

Effects of Riparian Buffers on Pollinator Activity in Oil Palm Plantations

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Background

- Oil palm is a major driver of deforestation in the tropics, but established plantations can be made more sustainable through maintenance of riparian (river-side) forest buffers
- Riparian buffers could improve sustainability by creating heterogenous environments in oil palm plantations, potentially supporting greater pollinator abundance and pollination services

Objectives

Identify how alternative riparian buffer treatments affect environmental conditions, pollinator abundances and pollination services, and the extent of these effects into the plantation



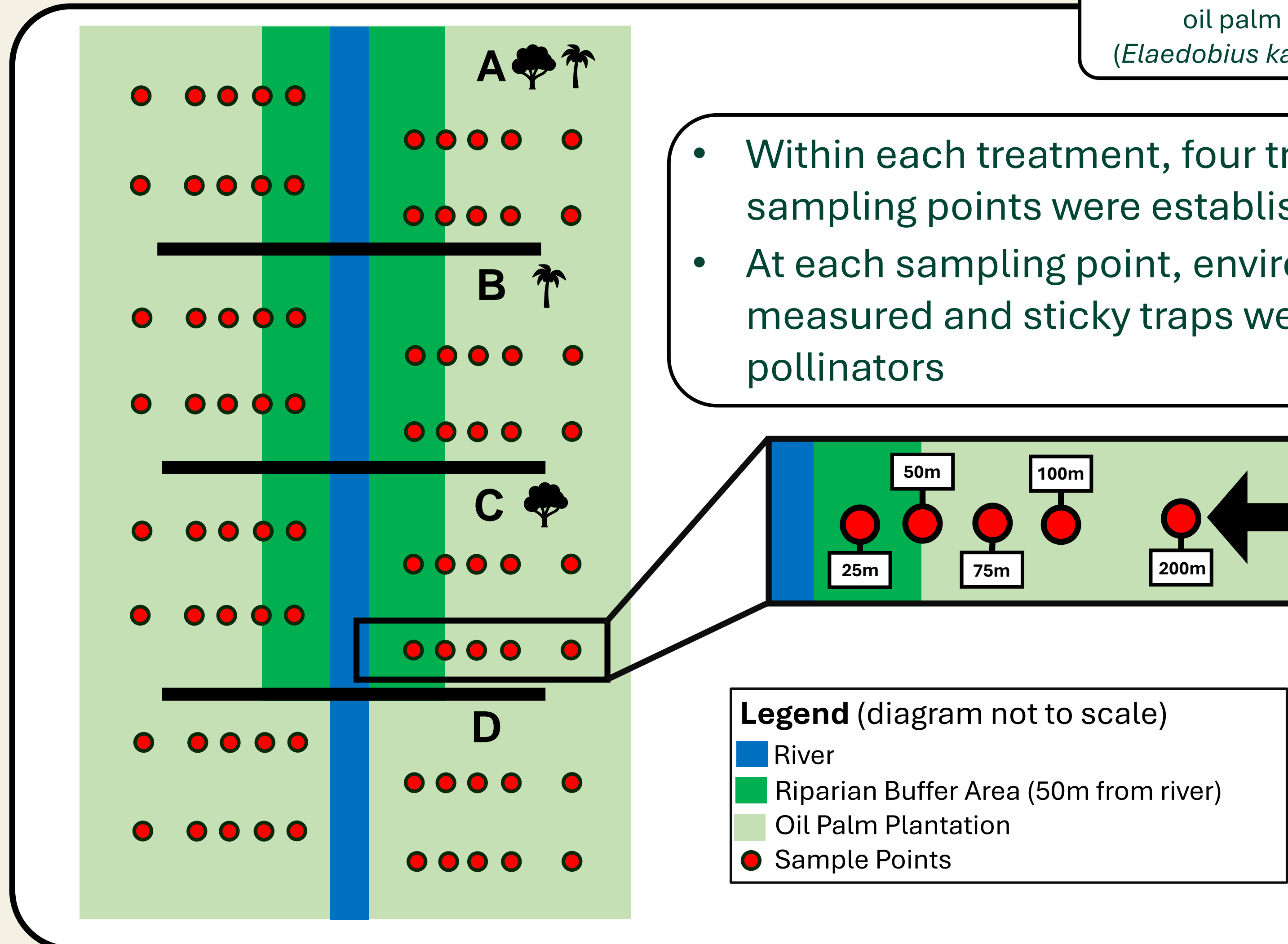
Primary oil palm pollinator, oil palm weevil (*Elaeodobius kamerunicus*)



Potential native pollinator, Hawaiian flower thrip (*Thrips hawaiiensis*)

Study Design

- A** = Mature palm and native plants buffer
- B** = Mature palm only buffer
- C** = Native plants only buffer
- D** = No buffer (control treatment)

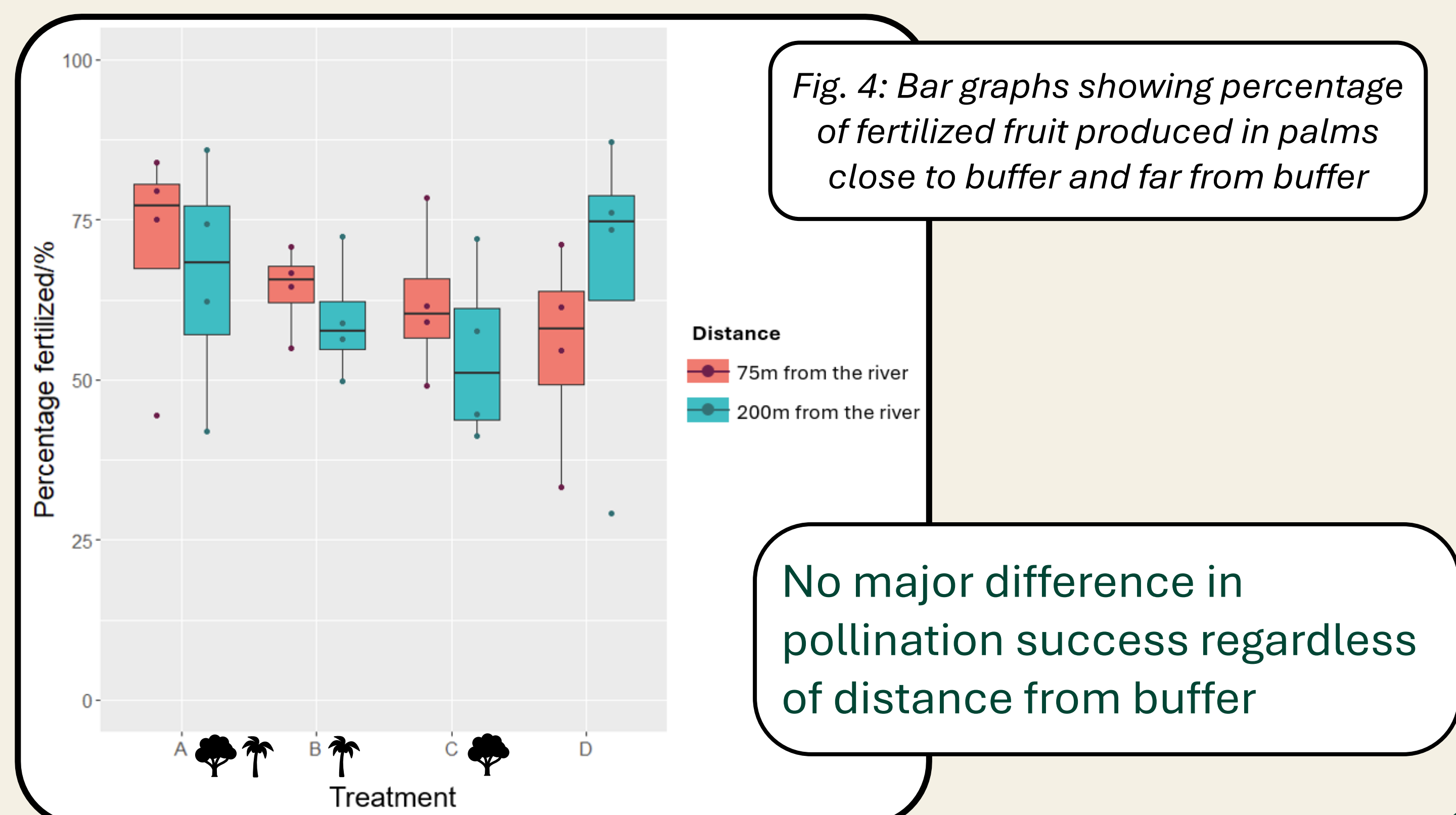
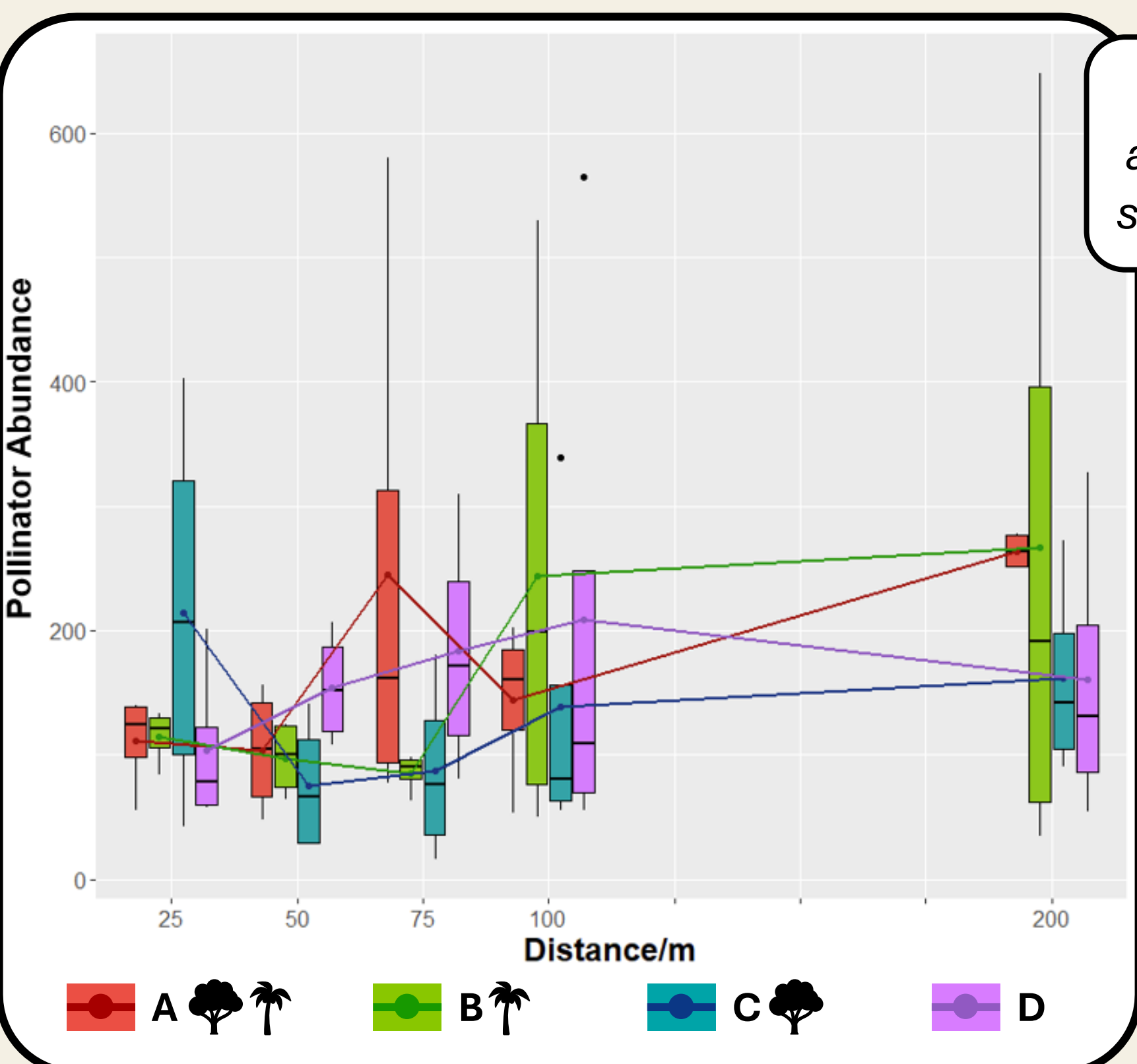
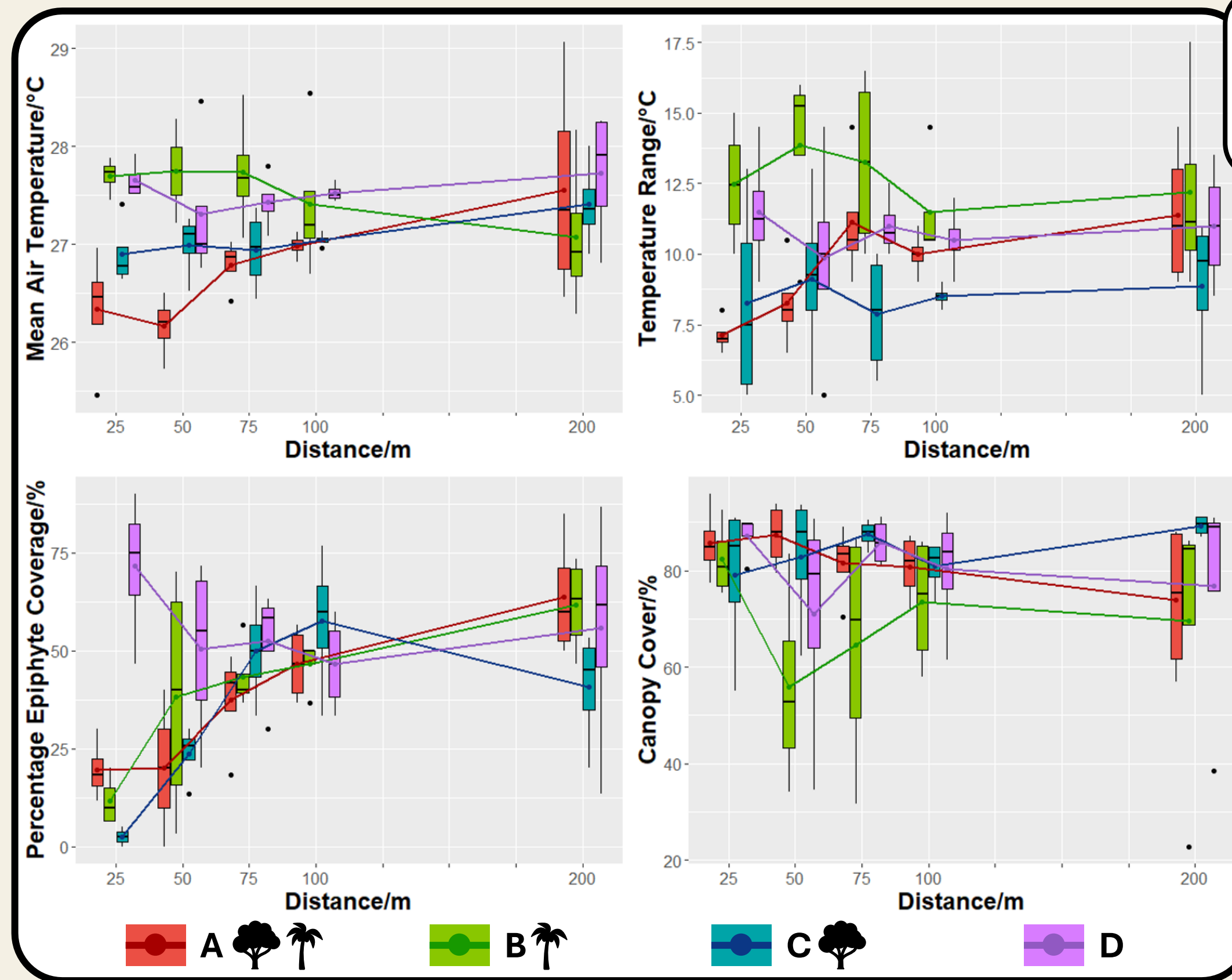
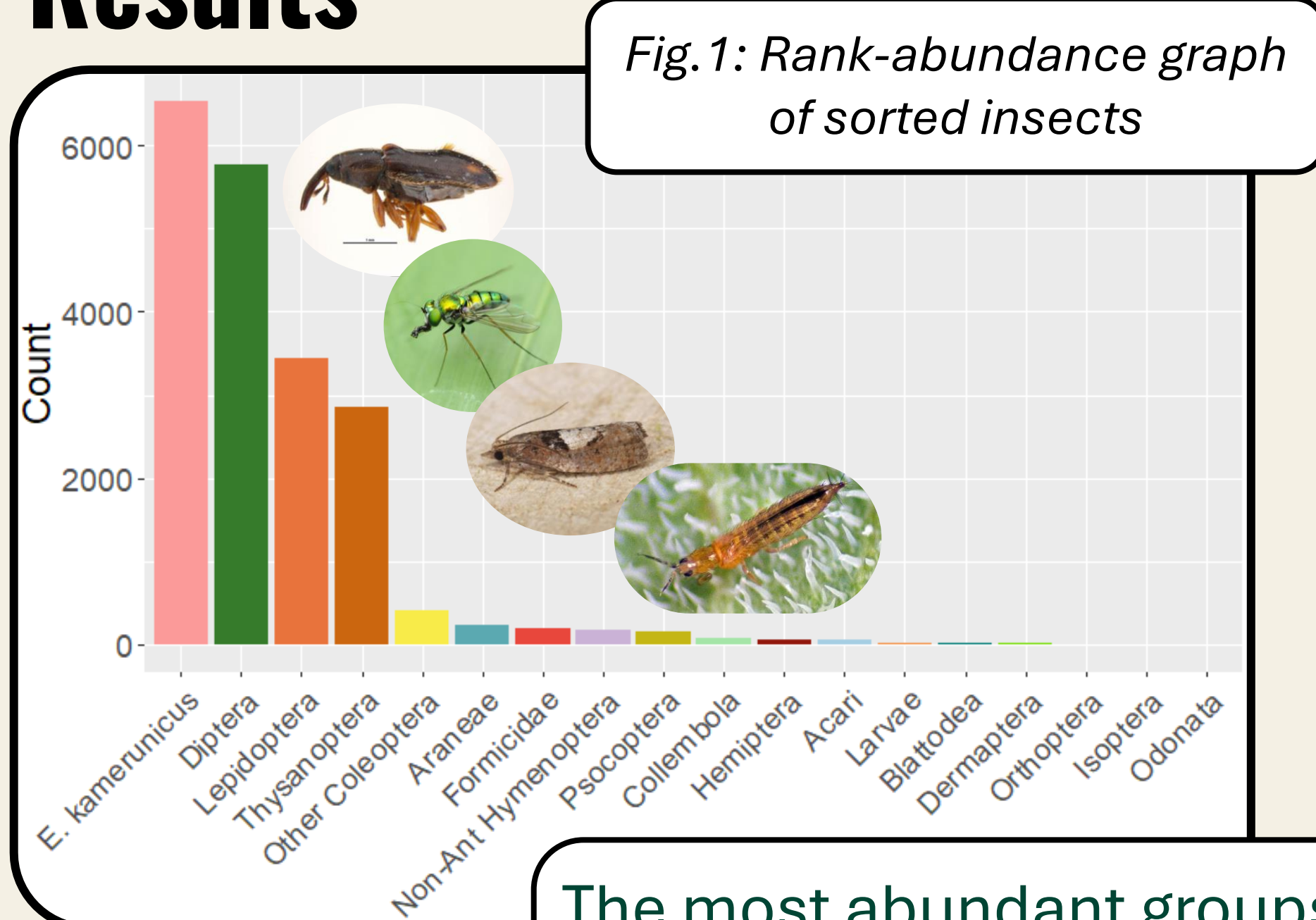


- Within each treatment, four transects consisting of five sampling points were established, totaling 80 points
- At each sampling point, environmental parameters were measured and sticky traps were used to sample potential pollinators



Sticky trap baited with oil palm inflorescence

Results



Conclusion

I found that buffer treatments had an impact on environmental parameters, but not on pollinator abundance or pollination success, though there was also no evidence of ecosystem disservices. Despite the inconclusive impacts of riparian buffers, with more time, the heterogenous environments created could have an impact on pollinator communities and improve oil palm sustainability.

