

Phytosociological description of hay meadows with dominating *Trisetum flavescens* in the lower montane belt of north-western and western Slovenia

Fitocenološka oznaka travnikov s prevladujočo vrsto *Trisetum flavescens* v spodnjem gorskem pasu severozahodne in zahodne Slovenije

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Abstract: We conducted a phytosociological study into hay meadows on former fields on original sites of beech forests from the alliance *Aremonio-Fagion* in the lower montane belt of the northwestern and western Slovenia (southern Julian Alps, northern part of the Dinaric Alps) and compared them to similar, previously described meadows in Slovenia and northwestern Italy. Based on this comparison they are classified into the new association *Rhinantho freynii-Trisetum flavescens* and new habitat type, southeastern-Alpine-northern-Illyrian lower montane hay meadows – 38.239-S1.

Key words: secondary grasslands, synsystematics, *Trisetum flavescens*, *Arrhenatherion*, Illyrian floral province, Slovenia

Izveček: Fitocenološko smo preučili travnike na nekdanjih njivah na izvornih rastiščih bukovih gozdov iz zveze *Aremonio-Fagion* v spodnjem gorskem pasu severozahodne in zahodne Slovenije (južne Julijske Alpe, severni del Dinarskega gorstva) in jih primerjali s podobnimi že opisanimi travniki v Sloveniji in severozahodni Italiji. Na podlagi te primerjave jih uvrščamo v novo asociacijo *Rhinantho freynii-Trisetum flavescens* in v nov habitatni tip jugovzhodnoalpski-severnoilirski spodnjegorski gojeni travniki – 38.239-S1.

Ključne besede: drugotna travišča, sinsistematika, *Trisetum flavescens*, *Arrhenatherion*, Ilirska florna provinca, Slovenija

Introduction

Phytosociology of meadows with dominant *Trisetum flavescens* in the submontane and mon-

tane belt in Slovenia was studied several years ago by Petras Sackl et al. (2012) who classified these meadows into two associations: *Astrantio-Trisetum* Knapp et Knapp ex Oberdorfer 1957

and *Pastinaco-Arrhenatheretum* Passarge 1964. Similar meadows in Friuli Venezia Giulia are classified into the syntaxon *Centaureo carniolicae-Arrhenatheretum* Oberdorfer 1964 corr. Poldini et Oriolo 1994 f. *montana* Poldini et Oriolo 1994 (Poldini and Oriolo 1994). When mapping the habitat types in the Spodnja Dolina in Bohinj between Bitnje and Ribčev Laz in 2014 we classified the meadows with dominant *Trisetum flavescens* as habitat type 38.31 (central-European montane hay meadows), but we found this classification to be inadequate. In the following, 2015, we made a phytosociological inventory of these meadows. Similar meadows were observed and recorded also on the Banjšice plateau above the Central Soča Valley and elsewhere in the foothills of the Julian Alps and in the Trnovski Gozd plateau. We arranged these relevés in the phytosociological table and tried to provide a corresponding syntaxonomical definition for them. We also described a new habitat type 38.239-S1.

Methods

Phytosociological records of lower montane meadows were made according to the standard Central-European method (Braun-Blanquet 1964) and entered into the FloVegSi database (Seliškar et al. 2003). We transformed the combined cover-abundance values with numerical values (1–9) according to van der Maarel (1979). Numerical comparisons were performed with the SYN-TAX 2000 program package (Podani 2001). The relevés were compared by means of “(unweighted) average linkage method” – UPGMA, using Wishart’s similarity ratio and Jaccard’s index. The nomenclature source for the names of vascular plants is the Mala flora Slovenije (Martinčič et al. 2007) and Šilc and Čarni (2012) for the names of syntaxa. In the classification of species into phytosociological groups (groups of diagnostic species) we mainly refer to the Flora alpina (Aeschimann et al. 2004). Geographic coordinates of relevés are determined according to the Slovenian geographic coordinate system D 48 (5th zone) on the Bessel ellipsoid and with Gauss-Krüger projection.

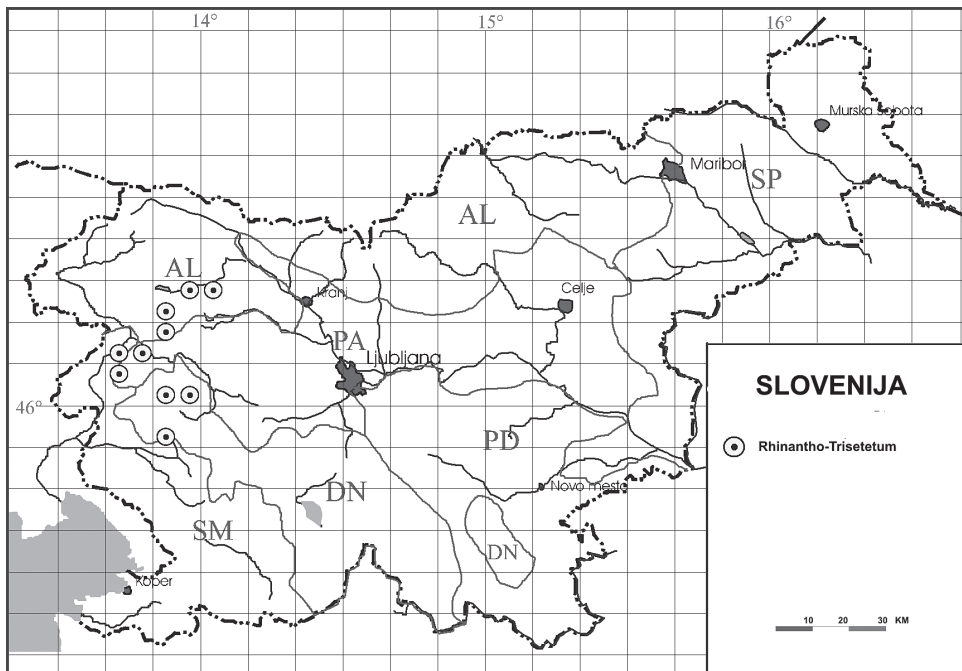


Figure 1: Approximate localities of researched hay meadows on the map of Slovenia
Slika 1: Približna lokacija popisanih travišč na zemljevidu Slovenije

Short ecological description of the study area

Figure 1 shows approximate localities of studied meadows in the southern Julian Alps (Bohinj and the Bača Valley) and in the northern part of the Dinaric Alps (Banjšice, Trnovski Gozd). They are situated in the elevation belt between (335) 500 m and 800 (1030) m, mainly on plateaus or very gentle slopes. Most of them occurred on abandoned fields. Geological bedrock is glacial material (till), limestone, limestone and flysch (or marlstone), rarely dolomite and marlstone, talus and gravel. The soil is shallow to medium deep. The predominating soil types are brown calcareous soil, eutric brown soil and rarely rendzina. The study area has a humid mountain climate. Ogrin (1998) describes it as a temperate-continental climate of western and southern Slovenia. The average annual temperature is 6–8°C (Cegnar 1998) and average annual precipitation is 2000 mm to 2500 mm (Zupančič 1998). The southwestern part of the study area (Banjšice) has a slightly warmer

and less moist climate, and the same applies to the Bača Valley. In terms of climate the relevés from Bohinj are comparable with the relevés from higher elevations in the Trnovski Gozd plateau. The studied hay meadows have been cleared in the belt of Illyrian beech forests from the alliance *Aremonio-Fagion*. These are potentially the sites of associations *Anemone trifoliae-Fagetum* (Bohinj, partly also the Bača Valley), *Lamio orvalae-Fagetum*, *Omphalodo-Fagetum* (Trnovski Gozd), *Lamio orvalae-Fagetum* and *Ornithogalo pyrenaici-Fagetum* (Banjšice).

Results and discussion

In Table 1 we arranged 24 relevés of hay meadows in the lower montane belt of northwestern and western Slovenia. Their species composition was compared to the species composition of stands from the associations *Astrantio-Trisetum*,

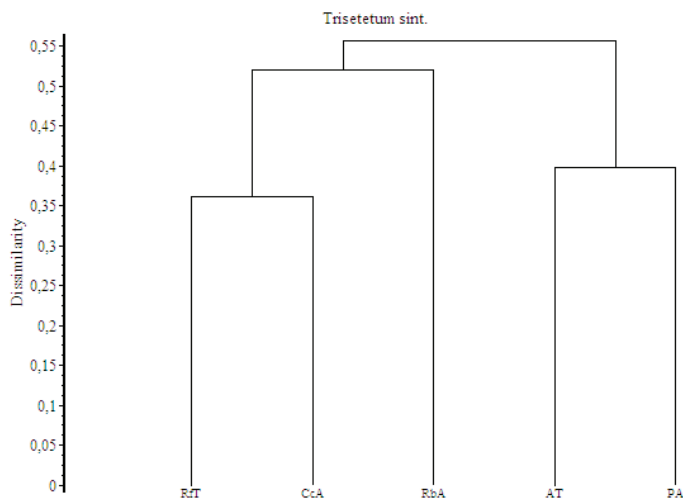


Figure 2: Dendrogram of hay meadows with dominating *Arrhenatherum elatius* and *Trisetum flavescens* in Slovenia and NE Italy (RfT – *Rhinantho freynii*-*Trisetetum*, CcA – *Centaureo carniolicae*-*Arrhenatheretum*, RbA – *Ranunculo bulbosi*-*Arrhenatheretum*, AT – *Astrantio*-*Trisetetum*, PA – *Pastinaco*-*Arrhenatheretum*) – UPGMA, similarity ratio

Slika 2: Dendrogram travnikov s prevladujočima vrstama *Arrhenatherum elatius* in *Trisetum flavescens* v Sloveniji in severovzhodni Italiji (RfT – *Rhinantho freynii*-*Trisetetum*, CcA – *Centaureo carniolicae*-*Arrhenatheretum*, RbA – *Ranunculo bulbosi*-*Arrhenatheretum*, AT – *Astrantio*-*Trisetetum*, PA – *Pastinaco*-*Arrhenatheretum*) – UPGMA, similarit ratio

Pastinaco-Arrhenatheretum (Petras Sackl et al. 2012), *Ranunculo bulbosi-Arrhenatheretum* (Čarni 2003) and stands of the montane form of the association *Centaureo carniolicae-Arrhenatheretum* (Poldini and Oriolo 1994) in the synthetic table that was prepared for this purpose (Table 2). The comparison was conducted by means of hierarchical classification with consideration of species frequencies (Figure 2) and either presence or absence of species (Figure 3).

Considering only the presence or absence of species (Figure 3) our relevés are floristically slightly similar to the stands of associations *Pastinaco-Arrhenatheretum* and *Astrantio-Trisetetum*, whereas with consideration of species frequencies (Figure 2) we observe more similarity with the stands of associations *Centaureo carniolicae-Arrhenatheretum* and *Ranunculo bulbosi-Arrhenatheretum*. We additionally analysed the composition of compared syntaxa by groups of diagnostic species (Tables 2 and 3). This comparison indicates the following. According to this

criterion the studied stands are very similar to the stands of the syntaxon *Centaureo-Arrhenatheretum* f. *montana*, but have a higher proportion of diagnostic species of dry grasslands from the class *Festuco-Brometea* and a much smaller proportion of hygrophilous tall herb species from the class *Mulgedio-Aconitetea*. Compared to the stands of the association *Ranunculo bulbosi-Arrhenatheretum* the studied stands have a considerably smaller proportion of acidophilous species from the class *Calluno-Ulicetea*, and in comparison with the stands of the association *Pastinaco-Arrhenatheretum* they have a higher proportion of species of the class *Festuco-Brometea* and a smaller proportion of species from classes *Stellarietea mediae* and *Trifolio-Geranietea*. Compared to the stands of the association *Astrantio-Trisetetum* the studied stands have a considerably higher proportion of species from the class *Molinio-Arrhenatheretea* and a smaller proportion of species from the order *Molinetalia* and classes *Calluno-Ulicetea*, *Trifolio-Geranietea* and *Quercu-Fagetea*.

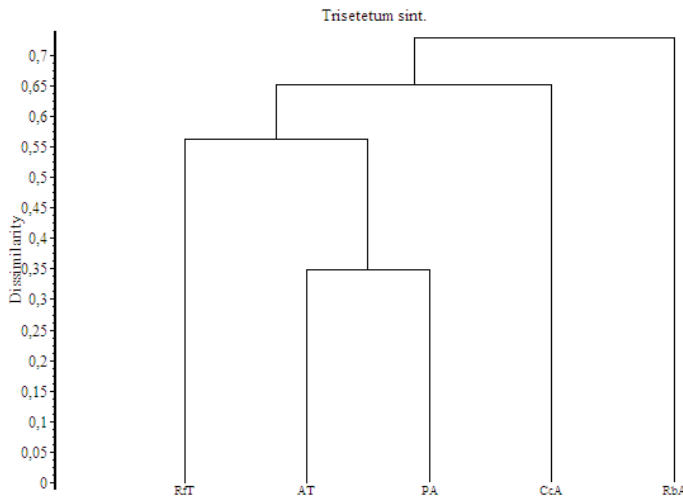


Figure 3: Dendrogram of hay meadows with dominating *Arrhenatherum elatius* and *Trisetum flavescens* in Slovenia and NE Italy (RfT – *Rhinantho freynii-Trisetetum*, CcA – *Centaureo carniolicae-Arrhenatheretum*, RbA – *Ranunculo bulbosi-Arrhenatheretum*, AT – *Astrantio-Trisetetum*, PA – *Pastinaco-Arrhenatheretum*) – UPGMA, Jaccard

Slika 3: Dendrogram travnikov s prevladujočima vrstama *Arrhenatherum elatius* in *Trisetum flavescens* v Sloveniji in severovzhodni Italiji (RfT – *Rhinantho freynii-Trisetetum*, CcA – *Centaureo carniolicae-Arrhenatheretum*, RbA – *Ranunculo bulbosi-Arrhenatheretum*, AT – *Astrantio-Trisetetum*, PA – *Pastinaco-Arrhenatheretum*) – UPGMA, Jaccard

Some of the diagnostic species of the association *Centaureo-Arrhenatheretum* (*Centaurea carniolica*, *Anthriscus sylvestris* and *Myosotis sylvatica*) are rare in the studied stands. Most of the diagnostic species of the association *Ranunculo bulbosi-Arrhenatheretum* (as defined by Ellmauer and Mucina 1993: 346): *Silene nutans*, *Clinopodium vulgare*, *Carlina acaulis*, *Carex montana*, *Linum catharticum*, *Trifolium montanum* and *Lychnis viscaria*, are only rarely or not at all recorded in the studied stands. Rare or absent among the diagnostic species of the association *Pastinaco-Arrhenatheretum* in the studied stands are *Pastinaca sativa* and *Geranium pratense*, and *Astrantia major*; *Carex montana*, *Linum catharticum* and *Listera ovata* are rarely recorded or absent from the diagnostic species of the association *Astrantio-Trisetetum*.

Based on mentioned analyses we came to the following conclusions. The studied stands cannot be classified into associations *Pastinaco-Arrhenatheretum* or *Astrantio-Trisetetum* due to the absence of their diagnostic species. Based on the presence of diagnostic species and (or) full floristic similarity these stands could be classified into the association *Ranunculo bulbosi-Arrhenatheretum* or into the montane form of the association *Centaureo carniolicae-Arrhenatheretum*. With consideration of the dominant species of these grasslands, *Trisetum flavescens*, their species composition and distribution in the lower montane belt we decided to name them after the dominant species and classified them into the new association *Rhinantho freynii-Trisetetum flavescens*. Their physiognomy and species composition differ both from the meadows of the colline and submontane belt that are usually classified into the association *Ranunculo bulbosi-Arrhenatheretum*, and from the meadows of the montane and altimontane belt, which are dominated by *Trisetum flavescens*. The diagnostic species of the new association, *Trisetum flavescens*, *Helictotrichon pubescens*, *Rhinanthus freynii*, *Medicago lupulina*, *Ranunculus bulbosus* and *Plantago media*, characterise species-rich, cultivated meadows on former fields with relatively shallow soil in the lower montane belt in the region of beech forests from the Illyrian alliance *Aremonio-Fagion*. *Rhinanthus freynii* is an eastern-Alpine-Illyrian species, character species of sub-Mediterranean dry grasslands

from the suballiance *Hypochoeridion maculatae* (Aeschimann et al. 2004: 278), which characterise the new association both ecologically and chorologically. The nomenclature type, *holotypus*, of the new association is relevé No. 20 in Table 1. The association is divided into two variants. The variant with *Rhinanthus minor* (its differential species is also *Lychnis flos-cuculi*) comprises the relevés on slightly moister soil and the variant with *Polygala comosa* (its differential species include *Bromopsis erecta*, *Brachypodium rupestre* and *Lathyrus pratensis*) comprises relevés on slightly drier sites. In terms of their characteristics the stands of the new association represent a transition between the stands of the syntaxa from orders *Poo alpinae-Trisetetalia* and *Arrhenatheretalia elatioris*. The new association is classified into the alliance *Arrhenatherion elatioris*, order *Arrhenatheretalia elatioris* and class *Molinio-Arrhenatheretea*.

Following the classification of Palaearctic habitats (P. Devillers-Terschuren and J. Devillers-Terschuren 1998, 2002) we classify the studied meadows into a new habitat type, southeastern-Alpine-northern-Illyrian lower montane hay meadows – 38.239-S1. The description of the new habitat is as follows:

Lower montane hay meadows are distributed in the foothills of the Alps and in the northern part of the Dinaric Mountains at elevations between (400) 500 m to 800 (1000) m in the belt of Illyrian montane beech forests (alliance *Aremonio-Fagion*) and are an intermediate stage between HT 38.22 and 38.3. The geological bedrock is usually calcareous, but frequently interlayered with silicate (limestone, limestone and marl), in places also glacial material (till). The soil is shallow brown rendzina, brown calcareous soil, eutric brown soil. Meadows are situated on plateaus or gentle slopes, frequently on former fields. They are usually mown once or twice a year, unfertilised or only moderately fertilised and species rich. The dominant grass is *Trisetum flavescens*, while *Arrhenatherum elatius*, *Helictotrichon pubescens* and *Holcus lanatus* have a slightly lower median coverage. More poorly represented or absent from the species composition are the diagnostic species of montane hay meadows. The differential species are some of the species of semi-dry meadows from the class *Festuco-Brometea* (*Medicago lupulina*,

Rhinanthus freynii, *Plantago media*, *Ranunculus bulbosus*). In terms of floristics they are more similar to lowland hay meadows from the associations *Ranunculo bulbosi-Arrhenatheretum* and *Centaureo carniolicae-Arrhenatheretum* (HT 38.221) than to montane hay meadows, but are nevertheless substantially different in their entire floristic composition, especially in terms of the presence of different companion species that are characteristic of the (lower) montane belt and in that *Trisetum flavescens* dominates over *Arrhenatherum elatius*.

Conclusions

Despite the predominant *Trisetum flavescens* the hay meadows on former fields in the lower montane belt of the northwestern and western Slovenia, originally the sites of beech forests from the alliance *Aremonio-Fagion*, are floristically nevertheless more similar to the meadows from the order *Arrhenatheretalia elatioris* than to those from the order *Poo alpinae-Trisetetalia*. They could be classified either into the association *Ranunculo bulbosi-Arrhenatheretum* or *Centaureo carniolicae-Arrhenatheretum*, but their distribution in the lower montane belt and entire species composition justify their classification into the new association *Rhinantho freynii-Trisetetum flavescens*. The new association indicates an intermediate type of hay meadows of the lower montane belt where *Trisetum flavescens* is the dominating species; their species composition, however, does not yet comprise expressly montane (upper-montane) species, but more species of semi-dry grasslands. They are species rich and less prone to degradation that is caused by intensive fertilisation. These meadows also comprise several protected species (Anon. 2004), such as *Orchis ustulata*, *O. morio*, *O. tridentata*, *Lilium bulbiferum*, *Listera ovata* and *Dactylorhiza fuchsii*.

Povzetek

V letu 2014 smo pri kartiranju habitatnih tipov v Spodnji dolini v Bohinju med Bitnjami in

Ribčevim Lazom označili travnike s prevladujočo vrsto *Trisetum flavescens* kot habitatni tip 38. 31 (srednjeevropski gorski gojeni travniki), vendar se nam ta oznaka ni zdela najbolj ustrezna. Naslednje leto, 2015, smo te travnike fitocenološko popisali. Podobne travnike smo opazili in popisali tudi v hribovju Banjšic nad srednjo Soško dolino in ponekod drugod v prigorju Julijskih Alp in v Trnovskem gozdu. Vse te popise smo uredili v fitocenološko tabelo in njihovo vrstno sestavo primerjali z vrstno sestavo sestojev asociacij *Astrantio-Trisetetum*, *Pastinaco-Arrhenatheretum* (Petras Sackl et al. 2012), *Ranunculo bulbosi-Arrhenatheretum* (Čarni 2003) in s sestoji montanske forme asociacije *Centaureo carniolicae-Arrhenatheretum* (Poldini in Oriolo 1994). Primerjavo smo izvedli s hierarhično klasifikacijo, ob upoštevanju frekvence vrst in zgolj prisotnosti ali odsotnosti vrst. Primerjane združbe smo analizirali tudi po sestavi skupin diagnostičnih vrst. Na podlagi navedenih analiz ugotavljamo, da uvrstitev preučeni sestojev v asociaciji *Pastinaco-Arrhenatheretum* ali *Astrantio-Trisetetum* zaradi odsotnosti njihovih diagnostičnih vrst ni mogoča. Po prisotnosti diagnostičnih vrst in (ali) celotni floristični podobnosti bi te sestoje mogli uvrstiti v asociacijo *Ranunculo bulbosi-Arrhenatheretum* ali v montansko formo asociacije *Centaureo carniolicae-Arrhenatheretum*. Ob upoštevanju prevladujoče vrste teh travnišč, *Trisetum flavescens*, njihove vrstne sestave in razširjenosti v spodnjem gorskem pasu, smo se odločili za njihovo poimenovanje po prevladujoči vrsti in jih uvrščamo v novo asociacijo *Rhinantho freynii-Trisetetum flavescens*. Označuje vrstno bogata travnišča na nekdanjih njivah z razmeroma plitvimi tlemi, v katerih prevladuje rumenkasti ovsenec, a v njihovi sestavi še ni vrst, ki so značilne za zgornji gorski pas, pač pa več vrst polsuhih travnišč. Obravnavana travnišča so značilna za spodnji gorski pas v območju bukovih gozdov iz ilirske zveze *Aremonio-Fagion*. Diagnostične vrste nove asociacije so *Trisetum flavescens*, *Helictotrichon pubescens*, *Rhinanthus freynii*, *Medicago lupulina*, *Ranunculus bulbosus* in *Plantago media*. Po tipologiji palearktičnih habitatnih tipov (P. Devillers-Terschuren in J. Devillers-Terschuren 1998, 2002) preučene travnike uvrščamo v nov habitatni tip jugovzhodnoalpski-severnoilirski spodnjegorski gojeni travniki – 38.239-S1.

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Table 1 (Preglednica 1): *Rhinantho freynii*-*Trisetum flavescens*

Number of relevé (Zaporedna številka popisa)	1	2	3	4	5	6	7	8	9
Database number of relevé (Delovna številka popisa)	245813	257007	258234	245826	245880	254991	245944	245948	245945
Author of relevé (Avtor popisa)	ID	ID	ID	ID	ID	ID	ID	ID	ID
Elevation in m (Nadmorska višina v m)	730	716	620	760	550	500	700	620	695
Aspect (Lega)	S	SE	SW	SW	NW	0	SE	E	S
Slope in degrees (Nagib v stopinjah)	10	10	5	5	5	0	10	10	5
Parent material (Matična podlaga)	DRG	AL	AF	DRG	D	Pr	Gr	ALR	Gr
Soil (Tla)	Eu	Eu	Eu	Eu	Eu	Re	Re	CC	Re
Cover of herb layer in % (Zastiranje zeliščne plasti v %):	100	100	100	100	100	100	100	100	100
Number of species (Število vrst)	53	46	51	44	53	46	51	49	43
Relevé area (Velikost popisne ploskve)	m ²	20	20	20	20	20	20	20	20
Date of taking relevé (Datum popisa)	6/6/2012	5/31/2015	6/4/2015	6/6/2012	6/13/2012	6/9/2014	6/5/2012	6/5/2012	6/5/2012
Locality (Nahajališče)	Mrzla Rupa - Pri Štalah	Banjšice - Perrtovti	Banjšice - Koprusche	Mrzla Rupa-Pri Štalah	Čepovan-Vrata-Gruden	Bohinjska Bistrica - Zagradec	Rut nad Baško dolino	Rut nad Baško dolino	Rut nad Baško dolino
Quadrant (Kvadrant)	9949/3	9948/1	9948/1	9949/3	9848/4	9749/2	9749/3	9749/3	9749/3
Coordinate GK Y (D-48)	m	413609	401964	402371	413316	407840	420918	414685	414823
Coordinate GK X (D-48)	m	5096108	5102318	5105622	5096250	5107424	5126613	5118741	5118173
Diagnostic species of the association (Diagnostične vrste asociacije)									
MA <i>Trisetum flavescens</i>	E1	1	1	3	3	3	1	3	3
MA <i>Helictotrichon pubescens</i>	E1	.	+	2	2	1	1	4	3
FB <i>Medicago lupulina</i>	E1	+	.	.	1	+	1	+	+
FB <i>Rhinanthus freynii</i>	E1	1	2	1	3	2	3	+	1
FB <i>Plantago media</i>	E1	.	1	+	.	+	+	1	+

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Pr.	Fr.
245946	258389	245949	258230	254787	258515	258517	254984	258507	258513	258510	258512	258514	258516	258511		
ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID		
715	735	335	630	1030	580	590	920	580	590	575	575	575	575	560		
SSE	NE	SW	NE	NE	NE	SEE	W	W	N	W	0	NNW	NE	S		
5	20	3	5	15	5	5	5	2	5	2	0	2	5	2		
Gr	L	Gr	AL	DL	Mo	Mo	A	Mo	Mo	Mo	Mo	Mo	Mo	Mo		
CC	Eu	CC	Eu	Eu	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC		
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		
41	39	45	28	38	29	33	38	44	45	39	30	37	45	43		
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20		
6/5/2012	5/28/2015	6/5/2012	6/4/2015	6/19/2014	6/2/2015	6/2/2015	4/8/2014	5/19/2015	5/19/2015	5/19/2015	5/19/2015	5/19/2015	6/2/2015	5/19/2015		
Rut nad Baško dolino	Banjšice - Levpa - Testeni	Koritnica v Baški dolini	Banjšice - Kuprušče - Sv. Tomaž	Vojsko - Gnezda	Bohinjska Bistrica-Dobrava	Bohinjska Bistrica-Dobrava	Predmeja - Podkaplince-Polh	Bohinjska Bistrica-Dobrava	Bohinjska Bistrica-Dobrava	Bohinjska Bistrica-Dobrava	Bohinjska Bistrica-Dobrava	Bohinjska Bistrica-Dobrava	Bohinjska Bistrica-Dobrava	Bohinjska Bistrica-Dobrava		
9749/3	9848/3	9849/1	9948/1	9949/4	9749/2	9749/2	0049/3	9749/2	9749/2	9749/2	9749/2	9749/2	9749/2	9749/2		
414643	402617	413300	402020	417860	418443	418418	415021	417973	418143	418008	417754	418008	418599	417494		
5118810	5108118	5114306	5105505	5096354	5125447	5125214	5089654	5125300	5125231	5125397	5125180	5125606	5125514	5125127		
3	3	2	3	4	4	3	3	1	1	3	4	1	2	2	24	100
.	3	2	3	.	+	+	1	2	2	2	2	+	1	2	21	88
+	+	+	1	.	1	.	.	+	+	1	+	+	2	1	19	79
+	1	+	.	+	+	1	+	.	+	1	.	.	.	2	18	75
+	+	+	.	.	.	.	+	+	+	+	.	+	+	+	17	71
															Pr.	Fr.

Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9
FB	<i>Ranunculus bulbosus</i>	E1	+	1	.	.	+	1	+	+
Differential species of lower units (Razlikovalnice nižjih enot)										
FB	<i>Polygala comosa</i>	E1	.	+	+	+	.	1	.	1
FB	<i>Bromopsis erecta</i>	E1	+	1	+	+	.	1	+	.
FB	<i>Brachypodium rupestre</i>	E1	2	+	.	2	1	+	+	.
MA	<i>Lathyrus pratensis</i>	E1	.	.	1	.	+	1	1	.
CU	<i>Rhinanthus minor</i>	E1	.	+	.	.	1	.	.	.
MA	<i>Lychnis flos-cuculi</i>	E1	.	1	.	.	.	.	.	.
MA	<i>Arrhenatheretalia, Molinio- Arrhenatheretea</i>									
	<i>Leucanthemum ircutianum</i>	E1	1	1	1	1	2	1	1	1
	<i>Arrhenatherum elatius</i>	E1	1	.	1	3	4	1	3	3
	<i>Ranunculus acris</i>	E1	1	+	+	.	1	1	+	1
	<i>Leontodon hispidus</i>	E1	1	+	1	1	1	2	2	3
	<i>Rumex acetosa</i>	E1	+	.	+	+	1	1	+	1
	<i>Dactylis glomerata</i>	E1	1	.	1	2	2	2	1	2
	<i>Galium mollugo</i> agg. (<i>G. album</i>)	E1	1	+	+	1	+	+	.	+
	<i>Trifolium pratense</i>	E1	1	1	1	+	.	1	2	2
	<i>Poa pratensis</i>	E1	.	.	.	1	1	1	1	2
	<i>Holcus lanatus</i>	E1	2	4	3	+	1	.	1	+
	<i>Knautia arvensis</i>	E1	1	.	.	3	.	2	2	3
	<i>Lotus corniculatus</i>	E1	+	1	1	.	.	1	1	1
	<i>Plantago lanceolata</i>	E1	+	+	+	+	1	1	+	+
	<i>Pimpinella major</i>	E1	.	+	+	.	+	+	2	2
	<i>Cerastium holosteoides</i>	E1	+	1	+	1	.	+	1	+
	<i>Achillea millefolium</i>	E1	.	+	+	+	1	.	.	+
	<i>Festuca pratensis</i>	E1	+	+	+	+	+	2	+	+
	<i>Centaurea jacea</i>	E1	2	+	+	1	2	1	.	.
	<i>Cynosurus cristatus</i>	E1	+	.	+	+	+	1	.	.
	<i>Trifolium repens</i>	E1	+	.	1	+	+	+	+	.
	<i>Daucus carota</i>	E1	+	1	+	.	.	+	+	+
	<i>Lolium perenne</i>	E1	.	.	.	.	.	.	+	+
	<i>Tragopogon pratense</i> subsp. <i>orientalis</i>	E1	.	1	1	1	+	+	1	.
	<i>Festuca rubra</i>	E1	1	2	1	.	.	1	+	.
	<i>Crepis biennis</i>	E1	.	.	+	+	1	1	.	.
	<i>Vicia cracca</i>	E1	.	.	1	+	+	.	1	+
	<i>Veronica chamaedrys</i>	E1	.	.	.	.	+	.	.	+
	<i>Campanula patula</i>	E1	.	1	.	.	+	.	.	.
	<i>Taraxacum officinale</i> agg.	E1	.	.	.	.	+	.	.	.
	<i>Heracleum sphondylium</i>	E1	.	+	.	.	.	.	+	+
	<i>Allium scorodoprasum</i>	E1	.	.	.	.	1	+	.	.
	<i>Ajuga reptans</i>	E1	+	.	.	.	.	.	.	.
	<i>Stellaria graminea</i>	E1	.	+	+	.	.	.	.	.

Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9
<i>Carum carvi</i>	E1	.	.	.	1	.	.	.	+	.
<i>Prunella vulgaris</i>	E1	+	.	.	1	.	+	.	.	.
<i>Vicia sepium</i>	E1	.	.	.	+	1	.	.	+	.
<i>Poa trivialis</i>	E1	.	.	.	.	.	.	.	.	.
<i>Euphrasia rostkoviana</i>	E1	.	.	.	.	.	.	1	.	1
<i>Medicago sativa</i>	E1	.	.	.	.	.	.	.	.	+
<i>Bellis perennis</i>	E1	.	.	.	.	.	.	.	.	.
<i>Carex hirta</i>	E1	+	.	.	.	.	.	.	.	.
<i>Bromus hordeaceus</i>	E1	.	.	.	+	.	.	.	.	.
<i>Achillea roseoalba</i>	E1	.	.	.	.	.	.	.	.	.
<i>Agropyron repens</i>	E1	.	.	.	.	.	.	.	.	.
<i>Phleum pratense</i>	E1	.	.	.	.	.	.	.	.	.
<i>Pastinaca sativa</i>	E1	.	+	.	.	.	.	.	.	.
<i>Trifolium campestre</i>	E1	.	+	.	.	.	.	.	.	.
<i>Anthriscus sylvestris</i>	E1	.	.	.	.	1	.	.	.	.
<i>Alchemilla xanthochlora</i>	E1	.	.	.	.	+	.	.	.	.
<i>Alopecurus pratensis</i>	E1	.	.	.	.	.	.	.	.	+
<i>Festuca arundinacea</i>	E1	.	.	.	.	.	.	.	.	.
<i>Alchemilla vulgaris</i>	E1	.	.	.	.	.	.	.	.	.
<i>Veronica serpyllifolia</i>	E1	.	.	.	.	.	.	.	.	.
<i>Trifolium patens</i>	E1	.	.	.	.	.	.	.	.	.
<i>Ornithogalum umbellatum</i>	E1	.	.	.	.	.	.	.	.	.
Mo <i>Molinietalia caeruleae</i>										
<i>Colchicum autumnale</i>	E1	1	+	.	1	.	+	+	+	.
<i>Centaurea carniolica</i>	E1	.	.	.	.	.	.	.	.	.
<i>Primula elatior</i>	E1	.	.	.	.	+	.	.	.	.
<i>Primula x digenea</i>	E1	.	.	.	.	+	.	.	.	.
<i>Equisetum arvense</i>	E1	.	.	.	.	.	+	.	.	.
<i>Betonica officinalis</i>	E1	.	.	.	.	.	.	.	.	.
PaT <i>Poo alpinae-Trisetetalia</i>										
<i>Anthoxanthum odoratum</i>	E1	1	2	1	+	+	.	.	+	+
<i>Agrostis capillaris</i>	E1	.	.	.	+	.	.	+	.	.
<i>Ranunculus nemorosus</i>	E1	.	.	.	.	.	.	.	.	.
MuA <i>Veratrum album</i> subsp. <i>lobelianum</i>	E1	.	.	.	.	.	.	.	.	.
FB <i>Brometalia erecti, Festuco-Brometea</i>										
<i>Salvia pratensis</i>	E1	.	2	1	3	+	3	3	2	.
<i>Briza media</i>	E1	2	1	1	.	+	2	1	.	.
<i>Thymus pulegioides</i>	E1	1	1	+	+	.	1	+	+	+
<i>Carex caryophylla</i>	E1	+	+	.	.	.	.	.	+	+
<i>Pimpinella saxifraga</i>	E1	+	.	+	1	.	.	+	.	.
<i>Silene vulgaris</i> subsp. <i>vulgaris</i>	E1	.	.	.	.	.	+	1	.	1
<i>Festuca rupicola</i>	E1	.	+	.	.	.	1	1	.	.
<i>Orobanche gracilis</i>	E1	.	.	.	.	.	+	1	.	+
<i>Arabis hirsuta</i>	E1	.	.	.	+	.	.	+	.	.

Legend - Legenda

ID Igor Dakskobler
 MuA *Mulgedio-Aconitetea*
 KC *Koelerio-Corynophoretea*
 A Limestone - apnenec
 D Dolomite - dolomit
 Gr Gravel - grušč
 Pr Alluvium - prod
 L Marlstone - laporovec
 G Claystone - glinavec
 R Chert - roženec
 Mo Till - til
 Eu Eutric brown soil - evtrična rjava tla
 CC Chromoc Cambisols - rjava pokarbonatna tla
 Re Rendzina - rendzina

Table 2: Synoptic table of *Trisetum flavescens* and *Arrhenatherum elatius* dominating (sub)montane grasslands in Slovenia and NE Italy

Preglednica 2: Sintezna tabela (sub)montanskih travnikov s prevladujočima vrstama *Trisetum flavescens* in *Arrhenatherum elatius* v Sloveniji in severovzhodni Italiji

Successive number (Zaporedna številka)	1	2	3	4	5	
Number of relevés (Število popisov)	24	10	7	44	47	
Number of taxa (Število taksonov)	166	120	71	191	147	
Sign for the syntax (Oznaka sintaksonov)	RfT	CcA	RbA	AT	PA	
Author (Avtor)	DS	PO	Č	PS	PS	
Diagnostic species of the association <i>Rhinantho freynii</i>-<i>Trisetum</i> (Diagnostične vrste asociacije)						
MA <i>Trisetum flavescens</i>	E1	100	90	86	98	91
MA <i>Helictotrichon pubescens</i>	E1	88	50	43	68	15
FB <i>Medicago lupulina</i>	E1	79	30	.	30	45
FB <i>Rhinanthus freynii</i>	E1	75	30	.	84	21
FB <i>Plantago media</i>	E1	71	70	.	48	26
FB <i>Ranunculus bulbosus</i>	E1	46	.	100	25	.
Diagnostic species of the association <i>Centaureo-Arrhenatherum</i> (Diagnostične vrste asociacije)						
MA <i>Pimpinella major</i>	E1	79	100	43	27	9
MA <i>Knautia arvensis</i>	E1	79	70	57	27	57
Mo <i>Colchicum autumnale</i>	E1	54	60	.	48	9
MA <i>Heracleum sphondylium</i>	E1	33	80	.	25	74
FB <i>Silene vulgaris</i> subsp. <i>vulgaris</i>	E1	25	80	.	27	36
Mo <i>Centaurea carniolica</i>	E1	8	50	.	.	.
MA <i>Anthriscus sylvestris</i>	E1	4	60	.	.	.
EA <i>Myosotis sylvatica</i>	E1	4	40	.	.	.
Diagnostic species of the association <i>Ranunculo bulbosi-Arrhenatherum</i> (Diagnostične vrste asociacije)						
FB <i>Salvia pratensis</i>	E1	75	90	.	75	49
FB <i>Ranunculus bulbosus</i>	E1	46	.	100	25	.

Successive number (Zaporedna številka)		1	2	3	4	5
FB	<i>Carex caryophylla</i>	E1	33	.	.	.
FB	<i>Pimpinella saxifraga</i>	E1	29	.	43	55 46
FB	<i>Silene nutans</i>	E1	17	10	29	20 30
TG	<i>Clinopodium vulgare</i>	E1	13	20	.	16 11
FB	<i>Carex montana</i>	E1	8	.	.	5 2
FB	<i>Linum catharticum</i>	E1	8	10	.	5 .
FB	<i>Trifolium montanum</i>	E1	8	30	14	5 4
FB	<i>Carlina acaulis</i>	E1	4	20	.	27 9
KC	<i>Lychnis viscaria</i>	E1	.	.	14	.
Diagnostic species of the association <i>Astrantio-Trisetetum</i> (Diagnostične vrste asociacije)						
MA	<i>Astrantia major</i>	E1	.	.	.	61 2
FB	<i>Carex montana</i>	E1	8	.	.	5 2
FB	<i>Linum catharticum</i>	E1	8	10	.	5 .
QF	<i>Listera ovata</i>	E1	8	10	.	5 .
Diagnostic species of the association <i>Pastinaco-Arrhenatheretum</i> (Diagnostične vrste asociacije)						
MA	<i>Arrhenatherum elatius</i>	E1	96	100	100	57 79
MA	<i>Campanula patula</i>	E1	33	30	29	27 32
MA	<i>Pastinaca sativa</i>	E1	4	40	.	5 87
MA	<i>Geranium pratense</i>	E1	.	.	.	5 .
MA	<i>Molinio-Arrhenatheretea</i>					
	<i>Leucanthemum ircutianum</i>	E1	100	60	43	89 89
	<i>Ranunculus acris</i>	E1	96	100	100	32 34
	<i>Leontodon hispidus</i>	E1	92	90	57	66 96
	<i>Rumex acetosa</i>	E1	92	100	57	11 15
	<i>Dactylis glomerata</i>	E1	92	70	29	98 85
	<i>Galium mollugo</i> agg. (<i>G. album</i>)	E1	88	80	29	66 55
	<i>Trifolium pratense</i>	E1	88	100	86	55 83
	<i>Poa pratensis</i>	E1	83	40	29	18 32
	<i>Holcus lanatus</i>	E1	79	30	86	48 72
	<i>Lotus corniculatus</i>	E1	79	80	57	82 87
	<i>Plantago lanceolata</i>	E1	79	80	57	52 89
	<i>Achillea millefolium</i>	E1	76	80	43	86 55
	<i>Cerastium holosteoides</i>	E1	76	60	29	. .
	<i>Festuca pratensis</i>	E1	71	70	43	41 68
	<i>Centaurea jacea</i>	E1	71	.	43	84 70
	<i>Cynosurus cristatus</i>	E1	67	10	14	23 28
	<i>Trifolium repens</i>	E1	58	50	14	16 .
	<i>Daucus carota</i>	E1	58	10	.	11 32
	<i>Lolium perenne</i>	E1	58	.	.	5 17
	<i>Tragopogon pratense</i> subsp. <i>orientalis</i>	E1	54	80	100	52 62
	<i>Festuca rubra</i>	E1	50	40	86	36 19
	<i>Crepis biennis</i>	E1	50	40	.	34 38
	<i>Lychnis flos-cuculi</i>	E1	38	.	14	23 4
	<i>Vicia cracca</i>	E1	38	90	.	77 91

Successive number (Zaporedna številka)	1	2	3	4	5	
<i>Veronica chamaedrys</i>	E1	38	70	71	45	13
<i>Campanula patula</i>	E1	33	30	29	27	32
<i>Taraxacum officinale</i>	E1	33	50	43	18	13
<i>Allium scorodoprasum</i>	E1	29	.	.	.	.
<i>Lathyrus pratensis</i>	E1	29	80	.	57	43
<i>Stellaria graminea</i>	E1	25	10	14	93	70
<i>Ajuga reptans</i>	E1	25	10	.	5	38
<i>Carum carvi</i>	E1	25	70	.	.	.
<i>Prunella vulgaris</i>	E1	21	20	.	64	40
<i>Poa trivialis</i>	E1	21	.	14	16	6
<i>Bellis perennis</i>	E1	21	.	.	93	30
<i>Vicia sepium</i>	E1	21	40	.	7	.
<i>Euphrasia rostkoviana</i>	E1	13	10	.	30	.
<i>Medicago sativa</i>	E1	13	10	.	.	4
<i>Achillea roseoalba</i>	E1	8	20	.	.	.
<i>Bromus hordeaceus</i>	E1	8	.	14	7	34
<i>Carex hirta</i>	E1	8	.	14	.	.
<i>Phleum pratense</i>	E1	8	.	.	18	62
<i>Agropyron repens</i>	E1	8	.	.	.	6
<i>Alchemilla xanthochlora</i>	E1	4	60	.	50	19
<i>Ornithogalum umbellatum</i>	E1	4	20	.	.	.
<i>Pastinaca sativa</i>	E1	4	40	.	5	87
<i>Alopecurus pratensis</i>	E1	4	.	29	20	11
<i>Festuca arundinacea</i>	E1	4	.	.	.	.
<i>Plantago major</i>	E1	4	.	.	2	4
<i>Trifolium campestre</i>	E1	4	.	.	11	23
<i>Alchemilla vulgaris</i>	E1	4	.	.	.	.
<i>Trifolium patens</i>	E1	4	.	.	.	.
<i>Veronica serpyllifolia</i>	E1	4	.	.	.	.
<i>Viola tricolor</i>	E1	.	30	.	7	2
<i>Agrostis stolonifera</i>	E1	.	10	.	.	.
<i>Orobanche minor</i>	E1	.	10	.	.	.
<i>Senecio gaudinii</i>	E1	.	10	.	.	.
<i>Moenchia mantica</i>	E1	.	.	14	.	.
<i>Senecio jacobea</i>	E1	.	.	14	.	.
<i>Symphytum officinale</i>	E1	.	.	14	.	100
<i>Astrantia major</i>	E1	.	.	.	61	2
<i>Deschampsia cespitosa</i>	E1	.	.	.	16	17
<i>Phleum phleoides</i>	E1	.	.	.	.	47
<i>Ranunculus repens</i>	E1	.	.	.	.	23
<i>Lolium multiflorum</i>	E1	.	.	.	.	4
MC <i>Molinietalia caeruleae</i>						
<i>Betonica officinalis</i>	E1	4	10	14	34	4
<i>Carex panicea</i>	E1	4	.	.	.	.
<i>Primula elatior</i>	E1	4	.	.	.	.

Successive number (Zaporedna številka)	1	2	3	4	5
<i>Primula x digenea</i>	E1	4	.	.	.
<i>Equisetum arvense</i>	E1	4	.	14	11
<i>Herminium monorchis</i>	E1	.	.	14	.
<i>Sanguisorba officinalis</i>	E1	.	.	14	.
<i>Cirsium oleraceum</i>	E1	.	.	.	75
<i>Inula salicina</i>	E1	.	.	.	23
<i>Valeriana officinalis</i>	E1	.	.	.	14
<i>Molinia caerulea</i>	E1	.	.	.	7
<i>Alchemilla glabra</i>	E1	.	.	.	5
<i>Succisa pratensis</i>	E1	.	.	.	5
PaT Poo alpinae-Trisetetalia					
<i>Anthoxanthum odoratum</i>	E1	71	50	71	80
<i>Agrostis capillaris</i>	E1	29	20	.	.
<i>Ranunculus nemorosus</i>	E1	13	.	.	.
<i>Trollius europaeus</i>	E1	.	70	.	16
<i>Poa alpina</i>	E1	.	10	.	5
<i>Campanula scheuchzeri</i>	E1	.	.	.	66
FB Festuco-Brometea					
<i>Briza media</i>	E1	50	50	57	91
<i>Polygala comosa</i>	E1	38	.	.	2
<i>Thymus pulegioides</i>	E1	38	20	.	48
<i>Bromopsis erecta</i>	E1	33	.	.	86
<i>Brachypodium rupestre</i>	E1	29	20	.	2
<i>Festuca rupicola</i>	E1	21	10	43	.
<i>Orobanche gracilis</i>	E1	21	10	.	.
<i>Arabis hirsuta</i>	E1	17	10	.	.
<i>Sanguisorba minor</i> s. lat.	E1	17	20	.	16
<i>Buphthalmum salicifolium</i>	E1	13	10	.	55
<i>Filipendula vulgaris</i>	E1	13	.	43	20
<i>Koeleria pyramidata</i>	E1	13	10	.	.
<i>Orchis ustulata</i>	E1	13	.	.	2
<i>Anthyllis vulneraria</i>	E1	8	.	.	61
<i>Centaurea scabiosa</i> s. lat.	E1	8	.	.	27
<i>Cirsium erisithales</i>	E1	8	10	.	.
<i>Galium verum</i>	E1	8	.	57	57
<i>Hieracium bauhini</i>	E1	8	.	14	5
<i>Knautia illyrica</i>	E1	8	.	.	.
<i>Orchis tridentata</i>	E1	8	.	.	.
<i>Peucedanum oreoselinum</i>	E1	8	.	71	.
<i>Ranunculus polyanthemophyllus</i>	E1	8	.	.	.
<i>Thlaspi praecox</i>	E1	8	.	.	.
<i>Campanula rapunculus</i>	E1	4	.	.	.
<i>Campanula glomerata</i>	E1	4	10	.	25
<i>Campanula rotundifolia</i>	E1	4	90	.	2
<i>Cirsium pannonicum</i>	E1	4	.	.	5

Successive number (Zaporedna številka)	1	2	3	4	5
<i>Danthonia alpina</i>	E1	4	.	.	.
<i>Euphorbia verrucosa</i>	E1	4	.	.	.
<i>Festuca valesiaca</i>	E1	4	.	.	.
<i>Genista tinctoria</i>	E1	4	.	.	.
<i>Gentianella ciliata</i>	E1	4	.	.	.
<i>Gymnadenia conopsea</i>	E1	4	10	.	39 6
<i>Helianthemum ovatum</i>	E1	4	.	.	30 9
<i>Medicago falcata</i>	E1	4	.	.	2 2
<i>Ononis spinosa</i>	E1	4	.	.	5 11
<i>Orchis morio</i>	E1	4	.	.	.
<i>Scabiosa triandra</i>	E1	4	.	.	14 4
<i>Gentianella germanica</i>	E1	.	10	.	9 .
<i>Thesium linophyllum</i>	E1	.	.	43	.
<i>Euphorbia cyparissias</i>	E1	.	.	14	34 4
<i>Prunella grandiflora</i>	E1	.	.	.	43 9
<i>Allium carinatum</i>	E1	.	.	.	32 11
<i>Cuscuta epythimum</i>	E1	.	.	.	25 9
<i>Dianthus hyssopifolius</i>	E1	.	.	.	25 .
<i>Asperula cynanchica</i>	E1	.	.	.	18 .
<i>Scabiosa columbaria</i>	E1	.	.	.	7 2
<i>Senecio integrifolius</i>	E1	.	.	.	7 .
<i>Carlina vulgaris</i>	E1	.	.	.	5 2
<i>Gentiana cruciata</i>	E1	.	.	.	5 .
<i>Melica ciliata</i>	E1	.	.	.	5 .
<i>Veronica teucrium</i>	E1	.	.	.	5 34
<i>Galium lucidum</i>	E1	.	.	.	.
<i>Centaurium erythraea</i>	E1	.	.	.	.
KC Koelerio-Corynophoretea					
<i>Arenaria serpyllifolia</i>	E1	8	.	.	.
<i>Sedum sexangulare</i>	E1	.	20	.	.
<i>Thlaspi perfoliatum</i>	E1	.	10	.	.
<i>Dianthus deltoides</i>	E1	.	.	14	.
<i>Poa compressa</i>	E1	.	.	14	.
<i>Petrorhagia saxifraga</i>	E1	.	.	.	11 4
<i>Sedum reflexum</i>	E1	.	.	.	.
ES Elyno-Seslerietea					
<i>Scorzonera rosea</i>	E1	.	10	.	.
<i>Acinos alpinus</i>	E1	.	10	.	.
<i>Betonica alopecurus</i>	E1	.	10	.	.
<i>Carduus defloratus</i>	E1	.	10	.	20 .
<i>Euphrasia picta</i>	E1	.	10	.	20 .
<i>Galium anysophyllum</i>	E1	.	10	.	.
<i>Phyteuma orbiculare</i>	E1	.	10	.	.
<i>Biscutella laevigata</i>	E1	.	.	.	48 .
<i>Polygonum viviparum</i>	E1	.	.	.	16 2
<i>Ranunculus carinthiacus</i>	E1	.	.	.	34 .

Successive number (Zaporedna številka)	1	2	3	4	5
<i>Ranunculus montanus</i>	E1	.	.	7	.
<i>Rhinanthus glacialis</i>	E1	.	.	5	.
<i>Knautia longifolia</i>	E1	.	.	5	2
CD <i>Caricetalia davallianae</i>					
<i>Tofieldia calyculata</i>	E1	.	.	32	.
<i>Astrantia carniolica</i>	E1	.	.	16	.
<i>Parnassia palustris</i>	E1	.	.	7	.
CU <i>Calluno-Ulicetea</i>					
<i>Luzula campestris</i>	E1	45	.	71	66 30
<i>Rhinanthus minor</i>	E1	42	10	57	.
<i>Carex pallescens</i>	E1	21	.	.	18 4
<i>Veronica officinalis</i>	E1	8	.	.	2 .
<i>Chamaespartium sagittale</i>	E1	4	.	29	5 9
<i>Festuca filiformis</i>	E1	4	.	.	.
<i>Phyteuma zahlbruckneri</i>	E1	4	30	.	32 4
<i>Polygala vulgaris</i>	E1	4	.	.	30 19
<i>Potentilla erecta</i>	E1	4	10	14	82 17
<i>Galium pumilum</i>	E1	.	20	.	.
<i>Luzula multiflora</i>	E1	.	20	.	.
<i>Rumex acetosella</i>	E1	.	.	29	52 28
<i>Carex leporina</i>	E1	.	.	14	.
<i>Hypochoeris radicata</i>	E1	.	.	14	.
<i>Arnica montana</i>	E1	.	.	.	18 .
<i>Leontodon helveticus</i>	E1	.	.	.	16 4
<i>Nardus stricta</i>	E1	.	.	.	7 38
<i>Holcus mollis</i>	E1	.	.	.	7 4
<i>Carex pilulifera</i>	E1	.	.	.	7 .
<i>Campanula barbata</i>	E1	.	.	.	5 .
<i>Antennaria dioica</i>	E1	.	.	.	2 .
<i>Calluna vulgaris</i>	E1	.	.	.	2 .
TG <i>Trifolio-Geranietea</i>					
<i>Dianthus barbatus</i>	E1	13	30	.	2 2
<i>Viola hirta</i>	E1	13	.	.	.
<i>Astragalus glycyphyllos</i>	E1	8	.	.	.
<i>Campanula rapunculoides</i>	E1	8	.	.	2
<i>Hypericum perforatum</i>	E1	8	10	14	18 26
<i>Lilium bulbiferum</i>	E1	4	10	.	11 2
<i>Thalictrum minus</i>	E1	4	.	.	.
<i>Verbascum nigrum</i>	E1	4	.	.	.
<i>Vicia incana</i>	E1	.	40	.	.
<i>Annathericum ramosum</i>	E1	.	10	.	20 4
<i>Vicia sylvatica</i>	E1	.	10	.	.
<i>Hieracium umbellatum</i>	E1	.	.	14	.
<i>Trifolium alpestre</i>	E1	.	.	.	75 21
<i>Trifolium medium</i>	E1	.	.	.	70 83

Successive number (Zaporedna številka)		1	2	3	4	5
	<i>Laserpitium latifolium</i>	E1	.	.	14	6
	<i>Vincetoxicum hirsundinaria</i>	E1	.	.	14	.
	<i>Lilium carnolicum</i>	E1	.	.	7	.
	<i>Origanum vulgare</i>	E1	.	.	5	4
	<i>Polygonatum odoratum</i>	E1	.	.	5	.
	<i>Trifolium rubens</i>	E1	.	.	5	.
MuA	Mulgedio-Aconitetea					
	<i>Veratrum album</i> subsp. <i>lobelianum</i>	E1	4	.	11	2
	<i>Carduus carduelis</i>	E1	.	.	34	.
	<i>Chaerophyllum aureum</i>	E1	.	70	.	.
	<i>Chaerophyllum hirsutum</i>	E1	.	70	14	9
	<i>Geranium sylvaticum</i>	E1	.	60	.	.
	<i>Hypericum maculatum</i>	E1	.	10	.	.
	<i>Lathyrus occidentalis</i>	E1	.	10	.	.
	<i>Phyteuma ovatum</i>	E1	.	10	45	9
	<i>Silene dioica</i>	E1	.	10	.	.
	<i>Thalictrum aquilegifolium</i>	E1	.	.	5	.
EA	Epilobietea angustifolii					
	<i>Carex muricata</i>	E1	4	.	.	.
	<i>Cirsium arvense</i>	E1	4	.	2	4
	<i>Fragaria vesca</i>	E1	.	.	14	.
	<i>Carex spicata</i>	E1	.	.	5	.
GU	Galio-Urticetea					
	<i>Aegopodium podagraria</i>	E1	4	20	.	.
	<i>Lamium album</i>	E1	.	20	.	.
	<i>Cirsium eriophorum</i>	E1	.	.	2	4
	<i>Salvia verticillata</i>	E1	.	.	2	6
SM	Stellarietea mediae					
	<i>Erigeron annuus</i>	E1	28	.	29	7
	<i>Myosotis arvensis</i>	E1	24	.	.	.
	<i>Veronica arvensis</i>	E1	20	10	29	.
	<i>Convolvulus arvensis</i>	E1	8	.	2	32
	<i>Silene latifolia</i> subsp. <i>alba</i>	E1	8	10	.	.
	<i>Rumex obtusifolius</i>	E1	4	.	14	7
	<i>Vicia hirsuta</i>	E1	4	10	.	.
	<i>Vicia sativa</i>	E1	.	10	.	.
	<i>Capsella bursa-pastoris</i>	E1	.	.	14	30
	<i>Vaccaria pyramidata</i>	E1	.	.	2	4
	<i>Poa annua</i>	E1	.	.	.	32
	<i>Potentilla reptans</i>	E1	.	.	.	60
EP	Erico-Pinetea					
	<i>Aquilegia atrata</i>	E1	.	30	.	.
	<i>Knautia ressmannii</i>	E1	.	10	.	.
	<i>Polygala chamaebuxus</i>	E1	.	.	.	6

Successive number (Zaporedna številka)		1	2	3	4	5	
VP	Vaccinio-Piceetea						
	<i>Deschampsia flexuosa</i>	E1	.	.	43	19	
	<i>Luzula luzuloides</i>	E1	.	.	14	.	
	<i>Maianthemum bifolium</i>	E1	.	.	9	.	
	<i>Calamagrostis arundinacea</i>	E1	.	.	7	4	
	<i>Gentiana asclepiadea</i>	E1	.	.	5	2	
	<i>Luzula luzulina</i>	E1	.	.	5	.	
FS	Fagetalia sylvaticae						
	<i>Knautia drymeia</i>	E1	21	.	77	87	
	<i>Carex sylvatica</i>	E1	8	.	.	.	
	<i>Phyteuma spicatum</i> subsp. <i>coeruleum</i>	E1	4	.	.	.	
	<i>Campanula trachelium</i>	E1	.	10	9	6	
	<i>Lilium martagon</i>	E1	.	10	.	.	
	<i>Helleborus niger</i>	E1	.	.	9	.	
	<i>Melica nutans</i>	E1	.	.	7	2	
QF	Quercu-Fagetea						
	<i>Cruciata glabra</i>	E1	21	20	29	80	23
	<i>Carex flacca</i>	E1	13	.	27	17	
	<i>Listera ovata</i>	E1	8	10	5	.	
	<i>Dactylorhiza fuchsii</i>	E1	4	.	18	.	
	<i>Ornithogalum pyrenaicum</i>	E1	4	.	.	.	
	<i>Primula vulgaris</i>	E1	4	.	32	4	
	<i>Aquilegia vulgaris</i>	E1	.	20	16	.	
	<i>Primula veris</i>	E1	.	20	5	.	
	<i>Crocus vernus</i>	E1	.	.	38	89	
	<i>Melampyrum pratense</i>	E1	.	.	11	.	
	<i>Serratula tinctoria</i>	E1	.	.	5	.	
	<i>Chamaecytisus supinus</i>	E1	.	.	5	.	
O	Other species (Druge vrste)						
	<i>Agrostis</i> sp.	E1	4	.	.	.	
	<i>Alchemilla</i> sp.	E1	4	.	.	.	
	<i>Knautia</i> sp.	E1	4	.	.	.	
	<i>Orobanche</i> sp.	E1	4	.	11	9	
	<i>Achillea</i> sp.	E1	.	.	30	9	
	<i>Sedum</i> sp.	E1	.	.	23	.	
	<i>Aquilegia</i> sp.	E1	.	.	7	.	

Legend - LegendaRfT *Rhinantho freynii-Trisetetum*, this article (ta članek);CcA *Centaureo carnoliccae-Arrhenatheretum* f. *montana*, Poldini and Oriolo 1994, Table 1, rel. 13-22;RbA – *Ranunculo bulbosi-Arrhenatheretum*, Čarni 2003, Table 1, rel. 1-7;AT – *Astrantio-Trisetetum*, Petras Sackl et al. 2012, Table 1;PA - *Pastinaco-Arrhenatheretum*, Petras Sackl et al. 2012, Table 2.

DS Dakskobler, Seliškar

PO Poldini, Oriolo

Č Čarni

PS Petras Sackl et al.

Table 3: Phytosociological structure of *Trisetum flavescens* and *Arrhenatherum elatius* dominating (sub)montane grasslands in Slovenia and NE Italy (relative frequencies)

Preglednica 3: Sestava po diagnostičnih vrstah v (sub)montanskih travnikih s prevladujočima vrstama *Trisetum flavescens* in *Arrhenatherum elatius* v Sloveniji in severovzhodni Italiji (relativne frekvence)

Successive number (Zaporedna številka)	1	2	3	4	5
Number of relevés (Število popisov)	24	10	7	44	47
Sign for the syntaxa (Oznaka sintaksonov)	RfT	CcA	RbA	AT	PA
Author (Avtor)	DS	PO	Č	PS	PS
<i>Molinio-Arrhenatheretea</i>	62	59	60	40	58
<i>Molinietalia caeruleae</i>	1,9	2,8	2,1	4,3	1,1
<i>Poo alpinae-Trisetetalia</i>	2,7	3,5	2,6	3,2	1,9
<i>Festuco-Brometea</i>	22	16	20	24	18
<i>Koelerio-Corynophoretea</i>	0,2	0,7	1,6	0,2	0,4
<i>Elyno-Seslerietea, Caricetalia davallianae</i>	0,1	1,6	0	4,1	0,1
<i>Calluno-Ulicetea</i>	3,2	2,1	8,5	6,8	4
<i>Trifolio-Geranietea</i>	1,8	3,1	1	5,1	4,1
<i>Mulgedio-Aconitetea</i>	0,1	5,6	0	2,1	0,5
<i>Epilobietea angustifolii</i>	0,3	0,9	0,5	0,1	0,1
<i>Stellarietea mediae, Galio-Urticetea</i>	2,6	1,9	2,7	0,7	5,2
<i>Vaccinio-Piceetea, Erico-Pinetea</i>	0	0,9	0	1,6	0,8
<i>Fagetalia sylvaticae</i>	0,9	0,5	0	2	2,4
<i>Quercu-Fagetea</i>	1,2	1,6	1,1	4,7	3,4
Other species (Druge vrste)	0,4	0	0	1,4	0,5
Skupaj (Total)	100	100	100	100	100

Legend - Legenda

See Table 2 (glej preglednico 2)