

Supplementary Materials

Soil Invertebrate Communities as Indicator of Ecological Conservation Status of Some Fertilised Grasslands from Romania

Table S1. A detailed description of investigated grasslands from Bucegi Mountains, Romania. (CG= control plot; A, B, C, D = experimental plots).

Code	Type of grassland	Longitude	Latitude	Exposure	Dominant plants	Type of soil	Type of management	Fertilization	Period of fertilization	Soil taxa richness
CG	Natural	45°21'23.7"	025°27'38.9"	1758 m	<i>Agrostis capillaris</i> L., <i>Festuca ovina</i> L., <i>Ligusticum mutellina</i> (L.) Crantz, <i>Nardus stricta</i> L., <i>Potentilla aurea</i> L., <i>Polytrichum</i> sp., <i>Ranunculus acris</i> L., <i>Trifolium repens</i> L.	Podzol	Overgrazing, with cows, 85-90 days/year.	None	None	10
A	Semi-natural	45°21'24.3"	025°27'39.5"	1758 m	<i>Agrostis capillaris</i> L., <i>Deschampsia cespitosa</i> (L.) P. Beauv., <i>Festuca rubra</i> L., <i>Phleum alpinum</i> L., <i>Poa pratensis</i> L., <i>Polygonum bistorta</i> L.	Podzol	Controlled grazing with cows, 85-90 days/year.	An average application rate per year by 100 kg ha ⁻¹ N + 50 kg ha ⁻¹ P2O5 + 50 kg ha ⁻¹ K2O	2000-2002 2010-2012 2014-2016	10
B	Semi-natural	45°21'24.9"	025°27'39.9"	1782 m	<i>Deschampsia cespitosa</i> (L.) P. Beauv., <i>Phleum alpinum</i> L., <i>Phleum pratense</i> L., <i>Ranunculus acris</i> L.,	Podzol	Controlled grazing with cows, 85-90 days/year.	An average application rate per year by 150 kg ha ⁻¹ N + 75 kg ha ⁻¹ P2O5	1996-1998	11

					<i>Trifolium repens</i> L.			+ 75 kg ha- 1 K2O	2004 2010 2016	
								Organicall y fertilised by paddockin g with dairy cows.		
								2/3 Ah (hydrolytic acidity), sterile lime powder (CaO) was used, in a dose of approxima tely 7.5 tons / ha. The powdered lime was spread on the surface of land.	1995	
C	Semi- natural	45°21'24. 7"	025°27'35. 0"	1782 m	<i>Agrostis vinealis</i> Schreb., <i>Ligusticum mutellina</i> (L.) Crantz, <i>Poa annua</i> L., <i>Poa pratensis</i> L., <i>Polygonum bistorta</i> L., <i>Trifolium repens</i> L	Podz ol	Controle d grazing with cows, 85-90 days/yea r.	An average application rate per year by 150 kg ha- 1 N + 75 kg ha-1 P2O5 + 75 kg ha- 1 K2O	1996- 1998	10
								Organicall y fertilised by paddockin g with dairy cows.	2003 2009 2015	
D	Semi- natural	45°21'23. 9"	025°27'34. 5"	1784 m	<i>Alchemilla vulgaris</i> L.,	Podz ol	Controle d	Herbicide Grassland	1995	13

Species	Management	Year
<i>Deschampsia cespitosa</i> (L.) P. Beauv., <i>Festuca rubra</i> L., <i>Holcus lanatus</i> L., <i>Ranunculus acris</i> L., <i>Taraxacum officinale</i> F.H.Wigg., <i>Trifolium repens</i> L.	grazing with Roundup at 5 l ha ⁻¹ 85-90 days/year. Calcium liming (the CaO was incorporated in soil)	1995
	Reseeded with a mixture of grasses and perennial legumes: <i>Phleum pratense</i> L. Favorit variety (40%), <i>Festuca pratensis</i> Huds. Transilvan variety (25%), <i>Lolium perenne</i> L. Marta variety (5%), <i>Trifolium hybridum</i> L.- local population from Braşov (15%), <i>Lotus corniculatus</i> L. Livada variety (15%)	1996-1998
	An average application rate per	2002 2008 2014

year by
150 kg ha-
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ha-1 P2O5
+ 75 kg ha-
1 K2O

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Table S2. Model selection results. Models are ranked in a decreasing order of the Akaike weights (w_i). For clarity, models with $w_i < 0.02$ are not shown. Statistics include: LL - log likelihood; K - number of parameters; the second-order Akaike information criterion corrected for small sample sizes AICc; Δ_i - AICc differences; w_i - Akaike weights.

Model structure.	LL	K	AICc	Δ_i	w_i
Abundance					
VegCovr + pH	-1288.81	4	2585.62	0.00	0.35
VegCovr + Ts + pH	-1288.49	5	2586.97	1.35	0.18
VegCovr + Rhs + pH	-1288.49	5	2586.98	1.36	0.18
VegCovr + pH + RPs	-1288.81	5	2587.61	2.00	0.13
VegCovr + Ts + Rhs + pH	-1288.03	6	2588.07	2.45	0.10
Species richness					
pH	-485.66	3	977.33	0.00	0.15
VegCovr + pH	-484.95	4	977.91	0.58	0.11
pH + RPs	-485.09	4	978.18	0.85	0.10
VegCovr + pH + RPs	-484.53	5	979.06	1.73	0.06
Rhs + pH	-485.60	4	979.21	1.88	0.06
Ts + pH	-485.66	47	979.33	2.00	0.06
RPs	-486.73	3	979.45	2.12	0.05
VegCovr + Rhs + pH	-484.75	5	979.51	2.18	0.05
VegCovr + Ts + pH	-484.95	5	979.91	2.58	0.04
Rhs + pH + RPs	-485.05	5	980.09	2.76	0.04

Model structure.	LL	K	AICc	Δ_i	w_i
VegCovr	-487.06	3	980.13	2.80	0.04
VegCovr + RPs	-486.31	4	980.62	3.29	0.03
