Supplementary Materials

Is Grazing Good for Wet Meadows? Vegetation Changes Caused by White-Backed Cattle

Table S1. Factor loadings of PCA based on analysis according to species cover.

Species	Principal component					
	PCA1	PCA2	PCA3	PCA4	PCA5	PCA 6
Ch All. Magnocaricion	0.032	0.224	0.275	0.463	0.806	−0.100
Ch All. Phragmition	0.016	0.086	0.020	0.054	−0.184	−0.977
Ch All. Calthion palustris	−0.621	−0.717	0.207	0.229	0.014	−0.059
Ch O. Molinietalia	0.196	0.014	0.931	−0.242	−0.184	0.045
Ch Cl. Molinio-Arrhenatheretea	−0.650	0.647	0.116	0.207	−0.298	0.116
Other species	0.389	−0.093	0.033	0.793	−0.440	0.125

Table S2. Summary statistics (mean and standard deviation) of plant species cover by year.

Characteristic	Year				Test values
	2016	2017	2018	2019	
Ch All. Magnocaricion	[c]60.5 ± 36.64	[bc]56.08 ± 38.26	[ab]47.01 ± 32.09	[a]41.74 ± 30.67	F=7.82; df=3; p<0.001
Ch All. Phragmition	[b]13.27 ± 24.92	[ab]11.35 ± 20.93	[a]7.38 ± 17.45	[a]7.38 ± 17.45	F=5.07; df = 3; p=0.005
Ch All. Calthion palustris	11.29 ± 17.81	12.35 ± 15.7	13.79 ± 13.07	14.45 ± 12.63	F=0.79; df=3; p=0.505
Ch O. Molinietalia	13.58 ± 11.96	11.18 ± 7.5	17.43 ± 10.73	15.9 ± 10.15	F=2.44; df=3; p=0.080
Ch Cl. Molinio-Arrhenatheretea	[a]9.41 ± 14.28	[a]9.62 ± 11.84	[ab]15.14 ± 12.16	[b]17.52 ± 14.64	F=5.90; df=3; p=0.002
Other species	[a]0.95 ± 1.33	[a]1.08 ± 1.28	[a]1.72 ± 1.5	[b]4.52 ± 4.8	F=6.31; df=3; p=0.002

Table S3. Summary statistics (mean and standard deviation) of phytosociological relevés characteristics by year.

Characteristic	Year				Test values
	2016	**2017**	**2018**	**2019**	
L	7.225 ± 0.417	7.218 ± 0.408	7.178 ± 0.329	7.156 ± 0.317	F=0.92; df=3; p=0.441
T	[a]5.183 ± 0.133	[ab]5.194 ± 0.131	[ab]5.207 ± 0.122	[b]5.225 ± 0.126	F=3.86; df=3; p=0.017
K	4.055 ± 1.373	4.073 ± 1.371	4.171 ± 1.212	4.283 ± 1.220	F=2.68; df=3; p=0.061
F	[b]9.035 ± 0.538	[b]8.972 ± 0.587	[a]8.707 ± 0.561	[a]8.567 ± 0.551	F=17.85; df=3; p<0.001
R	[a]5.329 ± 1.488	[ab]5.375 ± 1.444	[b]5.727 ± 1.046	[ab]5.647 ± 0.928	F=3.70; df=3; p=0.020
N	4.776 ± 0.728	4.784 ± 0.702	4.655 ± 0.510	4.614 ± 0.476	F=2.60; df=3; p=0.067
E_{GQ}	[a]12.05 ± 8.271	[a]12.01 ± 8.262	[a]15.12 ± 9.303	[b]20.38 ± 8.289	F=9.08; df=3; p<0.001
Species no.	[a]15.38 ± 5.881	[ab]17.38 ± 4.426	[bc]20.30 ± 4.59	[c]24.07 ± 6.664	GLM F=30.45; df=3; p<0.001
Shannon-Wiener H	[a]1.367 ± 0.585	[a]1.412 ± 0.602	[b]1.776 ± 0.544	[b]1.949 ± 0.594	F=32.38; df=3; p<0.001

abc – means in a row marked with the different letters differ significantly (ANOVA with repeated measures).

Table S4. Factor loadings of PCA based on analysis according to Ellenberg ecological indices.

Ellenberg Index	Principal component					
	PCA1	**PCA2**	**PCA3**	**PCA4**	**PCA5**	**PCA 6**
L	0.032	0.224	0.275	0.463	0.806	−0.100
T	0.016	0.086	0.020	0.054	−0.184	−0.977
K	−0.621	−0.717	0.207	0.229	0.014	−0.059
F	0.196	0.014	0.931	−0.242	−0.184	0.045
R	−0.650	0.647	0.116	0.207	−0.298	0.116
N	0.389	−0.093	0.033	0.793	−0.440	0.125