Supporting Information. Umaña, M.A., G. Arellano, N.G. Swenson, and J. Zambrano. 2020. Tree seedling trait optimization and growth in response to local-scale soil and light variability. Ecology. Change Umaña M.A. by Umaña M.N.

Appendix S2: Results obtained with AMISE.

~~AMISE~~. Content:

- Methods
- Figure S1

Methods

When using the kernel density to estimate the probability density distribution of any variable (e.g. understory light, K, N, Mg) is important to choose an appropriate bandwidth. There are different methods to estimate this parameter. In the main text we use a robust method that overcomes limitations of previous methods (i.e., assumptions of normal distribution, lack of local adaptability). Here, we use a different method, the asymptotic mean integrated squared method error (AMISE). This method has been widely used and consist in evaluating the mean integrated squared error of a density estimate which is constructed from data that follow a normal distribution. The objective with this method is to minimize mean integrated squared error by deriving the value that minimize the criterion. The main limitation of this method is that it affected by the construction of a preliminary normal model of the data upon which the bandwidth selection method depends (Botev et al. 2010). The results are shown below (Figure S1) and are largely consistent with the results presented in the main text.

References

Botev ZI, Grotowski JF, Kroese DP (2010) Kernel density estimation via diffusion. Ann Stat 38:2916–2957. https://doi.org/10.1214/10-AOS799

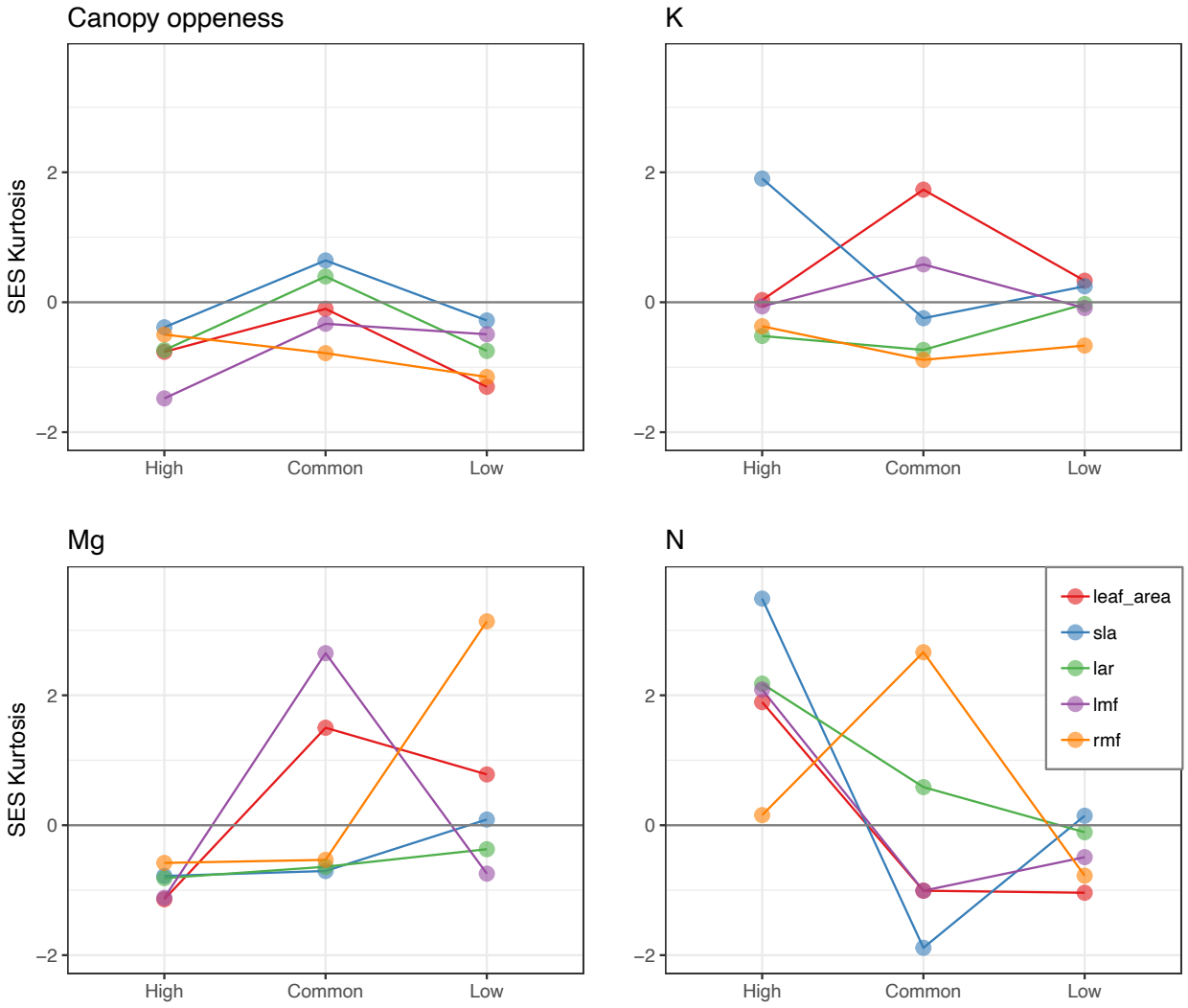

Figure S1. SES Kurtosis of trait values for three resource levels (high, common, and low). SES values > 1.96 indicate significantly higher than expected kurtosis in a given community. SES values < -1.96 indicate significantly lower than expected kurtosis in a given community. LA– leaf area, SLA– specific leaf area, LAR–leaf area ratio, LMF–Leaf mass fraction, RMF– root mass fraction.