Description of supplementary material

Sup Table 1. Shannon diversity comparisons

*Pairwise comparisons of Shannon diversity index at each location using the Kruskal-Wallis multiple comparisons correction.*

Sup Table 2 - P-tables for beta diversity distances

*P and Q values for each individual beta distance comparison using PERMANOVA in qiime2.*

Sup Table 3. Sample metadata and geochemical characteristics

*Lists all samples with sequencing identifiers, metadata and environmental characteristics*

Sup Table 4. Environmental correlations

*Correlation between different environmental variables. Strong positive correlations are colored blue and strong negative correlations are colored red.*

Sup Table 5. Differential abundances of taxa

Differential abundance of reads for each percentile between disturbed and recently glaciated sites as determined by ANCOM. The W-value is the number of sub-hypotheses that were significantly different across the two site histories for a given taxon. All are p < 0.05.

Sup Fig 1. Alpha rarefaction

*Number of features (A) and Faith’s PD richness (B) preserved at different sequencing depths.*

Sup Fig 2. FaithPD and Evenness diversity

*Faith PD and Evenness diversity of the different sampling sites. Both disturbed sites and putative refugia are included in the sample spread represented by the box.*

Sup Fig 3. Environmental differences between putative refugia and disturbed sites

*Differences between geochemistry values between putative refugia and disturbed sites.*

Sup Fig 4. Shannon diversity and environmental variables

*Individual sample replicates’ Shannon diversity is displayed in relation to the location’s environmental content. Replicates from the same site share the same geochemistry. Diamond shaped points indicate putative refugia, squares indicate disturbed sites. Colours indicate the valley basin samples originate from.*