *aguajales*. Particularly these swampy areas, where *M. flexuosa* occurs in abundance, provide a refuge for different kinds of fauna and flora. People from the local communities living in the Amazon depend on its nutritive fruits. The fact that it is a dioecious species presents number of difficulties in cultivation. Therefore, a large part of the production is still obtained from wild stands, usually by cutting the female trees. Unfortunately, this unsustainable management of the fruit collection leads to degradation of *aguajales* and to biodiversity loss.

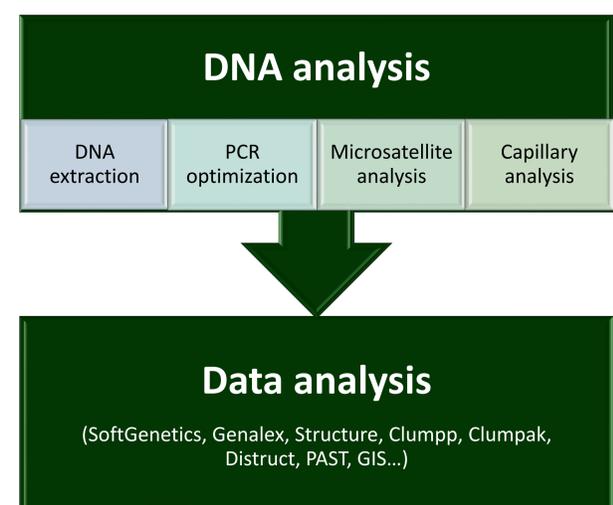
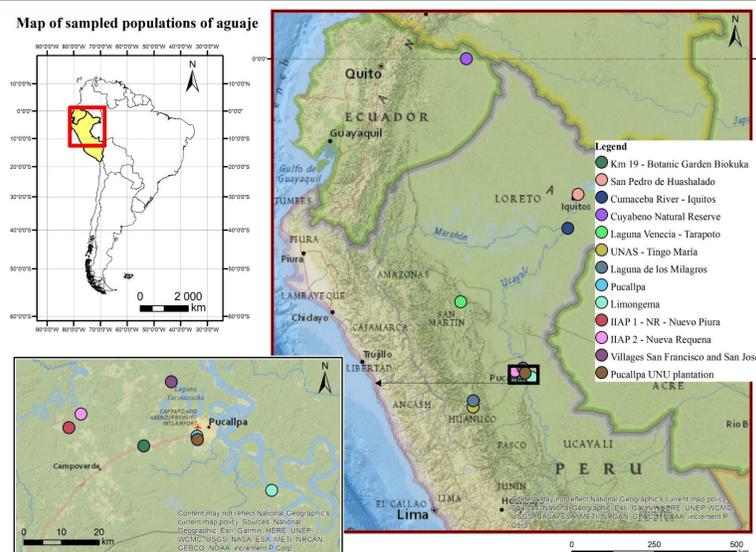
The specific aims of this study were:

1. To assess the intra- and inter-population genetic diversity of *M. flexuosa* in Peruvian and Ecuadorian Amazon by SSR microsatellite markers
2. To determine the genetic structure of sampled populations.
3. To find a correlation between geographical distances and genetic diversity among selected provenances and individuals.
4. To compare genetic variability among populations

## Materials and Methods

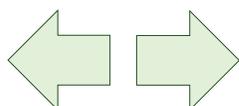


147 samples from 5 regions were collected in Peruvian and Ecuadorian Amazon between June and September 2018.



## Results

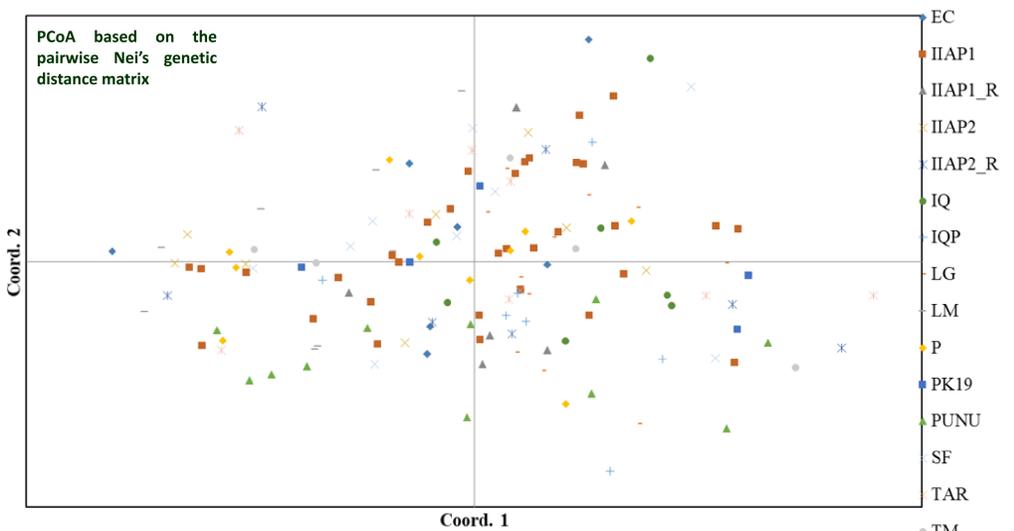
1. The populations were characterized by high values of genetic diversity and very low levels of inbreeding.



2. Sampled populations do not reflect existence of any clear stratification.

3. A very low correlation between geographic and genetic distances was determined using a Mantel test.

4. The high molecular variance was determined especially among individuals.



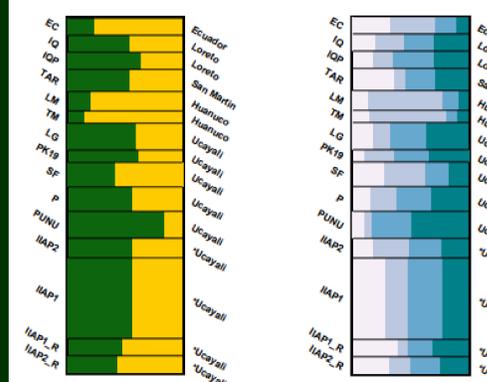
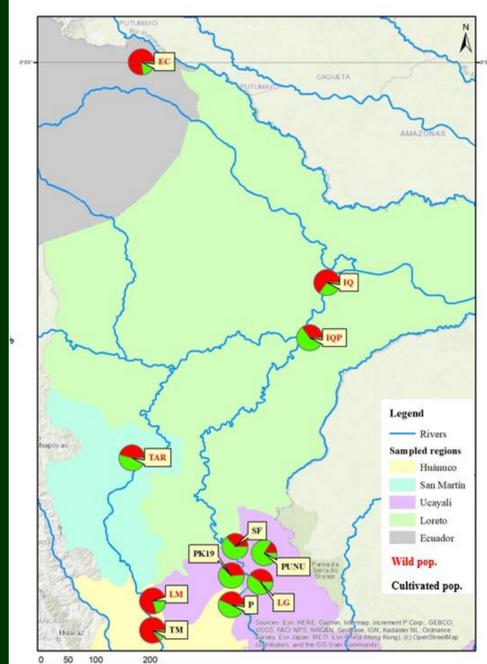
## Conclusion

- Rivers significantly influence the gene flow.

Any interference in the culmination of the rivers could irreversibly break long-lasting linkages and could easily result in an immediate decline in genetic diversity.

- Human activity probably contributes to higher genetic diversity of *Mauritia flexuosa* in Peruvian and Ecuadorian Amazon.

Lives of people have been closely connected to the banks of large rivers, as the same as the *M. flexuosa* occurrence. Numbers of ethnic groups have used *aguaje*, on a large scale, for generations.



## Acknowledgements

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