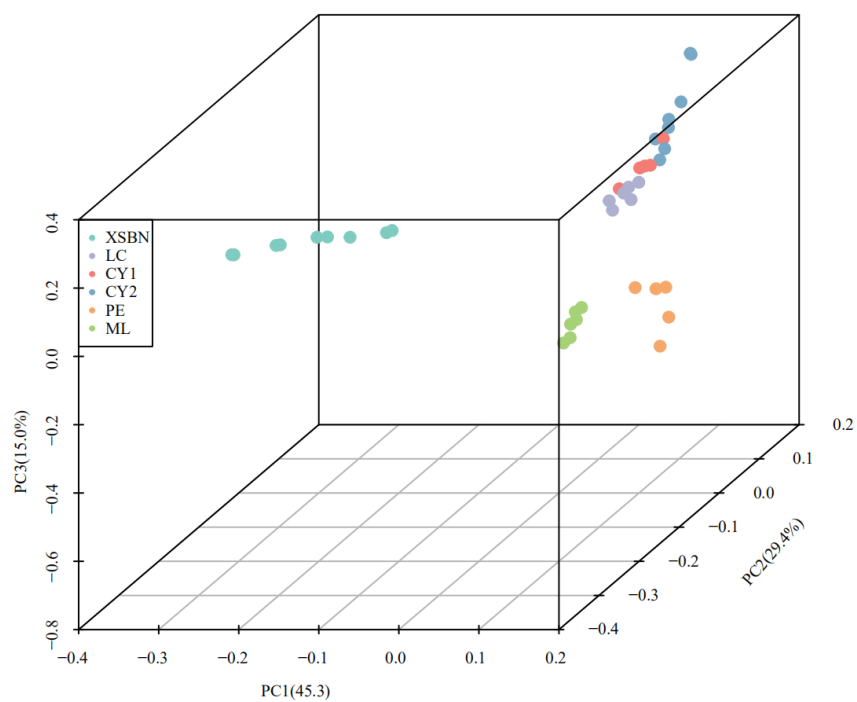


Figure S1. The results of cross-validation error (a) and ancestry composition when K=2 to K=6 in Admixture analysis (b).



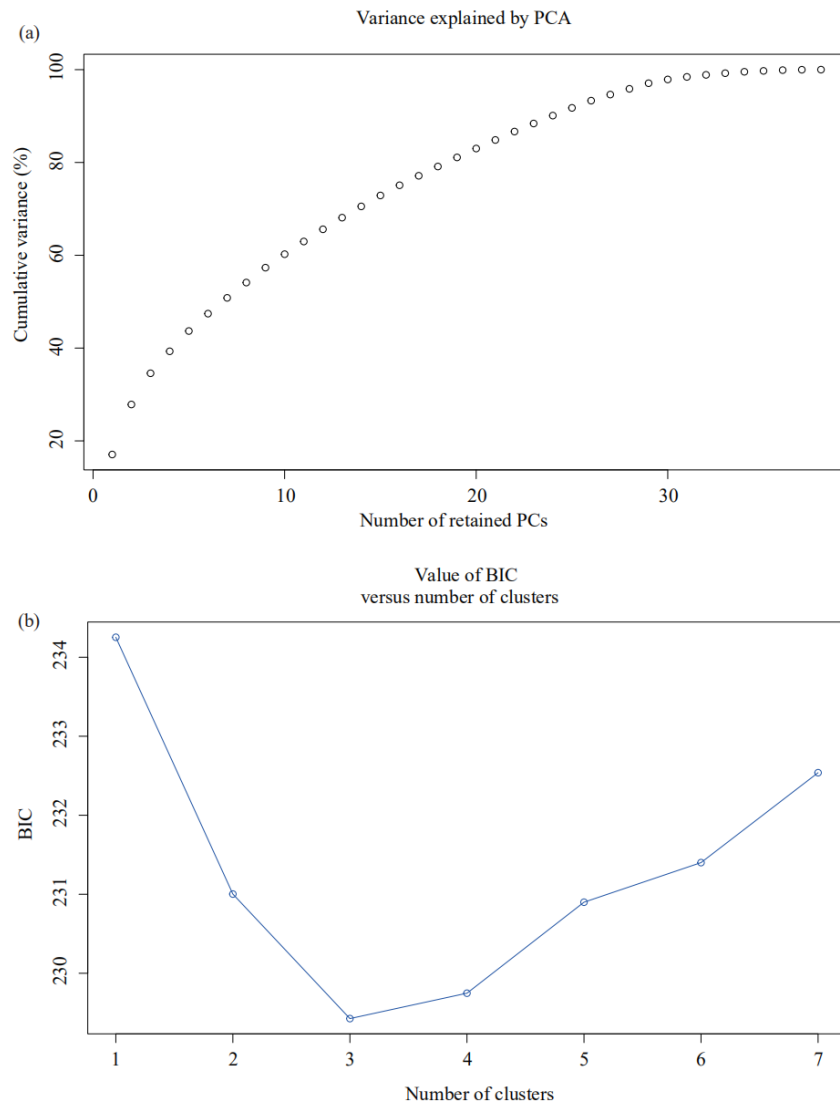


Figure S3. Variance explained by PCA eigenvalues (a) and optimal K-value results based on BIC (b) in DAPC analysis

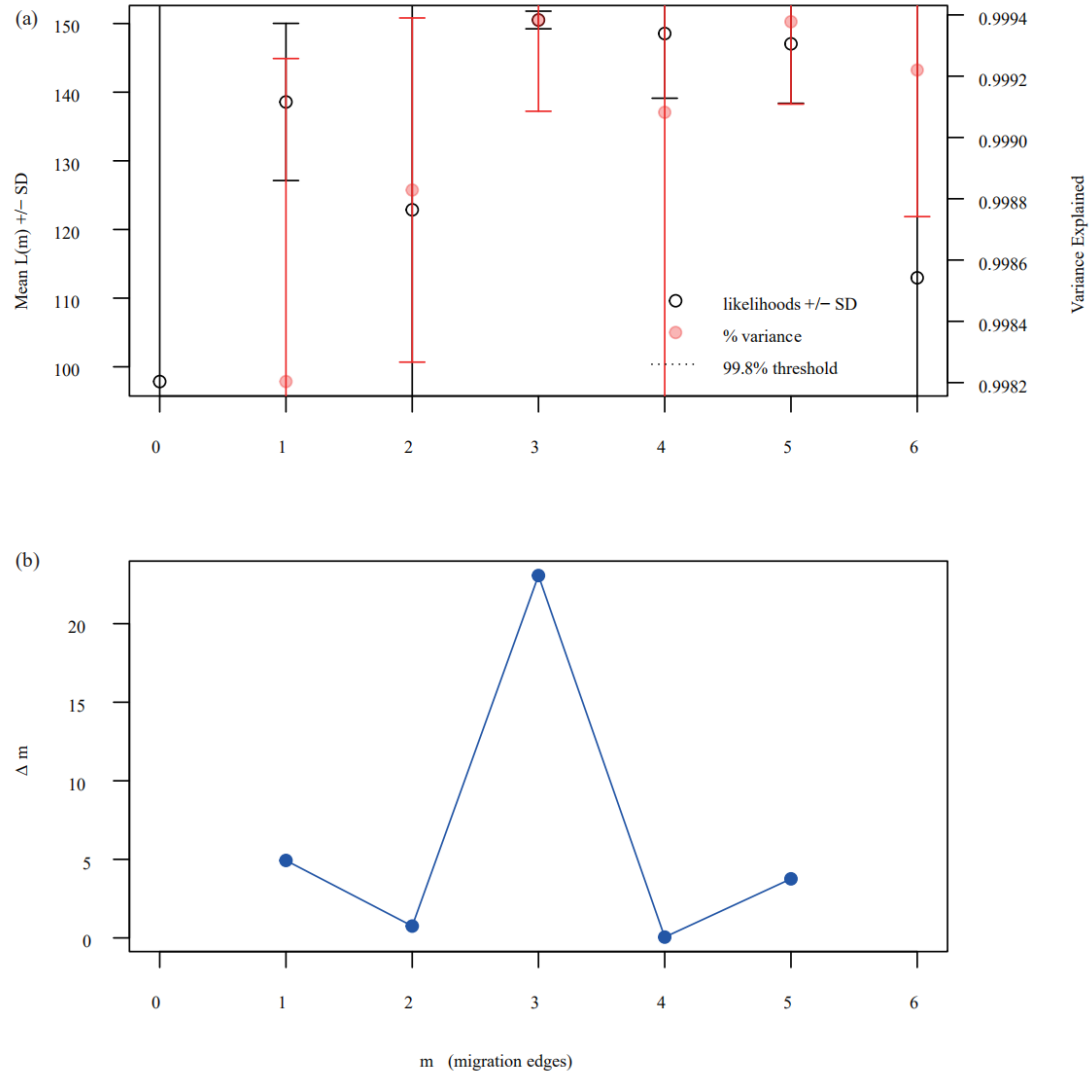


Figure S4. *OptM* results for TreeMix when run from 0 - 6 migration event(s). (a) Shows the mean and standard deviation and the proportion of variance explained (red circles) over 10 iterations of the likelihood $L(m)$ (black circles) for each migration events, with the 99.8% threshold is that recommended by Pickrell and Pritchard [56], but not visible here because the threshold is already met before $m = 1$ edges. (b) Shows ΔM , which shows the fitted migration events is 3.

Table S1. Three-population test for *T. doichangensis*

Population Configuration	f3	Standard error	Z-score
LC; XSBN, CY2	-0.0017	0.0004	-4.5426
CY1; XSBN, CY2	-0.0050	0.0004	-11.9257
CY1; LC, CY2	-0.0037	0.0004	-9.4232
CY1; CY2, PE	-0.0040	0.0004	-10.7353
CY1; CY2, ML	-0.0029	0.0006	-4.5153

Note: We performed f3-statistics (C; A, B) on all possible populations. Listed are at least one negative f3-score and Z-score less than -3; mixed populations C are those with significantly negative f3-statistics, not necessarily populations that were actually mixed historically.

Table S2. Four-population test for *T. doichangensis*

Population Configuration	f4	Standard error	Z-score
XSBN, CY1; LC, CY2	0.0062	0.0008	7.7825
XSBN, CY2; LC, CY1	0.0049	0.0007	7.1827
XSBN, PE; LC, CY2	0.0022	0.0006	3.7944
XSBN, ML; LC, CY2	0.0021	0.0007	3.1603
XSBN, ML; LC, PE	0.0028	0.0006	4.8838
XSBN, ML; CY1, CY2	0.0021	0.0007	3.1919
XSBN, ML; CY1, PE	0.0028	0.0007	4.1368
LC, ML; CY1, PE	0.0026	0.0008	3.4206
LC, PE; CY2, ML	0.0017	0.0004	4.1593
CY1, ML; CY2, PE	0.0054	0.0009	5.8693
CY1, PE; CY2, ML	0.0066	0.0005	12.0499
XSBN, LC; CY2, ML	-0.0032	0.0007	-4.8847
XSBN, LC; PE, ML	-0.0022	0.0006	-3.4128
XSBN, CY1; CY2, PE	-0.0047	0.0005	-10.1789
XSBN, CY1; CY2, ML	-0.0081	0.0008	-10.2276
XSBN, CY1; PE, ML	-0.0034	0.0010	-3.3953
XSBN, CY2; CY1, PE	-0.0038	0.0003	-11.2283
XSBN, CY2; CY1, ML	-0.0060	0.0010	-5.8577
LC, CY1; CY2, PE	-0.0037	0.0007	-5.1294
LC, CY1; CY2, ML	-0.0049	0.0007	-7.1258
LC, CY2; CY1, PE	-0.0040	0.0004	-9.0437
LC, CY2; CY1, ML	-0.0041	0.0006	-6.4494

Note: We performed f4-statistics (A, B; C, D) on all populations. Listed negative f4-score and Z-score less than -3 or positive f4-score and Z-score greater than 3.