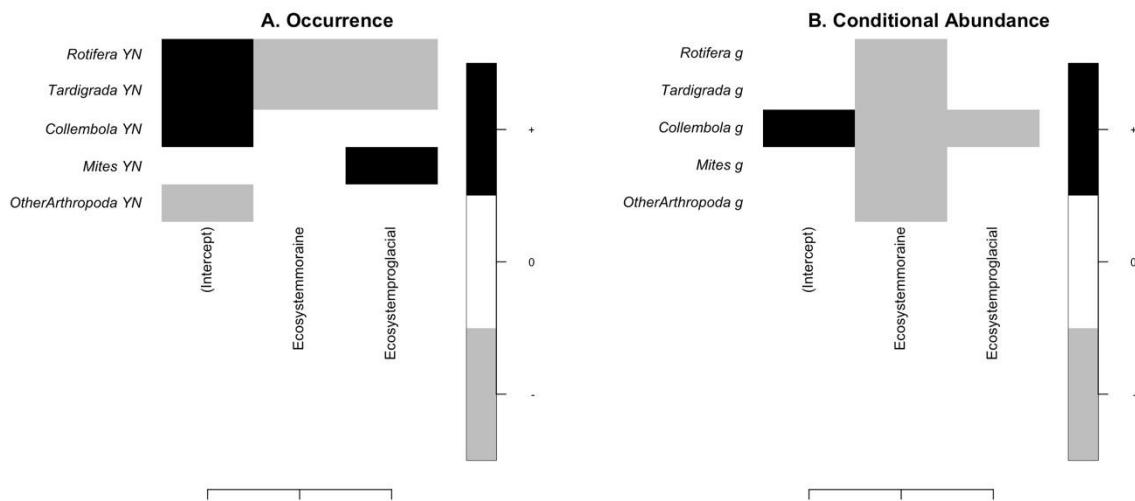
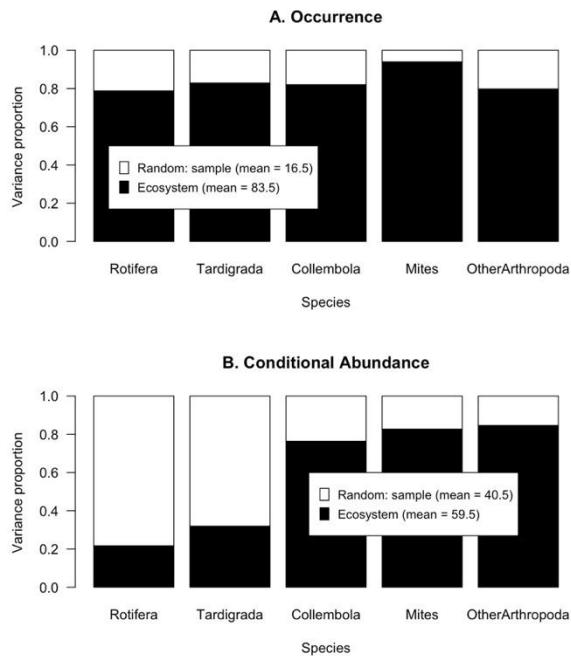


Supplementary Figure S1. Beta parameter (i.e. default contrasts) plots from the Joint Species Distribution Models. Black and grey shading correspond to statistical support for positive and negative contrasts, respectively. (A) Occurrence model (Yes/No binary data). The first column tests the estimated probability of occurrence for each taxonomic group against the value of 0.5 in the Glacier ice surface ecosystem (which was set as the Intercept). The subsequent two columns contrast the latter, for each taxonomic group, against those estimated for Medial moraine and for Glacial forefield ecosystems, respectively. (B) Conditional Abundance (standardized, log-10 counts per gram). The first column corresponds to tests of estimated conditional abundance for each taxonomic group against their observed averages for Glacier ice surface (since standardized log-10 abundance values were used). The subsequent two columns contrast the latter's estimates, for each taxonomic group, against the estimates of conditional abundance for Medial moraine and for Glacial forefield ecosystems, respectively. Note that Figure 2 allows for more comprehensive pairwise contrasts visualization.



Supplementary Figure S2. Variance partitioning output for (A) occurrence probability and (B) abundance conditional on presence models.



Supplementary Figure S3. NMDS plots for (a) Bray Curtis and (b) Jaccard beta diversity indices.

