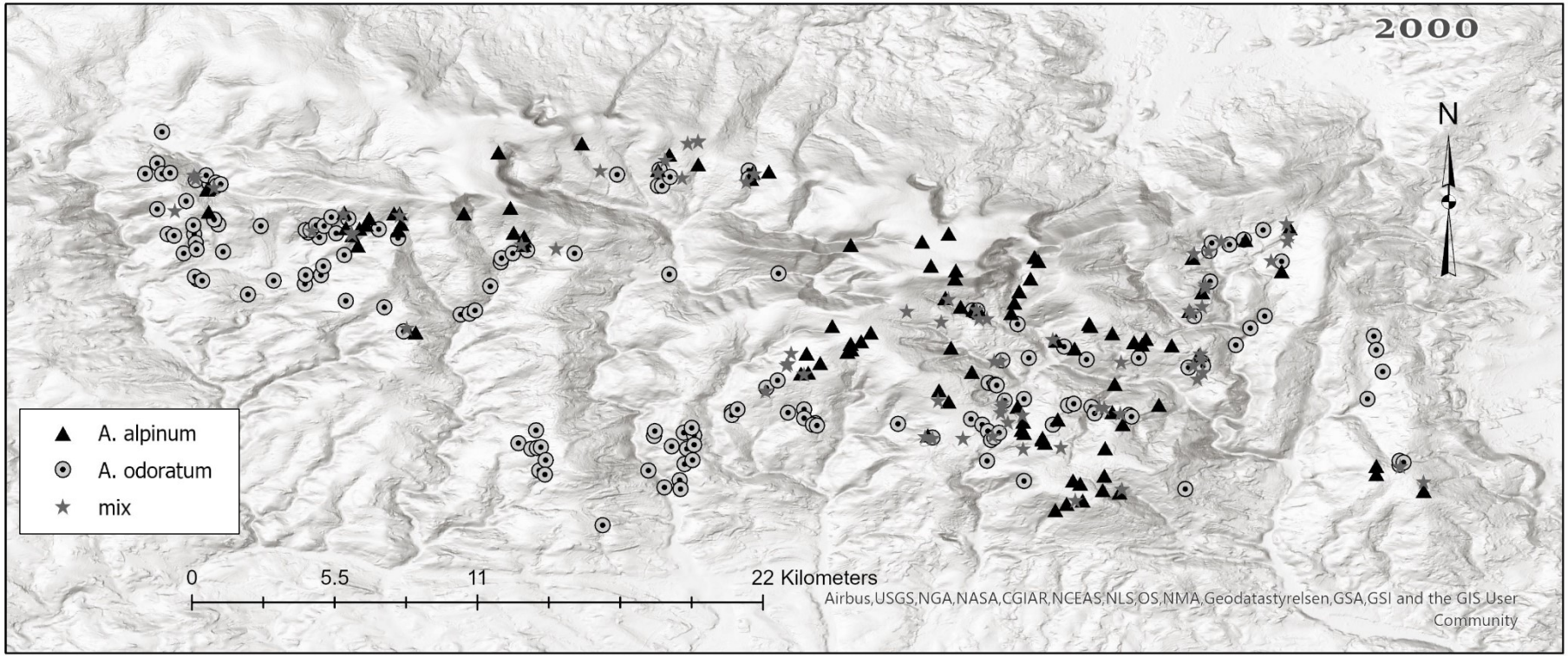
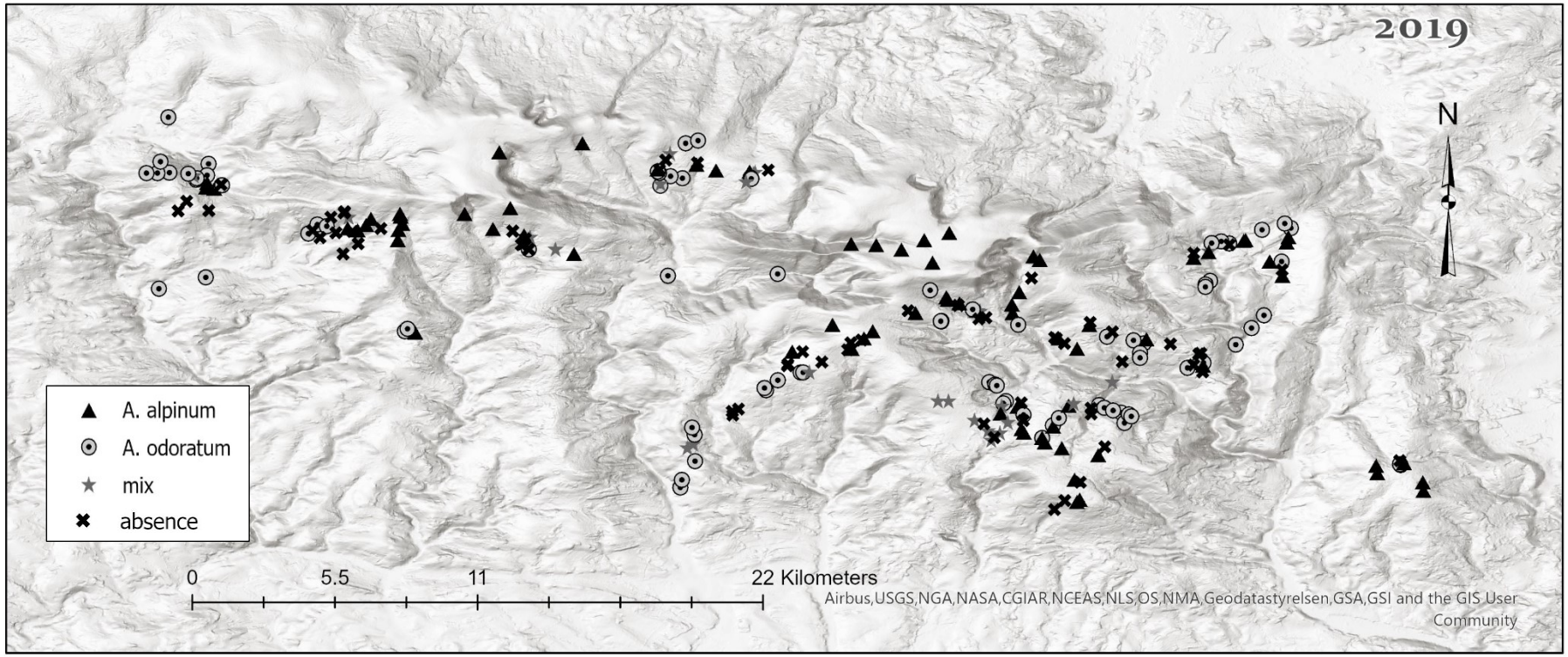
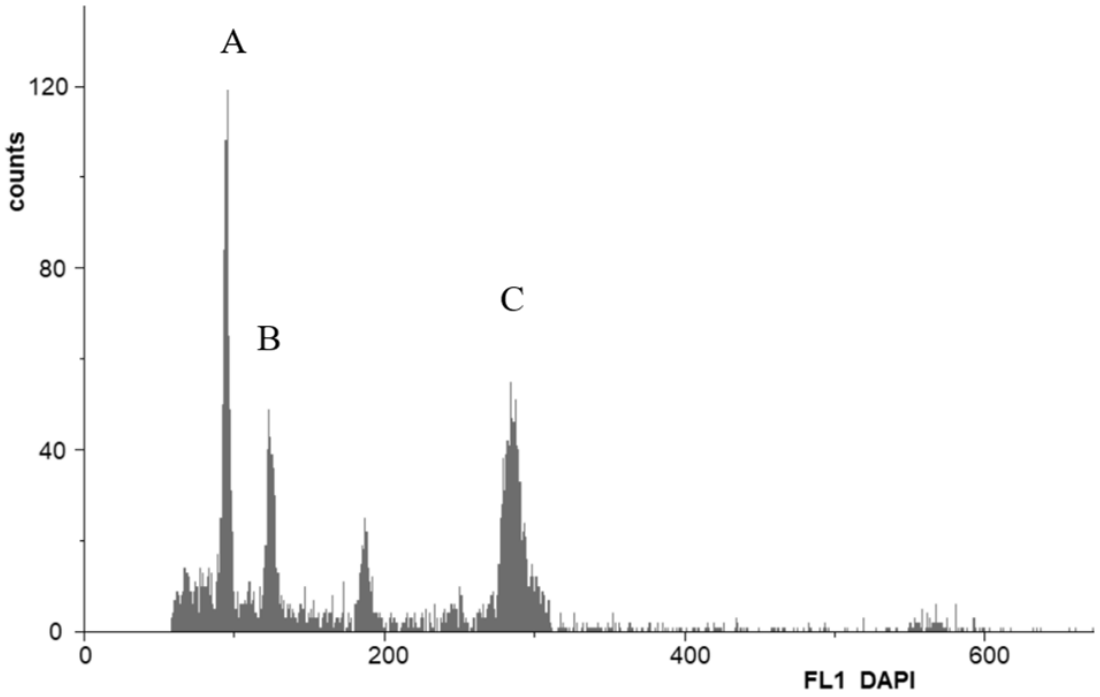
Electronic Supplemental Material (ESM)



Supporting information 1: A map of visited localities by Filipova and Krahulec (2006). Circle with a dot: *A. odoratum*, triangle: *A. alpinum*, star: their mixture.



Supporting information 2: A map of visited localities in 2019. Circle with a dot: *A. odoratum*, triangle: *A. alpinum*, star: their mixture, a cross: none of the species was found (absence).



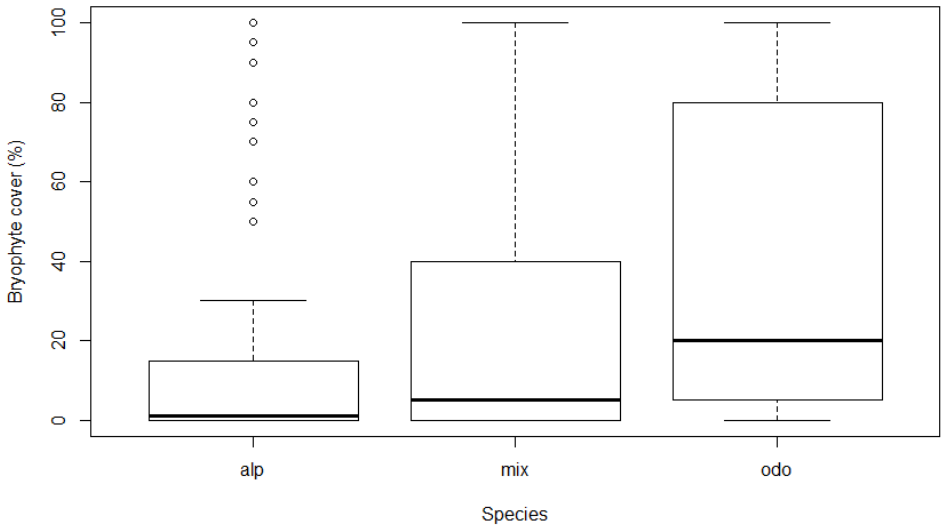
Supporting information 3. A picture of a flow cytometry (DAPI) of *Anthoxanthum odoratum* (C) and *A. alpinum* (B) with *Solanum pseudocapsicum* (A) used as standard.

Supporting information 4. A table of p-values (*p*) and deviance from tests of the effect of each predictor (in columns) on each dependent variable (rows) separately. A.a.: *A. alpinum*, A.o.: *A. odoratum*, veg cover: vegetation cover, bryophytes: bryophytes cover, nutrients, moisture and temp: temperature are obtained from Ellenberg indicator values (EIV), DCA2: site scores of the second DCA axis (Fig. 1) in the paper.

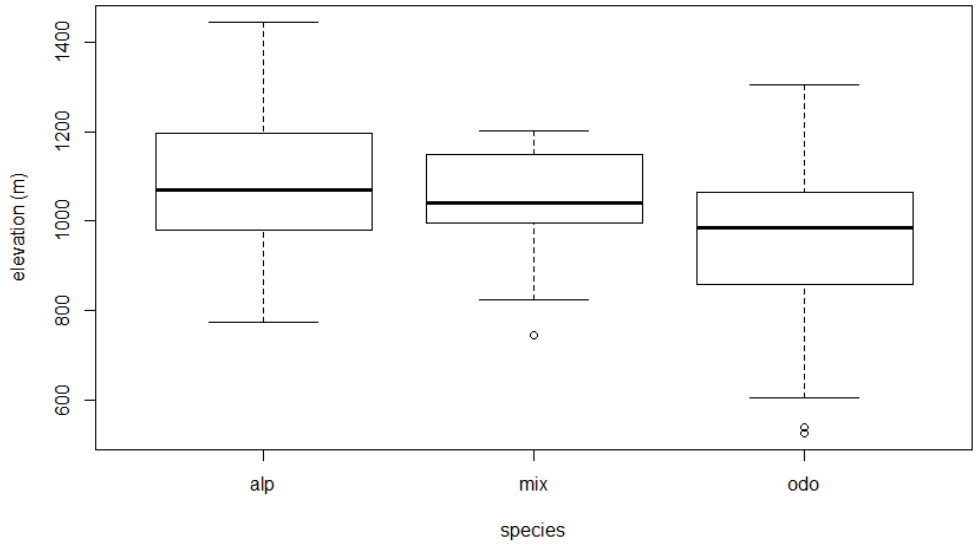
	Veg cover		**Bryophytes**		**Nutrients**		**Moisture**		**Temp**		**DCA2**		**Altitude**	
	p	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**
Appeared A.a.	0.63	0.231	0.2	1.775	0.735	0.115	0.055	4.011	0.062	3.925	0.692	0.157	0.493	0.117
Appeared A.o.	0.077	3.722	<0.001	11.11	0.035	4.776	0.327	0.978	0.03	5.462	0.112	2.845	0.733	0.116
Disappeared A.a.	0.007	9.355	0.08	3.018	0.055	3.784	0.432	0.623	<0.001	24.347	0.112	2.83	0.336	0.942
Disappeared A.o.	0.598	0.288	0.5	0.48	0.678	0.188	0.349	0.623	0.471	0.387	0.056	0.633	<0.001	28.3
A.a. occurrence	0.006	7.884	0.003	9.584	0.012	8.0297	0.033	5.212	<0.001	38.575	0.053	0.965	0.003	23.438
A.o. occurrence	0.003	8.763	0.002	11.632	<0.001	17.667	0.048	4.219	<0.001	30.447	0.025	5.39	0.002	19.968

Supporting information 5. A table of p-values (*p*) and deviance from tests of the effect of all the predictors with a step selection (in columns) included in a single model on each dependent variable (rows). A.a.: *A. alpinum*, A.o.: *A. odoratum*, veg cover: vegetation cover, bryophytes: bryophytes cover, nutrients, moisture and temperature are obtained from Ellenberg indicator values (EIV), DCA2: site scores of the second DCA axis (Fig. 1) in the paper. - indicated that a variable has been excluded from a model by step selection.

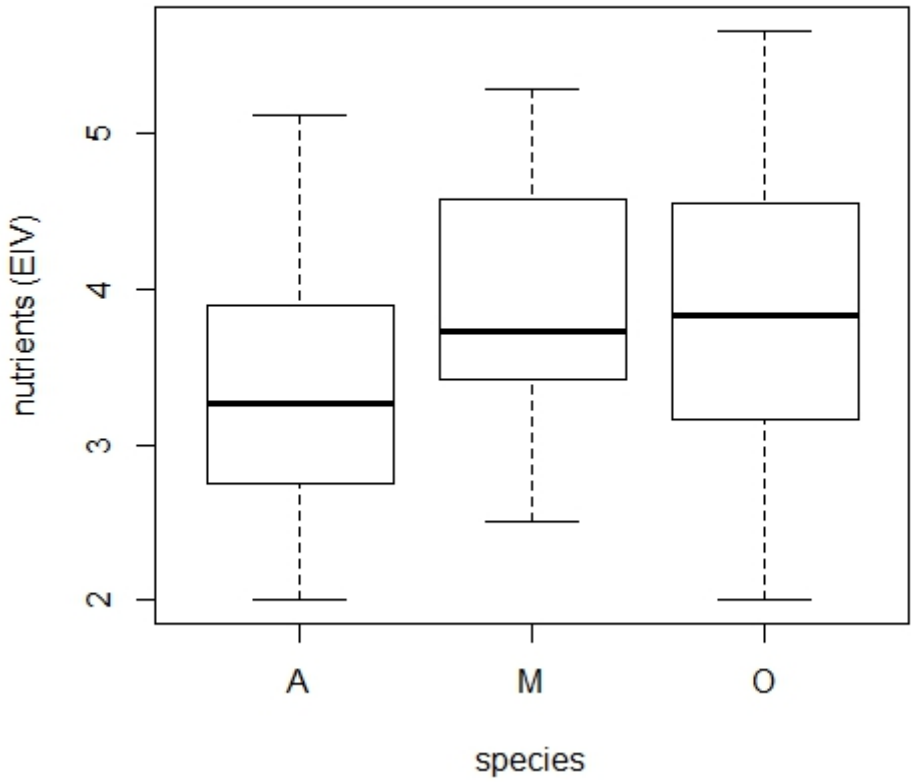
	Veg cover		**Bryophytes**		**Nutrients**		**Moisture**		**Temp**		**DCA2**		**Altitude**	
	p	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**	***p***	**Deviance**
appeared A.a.	-	-	0.166	0.432	-	-	0.053	0.471	0.058	0.911	-	-	-	-
appeared A.o.	-	-	0.002	0.994	-	-	0.094	0.210	0.013	0.796	0.141	0.262	-	-
disappeared A.a.	0.044	1.086	-	-	0.035	1.066	-	-	<0.001	4.210	0.019	0.560	-	-
disappeared A.o.	-	-	0.166	0.059	-	-	0.053	0.018	0.058	0.690	0.007	1.097	-	-
A.a. occurrence	-	-	0.041	0.711	0.016	2.715	0.029	0.718	<0.001	7.507	0.063	0.594	-	-
A.o. occurrence	-	-	0.041	0.878	0.002	4.925	0.064	0.524	<0.001	5.641	0.004	1.532	-	-



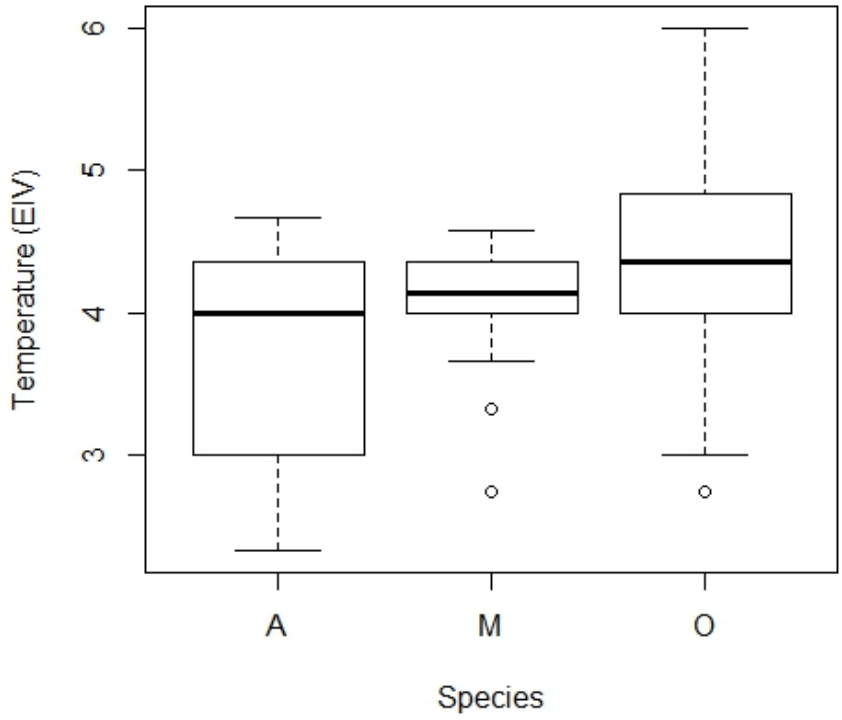
Supporting information 6. A boxplot showing differences between the occurrence of three types of populations (a population of *Anthoxanthum alpinum* (alp), *A. odoratum* (odo) and their mixture (mix) in bryophyte cover at the locality. The difference between the types is significant (p=0.004).



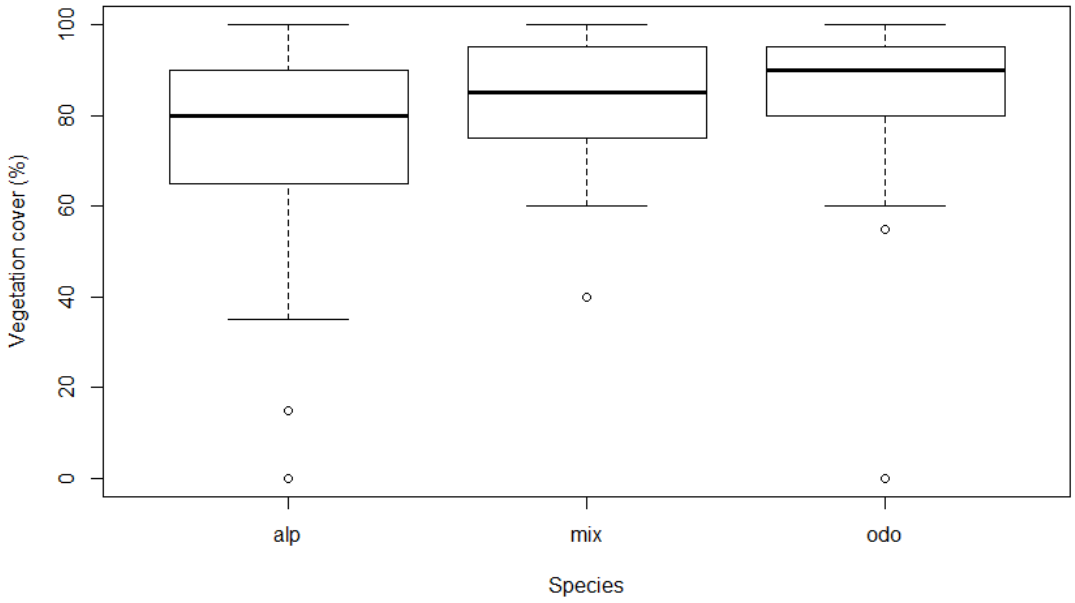
Supporting information 7. A boxplot showing differences between the occurrence of three types of populations (a population of *Anthoxanthum alpinum* (alp), *A. odoratum* (odo) and their mixture (mix) in the elevation of the locality. The difference between the types is significant ($p<0.001$).



Supporting information 8. A boxplot showing differences between the occurrence of three types of populations (a population of *Anthoxanthum alpinum* (A), *A. odoratum* (O) and their mixture (M) in the Ellenberg indicator values (EIV) for nutrients at the locality. The difference between the types is significant ($p<0.001$).



Supporting information 9. A boxplot showing differences between the occurrence of three types of populations (a population of *Anthoxanthum alpinum* (A), *A. odoratum* (O) and their mixture (M) in the Ellenberg indicator values (EIV) for temperature at the locality. The difference between the types is significant ($p<0.001$).



Supporting information 10. A boxplot showing differences between the occurrence of three types of populations (a population of *Anthoxanthum alpinum* (alp), *A. odoratum* (odo) and their mixture (mix) in the vegetation cover at the locality. The difference between the types is significant ($p<0.001$).