

PHYTOSOCIOLOGICAL DESCRIPTION OF ALTIMONTANE BEECH FOREST ON THE SOUTHEASTERN EDGE OF THE TRNOVSKI GOZD AND NANOS PLATEAUS (SOUTHWESTERN SLOVENIA)

FITOCENOLOŠKA OZNAKA ALTIMONTANSKEGA BUKOVEGA GOZDA NA JUGOVZHODNEM ROBU TRNOVSKEGA GOZDA IN NANOSA (JUGOZAHODNA SLOVENIJA)

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ABSTRACT

Phytosociological description of altimontane beech forest on the southeastern edge of the Trnovski gozd and Nanos plateaus (southwestern Slovenia)

We conducted a phytosociological study into altimontane beech and beech-maple stands on the peaks of the southeastern part of the Trnovski gozd plateau (Moščeniški hrib = Moščanarski hrib, Marni vrh, Križna gora, Špičasti vrh, Špik, Javornik) and the Nanos plateau (vicinity of Pleša) and compared their floristic composition with the floristic composition of similar communities that were described in Slovenia and belong to the associations *Isopyro-Fagetum*, *Stellario montanae-Fagetum* and *Ranunculo platanifolii-Fagetum*. Based on these comparisons we classify them into the association *Isopyro-Fagetum*, into the new geographical variant named after the species *Cardamine pentaphyllos* and into two new subassociations, *-scopolietosum carniolicae* and *-stellarietosum montanae*. Montane beech forests in the sinkholes of the Kalski gozd forest (the northeastern part of the Banjšice plateau), whose floristic composition is similar to the studied forests, especially in the occurrence of spring geophytes, are classified into the new subassociation *Lamio orvalae-Fagetum stellarietosum montanae*.

Key words: phytosociology, synsystematics, *Isopyro-Fagetum*, *Lamio orvalae-Fagetum*, Trnovski gozd, Nanos, Banjšice, Slovenia

IZVLEČEK

Fitocenološka oznaka altimontanskega bukovega gozda na jugovzhodnem robu Trnovskega gozda in Nanosa (jugozahodna Slovenija)

Fitocenološko smo preučili altimontanske bukove in bukovo-javorove sestoje na vrhovih v jugovzhodnem delu Trnovskega gozda (Moščeniški hrib = Moščanarski hrib, Marni vrh, Križna gora, Špičasti vrh, Špik, Javornik) in Nanosa (okolica Pleše) in njihovo floristično sestavo primerjali s floristično sestavo podobnih v Sloveniji opisanih fitocenoz iz asociacij *Isopyro-Fagetum*, *Stellario montanae-Fagetum* in *Ranunculo platanifolii-Fagetum*. Na podlagi teh primerjav jih uvrščamo v asociacijo *Isopyro-Fagetum*, v novo geografsko varianto, imenovano po vrsti *Cardamine pentaphyllos* in v dve novi subasociaciji *-scopolietosum carniolicae* in *-stellarietosum montanae*. Njim po floristični sestavi, še posebej spomladanskih geofitih, podobne montanske bukove gozdove v vrtačah Kalskega gozda (severovzhodni del planote Banjšice), uvrščamo v novo subasociacijo *Lamio orvalae-Fagetum stellarietosum montanae*.

Ključne besede: fitocenologija, sinsistematika, *Isopyro-Fagetum*, *Lamio orvalae-Fagetum*, Trnovski gozd, Nanos, Banjšice, Slovenija

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1 INTRODUCTION

While the forest vegetation of the Trnovski gozd plateau has been relatively well researched (ZUPANČIČ 1967, 1969, 1980, 1999, 2012, PUNCER 1979, MARINČEK 1996, 1998, MARINČEK & ČARNI 2010, MARINČEK et al. 1993, SURINA 2002, SURINA & DAKSKOBLER 2013, DAKSKOBLER, URBANČIČ & A. WRABER 2000, DAKSKOBLER 1997, 2003), the Nanos plateau, although a subject of some of the listed publications, has not been studied as much. Beech forest syntaxa described or mentioned for this area include: *Seslerio autumnalis-Fagetum*, *Lamio orvalae-Fagetum*, *Omphalodo-Fagetum*, *Ranunculo platanifolii-Fagetum*, *Stellario montanae-Fagetum* (*Stellario glochidispermae-Fagetum*) and *Polysticho lonchitis-Fagetum*. Stands of all listed communities were detected and recorded also during our previous research of forest vegetation on the Trnovski gozd plateau. In recent years, Idrian botanists (R. Terpin, A. Vončina) told us about the beech stands in the belt extending from Javornik past Kanji Dol, Strmec and Mrzli Log to Križna Gora which are special for the

abundance of geophytes in the herb layer (*Leucojum vernum*, *Galanthus nivalis*, *Allium usinum*, *Corydalis cava*, *C. solida*, *Scopolia carniolica*, *Scilla bifolia*, *Gagea lutea*, *Anemone ranunculoides*) in the early spring (April, early May) – see also DAKSKOBLER, TERPIN & VONČINA (2010: 83). These forest stands usually grow on sunny, gentle to moderately steep, gullied and very rocky slopes or on top areas of hills, at elevations ranging between 950 m to 1250 m (rarely higher, up to 1350 m a.s.l.). The geological bedrock is limestone, dolomite limestone or dolomite, the soil is shallow, fresh, rendzina, brown rendzina, rarely also brown calcareous soils (Chromic Cambisols). Beech is the dominant species in the tree layer; also frequent is sycamore maple (*Acer pseudoplatanus*), in places also European ash (*Fraxinus excelsior*) and wych elm (*Ulmus glabra*). Norway spruce (*Picea abies*) and silver fir (*Abies alba*) occur only sporadically as individual specimens. We made a total of 84 relevés that unequivocally characterise altimontane beech stands on calcareous bedrock and compared

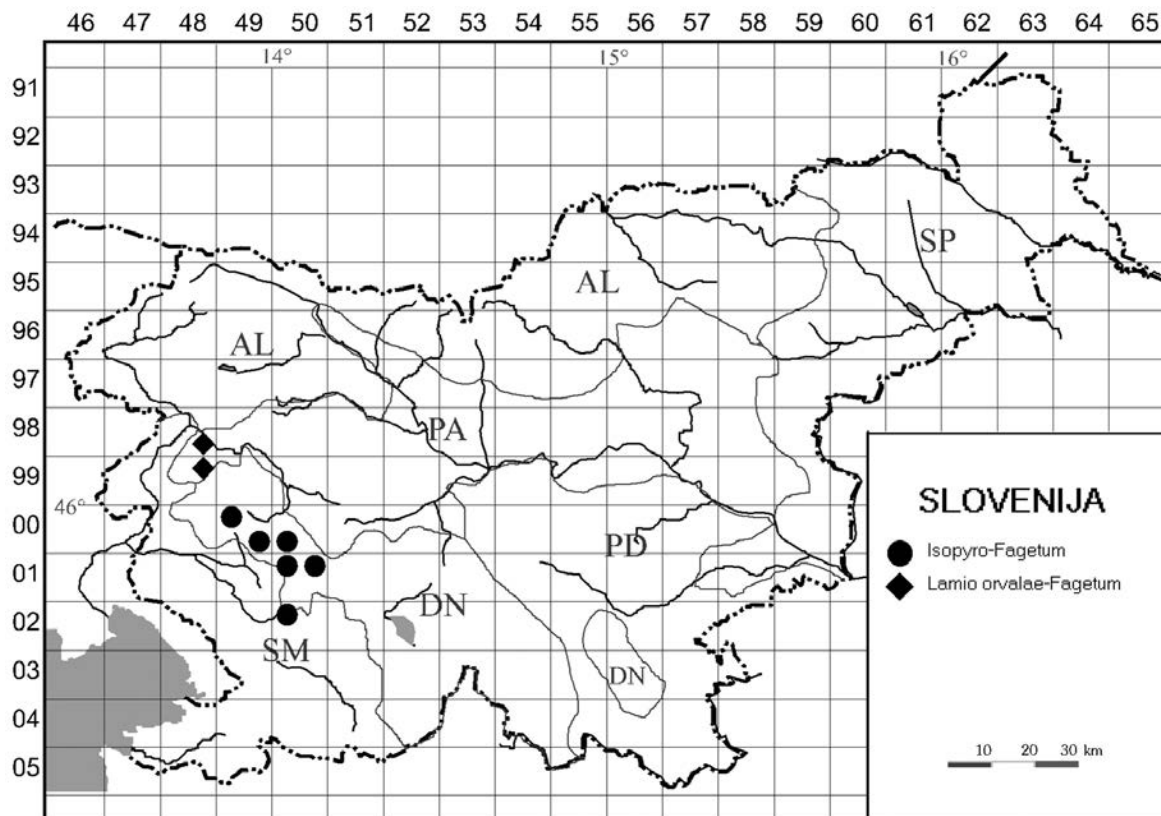


Figure 1: Approximate localities of the researched beech stands on the map of Slovenia
Slika 1: Približna nahajališča preučevanih bukovih sestojev na zemljevidu Slovenije

these stands with similar beech and beech-maple communities described at this elevation belt from the Illyrian alliance *Aremonio-Fagion* and from the associations *Isopyro-Fagetum*, *Ranunculo platanifolii-Fagetum* and *Stellario montanae-Fagetum*. Having estimated the diagnostic species and conducted the hierarchical classification we aimed to select the most suitable syntaxonomic designation and rank for the described

stands. Due to the similarities in the herb layer they were compared also to the montane beech forest on the slightly lower high-karst plateau of Banjšice (*Lamio orvalae-Fagetum stellarietosum*) in order to establish the differences and similarities between them; this forest had already been studied some time ago, but we have not, until now, validly published the results.

2 METHODS

Beech stands on the Banjšice, Trnovski gozd and Nanos plateaus (Figure 1) were studied applying the Central-European phytosociological method (BRAUN-BLANQUET 1964). In order to obtain the best possible floristic inventory the majority of relevés were made twice, in spring and in early summer. The relevés were entered into the FloVegSi database (T. SELIŠKAR, VREŠ & A. SELIŠKAR 2003). Combined cover-abundance values were transformed into ordinal values 1–9 (van der MAAREL 1979). Numerical comparisons were conducted with the software package SYN-TAX (PODANI 2001). Relevés were arranged into analytic tables based on hierarchical classification. We integrated the results of the (unweighted) pair group method with arithmetic mean “(Unweighted) average linkage” – UPGMA, where we applied Wishart’s similarity ratio. Phytosociological groups (= groups of diagnostic species) were formed on the basis of our own criteria, but with consideration of several authors. The floristic composition of the studied beech stands was compared to the floristic composition of similar altimontane beech communities in Slovenia. In our comparison we applied the hierarchical classification and two-dimensional ordination (principal coordinates analysis, PCoA, similarity ratio) and analysis of the proportion of diagnostic species of syntaxonomical groups. The nomenclature source for the names of vascular plants is MARTINČIČ & al. (2007), MARTINČIČ (2003, 2011) for names of mosses, SUPPAN, PRÜGGER & MAYRHOFER (2000) for the names of lichens and URBANČIČ et al. (2005) for the names of soil types. The nomenclature source for the names of syntaxa are ŠILC & ČARNI (2012), with the exception of the name of the class *Quercio-Fagetea* Braun-Blanquet et Vlieger in Vlieger 1937.

2.1 Ecological description of the study area

Beech stands were recorded on sunny slopes of Moščenški (Moščanarski) hrib (1356 m) above Pred-

meja, under Marni vrh (1080 m) and under Vrh Hoje (1105 m) above Otlica (these two sites were the most remote into the interior of the plateau), under Veliki Kamen (1076 m) and Mali Kamen (1045 m) above Križna gora, under Križna gora above Col (957 m), on the hills between Mrzli Log, Zadlog and Črni Vrh (Brkovnik, Špičasti vrh – 1128 m, Špik – 1068 m), under the ridge of Javornik (1240 m) above Kanji Dol and on the southeastern rim of Nanos around Pleša (1262 m) – Figure 2. The geological bedrock of the research area consists of Jurassic limestones and dolomites (Trnovski gozd) and of Cretaceous limestones with dolomite intercalations (Nanos) – BUSER (1973, 2009), JANEŽ et al. (1997); the predominating soil types are rendzina and brown calcareous soil (LOVRENČAK 1998, PRUS, in litt.). The climate is temperate continental, with mean annual temperature of 6 °C to 7 °C (CEGNAR 1998) and mean annual precipitation of between 2000 mm and 2200 mm, which decreases considerably on the rims of the Nanos plateau (B. ZUPANČIČ 1995, 1998). The vegetation, including secondary meadows and pastures on the southern rims of the Trnovski gozd and Nanos plateaus, is still heavily influenced by the sub-Mediterranean climate. The wind (bora) and snow are important climatic factors. As a rule, strong winds make the snow cover very uneven (high snow drifts accumulating on leeward slopes, wind-eroded areas on ridges) and the trees on peaks and ridges remain low and grouped in clusters due to the strong bora wind that blows there. The prevailing vegetation on the southern rims of the Trnovski gozd and Nanos plateaus is beech forest. In slightly lower areas between 800 m and 1000 m it is classified into the associations *Seslerio autumnalis-Fagetum* and *Lamio orvalae-Fagetum*, and at elevations exceeding 1000 m mainly into the association *Ranunculo platanifolii-Fagetum*. The Dinaric fir-beech forest (*Omphalodo-Fagetum*) is the predominating community in the interior of both plateaus.



Figure 2: Localities of researched montane and altimontane beech stands in Kalski gozd, on the Trnovski gozd and Nanos plateaus

Slika 2: Nahajališča raziskovanih montanskih in altimontanskih bukovih gozdov v Kalskem gozdu, Trnovskem gozdu in na Nanosu

3 RESULTS AND DISCUSSION

3.1 Altimontane beech forest on the southeastern border of the Trnovski gozd and Nanos plateaus

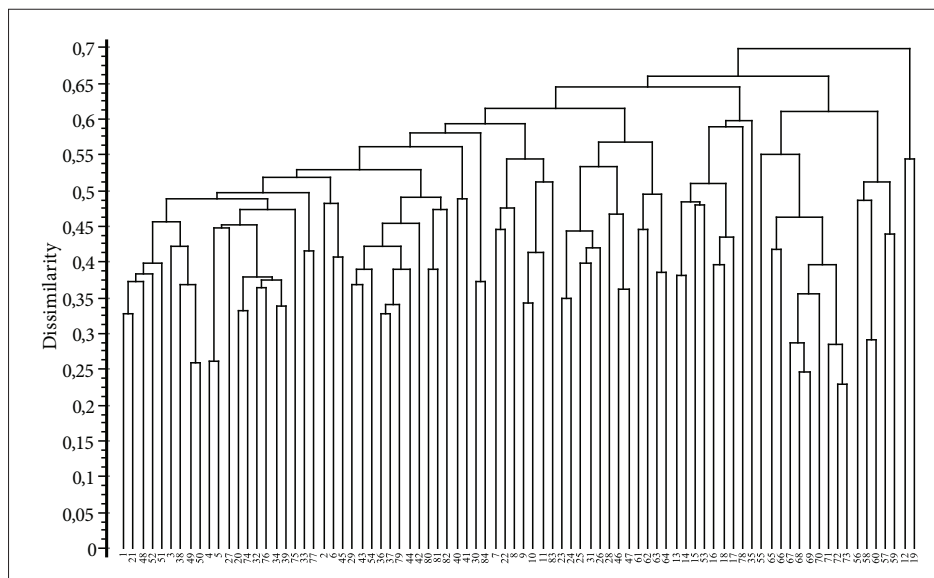


Figure 3: Dendrogram of relevés of altimontane beech stands on the southeastern border of the Trnovski gozd and Nanos plateaus (UPGMA, similarity ratio)

Slika 3: Dendrogram popisov altimontanskih bukovih sestojev na jugovzhodnem robu Trnovskega gozda in Nanosa (UPGMA, similarity ratio)

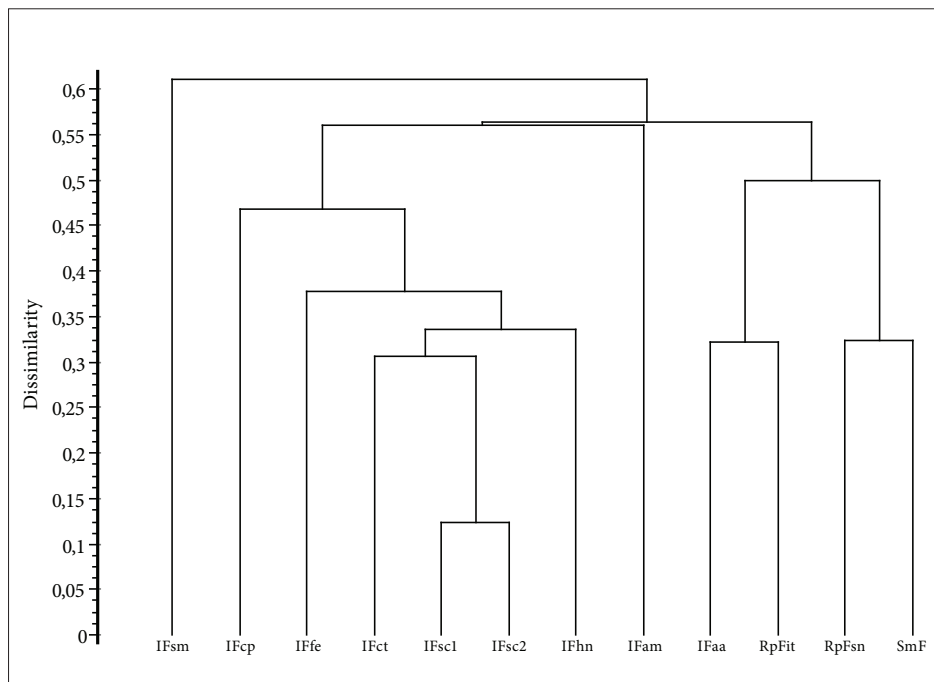


Figure 4: Dendrogram of stands of the associations *Isopyro-Fagetum*, *Ranunculo platanifolii-Fagetum* and *Stellario montanae-Fagetum* in Slovenia (UPGMA, similarity ratio)

Slika 4: Dendrogram sestojev asociacij *Isopyro-Fagetum*, *Ranunculo platanifolii-Fagetum* in *Stellario montanae-Fagetum* v Sloveniji (UPGMA, similarity ratio)

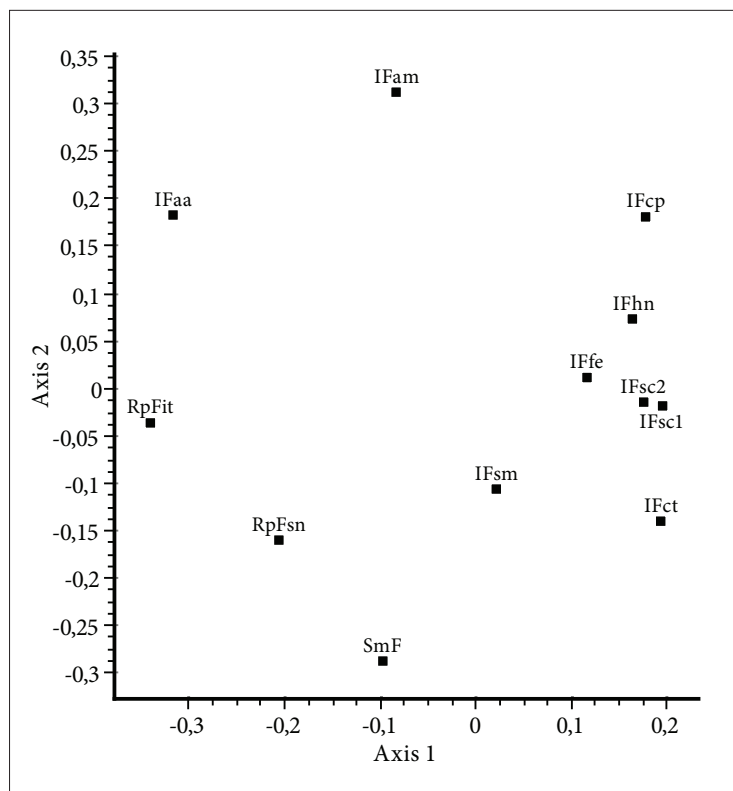


Figure 5: Two-dimensional scatter diagram of stands of the associations *Isopyro-Fagetum*, *Ranunculo platanifolii-Fagetum* and *Stellario montanae-Fagetum* in Slovenia (PCoA, similarity ratio)

Slika 5: Dvorazsežni ordinacijski diagram sestojev asociacij *Isopyro-Fagetum*, *Ranunculo platanifolii-Fagetum* in *Stellario montanae-Fagetum* v Sloveniji (PCoA, similarity ratio)

Legend to Figures 4 and 5:

- 1 IFsm *Isopyro-Fagetum stellarietosum montanae*, Trnovski gozd
- 2 IFcp *Isopyro-Fagetum* var. *Cyclamen purpurascens*, Trnovski gozd
- 3 IFfe *Isopyro-Fagetum* var. *Fraxinus excelsior*, Nanos
- 4 IFct *Isopyro-Fagetum scopolietosum* var. *Cardamine trifolia*, Trnovski gozd
- 5 IFsc1 *Isopyro-Fagetum scopolietosum*, Trnovski gozd
- 6 IFsc2 *Isopyro-Fagetum scopolietosum* var. *Campanula latifolia*, Trnovski gozd
- 7 IFhn *Isopyro-Fagetum scopolietosum* var. *Helleborus niger*, Trnovski gozd
- 8 IFam *Isopyro-Fagetum* var. *Arum maculatum*, KOŠIR (1979)
- 9 IFaa *Isopyro-Fagetum* var. *Adenostyles alliariae*, KOŠIR (1979)
- 10 RpFit *Ranunculo platanifolii-Fagetum* var. geogr. *Isopyrum thalictroides* (MARINČEK & ČARNI 2010)
- 11 RpFsn *Ranunculo platanifolii-Fagetum* var. geogr. *Calamintha grandiflora stellarietosum nemorum*, MARINČEK & ČARNI (2010)
- 12 SmF *Stellario montanae-Fagetum*, ZUPANČIČ (2012)

In terms of floristic similarity the recorded beech stands formed several groups (Figure 3) and based on this criterion they were arranged mainly in analytical tables. The differences are mainly in the presence and medium coverage of certain species (*Leucojum vernum*, *Galanthus nivalis*, *Allium ursinum*, *Corydalis solida*, *Scopolia carniolica*, *Lunaria rediviva*), partly also in the geological bedrock (dolomite or limestone) and in the presence of some frigidophilous species of spruce forests (see Tables 1, 2, 3 and 5). We made a synthetic table (Table 4) where we grouped our relevés into seven

groups, to which we added five columns. These five columns demonstrate the floristic composition of the syntaxa that are, according to our findings, the most similar to the stands on the southern edge of the Trnovski gozd plateau. The comparison comprised the following syntaxa: *Isopyro-Fagetum* var. *Arum maculatum* (KOŠIR 1979, Table 4), *Isopyro-Fagetum* var. *Adenostyles alliariae* (KOŠIR 1979, Tab. 7), *Ranunculo platanifolii-Fagetum* var. geogr. *Isopyrum thalictroides*

(MARINČEK 2004, Table 1, MARINČEK & ČARNI 2010, Table 10), *Ranunculo platanifolii-Fagetum* var. geogr. *Calamintha grandiflora stellarietosum nemorum* (MARINČEK & ČARNI 2010, Table 7) and *Stellario montanae-Fagetum* (ZUPANČIČ 2012, Table 1, columns 1 to 16). Thus we obtained a table with 12 columns which we compared using hierarchical classification and two-dimensional ordination (Figures 4 and 5). With the exception of one group (the relevés under Moščenški hrib, which are specific both in terms of floristics and stands), the researched stands from the Trnovski gozd and Nanos plateaus grouped separately from other compared syntaxa. The stands of the syntaxa *Stellario montanae-Fagetum* and *Ranunculo-Fagetum stellarietosum nemorum*, and the stands of the syntaxa *Isopyro-Fagetum* var. *Adenostyles alliariae* and *Ranunculo-Fagetum* var. geogr. *Isopyrum thalictroides* are relatively similar. The most similar to the stands from the southern edge of the Trnovski gozd plateau are the stands of the syntaxon *Isopyro-Fagetum* var. *Arum maculatum*. The comparison clearly indicates a group of very similar Illyrian altimontane beech communities on calcareous bedrock and their floristic composition allows for the possibility that they could be classified into all three compared associations – *Isopyro-Fagetum*, *Ranunculo-Fagetum* and (or) *Stellario-Fagetum*. We compared the presence of diagnostic species of the listed associations in the studied communities. KOŠIR (1979) lists *Isopyrum thalictroides*, *Corydalis cava*, *Ribes uva-crispa* and *Rumex arifolius* as character species of the association *Isopyro-Fagetum*, while the differential species of this association comprise, among others, *Scilla bifolia*, *Veratrum album*, *Adoxa moschatellina*, *Polygonatum verticillatum*, *Anemone ranunculoides*, *Chrysosplenium alternifolium*, *Stellaria montana*, *Gagea lutea*, *Arum maculatum* and *Adenostyles alliariae*. Most of the listed species occur also in the researched stands. *Adenostyles alliariae* and *Chrysosplenium alternifolium* are very rare. We also did not record *Ribes uva-crispa* and *Scrophularia vernalis*, but these two species are not frequent in Košir's relevés either (frequency under 50%). In our opinion, the diagnostic value of some of the listed species is in that they characterise the altimontane belt and usually occur in all of the compared altimontane beech communities (e.g. *Veratrum album* and *Polygonatum verticillatum*). ZUPANČIČ (2012) is of the same opinion. MARINČEK & ČARNI (2010) list the following species as diagnostic for the syntaxon *Ranunculo-Fagetum* var. geogr. *Calamintha grandiflora stellarietosum nemorum*: *Polygonatum verticillatum*, *Ranunculus platanifolius*, *Adenostyles glabra* (character and differential species of the association), *Aremonia agrimonoides*, *Cal-*

mintha grandiflora (geographical differential species), *Oxalis acetosella*, *Stellaria nemorum*, *Cardamine bulbifera*, *Galium odoratum*, *Adenostyles alliariae*, *Ranunculus lanuginosus*, *Doronicum austriacum* (differential species of lower units). The diagnostic value of character species of the association is low, as they are found in most altimontane beech communities. *Stellaria nemorum* was not recorded among the differential species of lower units in the studied stands, but we did record a similar species, *S. montana*. It is possible that in the relevés made by Marinček and published by MARINČEK & ČARNI (ibid.) *S. montana* also occurs alongside *S. nemorum*. MARINČEK & ČARNI (2010) list the following species as diagnostic for the syntaxon *Ranunculo-Fagetum* var. geogr. *Isopyrum thalictroides*: *Isopyrum thalictroides*, *Adenostyles alliariae*, *Leucojum vernum*, *Ranunculus ficaria*, *Crocus vernus*, *Corydalis cava* and *Veronica montana*. In the studied stands, *Ranunculus ficaria* was not recorded among the diagnostic species and *Veronica montana* occurred very rarely. ZUPANČIČ (2012) selected *Stellaria montana*, *Polystichum aculeatum* and *Cardamine pentaphyllos* as character species of the association *Stellario montanae-Fagetum*, and *Acer pseudoplatanus*, *Scrophularia nodosa* and *Corydalis cava* as the differential species. All these species occur also in the studied phytocoenoses. We find that in terms of floristic similarity these do not group together with the relevés of the syntaxa *Stellario-Fagetum* and *Ranunculo-Fagetum stellarietosum nemorum* that originate from the same phytogeographical region, but show a certain similarity with the syntaxon *Isopyro-Fagetum* var. *Arum maculatum* from the pre-Dinaric phytogeographical region. This similarity is grounded in ecological characteristics. In either case this means mountain tops and frequently sunny rather than shady rocky slopes under hills, in our case on the Primorska (littoral) side of the high-karst plateaus of Trnovski gozd and Nanos. The soil is shallow, but fresh and nutrient rich, mainly rendzina. The spring aspect is characterised by numerous geophytes. The association *Isopyro-Fagetum* must be given priority also because it was described much earlier (KOŠIR 1962) than the associations *Ranunculo-Fagetum* and *Stellario-Fagetum*. According to our findings the stands of the association *Isopyro-Fagetum* therefore occur also in the northwestern part of the Dinaric phytogeographical region, in the belt of zonal altimontane beech forests from the association *Ranunculo platanifolii-Fagetum*, with which they sometimes come in contact. Transitions between them are also possible, as demonstrated in relevés 1 to 7 in Table 2, and they could be classified, based on floristic composition, also into the association *Ranunculo platanifolii-Fagetum*. In

our opinion, diagnostic species of the association *Iso-pyro-Fagetum* comprise *Iso-pyrum thalictroides*, *Corydalis cava*, *C. solida*, *Anemone ranunculoides*, *Scilla bifolia*, *Gagea lutea*, *Allium ursinum*, *Leucojum vernalis*, *Galanthus nivalis* (the studied stands are dominated by the form *Galanthus nivalis* forma *Sortež* – BAVCON 2008: 21–22), *Arum maculatum* and *Scrophularia vernalis*. The joint occurrence of the listed species along with the presence of certain diagnostic species of altimontane beech forests (*Ranunculus platanifolius*, *Polygonatum verticillatum*, *Veratrum album* s. lat.) indicates special site conditions (sufficient moisture and warmth) on the hills on the Primorska (littoral) side of the Dinaric high-karst plateaus and on top areas of hills in the pre-Dinaric region. Floristically, the joint occurrence of the listed geophytes quite clearly differentiates these stands from similar phytocoenoses from the associations *Ranunculo platanifolii-Fagetum* and *Stellario montanae-Fagetum*. On the Trnovski gozd plateau, the beech-maple community from the association *Stellario montanae-Fagetum* is distributed in the interior of the plateau, in a colder and moister local climate, which is demonstrated also in its composition by groups of diagnostic species, with a relatively large proportion of species of spruce forests (*Vaccinio-Piceetea*) and tall herbs (*Mulgedio-Aconitetea*) – column 9 in Table 5.

In terms of phytogeography, the studied stands from the Trnovski gozd plateau are classified into the new, northwestern-Dinaric geographical variant *Iso-pyro-Fagetum* var. *geogr. Cardamine pentaphyllos*. Its differential species are *Cardamine pentaphyllos*, *Scopolia carniolica*, *Rhamnus fallax* and *Aconitum degenii* subsp. *paniculatum*, but *Lunaria rediviva* and *Campanula latifolia* also have a certain diagnostic value. Its stands are characterised by a relatively frequent occurrence of European ash (*Fraxinus excelsior*) and wych elm (*Ulmus glabra*) in the tree layer.

We propose that the pre-Dinaric variant be named after *Cardamine kitaibelii*: *Iso-pyro-Fagetum* var. *geogr. Cardamine kitaibelii*. Its differential species are *Cardamine kitaibelii* (*Cardamine polyphylla*) and *Cardamine waldsteinii* (= *C. savensis*). For the pre-Alpine form (*Iso-pyro-Fagetum* var. *Adenostyles alliariae*, *Menina planina*) we propose it be named after spruce (*Picea abies*): *Iso-pyro-Fagetum* var. *geogr. Picea abies*. The occurrence of spruce on the mountain pasture *Menina planina* is largely connected with past management (when it was deliberately introduced and promoted) and the spruce in the stands of the association *Iso-pyro-Fagetum* probably occurs mainly spontaneously there (ZUPANČIČ, in litt.); however, its natural occurrence in the foothills of the Savinja Alps cannot be excluded.

3.1.1 Lower syntaxonomical units of the geographical variant *Iso-pyro-Fagetum* var. *geogr. Cardamine pentaphyllos*

The most characteristic stands of the association *Iso-pyro-Fagetum* on the Trnovski gozd plateau are classified into the subassociation *Iso-pyro-Fagetum scopolietosum carniolicae* subass. nov. hoc loco. Its nomenclatural type, *holotypus*, is relevé No. 12 in Table 1 and its differential species are *Scopolia carniolica*, *Lunaria rediviva* and *Campanula latifolia*. We distinguish two variants, var. *typica* (relevés 1 to 24 in Table 1) and a slightly more “aceretal” variant var. *Campanula latifolia* (relevés 25 to 39 in Table 1), which is characterised by a higher frequency and abundance of *Lunaria rediviva*, *Campanula latifolia* and *Polystichum braunii* as compared to the typical variant. Relevés Nos. 1 to 7 in Table 2 are a transitional form towards the association *Ranunculo platanifolii-Fagetum* and are temporarily classified into the frigophilous variant *Iso-pyro-Fagetum scopolietosum* var. *Cardamine trifolia*. Relevés 8 to 19 in Table 2 are a dolomitophilous form classified into the syntaxon *Iso-pyro-Fagetum scopolietosum* var. *Helleborus niger* and their differential species include *Cyclamen purpurascens* and *Cirsium erisithales*. Relevés 20 to 28 in Table 2 are temporarily treated as the variant *Iso-pyro-Fagetum* var. *Fraxinus excelsior* whose relative diagnostic species are *Fraxinus excelsior*, *Acer pseudoplatanus* and *Allium ursinum*. Most of the relevés of this beech-maple forest were made on the Nanos plateau, in the vicinity of Pleša, but certain diagnostic species of the association *Iso-pyro-Fagetum* (e.g. *Iso-pyrum thalictroides*, *Arum maculatum* and *Scilla bifolia*) and some of the diagnostic species of the geographical variant *Cardamine pentaphyllos* (*Cardamine pentaphyllos* and *Scopolia carniolica*) were no longer found there. These relevés are generally still more similar to other stands of the association *Iso-pyro-Fagetum* than to the stands of other compared syntaxa – this is indicated also by their grouping with certain relevés of the syntaxon *Iso-pyro-Fagetum scopolietosum* (columns 29 to 31 in Table 2). Also atypical are relevés in columns 32 to 36 in Table 2, where tall herb species from the class *Mulgedio-Aconitetea* are slightly more poorly represented (possibly because these relevés were not repeated in the summer). For the time being they are classified into the syntaxon *Iso-pyro-Fagetum* var. *Cyclamen purpurascens*. Beech-maple stands in Table 3 that were made under Moščeniški (Mošančarski) hrib hill above Predmeja grouped completely separately from all other compared phytocoenoses. These forest stands were largely cleared in the past or were affected by natural hazards, which is re-

flected in the predominance of pole stands. Despite the absence of some of the diagnostic species it is our opinion that they also should be classified into the association *Isopyro-Fagetum* rather than into the association *Stellario-Fagetum* with which they share certain similarities. We classify them into the subassociation *Isopyro-Fagetum stellarietosum montanae* subass. nova hoc loco (the nomenclatural type, *holotypus*, is relevé No. 7 in Table 3). *Stellaria montana* and *Urtica dioica* are the differential species of the subassociation and indicate nitrophilous, moist and relatively warm sites on sunny aspects where snow melts faster, similar to some geophytes – *Corydalis cava*, *C. solida*, *Arum maculatum*, *Gagea lutea*, *Galanthus nivalis* forma *Sortež*, the latter in Slovenia only rarely occurs at such high elevations, at 1350 m a.s.l., and *Campanula latifolia*. In addition to the typical variant (var. *typica*) we also distinguish the variant with *Campanula latifolia* (relevés Nos. 7 to 9 in Table 3), which characterises more nitrophilous sites on the top area of the hill. Its differential species are also *Aconitum lycoctonum* s. lat. and *Doronicum austriacum*.

3.2 Comparison of the altimontane beech forest on the southeastern border of the Trnovski gozd plateau with the montane beech forest in Kalski gozd on the Banjšice plateau

The montane beech forest in Kalski gozd in the north-eastern part of the Banjšice plateau was phytosociologically studied years ago, but our findings were only noted in a detailed report (DAKSKOBLER 1986) in which we described two syntaxa, *Lamio orvalae-Fagetum stellarietosum* and *Lamio orvalae-Fagetum luzuletosum luzuloidis*. The relevé material for the subassociation *-stellarietosum montanae* was later supplemented and published in a synthetic form (DAKSKOBLER, SELIŠKAR & VREŠ 1999, Table 3, column 1). In this paper, we publish it also in the analytical form (Table 6). Basic ecological characteristics of the region where these stands were recorded are the following. The elevation of the relevés is between 800 m and 970 m a.s.l. (Figure 2). The highest peaks of the Banjšice plateau are Lašček and Veliki vrh, both 1071 m a.s.l., so the stands here occur at lower elevations than the compared stands from the Trnovski gozd plateau. The geological bedrock is Jurassic, in places also Cretaceous limestone (BUSER 2009). The climate is moist and montane with the mean average precipitation of around 2200 mm (B. ZUPANČIČ 1995, 1998) and the mean annual temperature of 7 °C to 8 °C (CEGNAR 1998). The predominating vegetation is beech forest, classified into the associa-

tions *Seslerio autumnalis-Fagetum* (DAKSKOBLER 1997) and *Lamio orvalae-Fagetum*. Stands of the subassociation *Lamio orvalae-Fagetum stellarietosum montanae* were found mainly on the rims and at the bottom of karstic sinkholes, on rocky sites. We excavated soil profiles on two spots and had them analysed by the Centre for Pedology and Plant Protection of the Department of Agronomy at the Biotechnical Faculty in Ljubljana; the soil was described by PRUS (in litt.). He determined lessived, medium deep brown calcareous soil at the bottom of the sinkhole, and brown rendzina, mull, colluvial-deluvial on the slope of the sinkhole. Ecological conditions are therefore comparable with those on the southern slopes of the Trnovski gozd and Nanos plateaus. The difference is that the predominating bedrock on the Banjšice plateau is exclusively limestone, whereas in the researched parts of the Trnovski gozd and Nanos plateaus limestone is often mixed with dolomite. Another difference is in the stand composition and structure. Kalski gozd is dominated by more or less pure beech stands, mainly of coppice origin. Sycamore maple (*Acer pseudoplatanus*) is very rare in the tree layer, but frequent in the herb layer. Its low frequency in the tree layer is probably the result of past management. The stand structure on the Trnovski gozd plateau is considerably better, with a higher proportion of seed source trees and more sycamore maple, European ash (*Fraxinus excelsior*) and wych elm (*Ulmus glabra*) trees in the tree layer. The composition of the herb layer in compared phytocoenoses is very similar. It is characterised above all by spring geophytes. The geophytes that cover the largest areas in Kalski gozd are *Cardamine enneaphylos*, *Corydalis cava*, *Anemone ranunculoides*, *A. nemorosa*, in places also *Cardamine pentaphylos*, *Corydalis solida*, *Gagea lutea*; *Isopyrum thalictroides* and *Crocus napolitanus* (*C. vernus* subsp. *vernus*) are rare and *Galanthus nivalis* very rare. The frequent occurrence of *Arum maculatum* and *Scrophularia vernalis* indicates nutrient-rich soil. *Scilla bifolia*, *Leucojum vernum*, *Allium ursinum*, *Scopolia carniolica* and *Campanula latifolia* were not recorded anywhere within the studied stands in Kalski gozd and *Lunaria rediviva* is also very rare. The summer aspect is recognised by high medium coverage of *Stellaria montana*, *Lamium orvala*, *Cardamine bulbifera*, *Galium odoratum*, *Senecio ovatus*, *Urtica dioica*, *Circaea lutetiana*, *Dryopteris filix-mas*, *Polystichum aculeatum* and *Athyrium filix-femina*. Indicators of nitrophilous and fresh sites, *Cardamine flexuosa* and *Veronica montana*, in places also *Circaea intermedia*, occur quite frequently. There are comparatively a lot more species of forest clearings and ruderal sites in these stands, which is the result of management (thin-

ning). The most common among them are *Galeopsis speciosa*, *G. pubescens* and *Rubus hirtus*. Some acidophilous species, such as *Luzula luzuloides*, which is the most frequent, and individual specimens of other acidophilous species, e.g. *Gymnocarpium dryopteris*, *Dryopteris expansa* and *D. carthusiana*, indicate leached soils and their acid reaction. As the sites are moist and rocky, the rocks are covered by a rich moss layer and several ferns, including *Cystopteris fragilis*. Compared to the stands on the Trnovski gozd plateau the stands in Kalski gozd comprise fewer diagnostic species of the alliance *Aremonio-Fagion* (*Vicia oroboides*, *Hacquetia epipactis*, *Omphalodes verna*, *Calamintha grandiflora*, *Helleborus niger* and *Euphorbia carniolica*, for example, were not recorded); on the other hand, *Helleborus odoratus*, which together with some more thermophilous species (e.g. *Sesleria autumnalis*) indicates a slightly warmer climate and the vicinity of the stands of the association *Seslerio autumnalis-Fagetum*, occurs frequently. Much less frequent in the montane beech stands in Kalski gozd are characteristic species of tall herb communities from the class *Mulgedio-Aconitetea* and some other diagnostic species of the altimontane belt (see also column 13 in Table 5). *Veratrum album* and *Saxifraga rotundifolia* were recorded only a few times in the stands of the

subassociation *Lamio orvalae-Fagetum stellarietosum*, while *Ranunculus platanifolius* and *Polygonatum verticillatum* were not recorded at all. The same applies to *Aconitum lycoctonum* s. lat., *Thalictrum aquilegifolium* and *Doronicum austriacum*, and to the shrubs *Lonicera alpigena* and *L. nigra*. Despite these differences the floristic similarity of the stands of the subassociation *Lamio orvalae-Fagetum stellarietosum* with the stands of the subassociation *Isopyro-Fagetum scopoliotosum* according to SØRENSEN (1948) is about 64 %, which allows for the classification of the compared phytocoenoses into the same community at the rank of association. In order to confirm or reject this supposition we used hierarchical classification and two-dimensional ordination to compare the stands of the syntaxon *Lamio orvalae-Fagetum stellarietosum* with some other forms of the association *Isopyro-Fagetum* on the Trnovski gozd plateau and with the classic form of this association (*Isopyro-Fagetum* var. geogr. *Cardamine kitaibelii*) from the pre-Dinaric region of Slovenia (KOŠIR 1979). This comparison (Figures 6 and 7) demonstrates that beech stands from the sinkholes of Kalski gozd do not group together with the syntaxa from the association *Isopyro-Fagetum*. With some of their characteristics, e.g. nitrophilous sites, they slightly resemble the stands of the syntaxon *Isopyro-Fagetum*

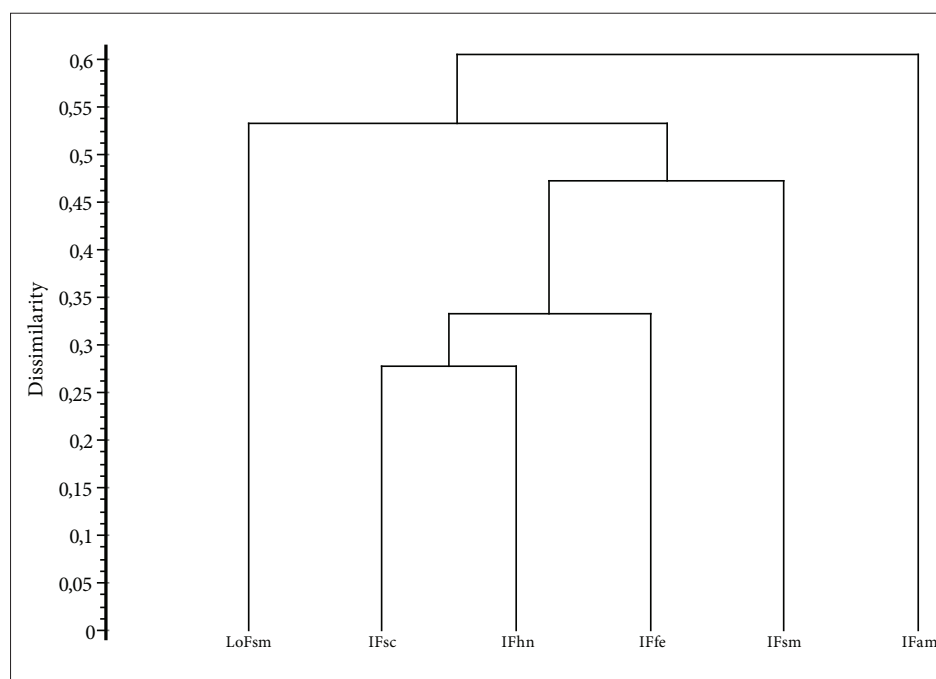


Figure 6: Dendrogram of some subunits of the associations *Isopyro-Fagetum* and *Lamio orvalae-Fagetum* (UPGMA, similarity ratio)

Slika 6: Dendrogram nekaterih oblik asociacij *Isopyro-Fagetum* in *Lamio orvalae-Fagetum* (UPGMA, similarity ratio)

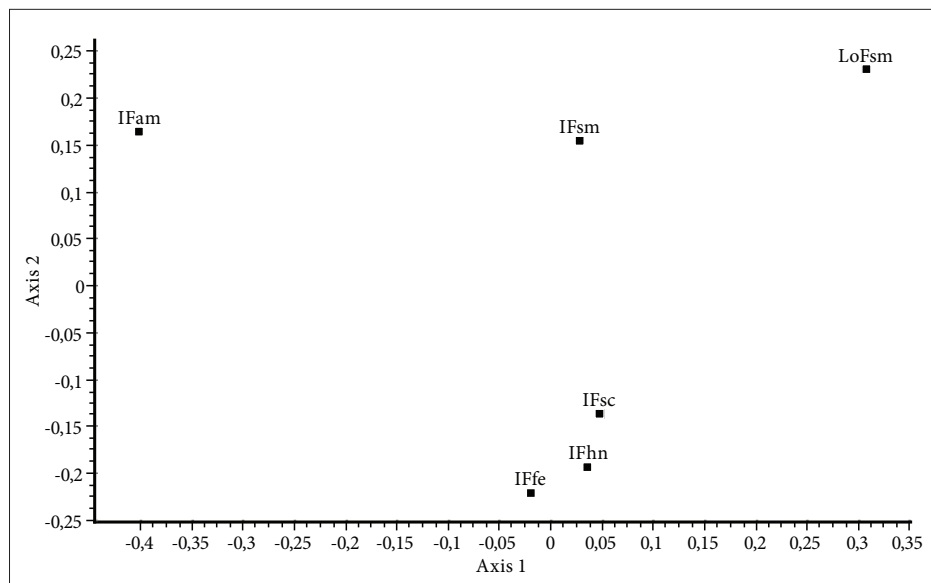


Figure 7: Two-dimensional scatter diagram of some subunits of the associations *Isopyro-Fagetum* and *Lamio orvalae-Fagetum* (PCoA, similarity ratio)

Slika 7: Dvorazsežni ordinacijski diagram nekaterih oblik asociacij *Isopyro-Fagetum* in *Lamio orvalae-Fagetum* (PCoA, similarity ratio)

Legend to Figures 6 and 7:

LoFsm *Lamio orvalae-Fagetum stellarietosum montanae*, Kalski gozd

IFsc *Isopyro-Fagetum scopolietosum*, Trnovski gozd

IFhn *Isopyro-Fagetum scopolietosum* var. *Helleborus niger*, Trnovski gozd

IFfe *Isopyro-Fagetum* var. *Fraxinus excelsior*, Nanos

IFsm *Isopyro-Fagetum stellarietosum montanae*, Trnovski gozd

IFam *Isopyro-Fagetum* var. *Arum maculatum*, KOŠIR (1979)

stellarietosum from Moščniški hrib above Predmeja, but their floristic composition as a whole is very different. Based on these comparisons they cannot yet be classified into the association *Isopyro-Fagetum* and we therefore stick to our existing classification into the syntaxon *Lamio orvalae-Fagetum stellarietosum montanae*, which we validly describe in this article. Its no-

menclatural type, *holotypus*, is relevé No. 5 in Table 6. The differential species of the subassociation are *Stellaria montana*, *Corydalis cava*, *C. solida*, *Gagea lutea*, *Anemone ranunculoides*, *Veronica montana* and *Scrophularia vernalis*. Geographical differential species are *Cardamine pentaphyllos*, *Sesleria autumnalis* and *Anemone trifolia*.

4 CONCLUSIONS

Beech and beech-maple forests of the altimontane belt on the Trnovski gozd and Nanos plateaus have so far been classified into the associations *Ranunculo platanifolii-Fagetum* and *Stellario montanae-Fagetum*. These two associations could also comprise altimontane beech stands in the southeastern part of the Trnovski gozd plateau, in the belt from Javornik past Kanji Dol, Strmec and Mrzli Log to Križna Gora,

which are characterised by abundant geophytes in the herb layer (*Leucojum vernalis*, *Galanthus nivalis*, *Allium usinum*, *Corydalis cava*, *C. solida*, *Scopolia carniolica*, *Scilla bifolia*, *Gagea lutea*, *Anemone ranunculoides*). Their site characteristics (rocky top areas of hills and their sunny slopes) and occurrence of most of the diagnostic species also allow for their classification into the association *Isopyro-Fagetum* that has so far been

known on similar sites in the pre-Dinaric and pre-Alpine phytogeographical regions. Such classification is corroborated also by the comparison with numerical methods. We described a new geographical variant *Isopyro-Fagetum* var. geogr. *Cardamine pentaphyllos* and new subassociations, *Isopyro-Fagetum scopolietosum* and *-stellarietosum montanae*. The species that differentiate the new geographical variant and subassociation *-scopolietosum* are *Cardamine pentaphyllos*, *Scopolia craniolica*, *Lunaria rediviva*, *Rhamnus fallax*, *Aconitum degenii* subsp. *paniculatum* and *Campanula latifolia*, while the endemic taxon *Scopolia carniolica* f. *hladnikiana* is its special feature. The latter was found in a small hollow on a sunny dolomite slope under Špičasti vrh (0050/3) at the elevation of 1100 m and not, as we had mistakenly published (DAKSKOBLER 2013: 42), at the altitude of 1000 m. Floristically very similar montane beech forests in sinkholes of Kalski gozd in the eastern part of the Banjšice plateau are classified, based on numerical comparisons and established ecological differences, into the new subassociation *Lamio orvalae-Fagetum stellarietosum montanae*.

The conspectus of the newly described syntaxa is as follows:

Class: *Quercus-Fagetea* Br.-Bl. et Vlieger in Vlieger 1937
 Order: *Fagetalia sylvaticae* Walas 1933
 Alliance: *Aremonio-Fagion* (Ht. 1938) Borhidi in Török, Podani & Borhidi 1989
 Association: *Isopyro-Fagetum* Košir 1962
-scopolietosum carnoliccae subss. nov.
 var. *typica*
 var. *Campanula latifolia*
 var. *Cardamine trifolia*
 var. *Helleborus niger*
-stellarietosum montanae subss. nov.
 var. *typica*
 var. *Campanula latifolia*
Isopyro-Fagetum var. *Fraxinus excelsior* prov.

Isopyro-Fagetum var. *Cyclamen purpurascens* prov.
 Association: *Lamio orvalae-Fagetum* (Ht. 1938) Borhidi 1963

-stellarietosum montanae subss. nov.

Division of the described stands in terms of phytogeography is as follows:

Isopyro-Fagetum Košir 1962 var. geogr. *Cardamine kitaibelii* Košir (= *Isopyro-Fagetum* Košir 1962 var. *Arum maculatum* Košir 1979), pre-Dinaric region

Isopyro-Fagetum Košir 1962 var. geogr. *Picea abies* Košir (= *Isopyro-Fagetum* Košir 1962 var. *Adenostyles alliariae* Košir 1979), pre-Alpine region

Isopyro-Fagetum Košir 1962 var. geogr. *Cardamine pentaphyllos* var. geogr. nova, the northern part of the Dinaric region

Lamio orvalae-Fagetum (Ht. 1938) Borhidi 1963 var. geogr. *Cardamine pentaphyllos* Marinček 1995 (the pre-Alpine and northwestern Dinaric regions)

The studied beech forests are mainly managed forests whose growth potential is generally low due to the extreme sites (rockiness, shallow soil, exposure to the bora wind), but which still have a pronounced protective function. Montane beech forests in Kalski gozd, where growth conditions in sinkholes are very good, are an exception. The protective function is the most important in the stands on ridges and any clear-felling here would lead to severe degradation. In addition, the studied forests are a site of some protected species and (or) species of conservation concern (ANON. 2002, 2004). The taxa *Helleborus niger*, *H. odoratus*, *Cyclamen purpurascens*, *Convallaria majalis*, *Dactylorhiza fuchsii*, *Leucojum vernum*, *Galanthus nivalis*, *Listera ovata*, *Lilium martagon*, *L. bulbiferum*, *Iris graminea*, *Neottia nidus-avis*, *Sedum maximum* and *Platanthera bifolia* are protected, but generally not threatened. The Red List includes two rare endemic taxa, *Ranunculus wraberii* and *Scopolia carniolica* f. *hladnikiana*, as well as *Veratrum nigrum*.

5 POVZETEK

5.1 Uvod

Gozdna vegetacija Trnovskega gozda je razmeroma dobro raziskana (ZUPANČIČ 1967, 1969, 1980, 1999, 2012, PUNCER 1979, MARINČEK 1996, 1998, MARINČEK & ČARNI 2010, MARINČEK et al. 1993, SURINA 2002, SURINA & DAKSKOBLER 2013, DAKSKOBLER, URBANČIČ & A. WRABER 2000, DAKSKOBLER 1997, 2003), malo manj to velja za Nanos, čeprav se nekatere prej naštetje

objave nanašajo tudi nanj. S tega območja so opisani ali vsaj omenjeni naslednji sintaksoni bukovih gozdov: *Seslerio autumnalis-Fagetum*, *Lamio orvale-Fagetum*, *Omphalodo-Fagetum*, *Ranunculo platanifolii-Fagetum*, *Stellario montanae-Fagetum* (*Stellario glochidispermae-Fagetum*) in *Polysticho lonchitis-Fagetum*. Sestojte vseh naštetih združb smo opazili in popisali tudi pri naših dosedanjih raziskavah gozdne vegetacije Trnovskega gozda. Idrijski botaniki (R. Terpin, A. Vončina)

so nas v zadnjih letih opozorili na bukove sestoje v pasu od Javornika mimo Kanjega Dola, Strmca in Mrzlega Loga do Križne Gore, katerih posebnost je bujna zeliščno plast geofitov (*Leucojum vernum*, *Galanthus nivalis*, *Allium usinum*, *Corydalis cava*, *C. solida*, *Scopolia carniolica*, *Scilla bifolia*, *Gagea lutea*, *Anemone ranunculoides*) zgodaj spomladi (aprila, začetek maja) – glej tudi DAKSKOBLER, TERPIN & VONČINA (2010: 83). Osnovna značilnost teh gozdnih sestojev je, da navadno uspevajo na prisojnih, položnih do zmerno strmih užlebljenih in precej skalnatih pobočjih ali na samem ovršju vzpetin, na nadmorski višini od 950 m do 1250 m (redko tudi višje, do nadmorske višine 1350 m). Geološka podlaga je apnenec, dolomitni apnenec ali dolomit, tla pa so plitva, sveža, rendzina, rjava rendzina, redko tudi rjava pokarbonatna tla. Bukev je dominantna vrsta drevesne plasti, ob njej je pogost gorski javor (*Acer pseudoplatanus*), ponekod tudi veliki jesen (*Fraxinus excelsior*) in gorski brest (*Ulmus glabra*). Smreka (*Picea abies*) in jelka (*Abies alba*) se pojavljata le tu in tam kot posamična primes. Skupno smo naredili 84 fitocenoloških popisov, ki nedvomno označujejo altimontansko bukovo na karbonatni podlagi, in ga primerjali s podobnimi v tem višinskem pasu opisanimi bukovimi in bukovo-javorovimi združbami iz ilirske zveze *Aremonio-Fagion*, iz asociacij *Isopyro-Fagetum*, *Ranunculo platanifolii-Fagetum* in *Stellario montanae-Fagetum*. Na podlagi hierarhične klasifikacije in po presoji diagnostičnih vrst smo poskušali za opisane sestoje izbrati najprimernejšo sintaksonomsko oznako in rang. Zaradi podobnosti v zeliščni plasti smo jih primerjali tudi z gorskim bukovim gozdom na nekoliko nižji visokokraški planoti Banjšice (*Lamio orvalae-Fagetum stellarietosum*), ki smo ga preučili, a rezultatov do zdaj še ne veljavno objavili, že pred precej leti, in ugotavljali podobnosti in razlike.

5.2 Metode

Bukove sestoje na Banjšicah, v Trnovskem gozdu in na Nanosu (slika 1) smo preučevali po srednjeevropski metodi (BRAUN-BLANQUET 1964). Večji del fitocenoloških popisov smo naredili dvakrat, spomladi in v začetku poletja, da smo pridobili čim popolnejši floristični inventar. Popise smo vnesli v bazo FloVegSi (T. SELIŠKAR, VREŠ & A. SELIŠKAR 2003). Kombinirane ocene zastiranja in pogostnosti smo pretvorili v ordinalne vrednosti od 1 do 9 (van der MAAREL 1979). Numerične primerjave smo opravili s programom SYN-TAX 2000 (PODANI 2001). Popise smo uredili v analitske preglednice na podlagi hierarhične klasifikacije. Upoštevali smo rezultate metode kopičenja na podlagi

povezovanja (netehtanih) srednjih razdalj “(Unweighted) average linkage” – UPGMA, kjer smo uporabljali Wishartov koeficient podobnosti (similarity ratio). Fitocenološke skupine (= skupine diagnostičnih vrst) smo ob upoštevanju številnih avtorjev oblikovali po lastnih merilih. Floristično sestavo preučenih bukovih sestojev smo primerjali s floristično sestavo podobnih altimontanskih bukovih združb v Sloveniji. Pri primerjavi smo uporabili hierarhično klasifikacijo in dvorazsežno ordinacijo (metodo glavnih koordinat, PCoA, koeficient podobnosti je bil »similarity ratio«) in analizo deležev diagnostičnih vrst sintaksonomskih skupin. Nomenklaturni viri za imena praprotnic in semenk so MARTINČIČ & al. (2007), za imena mahov MARTINČIČ (2003, 2011), za imena lišajev SUPPAN, PRÜGGER & MAYRHOFER (2000) in URBANČIČ et al. (2005) za imena talnih tipov. Nomenklaturni vir za imena sintaksonov sta ŠILC & ČARNI (2012), razen za ime razreda *Quercio-Fagetea* Braun-Blanquet et Vlieger in Vlieger 1937.

5.2.1 Ekološka oznaka raziskovanega območja

Bukove sestoje smo popisali na prisojnih pobočjih Moščeniškega (Moščanarskega) hriba (1356 m) nad Predmejo, pod Marnim vrhom (1080 m) in Vrhom Hoje (1105 m) nad Otlico (to sta bili najbolj v notranjost planote umaknjeni nahajališči), pod Velikim (1076 m) in Malim Kamnom (1045 m) nad Križno goro, pod Križno goro nad Colom (957 m), na vzpetinah med Mrzlim Logom, Zadlogom in Črnim Vrhom (Brkovnik, Špičasti vrh – 1128 m, Špik – 1068 m), pod grebenom Javornika (1240 m) nad Kanjim Dolom in na jugovzhodnem robu Nanosa okoli Pleše (1262 m) – slika 2. Geološka podlaga raziskovanega območja so jurski apnenci in dolomiti (Trnovski gozd) in kredni apnenci z vložki dolomita (Nanos) – BUSER (1973, 2009), JANEŽ et al. (1997), prevladujoči talni tip so rendzina in rjava pokarbonatna tla (LOVRENČAK 1998, PRUS, in litt.). Podnebje je zmernocelinsko, gorsko s povprečno letno temperaturo okoli 6 °C – 7 °C (CEGNAR 1998) in povprečno letno množino padavin od 2000 mm do 2200 mm, na obrobju Nanosa tudi precej manj (B. ZUPANČIČ 1995, 1998). Na južnih robovih Trnovskega gozda in Nanosa se v rastju, tudi na drugotnih travnikih in pašnikih, še precej pozna submediteranski vpliv. Pomembna podnebna dejavnika sta veter (burja) in sneg. Snežna odeja je zaradi močnih vetrov navadno zelo nenakomerna (visoki zameti v zavetrju, spihana območja na grebenih), močna burja pa na vrhovih in grebenih pogojuje nizko in šopasto rast dreves. Prevladujoča vegetacija na južnih robovih Trnovskega gozda in Nanosa je bukov gozd. V nekoliko nižjih predelih med

800 m in 1000 m ga uvrščamo v asociaciji *Seslerio autumnalis-Fagetum* in *Lamio orvalae-Fagetum*, na nadmorski višini nad 1000 m pa v glavnem v asociacijo *Ranunculo platanifolii-Fagetum*. Dinarski jelovo-bukov gozd (*Omphalodo-Fagetum*) je prevladujoča združba notranjosti obeh planot.

5.3 Rezultati in razprava

5.3.1 Altimontanski bukov gozd na jugovzhodnem robu Trnovskega gozda in Nanosa

Popisani bukovi sestoji so se na podlagi floristične podobnosti združevali v več skupin (slika 3) in po tem merilu smo jih v glavnem uredili v analitske preglednice. Razlike so predvsem v prisotnosti in srednjem zastiranjju nekaterih vrst (*Leucojum vernum*, *Galanthus nivalis*, *Allium ursinum*, *C. solida*, *Scopolia carniolica*, *Lunaria rediviva*), deloma tudi v geološki podlagi (dolomit ali apnenec) in v prisotnosti nekaterih hladno-ljubnih vrst smrekovih gozdov (glej preglednice 1, 2, 3 in 5). Izdelali smo sintezno preglednico (preglednica 4), kjer smo naše popise združili v sedem skupin in jim dodali še pet stolpcev. V njih je floristična sestava sintaksonov, ki so po našem vedenju najbolj podobni preučeni sestojem na južnem robu Trnovskega gozda. V primerjavo smo vključili naslednje sintaksone: *Isopyro-Fagetum* var. *Arum maculatum* (KOŠIR 1979, preglednica 4), *Isopyro-Fagetum* var. *Adenostyles alliariae* (KOŠIR 1979, preglednica 7), *Ranunculo platanifolii-Fagetum* var. geogr. *Isopyrum thalictroides* (MARINČEK 2004, preglednica 1, MARINČEK & ČARNI 2010, preglednica 10), *Ranunculo platanifolii-Fagetum* var. geogr. *Calamintha grandiflora stellarietosum nemorum* (MARINČEK & ČARNI 2010, preglednica 7) in *Stellario montanae-Fagetum* (ZUPANČIČ 2012, preglednica 1, stolpci 1 do 16). Tako smo dobili preglednico s 12 stolpci in jih med seboj primerjali s hierarhično klasifikacijo in dvorazsežno ordinacijo (sliki 4 in 5). Preučeni sestoji iz Trnovskega gozda in z Nanosa so se razen ene skupine (popisi pod Moščenjskim hribom, ki so floristično in sestojno posebni) združevali ločeno od ostalih primerjanih sintaksonov. Razmeroma podobni so si sestoji sintaksonov *Stellario montanae-Fagetum* in *Ranunculo-Fagetum stellarietosum nemorum* ter sestoji sintaksonov *Isopyro-Fagetum* var. *Adenostyles alliariae* in *Ranunculo-Fagetum* var. geogr. *Isopyrum thalictroides*. Sestojem z južnega roba Trnovskega gozda so še najbolj podobni sestoji sintaksona *Isopyro-Fagetum* var. *Arum maculatum*. Primerjava očitno kaže na skupino precej podobnih ilirskih altimontanskih bukovih združb na karbonatni podlagi in njihova floristična sestava do-

pušča možnost, da jih lahko uvrstimo v vse tri primerjane asociacije, *Isopyro-Fagetum*, *Ranunculo-Fagetum* in (ali) *Stellario-Fagetum*. Primerjali smo prisotnost diagnostičnih vrst naštetih asociacij v preučeni fitocenozah. KOŠIR (1979) kot značilnice asociacije *Isopyro-Fagetum* našteva vrste *Isopyrum thalictroides*, *Corydalis cava*, *Ribes uva-crispa* in *Rumex arifolius*, razlikovalnice te asociacije pa so vrste *Scilla bifolia*, *Veratrum album*, *Adoxa moschatellina*, *Polygonatum verticillatum*, *Anemone ranunculoides*, *Chrysosplenium alternifolium*, *Stellaria montana*, *Gagea lutea*, *Arum maculatum*, *Adenostyles alliariae* in še nekatere druge. Večina od naštetih vrst uspeva tudi v preučeni sestojih. Zelo redki sta vrsti *Adenostyles alliariae* in *Chrysosplenium alternifolium* in nismo popisali vrst *Ribes uva-crispa* in *Scrophularia vernalis*, ki pa tudi v Koširjevih popisih nista pogosti (frekvenca pod 50 %). Nekatere od naštetih vrst imajo po našem mnenju diagnostično vrednost le v tem, da označujejo altimontanski pas in so navadno prisotne v vseh primerjanih altimontanskih bukovih združbah (na primer vrsti *Veratrum album* in *Polygonatum verticillatum*). Enako meni tudi ZUPANČIČ (2012). MARINČEK & ČARNI (2010) kot diagnostične vrste sintaksona *Ranunculo-Fagetum* var. geogr. *Calamintha grandiflora stellarietosum nemorum* naštevata *Polygonatum verticillatum*, *Ranunculus platanifolius*, *Adenostyles glabra* (asociacijske značilne in razlikovalne vrste), *Aremonia agrimonoides*, *Calamintha grandiflora* (geografski razlikovalnici), *Oxalis acetosella*, *Stellaria nemorum*, *Cardamine bulbifera*, *Galium odoratum*, *Adenostyles alliariae*, *Ranunculus lanuginosus*, *Doronicum austriacum* (razlikovalnice nižjih enot). Diagnostična vrednost značilnic asociacije je majhna, saj jih najdemo v večini altimontanskih bukovih združb, med razlikovalnicami nižjih enot v preučeni sestojih nismo popisali vrste *Stellaria nemorum*, pač pa podobno vrsto *S. montana*. Možno je, da tudi v popisih, ki jih je naredil Marinček in sta jih objavila MARINČEK & ČARNI (ibid.), poleg vrste *S. nemorum* uspeva tudi vrsta *S. montana*. MARINČEK & ČARNI (2010) med diagnostičnimi vrstami sintaksona *Ranunculo-Fagetum* var. geogr. *Isopyrum thalictroides* naštevata *Isopyrum thalictroides*, *Adenostyles alliariae*, *Leucojum vernum*, *Ranunculus ficaria*, *Crocus vernus*, *Corydalis cava* in *Veronica montana*. Med njimi v preučeni sestojih nismo popisali vrste *Ranunculus ficaria* in zelo redko vrsto *Veronica montana*. ZUPANČIČ (2012) je za značilnice asociacije *Stellario montanae-Fagetum* izbral vrste *Stellaria montana*, *Polystichum aculeatum* in *Cardamine pentaphyllos*, kot razlikovalnice pa vrste *Acer pseudoplatanus*, *Scrophularia nodosa* in *Corydalis cava*. Vse našete vrste uspevajo tudi v preučeni fitocenozah. Ugotavljamo, da se te po floristični podobno-

sti ne združujejo skupaj s popisi sintaksonov *Stellario-Fagetum* in *Ranunculo-Fagetum stellarietosum nemorum*, čeprav le ti izvirajo iz istega fitogeografskega območja, pač pa kažejo določeno podobnost s sintaksonom *Isopyro-Fagetum* var. *Arum maculatum* iz predinarskega fitogeografskega območja. Ta podobnost je utemeljena na ekoloških značilnostih. V obeh primerih so to ovršja in večkrat prisojna kot osojna skalnata pobočja pod vzpetinami, v našem primeru na primorski (litoralni) strani visokokraških planot Trnovskega gozda in Nanosa. Tla so plitva, a sveža in bogata s hranili, v glavnem rendzina. Spomladanski aspekt označujejo številni geofiti. Asociaciji *Isopyro-Fagetum* moramo dati prednost tudi zato, ker je bila v primerjavi z asociacijama *Ranunculo-Fagetum* in *Stellario-Fagetum* opisana precej prej (KOŠIR 1962). Po naših spoznanjih torej sestoji asociacije *Isopyro-Fagetum* uspevajo tudi v severozahodnem delu dinarskega fitogeografskega območja, v pasu conalnih altimontanskih bukovih gozdov iz asociacije *Ranunculo platanifolii-Fagetum*, s katerimi so ponekod stični. Mogoči so tudi prehodi med njima in pokazali smo jih v popisih 1 do 7 v preglednici 2, ki bi jih na podlagi floristične sestave lahko uvrstili tudi v asociacijo *Ranunculo platanifolii-Fagetum*. Diagnostične vrste asociacije *Isopyro-Fagetum* so po našem mnenju *Isopyrum thalictroides*, *Corydalis cava*, *C. solida*, *Anemone ranunculoides*, *Scilla bifolia*, *Gagea lutea*, *Allium ursinum*, *Leucojum vernum*, *Galanthus nivalis* (v preučeni sestoji prevladuje forma *Sortež* – BAVCON 2008: 21–22), *Arum maculatum* in *Scrophularia vernalis*. Skupno uspevanje naštetih vrst ob prisotnosti nekaterih diagnostičnih vrst altimontanskih bukovih gozdov (*Ranunculus platanifolius*, *Polygonatum verticillatum*, *Veratrum album* s. lat.) označuje posebne rastiščne razmere (dovolj vlage in toplote) na vzpetinah na primorski (litoralni) strani dinarskih visokokraških planot in na ovršju hribov v predinarskem območju. Skupno uspevanje naštetih geofitov te sestoje floristično dokaj jasno razlikuje od podobnih fitocenoz iz asociacij *Ranunculo platanifolii-Fagetum* in *Stellario montanae-Fagetum*. Bukovo-javorjeva združba iz asociacije *Stellario montanae-Fagetum* je v Trnovskem gozdu razširjena v notranjosti planote, v bolj hladnem in vlažnem krajevnem podnebju, kar kaže tudi njena sestava po skupinah diagnostičnih vrst z razmeroma večjim deležem vrst smrekovih gozdov (*Vaccinio-Piceetea*) in visokih steblik (*Mulgedio-Aconitetea*) – stolpec 9 v preglednici 5.

Preučene sestoje v Trnovskem gozdu v fitogeografskem smislu uvrščamo v novo severozahodnodinarsko geografsko varianto *Isopyro-Fagetum* var. geogr. *Cardamine pentaphyllos*. Njene razlikovalnice so vrste *Cardamine pentaphyllos*, *Scopolia carniolica*, *Rhamnus*

fallax in *Aconitum degenii* subsp. *paniculatum*, določeno diagnostično vrednost pa imata tudi vrsti *Lunaria rediviva* in *Campanula latifolia*. Posebnost njenih sestojev je razmeroma pogosta prisotnost velikega jesena (*Fraxinus excelsior*) in gorskega bresta (*Ulmus glabra*) v drevesni plasti.

Za predinarsko varianto predlagamo poimenovanje po vrsti *Cardamine kitaibelii*: *Isopyro-Fagetum* var. geogr. *Cardamine kitaibelii*. Njeni razlikovalnici sta vrsti *Cardamine kitaibelii* (*Cardamine polyphylla*) in *Cardamine waldsteinii* (= *C. savensis*). Za predalpsko obliko (*Isopyro-Fagetum* var. *Adenostyles alliariae*, Menina planina) predlagamo poimenovanje po smreki (*Picea abies*): *Isopyro-Fagetum* var. geogr. *Picea abies*. Uspevanje smreke na Menini planini je sicer v precejšnji meri povezano s preteklim gospodarjenjem (ko so jo načrtno vnašali in pospeševali) in verjetno v tamkajšnjih sestojih asociacije *Isopyro-Fagetum* uspeva predvsem subspontano (ZUPANČIČ, in litt.), a ne moremo izključiti njenega naravnega uspevanja v prigorju Savinjskih Alp.

5. 3.1.1 Nižje sintaksonomske enote geografske variante *Isopyro-Fagetum* var. geogr. *Cardamine pentaphyllos*

Najbolj značilne sestoje asociacije *Isopyro-Fagetum* v Trnovskem gozdu uvrščamo v subasociacijo *Isopyro-Fagetum scopolietosum carniolicae* subass. nova hoc loco. Njen nomenklaturni tip, *holotypus*, je popis št. 12 v preglednici 1, razlikovalnice pa vrste *Scopolia carniolica*, *Lunaria rediviva* in *Campanula latifolia*. Razlikujemo dve varianti, var. *typica* (popisi 1 do 24 v preglednici 1) in še nekoliko bolj aceretalno varianto var. *Campanula latifolia* (popisi 25 do 39 v preglednici 1), ki jo z večjo pogostnostjo in obilnostjo kot v tipični varianti označujejo vrste *Lunaria rediviva*, *Campanula latifolia* in *Polystichum braunii*. Popisi št. 1 do 7 v preglednici 2 so prehodna oblika proti asociaciji *Ranunculo platanifolii-Fagetum* in jih začasno uvrščamo v hladnoljubno varianto *Isopyro-Fagetum scopolietosum* var. *Cardamine trifolia*. Popisi številka 8 do 19 v preglednici 2 so dolomitofilna oblika, ki jo uvrščamo v sintakson *Isopyro-Fagetum scopolietosum* var. *Helleborus niger*, njihovi razlikovalnici sta tudi vrsti *Cyclamen purpurascens* in *Cirsium erisithales*. Popise številka 20 do 28 v preglednici 2 začasno vrednotimo kot varianto *Isopyro-Fagetum* var. *Fraxinus excelsior*, njene relativne diagnostične vrste so *Fraxinus excelsior*, *Acer pseudoplatanus* in *Allium ursinum*. Večino popisov tega bukovo-javorovega gozda smo naredili na Nanosu, v okolici Pleše in v njih nismo več našli nekaterih diagnostičnih vrst asociacije *Isopyro-Fagetum* (na primer vrst *Isopyrum thalictroides*, *Arum macula-*

tum in *Scilla bifolia*), prav tako ne nekaterih diagnostičnih vrst geografske variante *Cardamine pentaphyllos* (*Cardamine pentaphyllos* in *Scopolia carniolica*). V splošnem pa so ti popisi še vedno bolj podobni ostalim sestojem asociacije *Isopyro-Fagetum* kot sestojem drugih primerjanih sintaksonov – to kaže tudi njihovo združevanje z nekaterimi popisi sintaksona *Isopyro-Fagetum scopolietosum* (stolpci 29 do 31 v preglednici 2). Netipični so tudi popisi v stolpcih 32 do 36 v preglednici 2, kjer so nekoliko slabše zastopane vrste visokih steblik iz razreda *Mulgedio-Aconitetea* (mogoč vzrok temu je v dejstvu, da teh popisov nismo ponovili v poletnem času). Za zdaj jih uvrščamo v sintakson *Isopyro-Fagetum* var. *Cyclamen purpurascens*. Povsem ločeno od vseh ostalih primerjanih fitocenoz so se združevali bukovo-javorovi sestoji v preglednici 3, ki smo jih naredili pod Moščeniškim (Mošančarskim) hribom nad Predmejo. Ti gozdni sestoji so bili v preteklosti močno izsekani ali prizadeti zaradi ujm, saj prevladujejo drogovnjaki. Kljub odsotnosti nekaterih diagnostičnih vrst je po našem mnenju tudi v tem primeru ustrežnejša njihova uvrstitev v asociacijo *Isopyro-Fagetum* kot pa v asociacijo *Stellario-Fagetum*, s katero kažejo določeno podobnost. Uvrščamo jih v subasociacijo *Isopyro-Fagetum stellarietosum montanae* subass. nova hoc loco (nomenklaturni tip, *holotypus*, je popis št. 7 v preglednici 3). Razlikovalnici subasociacije sta vrsti *Stellaria montana* in *Urtica dioica*, ki kažeta na nitrofilna, vlažna in tudi razmeroma topla rastišča v prisojni legi, kjer sneg prej skopni, podobno kot nekateri geofiti: *Corydalis cava*, *C. solida*, *Arum maculatum*, *Gagea lutea*, *Galanthus nivalis* (forma *Sortež*) – ta redkokje v Sloveniji uspeva tako visoko, na nadmorski višini 1350 m in tudi vrsta *Campanula latifolia*,. Poleg tipične variante (var. *typica*) razlikujemo tudi varianto z vrsto *Campanula latifolia* (popisi št. 7 do 9 v tabeli 3), ki označuje najbolj nitrofilna rastišča na ovršju vzpetine. Njeni razlikovalnici sta tudi vrsti *Aconitum lycoctonum* s. lat. in *Doronicum austriacum*.

5.3.2 Primerjava altimontanskega bukovega gozda z južnih pobočij Trnovskega gozda z gorskim bukovim gozdom v Kalskem gozdu na Banjšicah

Montanski bukov gozd v Kalskem gozdu v severovzhodnem delu planote Banjšice smo fitocenološko preučili že pred precej leti, a naša spoznanja zapisali le v elaboratu (DAKSKOBLER 1986). V njem smo opisali dva sintaksona, *Lamio orvalae-Fagetum stellarietosum* in *Lamio orvalae-Fagetum luzuletosum luzuloidis*. Kasneje smo popisno gradivo za subasociacijo *-stellarietosum montanae* dopolnili in ga v sintezni obliki že obja-

vili (DAKSKOBLER, SELIŠKAR & VREŠ 1999, preglednica 3, stolpec 1). Zdaj ga objavljamo tudi v analitski obliki (preglednica 6). Osnovne ekološke značilnosti območja, kjer smo te sestoje popisali, so naslednje. Nadmorska višina popisov je od 800 m do 970 m nm. v. Ti sestoji uspevajo na nižji nadmorski višini od primerjanih v Trnovskem gozdu, saj sta najvišji vzpetini Banjšic, Lašček in Veliki vrh, visoki le 1071 m nm v. Geološka podlaga je jurski, ponekod tudi kredni apnenec (BUSER 2009). Podnebje je vlažno in gorsko, z letno povprečno množino padavin okoli 2200 mm (B. ZUPANČIČ 1995, 1998) in srednjo letno temperaturo 7 °C do 8 °C (CEGNAR 1998). Prevladujoča vegetacijaje je bukov gozd, ki ga uvrščamo v asociacijo *Seslerio autumnalis-Fagetum* (DAKSKOBLER 1997) in *Lamio orvalae-Fagetum*. Sestoje subasociacije *Lamio orvalae-Fagetum stellarietosum montanae* smo našli večinoma na obodih in v dnu kraških vrtač, na skalnatih rastiščih. Na dveh mestih smo izkopali talna profila in analize so opravili na Centru za pedologijo in varstvo rastlin Oddelka za agronomijo Biotehniške fakultete v Ljubljani, tla pa je opisal PRUS (in litt.). V dnu vrtače je ugotovil sprana srednje globoka rjava pokarbonatna tla, na pobočju vrtače pa rjava rendzino, sprsteninasto, koluvalno-deluvialno. Ekološke razmere so torej precej primerljive z razmerami na južnih pobočjih Trnovskega gozda in Nanosa. Razlika je v tem, da na Banjšicah prevladuje izključno apnenec, v preučeni delih Trnovskega gozda in Nanosa pa je pogosto primešan doloimit. Razlika je tudi v sestojni zasnovi in zgradbi. V Kalskem gozdu prevladujejo bolj ali manj čisti bukovski sestoji, večinoma panjevskega izvora. Gorski javor (*Acer pseudoplatanus*) je v drevesni plasti zelo redek, pogost pa je v zeliščni plasti. Njegova majhna prisotnost v drevesni plasti je najbrž posledica preteklega gospodarjenja. Zasnova sestojev v Trnovskem gozdu je bistveno boljša, več je semenovcev in več je v drevesni plasti gorskega javorja, velikega jesena (*Fraxinus excelsior*) in gorskega bresta (*Ulmus glabra*). Precej podobna je v primerjanih fitocenozah sestava zeliščne plasti. Zanjso so značilni predvsem spomladanski geofiti, med katerimi v Kalskem gozdu največjo površino zastirajo vrste *Cardamine enneaphyllos*, *Corydalis cava*, *Anemone ranunculoides*, *A. nemorosa*, ponekod tudi *Cardamine pentaphyllos*, *Corydalis solida*, *Gagea lutea*, redko *Isopyrum thalictroides* in *Crocus napolitanus* (*C. vernus* subsp. *vernus*) in zelo redko *Galanthus nivalis*. Na s hranili bogata rastišča kažeta pogosti vrsti *Arum maculatum* in *Scrophularia vernalis*. V preučeni sestoji v Kalskem gozdu nismo nikjer popisali vrst *Scilla bifolia*, *Leucojum vernum*, *Allium ursinum*, *Scopolia carniolica* in *Campanula latifolia*, zelo redka je tudi navadna srebrenka (*Lunaria rediviva*). Poletni aspekt prepozna-

mo po velikem srednjem zastiranju vrst *Stellaria montana*, *Lamium orvala*, *Cardamine bulbifera*, *Galium odoratum*, *Senecio ovatus*, *Urtica dioica*, *Circaea lutetiana*, *Dryopteris filix-mas*, *Polystichum aculeatum* in *Athyrium filix-femina*. Precej pogosti sta pokazateljci nitrofilnih in svežih rastišč *Cardamine flexuosa* in *Veronica montana* in ponekod tudi vrsta *Circaea intermedia*. Kot posledica gospodarjenja (redčenj) v teh sestojih uspeva primerjalno precej več vrst gozdnih posek in ruderalnih rastišč. Najpogostejše med njimi so *Galeopsis speciosa*, *G. pubescens* in *Rubus hirtus*. Na sprana tla in njihovo kislo reakcijo kažejo nekatere acidofilne vrste, najbolj pogosta med njimi je *Luzula luzuloides*, a posamično uspevajo tudi druge, na primer *Gymnocarpium dryopteris*, *Dryopteris expansa* in *D. carthusiana*. Ker so rastišča vlažna in skalnata, te skale pokriva bogata mahovna plast in tudi nekatere praproti, med njimi *Cystopteris fragilis*. V primerjavi s sestoji v Trnovskem gozdu so v Kalskem gozdu precej slabše zastopene diagnostične vrste zveze *Aremonio-Fagion* (nismo na primer popisali vrst *Vicia oroboides*, *Hacquetia epipactis*, *Omphalodes verna*, *Calamintha grandiflora*, *Helleborus niger* in *Euphorbia carniolica*), pač pa je pogost blagodišeči teloh (*Helleborus odoratus*), ki skupaj s še nekaterimi bolj toploljubnimi vrstami (na primer *Sesleria autumnalis*), kaže na nekoliko toplejše podnebje in na bližino sestojev asociacije *Seslerio autumnalis-Fagetum*. Precej manj pogoste so v montanskem bukovju v Kalskem gozdu značilnice združb visokih steblik iz razreda *Mulgedio-Aconitetea* in nekatere druge diagnostične vrste altimontanskega pasu (glej tudi stolpec 13 v preglednici 5). Vrsti *Veratrum album* in *Saxifraga rotundifolia* smo v sestojih subasociacije *Lamio orvalae-Fagetum stellarietosum* popisali le nekajkrat, vrst *Ranunculus platanifolius* in *Polygonatum verticillatum* pa sploh ne. Enako velja za vrste *Aconitum lycoctonum* s. lat., *Thalictrum aquilegifolium* in *Doronicum austriacum* ter za grmovnici *Lonicera alpigena* in *L. nigra*. Kljub tem razlikam je floristična podobnost sestojev subasociacije *Lamio orvalae-Fagetum stellarietosum* s sestoji subasociacije *Isopyro-Fagetum scopolietosum* po SØRENSEN (1948) okoli 64 %, kar dopušča uvrstitev primerjanih fitocenoz v isto združbo na rangu asociacije. Da bi to potrdili ali zavrgli, smo s hierarhično klasifikacijo in dvorazsežno ordinacijo sestoje sintaksona *Lamio orvalae-Fagetum stellarietosum* primerjali še z nekaterimi drugimi oblikami asociacije *Isopyro-Fagetum* v Trnovskem gozdu ter s klasično obliko te asociacije (*Isopyro-Fagetum* var. geogr. *Cardamine kitaibelii*) iz preddinarskega sveta Slovenije (KOŠIR 1979). Ta primerjava (sliki 6 in 7) pokaže, da so bukovi sestoji iz vrtač Kalskega gozda ne združujejo skupaj s sintaksoni iz asociacije *Isopyro-Fa-*

getum. Po nekaterih znakih, nitrofilnosti rastišč, so nekoliko podobni sestojem sintaksona *Isopyro-Fagetum stellarietosum* z Moščeniškega hriba nad Predmejo, nikakor pa ne po celotni floristični sestavi. Na podlagi teh primerjav jih za zdaj ne moremo uvrstiti v asociacijo *Isopyro-Fagetum* in ostajamo pri dozdejšnji uvrstitvi v sintakson *Lamio orvalae-Fagetum stellarietosum montanae*, ki ga v tem članku tudi veljavno opisujemo. Njegov nomenklaturni tip, *holotypus*, je fitocenološki popis št. 5 v preglednici 6. Razlikovalnice subasociacije so vrste *Stellaria montana*, *Corydalis cava*, *C. solida*, *Gagea lutea*, *Anemone ranunculoides*, *Veronica montana* in *Scrophularia vernalis*. Geografske razlikovalnice so vrste *Cardamine pentaphyllos*, *Sesleria autumnalis* in *Anemone trifolia*.

5.4 Zaključki

Bukove in bukovo-javorove gozdove altimontanskega pasu v Trnovskem gozdu in na Nanosu smo do zdaj uvrščali v asociaciji *Ranunculo platanifolii-Fagetum* in *Stellario montanae-Fagetum*. V ti dve asociaciji bi lahko uvrstili tudi altimontanske bukove sestoje v jugovzhodnem delu Trnovskega gozda, v pasu od Javornika mimo Kanjega Dola, Strmca in Mrzlega Loga do Križne Gore, katerih posebnost je bujna zeliščna plast geofitov (*Leucojum vernum*, *Galanthus nivalis*, *Allium usinum*, *Corydalis cava*, *C. solida*, *Scopolia carniolica*, *Scilla bifolia*, *Gagea lutea*, *Anemone ranunculoides*). Značilnosti njihovih rastišč (skalnata ovršja vzpetin in njihova prisojna pobočja) in prisotnost večine diagnostičnih vrst dopušča tudi njihovo uvrstitev v asociacijo *Isopyro-Fagetum*, ki smo jo do zdaj poznali na podobnih rastiščih v preddinarskem in predalpskem fitogeografskem območju. Takšno uvrstitev podpira tudi primerjava z numeričnimi metodami. Opisali smo novo geografsko varianto *Isopyro-Fagetum* var. geogr. *Cardamine pentaphyllos* in novi subasociaciji *Isopyro-Fagetum scopolietosum* in *-stellarietosum montanae*. Vrste, ki razlikujejo novo geografsko varianto in subasociacijo *-scopolietosum*, so *Cardamine pentaphyllos*, *Scopolia carniolica*, *Lunaria rediviva*, *Rhamnus fallax*, *Aconitum degenii* subsp. *paniculatum* in *Campanula latifolia*, posebnost pa je endemit *Scopolia carniolica* f. *hladnikiana*. Slednjega smo našli v manjši kotanji na prisojnem dolomitnem pobočju pod Špičastim vrhom (0050/3) na nadmorski višini 1100 m in ne, kot smo pomotoma objavili (DAKSKOBLER 2013: 42), na nadmorski višini 1000 m. Floristično precej podobne montanske bukove gozdove v vrtačah Kalskega gozda v vzhodnem delu planote Banjšice na podlagi numeričnih primerjav in ugotovljenih ekoloških razlik uvršča-

mo v novo subasociacijo *Lamio orvalae-Fagetum stellarietosum montanae*.

Pregled novo opisanih sintaksonov je naslednji:

Razred: *Quercu-Fagetea* Br.-Bl. et Vlieger in Vlieger 1937

Red: *Fagetalia sylvaticae* Walas 1933

Zveza: *Aremonio-Fagion* (Ht. 1938) Borhidi in Török, Podani & Borhidi 1989

Asociacija: *Isopyro-Fagetum* Košir 1962

-*scopolietosum carniolicae* subss. nov.

var. *typica*

var. *Campanula latifolia*

var. *Cardamine trifolia*

var. *Helleborus niger*

-*stellarietosum montanae* subas. nov.

var. *typica*

var. *Campanula latifolia*

Isopyro-Fagetum var. *Fraxinus excelsior* prov.

Isopyro-Fagetum var. *Cyclamen purpurascens* prov.

Asociacija: *Lamio orvalae-Fagetum* (Ht. 1938) Borhidi 1963

-*stellarietosum montanae* subass. nov.

Členitev opisanih sestojev v fitogeografskem smislu pa je naslednja:

Isopyro-Fagetum Košir 1962 var. geogr. *Cardamine kitaibelii* Košir (= *Isopyro-Fagetum* Košir 1962 var. *Arum maculatum* Košir 1979), predinarsko območje

Isopyro-Fagetum Košir 1962 var. geogr. *Picea abies* Košir (= *Isopyro-Fagetum* Košir 1962 var. *Adenostyles alliariae* Košir 1979), predalpsko območje

Isopyro-Fagetum Košir 1962 var. geogr. *Cardamine pentaphyllos* var. geogr. nova, severni del dinarskega območja

Lamio orvalae-Fagetum (Ht. 1938) Borhidi 1963 var. geogr. *Cardamine pentaphyllos* Marinček 1995 (predalpsko in severozahodno dinarsko območje)

Raziskani bukovi gozdovi so v glavnem gospodarski, njihov rastni potencial je zaradi precej skrajnih rastišč (veliki skalnatosti, plitvih tal, izposatavljenosti burji) v splošnem majhen in imajo poudarjeno varovalno vlogo. Izjema so gorski bukovi gozdovi v Kalskem gozdu, kjer je v vrtačah ravnost zelo dobra. V sestojih na grebenih je varovalna vloga tudi najpomembnejša in bi morebitna golosečnja povzročila hudo degradacijo. Preučeni gozdovi so tudi rastišče nekaterih zavarovanih in (ali) varstveno pomembnih vrst (ANON. 2002, 2004). Zavarovani, a v splošnem neogroženi, so taksoni *Helleborus niger*, *H. odoratus*, *Cyclamen purpurascens*, *Convallaria majalis*, *Dactylorhiza fuchsii*, *Leucojum vernum*, *Galanthus nivalis*, *Listera ovata*, *Lilium martagon*, *L. bulbiferum*, *Iris graminea*, *Neottia nidus-avis*, *Sedum maximum* in *Platanthera bifolia*. Na Rdečem seznamu sta redka endemita Wraberjeva zlatica (*Ranunculus wraberii*) in Hladnikov volčič (*Scopolia carniolica* f. *hladnikiana*) ter črna čmerika (*Veratrum nigrum*).

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Figure 8 (Slika 8): *Scopolia carniolica* f. *hladnikiana*, Špičasti vrh. Foto (Photo): I. Dakskobler



Figure 9 (Slika 9): *Campanula latifolia*, Javornik, Foto (Photo): I. Dakskobler





Figures 10, 11, 12. Photo: I. Dakskobler
Slike 10, 11, 12. Foto: I. Dakskobler

Figure 10: Southeastern part of the Trnovski gozd plateau
Slika 10: Jugovzhodni del Trnovskega gozda

Figure 11: Stand of the association Isopyro-Fagetum in the early spring (Nanos)
Slika 11: Sestoj asociacije Isopyro-Fagetum zgodaj spomladi (Nanos)

Figure 12: Stand of the association Isopyro-Fagetum in summer (Moščniški hrib)
Slika 12: Sestoj asociacije Isopyro-Fagetum poleti (Moščniški hrib)

| | | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
|--|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Number of relevé (Zaporedna številka popisa) | | 0050/3 | 0050/3 | 0050/3 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0050/3 |
| Quadrant (Kvadrant) | | 0050/3 | 0050/3 | 0050/3 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0150/1 | 0050/3 |
| Coordinate GK Y (D-48) | | 423703 | 423682 | 423734 | 423735 | 428237 | 423120 | 423107 | 418365 | 418400 | 425164 | 423622 | 423620 | 427647 | 427536 | 428026 |
| Coordinate GK X (D-48) | | 423703 | 423682 | 422734 | 423735 | 428237 | 423120 | 423107 | 418365 | 418400 | 425164 | 423622 | 423620 | 427647 | 427536 | 428026 |
| Diagnostic species of the association (Diagnostične vrste asociacije) | | | | | | | | | | | | | | | | |
| FS | <i>Corydalis cava</i> | E1 | + 1 | + 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| FS | <i>Leucojum vernum</i> | E1 | 3 | 1 | 4 | 3 | 4 | 3 | 2 | 2 | 3 | 3 | 1 | 3 | 1 | 1 |
| QF | <i>Anemone ranunculoides</i> | E1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 3 |
| TA | <i>Arum maculatum</i> | E1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| FS | <i>Allium ursinum</i> | E1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| TA | <i>Corydalis solida</i> | E1 | + | + | + | + | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EC | <i>Isopyrum thalictroides</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| QF | <i>Scilla bifolia</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| QF | <i>Gagea lutea</i> | E1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EC | <i>Galanthus nivalis</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Differential species of the geographical variant and the subassociation (Razlikovalnice geografske variante in subasociacije) | | | | | | | | | | | | | | | | |
| AF | <i>Scopolia carniolica</i> | E1 | 3 | 1 | 3 | 2 | 2 | 3 | 4 | 1 | 1 | 4 | 3 | 1 | 3 | 3 |
| AF | <i>Scopolia carniolica f. hladnickiana</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| FS | <i>Cardamine pentaphyllos</i> | E1 | + | 2 | + | 2 | 1 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 1 |
| TA | <i>Lunaria rediviva</i> | E1 | 1 | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| TA | <i>Aconitum degenii subsp. paniculatum</i> | E1 | + | + | + | 1 | 1 | + | + | + | + | + | + | + | + | 1 |
| TA | <i>Ulmus glabra</i> | E3b | + | + | + | 1 | 1 | + | + | + | + | + | + | + | + | + |
| TA | <i>Ulmus glabra</i> | E3a | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| TA | <i>Ulmus glabra</i> | E2a | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| TA | <i>Ulmus glabra</i> | E2b | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| TA | <i>Ulmus glabra</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| FS | <i>Fraxinus excelsior</i> | E3b | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + |
| FS | <i>Fraxinus excelsior</i> | E3a | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| FS | <i>Fraxinus excelsior</i> | E2b | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| FS | <i>Fraxinus excelsior</i> | E2a | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| AF | <i>Rhamnus fallax</i> | E2a | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| AF | <i>Rhamnus fallax</i> | E2b | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| AF | <i>Rhamnus fallax</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| TA | <i>Campanula latifolia</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

| | | Number of relevé (Zaporedna številka popisa) | | | | | | | | | | | | | | | | | | | | | | | |
|-----|------------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| AF | Aremonio-Fagion | | | | | | | | | | | | | | | | | | | | | | | | |
| E1 | <i>Cardamine emeaphyllos</i> | 2 | 1 | 2 | 2 | 1 | . | . | . | 1 | 1 | 1 | 2 | 1 | 1 | 1 | + | 3 | . | . | 1 | 1 | 2 | 2 | 3 |
| E1 | <i>Vicia oroboides</i> | +1 | + | + | . | . | . | . | + | . | . | + | + | + | + | + | + | + | + | . | . | + | . | . | + |
| E1 | <i>Stellaria montana</i> | . | . | 1 | . | + | . | + | 1 | 1 | 1 | + | . | r | + | . | . | . | . | . | + | + | 1 | . | . |
| E1 | <i>Lamium orvala</i> | . | . | 1 | 2 | . | . | . | . | . | 1 | 1 | . | + | + | + | + | . | . | . | . | 2 | . | . | . |
| E1 | <i>Aremunia agrimonoides</i> | 1 | . | + | r | + | . | . | . | . | . | . | + | + | . | . | . | . | . | . | . | + | . | r | . |
| E1 | <i>Omphalodes verna</i> | 1 | . | + | . | . | . | . | . | . | . | . | + | . | + | . | . | . | . | . | . | . | . | . | + |
| E1 | <i>Hacquetia epipactis</i> | 1 | 1 | + | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Cyclamen purpurascens</i> | + | + | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| E1 | <i>Calamintha grandiflora</i> | + | . | . | + | r | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . |
| E1 | <i>Cardamine trifolia</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | 1 | . | . | . | + | . | . | . |
| E1 | <i>Euphorbia carniolica</i> | + | . | . | . | + | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | + |
| E1 | <i>Helleborus niger</i> | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| EC | Erythronio-Carpinion | | | | | | | | | | | | | | | | | | | | | | | | |
| E1 | <i>Crocus vernus subsp. vernus</i> | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| TA | Tilio-Acerion | | | | | | | | | | | | | | | | | | | | | | | | |
| E3b | <i>Acer pseudoplatanus</i> | r | + | + | 1 | + | 1 | 1 | 1 | 1 | 1 | + | . | . | . | . | . | . | . | . | . | . | . | . | 2 |
| E3a | <i>Acer pseudoplatanus</i> | + | 1 | . | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E2b | <i>Acer pseudoplatanus</i> | . | . | . | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E2a | <i>Acer pseudoplatanus</i> | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Acer pseudoplatanus</i> | + | 1 | + | 1 | + | . | . | + | 1 | 1 | 1 | . | . | . | . | . | . | . | . | . | . | . | . | 1 |
| E1 | <i>Geranium robertianum</i> | . | . | + | 1 | + | 1 | + | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | + |
| E1 | <i>Adoxa moschatellina</i> | + | + | + | + | 1 | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| E1 | <i>Polystichum aculeatum</i> | . | . | + | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| E1 | <i>Thalictrum aquilegifolium</i> | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |
| E1 | <i>Aconitum lycoctonum s. lat.</i> | 1 | + | + | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 |
| E1 | <i>Phyllitis scolopendrium</i> | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Aruncus dioicus</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Polystichum x luerssenii</i> | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Polystichum braunii</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Hesperis candida</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E3b | <i>Acer platanoides</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E3a | <i>Acer platanoides</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Acer platanoides</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Dryopteris affinis</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| AI | Alnion incanae | | | | | | | | | | | | | | | | | | | | | | | | |
| E1 | <i>Impatiens noli-tangere</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Solanum dulcamara</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | <i>Festuca gigantea</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| FS | Fagetalia sylvaticae | | | | | | | | | | | | | | | | | | | | | | | | |
| E3b | <i>Fagus sylvatica</i> | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| E3a | <i>Fagus sylvatica</i> | 1 | . | . | 1 | . | 1 | . | . | 1 | + | 1 | . | . | . | . | . | . | . | . | . | . | . | . | 1 |
| E2b | <i>Fagus sylvatica</i> | 1 | + | . | + | + | 1 | . | . | 1 | + | + | + | + | + | + | + | + | . | . | . | . | . | . | 1 |
| E2a | <i>Fagus sylvatica</i> | + | 1 | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + |

| Number of relevé (Zaporedna številka popisa) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | Pr. Fr. | | | |
|---|----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------|---|---|---|
| <i>Mnium thomsonii</i> | E0 | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | |
| <i>Dicranum scoparium</i> | E0 | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 |
| <i>Collema cristatum</i> | E0 | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 |
| <i>Neckera complanata</i> | E0 | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | |
| <i>Atrichum undulatum</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | |
| <i>Porella platyphylla</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | |
| <i>Conocephalum conicum</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | | |
| <i>Mnium marginatum</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | | |
| <i>Homalothecium philippeanum</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | | |

Legend - Legenda

- Relevés 1-24: var. typica
 Relevés 25-39: var. *Campanula latifolia*
 A Limestone - apnenec
 D Dolomite - dolomit
 Re Rendzina - rendzina
 CC Chromic Cambisols - Rjava pokarbonatna tla

| Diagnostic species of the association (Diagnostične vrste asociacije) | Number of relevé (Zaporedna številka popisa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Pr. Fr. | | | | | | |
|---|--|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | | | | | | | |
| FS <i>Allium ursinum</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| TA <i>Arum maculatum</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| QF <i>Anemone ranunculoides</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| FS <i>Corydalis cava</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| TA <i>Corydalis solida</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| QF <i>Scilla bifolia</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| FS <i>Leucojum vernum</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| EC <i>Galanthus nivalis</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| EC <i>Isopyrum thalictroides</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | |
| Differential species of the geographical variant and lower units (razlikovalnice geografskih variant in nižjih enot) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FS <i>Fraxinus excelsior</i> | r | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| E3b | r | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| E3a | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E2b | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E2a | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| FS <i>Fraxinus excelsior</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| FS <i>Fraxinus excelsior</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| AF <i>Scopolia carniolica</i> | 2 | 2 | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| FS <i>Cardamine pentaphyllos</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| TA <i>Lunaria rediviva</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| E3b | r | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| TA <i>Ulmus glabra</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| TA <i>Ulmus glabra</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| TA <i>Aconitum degenerii</i> subsp. <i>paniculatum</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| AF <i>Rhamnus fallax</i> | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| AF <i>Rhamnus fallax</i> | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| AF <i>Rhamnus fallax</i> | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| TA <i>Campanula latifolia</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| AF <i>Arenario-Fagion</i> | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E1 | 2 | + | 1 | 2 | 2 | 1 | 1 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | |
| E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| E1 | + | + | 1 | + | + | 1 | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E1 | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| E1 | . | 1 | . | + | r | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | Pr. Fr. | | | | | | |
|--|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------|-----|----|----|----|----|----|
| Number of relevé (Zaporedna številka popisa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Stellaria montana</i> | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 1 | 1 | 12 | 33 | | | | |
| <i>Arenonia agrimonoides</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | 25 | | | |
| <i>Euphorbia carnolica</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 | 19 | | | |
| <i>Hacquetia epipactis</i> | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 7 | 19 | | | |
| <i>Knautia drymeia</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 6 | | | |
| <i>Ranunculus wraberii</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 6 | | | |
| EC Erythronio-Carpinion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Crocus vernus</i> subsp. <i>vernus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | 14 | | | |
| <i>Primula vulgaris</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 11 | | | |
| <i>Helleborus odoratus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | |
| TA Tilio-Acerion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Acer pseudoplatanus</i> | | | | 1 | 1 | + | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | r | + | 4 | 24 | 67 | | |
| <i>Acer pseudoplatanus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | 22 | | |
| <i>Acer pseudoplatanus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 11 | | |
| <i>Acer pseudoplatanus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | 17 | | |
| <i>Acer pseudoplatanus</i> | | | 1 | + | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | 42 | | |
| <i>Adoxa moschatellina</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 18 | 50 | | |
| <i>Geranium robertianum</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18 | 50 | | |
| <i>Polystichum aculeatum</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 16 | 44 | | |
| <i>Thalictrum aquilegifolium</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 11 | 31 | | | |
| <i>Aconitum lycoctonum</i> s. lat. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 10 | 28 | | |
| <i>Aruncus dioicus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 | 14 | | | |
| <i>Hesperis candida</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 6 | | |
| <i>Tilia platyphyllos</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 6 | | |
| <i>Phyllitis scolopendrium</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 6 | | |
| <i>Cardamine flexuosa</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | |
| <i>Polystichum x bicknellii</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | |
| AI Alnion incanae | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Listera ovata</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | |
| <i>Festuca gigantea</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | |
| FS Fagetalia sylvaticae | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Fagus sylvatica</i> | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 3 | 36 | 100 | | | | | |
| <i>Fagus sylvatica</i> | | | | | 1 | + | | 1 | + | | | 1 | + | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 13 | 36 | |
| <i>Fagus sylvatica</i> | 2 | + | 1 | + | 1 | + | | + | | | | + | + | | 1 | + | | | | | | | | | | | | | | | | | | | | | | | | 21 | 58 | | |
| <i>Fagus sylvatica</i> | 1 | + | + | + | + | + | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | 42 | | |
| <i>Fagus sylvatica</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | 42 | | |
| <i>Cardamin bulbifera</i> | 1 | 1 | 1 | + | | | | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 33 | 92 | | | |
| <i>Mercurialis perennis</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 33 | 92 |
| <i>Hieracium sphondylium</i> | 1 | 1 | 1 | + | + | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31 | 86 | | |
| <i>Dryopteris filix-mas</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 83 | | |
| <i>Daphne mezereum</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 83 | | |
| <i>Galium odoratum</i> | 1 | + | 1 | 1 | + | + | | 2 | 2 | + | 1 | 2 | 2 | 1 | 2 | 2 | + | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 26 | 72 | | |
| <i>Lonicera alpigena</i> | 1 | + | 1 | 1 | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 26 | 72 | | |
| <i>Paris quadrifolia</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | 67 | |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | Pr. | Fr. | | | |
|---|-----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|----|----|----|
| Number of relevé (Zaporedna številka popisů) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | Pr. | Fr. | | | |
| <i>Actaea spicata</i> | 1 | + | . | + | + | 1 | + | 1 | 1 | + | + | 1 | + | . | . | 1 | . | + | 1 | + | + | + | . | + | . | . | . | + | . | . | . | . | . | . | . | . | 23 | 64 | | | |
| <i>Mycelis muralis</i> | E1 | + | . | + | + | + | 1 | + | . | + | 1 | . | . | . | 1 | + | + | + | + | + | 1 | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 22 | 61 | | |
| <i>Galeobdolon flavidum</i> | E1 | . | . | . | + | 1 | 1 | + | + | . | . | . | + | 1 | + | + | + | . | 1 | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 20 | 56 | | |
| <i>Lilium martagon</i> | E1 | + | + | + | + | + | + | + | + | . | . | . | + | 1 | 1 | + | . | . | . | 1 | 1 | 1 | + | 1 | + | + | + | + | + | . | . | . | . | . | . | . | . | 19 | 53 | | |
| <i>Lathyrus vernus</i> | E1 | + | + | + | . | . | . | 1 | + | + | + | + | + | . | . | . | + | + | 1 | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 18 | 50 | | |
| <i>Polygonatum multiflorum</i> | E1 | + | . | . | . | + | . | 1 | 1 | 1 | 1 | 1 | 1 | . | . | . | . | . | . | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 18 | 50 | | |
| <i>Symphytum tuberosum</i> | E1 | . | . | . | . | . | . | + | + | + | 1 | . | . | . | . | . | . | . | 1 | + | + | + | + | + | + | + | + | + | + | . | . | . | . | . | . | . | . | 16 | 44 | | |
| <i>Euphorbia amygdaloides</i> | E1 | 1 | + | + | 1 | + | + | + | + | + | + | . | . | . | . | . | . | . | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 15 | 42 | | |
| <i>Salvia glutinosa</i> | E1 | + | + | . | . | . | . | + | + | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 14 | 39 | | |
| <i>Campanula trachelium</i> | E1 | + | + | . | . | . | . | + | + | + | + | . | 1 | + | + | + | 1 | . | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 14 | 39 | | |
| <i>Prenanthes purpurea</i> | E1 | + | + | . | . | . | . | + | + | + | + | . | 1 | . | . | . | . | . | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 11 | 31 | | |
| <i>Poa nemoralis</i> | E1 | + | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | | |
| <i>Sambucus nigra</i> | E2b | . | . | . | . | . | . | . | . | . | . | . | r | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 | 28 | | |
| <i>Sambucus nigra</i> | E2a | . | . | . | . | . | . | + | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 | |
| <i>Sambucus nigra</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 | | |
| <i>Scrophularia nodosa</i> | E1 | . | . | . | . | . | . | + | + | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 | 28 | | |
| <i>Asarum europaeum subsp. caucasicum</i> | E1 | . | . | . | . | . | . | 1 | + | . | + | 1 | . | . | . | . | 1 | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 9 | 25 | | |
| <i>Neottia nidus-avis</i> | E1 | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 9 | 25 | | |
| <i>Sonica europaea</i> | E1 | . | . | . | r | + | . | + | . | . | . | . | + | . | . | . | . | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 9 | 25 | | |
| <i>Galeobdolon montanum</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 7 | 19 | |
| <i>Phyteuma spicatum subsp. coeruleum</i> | E1 | . | + | . | . | . | . | + | + | + | + | + | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 7 | 19 | |
| <i>Epilobium montanum</i> | E1 | + | + | . | . | . | . | + | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 5 | 14 | |
| <i>Euphorbia dulcis</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 5 | 14 | |
| <i>Festuca altissima</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 5 | 14 | |
| <i>Melica nutans</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 | |
| <i>Carex sylvatica</i> | E1 | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 | |
| <i>Galium laevigatum</i> | E1 | . | . | . | . | . | . | + | . | + | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 3 | 8 | |
| <i>Ranunculus lanuginosus</i> | E1 | . | . | . | . | . | . | + | . | + | . | . | . | . | . | . | . | . | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 3 | 8 | |
| <i>Brachypodium sylvaticum</i> | E1 | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 6 | |
| <i>Cephalanthera damasonium</i> | E1 | . | . | . | . | . | . | + | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 6 | |
| <i>Prunus avium</i> | E3b | . | . | . | . | . | . | . | + | . | . | r | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 6 | |
| <i>Prunus avium</i> | E2a | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 6 | |
| <i>Cardamine impatiens</i> | E1 | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 6 | |
| <i>Epipactis helleborine</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | |
| <i>Viola reichenbachiana</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | |
| <i>Myosotis sylvatica</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | |
| QP Quercetalia pubescenti- petraeeae | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 |
| <i>Tanacetum corymbosum (subsp. clusii?)</i> | E1 | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 |
| <i>Arabis turrita</i> | E1 | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 |
| <i>Convallaria majalis</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 11 |

Table 3 (Preglednica 3) : *Isopyro-Fagetum stellarietosum* - Trnovski gozd

| Number of relevé (Zaporedna številka popisa) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | |
|--|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---|---|-----|
| Database number of relevé (Delovna številka popisa) | 248174 | 248175 | 248176 | 248177 | 248178 | 248179 | 248180 | 248181 | 248182 | | | |
| Elevation in m (Nadmorska višina v m) | 1260 | 1260 | 1280 | 1300 | 1320 | 1340 | 1360 | 1350 | 1345 | | | |
| Aspect (Lega) | SW | SW | SW | SW | SW | W | SW | S | SE | | | |
| Slope in degrees (Nagib v stopinjah) | 20 | 30 | 25 | 20 | 25 | 25 | 5 | 15 | 30 | | | |
| Parent material (Matična podlaga) | DA | DA | DA | DA | DA | DA | DA | DA | DA | | | |
| Soil (Tla) | Re | Re | Re | Re | Re | Re | Re | Re | Re | | | |
| Stoniness in % (Kamnitost v %) | 20 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 20 | | | |
| Cover in % (Zastiranje v %): | | | | | | | | | | | | |
| Upper tree layer (Zgornja drevesna plast) | E3b | 90 | 90 | 90 | 90 | 90 | 85 | 90 | 90 | | | |
| Lower tree layer (Spodnja drevesna plast) | E3a | . | . | . | . | . | . | . | . | | | |
| Shrub layer (Grmovna plast) | E2 | 1 | 1 | 1 | 1 | 1 | 5 | 1 | 1 | | | |
| Herb layer (Zeliščna plast) | E1 | 70 | 80 | 80 | 80 | 70 | 80 | 80 | 80 | | | |
| Moss layer (Mahovna plast) | E0 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | | |
| Maximum diameter of trees (Največji prsni premer dreves) | cm | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 | | | |
| Maximum height of tress (Največja drevesna višina) | m | 18 | 19 | 20 | 19 | 18 | 16 | 10 | 15 | | | |
| Number of species (Število vrst) | | 37 | 35 | 35 | 33 | 32 | 33 | 49 | 43 | | | |
| Relevé area (Velikost popisne ploskve) | m ² | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | | | |
| Date of taking relevé (Datum popisa) | | 5/4/2013 | 5/4/2013 | 5/4/2013 | 5/4/2013 | 5/4/2013 | 5/4/2013 | 5/4/2013 | 5/4/2013 | | | |
| Locality (Nahajališče) | | Moščeniški hrib | Moščeniški hrib | Moščeniški hrib | Moščeniški hrib | Moščeniški hrib | Moščeniški hrib | Moščeniški hrib | Moščeniški hrib | | | |
| Quadrant (Kvadrant) | | 0049/1 | 0049/1 | 0049/1 | 0049/1 | 0049/1 | 0049/1 | 0049/1 | 0049/1 | | | |
| Coordinate GK Y (D-48) | m | 413128 | 413141 | 413151 | 413213 | 413258 | 413286 | 413320 | 413315 | | | |
| Coordinate GK X (D-48) | m | 5091639 | 5091620 | 5091671 | 5091683 | 5091721 | 5091774 | 5091802 | 5091771 | | | |
| Diagnostic species of the association (Diagnostične vrste asociacije) | | | | | | | | | | | | |
| FS <i>Corydalis cava</i> | E1 | 1 | 4 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 9 | 100 |
| TA <i>Arum maculatum</i> | E1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 9 | 100 |
| EC <i>Galanthus nivalis</i> | E1 | 2 | + | 1 | 2 | 3 | 2 | 1 | 1 | + | 9 | 100 |
| QF <i>Gagea lutea</i> | E1 | 1 | + | + | 1 | + | + | 1 | + | 1 | 9 | 100 |
| TA <i>Corydalis solida</i> | E1 | . | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 8 | 89 |
| QF <i>Anemone ranunculoides</i> | E1 | + | . | . | . | + | . | . | . | + | 3 | 33 |
| Differential species of the geographical variant (Razlikovalnice geografske variante) | | | | | | | | | | | | |
| TA <i>Campanula latifolia</i> | E1 | . | . | . | . | . | . | 1 | 1 | 1 | 3 | 33 |
| TA <i>Lunaria rediviva</i> | E1 | . | 2 | . | . | . | . | . | . | . | 1 | 11 |
| TA <i>Aconitum degenii subsp. paniculatum</i> | E1 | . | . | . | . | . | . | + | . | . | 1 | 11 |
| Differential species of the subassociation (Razlikovalne vrste subasociacije) | | | | | | | | | | | | |
| AF <i>Stellaria montana</i> | E1 | + | 1 | + | + | 1 | 1 | + | 1 | 1 | 9 | 100 |
| GU <i>Urtica dioica</i> | E1 | . | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 8 | 89 |
| Differential species of the variant (Razlikovalne vrste variante) | | | | | | | | | | | | |
| <i>Aconitum lycoctonum s. lat.</i> | E1 | . | . | . | . | . | . | 1 | + | 1 | 3 | 33 |
| <i>Doronicum austriacum</i> | E1 | . | . | . | . | . | . | 3 | + | + | 3 | 33 |
| AF <i>Aremonio-Fagion</i> | | | | | | | | | | | | |
| <i>Cardamine enneaphyllos</i> | E1 | 3 | 1 | 3 | 2 | 2 | 2 | . | 2 | + | 8 | 89 |
| <i>Aremonia agrimonoides</i> | E1 | . | r | + | + | . | . | . | . | . | 3 | 33 |
| <i>Lamium orvala</i> | E1 | + | 2 | . | . | . | . | . | . | . | 2 | 22 |
| <i>Calamintha grandiflora</i> | E1 | + | . | . | . | . | . | . | . | . | 1 | 11 |
| <i>Cyclamen purpurascens</i> | E1 | . | . | + | . | . | . | . | . | . | 1 | 11 |
| TA <i>Tilio-Acerion</i> | | | | | | | | | | | | |
| <i>Acer pseudoplatanus</i> | E3b | 1 | 4 | 2 | 4 | 4 | + | 1 | 1 | + | 9 | 100 |

| Number of relevé (Zaporedna številka popisa) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Pr. | Fr. | |
|--|---|-----|---|---|---|---|---|---|---|---|-----|-----|-----|
| | <i>Acer pseudoplatanus</i> | E3a | . | . | . | . | + | + | . | . | 2 | 22 | |
| | <i>Acer pseudoplatanus</i> | E2b | . | . | . | . | + | . | . | . | 1 | 11 | |
| | <i>Acer pseudoplatanus</i> | E1 | + | . | . | . | + | + | + | . | 5 | 56 | |
| | <i>Adoxa moschatellina</i> | E1 | + | + | 1 | . | + | 1 | 2 | 1 | 2 | 8 | 89 |
| | <i>Geranium robertianum</i> | E1 | . | + | + | + | + | . | . | + | 5 | 56 | |
| | <i>Phyllitis scolopendrium</i> | E1 | . | . | . | + | + | + | . | . | 3 | 33 | |
| | <i>Polystichum aculeatum</i> | E1 | . | . | . | . | + | + | + | . | 3 | 33 | |
| | <i>Cardamine flexuosa</i> | E1 | . | . | . | . | . | r | . | . | 1 | 11 | |
| AI | <i>Chrysosplenium alternifolium</i> | E1 | . | . | . | . | . | . | + | . | 1 | 11 | |
| FS | Fagetalia sylvaticae | | | | | | | | | | | | |
| | <i>Fagus sylvatica</i> | E3b | 5 | 3 | 4 | 3 | 3 | 5 | 5 | 5 | 9 | 100 | |
| | <i>Fagus sylvatica</i> | E3a | + | + | + | + | 1 | . | . | . | + | 6 | 67 |
| | <i>Fagus sylvatica</i> | E2b | + | + | . | . | + | . | + | . | 5 | 56 | |
| | <i>Fagus sylvatica</i> | E2a | + | + | . | . | . | . | . | . | 2 | 22 | |
| | <i>Fagus sylvatica</i> | E1 | . | . | . | + | + | + | + | + | 5 | 56 | |
| | <i>Galium odoratum</i> | E1 | 1 | 1 | 2 | 3 | 1 | 1 | 1 | 3 | + | 9 | 100 |
| | <i>Cardamine bulbifera</i> | E1 | 2 | 2 | . | 2 | 1 | 2 | + | 1 | + | 8 | 89 |
| | <i>Dryopteris filix-mas</i> | E1 | 1 | 1 | + | 1 | 1 | . | 1 | 1 | 1 | 8 | 89 |
| | <i>Actaea spicata</i> | E1 | + | + | + | . | + | . | + | + | + | 7 | 78 |
| | <i>Cardamine impatiens</i> | E1 | . | . | + | + | 1 | 1 | 1 | + | 1 | 7 | 78 |
| | <i>Myosotis sylvatica</i> | E1 | . | + | + | + | + | . | 1 | + | 1 | 7 | 78 |
| | <i>Paris quadrifolia</i> | E1 | . | + | 1 | 1 | 1 | . | 1 | 1 | 1 | 7 | 78 |
| | <i>Mycelis muralis</i> | E1 | + | + | + | . | . | + | . | + | + | 6 | 67 |
| | <i>Galeobdolon flavidum</i> | E1 | + | . | + | . | . | + | . | + | + | 5 | 56 |
| | <i>Lilium martagon</i> | E1 | + | r | . | . | . | + | + | . | + | 5 | 56 |
| | <i>Scrophularia nodosa</i> | E1 | . | + | + | . | . | . | 1 | 1 | 1 | 5 | 56 |
| | <i>Daphne mezereum</i> | E2a | . | . | + | . | . | + | . | + | + | 4 | 44 |
| | <i>Epilobium montanum</i> | E1 | . | + | . | . | . | . | + | + | + | 4 | 44 |
| | <i>Mercurialis perennis</i> | E1 | . | . | . | + | . | . | 1 | + | + | 4 | 44 |
| | <i>Salvia glutinosa</i> | E1 | + | + | . | . | . | . | . | + | + | 4 | 44 |
| | <i>Heracleum sphondylium</i> | E1 | . | . | . | . | . | + | 1 | + | . | 3 | 33 |
| | <i>Lathyrus vernus</i> | E1 | 1 | + | + | . | . | . | . | . | . | 3 | 33 |
| | <i>Poa nemoralis</i> | E1 | . | . | . | . | . | . | + | . | + | 2 | 22 |
| | <i>Polygonatum multiflorum</i> | E1 | . | . | . | + | . | . | . | . | . | 1 | 11 |
| AF | Quercus-Fagetea | | | | | | | | | | | | |
| | <i>Anemone nemorosa</i> | E1 | 1 | + | + | 1 | + | 1 | + | 1 | + | 9 | 100 |
| | <i>Dactylorhiza fuchsii</i> | E1 | . | . | . | . | . | r | . | . | . | 1 | 11 |
| VP | Vaccinio-Piceetea | | | | | | | | | | | | |
| | <i>Luzula luzuloides</i> | E1 | + | . | + | + | . | + | 1 | + | + | 7 | 7,8 |
| | <i>Oxalis acetosella</i> | E1 | + | . | . | + | . | + | + | . | + | 5 | 56 |
| | <i>Maianthemum bifolium</i> | E1 | + | . | 1 | + | . | . | . | . | . | 3 | 33 |
| | <i>Circaea alpina</i> | E1 | . | . | . | . | + | + | . | . | . | 2 | 22 |
| SSC | Sambuco-Salicion capreae | | | | | | | | | | | | |
| | <i>Sambucus racemosa</i> | E2 | . | . | . | . | . | + | . | + | + | 3 | 33 |
| | <i>Sorbus aucuparia</i> | E3b | + | . | . | . | . | . | . | . | . | 1 | 11 |
| | <i>Sorbus aucuparia</i> | E1 | + | . | . | . | . | . | + | . | . | 2 | 22 |
| MuA | Mulgedio-Aconitetea | | | | | | | | | | | | |
| | <i>Senecio ovatus</i> | E1 | 1 | + | 1 | + | + | + | 1 | 1 | 1 | 9 | 100 |
| | <i>Veratrum album subsp. lobelianum</i> | E1 | . | . | 1 | 3 | 1 | + | 1 | 1 | 2 | 7 | 78 |
| | <i>Milium effusum</i> | E1 | + | . | 1 | + | + | . | + | . | + | 6 | 67 |
| | <i>Polygonatum verticillatum</i> | E1 | + | + | + | + | . | . | . | + | 1 | 6 | 67 |
| | <i>Silene dioica</i> | E1 | . | . | . | . | . | . | + | . | + | 2 | 22 |
| | <i>Ranunculus platanifolius</i> | E1 | + | . | . | . | . | . | . | . | . | 1 | 11 |
| | <i>Athyrium filix-femina</i> | E1 | . | . | . | . | + | . | . | . | . | 1 | 11 |
| | <i>Adenostyles alliariae</i> | E1 | . | . | . | . | . | . | + | . | . | 1 | 11 |
| | <i>Myrrhis odorata</i> | E1 | . | . | . | . | . | . | + | . | . | 1 | 11 |
| | <i>Rumex arifolius</i> | E1 | . | . | . | . | . | . | + | . | . | 1 | 11 |
| | <i>Saxifraga rotundifolia</i> | E1 | . | . | . | . | . | . | + | . | . | 1 | 11 |
| EA | Epilobietea angustifolii | | | | | | | | | | | | |
| | <i>Rubus idaeus</i> | E2a | + | + | . | . | + | . | + | + | . | 5 | 56 |
| | <i>Galeopsis speciosa</i> | E1 | . | . | . | . | . | . | + | + | + | 3 | 33 |

| Number of relevé (Zaporedna številka popisa) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Pr. | Fr. |
|--|--|----|---|---|---|---|---|---|---|---|-----|-----|
| MA | Molinio-Arrhenatheretea | | | | | | | | | | | |
| | <i>Taraxacum officinale</i> | E1 | . | . | . | . | . | + | + | + | 3 | 33 |
| TR | Thlaspietea rotundifolii | | | | | | | | | | | |
| | <i>Adenostyles glabra</i> | E1 | + | . | + | + | . | . | + | . | 4 | 44 |
| AT | Asplenietea trichomanis | | | | | | | | | | | |
| | <i>Cystopteris fragilis</i> | E1 | . | . | . | . | . | . | . | + | 1 | 11 |
| MI | Mosses and lichens (Mahovi in lišaji) | | | | | | | | | | | |
| | <i>Pseudoleskeella catenulata</i> | E0 | + | + | + | + | + | + | . | + | 8 | 89 |
| | <i>Schistidium apocarpum</i> | E0 | 1 | 1 | + | + | + | + | . | + | 8 | 89 |
| | <i>Homalothecium lutescens</i> | E0 | + | + | . | + | + | + | + | . | 7 | 78 |
| | <i>Isothecium alopecuroides</i> | E0 | + | . | . | . | . | + | + | + | 4 | 44 |
| | <i>Ctenidium molluscum</i> | E0 | + | + | . | . | . | . | . | . | 2 | 22 |
| | <i>Homalothecium philippeanum</i> | E0 | . | . | . | . | . | + | . | + | 2 | 22 |
| | <i>Tortella tortuosa</i> | E0 | . | . | . | . | . | + | . | . | 1 | 11 |

Legend - Legenda

 Relevés 1-6: *Isopyro-Fagetum stellarietosum* var. *typica*

 Relevés 7-9: *Isopyro-Fagetum stellarietosum* var. *Campanula latifolia*

A Limestone - apnenec

D Dolomite - dolomit

Re Rendzina - rendzina

**Table 4: Synoptic table of the syntaxa *Isopyro-Fagetum*, *Stellario montanae-Fagetum* and *Ranunculo platentifolii-Fagetum*
 Preglednica 4: Sintezna preglednica sintaksonov *Isopyro-Fagetum*, *Stellario montanae-Fagetum* in *Ranunculo platentifolii-Fagetum***

| Successive number (Zaporedna številka) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|------------------------|---------------------|-----------|------------------------|------------------|----------------------------|-------------|----------------|--------|------------|--------------|----------------|
| Number of relevés (Število popisov) | 24 | 15 | 7 | 12 | 12 | 5 | 28 | 19 | 16 | 16 | 20 | 9 |
| Area (Območje) | Križna gora - Javornik | Javornik - Črni vrh | Marni vrh | Črni vrh - Križna gora | Nanos - Javornik | Križna gora - Veliki kamen | IF-AM-Košir | RPFST-Dinaridi | SMF-TG | IFAA-Košir | RPFIT-Menina | Moščenški hrib |
| Sign for syntaxa (Oznaka sintaksonov) | IFsc1 | IFsc2 | IFct | IFhn | IFfe | IFcp | IFam | RpFsn | SmF | IFaa | RpFit | IFsm |
| Author (Avtor) | ID | ID | ID | ID | ID | ID | ŽK | LM | MZ | ŽK | LM | ID |

Diagnostic species of the association *Isopyro-Fagetum* (Diagnostične vrste asociacije *Isopyro-Fagetum*)

| | | | | | | | | | | | | | |
|----------------------------------|----|----|-----|----|----|----|-----|-----|----|----|-----|----|-----|
| FS <i>Corydalis cava</i> | E1 | 96 | 100 | 43 | 83 | 25 | 60 | 96 | 5 | 26 | 88 | 40 | 100 |
| FS <i>Leucojum vernum</i> | E1 | 92 | 100 | 29 | 25 | 17 | 60 | 21 | . | 6 | 56 | 65 | . |
| QF <i>Anemone ranunculoides</i> | E1 | 83 | 60 | . | 92 | 75 | . | 32 | . | . | 69 | 25 | 33 |
| TA <i>Arum maculatum</i> | E1 | 75 | 60 | 43 | 92 | 17 | 100 | 100 | 11 | . | . | . | 100 |
| FS <i>Allium ursinum</i> | E1 | 71 | 47 | . | 83 | 92 | 20 | 29 | . | . | . | 15 | . |
| TA <i>Corydalis solida</i> | E1 | 58 | 60 | 14 | 33 | 58 | 60 | 11 | . | . | 94 | 5 | 89 |
| QF <i>Gagea lutea</i> | E1 | 54 | 40 | . | 42 | 33 | 20 | 11 | . | . | 13 | . | 100 |
| QF <i>Scilla bifolia</i> | E1 | 54 | 47 | 14 | 75 | 8 | . | 57 | . | . | 94 | 20 | . |
| TA <i>Isopyrum thalictroides</i> | E1 | 38 | 80 | 14 | 42 | 8 | . | 89 | 5 | . | 100 | 95 | . |
| EC <i>Galanthus nivalis</i> | E1 | 8 | . | . | 33 | 50 | . | 61 | . | . | . | . | 100 |
| TA <i>Scrophularia vernalis</i> | E1 | . | . | . | . | . | . | 18 | . | . | 25 | . | . |

Differential species of the geographical variants (Razlikovalnice geografskih variant)

| | | | | | | | | | | | | | |
|---|----|-----|-----|-----|----|----|----|----|---|----|---|---|----|
| AF <i>Scopolia carniolica</i> | E1 | 100 | 100 | 71 | 50 | 17 | . | . | . | . | . | . | . |
| FS <i>Cardamina pentaphyllos</i> | E1 | 96 | 93 | 57 | 25 | 8 | 60 | . | . | 25 | . | . | . |
| TA <i>Lunaria rediviva</i> | E1 | 71 | 100 | 57 | . | 50 | 20 | . | 5 | 19 | . | 5 | 11 |
| FS <i>Fraxinus excelsior</i> | E3 | 38 | 33 | 296 | 42 | 75 | 40 | . | . | . | . | . | . |
| FS <i>Fraxinus excelsior</i> | E2 | 21 | 20 | . | 17 | 33 | . | . | . | . | . | 5 | . |
| FS <i>Fraxinus excelsior</i> | E1 | 46 | 7 | 143 | 33 | 25 | . | . | . | . | . | . | . |
| TA <i>Ulmus glabra</i> | E3 | 46 | 33 | 43 | 25 | . | 60 | . | . | . | . | . | . |
| TA <i>Ulmus glabra</i> | E2 | 13 | 13 | . | . | . | . | . | . | . | . | . | . |
| TA <i>Ulmus glabra</i> | E1 | 21 | 7 | 29 | 8 | . | 20 | . | . | . | . | . | . |
| AF <i>Rhamnus fallax</i> | E2 | 33 | 50 | 71 | 17 | . | 20 | . | 5 | . | . | . | . |
| TA <i>Campanula latifolia</i> | E1 | 13 | 53 | . | 8 | . | . | . | . | . | . | . | 33 |
| AF <i>Cardamine kitaibelii</i> (<i>C. polyphylla</i>) | E1 | . | . | . | . | . | . | 68 | . | . | . | . | . |
| AF <i>Cardamine waldsteinii</i> (<i>C. savensis</i>) | E1 | . | . | . | . | . | . | 50 | . | . | . | . | . |

AF *Aremonio-Fagion*

| | | | | | | | | | | | | | |
|--|----|----|----|-----|-----|----|-----|----|----|----|-----|----|-----|
| <i>Cardamine trifolia</i> | E1 | 13 | 13 | 100 | 50 | 58 | 20 | 25 | 58 | 81 | 100 | 95 | 0 |
| <i>Cardamine enneaphyllos</i> | E1 | 83 | 80 | 100 | 100 | 92 | 100 | 75 | 89 | 31 | 100 | 95 | 89 |
| <i>Vicia oroboides</i> | E1 | 75 | 60 | 14 | 58 | 67 | . | 11 | . | 19 | 8 | 37 | . |
| <i>Stellaria montana</i> | E1 | 50 | 47 | . | 8 | 58 | 80 | 11 | . | 81 | 31 | 60 | 100 |
| <i>Aremonia agrimonoides</i> | E1 | 38 | . | 14 | 50 | 8 | 20 | 4 | 58 | 38 | 31 | 85 | 33 |
| <i>Lamium orvala</i> | E1 | 33 | 27 | 43 | 92 | 67 | 20 | . | 47 | 56 | . | 5 | 22 |
| <i>Cyclamen purpurascens</i> | E1 | 25 | 7 | 14 | 83 | 8 | 100 | 18 | . | 19 | . | . | 11 |
| <i>Omphalodes verna</i> | E1 | 21 | 27 | 57 | 75 | . | . | 11 | . | . | . | 5 | . |
| <i>Calamintha grandiflora</i> | E1 | 21 | 7 | 43 | 50 | 25 | . | . | 47 | . | . | 10 | 11 |
| <i>Euphorbia carniolica</i> | E1 | 17 | . | . | 42 | 8 | 20 | . | 5 | . | . | 5 | . |
| <i>Hacquetia epipactis</i> | E1 | 17 | 27 | . | 33 | 25 | . | . | 5 | . | 6 | . | . |
| <i>Helleborus niger</i> | E1 | 17 | . | . | 83 | 25 | . | 7 | . | . | 69 | 40 | . |
| <i>Scopolia carniolica</i> f. <i>hladnikiana</i> | E1 | 4 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Knautia drymeia</i> | E1 | . | . | . | . | 17 | . | . | . | . | . | . | . |
| <i>Ranunculus wraberii</i> | E1 | . | . | . | . | 17 | . | . | . | . | . | . | . |

EC *Erythronio-Carpinion*

| | | | | | | | | | | | | | |
|---|----|---|---|---|----|---|----|----|---|---|---|----|---|
| <i>Crocus vernus</i> subsp. <i>vernus</i> | E1 | 4 | . | . | 33 | . | 20 | . | . | . | . | . | . |
| <i>Primula vulgaris</i> | E1 | . | . | . | 33 | . | . | . | . | . | . | . | . |
| <i>Helleborus odoratus</i> | E1 | . | . | . | 8 | . | . | . | 5 | . | 6 | 20 | . |
| <i>Helleborus dumetorum</i> | E1 | . | . | . | . | . | . | 14 | . | . | . | . | . |

| Successive number (Zaporedna številka) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
|---|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|
| TA <i>Tilio-Acerion</i> | | | | | | | | | | | | | |
| <i>Acer pseudoplatanus</i> | E3 | 88 | 100 | 71 | 42 | 83 | 80 | 75 | 74 | 100 | . | 5 | 100 |
| <i>Acer pseudoplatanus</i> | E2 | 46 | 40 | . | 42 | 25 | . | 89 | 58 | 75 | . | 35 | 11 |
| <i>Acer pseudoplatanus</i> | E1 | 75 | 47 | 86 | 33 | 33 | 20 | . | 63 | 31 | . | . | 56 |
| <i>Geranium robertianum</i> | E1 | 83 | 53 | 43 | 42 | 42 | 100 | 7 | 32 | 56 | 25 | 10 | 56 |
| <i>Aconitum degenii</i> subsp. <i>paniculatum</i> | E1 | 75 | 53 | 433 | . | 17 | . | . | . | 6 | . | . | 11 |
| <i>Adoxa moschatellina</i> | E1 | 75 | 60 | 43 | 50 | 42 | 80 | 54 | 42 | 44 | 81 | 35 | 89 |
| <i>Aconitum lycoctonum</i> s. lat. | E1 | 54 | 33 | 57 | 42 | . | 20 | . | 21 | 25 | . | . | 33 |
| <i>Polystichum aculeatum</i> | E1 | 54 | 73 | 100 | 50 | 8 | 40 | 21 | 26 | 81 | 63 | 25 | 33 |
| <i>Thalictrum aquilegifolium</i> | E1 | 46 | 60 | 29 | 17 | 58 | . | . | 5 | 13 | . | 10 | . |
| <i>Aruncus dioicus</i> | E1 | 13 | 33 | 43 | . | 17 | . | . | 5 | 25 | . | . | . |
| <i>Phyllitis scolopendrium</i> | E1 | 13 | 47 | 14 | . | . | 20 | 4 | 11 | 13 | . | . | 33 |
| <i>Polystichum x luerssenii</i> | E1 | 13 | 33 | . | . | . | . | . | . | . | . | . | . |
| <i>Acer platanoides</i> | E3 | 4 | . | . | . | . | . | 11 | . | . | . | . | . |
| <i>Acer platanoides</i> | E1 | 8 | . | . | . | . | . | 7 | . | . | . | . | . |
| <i>Hesperis candida</i> | E1 | 8 | 7 | 14 | . | 8 | . | . | . | . | . | . | . |
| <i>Dryopteris affinis</i> | E1 | 8 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Polystichum braunii</i> | E1 | 4 | 40 | . | . | . | . | . | . | . | . | . | . |
| <i>Cardamine flexuosa</i> | E1 | . | . | 14 | . | . | . | . | . | . | . | . | 11 |
| <i>Tilia platyphyllos</i> | E3 | . | . | 14 | . | 8 | . | . | . | . | . | . | . |
| <i>Polystichum x bicknellii</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | . |
| <i>Scrophularia vernalis</i> | E1 | . | . | . | . | . | . | 18 | . | . | 25 | . | . |
| <i>Euonymus latifolia</i> | E2 | . | . | . | . | . | . | 4 | . | . | . | . | . |
| AI <i>Almion incanae</i> | | | | | | | | | | | | | |
| <i>Solanum dulcamara</i> | E1 | 13 | . | . | . | . | . | . | . | . | . | . | . |
| <i>Impatiens noli-tangere</i> | E1 | . | 27 | . | . | . | . | 7 | 16 | 6 | . | . | . |
| <i>Festuca gigantea</i> | E1 | . | 7 | . | . | 8 | . | . | . | . | . | . | . |
| <i>Listera ovata</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | . |
| <i>Glechoma hirsuta</i> | E1 | . | . | . | . | . | . | 21 | . | . | . | . | . |
| <i>Chrysosplenium alternifolium</i> | E1 | . | . | . | . | . | . | 14 | 21 | 50 | 69 | 30 | 11 |
| FS <i>Fagetalia sylvaticae</i> | | | | | | | | | | | | | |
| <i>Fagus sylvatica</i> | E3 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 95 | 100 |
| <i>Fagus sylvatica</i> | E2 | 88 | 80 | 86 | 83 | 67 | 20 | 89 | 95 | 94 | 100 | 50 | 56 |
| <i>Fagus sylvatica</i> | E1 | 46 | 13 | 100 | 25 | 33 | 20 | . | 47 | 13 | . | 30 | 56 |
| <i>Mercurialis perennis</i> | E1 | 100 | 80 | 100 | 100 | 75 | 100 | 32 | 21 | 31 | 25 | 10 | 44 |
| <i>Dryopteris filix-mas</i> | E1 | 100 | 93 | 100 | 100 | 67 | 80 | 54 | 84 | 100 | 38 | 80 | 89 |
| <i>Galium odoratum</i> | E1 | 96 | 80 | 71 | 83 | 50 | 100 | 100 | 74 | 81 | 50 | 90 | 100 |
| <i>Daphne mezereum</i> | E2 | 88 | 73 | 86 | 100 | 75 | 60 | 32 | 32 | 44 | 75 | 65 | 44 |
| <i>Lilium martagon</i> | E1 | 88 | 80 | 71 | 33 | 83 | . | 7 | 47 | 31 | 19 | 10 | 56 |
| <i>Paris quadrifolia</i> | E1 | 88 | 67 | 71 | 67 | 58 | 80 | 75 | 63 | 56 | 88 | 95 | 78 |
| <i>Mycelis muralis</i> | E1 | 83 | 53 | 86 | 58 | 58 | 40 | 11 | 58 | 81 | 19 | 35 | 67 |
| <i>Heracleum sphondylium</i> | E1 | 79 | 67 | 71 | 100 | 75 | 100 | 7 | 16 | 38 | . | . | 33 |
| <i>Cardamine bulbifera</i> | E1 | 75 | 87 | 71 | 100 | 92 | 100 | 100 | 74 | 31 | 94 | 95 | 89 |
| <i>Actaea spicata</i> | E1 | 67 | 87 | 86 | 75 | 58 | 20 | 14 | 16 | 81 | . | . | 78 |
| <i>Galeobdolon flavidum</i> | E1 | 67 | 67 | 43 | 83 | 33 | 60 | 14 | 89 | 82 | 31 | 45 | 56 |
| <i>Lonicera alpigena</i> | E2 | 67 | 60 | 100 | 75 | 50 | 80 | 46 | 16 | 25 | . | . | . |
| <i>Polygonatum multiflorum</i> | E1 | 67 | 60 | 29 | 58 | 50 | 60 | 29 | 5 | . | . | . | 11 |
| <i>Poa nemoralis</i> | E1 | 63 | 47 | 71 | 17 | 33 | . | . | . | 6 | . | 5 | 22 |
| <i>Symphytum tuberosum</i> | E1 | 58 | 33 | 29 | 58 | 58 | 40 | 36 | 63 | 6 | 88 | 90 | . |
| <i>Scrophularia nodosa</i> | E1 | 54 | 60 | . | 42 | 42 | . | 11 | 53 | 88 | 6 | . | 56 |
| <i>Sambucus nigra</i> | E2 | 50 | 40 | . | 75 | 8 | 40 | . | . | . | . | . | . |
| <i>Epilobium montanum</i> | E1 | 42 | 40 | 43 | 17 | . | . | . | 53 | 75 | 25 | 20 | 44 |
| <i>Prenanthes purpurea</i> | E1 | 42 | 40 | 43 | 58 | 33 | . | . | 47 | 31 | . | 10 | . |
| <i>Salvia glutinosa</i> | E1 | 38 | 47 | 100 | 58 | . | 20 | . | 5 | 19 | . | 5 | 44 |
| <i>Carex sylvatica</i> | E1 | 29 | 13 | . | 17 | 17 | . | 14 | 47 | 56 | . | 75 | . |
| <i>Lathyrus vernus</i> | E1 | 29 | 7 | 29 | 58 | 50 | 60 | . | . | 31 | . | . | 33 |
| <i>Campanula trachelium</i> | E1 | 21 | 20 | 14 | 50 | 50 | 20 | . | 5 | . | . | 10 | . |
| <i>Neottia nidus-avis</i> | E1 | 21 | . | 14 | 33 | 33 | . | . | . | . | . | 10 | . |
| <i>Sanicula europaea</i> | E1 | 21 | 7 | 29 | 33 | 25 | . | 4 | 21 | 31 | . | 15 | . |
| <i>Euphorbia amygdaloides</i> | E1 | 17 | 7 | . | 50 | 58 | 60 | 14 | 32 | . | 69 | 75 | . |
| <i>Prunus avium</i> | E3 | 17 | 13 | . | 17 | . | . | . | . | . | . | . | . |
| <i>Prunus avium</i> | E2 | 4 | 13 | . | 8 | 8 | . | 4 | . | . | . | . | . |

| Successive number (Zaporedna številka) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|----|----|-----|----|-----|----|-----|----|----|-----|----|-----|
| <i>Prunus avium</i> | E1 | 8 | . | . | . | . | . | . | . | . | . | . |
| <i>Euphorbia dulcis</i> | E1 | 13 | . | . | 17 | 25 | . | 5 | . | . | . | . |
| <i>Myosotis sylvatica</i> | E1 | 13 | . | . | . | 20 | 11 | 42 | 56 | . | 5 | 78 |
| <i>Phyteuma spicatum s. lat.</i> | E1 | 13 | 7 | 14 | 50 | . | . | 16 | 6 | . | 10 | . |
| <i>Ranunculus lanuginosus</i> | E1 | 13 | 13 | . | 25 | . | . | 58 | 69 | . | 65 | . |
| <i>Festuca altissima</i> | E1 | 8 | . | . | . | 25 | 40 | . | 11 | 13 | . | . |
| <i>Cardamine impatiens</i> | E1 | 4 | 7 | . | . | 17 | . | 4 | 11 | . | . | 78 |
| <i>Asarum europaeum</i> | E1 | 4 | . | . | 58 | 8 | 20 | . | . | . | 5 | . |
| <i>Brachypodium sylvaticum</i> | E1 | 4 | 13 | . | 8 | 8 | . | . | . | . | . | . |
| <i>Circaea lutetiana</i> | E1 | 4 | 13 | . | . | . | 32 | . | . | 6 | . | . |
| <i>Hordelymus europaeus</i> | E1 | 4 | . | . | . | . | 11 | . | . | . | . | . |
| <i>Pulmonaria officinalis</i> | E1 | 4 | . | . | . | . | . | 5 | 25 | . | . | . |
| <i>Epipactis helleborine</i> | E1 | . | 7 | 14 | . | . | . | . | . | . | . | . |
| <i>Galeobdolon montanum</i> | E1 | . | 7 | . | . | 58 | . | . | . | . | . | . |
| <i>Melica nutans</i> | E1 | . | . | 14 | 8 | 17 | . | . | . | . | . | . |
| <i>Cephalanthera damasonium</i> | E1 | . | . | . | 17 | . | . | . | . | . | . | . |
| <i>Galium laevigatum</i> | E1 | . | . | . | 17 | 8 | . | . | 6 | . | . | . |
| <i>Viola reichenbachiana</i> | E1 | . | . | . | . | 8 | . | 4 | 21 | 19 | . | 5 |
| <i>Petasites albus</i> | E1 | . | . | . | . | . | . | . | 13 | . | 5 | . |
| QP <i>Quercetalia pubescenti-petraeae</i> (incl. <i>Festuco-Brometea</i>) | | | | | | | | | | | | |
| <i>Melittis melissophyllum</i> | E1 | 4 | . | . | . | . | . | . | . | . | . | . |
| <i>Sorbus aria</i> | E3 | . | . | 14 | 17 | . | . | . | . | . | . | . |
| <i>Sorbus aria</i> | E2 | . | . | . | 17 | . | . | 5 | . | . | 5 | . |
| <i>Sorbus aria</i> | E1 | 4 | . | 14 | . | . | . | . | . | . | . | . |
| <i>Convallaria majalis</i> | E1 | . | . | . | 17 | 17 | . | . | . | . | . | . |
| <i>Arabis hirsuta</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Arabis turrita</i> | E1 | . | . | . | 8 | 25 | . | . | . | . | . | . |
| <i>Lathyrus venetus</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Ostrya carpinifolia</i> | E3 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Prunus mahaleb</i> | E3 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Sesleria autumnalis</i> | E1 | . | . | . | 8 | 8 | 20 | . | . | . | . | . |
| <i>Tamus communis</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Tanacetum corymbosum</i> (subsp. <i>clusii</i> ?) | E1 | . | . | . | 8 | 25 | . | . | . | . | . | . |
| <i>Stachys recta</i> | E1 | . | . | . | . | . | 4 | . | . | . | . | . |
| <i>Hypericum montanum</i> | E1 | . | . | . | . | . | . | . | . | . | 5 | . |
| QR <i>Quercetalia roboris</i> | | | | | | | | | | | | |
| <i>Rubus hirtus</i> | E2 | . | 13 | . | 17 | . | 29 | 5 | . | . | . | . |
| <i>Hieracium lachenalii</i> | E1 | . | 7 | . | . | . | . | . | . | . | . | . |
| <i>Pteridium aquilinum</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Serratula tinctoria</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Veronica officinalis</i> | E1 | . | . | . | . | . | . | 5 | . | . | . | . |
| QF <i>Querceto-Fagetea</i> | | | | | | | | | | | | |
| <i>Anemone nemorosa</i> | E1 | 96 | 100 | 86 | 100 | 75 | 100 | 79 | 31 | 100 | 75 | 100 |
| <i>Lonicera xylosteum</i> | E2 | 29 | 27 | 86 | 58 | . | 60 | 21 | . | 19 | 6 | . |
| <i>Aegopodium podagraria</i> | E1 | 25 | 33 | 14 | 58 | 25 | . | 5 | . | 19 | 10 | . |
| <i>Moehringia trinervia</i> | E1 | 21 | 7 | . | 17 | 33 | . | . | . | . | . | . |
| <i>Cruciata glabra</i> | E1 | 8 | . | 14 | 8 | 8 | . | . | . | . | . | . |
| <i>Rosa arvensis</i> | E2 | 8 | . | . | 8 | . | . | . | . | . | . | . |
| <i>Stellaria holostea</i> | E1 | 8 | 7 | 14 | 8 | 50 | . | . | . | . | . | . |
| <i>Clematis vitalba</i> | E2 | 4 | . | . | . | . | . | . | . | . | . | . |
| <i>Corylus avellana</i> | E2 | 4 | 7 | . | 25 | . | . | . | . | . | . | . |
| <i>Dactylorhiza fuchsii</i> | E1 | 4 | . | . | . | 8 | . | 11 | 6 | . | 10 | 11 |
| <i>Hepatica nobilis</i> | E1 | 4 | . | 14 | 25 | 8 | . | . | . | . | . | . |
| <i>Platanthera bifolia</i> | E1 | . | 13 | . | 8 | . | 4 | 5 | . | . | . | . |
| <i>Veronica montana</i> | E1 | . | . | 14 | . | . | 39 | 26 | . | . | 35 | . |
| <i>Carex pilosa</i> | E1 | . | . | . | . | 8 | . | . | . | . | . | . |
| <i>Viola riviniana</i> | E1 | . | . | . | . | 8 | . | . | . | . | . | . |
| <i>Carex digitata</i> | E1 | . | . | . | . | . | 20 | . | 13 | . | . | . |
| <i>Veratrum nigrum</i> | E1 | . | . | . | . | . | 20 | . | . | . | . | . |
| <i>Ranunculus ficaria</i> | E1 | . | . | . | . | . | 7 | . | . | 25 | 45 | . |
| <i>Festuca heterophylla</i> | E1 | . | . | . | . | . | . | 5 | . | . | . | . |
| VP <i>Vaccinio-Piceetea</i> | | | | | | | | | | | | |

| Successive number (Zaporedna številka) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
|--|----|----|-----|-----|----|----|----|----|----|-----|-----|-----|-----|
| <i>Maianthemum bifolium</i> | E1 | 67 | 20 | 71 | 58 | 42 | 20 | . | 16 | 44 | . | 25 | 33 |
| <i>Gentiana asclepiadea</i> | E1 | 63 | 47 | 100 | 50 | 17 | . | . | 21 | 63 | . | 70 | . |
| <i>Oxalis acetosella</i> | E1 | 46 | 47 | 29 | . | 33 | 20 | 25 | 89 | 94 | 81 | 95 | 56 |
| <i>Lonicera nigra</i> | E2 | 33 | 33 | 71 | 25 | 8 | 60 | . | 5 | 25 | . | . | . |
| <i>Valeriana tripteris</i> | E1 | 25 | 27 | 57 | 8 | 33 | 20 | . | . | 6 | . | . | . |
| <i>Luzula luzulina</i> | E1 | 21 | 13 | 14 | . | 17 | . | . | . | . | . | . | . |
| <i>Calamagrostis arundinacea</i> | E1 | 17 | 13 | . | . | 33 | . | . | . | 13 | . | 5 | . |
| <i>Rosa pendulina</i> | E2 | 17 | . | 43 | 42 | 17 | 20 | 14 | 5 | 19 | 6 | 5 | . |
| <i>Solidago virgaurea</i> | E1 | 17 | 27 | 29 | 17 | 8 | 20 | . | 5 | . | . | . | . |
| <i>Veronica urticifolia</i> | E1 | 17 | 33 | 57 | 8 | . | . | . | 5 | 13 | . | 15 | . |
| <i>Abies alba</i> | E3 | . | . | 43 | 8 | 8 | 20 | . | 16 | 19 | . | . | . |
| <i>Abies alba</i> | E2 | 13 | . | 14 | 8 | . | . | . | 11 | 13 | . | . | . |
| <i>Abies alba</i> | E1 | 13 | 7 | 29 | 17 | 17 | . | . | 11 | . | . | . | . |
| <i>Picea abies</i> | E3 | 13 | 7 | 29 | 33 | . | 20 | 7 | 21 | 38 | 88 | 75 | . |
| <i>Picea abies</i> | E2 | 8 | . | 43 | 8 | . | . | 7 | 16 | 19 | 63 | 80 | . |
| <i>Picea abies</i> | E1 | . | . | 14 | 8 | . | . | . | . | . | . | 15 | . |
| <i>Hieracium murorum</i> | E1 | 8 | . | 29 | . | 8 | . | . | . | . | . | 5 | . |
| <i>Luzula luzuloides</i> | E1 | 8 | 7 | 14 | 17 | 42 | . | 4 | 16 | 25 | . | 30 | 78 |
| <i>Dryopteris dilatata</i> | E1 | 8 | 60 | 43 | . | 8 | . | . | . | . | . | . | . |
| <i>Aposeris foetida</i> | E1 | 4 | . | . | 33 | . | . | 11 | 21 | . | 75 | 75 | . |
| <i>Dryopteris expansa</i> | E1 | . | 27 | 14 | . | . | . | . | . | 50 | . | 20 | . |
| <i>Homogyne sylvestris</i> | E1 | . | 7 | 14 | . | . | . | . | . | . | . | 5 | . |
| <i>Luzula pilosa</i> | E1 | . | 7 | . | . | . | . | . | 5 | . | . | 10 | . |
| <i>Clematis alpina</i> | E2 | . | . | 14 | . | 8 | . | . | . | . | . | . | . |
| <i>Vaccinium myrtillus</i> | E1 | . | . | 14 | . | . | . | . | . | . | . | . | . |
| <i>Huperzia selago</i> | E1 | . | . | 14 | . | . | . | . | . | . | . | . | . |
| <i>Luzula sylvatica</i> | E1 | . | . | . | . | . | . | . | 32 | 19 | 13 | 5 | . |
| <i>Laserpitium krapfii</i> | E1 | . | . | . | . | . | . | . | 5 | . | . | . | . |
| <i>Phegopteris connectilis</i> | E1 | . | . | . | . | . | . | . | 5 | 6 | . | . | . |
| <i>Polystichum lonchitis</i> | E1 | . | . | . | . | . | . | . | 5 | . | 19 | . | . |
| <i>Gymnocarpium dryopteris</i> | E1 | . | . | . | . | . | . | . | 25 | 25 | 55 | . | . |
| <i>Circaea alpina</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | 22 |
| EP <i>Erico-Pinetea</i> | | | | | | | | | | | | | |
| <i>Calamagrostis varia</i> | E1 | 4 | 7 | 71 | 25 | 8 | . | . | . | 38 | . | 5 | . |
| <i>Cirsium erisithales</i> | E1 | 4 | . | 14 | 42 | 25 | . | . | 5 | 13 | . | . | . |
| <i>Carex alba</i> | E1 | 4 | . | . | . | 8 | . | . | . | . | . | . | . |
| <i>Rubus saxatilis</i> | E1 | . | . | . | . | 8 | . | . | 5 | 6 | . | . | . |
| SSC <i>Sambuco-Salicion capreae</i> | | | | | | | | | | | | | |
| <i>Sorbus aucuparia</i> | E3 | 17 | 27 | 14 | . | 8 | . | . | . | 25 | . | . | 11 |
| <i>Sorbus aucuparia</i> | E2 | 8 | 13 | 42 | 17 | 8 | . | . | 37 | 56 | . | 20 | . |
| <i>Sorbus aucuparia</i> | E1 | 38 | 20 | 86 | 8 | 8 | . | . | . | . | . | . | 22 |
| <i>Sambucus racemosa</i> | E2 | 29 | 40 | 43 | 8 | 25 | 40 | . | . | 25 | . | . | 33 |
| <i>Salix caprea</i> | E3 | 4 | 20 | . | . | 17 | . | . | . | . | . | . | . |
| RP <i>Rhamno-Prunetea</i> | | | | | | | | | | | | | |
| <i>Rubus fruticosus</i> agg. | E2 | 4 | 7 | . | . | . | . | . | . | . | . | . | . |
| <i>Euonymus europaea</i> | E1 | 4 | . | . | 8 | . | . | . | . | . | . | . | . |
| <i>Rhamnus catharticus</i> | E2 | . | . | . | . | 8 | . | . | . | . | . | . | . |
| MuA <i>Mulgedio-Aconieteta</i> | | | | | | | | | | | | | |
| <i>Senecio ovatus</i> | E1 | 96 | 73 | 100 | 92 | 92 | 60 | 32 | 95 | 88 | 56 | 100 | 100 |
| <i>Veratrum album</i> subsp. <i>lobelianum</i> | E1 | 96 | 100 | 100 | 67 | 92 | 40 | 57 | 68 | 56 | 100 | 90 | 78 |
| <i>Polygonatum verticillatum</i> | E1 | 92 | 87 | 100 | 58 | 75 | . | 54 | 68 | 75 | 25 | 75 | 67 |
| <i>Ranunculus platanifolius</i> | E1 | 75 | 73 | 57 | 58 | 58 | . | . | 53 | 31 | 25 | 65 | 11 |
| <i>Milium effusum</i> | E1 | 46 | 13 | 29 | 17 | 33 | . | 11 | . | 50 | . | 55 | 67 |
| <i>Athyrium filix-femina</i> | E1 | 42 | 80 | 71 | 42 | 42 | . | 29 | 58 | 100 | 81 | 90 | 11 |
| <i>Silene dioica</i> | E1 | 25 | 20 | . | 8 | 8 | . | . | . | 19 | . | 10 | 22 |
| <i>Doronicum austriacum</i> | E1 | 21 | 40 | 14 | . | 17 | . | . | 32 | 38 | . | 10 | 33 |
| <i>Saxifraga rotundifolia</i> | E1 | 21 | 53 | 29 | . | 8 | . | . | 37 | 62 | 69 | 30 | 11 |
| <i>Ribes alpinum</i> | E2 | 17 | . | 29 | 8 | 25 | . | . | . | 6 | . | 10 | . |
| <i>Phyteuma ovatum</i> | E1 | 13 | 33 | . | . | 25 | . | . | . | . | . | . | . |
| <i>Anthriscus nitida</i> | E1 | 8 | 7 | . | . | 33 | . | . | . | . | . | 35 | . |
| <i>Geranium sylvaticum</i> | E1 | 4 | . | . | . | . | . | . | 5 | . | . | . | . |
| <i>Poa hybrida</i> | E1 | 4 | 13 | . | . | . | . | . | . | . | . | . | . |

| Successive number (Zaporedna številka) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| <i>Cicerbita alpina</i> | E1 | . | 20 | . | . | . | . | 26 | 31 | . | 10 | . | |
| <i>Salix appendiculata</i> | E2 | . | 7 | . | . | . | . | . | . | . | . | . | |
| <i>Senecio nemorensis</i> | E1 | . | 7 | 14 | . | . | . | . | . | . | . | . | |
| <i>Allium victorialis</i> | E1 | . | . | . | . | 33 | . | . | . | . | . | . | |
| <i>Pleurospermum austriacum</i> | E1 | . | . | . | . | 8 | . | . | . | . | . | . | |
| <i>Rumex arifolius</i> | E1 | . | . | . | . | 8 | . | 4 | 5 | 6 | 13 | 11 | |
| <i>Ribes uva-crispa</i> | E2 | . | . | . | . | . | 29 | . | . | 13 | . | . | |
| <i>Chaerophyllum hirsutum</i> | E1 | . | . | . | . | . | 7 | . | 44 | 19 | 15 | . | |
| <i>Myrrhis odorata</i> | E1 | . | . | . | . | . | 4 | . | 25 | . | . | 11 | |
| <i>Stellaria nemorum</i> | E1 | . | . | . | . | . | . | 79 | 6 | . | 30 | . | |
| <i>Adenostyles alliariae</i> | E1 | . | . | . | . | . | . | 53 | 44 | 75 | 90 | 11 | |
| <i>Crepis paludosa</i> | E1 | . | . | . | . | . | . | . | 13 | . | 10 | . | |
| <i>Geum rivale</i> | E1 | . | . | . | . | . | . | . | 6 | . | . | . | |
| TG <i>Trifolio-Geranietea</i> | | | | | | | | | | | | | |
| <i>Hypericum perforatum</i> | E1 | 8 | . | . | . | . | . | . | . | . | . | . | |
| <i>Digitalis grandiflora</i> | E1 | 4 | 7 | . | 8 | . | . | . | . | . | . | . | |
| <i>Origanum vulgare</i> | E1 | 4 | . | . | . | . | . | . | . | . | . | . | |
| <i>Lilium bulbiferum</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | |
| <i>Polygonatum odoratum</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | |
| <i>Valeriana wallrothii</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | |
| <i>Achillea distans</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | |
| <i>Iris graminea</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | |
| <i>Verbascum lanatum</i> | E1 | . | . | . | 8 | . | . | . | . | . | . | . | |
| <i>Fragaria moschata</i> | E1 | . | . | . | . | . | . | . | . | . | 5 | . | |
| EA <i>Epilobietea angustifolii</i> | | | | | | | | | | | | | |
| <i>Rubus idaeus</i> | E2 | 58 | 53 | 86 | 58 | 25 | 20 | 14 | 68 | 68 | 13 | 45 | 56 |
| <i>Galeopsis speciosa</i> | E1 | 25 | 33 | 14 | 8 | 33 | . | . | 31 | . | . | 33 | |
| <i>Stachys alpina</i> | E1 | 13 | 13 | 14 | . | . | . | . | . | . | . | . | |
| <i>Fragaria vesca</i> | E1 | 8 | . | . | 17 | . | 20 | . | 11 | 31 | . | 55 | |
| <i>Hypericum hirsutum</i> | E1 | 8 | . | 43 | 8 | 8 | . | . | . | . | . | . | |
| <i>Arctium nemorosum</i> | E1 | 4 | 7 | . | . | . | . | . | . | . | . | . | |
| <i>Bromus benekenii</i> | E1 | . | . | . | . | 8 | . | . | . | . | . | . | |
| <i>Galeopsis pubescens</i> | E1 | . | . | . | . | . | . | . | 16 | . | . | 10 | |
| <i>Stachys sylvatica</i> | E1 | . | . | . | . | . | . | . | 5 | . | . | . | |
| MA <i>Molinio-Arrhenatheretea</i> | | | | | | | | | | | | | |
| <i>Poa angustifolia</i> | E1 | 4 | . | 14 | . | . | . | . | . | . | . | . | |
| <i>Veronica chamaedrys</i> | E1 | 4 | . | . | . | . | . | . | 5 | . | . | . | |
| <i>Taraxacum officinale</i> | E1 | . | . | 14 | . | . | 20 | . | . | . | . | 33 | |
| <i>Crocus albiflorus</i> | E1 | . | . | 14 | 17 | 25 | . | . | . | 31 | 70 | . | |
| <i>Dactylis glomerata</i> | E1 | . | . | . | . | 8 | . | . | 5 | . | . | . | |
| <i>Galium mollugo</i> | E1 | . | . | . | . | 8 | . | . | . | . | . | . | |
| <i>Deschampsia cespitosa</i> | E1 | . | . | . | . | . | . | . | 5 | 19 | . | 5 | |
| <i>Trolius europaeus</i> | E1 | . | . | . | . | . | . | . | 5 | . | . | . | |
| <i>Ajuga reptans</i> | E1 | . | . | . | . | . | . | . | . | . | 10 | . | |
| GU <i>Galio-Urticetea</i> | | | | | | | | | | | | | |
| <i>Urtica dioica</i> | E1 | 38 | 53 | 29 | . | 42 | 40 | 21 | 5 | 88 | 19 | 89 | |
| <i>Chaerophyllum aureum</i> | E1 | 13 | 20 | 14 | 8 | 33 | . | . | . | . | . | . | |
| <i>Geum urbanum</i> | E1 | 4 | . | . | . | . | . | . | . | . | . | . | |
| <i>Lamium maculatum</i> | E1 | 4 | 33 | 14 | . | . | . | 11 | . | 19 | . | . | |
| <i>Geranium phaeum</i> | E1 | . | 13 | 14 | . | . | . | . | . | . | . | . | |
| <i>Alliaria petiolata</i> | E1 | . | . | . | . | 17 | . | 7 | . | . | . | . | |
| <i>Rumex alpinus</i> | E1 | . | . | . | . | . | . | . | . | . | 5 | . | |
| TR <i>Thlaspietea rotundifolii</i> | | | | | | | | | | | | | |
| <i>Adenostyles glabra</i> | E1 | 13 | 13 | 14 | . | 25 | . | . | 26 | 56 | . | 80 | 44 |
| AT <i>Asplenieta trichomanis</i> | | | | | | | | | | | | | |
| <i>Asplenium trichomanes</i> | E1 | 29 | 33 | 57 | 58 | 8 | . | . | 5 | . | . | 15 | |
| <i>Sedum hispanicum</i> | E1 | 25 | 20 | 29 | 17 | 8 | . | . | . | . | . | . | |
| <i>Cystopteris fragilis</i> | E1 | 25 | 27 | 43 | 25 | 8 | . | 4 | 11 | 44 | 44 | 30 | 11 |
| <i>Cardaminopsis arenosa</i> | E1 | 8 | . | . | . | 17 | . | . | . | . | . | . | |
| <i>Moehringia muscosa</i> | E1 | 8 | 7 | . | 17 | 8 | . | . | . | . | . | . | |
| <i>Polypodium vulgare</i> | E1 | 4 | 27 | 29 | 33 | . | 20 | . | . | 19 | . | . | |
| <i>Asplenium ruta-muraria</i> | E1 | 4 | . | 29 | 25 | . | . | . | . | . | . | . | |

| Successive number (Zaporedna številka) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|----|-----|------|-----|-----|----|----|----|----|----|----|-------|
| <i>Asplenium viride</i> | E1 | 4 | 7 | 43 | . | . | . | 11 | 19 | . | . | . |
| <i>Phyteuma scheuchzeri</i> subsp. <i>columnae</i> | E1 | . | . | 8 | . | . | . | . | . | . | . | . |
| <i>Sedum maximum</i> | E1 | . | . | 8 | . | . | . | . | . | . | . | . |
| ML Mosses and lichens (Mahovi in lišaji) | | | | | | | | | | | | |
| <i>Ctenidium molluscum</i> | E0 | 100 | 87 | 100 | 100 | 58 | 80 | . | 47 | 88 | . | 40 22 |
| <i>Isothecium alopecuroides</i> | E0 | 75 | 60 | 57 | 58 | 50 | 80 | . | 42 | 31 | . | 55 44 |
| <i>Homalothecium lutescens</i> | E0 | 71 | 7 | 14 | 50 | 58 | 40 | . | . | 56 | . | 15 78 |
| <i>Schistidium apocarpum</i> | E0 | 71 | 27 | 71 | 75 | 50 | 80 | . | 11 | 31 | . | 89 |
| <i>Tortella tortuosa</i> | E0 | 67 | 7 | 29 | 17 | 17 | 20 | . | 11 | 38 | . | 10 11 |
| <i>Neckera crispa</i> | E0 | 33 | 7 | 71 | 42 | 8 | 20 | . | . | . | . | . |
| <i>Peltigera canina</i> | E0 | 25 | 53,3 | . | 8 | 8 | 20 | . | . | . | . | . |
| <i>Plagiomnium cuspidatum</i> | E0 | 17 | 27 | 14 | 17 | . | . | . | . | . | . | . |
| <i>Plagiomnium undulatum</i> | E0 | 17 | 27 | 14 | . | . | . | . | 13 | . | . | . |
| <i>Plagiochila porelloides</i> | E0 | 13 | 13 | 14 | . | . | . | . | 50 | . | 20 | . |
| <i>Pseudoleskeella catenulata</i> | E0 | 13 | 13 | . | . | . | . | . | 0 | . | . | 89 |
| <i>Anomodon attenuatus</i> | E0 | 8 | . | . | 17 | . | . | . | 56 | . | . | . |
| <i>Anomodon viticulosus</i> | E0 | 8 | . | . | 17 | 8 | . | . | 13 | . | . | . |
| <i>Hypnum cupressiforme</i> | E0 | 8 | 13 | . | 8 | . | . | . | 5 | 13 | . | 5 |
| <i>Paraleucobryum sauteri</i> | E0 | 8 | . | 14 | 8 | . | . | . | . | . | . | . |
| <i>Polytrichum formosum</i> | E0 | 8 | 13 | 57 | 25 | 8 | 20 | . | 5 | 19 | . | 5 |
| <i>Thamnobryum alopecurum</i> | E0 | 8 | 33 | 14 | 17 | . | . | . | 19 | . | . | . |
| <i>Atrichum undulatum</i> | E0 | 4 | . | . | . | . | . | . | 25 | . | 5 | . |
| <i>Brachythecium rutabulum</i> | E0 | 4 | 27 | . | . | . | . | . | . | . | . | . |
| <i>Bryum capillare</i> | E0 | 4 | 20 | . | 8 | . | . | . | . | . | . | . |
| <i>Dicranum scoparium</i> | E0 | 4 | . | 14 | . | . | . | . | . | . | . | . |
| <i>Homalothecium sericeum</i> | E0 | 4 | . | . | . | 17 | . | . | . | . | . | . |
| <i>Mnium thomsonii</i> | E0 | 4 | . | 14 | . | . | . | . | . | . | . | . |
| <i>Neckera complanata</i> | E0 | 4 | . | . | . | 8 | 20 | . | . | . | . | . |
| <i>Collema cristatum</i> | E0 | 4 | . | . | . | . | . | . | . | . | . | . |
| <i>Conocephalum conicum</i> | E0 | . | 7 | . | . | . | . | . | 13 | . | . | . |
| <i>Homalothecium philippeanum</i> | E0 | . | 7 | . | 25 | . | 20 | . | . | . | . | 22 |
| <i>Mnium marginatum</i> | E0 | . | 7 | . | . | . | . | . | . | . | . | . |
| <i>Porella platyphylla</i> | E0 | . | 7 | . | 8 | . | . | . | . | . | . | . |
| <i>Fissidens dubius</i> | E0 | . | . | 29 | 8 | . | . | . | 11 | 25 | . | 10 |
| <i>Marchantia polymorpha</i> | E0 | . | . | 14 | . | . | . | . | . | . | . | . |
| <i>Cladonia pyxidata</i> | E0 | . | . | 14 | . | . | . | . | 19 | . | 10 | . |
| <i>Bartramia pomiformis</i> | E1 | . | . | . | . | . | . | . | 5 | . | . | 5 |
| <i>Dicranodontium</i> sp. | E0 | . | . | . | . | . | . | . | 5 | . | . | . |
| <i>Metzgeria furcata</i> | E0 | . | . | . | . | . | . | . | 5 | . | . | . |
| <i>Taxiphyllum depressum</i> | E0 | . | . | . | . | . | . | . | . | 62 | . | . |
| <i>Orthodicranum montanum</i> | E0 | . | . | . | . | . | . | . | . | 50 | . | . |
| <i>Mnium spinosum</i> | E0 | . | . | . | . | . | . | . | . | 31 | . | . |
| <i>Peltigera leucophlebia</i> | E0 | . | . | . | . | . | . | . | . | 31 | . | . |
| <i>Eurhynchium zetterstedtii</i> | E0 | . | . | . | . | . | . | . | . | 25 | . | . |
| <i>Mnium seligeri</i> | E0 | . | . | . | . | . | . | . | . | 25 | . | . |
| <i>Rhizomnium punctatum</i> | E0 | . | . | . | . | . | . | . | . | 19 | . | . |
| <i>Pellia epiphylla</i> | E0 | . | . | . | . | . | . | . | . | 13 | . | . |
| <i>Tortella fragilis</i> | E0 | . | . | . | . | . | . | . | . | 6 | . | . |
| <i>Thuidium tamariscinum</i> | E0 | . | . | . | . | . | . | . | . | . | 10 | . |

Legend - Legenda

- 1 IFsc1 *Isopyro-Fagetum scopolietosum* var. *typica*, Trnovski gozd
- 2 IFsc2 *Isopyro-Fagetum scopolietosum* var. *Campanula latifolia*, Trnovski gozd
- 3 IFct *Isopyro-Fagetum scopolietosum* var. *Cardamine trifolia*, Trnovski gozd
- 4 IFhn *Isopyro-Fagetum scopolietosum* var. *Helleborus niger*, Trnovski gozd
- 5 IFfe *Isopyro-Fagetum* var. *Fraxinus excelsior*, Nanos
- 6 IFcp *Isopyro-Fagetum* var. *Cyclamen purpurascens*, Trnovski gozd
- 7 IFam *Isopyro-Fagetum* var. *Arum maculatum*, Košir (1979)
- 8 RpFsn *Ranunculo platanifolii-Fagetum* var. geogr. *Calamintha grandiflora stellarietosum nemorum*, Marinček & Čarni (2010)
- 9 SmF *Stellario montanae-Fagetum*, Zupančič (2012)
- 10 IFaa *Isopyro-Fagetum* var. *Adenostyles alliariae*, Košir (1979)
- 11 RpFit *Ranunculo platanifolii-Fagetum* var. geogr. *Isopyrum thalictroides* (Marinček & Čarni 2010)
- 12 IFsm *Isopyro-Fagetum stellarietosum montanae*, Trnovski gozd

Table 5: Groups of diagnostic species in the stands of the association *Isopyro-Fagetum*, *Stellario-Fagetum*, *Ranunculo-Fagetum* and *Lamio orvalae-Fagetum* (relative frequencies)

 Preglednica 5: Fitosociološka sestava sestojev asociacij *Isopyro-Fagetum*, *Stellario-Fagetum*, *Ranunculo-Fagetum* in *Lamio orvalae-Fagetum* (relativne frekvence)

| Successive number (Zaporedna številka) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|--|------------------------|-------------------|-----------|----------------------|----------------|----------------------------|-------------|----------------|--------|------------|--------------|----------------|-------------|
| Number of relevé (Število popisov) | 24 | 15 | 7 | 12 | 12 | 5 | 28 | 19 | 16 | 16 | 20 | 9 | 18 |
| Area (Območje) | Križna gora - Javornik | Javornik-Črni vrh | Marni vrh | Črni vrh-Križna gora | Nanos-Javornik | Križna gora - Veliki kamen | IF-AM-Košir | RPFST-Dinaridi | SMF-TG | IFAA-Košir | RPFIT-Menina | Mošeniški hrib | Kalski gozd |
| Sign for syntaxa (Oznaka sintaksonov) | IFsc1 | IFsc2 | IFct | IFhn | IFfe | IFcp | IFam | Rpfsn | SmF | IFaa | RPfit | IFsm | LoFsm |
| Author (Avtor) | ID | ID | ID | ID | ID | ID | ŽK | LM | MZ | ŽK | LM | ID | ID |
| <i>Aremonio-Fagion</i> | 8,7 | 7,5 | 8,6 | 13 | 10 | 10,3 | 11,1 | 9,1 | 6,6 | 11,3 | 10,8 | 6,6 | 6,0 |
| <i>Erythronio-Carpinion</i> | 0,8 | 1,4 | 0,2 | 2,5 | 1,2 | 0,5 | 6,5 | 0,3 | . | 3,5 | 2,8 | 2,5 | 1,9 |
| <i>Tilio-Acerion</i> | 15,3 | 17,1 | 12,4 | 8,1 | 9,5 | 16,8 | 15,9 | 10,2 | 9,9 | 9,4 | 3,2 | 16,6 | 9,9 |
| <i>Alnion incanae</i> | 0,2 | 0,6 | . | 0,1 | 0,2 | . | 1,7 | 1,1 | 1,1 | 2,3 | 0,7 | 0,3 | 2,2 |
| <i>Fagetalia sylvaticae</i> | 37,2 | 34,0 | 30,3 | 38,4 | 38,4 | 42,7 | 39,7 | 38,7 | 30,2 | 31,6 | 30,6 | 35,2 | 37,6 |
| <i>Quercetalia pubescenti-petraeae</i> | 0,1 | . | 0,5 | 1,9 | 1,5 | 0,5 | 0,2 | 0,1 | . | . | 0,2 | . | 0,7 |
| <i>Quercetalia roboris</i> | . | 0,3 | . | 0,4 | 0,2 | . | 1,1 | 0,3 | . | . | . | . | 0,9 |
| <i>Quercu-Fagetea</i> | 6,4 | 5,8 | 4,2 | 8,6 | 6,9 | 5,9 | 9,9 | 3,8 | 1,4 | 10,6 | 5,4 | 6,1 | 6,0 |
| <i>Vaccinio-Picetea</i> | 6,3 | 6,5 | 13,1 | 5,6 | 6,1 | 5,4 | 2,7 | 9,0 | 9,9 | 12,1 | 14,6 | 4,7 | 5,4 |
| <i>Erico-Pinetea</i> | 0,2 | 0,1 | 1,4 | 1,1 | 1,0 | . | . | 0,3 | 1,2 | . | 0,1 | . | 0,1 |
| <i>Sambuco-Salicion capreae</i> | 1,5 | 2,0 | 3,0 | 0,5 | 1,4 | 1,1 | . | 1,1 | 2,1 | . | 0,5 | 1,7 | 1,0 |
| <i>Rhamno-Prunetea</i> | 0,1 | 0,1 | . | 0,1 | 0,2 | . | . | . | . | . | . | . | . |
| <i>Mulgedio-Aconieteta</i> | 8,8 | 10,6 | 8,9 | 5,7 | 11,3 | 2,7 | 9,0 | 16,7 | 14,1 | 15,5 | 18,0 | 10,8 | 3,0 |
| <i>Trifolio-Geranietea</i> | 0,3 | 0,1 | . | 0,5 | 0,5 | . | . | . | . | . | 0,1 | . | 3,6 |
| <i>Epilobietea angustifolii</i> | 1,8 | 1,8 | 2,6 | 1,5 | 1,5 | 1,1 | 0,6 | 2,9 | 2,6 | 0,4 | 2,7 | 2,2 | 0,4 |
| <i>Molinio-Arrhenetheretea</i> | 0,1 | . | 0,7 | 0,3 | 0,8 | 0,5 | . | 0,6 | 0,4 | 1,0 | 2,1 | 0,8 | 0,9 |
| <i>Galio-Urticetea</i> | 0,9 | 2,0 | 1,2 | 0,1 | 1,9 | 1,1 | 1,5 | 0,1 | 2,2 | 0,6 | 0,1 | 2,2 | 1,6 |
| <i>Thlaspietea rotundifolii</i> | 0,2 | 0,2 | 0,2 | . | 0,5 | . | . | 0,8 | 1,1 | . | 2,0 | 1,1 | 0,1 |
| <i>Asplenetetea trichomanis</i> | 1,7 | 2,0 | 3,7 | 3,1 | 1,0 | 0,5 | 0,2 | 0,8 | 1,7 | 1,4 | 1,1 | 0,3 | 3,5 |
| Mosses and lichens (Mahovi in lišaji) | 9,2 | 7,8 | 9,1 | 8,3 | 5,9 | 10,8 | . | 4,3 | 15,6 | . | 4,7 | 8,9 | 15,1 |
| Total (Skupaj) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Legend -Legenda

- 1 IFsc1 *Isopyro-Fagetum scopolietosum* var. *typica*, Trnovski gozd
- 2 IFsc2 *Isopyro-Fagetum scopolietosum* var. *Campanula latifolia*, Trnovski gozd
- 3 IFct *Isopyro-Fagetum scopolietosum* var. *Cardamine trifolia*, Trnovski gozd
- 4 IFhn *Isopyro-Fagetum scopolietosum* var. *Helleborus niger*, Trnovski gozd
- 5 IFfe *Isopyro-Fagetum* var. *Fraxinus excelsior*, Nanos
- 6 IFcp *Isopyro-Fagetum* var. *Cyclamen purpurascens*, Trnovski gozd
- 7 IFam *Isopyro-Fagetum* var. *Arum maculatum*, Košir (1979)
- 8 Rpfsn *Ranunculo platanifolii-Fagetum* var. geogr. *Calamintha grandiflora stellarietosum nemorum*, Marinček & Čarni (2010)
- 9 SmF *Stellario montanae-Fagetum*, Zupančič (2012)
- 10 IFaa *Isopyro-Fagetum* var. *Adenostyles alliariae*, Košir (1979)
- 11 RPFIT *Ranunculo platanifolii-Fagetum* var. geogr. *Isopyrum thalictroides* (Marinček & Čarni 2010)
- 12 IFsm *Isopyro-Fagetum stellarietosum montanae*, Trnovski gozd
- 13 LoF *Lamio orvalae-Fagetum stellarietosum*, Kalski gozd

Table 6 (Preglednica 6): *Lamio ovalae-Fagetum stellarietosum montanae*, Kalški gozd, Banjšice

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Number of relevé (Zaporedna številka popisa) | 221585 | 221587 | 221589 | 221590 | 221591 | 221592 | 221593 | 221594 | 221595 | 221596 | 221597 | 221598 | 221599 | 221600 | 221601 | 221602 | 221603 | 221604 |
| Database number of relevé (Delovna številka popisa) | | | | | | | | | | | | | | | | | | |
| Elevation in 10 m (Nadmorska višina v 10 m) | 83 | 86 | 87 | 89 | 84 | 85 | 87 | 84 | 86 | 80 | 97 | 84 | 85 | 83 | 80 | 84 | 93 | 84 |
| Aspect (lega) | NW | SW | SW | NW | NW | NW | NW | N | NW | SW | NW | W | S | NW | W | SW | - | NW |
| Parent material (Geološka podlaga) | K | K | K | K | K | K | K | K | K | K | K | K | K | K | K | K | K | K |
| Tla | CC | CC | CC | CC | CC | CC | CC | CC | CC | CC | CC | CC | CC | R | CC | CC | CC | CC |
| Slope in degrees (Nagib v stopinjah) | 25 | 30 | 30 | 20 | 25 | 25 | 25 | 25 | 25 | 15 | 15 | 25 | 1 | 20 | 25 | 25 | 25 | 25 |
| Stoniness in % (Kamnitost v %) | 35 | 40 | 30 | 30 | 20 | 35 | 25 | 30 | 50 | 50 | 30 | 50 | 5 | 20 | 30 | 25 | 30 | 15 |
| Cover in %: | | | | | | | | | | | | | | | | | | |
| Zastiranje v % | E3 | 85 | 80 | 80 | 90 | 90 | 80 | 80 | 85 | 90 | 90 | 80 | 80 | 90 | 90 | 90 | 80 | 80 |
| Tree layer (Drevesna plast) | E2 | 5 | 10 | 1 | 5 | 1 | 5 | 1 | 1 | 1 | 5 | 15 | 1 | 5 | 1 | 1 | 1 | 1 |
| Shrub layer (Grmovna plast) | E1 | 65 | 70 | 60 | 60 | 60 | 70 | 70 | 60 | 60 | 60 | 60 | 80 | 70 | 60 | 70 | 70 | 60 |
| Herb layer (Zeliščna plast) | E0 | 15 | 10 | 10 | 10 | 10 | 10 | 15 | 10 | 10 | 15 | 15 | 5 | 5 | 15 | 10 | 10 | 5 |
| Moss layer (Mahovna plast) | | 20 | 30 | 30 | 35 | 30 | 35 | 30 | 30 | 35 | 35 | 35 | 35 | 40 | 30 | 30 | 30 | 30 |
| Average diameter in cm (srednji premer v cm) | | 18 | 18 | 22 | 22 | 20 | 24 | 22 | 22 | 22 | 22 | 22 | 22 | 24 | 20 | 22 | 22 | 22 |
| Tree height in m (Drevesna višina v m) | | | | | | | | | | | | | | | | | | |
| Relevé area in 10 m (Velikost popisne ploskve v 10 m) | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Number of species (Število vrst) | 84 | 68 | 84 | 67 | 67 | 82 | 67 | 71 | 85 | 81 | 69 | 65 | 71 | 85 | 80 | 67 | 52 | 63 |
| Date of taking relevé (Datum popisa) | 6/28/1988 | 6/29/1988 | 6/28/1988 | 6/28/1988 | 6/30/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 | 6/28/1988 |
| Locality (Nahajališče) | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG | KG |
| Quadrant (Kvadrant) | 9948/2 | 9948/2 | 9948/2 | 9848/4 | 9848/4 | 9948/2 | 9948/2 | 9848/4 | 9948/2 | 9948/2 | 9848/4 | 9948/2 | 9948/2 | 9948/2 | 9948/2 | 9848/4 | 9848/4 | 9948/2 |
| Coordinate GK Y (D-48) | 5105816 | 404713 | 5103194 | 404142 | 5107586 | 404694 | 5104604 | 404431 | 5103233 | 403710 | 405019 | 404710 | 404437 | 404317 | 404535 | 404644 | 405195 | 404647 |
| Coordinate GK X (D-48) | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m | m |
| Diagnostic species of the association (Diagnostična vrsta asociacije) | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Lamium ovalae</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Differential species of the subassociation (Razlikovalnice subasociacije) | E1 | 3 | 1 | + | 2 | 2 | 3 | 1 | + | 1 | 1 | 3 | + | 3 | 1 | 3 | 1 | 3 |
| <i>Stellaria montana</i> | E1 | 1 | + | + | 2 | 2 | + | 1 | + | + | + | 1 | + | 1 | 1 | 2 | 1 | 3 |
| <i>Corydalis cava</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Gagea lutea</i> | E1 | + | + | + | + | + | + | + | + | 2 | + | 1 | 1 | 1 | + | + | + | 1 |
| <i>Anemone ranunculoides</i> | E1 | 1 | + | + | + | + | + | + | + | 1 | + | + | + | 1 | 1 | 1 | + | + |
| <i>Veronica montana</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | + | 1 | + | 1 | + | + |
| <i>Corydalis solida</i> | E1 | + | + | + | 1 | + | 1 | + | + | + | + | + | + | 1 | + | 1 | + | 1 |
| <i>Scrophularia vernalis</i> | E1 | + | + | + | + | + | + | + | + | + | + | + | 2 | 1 | + | + | + | + |
| Pr. | 18 | 100 | 18 | 100 | 18 | 100 | 18 | 100 | 18 | 100 | 18 | 100 | 18 | 100 | 18 | 100 | 18 | 100 |

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | Pr. | Fr. |
|--|-------------------------------------|----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|-----|-----|
| Number of relevé (Zaporedna številka popisa) | | | | | | | | | | | | | | | | | | | | | |
| Geographical differential species (Geografske razlikovalne vrste) | | | | | | | | | | | | | | | | | | | | | |
| FS | <i>Cardamine pentaphyllos</i> | | | + | + | 1 | + | 3 | 3 | 2 | 2 | 2 | | 1 | | 1 | | 1 | | | |
| QP | <i>Sesleria autumnalis</i> | | | + | | | | | | + | | | | | | | | | | | |
| AF | <i>Anemone trifolia</i> | | | | | | | | | | + | | | | | | | | | | |
| Differential species of lower units (Razlikovalnice nižjih enot) | | | | | | | | | | | | | | | | | | | | | |
| EC | <i>Isophyrum thalictroides</i> | | | | | | | | | | | | | | + | + | | | | | |
| TA | <i>Circaea intermedia</i> | | | | | | | | | | | | | 3 | | | | | | | |
| AF | Aremonio-Fagion | | | | | | | | | | | | | | | | | | | | |
| | <i>Cardamine enneaphyllos</i> | E1 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 1 | 3 | + | + | 3 | 2 | + | 1 | 18 | 100 |
| | <i>Cardamine trifolia</i> | E1 | | | + | 1 | | 1 | 1 | + | | 1 | | + | + | | + | + | 1 | 11 | 61 |
| | <i>Cyclamen purpurascens</i> | E1 | 1 | + | | | | | | + | | | | | + | | | | | 7 | 39 |
| | <i>Aremonia agrimonoides</i> | E1 | | + | | | | | | | | | | | + | | | | | 5 | 28 |
| | <i>Rhannus fallax</i> | E2 | | | | | | | | | | | | | + | | | | | 3 | 17 |
| EC | Erythronio-Carpinion | | | | | | | | | | | | | | | | | | | | |
| | <i>Helleborus odorus</i> | E1 | + | | + | + | + | + | + | 1 | + | + | + | + | + | 1 | + | | + | 16 | 89 |
| | <i>Crocus napolitanus</i> | E1 | | | | | | | | | + | | | + | | | | | | 3 | 17 |
| | <i>Galanthus nivalis</i> | E1 | | + | | | | | | | | | | | | | | | | 1 | 6 |
| | <i>Primula vulgaris</i> | E1 | | | | | | | | | | + | | | | | | | | 1 | 6 |
| TA | Tilio-Acerion | | | | | | | | | | | | | | | | | | | | |
| | <i>Arum maculatum</i> | E1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | + | + | 1 | 1 | + | + | 18 | 100 |
| | <i>Polystichum aculeatum</i> | E1 | 1 | + | 1 | 1 | 1 | 1 | 1 | + | + | + | 1 | + | + | + | 1 | + | + | 18 | 100 |
| | <i>Adoxa moschatellina</i> | E1 | 1 | + | + | + | + | 1 | 2 | 1 | + | 1 | 1 | + | + | 1 | + | + | + | 18 | 100 |
| | <i>Acer pseudoplatanus</i> | E3 | | | | | | | | | | | + | | | | | | | 1 | 6 |
| | <i>Acer pseudoplatanus</i> | E2 | 1 | | + | | | + | | | + | + | + | + | | | | | | 7 | 39 |
| | <i>Acer pseudoplatanus</i> | E1 | 1 | + | 1 | 2 | + | + | 1 | + | + | + | 2 | 1 | + | | | | + | 14 | 78 |
| | <i>Phyllitis scolopendrium</i> | E1 | + | + | 1 | 1 | + | 1 | + | + | | | | | + | + | + | + | | 13 | 72 |
| | <i>Polystichum x luerssenii</i> | E1 | + | + | + | 1 | + | + | + | + | | | | + | + | + | + | + | | 10 | 56 |
| | <i>Cardamine flexuosa</i> | E1 | + | + | | + | + | + | + | | | | | 2 | + | + | + | + | + | 10 | 56 |
| | <i>Dryopteris affinis</i> | E1 | | | | | | | | | | | | | | | | | + | 2 | 11 |
| | <i>Lunaria rediviva</i> | E1 | | | | | | | | | | | | | | | | | | 1 | 6 |
| | <i>Acer platanoides</i> | E1 | | + | | | | | | | | | | | | | | | | 1 | 6 |
| | <i>Aruncus dioicus</i> | E1 | | | | | | | | | | | | | | | | | | 1 | 6 |
| AI | Alnion incanae | | | | | | | | | | | | | | | | | | | | |
| | <i>Chrysosplenium alternifolium</i> | E1 | 1 | | + | + | + | 1 | + | 1 | + | | + | + | + | + | + | + | | 14 | 78 |
| | <i>Impatiens noli-tangere</i> | E1 | 1 | | + | + | + | 2 | 1 | | | | | 3 | 2 | + | + | + | 1 | 9 | 50 |
| | <i>Solanum dulcamara</i> | E1 | | + | | | | + | | + | | | | | | | | | | 7 | 39 |
| FS | Fagetalia sylvaticae | | | | | | | | | | | | | | | | | | | | |
| | <i>Fagus sylvatica</i> | E3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 18 | 100 |
| | <i>Fagus sylvatica</i> | E2 | | + | + | + | | + | + | + | 1 | + | + | + | + | 1 | | | | 13 | 72 |
| | <i>Fagus sylvatica</i> | E1 | 1 | | 1 | + | 1 | 1 | 1 | 1 | + | + | 1 | | 2 | 1 | + | | + | 14 | 78 |
| | <i>Cardamine bulbifera</i> | E1 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 1 | 1 | 2 | 3 | 2 | 1 | 2 | 1 | 1 | 18 | 100 |
| | <i>Dryopteris filix-mas</i> | E1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 18 | 100 |
| | <i>Galium odoratum</i> | E1 | 1 | 2 | 2 | + | + | + | 1 | + | 1 | 1 | + | 1 | + | 2 | 1 | 1 | 1 | 18 | 100 |
| | <i>Geranium robertianum</i> | E1 | + | 1 | 1 | + | + | + | + | 1 | + | + | + | + | + | 1 | 1 | 1 | + | 18 | 100 |
| | <i>Paris quadrifolia</i> | E1 | + | 1 | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 18 | 100 |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | Pr. | Fr. |
|--|----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|-----|-----|
| <i>Circaea lutetiana</i> | E1 | 1 | 1 | + | . | 1 | 1 | 1 | + | 1 | + | 2 | + | 1 | 1 | 1 | + | 1 | 17 | 94 |
| <i>Myosotis sylvatica</i> | E1 | 1 | + | 2 | + | + | + | + | + | + | + | 1 | + | + | + | 1 | + | + | 17 | 94 |
| <i>Scrophularia nodosa</i> | E1 | 1 | + | 1 | + | 1 | + | 1 | 1 | . | + | 1 | + | + | + | 1 | + | + | 17 | 94 |
| <i>Galeobdolon flavidum</i> | E1 | + | + | + | + | . | + | 1 | 2 | 1 | + | + | 1 | + | + | + | 1 | + | 17 | 94 |
| <i>Milium effusum</i> | E1 | + | 1 | 1 | + | + | + | + | 1 | 1 | + | + | + | + | + | + | + | + | 17 | 94 |
| <i>Epilobium montanum</i> | E1 | 1 | + | 1 | + | 1 | + | + | + | 1 | . | 1 | + | + | 1 | + | + | + | 17 | 94 |
| <i>Actaea spicata</i> | E1 | + | + | + | + | 1 | + | + | + | + | + | + | + | + | 1 | + | + | + | 17 | 94 |
| <i>Epipactis helleborine</i> | E1 | + | + | + | + | 1 | + | 1 | + | + | + | + | . | + | + | + | + | 1 | 17 | 94 |
| <i>Mycelis muralis</i> | E1 | + | + | 1 | 1 | + | + | + | 1 | 1 | + | + | + | + | 1 | + | + | + | 17 | 94 |
| <i>Sambucus nigra</i> | E2 | 1 | + | + | + | 1 | . | + | + | + | + | 1 | + | . | + | 1 | + | 1 | 16 | 89 |
| <i>Viola reichenbachiana</i> | E1 | . | + | + | + | + | + | + | + | + | + | . | 1 | + | + | + | + | + | 16 | 89 |
| <i>Daphne mezereum</i> | E2 | + | + | + | + | + | + | + | + | + | + | . | + | + | + | + | + | + | 16 | 89 |
| <i>Polygonatum multiflorum</i> | E1 | + | + | + | . | + | . | + | . | + | + | + | . | + | + | + | + | + | 14 | 78 |
| <i>Fraxinus excelsior</i> | E3 | + | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | 1 | 6 |
| <i>Fraxinus excelsior</i> | E2 | + | . | . | . | . | . | + | . | . | . | + | . | . | . | . | + | . | 3 | 17 |
| <i>Fraxinus excelsior</i> | E1 | 1 | . | + | . | + | . | . | + | + | + | + | + | + | 1 | . | + | 1 | 13 | 72 |
| <i>Mercurialis perennis</i> | E1 | + | 1 | + | 1 | 2 | . | + | 1 | 1 | + | . | . | + | + | 1 | . | . | 13 | 72 |
| <i>Cardamine impatiens</i> | E1 | + | + | + | . | + | + | + | + | . | + | . | + | + | + | + | . | + | 13 | 72 |
| <i>Pulmonaria officinalis</i> | E1 | + | 1 | . | . | + | . | . | + | + | + | . | . | + | + | + | 1 | + | 11 | 61 |
| <i>Sanicula europaea</i> | E1 | + | + | . | + | + | . | . | . | + | + | + | 1 | + | . | . | . | . | 9 | 50 |
| <i>Carex sylvatica</i> | E1 | + | . | . | . | . | + | 1 | . | + | + | + | + | + | . | . | . | . | 9 | 50 |
| <i>Symphytum tuberosum</i> | E1 | + | . | . | . | + | . | . | . | 1 | + | . | . | . | . | . | + | . | 8 | 44 |
| <i>Lathyrus vernus</i> | E1 | . | + | + | . | . | . | + | . | + | . | . | . | + | . | . | . | . | 8 | 44 |
| <i>Festuca altissima</i> | E1 | . | + | + | + | . | + | . | . | + | . | . | + | + | . | . | . | . | 7 | 39 |
| <i>Neottia nidus-avis</i> | E1 | . | . | + | . | + | + | + | . | . | . | + | + | . | . | . | . | + | 5 | 28 |
| <i>Prunus avium</i> | E3 | + | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 |
| <i>Prunus avium</i> | E1 | . | + | . | . | + | . | . | + | . | . | . | . | . | . | . | . | . | 4 | 22 |
| <i>Melica nutans</i> | E1 | + | . | + | . | . | . | . | . | . | . | + | . | . | . | . | . | . | 3 | 17 |
| <i>Brachypodium sylvaticum</i> | E1 | + | . | + | . | . | . | . | . | . | + | . | + | + | . | . | . | . | 3 | 17 |
| <i>Asarum europaeum subsp. caucasicum</i> | E1 | . | . | . | . | + | . | . | . | . | . | . | . | + | . | . | . | . | 3 | 17 |
| <i>Salvia glutinosa</i> | E1 | . | . | . | . | . | . | . | . | . | + | . | . | . | . | + | + | . | 3 | 17 |
| <i>Galium laevigatum</i> | E1 | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | 2 | 111 |
| <i>Euphorbia dulcis</i> | E1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | + | 2 | 11 |
| <i>Campanula trachelium</i> | E1 | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 |
| <i>Prenanthes purpurea</i> | E1 | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 |
| <i>Prunus avium</i> | E2 | . | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | 1 | 6 |
| <i>Prunus avium</i> | E1 | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | 1 | 6 |
| <i>Ranunculus lanuginosus</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | 1 | 6 |
| <i>Petasites albus</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | 1 | 6 |
| <i>Poa nemoralis</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | 1 | 6 |
| QP <i>Quercetalia pubescenti-petraeae</i> | | | | | | | | | | | | | | | | | | | | |
| <i>Hypericum montanum</i> | E1 | . | . | + | . | . | . | . | + | . | . | . | . | . | + | . | . | . | 3 | 17 |
| <i>Arabis turrata</i> | E1 | . | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 11 |
| <i>Calamintha sylvatica</i> | E1 | . | . | . | . | . | . | . | + | . | . | . | . | + | . | . | . | . | 2 | 11 |

Number of relevé (Zaporedna številka popisa)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | Pr. | Fr. | |
|-------------------------------------|----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|-----|-----|--|
| QR <i>Quercetetea roboris</i> | E2 | + | + | + | + | + | . | . | + | + | . | + | + | . | + | . | . | + | 11 | 61 | |
| <i>Rubus hirtus</i> | E3 | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 | |
| <i>Populus tremula</i> | | | | | | | | | | | | | | | | | | | | | |
| QF <i>Quercio-Fagetetea</i> | E1 | 1 | 1 | 2 | 1 | 1 | + | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | + | 1 | 1 | 18 | 100 | |
| <i>Anemone nemorosa</i> | E2 | . | + | . | . | + | . | . | + | . | . | + | + | + | + | . | . | . | 6 | 33 | |
| <i>Lonicera xylosteum</i> | E2 | . | + | . | + | + | . | . | . | . | . | . | . | + | + | + | . | . | 6 | 33 | |
| <i>Corylus avellana</i> | E1 | + | . | + | + | + | . | . | + | + | . | . | . | . | + | . | . | . | 5 | 28 | |
| <i>Vincetoxicum minor</i> | E2 | + | . | + | . | + | . | . | + | . | . | . | . | . | + | + | . | . | 5 | 28 | |
| <i>Clematis vitalba</i> | E1 | + | . | . | . | + | . | . | . | . | . | . | . | . | . | + | . | . | 2 | 11 | |
| <i>Moehringia trinervia</i> | E1 | . | + | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | 2 | 11 | |
| <i>Platanthera bifolia</i> | E1 | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | 2 | 11 | |
| <i>Hepatica nobilis</i> | E1 | . | . | + | . | . | . | . | + | . | . | . | . | . | . | . | . | . | 2 | 11 | |
| <i>Carex digitata</i> | E1 | . | . | . | . | + | . | . | + | . | . | . | . | . | . | . | . | . | 2 | 11 | |
| <i>Aegopodium podagraria</i> | E1 | . | . | . | . | . | . | . | . | . | . | . | . | + | . | . | . | . | 1 | 6 | |
| VP <i>Vaccinio-Piceetea</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Oxalis acetosella</i> | E1 | 1 | . | + | + | + | 1 | 1 | 1 | 1 | 1 | + | 1 | 1 | . | 1 | 2 | 1 | 16 | 89 | |
| <i>Luzula luzuloides</i> | E1 | + | + | + | + | + | + | + | + | + | + | . | + | + | + | + | . | + | 15 | 83 | |
| <i>Gymnocarpium dryopteris</i> | E1 | + | . | . | . | . | + | 1 | . | . | . | . | + | + | . | + | + | + | 10 | 56 | |
| <i>Dryopteris expansa</i> | E1 | + | + | . | . | + | + | + | + | . | . | . | + | + | . | + | . | . | 10 | 56 | |
| <i>Dryopteris carthusiana</i> | E1 | + | . | . | . | . | . | + | + | . | . | . | . | + | . | + | . | . | 5 | 28 | |
| <i>Maianthemum bifolium</i> | E1 | . | + | . | . | . | . | . | + | . | . | . | . | . | + | . | . | . | 4 | 22 | |
| <i>Gentiana asclepiadea</i> | E1 | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | 3 | 17 | |
| <i>Luzula luzulina</i> | E1 | + | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | 2 | 11 | |
| <i>Saxifraga cuneifolia</i> | E1 | . | . | . | . | + | . | . | . | . | . | . | . | + | . | . | . | . | 2 | 11 | |
| <i>Picea abies</i> | E2 | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | 2 | 11 | |
| <i>Abies alba</i> | E2 | . | . | . | . | . | . | . | . | 1 | . | . | . | . | . | . | + | . | 2 | 11 | |
| <i>Phegopteris connectilis</i> | E1 | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 | |
| <i>Solidago virgaurea</i> | E1 | . | . | . | . | . | . | . | . | . | + | . | . | . | . | . | . | . | 1 | 6 | |
| EP <i>Erico-Pinetea</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Calamagrostis varia</i> | E1 | . | . | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 | |
| SSC <i>Sambuco-Salicion capreae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Sambucus racemosa</i> | E2 | . | 1 | . | + | + | . | . | . | + | . | + | . | . | + | . | . | . | 6 | 33 | |
| <i>Sorbus aucuparia</i> | E2 | . | . | . | + | . | . | . | + | . | . | . | . | . | . | . | . | . | 3 | 17 | |
| <i>Sorbus aucuparia</i> | E1 | . | . | . | + | + | + | + | . | . | . | . | . | . | . | . | . | . | 5 | 28 | |
| MuA <i>Mulgedio-Aconitetea</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Senecio ovatus</i> | E1 | 1 | 1 | 1 | 1 | 1 | + | 1 | 1 | 1 | 1 | 1 | 1 | + | 1 | 1 | 1 | 1 | 18 | 100 | |
| <i>Athyrium filix-femina</i> | E1 | 1 | . | + | . | 1 | 1 | 1 | + | . | + | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 | 83 | |
| <i>Ribes alpinum</i> | E2 | . | . | . | . | . | . | . | . | + | . | . | . | + | + | . | . | . | 3 | 17 | |
| <i>Veratrum album</i> | E1 | . | . | . | . | . | . | + | . | . | . | . | . | + | . | . | . | . | 2 | 11 | |
| <i>Saxifraga rotundifolia</i> | E1 | . | . | . | . | . | . | . | . | . | + | . | . | + | . | . | . | . | 2 | 11 | |
| EA <i>Epilobietea angustifolii</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Galeopsis pubescens</i> | E1 | 1 | 1 | + | + | + | . | . | + | 1 | + | 1 | + | + | + | 1 | . | 1 | 15 | 83 | |
| <i>Galeopsis spectiosa</i> | E1 | + | 1 | + | . | 1 | . | . | . | + | . | . | . | . | . | . | . | + | 9 | 50 | |
| <i>Rubus ideus</i> | E2 | + | + | . | . | . | + | + | + | . | . | . | . | + | . | . | 1 | . | 8 | 44 | |
| <i>Atropa belladonna</i> | E1 | + | + | + | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 6 | 33 | |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | Pr. | Fr. | |
|--|----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|-----|-----|--|
| Number of relevé (Zaporedna številka popisa) | | | | | | | | | | | | | | | | | | | | | |
| <i>Fragaria vesca</i> | E1 | + | | | | + | + | | | + | | | | + | | | | | 5 | 28 | |
| <i>Stachys sylvatica</i> | E1 | + | | | | | | | | | | | + | | | | | | 2 | 11 | |
| <i>Bromus ramosus</i> | E1 | | | | | | | | | | | | + | | | | + | | 2 | 11 | |
| <i>Eupatorium cannabinum</i> | E1 | + | | | | | | | | | | | | | | | | | 1 | 6 | |
| TG | | | | | | | | | | | | | | | | | | | | | |
| Trifolio-Geranietea | | | | | | | | | | | | | | | | | | | | | |
| <i>Verbascum lanatum</i> | E1 | | + | | | | | | + | | | | | | | | | | 3 | 17 | |
| <i>Clinopodium vulgare</i> | E1 | | + | | | | | | | | | | | | | | | | 1 | 6 | |
| <i>Vincetoxicum hirundinaria</i> | E1 | | | + | | | | | | | | | | | | | | | 1 | 6 | |
| MA | | | | | | | | | | | | | | | | | | | | | |
| Molinio-Arrhenatheretea | | | | | | | | | | | | | | | | | | | | | |
| <i>Angelica sylvestris</i> | E1 | | + | | | | | | + | | | | | | | | | | 5 | 28 | |
| <i>Deschampsia cespitosa</i> | E1 | | | | | | | | | | | | + | | + | | | | 3 | 17 | |
| <i>Galium mollugo</i> agg. | E1 | + | | | | | | | | | | | | | | | | | 1 | 6 | |
| <i>Dactylis glomerata</i> | E1 | | | + | | | | | | | | | | | | | | | 1 | 6 | |
| <i>Taraxacum officinale</i> | E1 | | | | | | | + | | | | | | | | | | | 1 | 6 | |
| <i>Veronica chamaedrys</i> | E1 | | | | | | | | + | | | | | | | | | | 1 | 6 | |
| GU | | | | | | | | | | | | | | | | | | | | | |
| Galio-Urticetea | | | | | | | | | | | | | | | | | | | | | |
| <i>Urtica dioica</i> | E1 | 2 | 3 | 2 | 2 | + | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | + | + | 3 | + | 18 | 100 | |
| <i>Galeopsis tetralix</i> | E1 | + | | | | | | | | | | | + | | | | | | 2 | 11 | |
| <i>Turritis glabra</i> | E1 | | | + | | | | | | | | | | | | | | | 1 | 6 | |
| <i>Geum urbanum</i> | E1 | | | | | | | | | | | | + | | | | | | 1 | 6 | |
| TR | | | | | | | | | | | | | | | | | | | | | |
| Thlaspietea rotundifolii | | | | | | | | | | | | | | | | | | | | | |
| <i>Adenostyles glabra</i> | E1 | + | | | | | | | + | | | | | | | | | | 2 | 11 | |
| AT | | | | | | | | | | | | | | | | | | | | | |
| Asplenietea trichomanis | | | | | | | | | | | | | | | | | | | | | |
| <i>Cystopteris fragilis</i> | E1 | + | + | + | + | + | | + | + | + | + | + | | | + | + | | 14 | 78 | | |
| <i>Asplenium trichomanes</i> | E1 | + | + | + | | + | + | | + | + | + | + | | | + | + | | 13 | 72 | | |
| <i>Polypodium vulgare</i> | E1 | | | + | + | + | + | | | | + | + | | | + | | | 9 | 50 | | |
| <i>Cymbalaria muralis</i> | E1 | | | + | + | + | + | + | + | | | | | | + | + | | 5 | 28 | | |
| <i>Sedum hispanicum</i> | E1 | | | + | | | | | + | | | | | | + | + | | 3 | 17 | | |
| <i>Moehringia muscosa</i> | E1 | | | | | | | | + | | | | | | + | + | | 2 | 11 | | |
| <i>Saxifraga petraea</i> | E1 | | | | | | | | | | | | | | + | | | 1 | 6 | | |
| ML | | | | | | | | | | | | | | | | | | | | | |
| Mosses and lichens (Mahovi in lišaji) | | | | | | | | | | | | | | | | | | | | | |
| <i>Schistidium apocarpum</i> | E0 | 1 | + | + | + | + | + | + | 1 | 1 | + | 1 | + | + | + | + | + | + | 17 | 94 | |
| <i>Camptothecium lutescens</i> | E0 | 1 | 1 | 1 | | 2 | 1 | | 2 | 2 | 2 | 2 | + | 1 | 2 | 1 | 2 | 1 | 16 | 89 | |
| <i>Isoetium alopecuroides</i> | E0 | 1 | 1 | 1 | 2 | 1 | 1 | | 1 | 1 | 1 | 1 | + | 1 | 1 | 1 | 2 | | 16 | 89 | |
| <i>Ctenidium molluscum</i> | E0 | 1 | | + | 1 | 1 | + | | 1 | 1 | 1 | + | + | + | 1 | 1 | 1 | 15 | 83 | | |
| <i>Brachythecium velutinum</i> | E0 | + | + | 1 | 1 | 1 | + | | 1 | + | + | + | 1 | + | + | + | + | 16 | 89 | | |
| <i>Plagiochila porolloides</i> | E0 | 1 | | + | 1 | 1 | + | | 1 | + | + | + | | + | 1 | 1 | | 12 | 67 | | |
| <i>Collema</i> sp. | E0 | 1 | + | | | | | + | + | | | + | + | | 1 | | | 9 | 50 | | |
| <i>Neckera crispa</i> | E0 | + | | | + | 1 | + | | + | + | | | | | + | + | | 8 | 44 | | |
| <i>Plagiothecium denticulatum</i> | E0 | + | | + | + | + | + | 1 | 1 | + | | | | | + | + | | 7 | 39 | | |
| <i>Plagiomnium affine</i> | E0 | 1 | | | | | + | | | | | 1 | | | 1 | | | 7 | 39 | | |
| <i>Hypnum cupressiforme</i> | E0 | | | + | + | + | + | | | | | + | | + | + | + | | 7 | 39 | | |
| <i>Thamnobryum alopecurum</i> | E0 | | | + | 1 | 1 | + | 1 | | | | | | | | + | | 7 | 39 | | |
| <i>Brachythecium rutabulum</i> | E0 | | | + | | | | | 1 | + | | | + | + | | | 2 | 1 | 7 | 39 | |
| <i>Mnium marginatum</i> | E0 | | | | | | | 1 | | | | | | + | | 1 | | + | 7 | 39 | |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | Pr. | Fr. |
|--|----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|-----|-----|
| Number of relevé (Zaporedna številka popisa) | | | | | | | | | | | | | | | | | | | | |
| <i>Mritum</i> sp. | E0 | + | . | . | + | . | . | . | . | . | . | . | + | 1 | + | . | + | . | 6 | 33 |
| <i>Porella platyphylla</i> | E0 | . | + | . | . | . | . | . | + | 1 | . | 1 | . | . | + | + | . | . | 6 | 33 |
| <i>Anomodon viticulosus</i> | E0 | + | . | . | . | . | . | . | + | 1 | . | 1 | . | . | + | . | . | . | 5 | 28 |
| <i>Plagiomnium undulatum</i> | E0 | . | + | . | . | . | . | . | . | . | . | . | + | + | . | + | . | . | 5 | 28 |
| <i>Polytrichum formosum</i> | E0 | . | . | + | . | . | . | . | + | . | + | . | . | . | . | . | . | . | 5 | 28 |
| <i>Bryum capillare</i> | E0 | + | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | 4 | 22 |
| <i>Conocephalum conicum</i> | E0 | + | . | . | . | . | . | . | + | . | . | . | . | . | . | . | . | . | 4 | 22 |
| <i>Plagiomnium cuspidatum</i> | E0 | . | . | . | . | . | + | . | + | . | . | . | . | . | . | . | . | . | 4 | 22 |
| <i>Peltigera canina</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 3 | 17 |
| <i>Cladonia</i> sp. | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 11 |
| <i>Metzgeria furcata</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 11 |
| <i>Anomodon attenuatus</i> | E0 | . | . | . | . | . | . | . | . | 1 | . | . | . | . | . | + | . | . | 2 | 11 |
| <i>Atrichum undulatum</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | + | + | . | . | . | . | 2 | 11 |
| <i>Mnium stellare</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 |
| <i>Fissidens dubius</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 |
| <i>Plagiothecium sylvaticum</i> | E0 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 6 |

Legend - Legenda

A Limestone - apnenec

Re Rendzina - rendzina

CC Chromic Cambisols - Rjava pokarbonatna tla

CCl Lessivé Chromic Cambisols - Izprana rjava pokarbonatna tla

KG Kalski gozd