**Supplementary data set 1.** Raw data of the number and size of seeds found in the fecal samples and the number of large and very large seeds per fecal sample of *Lagothrix lagothricha* collected in Rey Zamuro, Meta, Colombia from November 2018 to March 2020.

**Supplementary data set 2.** Raw data of the number and size of seeds found in the fecal samples and the number of large and very large seeds per fecal sample of *Alouatta seniculus* and *Sapajus apella* collected in Santa Rosa, Meta, Colombia from September to December 2006.

**Supplementary code 1.** Annotated R code of the analysis of overall seed dispersal using the Fligner-Policello test, the number of large and very large seeds per fecal sample using maximum likelihood estimation, the extrapolated number of large and very large-seeded species dispersed, and Appendices S1 and S2.

**Supplementary data set 3.** The presence/absence data at the genus level for all trees, palms, and lianas with a DBH greater than 10 cm and the seed width (mm) for trees, palms, and lianas identified to the species level and dispersed by endozoochory from 1-ha vegetation plots in Santa Rosa and Rey Zamuro.