



**Figure Appendix S7:** Comparison of phylogenetic community structure between microhabitats within each summit. Boxplots of standardized effect sizes (SES) for a) mean nearest taxon phylogenetic distance (MNTD) and b) mean pairwise phylogenetic distance (MPD) of all species collected above tree-line (All Alpine) and for species only occurring only on talus slopes (excluding species collected in alpine meadows; Talus). Positive SES values indicate phylogenetic overdispersion (high phylogenetic divergence), negative SES indicate phylogenetic clustering (low phylogenetic divergence). The significance of a *t*-test comparing the means of each group is indicated about the box:  $p < 0.05$  \*,  $p < 0.01$  \*\*,  $p < 0.001$  \*\*\*, NS = not significant. Boxes show first and third quartiles, solid horizontal lines indicate the median, vertical black lines are the range, and dots are points that lie 1.5x the interquartile range above the third quartile or below the first quartile.