

Additional file 2. Bayesian clustering results of STRUCTURE and evidence of multimodality.

Similarity coefficients between runs (i.e. 30 replicates of the same K) (H') estimated by CLUMPP were low, indicating significant multimodality ($K= 3$: $H'= 0.725$; from 0.743 to 0.999). **(A)** A Non-metric multidimensional scaling performed on the run pairwise matrix of similarity coefficients ($K = 3$) (transformed to a dissimilarity matrix) was used to visualize the different solutions for the 30 replicates. Three distinct groups of solutions were found among the 30 runs. The first, second and third group of solutions comprised 19, 8 and 3 runs, respectively. **(B)** Bayesian assignment probabilities of *B. alpinus* and *B. melanonyx* individuals into three inferred clusters, averaged across the three groups of solutions. Each individual is represented by a vertical line (x axis) partitioned into K colored segments that represent the individual's estimated membership proportion in each of the K clusters (y axis). Sampling site labels (letters along the x axis) are identical to Figure 1. **(C)** The average individual cluster assignment probabilities of all replicates within the most frequently observed group of solutions (i.e. 19 runs) was used for interpretation (M. Jakobsson, personal communication). Similarity coefficients between the selected runs was high ($H'= 0.999$). **(D)** DAPC cluster assignment probabilities of each individual for the three clusters based on the discriminant functions are shown for comparison.

