COMMUNITIES WITH *ERYNGIUM ALPINUM* IN THE SOUTHERN JULIAN ALPS (MTS. ČRNA PRST AND POREZEN)

Igor DAKSKOBLER*, Wilfried ROBERT FRANZ** &
Gabrijel SELJAK***

Izvleček

Po standardni srednjeevropski metodi (Braun-Blanquet 1964) smo v južnih Julijskih Alpah (Črna prst, Kobla, Slatnik, Porezen) preučili rastlinske združbe na nekdanjih subalpinskih senožetih in pašnikih, v katerih uspeva vrsta *Eryngium alpinum*. Njihovo vrstno sestavo smo primerjali z vrstno sestavo podobnih združb visokih steblik in subalpinskih travišč drugod v Alpah (Aichinger 1933, Braun-Blanquet 1969, 1976, Béguin 1972, Sutter 1978, Gehu-Franck & al. 1984, Franz 2004 mscr.) in v Dinarskem gorstvu (Horvat 1930, 1962, Fukarek 1957, Horvat & al. 1974). Na podlagi te primerjave večino sestojev z vrsto *Eryngium alpinum* v južnih Julijskih Alpah uvrščamo v naslednje sintaksone: *Carici ferrugineae-Eryngietum alpinae* Seljak ex Dakskobler, Franz & Seljak 2005 ass. nova (zveza *Caricion ferrugineae* in razred *Elyno-Seslerietea*), *Allio victorialis-Eryngietum alpinae* Franz (1997) 2004 mscr. var. *Serratula macrocephala* prov. (zveza *Adenostylion alliariae* in razred *Mulgedio-Aconitetea*) in *Salicetum waldsteinianae* Beger 1922 corr. Zupančič & Žagar 2001 var. geogr. *Homogyne sylvestris* Zupančič & Žagar 2001 (zveza *Alnion viridis* in razred *Mulgedio-Aconitetea*).

Abstract

Applying the standard Central-European method (Braun-Blanquet 1964) we studied the plant communities on former subalpine hay-fields and meadows with *Eryngium alpinum* in the southern Julian Alps (Mts. Črna prst, Kobla, Slatnik, Porezen). Their species composition was compared to the species composition of similar tall herb communities and subalpine grasslands elsewhere in the Alps (Aichinger 1933, Braun-Blanquet 1969, 1976, Béguin 1972, Sutter 1978, Gehu-Franck & al. 1984, Franz 2004 mscr.) and the Dinaric mountains (Horvat 1930, 1962, Fukarek 1957, Horvat & al. 1974). Based on this comparison, most stands with *Eryngium alpinum* in the southern Julian Alps are classified into the following syntaxa: *Carici ferrugineae-Eryngietum alpinae* Seljak ex Dakskobler, Franz & Seljak 2005 ass. nova (alliance *Caricion ferrugineae* and class *Elyno-Seslerietea*), *Allio victorialis-Eryngietum alpinae* Franz (1997) 2004 mscr. var. *Serratula macrocephala* prov. (alliance *Adenostylion alliariae* and class *Mulgedio-Aconitetea*) and *Salicetum waldsteinianae* Beger 1922 corr. Zupančič & Žagar 2001 var. geogr. *Homogyne sylvestris* Zupančič & Žagar 2001 (alliance *Alnion viridis* and class *Mulgedio-Aconitetea*).

Ključne besede: *Eryngium alpinum*, *Caricion ferrugineae*, *Adenostylion alliariae*, *Alnion viridis*, fitocenologija, sinsistematika, južne Julijske Alpe, zahodna Slovenija
Key words: *Eryngium alpinum*, *Caricion ferrugineae*, *Adenostylion alliariae*, *Alnion viridis*, phytosociology, synsystematics, the southern Julian Alps, western Slovenia

1. INTRODUCTION

Eryngium alpinum is a Central- and south-European mountain species, included into The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora – 1992. Therefore its localities and sites call for extra attention and protection.

The species is distributed in the Alps and the Dinaric mountains and is classified among Alpine-

* Biološki inštitut Jovana Hadžija ZRC SAZU, Regijska raziskovalna enota Tolmin, Brunov drevored 13, SI - 5220 Tolmin, Slovenija; Igor.Dakskobler@guest.arnes.si
** Am Birkengrund 75, A-9073 Klagenfurt-Viktring; wfranz@aon.at
***Kmetijsko-gozdarski zavod Nova Gorica, Pri hrastu 18, 5000 Nova Gorica; GabrijelS@kvz-ng.si

Illyrian species (Aeschimann & al. 2004a: 1074). Its localities are in the French (High) Jura, along the Alpine chain from the Maritime to the Carnic Alps, Julian Alps and the Karavanke (Karawanken) mountains (but not in the Austrian part of these mountains), as well as in the Dinaric mountains up to Bosnia and Montenegro. Its occurence in the Carpathians (Tatra) in Slovakia is questionable (Hlavaček & al. 1984: 193, the species is not included in the Register of Slovakian flora – Marhold 1998). In Slovenia it grows in the Julian Alps (the Krn mountain chain, Mts. Črna prst and Porezen) and in the Karavanke mountains. Its localities in Slovenia were recently presented in more detail (Dakskobler 2004), whereas the most endangered and in places possibly even lost localities in the Karavanke mountains were described by Praprotnik (2002, 2004). In Slovenia, the species grows on former hay-fields, on coarse, overgrown hillside scree (talus) and on rocky plains. The geological bedrock is limestone, occasionally mixed with marl, claystones and cherts.

2. REVIEW OF COMMUNITIES WITH *ERYNGIUM ALPINUM* DESCRIBED SO FAR IN SLOVENIA, ELSEWHERE IN THE ALPS AND IN THE DINARIC MOUNTAINS

In general, *Eryngium alpinum* is a plant of open habitats, natural and secondary grasslands along or just above the upper timberline. It grows above all in the communities of the alliance *Caricion ferrugineae* G. & J. Br.-Bl. 1931 and in the communities of the order *Adenostyletalia* G. & J. Braun-Blanquet 1931 (Oberdorfer 1983: 698, Kässerman & Moser 1999: 134), as well as in tall herb communities of the altimontane and subalpine belt from the alliance *Calamagrostion arundinaceae* Oberdorfer 1950 (Kässerman & Moser 1999: 134, Aeschimann & al. 2004a: 1074). There are relatively few phytosociological studies of its sites. In his extensive monography on the vegetation of the Karavanke mountains, Aichinger (1933) included a phytosociological table with four relevés when describing the association *Caricetum ferruginei carniolicum* Aichinger 1933, and thus illustrated the transition between the stands of this association and various stands of tall herbs. In one of the relevés of this transitional, synsystematically unclassified community, the occurrence of *Eryngium alpinum* was noted. Aichinger (1933: 130–131) found this transitional community in gently sloping hollows on the southern slopes of Mt. Golica (which is in the territory of Slovenia), at an altitude of 1650 to 1700 m. The locality of *Eryngium alpinum* was documented with a phytosociological table also on the southern slopes of Mt. Porezen in the foothills of the Julian Alps. It was here that Seljak (1974: 61–64) in his graduation thesis presented a community of the species *Eryngium alpinum-Carex ferruginea* with four relevés at an altitude between 1370 and 1450 m. On Mt. Črna prst, under Lisec, the stands with *Eryngium alpinum* were first phytosociologically studied by T. Wraber (1990: 52), but his relevé was not published (T. Wraber, written note, 2003). In recent years, the successional stage *Centaureo julici-Laserpitietum sileris* Dakskobler 2003 (nom. prov.) was described when researching former hay-fields in the Julian Alps. The phytosociological table of this community (relevé No. 1 in the Phytosociological Table 1, under Slatnik, in the upper Bača Valley) includes *Eryngium alpinum* (Dakskobler 2003a). In the wider region of Mt. Črna prst, three relevés with this species have been published so far: in the shrub community with the species *Acer pseudoplatanus, Rhamnus fallax, Ribes petraeum, R. alpinum* and *Lonicera alpigena*, in the stand of the syntaxon *Salicetum waldsteinianae* Beger 1922 corr. Zupančič & Žagar 2001 var. geogr. *Homogyne sylvestris* Zupančič & Žagar 2001, and in the stand of the provisionally described community *Allio victorialis-Eryngietum alpinae* nom. prov. (Dakskobler 2003b: 52–53, and Phyt. Tab. 4 on pages 65–66).

Several authors have written about *Eryngium alpinum* elsewhere in the Alps and in the Jura. Braun-Blanquet (1969) described an endemic tall herb community of the subalpine belt (1800 to 2000 m a.s.l.) in the southwestern (French) Alps, *Myrrhido-Adenostyletum* Braun-Blanquet 1969. Among the character species of this association he mentioned also *Eryngium alpinum* (although it occurs in only one of the six published relevés). In his extensive analysis of the vegetation and ecology of the High Jura in Switzerland and France, Béguin (1972, effectively in fact published not earlier than in 1974*)

* Claude Béguin's thesis »Contribution à l'étude phytosociologique et écologique du Haut Jura«, Beitr. Geobot. Landesaufn. Schweiz 54, 190 pp. + 1 map was effectively published as late as in 1974. Therefore, the date of publication of all syntaxonomical novelties published in the thesis is in fact 1974. Unfortunately, many people are not aware of this (the publication was delayed be-

described among others also a new association *Campanulo-Laserpitietum latifoliae* Béguin 1972 (alliance *Caricion ferrugineae*, Table 8), whose character species include *Eryngium alpinum* (although it occurs in only two of the 18 relevés, in its humid form). An interesting tall herb community with *Eryngium alpinum* was described in the Swiss Alps (Nufenen, Hinterrheintal) by Braun-Blanquet (1976: 11–12), who found it in a stony, sunny gully at an altitude between 1920 to 1960 m and published two relevés. Characteristic for this community is an abundant occurrence of the species *Eryngium alpinum, Stemmacantha rhapontica, Dactylis glomerata, Chaerophyllum hirsutum, Festuca violacea, Helianthemum grandiflorum, Heracleum montanum, Hieracium prenanthoides, Laserpitium latifolium, Gentiana lutea, Crepis pyrenaica* etc. Braun-Blanquet (1976) allowed the possibility that this was an independent association or a specific form of the association *Peucedano ostruthi-Cirsietum spinosissimi* J. & G. Br.-Bl. 1931. Sutter (1978) classified the tall herb community from the Swiss Central Alps dominated by *Stemmacantha rhapontica* as the association *Eryngio-Centaureetum rhaponticae* Sutter 1978, and noted that both species after which the new association was named often share the same sites (and therefore similar ecology – limestone to neutral soil on southern slopes). He presented the new association with ten relevés – *Eryngium alpinum* occurs in only one of them (the two relevés published by Braun-Blanquet 1976 could probably be classified into this association, too). Karner & Mucina (1993: 475–476) treat Sutter's name as a syntaxonomical synonym for the association *Centaureetum rhaponticae* van Gils & Gilissen 1976 (as the latter name was published before Sutter's, although not yet at the time when Sutter was writing his thesis). In the original description of the association *Centaureetum rhaponticae* (van Gils & Gilissen 1976) *Eryngium alpinum* no longer occurs, but Karner & Mucina (1993: 476) classify it as the character species of the association. A somewhat similar community with *Stemmacantha helenifolia* and *Eryngium alpinum* as the dominant species was described in the French Alps by Gehu-Franck & al. (1984), who classified it into the new association *Polygono bistortae-Eryngietum alpini* Gehu-Franck, Gehu & Dhennin 1984. In the Southeastern Alps (the Carnic Alps and Gailtaler Alps), the stands with *Eryngium alpinum* have been studied in recent years by one of the co-authors of this article, Franz (1997, 2002, 2004 mscr.). His, for now unpublished, relevé material on the community of the species *Allium victorialis* and *Eryngium alpinum* (*Allio victorialis-Eryngietum alpinae* Franz nom. prov.) was used in our comparisons. Some subassociations of this community can be expected in Carinthia and Italy.

In the Dinaric mountains, the stands with *Eryngium alpinum* were phytosociologically first studied by I. Horvat (1930). He found the species in the subalpine grasslands in the Croatian part of this mountain range (northern and southern Velebit, Lička Plješivica). In the grasslands from the alliance *Festucion pungentis* Horvat 1930 (dry grasslands on deep limestone soil on more or less sheltered aspects) the species grows in the stands of the association *Festucetum pungentis* Horvat 1930, where it is one of the character species (in the phytosociological table with 29 relevés it has the frequency of 31 % – Horvat 1930, Tab. 5, in the Synoptic Table 143, in Horvat & al. 1974: 607–608 it is mentioned with the constancy of 1 to 4 in three forms of the association). Later it was mentioned also in the stands of the provisionally described association *Festuca pungens-Centaurea kotschyana* Horvat nom. prov. on Durmitor in Montenegro (Horvat 1930, Horvat & al. 1974: 605–609). Horvat (1930: 67) wrote that *Eryngium alpinum* on Plješevica (= Plješivica) and in the northern Velebit grows in subalpine grasslands and open dwarf pine stands (*Pinetum mugo* s. lat.). Later, in 1956, Horvat described the association *Adenostylo alliariae-Doronicetum austriaci* Horvat ex Horvat, Glavač & Ellenberg 1974 on Bjele Stijene in Velika Kapela, on Snježnik and Plješivica, mostly in small karst sinkholes. *Eryngium alpinum* (Horvat & al. 1974: 581) is one of the local character species of the association, although this is not mentioned in Horvat's short description of the community (Horvat 1962: 103). Horvat classified the other group of communities with *Eryngium alpinum* into the alliance *Caricion ferrugineae*. He recorded it in the stands of the association *Calamagrostio-Centaureetum pseudophrygiae* Horvat ex Horvat & al. 1974 (on Risnjak and Snježnik, see also Horvat 1962: 100), *Hyperico grisebachii-Caricetum ferrugineae* Horvat ex T. Wraber 1971 (on the same location), and in the stands of the provisionally described community *Ranunculus thora-Astrantia major* ass. Horvat nom. prov. on Bjelašnica in Bosnia (Horvat & al. 1974: 605–609). In Bosnia, on the Plazenica alp, Fukarek (1957)

cause C. Béguin was on leave in the United States, but as the cover had already been printed before his departure, they did not want to change the date) – Theurillat (electronic message, 30. 3. 2005).

described a shrub community of *Eryngium alpinum* and *Sorbus chamaemespilus* (association *Sorbetum chamaemespilis* Fukarek 1957). It was documented with three relevés (Fukarek 1957: 167). This community grows on dolomite bedrock as high as at the altitude between 1630 and 1660 m, in the belt of subalpine beech forests (»*Fagetum subalpinum dolomiticum*«). A short description of the sites with *Eryngium alpinum* in the Dinaric mountains can be found also with Forenbacher (1990: 511–513): it grows very infrequently on stony subalpine meadows, on dwarf pine edges, among stones and on sinkhole edges, only on high and the highest aspects on the Velebit, whereas in Herzegovina it is found on stony localities in the subalpine and alpine belt in the Blidinje Nature Park (Šilić 2002: 117).

Apart from the phytosociological studies we would like to call attention also to the recently published, detailed study on the reproductive ecology of the species *Eryngium alpinum* (Gaudeul & Till-Bottraud 2004), which was conducted in the Fournel Valley in France (with supposedly the richest localities of this species in Europe).

3. METHODS

Applying the standard Central-European phytosociological method (Braun-Blanquet 1964) we studied the stands with *Eryngium alpinum* found in the wider region of Mt. Črna prst (1844 m): under and on the ridge of Lisec (1653 m), in Home under Črna gora ridge, in Blehe under the peak of Šoštar, on Štuke above Stržišče, in Krevle under the peak of Kobla (1498 m) and under the Slatnik ridge (1600 m), as well as on the southern and southwestern slopes of Mt. Porezen (1630 m) above the Zapoška gorge. Most of the relevés were made in the last few years (2001–2004, author I. Dakskobler), with the exception of four relevés from Mt. Porezen, which are older (from 1974, author G. Seljak). When arranging the relevés into a phytosociological table we applied the methods of hierarchical classification and the ordination method of principal coordinates analysis (PCoA). We used the program package SYN-TAX (Podani 2001). The results of numerical methods were combined with the classic arrangement based on diagnostic species. A synoptic table was made into which we classified, apart from ours, also similar communities of tall herbs and subalpine grasslands from various regions in the Alps, the Jura and the Dinaric mountains (see Chapter 2). These communities were then mutually compared by means of principal coordinates analysis (PCoA) and with hierarchical classification. The nomenclature sources for the names of vascular plants were the *Mala flora Slovenije* (Martinčič & al. 1999) and *Flora alpina* (Aeschimann & al. 2004a, b, c), and Martinčič (2003) for the names of mosses. The *Flora alpina* was considered also when classifying the species into syntaxonomical groups. We found considerable differences in the nomenclature of syntaxa of the ranks higher than association in certain monographic reviews (e.g. between the *Flora alpina* and the *Pflanzengesellschaften Österreichs* – Grabherr & Mucina 1993). As we cannot corroborate the accuracy of certain authorial citations without the original sources (which are not at our disposal), our nomenclature follows the above quoted literature.

4. ECOLOGICAL CHARACTERIZATION OF THE RESEARCH AREA

The research area is part of the southern Julian Alps and their foothills. Here, the species *Eryngium alpinum* grows in the subalpine belt, at an altitude from around 1350 to 1650 m. Geological bedrock is partly Triassic Dachstein limestone (the Lisec ridge, Mt. Črna prst, Blehe near Šoštar), Jurassic limestone with addition of chert and marl (Krevle under Mt. Kobla, Slatnik), claystone, siltstone and chert (Triassic) – Štuke above Stržišče and Cretaceous platy limestone with addition of marl and chert (Porezen) – resumed after Buser (1986, 1987). The localities of *Eryngium alpinum* under Lisec are partly still in the belt of the subalpine beech forest, *Polysticho lonchitis-Fagetum* (I. Horvat 1938) Marinček in Poldini & Nardini 1993 (above the Osredki alp). Subalpine scrub vegetation prevails under the very stony top of the Lisec– Kozji rob ridge: partly dwarf pine stands – *Rhododendro hirsuti-Pinetum prostratae* Zöttl 1951 nom. inv. var. geogr. *Anemone trifolia* Poldini, Oriolo & Francescato 2004 [synonims *Rhodothamno-Rhododendretum hirsuti* (Aichinger 1933) Br.-Bl. & Sissingh in Br.-Bl. & al. 1939 var. geogr. *Paederota lutea* Zupančič & Žagar in Zupančič, Wraber & Žagar 2004, *Rhodothamno-Pinetum mugo* Zupančič & Žagar 1980 mscr.], partly Waldstein willow stands – *Salicetum waldsteinianae* var. geogr. *Homogyne sylvestris*, pioneer stands

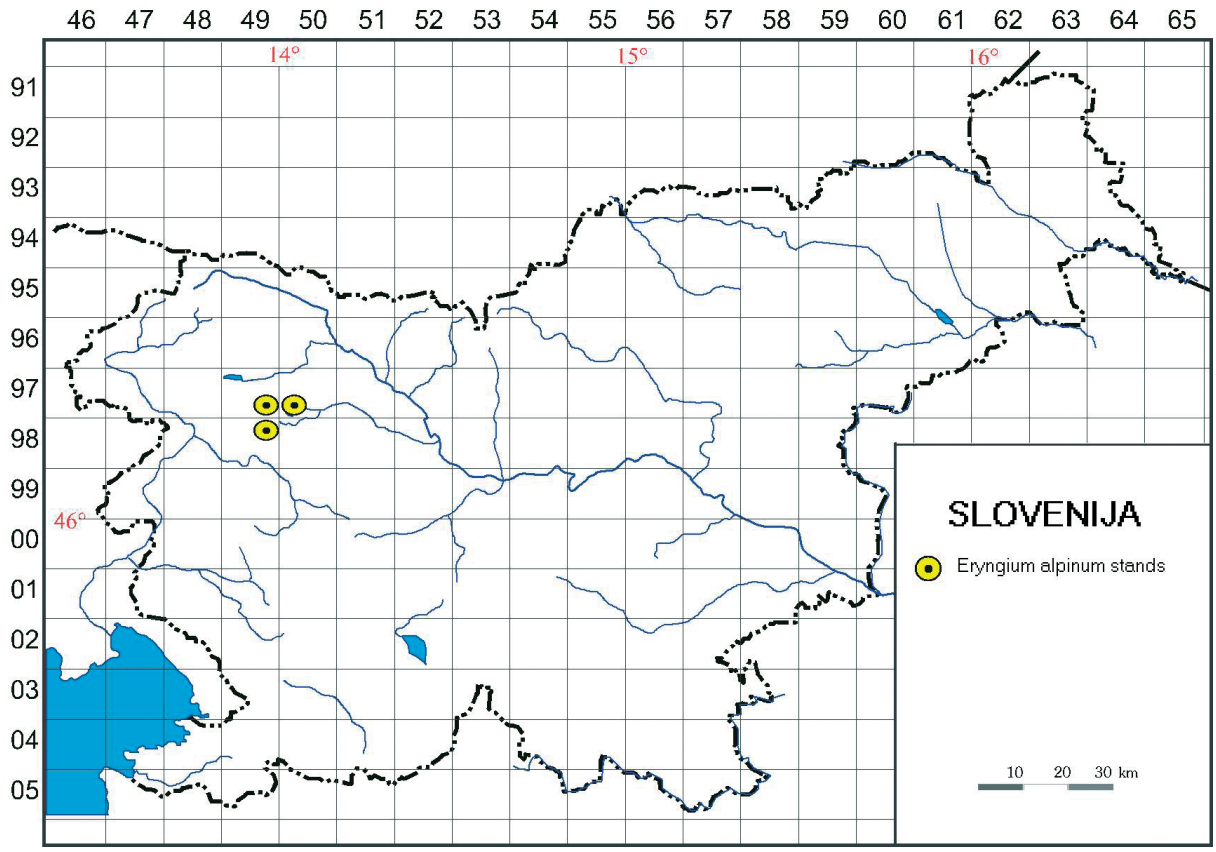

Figure 1: Localities of the research communities with *Eryngium alpinum* in the southern Julian Alps
Slika 1: Lokacije preučevanih združb z vrsto *Eryngium alpinum* v južnih Julijskih Alpah

of large-leaved and Alpine willow (*Salix appendiculata, S. glabra*), green alder (*Alnus viridis*) and tall herb communities. In part still active pastures on the Lisec and Osredki alps are mostly located a little lower on both sides of the above-mentioned ridge. Naturally subalpine vegetation of tall herbs developed also on the gravelly slopes of Home under the ridge of Črna gora. On the very stony sites under Lisec, as well as under Črna gora, there is initial soil, Lithosols and in places rendzina.

All other localities of *Eryngium alpinum* under Mts. Črna prst and Porezen are on former hay-fields, i.e. still in the belt of the subalpine beech forest. The slopes on these hay-fields are usually very steep (locally, prominences such as Štuke, are less steep); as a rule the aspect is sunny, and the soil usually deeper, colluvial-delluvial in gullies, elsewhere rendzina, and on prominences eutric and dystric brown soil. For the most part, people stopped mowing these hay-fields in 1950s and 1960s. Since then they have gradually become overgrown, above all with spruce (see Dakskobler 2003a). This overgrowth, however, is slower in gullies with recurrent avalanches than on prominences and ridges.

The climate of the subalpine belt of this part of the Julian Alps is humid, with abundant precipitation (on average 2500 to 3000 mm annually – resumed after Zupančič 1995). Precipitation is rather evenly distributed over the year with peaks in late spring and early summer (May, June) and in late autumn months (October, November). The snow cover is thicker and longer-lasting (from November to May) mostly on shady aspects (Lisec, Črna gora), whereas sunny aspects often remain snowless even in winter. Only in gullies does the snow remain longer (which is precisely where *Eryngium alpinum* usually grows). There is less information on temperature conditions as there are no such stations for now. The mean annual temperature on Komna (1520 m a.s.l.) in the period 1961–1990 was 3.7 °C (interpolated value), the coldest month was January (–4 °C), the warmest was July (12.4 °C) – Mekinda-Majaron (1995: 41, 56, 79). These temperature data would probably correspond to the localities of *Eryngium alpinum* under Lisec and Črna gora,

and less so to other localities on sunny aspects of Mts. Črna prst, Kobla, Slatnik and Porezen, where the mean temperature is supposedly slightly higher than at the same altitude on shady slopes of the Tolmin-Bohinj ridge, where Komna is situated too.

5. RESULTS AND DISCUSSION

29 relevés of communities with *Eryngium alpinum* from the southern Julian Alps were incorporated into Table 1. When arranging the table we established four groups. Only one relevé, under the top of Lisec, was classified into the association *Salicetum waldstenianae* s. lat. Three relevés, also from the vicinity of Lisec, in our opinion indicate the transition, a successional stage of the subalpine grassland, towards the subalpine willow stand. Relevés made on Štuke under Mt. Črna prst group separately (on deep and slightly acid soil). The largest group of relevés (relevés 5 to 24 in Table 1, in a wider sense also transitional relevés 2–4 in this table) would conditionally belong to the community of *Eryngium alpinum-Carex ferruginae* – Seljak (1974: 61–64), while the group of relevés from Štuke (No. 25 to 29) is incorporated into the provisionally described association *Allio victorialis-Eryngietum alpinae*.

These two syntaxa were therefore included into the comparative, i.e. synoptic table (simplified in Table 2) as two separate columns and then compared with some similar communities of subalpine-alpine grasslands dominated by rusty-brown sedge (*Caricetum ferrugineae* s. lat.) and with some tall herb communities with *Eryngium alpinum*. The following syntaxa were included into the synoptic table:

1 CjLs: *Centaureo julici-Laserpitietum sileris* Dakskobler 2003 nom. prov., the southern Julian Alps, Dakskobler (2003a, supplemented);
2 CfEa: *Carici ferrugineae-Eryngietum alpinae* Seljak ex Dakskobler, Franz & Seljak 2005 ass. nova – the southern Julian Alps: Mts. Črna prst and Porezen, this study, Tab 1, relevés 5–24;
3 AvEa1: *Allio victorialis-Eryngietum alpinae* Franz (1997) 2004 mscr. var. *Seratula macrocephala* prov., the southern Julian Alps – Štuke under Mt. Črna prst, this study, relevés 25–29;
4 CLl: *Campanulo-Laserpitietum latifoliae* Béguin 1972, the High Jura, Béguin (1972);
5 AvEa2: *Allio victorialis-Eryngietum alpinae* Franz (1997) 2004 mscr., Austria, the Carnic Alps (Karnische Alpen), Franz (2004 mscr.);
6 EaCr: *Eryngio-Centaureetum rhaponticae* Sutter 1978, the Swiss Central Alps, Sutter (1978);
7 PbEa: *Polygono bistortae-Eryngietum alpini* Gehu-Franck, Gehu & Dhennin 1984, Vanoise, the French Alps, Gehu-Franck & al. (1984);
8 MyAa: *Myrrhido-Adenostyletum* J. Br.- Bl. 1969, the southwestern (French) Alps, Braun-Blanquet (1969);
9 Cf-H: Transition between the association *Caricetum ferrugineae* s. lat. and tall herbs community – Mt. Golica, the Karavanke, Aichinger (1933);
10 AaDa: *Adenostylo-Doronicetum* Horvat ex Horvat, Glavač & Ellenberg 1974, the Dinaric mountains, Horvat in Horvat & al. (1974);
11 Cf-1: *Caricetum ferrugineae carniolicum* Aichinger 1933 – Mt. Golica, the Karavanke, Aichinger (1933);
12 Cf-2: *Caricetum ferrugineae* Lüdi 1921 s. lat., the Julian Alps, the Krn mountain range, Surina (2004);
13 Cf-3: *Caricetum ferruginea* Lüdi 1921 s. lat., the southern Julian Alps, the Tolmin-Bohinj ridge, Dakskobler (2004, mscr.);
14 CCp: *Calamagrostio-Centaureetum pseudophrygiae* Horvat ex Horvat, Glavač & Ellenberg 1974, Croatia, the northern part of the Dinaric mountains, Horvat in Horvat & al. (1974);
15 HrCf: *Hyperico grisebachii-Caricetum ferugineae* Horvat ex T. Wraber 1971, Croatia, the northern part of the Dinaric mountains, Horvat in Horvat & al. (1974).

Horvat's association *Festucetum pungentis* (Horvat 1930, Table 5) was not included into the synoptic table as it is ecologically, and above all floristically, considerably different from the studied communities in the southern Julian Alps. However, there are some interesting species which they have in common: apart from *Eryngium alpinum*, also *Centaurea haynaldii, Scorzonera rosea, Serratula tinctoria* subsp. *macrocephala, Crepis bocconi, Scabiosa lucida* subsp. *stricta, Betonica alopecuros, Gentiana lutea* subsp. *symphyandra, Koeleria eriostachya, Libanotis montana* (= *Seseli libanotis*), *Laserpitium siler, Lilium carniolicum, Veratrum album* s. lat. and some others.

With the ordination method of principle coordinates we obtained the following two-dimensional scatter-diagram (Figure 2).

The studied stands with *Eryngium alpinum* are floristically most similar to a tall herb community on former hay-fields in the southern Julian Alps, i. e. to the stands of the association *Centaureo julici-Laserpitietum sileris*. Floristically the most similar to

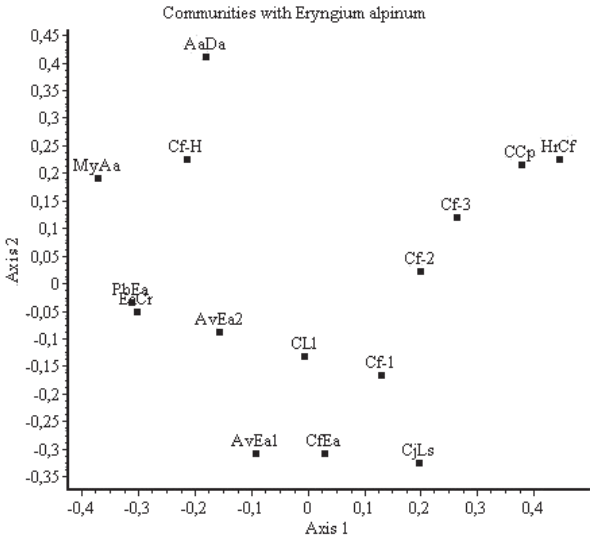

Figure 2: Two-dimensional scatter-diagram of the communities with *Eryngium alpinum* in the Alps and the Dinaric mountains (PCoA, similarity ratio)
Slika 2: Dvorazsežni ordinacijski diagram združb z vrsto *Eryngium alpinum* v Alpah in Dinarskem gorstvu (PCoA, similarity ratio)

our stands among the *Carex ferruginea* communities (*Caricetum ferrugineae* s. lat.) are the stands of the community described in the Karavanke by Aichinger (11) – Grabherr & al. (1993: 430) classify it into the association *Hyperico alpini-Cericetum ferrugineae* Horvat ex T. Wraber 1971 (= *Hyperico grisebachii-Cericetum ferrugineae* Horvat ex T. Wraber 1971), whereas the stands of the association *Caricetum ferrugineae* s. lat. in the Tolmin-Bohinj (Dakskobler 2004 mscr.) and Krn (Surina 2004) region of the Julian Alps resemble them to a considerably smaller extent. It should be noted, however, that the problems regarding the synsystematic affiliation of grasslands dominated by *Carex ferriginea* in the Southeastern Alps are still open, and that for the time being its stands in the Julian Alps cannot be classified into the association *Horminio pyrenaici-Caricetum ferrugineae* Buffa & Sburlino 2001 nor into the Dinaric association *Hyperico grisebachii-Caricetum ferrugineae* (compare also Buffa & Sburlino 2001, Surina 2004: 99–101). Among other communities dominated by tall herbs the stands of the association *Campanulo-Laserpitietum latifoliae* from the High Jura in France (4) floristically resemble our stands the most. The stands of this community grow in very similar site conditions at an altitude of about 1300 to 1600 m, on very steep (25 to 40 °) sunny (southern, southwestern and southeastern) slopes on limestone bedrock with shallow rendzina. Characteristic for the community is a wide variety of species (about 70 species per 100 m^2), but, unlike the ecologically similar community *Seslerio-Laserpitetum* Moor 1957, its author classifies it into the alliance *Caricion ferrugineae*. Within this community, *Eryngium alpinum* occurs only in the mesophilous variant (the autor calls it "facies humide"). Our stands are slightly less similar to the stands of – for the time being only provisionally described – association *Allio victorialis-Eryngietum* from the Carnic Alps. Other tall herb communities are floristically very different from ours. The ordination diagram clearly illustrates the transitional position of the studied communities (between subalpine-alpine grasslands of the class *Elyno-Seslerietea* and the alliance *Caricion ferrugineae*) and tall herb communities from the class *Mulgedio-Aconitetea*. When applying the methods of hierarchical classification (Figure 3) the studied communities always united into clusters with subalpine-alpine grasslands (and are therefore closer to the alliance *Caricion ferrugineae* or the class *Elyno-Seslerietea*).

Results of ordination and classification of the syntaxa from Table 2 (Figures 2 and 3) suggest the possibility that the studied stands (*Carici ferrugineae-Eryngietumn alpinae*) could be included into the association *Centaureo julici-Laserpitietum sileris* as a specific subassociation *-eryngietosum alpinae* (with the differential species *Eryngium alpinum* and *Carex ferruginea*), and that the variant with the species *Allium victorialis* (the stands on Štuke under Mt. Črna prst, five relevés temporarily classified as ass. *Allio victorialis-Eryngietum alpinae*) is differentiated separately within the syntaxon. Such a syntaxonomical solution is additionally supported by the fact that both communities compared are a relatively long-lasting successional stage with dominating tall herbs on former hay-fields in the subalpine (still forest) belt of the southern Julian Alps. Even the ecology is relatively similar (the same altitudinal belt, similar geological bedrock, gradient, exposition), although the stands with *Eryngium alpinum* usually grow in gullies, on somewhat damper soil where the snow stays longer and organic matter accumulates. To re-examine this possibility, we included into the working table the relevés of the association *Centaureo julici-Laserpitetum sileris* (apart from the already published, Dakskobler 2003a – also several additional ones made under Mt. Kobla and Črna gora near Mt. Črna prst in 2004) and the relevés of the communities with *Eryngium alpinum*. Altogether 57 relevés were mutually compared by means of hierarchical classification (MISSQ – min-

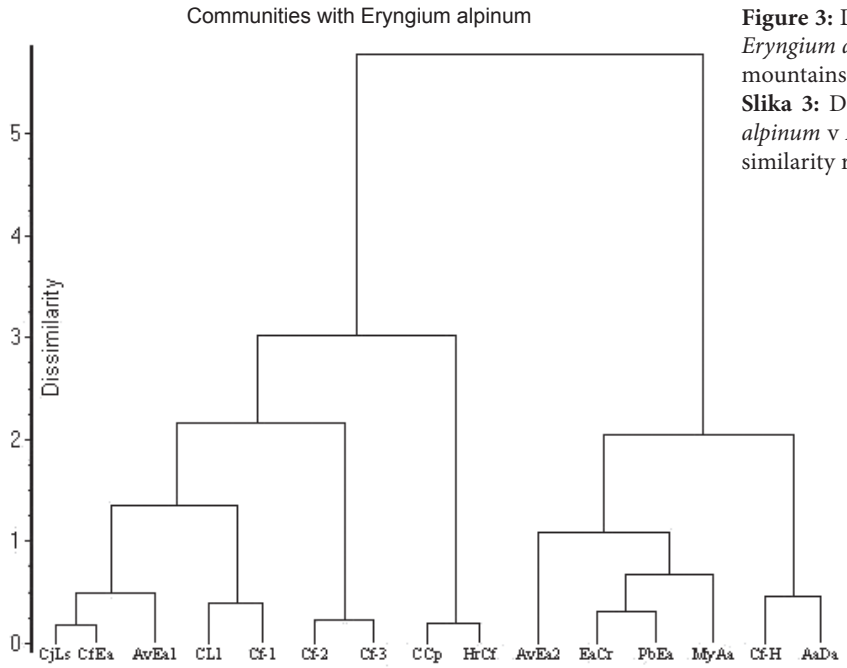

Figure 3: Dendrogram of the communities with *Eryngium alpinum* in the Alps and in the Dinaric mountains (MISSQ, similarity ratio)
Slika 3: Dendrogram združb z vrsto *Eryngium alpinum* v Alpah in Dinarskem gorstvu (MISSQ, similarity ratio)

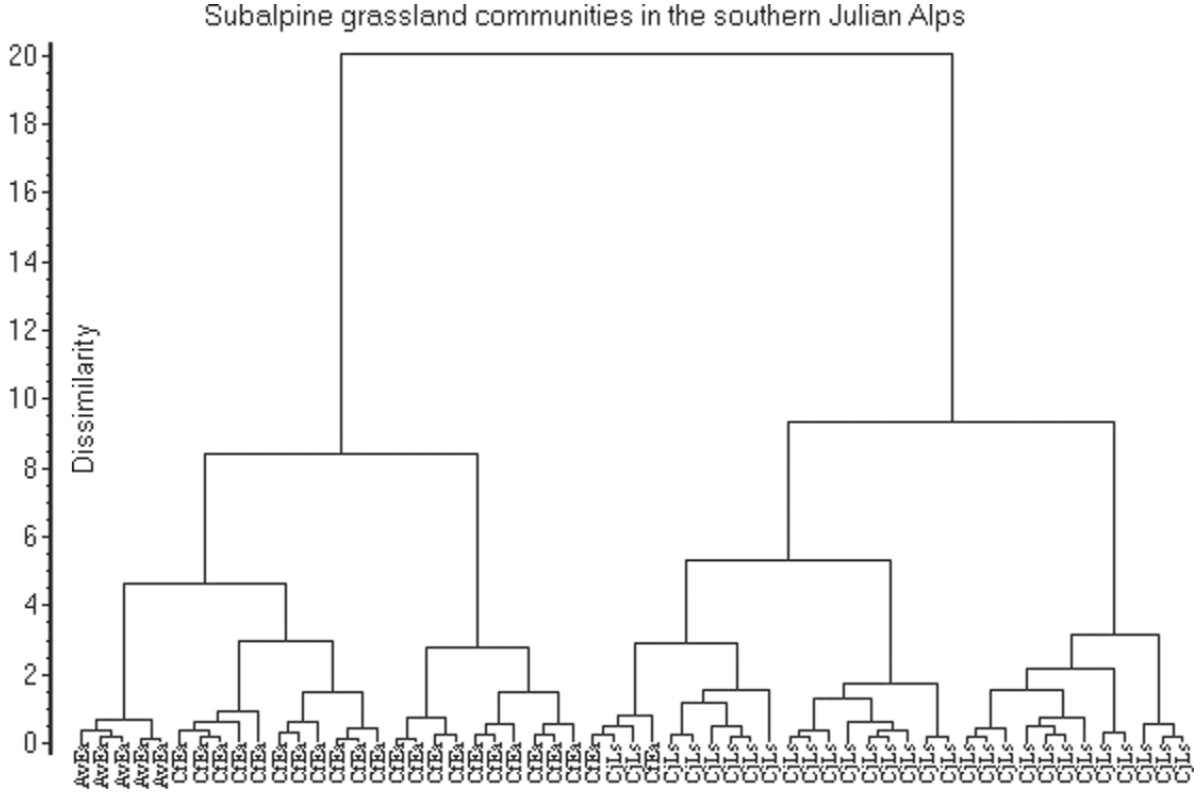

Figure 4: Dendrogram of the subalpine grassland stands in the southern Julian Alps: AvEa – *Allio victorialis-Eryngietum alpinae*, CfEa – *Carici ferrugineae-Eryngietum alpinae*, CjLs – *Centaureo julici-Laserpitetum sileris*; MISSQ, similarity ratio
Slika 4: Dendrogram sestojev subalpinskih travišč v južnih Julijskih Alpah: AvEa – *Allio victorialis-Eryngietum alpinae*, CfEa – *Carici ferrugineae-Eryngietum alpinae*, CjLs – *Centaureo julici-Laserpitetum sileris*; MISSQ, similarity ratio

imum increase of error sum of squares) and ordination method of principle coordinates analysis (PCoA) – Figures 4 and 5.

According to the results, the relevés with *Eryngium alpinum* mostly group separately from the relevés classified into the association *Centaureo julici-Laserpitietum sileris*. Only a group of four relevés could be characterised as a sort of transition between both communities. It comprises two relevés classified into the studied community of the species *Eryngium alpinum* and *Carex ferruginea* (relevés No. 8 and 9 in Table 1). In 2003 we provisionally included the first into the association *Centaureo julici-Laserpitietum sileris*, although we pointed out that there was a certain similarity with the *Carex ferruginea* communities (Dakskobler, 2003a: 26, and Phytosociological Table 1, relevé 1).

Based on these additional comparisons we consider it appropriate to treat the stands with *Eryngium alpinum* in the southern Julian Alps separately from the floristically very similar stands of the association *Centaureo julici-Laserpitietum sileris*. A large part of its diagnostic species grow also in the stands of the community *Carici ferrugineae-Eryngietum alpinae*, but the edifier *Laserpitium siler* is not found in all of them (frequency 55 %). Other diagnostic species of the successional stage *Centaureo julici-Laserpitietum sileris* have the following frequencies in the stands of the community *Carici ferruginea-Eryngietum alpinae*: *Laserpitium latifolium* 80 %, *Centaurea haynaldii* subsp. *julica* 85 %, *Serratula tinctoria* subsp. *macrocephala* 85 %, *Lathyrus occidentalis* var. *montanus* 45 %, *Lilium carniolicum* 65 %, *Chamaecytisus hirsutus* subsp. *ciliatus* 20 %, *Carduus crassifolius* 20 % and *Gentiana lutea* subsp. *symphyandra* 20 %. This means that above all the last three species have the highest differential value. Apart from them, the stands of the association *Centaureo julici-Laserpitietum sileris* are differentiated towards the studied community of the species *Eryngium alpinum* and *Carex ferruginea* also by the species *Laserpitium peucedanoides*, *Carex sempervirens, Dianthus monspessulanus, Erica carnea, Genista radiata, Carex humilis*, which also have a considerably higher constancy and which mostly indicate drier sites. The association *Carici ferrugineae-Eryngietum alpinae*, however, is

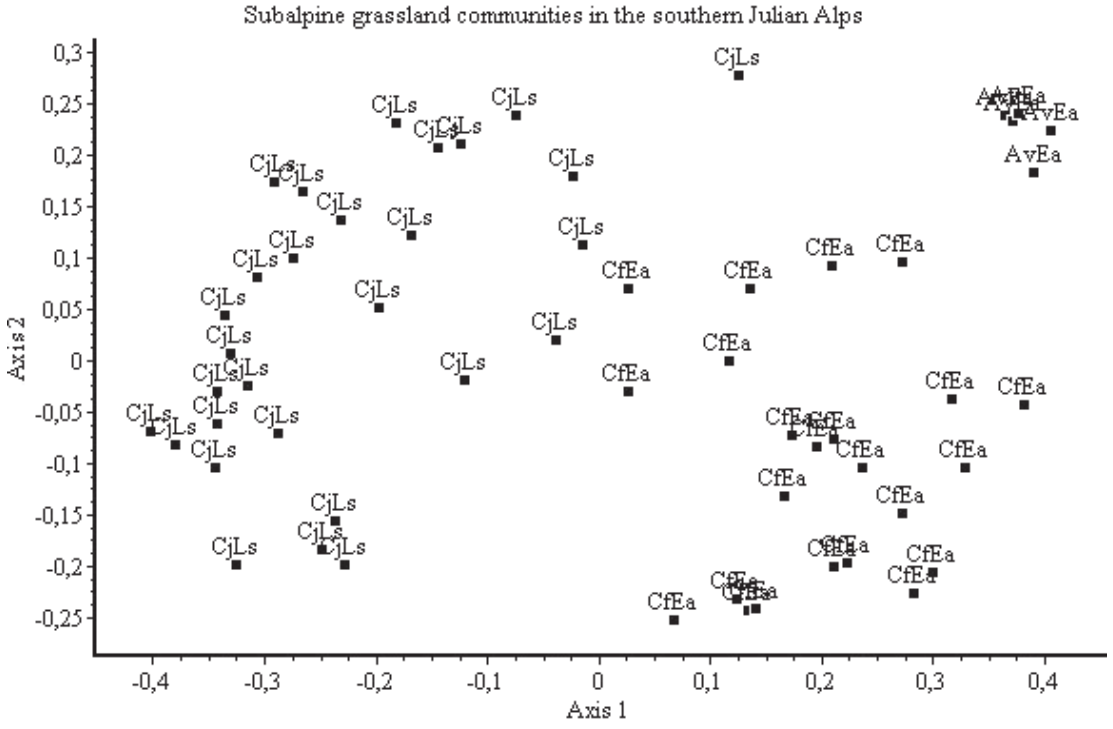

Figure 5: Two-dimensional scatter-diagram of the subalpine grassland stands in the southern Julian Alps: AvEa – *Allio victorialis-Eryngietum alpinae*, CfEa – *Carici ferrugineae-Eryngietum alpinae*, CjLs – *Centaureo julici-Laserpitetum sileris*; PCoA, similarity ratio

Slika 5: Dvorazsežni ordinacijski diagram subalpinskih travišč v južnih Julijskih Alpah: AvEa – *Allio victorialis-Eryngietum alpinae*, CfEa – *Carici ferrugineae-Eryngietum alpinae*, CjLs – *Centaureo julici-Laserpitetum sileris*; PCoA, similarity ratio

differentiated towards the stands of the association *Centaureo julici-Laserpitietum sileris* by the following species with much higher constancy: *Eryngium alpinum, Carex ferruginea, Crepis pyrenaica, Dactylis glomerata, Galium mollugo, Heracleum montanum, Hypericum maculatum, Phleum hirsutum, Agrostis tenuis, Pleurospermum austriacum* and *Rumex alpestris*, i.e. above all by the species that indicate more nutritious, moist soil and successional development towards tall herb communities. The provisionally described association *Centaureo julici-Laserpitetum sileris* is classified into the alliance *Caricion austroalpinae* Sutter 1962 and class *Elyno-Seslerietea* Br.-Bl. 1948, and the association *Carici ferrugineae-Eryngietum alpinae* into the alliance *Caricion ferrugineae* and class *Elyno-Seslerietea*.

Apart from the comparison of the communities *Centaureo julici-Laserpitietum sileris* and *Carici ferrugineae-Eryngietum alpinae,* there is another interesting parallel with somewhat similar communities described and compared by Béguin (1972) in the High Jura; namely the associations *Seslerio-Laserpitietum* Moor 1957 (alliance *Seslerion variae* Br.-Bl. in Br.-Bl. & Jenny 1926) – which is a sort of parallel (geographical variant?) to our association *Centaureo julici-Laserpitietum sileris,* and *Campanulo-Laserpitietum latifoliae* (alliance *Caricion ferrugineae*) – which is a parallel to the association *Carici ferrugineae-Eryngietum alpinae*.

Regarding the association *Centaureo julici-Laserpitietum sileris* we would like to bring attention to a report by Prof. Poldini (a written note of 29th Sept. 2003), where he mentioned that similar stands had been catalogued also in Friuli. He suggested that various regional forms (such as ours with *Centaurea haynaldii* subsp. *julica*) could be united in a new association for which he proposed the name *Laserpitio peucedanoidis-Laserpitietum sileris*. For this reason the association *Centaureo julici-Laserpitietum sileris* has not been typified as yet.

The nomenclature type (*holotypus*) of the association *Carici ferrugineae-Eryngietum alpinae* Seljak ex Dakskobler, Franz & Seljak 2005 is relevé No. 22 in Table 1 (i.e. relevé No. 1 in the unpublished graduation thesis, Seljak 1974: 62–64). The new association is characterised and differentiated from similar communities elsewhere in the Alps and the Dinaric mountains by the species combination of *Eryngium alpinum, Carex ferruginea* (relative character species), *Serratula tinctoria* subsp. *macrocephala* (= *S. tinctoria* subsp. *monticola*), *Pleurospermum austriacum, Tanacetum corymbosum* subsp. *clusii*, *Arabis pauciflora* (= *Fourraea alpina*), *Lilium carniolicum* (differential species), *Centaurea haynaldii* subsp. *julica, Ligusticum seguieri, Festuca calva, Omphalodes verna* (geographical differential species). Under Mt. Porezen we catalogued the facies with *Genista radiata* (this species is otherwise more characteristic for the stands of the association *Centaureo julici-Laserpitietum sileris*).

For the time being, five relevés in Table 1 (relevés 25 to 29) are not classified into this association, but are treated separately as the community of the species *Eryngium alpinum* and *Allium victorialis*. Our comparison (Table 2, Figures 2 and 3) determined considerable differences in the floristic composition between the stands of these two species under Mt. Črna prst and similar stands in the Carnic Alps (Franz 2004 mscr.). Regarding their entire floristic composition these stands are therefore still most similar to the stands of the associations *Carici ferrugineae-Eryngietum alpinae* and *Centaureo julici-Laserpitietum sileris*; however, when mutually compared they nevertheless still group separately (see Fig. 4 and 5). They differ from the already mentioned communities mainly by the larger abundance of the species of the order *Adenostyletalia* and class *Mulgedio-Aconitetea*, which means they indicate the transition between the communities of this class and the communities of the class *Elyno-Seslerietea*. The studied stands are relatively differentiated from the stands of the associations *Carici ferrugineae-Eryngietum alpinae* and *Centaureo julici-Laserpitietum sileris* by the species *Allium victorialis, Phyteuma zahlbruckneri, Astrantia major, Calamagrostis arundinacea, Achillea distans, Ranunculus platanifolius, Crepis bocconi, Carduus carduelis, Solidago virgaurea, Luzula luzuloides* and *Lilium martagon*.

Although the studied community is floristically considerably different from the similar community with the species *Eryngium alpinum* and *Allium victorialis* from the Carnic Alps, we temporarily, as a specific variant with differential species *Serratula tinctoria* subsp. *macrocephala* and *Tanacetum corymbosum* subsp. *clusii*, classify it into the – for now only provisionally described – association *Allio victorialis-Eryngietum alpinae* Franz (1997) 2004 mscr. Further comparisons of the communities with *Eryngium alpinum* in the Southeastern Alps (Franz, in preparation) would be required for a more reliable synsystematic classification. For the time being, the association *Allio victorialis-Eryngietum alpinae* is classified into the alliance *Adenostylion alliariae* Br.-Bl. 1962 and into the class *Mulgedio-Aconitetea* Hadač & Klika in Klika 1948 (or Hadač & Klika in Klika & Hadač 1944).

6. CONCLUSIONS

The Alpine-Illyrian montane species *Eryngium alpinum* is included in The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora – 1992, so its localities and sites call for extra attention and protection. Its stands in the Jura, the western and the southeastern Alps and the Dinaric mountains are very similar regarding their sites and ecology and are most often classified into tall herb communities (class *Mulgedio-Aconitetea*) and into *Carex ferruginea* communities (alliance *Caricion ferrugineae*, class *Elyno-Seslerietea*). In the last few years, when examining their localities for the Natura 2000 project, we focused our attention to a larger extent also on *Eryngium alpinum* in Slovenia (Praprotnik 2002, Dakskobler 2004). Its stands in the southern Julian Alps (under Mts. Črna prst, Lisec, Črna gora, Kobla, Slatnik and Porezen) – Fig. 1 were studied by applying the standard phytosociological method (Braun-Blanquet 1964), and 29 relevés were included into Table 1. The studied stands were compared with similar stands elsewhere in the Alps, the Jura and the Dinaric mountains. For this purpose we made a synoptic table (Table 2) and compared its syntaxa by means of hierarchical classification and the ordination method of principal coordinates analysis (PCoA) – Fig. 2 and 3. On the basis of these comparisons we established considerable floristic similarity of the studied stands to the stands of the recently described successional stage on abandoned subalpine hay-fields in the southern Julian Alps (association *Centaureo julici-Laserpitietum sileris* Dakskobler 2003 nom. prov., alliance *Caricion austroalpinae*), a relative floristic similarity with the stands of the association *Campanulo-Laserpitietum latifoliae* Béguin 1972 (alliance *Caricion ferrugineae*) from the High Jura in France (Béguin 1972), as well as with three relevés of the association *Caricetum ferrugineae carniolicum* Aichinger 1933 from Mt. Golica in the Karavanke mountains (Aichinger 1933). The tall herb communities with *Eryngium alpinum* from the western Alps (*Myrrhido-Adenostyletum* Braun-Blanquet 1969, *Eryngio-Centaureetum rhaponticae* Sutter 1978, *Polygono bistortae-Eryngietum alpini* Gehu-Franck & al. 1984) and the Dinaric mountains (*Adenostylo alliariae-Doronicetum austriaci* Horvat ex Horvat & al. 1974) are floristically much different, as are the communities dominated by *Carex ferruginea* from the Julian Alps (*Caricetum ferrugineae* Lüdi 1921 s. lat. – the Krn mountain chain, Surina 2004, the Tolmin-Bohinj ridge, Dakskobler 2004 mscr.) and from the Dinaric mountains (*Calamagrostio-Centaureetum pseudophrygiae* Horvat ex Horvat & al. 1974, *Hyperico grisebachii-Caricetum ferrugineae* Horvat ex T. Wraber 1971). After comparing all the phytosociological relevés (57) of grassland communities collected so far on the former hay-fields in the southern Julian Alps (Mts. Črna prst, Kobla, Slatnik, Porezen) by means of methods of hierarchical classification and the ordination method of principal coordinates analysis (Fig. 4 and 5) we found that despite the similar ecology (the same altitudinal belt, similar geological bedrock, gradient, exposition) the stands with the species *Eryngium alpinum* and *Carex ferruginea* (which grow above all in gullies, on damp soil where organic matter accumulates) mainly group separately from the stands of the association *Centaureo julici-Laserpitietum sileris*. The stands with *Eryngium alpinum* and *Allium victorialis* (catalogued on deep and slightly acid soil on Štuke under Mt. Črna prst) group separately as well. Based on this analysis, the stands with *Eryngium alpinum* in the southern Julian Alps are classified into the following syntaxa:

Salicetum waldsteinianae Beger 1922 corr. Zupančič & Žagar 2001 var. geogr. *Homogyne sylvestris* Zupančič & Žagar 2001 (only one relevé under Lisec near Mt. Črna prst was classified into this association, but several other relevés under this mountain show a syndynamic resemblance to this community).

Carici ferrugineae-Eryngietum alpinae Seljak ex Dakskobler, Franz & Seljak 2005 ass. nova. *Holotypus* is relevé No. 22 in Table 1, i.e. relevé No. 1 in the unpublished graduation thesis, Seljak (1974: 62–64). The new association is classified into the alliance *Caricion ferrugineae* and into class *Elyno-Seslerietea*.

Allio victorialis-Eryngietum alpinae Franz (1997) 2004 mscr. var. *Serratula macrocephala* prov. This syntaxon is temporarily classified into the alliance *Adenostylion alliariae* and into class *Mulgedio-Aconitetea*. Further comparisons with similar communities with *Eryngium alpinum* in the Southeastern Alps (Franz, in preparation) will be required for a more reliable synsystematic classification of *Eryngium alpinum* and *Allium victorialis* stands on Štuke under Mt. Črna prst.

For a more detailed discussion on the problems regarding the protection of the communities with *Eryngium alpinum* and their sites in the Slovenian Alps see Praprotnik (2002) and Dakskobler (2004).

7. POVZETEK

Združbe z vrsto *Eryngium alpinum* v južnih Julijskih Alpah (Črna prst, Porezen)

Alpsko-ilirska montanska vrsta *Eryngium alpinum* je uvrščena v Direktivo Evropske skupnosti za ohranitev naravnih habitatov ter prosto živeče favne in flore (The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora – 1992), zato njena nahajališča in rastišča potrebujejo posebno pozornost in varovanje.

Njeni sestoji v Juri, zahodnih in jugovzhodnih Alpah ter Dinarskem gorstvu so po rastiščih in ekologiji precej podobni in jih največkrat uvrščamo v združbe visokih steblik (razred *Mulgedio-Aconitetea*) in v združbe rjastega šaša (zveza *Caricion ferrugineae*, razred *Elyno-Seslerietea*). Ob pregledovanju njenih nahajališč za potrebe projekta Natura 2000 smo v zadnjih letih vrsti *Eryngium alpinum* posvetili več pozornosti tudi v Sloveniji (Praprotnik 2002, Dakskobler 2004). S standardno fitocenološko metodo (Braun-Blanquet 1964) smo preučili njene sestoje v južnih Julijskih Alpah (pod Črno prstjo, Liscem, Črno goro, Koblo, Slatnikom in Poreznom) – sl. 1 in 29 popisov uvrstili v tabelo 1. Preučene sestoje smo primerjali s podobnimi sestoji drugod v Alpah in v Dinarskem gorstvu. V ta namen smo izdelali sintezno tabelo (tabela 2) in vanjo uvrščene sintaksone med seboj primerjali s hierarhično klasifikacijo in ordinacijsko metodo glavnih koordinat (PCoA) – sl. 2 in 3. Na osnovi teh primerjav smo ugotovili precejšnjo floristično podobnost preučenih sestojev s sestoji nedavno opisanega sukcesijskega stadija na opuščenih subalpinskih senožetih južnih Julijskih Alp (asociacija *Centaureo julici-Laserpitietum sileris* Dakskobler 2003 nom. prov, zveza *Caricion austroalpinae*), prav tako sorazmerno floristično podobnost s sestoji asociacije *Campanulo-Laserpitietum latifoliae* Béguin 1972 (zveza *Caricion ferrugineae*) iz Visoke Jure v Franciji (Béguin 1972) ter s tremi popisi asociacije *Caricetum ferrugineae carniolicum* Aichinger 1933 z Golice v Karavankah (Aichinger 1933). Združbe visokih steblik z vrsto *Eryngium alpinum* iz zahodnih Alp (*Myrrhido-Adenostyletum* Braun-Blanquet 1969, *Eryngio-Centaureetum rhaponticae* Sutter 1978, *Polygono bistortae-Eryngietum alpini* Gehu-Franck & al. 1984) in Dinarskega gorstva (*Adenostylo alliariae-Doronicetum austriaci* Horvat ex Horvat & al. 1974) so floristično precej drugačne, prav tako združbe z dominantno vrsto *Carex ferruginea* iz Julijskih Alp (*Caricetum ferrugineae* Lüdi 1921 s. lat. – Krnsko pogorje, Surina 2004, Tolminsko-Bohinjski greben, Dakskobler 2004 mscr.) in iz Dinarskega gorstva (*Calamagrostio-Centaureetum pseudophrygiae* Horvat ex Horvat & al. 1974, *Hyperico grisebachii-Caricetum ferrugineae* Horvat ex T. Wraber 1971). Po primerjavi vseh doslej zbranih fitocenoloških popisov (57) travišćnih združb na nekdanjih senožetih v južnih Julijskih Alpah (Črna prst, Kobla, Slatnik, Porezen) z metodami hierarhične klasifikacije in ordinacijsko metodo glavnih koordinat (sl. 4 in 5) smo ugotovili, da se kljub podobni ekologiji (isti višinski pas, podobna geološka podlaga, strmina, ekspozicija) sestoji z vrstama *Eryngium alpinum* in *Carex ferruginea* (uspevajo predvsem v žlebovih, na vlažnih tleh, kjer se kopiči organska masa) v glavnem grupirajo ločeno od sestojev asociacije *Centaureo julici-Laserpitietum sileris*, prav tako se grupirajo ločeno sestoji z vrstama *Eryngium alpinum* in *Allium victorialis* (ki smo jih popisali na globokih in nekoliko zakisanih tleh na Štukah pod Črno prstjo). Na podlagi te analize sestoje z vrsto *Eryngium alpinum* v južnih Julijskih Alpah uvrščamo v naslednje sintaksone:

Salicetum waldsteinianae Beger 1922 corr. Zupančič & Žagar 2001 var. geogr. *Homogyne sylvestris* Zupančič & Žagar 2001 (v to asociacijo smo uvrstili le en popis pod Liscem pri Črni prsti, sindinamsko pa je tej združbi podobnih še nekaj popisov pod to goro).

Carici ferrugineae-Eryngietum alpinae Seljak ex Dakskobler, Franz & Seljak 2005 ass. nova. *Holotypus* je fitocenološki popis št. 22 v tabeli 1, to je fitocenološki popis št. 1, v neobjavljenem diplomskem delu, Seljak (1974: 62–64). Novo asociacijo uvrščamo v zvezo *Caricion ferrugineae* G. & J. Br.-Bl. 1931 in v razred *Elyno-Seslerietea* Br.-Bl. 1948.

Allio victorialis-Eryngietum alpinae Franz (1997) 2004 mscr. var. *Serratula macrocephala* prov. Ta sintakson začasno uvrščamo v zvezo *Adenostylion alliariae* Br.-Bl. 1962 in v razred *Mulgedio-Aconitetea* Hadač & Klika in Klika 1948 (oz. Hadač & Klika in Klika & Hadač 1944). Za zanesljivejšo sinsistematsko uvrstitev sestojev vrst *Eryngium alpinum* in *Allium victorialis* na Štukah pod Črno prstjo bodo potrebne nadaljnje primerjave s podobnimi združbami z vrsto *Eryngium alpinum* v Jugovzhodnih Alpah (Franz, v pripravi).

Podrobneje o problematiki varovanja združb z vrsto *Eryngium alpinum* in njihovih rastišč v slovenskih Alpah glej Praprotnik (2002) in Dakskobler (2004).

8. ACKNOWLEDGEMENTS

The first author was given valuable information on articles discussing *Eryngium alpinum* and (or) its communities by Prof. Dr. Jean-Paul Theurillat (Chambésy, Switzerland) and Dr. Arno Wörz (Stuttgart). Dr. Nada Praprotnik (Ljubljana), Dr. Peter Skoberne (Ljubljana), Dr. Boštjan Surina (Ilirska Bistrica), Ivan Veber B.Sc. (Bohinjska Bistrica) and Prof. Dr. Tone Wraber (Polhov Gradec) gave helpful advice on the localities and sites of this species in Slovenia and Croatia, whereas †Milan Valentinčič (Hoba at Podbrdo), Zdravko Zgaga (Podbrdo) and Cveto Kemperle (Bača near Podbrdo) informed him of the localities of the species in Krevle under Mt. Kobla. Drago Samec (The SAZU Library, Ljubljana) and the author's co-workers Olga Dežman-Jokić and Dr. Valerija Babij helped to find the literature.

The synoptic map of the researched region (Figure 1) was made by Dr. Branko Vreš, while Mag. Boško Čušin helped with the selection and arrangement of photos. The English translation was made by Andreja Šalamon Verbič.

Sincere thanks on behalf of all the three authors to all, especially to Dr. Boštjan Surina and Prof. Dr. Livio Poldini (Trieste) for the critical review of the article.

9. REFERENCES

Aeschimann, D., Lauber, K., Moser, D. M., Theurillat, J.-P. 2004a: Flora alpina. Bd. 1: *Lycopodiaceae– Apiaceae*. Haupt Verlag, Bern, Stuttgart, Wien, 1159 pp.

Aeschimann, D., Lauber, K., Moser, D. M., Theurillat, J.-P. 2004b: Flora alpina. Bd. 2: *Gentianaceae–Orchidaceae*. Haupt Verlag, Bern, Stuttgart, Wien, 1188 pp.

Aeschimann, D., Lauber, K., Moser, D. M., Theurillat, J.-P. 2004c: Flora alpina. Bd. 3: Register. Haupt Verlag, Bern, Stuttgart, Wien, 322 pp.

Aichinger, E. 1933: Vegetationskunde der Karawanken. Gustav Fischer, Jena 329 pp.

Béguin, C. 1972: Contribution à l'étude phytosociologique et écologique du Haut Jura. Beiträge zur Geobotanischen Landesaufnahme der Schweiz 54, Bern, 190 pp. + 1 map.

Braun-Blanquet, J. 1964: Pflanzensoziologie. Grundzüge der Vegetationskunde. 3. Auflage. Springer, Wien – New York, 865 pp.

Braun-Blanquet, J. 1969: Une association endemique des Alpes sud-occidentales le *Myrhido-Adenostyletum*. Acta Botanica Croatica (Zagreb) 28: 49–54.

Braun-Blanquet, J. 1976: Fragmenta Phytosociologica Raetica III, IV und VII. Fragmenta III: Das *Peucedano ostrithii-Cirsietum spinosissimi* G. et J. Br.-Bl. 1931. Veröff. Geobot. Inst. ETH, Stift. Rübel (Zürich) 58: 5–12.

Buffa, G. & Sburlino, G. 2001: *Carex ferruginea* grasslands in the south-eastern Alps. Plant Biosystems 35 (2): 195–206.

Buser, S. 1986: Tolmač listov Tolmin in Videm (Udine). Osnovna geološka karta SFRJ 1 : 100 000. Zvezni geološki zavod, Beograd, 103 pp.

Buser, S. 1987: Osnovna geološka karta SFRJ. Tolmin in Videm 1: 100 000. Zvezni geološki zavod, Beograd.

Dakskobler, I. 2003a: Pionirsko smrekovje nad sedanjo (antropogeno) zgornjo gozdno mejo v južnih Julijskih Alpah (primer iz zgornje Baške doline). Hacquetia (Ljubljana) 2 (1): 19–52.

Dakskobler, I. 2003b: Floristične novosti iz Posočja in sosednjih območij v zahodni Sloveniji – III. Hladnikia (Ljubljana) 15–16: 43–71.

Dakskobler, I. 2004: *Eryngium alpinum* L. – alpska možina. In: Čušin (ed.) & al.: Natura 2000 v Sloveniji – rastline, Založba ZRC, Ljubljana, pp. 83–88.

Franz, W. R. 1997: Die Alpen-Mannstreu-(*Eryngium alpinum*-) Wiesen auf der Schneider-Alm in den Karnischen Alpen (Südkärnten). Kärntner Naturschutzberichte, Band 2, pp. 87–88.

Franz, W. R. 2002: Floristische Besonderheiten und kleinflächige Feuchtbiotope der Mussen. In: Wieser, Ch. & Komposch, Ch. (eds): Paradieslilie und Höllenotter – Bergwiesenlandschaft Mussen. Amt der Kärntner Landesregierung, Abt. 20 – Landensplanung / UAbt. Naturschutz im Verlag des Naturwissenschaftlichen Verein für Kärnten, Klagenfurt, pp. 150–160.

Franz, W. R. 2004: Gesellschaften mit *Eryngium alpinum* in den Karnischen Alpen (Österreich, Italien). Manuscript, Klagenfurt.

Forenbacher, S. 1990: Velebit i njegov biljni svijet. Školska knjiga, Zagreb, 800 pp.

Fukarek, P. 1957: Šibljaci mukinjice (*Sorbus chamaemespilus* Crantz) na planini Plazenici u Bosni. God. Biol. inst. (Sarajevo) 10: 163–171.

Gaudeul, M. & Till-Bottraud, I. 2004: Reproductive ecology of the endangered Alpine species *Eryngium alpinum* L. (*Apiaceae*): phenology, gene dispersal and reproductive success. Annals of Botany 93: 711–721.

Gehu-Franck, J., Gehu J.-M. & Dhennin, R. 1984: Apercu synécologique sur la station á *Eryngium alpinum* L. du Doron de Pralognan (73). Documents phytosociologiques N. S. (Camerino) 8: 247–255.

Grabherr, G. & Mucina L. (eds.), 1993: Die Pflanzengesellschaften Österreichs. Teil II. Natürliche Waldfreie Vegetation. Gustav Fischer Verlag, Jena – Stuttgart – New York, 523 pp.

Grabherr, G., Greimler, J. & Mucina, L. 1993: *Seslerietea albicantis*. In: Grabherr, G. & Mucina L. (eds.): Die Pflanzengesellschaften Österreichs. Teil II: Natürliche waldfreie Vegetation. Gustav Fischer Verlag, Jena - Stuttgart - New York, pp. 402–446.

Hlavaček, A., Jasičová, M., & Zahradníková, K. 1984: *Eryngium* L. Kotúč. In: Bertová, L. (ed.): Flóra Slovenska IV/1. VEDA SAV, Bratislava, pp. 190–193.

Horvat, I. 1930: Vegetacijske studije u hrvatskim planinama. I. Zadruge na planinskim goletima. Rad Jugoslavenske akademije znanosti i umjetnosti (Zagreb), 238: 1–96.

Horvat, I. 1962: Vegetacija planina Zapadne Hrvatske sa 4 karte biljnih zajednica sekcije Sušak. Acta biologica 2, Prirodoslovna istraživanja 30, JAZU Zagreb, 179 pp.

Horvat, I., Glavač, V. & Ellenberg H. 1974: Vegetation Südosteuropas. Gustav Fischer, Stuttgart, 768 pp.

Karner, P. & Mucina L. 1993: *Mulgedio-Aconitetea*. In: Grabher, G. & Mucina, L. (eds.): Die Pflanzengesellschaften Österreichs, Teil II: Natürliche waldfreie Vegetation. Gustav Fischer Verlag, Jena - Stuttgart - New York, pp. 468–505.

Käsermann, C. & Moser, D. 1999: Merkblätter Artenschutz. Blütenpflanzen und Farne. Bundesamt für Umwelt, Wald und Landschaft, Bern, 344 pp.

Marhold, K, (ed.) 1998: Papradorasty a semenné rastliny (*Ferns and flowering plants*). In: Marhold K. & Hindák F. (eds.): Zoznam nižších a vyšších rastlin Slovenska (*Checklist of non-vascular and vascular plants of Slovakia*). VEDA SAV, Bratislava, pp. 333–687.

Martinčič, A. 2003: Seznam listnatih mahov (*Bryopsida*) Slovenije. Hacquetia (Ljubljana) 2 (1): 91–166.

Martinčič, A., Wraber, T., Jogan, N., Ravnik, V., Podobnik, A., Turk, B. & Vreš, B. 1999: Mala flora Slovenije. Ključ za določanje praprotnic in semenk. Tehniška založba Slovenije, Ljubljana, 845 pp.

Mekinda - Majaron, T. 1995: Klimatografija Slovenije. Temperatura zraka 1961–1990. Hidrometeorološki zavod Republike Slovenije, Ljubljana, 356 pp.

Oberdorfer, E. 1983: Pflanzensoziologische Exkursionsflora. 5. Aufl. Eugen Ulmer, Stuttgart, 1015 pp.

Podani, J. 2001: SYN-TAX 2000. Computer Programs for Data Analysis in Ecology and Systematics. User's Manual, Budapest, 53 pp.

Praprotnik, N. 2002: Po sledeh zaspanke na Golici. Proteus (Ljubljana) 64 (9–10): 406–410.

Praprotnik, N. 2004: Botanične zanimivosti z Golice. Jeseniški zbornik (Jesenice) 9: 197–204.

Seljak, G. 1974: Travniška vegetacija Porezna. Diplomsko delo. Univerza v Ljubljani, Biotehniška fakulteta, Oddelek za agronomijo, Ljubljana, 103 pp.

Surina, B. 2004: Subalpinska in alpinska vegetacija Krnskega pogorja v Julijskih Alpah. Doktorska disertacija. Oddelek za biologijo, Biotehniška fakulteta Univerze v Ljubljani, Ljubljana, 167 pp. + phytosociological tables.

Sutter, R. 1978: Sind die *Centaurea rhapontica*- und die *Delphinium elatum*-Hochstaudenfluren Assoziationen? Poroč. Vzhodnoalp.-dinar. dr. preuč. veget. (Ljubljana) 14: 375–385 + table.

Šilić, Č. 2002: Endemične i rijetke biljke Parka prirode Blidinje. Matica Hrvatska. Ogranjak Čitluk. (Priroda BiH 1), Ćitluk, 279 pp.

van Gils, H. A. M. J. & Gilissen, L. P. M. 1976: Wärmliebende Saumgesellschaften im Ober-Inntal, Tirol. Linzer biol. Beitr. (Linz) 8 (1): 41–62.

Wraber, T. 1990: Sto znamenitih rastlin na Slovenskem. Prešernova družba, Ljubljana, 239 pp.

Zupančič, B. 1995: Klimatografija Slovenije. Padavine 1961–1990. Hidrometeorološki zavod Republike Slovenije, Ljubljana, 366 pp.

Recieved 23. 2. 2005
Revision recieved 8. 4. 2005
Accepted 7. 10. 2005

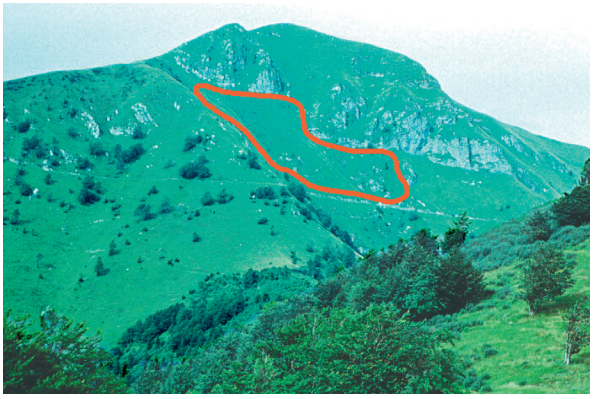

Figure 6: Southern and southwestern slopes of Mt. Porezen (1630 m) above the Zapoška gorge. With red line is marked the area where are stands of the association *Carici ferrugineae-Eryngietum alpinae*. Photo G. Seljak.
Slika 6: Južna in jugozahodna pobočja Porezna (1630 m) nad Zapoško grapo. Z rdečo črto je označeno območje, kjer so sestoji asociacije *Carici ferrugineae-Eryngietum alpinae*. Foto G. Seljak.

Figure 7: Stand of the association *Carici ferrugineae-Eryngietum alpinae* on the southern slopes of Mt. Porezen. Photo I. Dakskobler
Slika 7: Sestoj asociacije *Carici ferrugineae-Eryngietum alpinae* na južnih pobočjih Porezna. Foto I. Dakskobler

Figure 8: Very steep gully under Mt. Kobla (Krevle), former hay-field, site of the community *Carici ferrugineae-Eryngietum alpinae*. Photo I. Dakskobler
Slika 8: Zelo strm žleb pod Koblo (Krevle), nekdanja senožet, rastišče združbe *Carici ferrugineae-Eryngietum alpinae.* Foto I. Dakskobler

Figure 9: *Eryngium alpinum* community, rich with *Laserpitium siler* and *Festuca norica*. Carinthia, Carnic Alps, Ringmauer, Rattendorfer Alm. Photo W. R. Franz
Slika 9: Združba z dominantno vrsto *Eryngium alpinum* in pogostima vrstama *Laserpitium siler* in *Festuca norica*. Koroška, Karnijske Alpe, Ringmauer, Rattendorfer Alm. Foto W. R. Franz

10. APPENDIX

Table 1: Communities with *Eryngium alpinum* under the Mts. Črna prst and Porezen in the southern Julian Alps
Tabela 1: Združbe z vrsto *Eryngium alpinum* pod Črno prstjo in Poreznom (južne Julijske Alpe)

	Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12
	Altitude in m (Nadmorska višina v m)		1630	1510	1620	1640	1540	1540	1590	1520	1570	1430	1420	1410
	Aspect (Lega)		N	W	E	E	SE	SE	SE	SW	SW	SWW	SWW	SWW
	Slope in degrees (Nagib v stopinjah)		20	30	35	30	25	30	20	40	35	40	35	35
	Stoniness in % (Kamnitost v %)		10	10	20	30	40	20	0	10	5	5	0	0
	Parent material (Matična podlaga)		A	A	A	A	A	A	A	A	A	A,L	A,L	A,L
	Soil (Tla)		R	R	R	R	Li	Li	R	R	R	R	R	R
	Cover in % (Zastiranje v %)													
	Shrub layer (Grmovna plast)		80	20	20		5			1				
	Herb layer (Zeliščna plast)		60	90	90	80	100	100	100	100	100	100	100	100
	Moss layer (Mahovna plast)		5											
	Relevé area (Velikost popisne ploskve) – m^2		100	50	50	50	10	10	10	50	10	10	15	15
	Number of species (Število vrst)		74	43	90	72	66	72	71	74	41	61	48	59
	Character and differential species of the associations													
	Značilne in razlikovalne vrste asociacij													
AV	*Salix waldsteiniana*	E2a	2	+	.	.	.	.	.	.	.	.	.	.
AV	*Salix glabra*	E2a	3	+	.	.	.	.	.	.	.	.	.	.
VP	*Rosa pendulina*	E1	+	+	+	+	.	.	.	.	.	+	.	.
A	*Sorbus chamaemespilus*	E2a	1	+	+	+	.	.	.	.	.	.	.	.
EP	*Rhododendron hirsutum*	E2a	1	+	+	2	.	.	.	.	.	.	.	.
A	*Eryngium alpinum*	E1	1	1	2	+	2	3	2	+	1	2	3	2
CF	*Carex ferruginea*	E1	+	.	1	+	2	1	2	3	.	2	2	2
CF	*Serratula tinctoria* subsp. *macrocephala*	E1	+	+	1	+	.	.	1	1	+	2	2	1
TG	*Lilium carniolicum*	E1	.	.	.	.	1	+	.	+	+	+	+	+
TG	*Arabis pauciflora* (*Fourraea alpina*)	E1	.	.	.	.	1	+	+	.	.	+	.	.
A	*Pleurospermum austriacum*	E1	+	.	.	+	.	.	.	.	.	.	+	+
TG	*Tanacetum corymbosum* subsp. *clusii* ?	E1	.	.	.	.	.	.	.	+	.	+	1	1
F	*Omphalodes verna*	E1	.	.	.	.	.	.	.	.	.	.	.	.
EP	*Genista radiata*	E1	.	.	.	.	+	.	1	.	.	.	.	.
A	*Eryngium alpinum*	E1	1	1	2	+	2	3	2	+	1	2	3	2
CU	*Phyteuma zahlbruckneri*	E1	.	.	+	.	.	.	.	.	.	.	.	.
A	*Allium victorialis*	E1	.	.	.	.	.	.	+	.	.	.	.	.
AV	***Alnion viridis***													
	Salix appendiculata	E2a	+	1	+	.	+	.	.	+	.	.	.	.
	Alnus viridis	E2a	+	+	.	.	.	.	.	.	.	.	.	.
A	***Adenostyletalia***													
	Silene vulgaris subsp. *antelopum*	E1	+	1	+	+	+	+	.	1	1	1	1	1
	Heracleum montanum	E1	+	1	+	2	1	1	+	1	+	+	1	2
	Lathyrus occidentalis var. *montanus*	E1	+	+	+	.	2	2	+	1	+	.	.	.
	Senecio fuchsii	E1	.	.	+	+	.	+	.	.	.	.	.	+
	Polygonatum verticillatum	E1	1	.	+	.	1	1	1	.	.	.	.	+
	Crepis pyrenaica	E1	+	1	1	2	+	1	+	.	.	+	1	+

Associations (Asociacije): I relevé 1 (popis 1): *Salicetum waldsteinianae* Beger 1922 corr. Zupančič & Žagar 2001;
II relevés 5 to 24 (popisi 5 do 24): *Carici ferrugineae-Eryngietum alpinae* Seljak ex Dakskobler, Franz & Seljak 2005 ass. nova;
relevés 2, 3 and 4 (popisi, 2, 3 in 4): transitional form between I and II (prehodna oblika med I in II)
III relevés 25 to 29 (popisi 25-29): *Allio victorialis-Eryngietum alpinae* Franz (1997) 2004 mscr. var. *Serratula macrocephala* prov.

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
1440	1410	1490	1480	1460	1520	1530	1510	1370	1450	1400	1400	1540	1550	1500	1530	1570						
SW	SW	S	SW	S	SW	SE	SSW	SW	SW	SW	S	S	SW	SW	SW	SW						
40	35	35	35	35	30	40	45	40	50	50	30	25	30	30	30	30						
0	0	5	0	10	0	5	5	0	0	0	0	10	0	0	0	0						
A,L	A,L	A,L	A,L	A,L	A,L	A,L	A,L	A,L	A,L	A,L	A,L	G,A	G,A	G,A	G,A	G,A						
R	R	R	R	R	R	R	R	R	R	R	R	EC	EC	EC	EC	EC						
		5	1		30		5					5										
100	100	100	100	95	100	100	100	100	100	100	100	100	100	100	100	100						
10	10	20	10	10	10	20	20	30	50	50	60	40	10	10	50	20						
40	50	47	40	49	42	36	49	44	34	27	37	55	41	51	50	43						
																			II		III	
																	Pr.	Fr.				
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
.	.	.	.	.	.	+	+	+	.	.	.	.	.	.	.	.	8	28	4	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	5	17	.	.	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	.	.	.	.
																	.	.	.	.	.	.
2	2	4	3	3	1	1	2	2	3	3	2	2	3	3	3	3	29	100	20	100	5	100
1	.	1	1	.	.	2	+	+	2	3	1	.	.	.	.	.	19	66	16	80	.	.
2	2	.	+	+	+	3	1	+	1	+	1	2	2	2	3	2	26	90	17	85	5	100
.	+	+	+	.	.	.	+	.	+	.	+	.	.	.	.	.	13	45	13	65		.
+	.	+	+	.	+	1	1	.	.	+	.	.	.	.	.	.	11	38	11	55	.	.
.	+	2	1	+	+	.	2	1	.	+	1	.	.	.	.	.	13	45	11	55	.	.
1	.	.	+	+	.	.	.	+	+	+	.	+	+	+	+	+	15	52	10	50	5	100
.	.	1	1	1	.	1	+	1	.	+	.	.	.	.	.	.	7	24	7	35	.	.
.	.	4	5	1	.	.	.	.	.	.	.	.	.	.	.	.	5	17	5	25	.	.
2	2	4	3	3	1	1	2	2	3	3	2	2	3	3	3	3	29	100	20	100	5	100
.	1	.	.	.	.	.	.	.	.	.	.	+	+	+	+	1	7	24	1	5	5	100
.	.	.	.	.	.	.	.	.	.	.	.	1	2	2	+	1	6	21	1	5	5	100
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	17	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
+	1	1	+	1	1	.	+	.	.	.	+	.	.	1	1	1	22	76	15	75	3	60
.	2	.	+	3	.	.	+	+	.	.	.	2	+	+	.	2	21	72	13	65	4	80
.	.	+	+	+	.	.	+	.	+	+	+	1	1	1	2	2	20	69	12	60	5	100
.	+	+	.	1	1	+	+	.	.	.	+	1	2	2	+	2	16	55	9	45	5	100
+	1	.	.	.	.	.	.	.	.	.	.	+	+	.	+	+	12	41	6	30	4	80
.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11	38	7	35	.	.

	Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12
	Thalictrum aquilegiifolium	E1	+	+	+	+	+	+	+	+	.	.	.	.
	Astrantia major	E1	.	.	.	.	.	.	+	1	1	.	.	.
	Angelica sylvestris	E1	.	1	+	.	+	+	.	.	.	.	.	.
	Aconitum degenii subsp. *paniculatum*	E1	+	.	+	.	+	+	.	.	.	.	.	.
	Centaurea montana	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Senecio cacaliaster	E1	+	1	+	.	+	+	.	.	.	.	.	.
	Calamagrostis arundinacea	E1	.	.	.	.	.	.	.	.	.	+	.	.
	Geum rivale	E1	.	+	+	.	+	+	.	.	.	.	.	.
	Poa hybrida agg.	E1	+	+	+	.	+	.	.	.	.	.	.	.
	Achillea distans	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Rhodiola rosea	E1	.	.	.	+	+	+	.	.	.	.	.	.
	Carduus personata	E1	+	1	.	.	.	.	.	.	.	.	.	.
	Crepis paludosa	E1	+	.	.	.	+	.	.	.	.	.	.	.
	Hieracium prenanthoides	E1	1	.	.	.	.	.	.	.	.	.	.	.
	Scrophularia scopolii	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Viola pyrenaica	E1	.	.	.	.	1	+	.	.	.	.	.	.
	Aconitum angustifolium	E1	.	.	.	.	.	.	.	.	.	.	.	+
	Cirsium carniolicum	E1	.	.	.	.	.	.	.	+	.	.	.	.
	Elymus caninus	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Epilobium alpestre	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Hesperis candida	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Saxifraga rotundifolia	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Silene dioica	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Athyrium filix-femina	E1	+	.	.	.	.	.	.	.	.	.	.	.
MU	***Mulgedio-Aconitetea***													
	Hypericum maculatum	E1	+	1	+	+	+	+	.	+	1	+	1	.
	Rumex alpestris	E1	+	+	+	+	+	+	.	+	1	+	1	+
	Aconitum lycoctonum agg.	E1	+	.	+	+	+	1	+	r	.	+	2	2
	Chaerophyllum villarsii	E1	+	2	.	+	1	1	.	.	.	2	1	1
	Veratrum album subsp. *lobelianum*	E1	.	1	+	.	.	1	1	+	1	+	1	+
	Carduus carduelis	E1	.	1	1	+	1	1	+	.	.	.	.	.
	Geranium sylvaticum	E1	+	.	+	+	.	.	+	+	.	+	.	.
	Ranunculus platanifolius	E1	+	.	.	.	+	+	.	.	.	.	.	.
	Chaerophyllum aureum	E1	.	.	.	.	.	.	.	.	.	.	.	+
	Adenostyles alliariae	E1	+	.	.	.	.	.	.	.	.	.	.	.
	Ribes alpinum	E2a	.	.	.	+	.	.	.	.	.	.	.	.
	Viola biflora	E1	+	.	.	.	.	.	.	.	.	.	.	.
CA	***Caricion austroalpinae***													
	Centaurea haynaldii subsp. *julica*	E1	.	.	.	+	+	+	+	1	1	+	.	+
	Scorzonera rosea	E1	.	.	+	.	+	+	1	+	+	1	1	+
	Koeleria eriostachya (inc. *K. carniolica*)	E1	.	.	+	1	.	+	+	+	+	+	.	+
	Festuca calva	E1	.	.	+	.	.	.	.	.	1	.	.	+
	Heracleum austriacum subsp. *siifolium*	E1	r	.	+	+	.	.	r	.	.	.	r	+
	Gentiana lutea subsp. *symphyandra*	E1	.	+	.	.	.	.	.	1	+	r	.	.
	Allium ericetorum	E1	.	.	.	.	.	.	+	.	.	+	.	.
	Laserpitium peucedanoides	E1	+	.	.	.	.	.	1	+	.	.	.	.
	Gentiana lutea subsp. *vardjanii*	E1	.	.	1	1	.	.	+	.	.	.	.	.
CF	***Caricion ferrugineae***													
	Crepis bocconi	E1	.	.	.	+	.	.	1	.	+	.	.	.

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	9	31	4	20	1	20
.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	1	1	8	28	3	15	5	100
.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	6	21	4	20	.	.
.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	5	17	.	.	.	.
.	.	.	+	+	.	.	+	+	.	.	.	+	.	.	.	.	5	17	3	15	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	17	4	20	.	.
.	.	.	.	.	+	.	.	.	.	.	.	.	+	3	.	.	4	14	2	10	2	40
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	+	.	3	10	.	.	3	60
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	2	7	.	.	1	20
.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
+	+	+	+	+	1	+	1	+	.	+	+	1	1	+	1	1	26	90	17	85	5	100
.	1	.	.	.	+	.	+	+	.	.	1	1	2	+	1	+	21	72	12	60	5	100
.	4	+	1	2	1	+	2	1	.	+	.	+	.	.	.	.	20	69	16	80	1	20
1	2	.	.	+	+	.	.	.	.	.	.	2	3	3	2	1	17	59	9	45	5	100
.	1	.	.	.	+	.	.	.	.	.	.	2	1	2	1	+	16	55	9	45	5	100
.	.	.	.	.	.	.	.	.	.	.	.	2	+	1	1	2	11	38	3	15	5	100
+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7	24	4	20	.	.
.	+	.	.	.	.	.	.	.	.	.	.	.	+	1	+	.	7	24	3	15	3	60
.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
+	+	+	+	+	+	1	1	+	+	.	.	.	+	+	+	+	22	76	17	85	4	80
+	.	.	.	.	.	.	.	r	+	.	.	+	+	1	1	1	17	59	11	55	5	100
.	.	+	.	+	.	+	+	.	.	.	.	+	+	+	+	.	16	55	10	50	4	80
.	+	.	.	+	.	.	2	.	+	.	.	+	.	.	.	.	8	28	6	30	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	7	24	3	15	1	20
.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	+	.	6	21	4	20	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	4	14	2	10	2	40
.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	4	14	2	10	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	5	17	2	10	2	40

	Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12
ES	***Elyno-Seslerietea***													
	Betonica alopecuros	E1	.	.	1	1	1	+	1	1	.	1	1	1
	Scabiosa lucida s. lat.	E1	.	.	1	1	+	.	+	+	1	+	.	1
	Campanula witasekiana	E1	.	+	1	+	.	+	+	+	+	.	+	.
	Helianthemum grandiflorum	E1	+	.	1	.	.	.	+	+	.	.	.	+
	Phyteuma orbiculare	E1	.	.	+	+	+	+	+	+	.	+	+	+
	Rhinanthus glacialis	E1	.	.	+	1	.	+	.	.	+	1	.	+
	Sesleria caerulea subsp. *calcaria*	E1	.	.	r	+	.	.	+	+	.	+	.	.
	Pulsatilla alpina	E1	r	+	+	+	+	+	1	+	+	.	.	.
	Astrantia bavarica	E1	+	+	.	+	.	.	+	+	.	.	+	+
	Leucanthemum cf. *maximum*	E1	.	.	+	+	.	+	+	+	+	.	.	.
	Hieracium villosum	E1	+	.	r	+	.	+	r	.	.	.	.	.
	Carduus crassifolius	E1	.	.	+	.	.	.	r	+	1	.	.	.
	Anthyllis vulneraria subsp. *alpestris*	E1	.	.	.	.	+	+	.	.	.	.	.	r
	Carex sempervirens	E1	.	.	.	.	.	.	+	+	.	+	.	.
	Linum julicum	E1	.	.	.	+	+	+	+	.	.	.	.	.
	Ranunculus montanus	E1	.	.	.	.	.	.	+	+	.	+	.	.
	Acinos alpinus	E1	.	.	.	+	.	+	+	.	.	.	.	.
	Cerastium strictum	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Euphrasia picta	E1	.	.	.	+	.	+	.	.	.	1	.	.
	Galium anisophyllon	E1	.	.	.	.	.	.	.	+	.	+	.	.
	Achillea clavenae	E1	.	.	+	+	.	.	.	.	.	.	.	.
	Anemone narcissiflora	E1	.	.	.	+	.	.	+	.	.	.	.	.
	Poa alpina	E1	.	.	.	.	+	.	.	.	.	.	.	.
	Polygonum viviparum	E1	.	.	.	.	.	.	.	r	.	.	.	.
	Alchemilla flabellata	E1	.	.	.	.	.	.	.	.	.	.	+	.
	Aster bellidiastrum	E1	+	.	.	.	.	.	.	.	.	.	.	.
	Gentianella anisodonta	E1	.	.	.	+	.	.	.	.	.	.	.	.
	Juncus monanthos	E1	.	.	.	+	.	.	.	.	.	.	.	.
	Thesium alpinum	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Thymus alpigenus	E1	.	.	.	+	.	+	r	.	.	.	.	.
PT	***Poo alpinae-Trisetalia***													
	Festuca nigrescens	E1	.	.	1	1	.	+	.	1	.	1	1	1
	Trollius europaeus	E1	r	+	+	1	1	+	1	+	1	2	1	1
	Pimpinella major subsp. *rubra*	E1	1	.	+	.	.	.	r	+	.	1	1	1
	Phleum hirsutum	E1	.	.	+	+	.	.	.	.	1	.	.	+
	Agrostis tenuis	E1	.	.	.	+	.	.	+	.	+	+	1	+
	Ranunculus nemorosus	E1	.	.	+	+	+	+	+	+	.	+	+	+
	Campanula scheuchzeri	E1	+	.	+	.	.	.	.	+	.	.	.	.
	Deschampsia caespitosa	E1	.	+	.	.	.	+	.	.	.	.	.	.
	Crocus vernus subsp. *albiflorus*	E1	.	.	.	.	.	+	.	+	.	.	.	.
	Cardaminopsis halleri	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Traunsteinera globosa	E1	.	.	.	.	.	.	.	.	.	+	.	.
MA	***Molinio-Arrhenatheretea***													
	Dactylis glomerata	E1	1	.	2	1	+	1	+	1	2	2	3	2
	Galium mollugo agg.	E1	.	.	+	.	+	1	.	.	+	r	+	+
	Leontodon hispidus	E1	.	.	+	+	+	+	+	+	.	+	+	+
	Achillea millefolium agg.	E1	.	.	.	.	.	.	.	.	.	+	+	1
	Lotus corniculatus	E1	.	.	.	+	.	.	+	.	.	+	+	+

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
1	+	+	1	.	1	1	+	+	+	+	+	+	.	.	+	+	23	79	18	90	3	60
+	+	1	.	+	1	1	1	1	+	1	+	.	.	.	.	+	20	69	17	85	1	20
.	.	.	+	.	+	+	+	.	.	.	r	+	+	+	+	+	18	62	10	50	5	100
.	.	1	.	+	+	1	+	+	2	1	+	.	.	.	.	.	14	48	12	60	.	.
+	.	+	.	.	.	.	.	r	.	.	+	.	.	.	.	.	13	45	11	55	.	.
+	.	.	.	.	.	.	.	.	+	.	.	.	.	+	+	+	11	38	6	30	3	60
.	.	+	+	+	.	3	2	.	+	.	.	.	.	.	.	.	11	38	9	45	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	10	34	5	25	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7	24	4	20	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	21	4	20	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	17	2	10	.	.
.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	17	4	20	.	.
.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	4	14	4	20	.	.
.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	4	20	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	3	15	.	.
+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	4	20	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	2	10	.	.
.	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	3	10	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	3	10	2	10	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	2	7	1	5	1	20
.	.	.	.	.	.	.	.	.	.	.	r	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	2	10	.	.
+	.	1	+	+	.	+	+	+	2	+	1	1	1	1	+	+	22	76	15	75	5	100
1	1	.	.	.	+	.	.	.	.	.	1	1	1	+	+	+	21	72	12	60	5	100
1	1	+	.	+	.	.	+	+	.	.	.	+	1	+	+	1	18	62	11	55	5	100
.	+	+	+	.	.	+	2	.	+	+	+	1	+	+	+	1	17	59	10	50	5	100
+	.	.	.	.	+	.	.	.	.	.	+	+	2	1	1	.	13	45	8	40	4	80
.	1	+	.	.	.	.	.	.	.	.	+	.	.	.	.	.	12	41	10	50	.	.
.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	4	14	2	10	.	.
.	.	.	.	+	2	.	.	.	.	.	.	.	.	.	.	.	4	14	3	15	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	4	14	2	10	2	40
.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
3	2	1	+	2	3	+	.	+	.	.	.	.	.	1	2	1	22	76	16	80	3	60
+	1	+	1	1	1	.	+	1	.	+	.	+	.	.	+	.	18	62	15	75	2	40
.	.	.	.	.	.	.	.	.	+	.	.	.	.	+	+	.	12	41	8	40	2	40
+	+	.	.	+	+	.	.	.	.	.	1	.	.	.	.	.	8	28	8	40	.	.
.	.	.	.	.	.	.	.	.	+	.	+	.	+	.	.	.	8	28	6	30	1	20

	Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12
	Trifolium pratense	E1	r	+	+	+	.	.	.	.	.	.	+	+
	Lathyrus pratensis	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Veronica chamaedrys	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Dactylorhiza majalis	E1	.	.	.	.	.	.	.	.	.	.	.	+
	Molinia caerulea subsp. *arundinacea*	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Tragopogon pratensis subsp. *orientalis*	E1	.	.	.	.	.	.	.	+	.	.	.	.
	Valeriana officinalis	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Vicia sepium	E1	.	.	.	.	.	.	.	.	.	.	.	.
FB	***Festuco-Brometea***													
	Carlina acaulis	E1	.	+	+	+	+	+	+	+	+	+	+	+
	Bromus erectus agg.	E1	.	.	+	.	.	.	+	1	+	2	+	1
	Buphthalmum salicifolium	E1	r	+	1	+	+	+	.	1	+	.	.	+
	Prunella grandiflora	E1	.	+	+	+	+	+	+	+	+	1	+	1
	Dianthus monspessulanus	E1	.	.	.	.	.	.	+	.	.	+	.	.
	Campanula glomerata	E1	.	.	.	.	.	.	.	+	.	+	+	+
	Linum viscosum	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Carex humilis	E1	.	.	.	.	.	.	.	+	.	+	.	+
	Carex flacca	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Briza media	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Gymnadenia conopsea	E1	.	.	.	+	+	.	.	.	.	.	.	.
	Hippocrepis comosa	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Brachypodium rupestre	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Orobanche gracilis	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Stachys recta s. lat.	E1	.	.	.	.	+	.	.	.	.	.	.	.
	Iris sibirica subsp. *erirrhiza*	E1	.	.	.	.	.	.	+	.	.	.	.	.
	Centaurea triumfettii	E1	.	.	.	.	.	.	+	.	.	.	.	.
	Thlaspi praecox	E1	.	.	.	.	.	.	.	+	.	.	.	.
	Thymus pulegioides	E1	.	.	.	.	.	.	.	.	.	.	.	.
TG	***Trifolio-Geranietea***													
	Laserpitium latifolium	E1	.	.	.	.	.	.	.	1	3	+	.	+
	Thalictrum minus	E1	.	.	.	.	+	r	+	+	+	.	+	+
	Vicia sylvatica	E1	.	.	.	.	.	.	.	+	1	.	.	.
	Laserpitium siler	E1	.	.	.	+	3	3	+	3	2	2	1	4
	Iris graminea	E1	.	.	+	.	.	.	+	+	.	+	.	.
	Libanotis sibirica subsp. *montana*	E1	.	.	.	.	.	.	+	.	1	+	.	+
	Verbascum alpinum	E1	.	.	.	.	+	+	.	+	.	.	.	.
	Dianthus barbatus	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Digitalis grandiflora	E1	.	1	+	.	.	.	.	.	.	.	.	.
	Polygonatum odoratum	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Anthericum ramosum	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Clinopodium vulgare	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Hypericum perforatum	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Origanum vulgare	E1	.	.	+	.	.	.	.	.	.	.	.	.
CU	***Calluno-Ulicetea***													
	Anthoxanthum odoratum	E1	+	.	.	.	.	.	.	1	.	+	.	.
	Potentilla erecta	E1	.	.	.	.	.	.	.	.	.	+	.	.
	Carex pallescens	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Coeloglossum viride	E1	.	.	.	.	.	.	.	.	.	.	.	r
	Galium pumilum	E1	.	.	.	.	.	.	.	.	.	.	.	.

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	21	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	2	7	1	5	1	20
.	1	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	1	3	.	.	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	+	+	+	+	.	.	+	.	.	.	+	+	+	+	+	21	72	13	65	5	100
+	+	+	+	.	.	2	1	+	+	.	.	1	1	+	1	+	20	70	14	70	5	100
.	.	+	1	+	+	+	+	+	+	.	+	.	.	.	.	+	19	66	14	70	1	20
+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	14	48	10	50	1	20
1	.	+	.	.	.	+	+	.	.	.	.	+	+	+	+	+	11	38	6	30	5	100
+	+	.	.	+	.	.	.	.	+	.	.	+	.	.	.	.	9	31	8	40	1	20
.	.	+	+	+	+	+	+	.	+	+	.	.	.	.	.	.	8	28	8	40	.	.
.	.	+	.	+	+	+	.	.	.	.	.	.	.	.	.	.	7	24	7	35	.	.
.	.	1	1	+	+	.	.	.	.	+	.	.	.	.	.	.	5	17	5	25	.	.
+	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	.	3	10	2	10	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	.	.	.	.	.	.	.	.	+	.	.	+	.	.	.	.	2	7	1	5	1	20
.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	1	3	1	5	.	.
2	+	1	1	1	+	+	1	+	1	1	2	2	+	3	4	3	21	72	16	80	5	100
.	.	+	+	.	+	+	+	+	.	.	.	.	.	.	.	+	14	48	13	65	1	20
.	.	1	1	1	1	.	+	+	+	+	+	+	.	.	+	+	14	48	11	55	3	60
1	1	.	.	.	.	.	.	+	.	.	.	.	.	+	.	.	13	45	11	55	1	20
+	1	.	.	.	.	+	+	+	.	+	.	.	.	.	.	.	10	34	9	45	.	.
+	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+	+	9	31	5	25	4	80
.	.	.	.	+	+	.	.	r	.	.	.	.	.	.	.	.	6	21	6	30	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	3	10	.	.	2	40
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	1	3	1	5	.	.
.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	5	17	2	10	2	40
.	.	.	.	.	+	.	.	.	.	.	.	.	+	+	.	.	4	14	2	10	2	40
.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	1	3	.	.	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	1	3	.	.	1	20

	Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12
TR	***Thlaspietea rotundifolii***													
	Ligusticum seguieri	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Adenostyles glabra	E1	+	.	.	1	.	.	.	.	.	.	.	.
	Biscutella laevigata	E1	.	.	+	.	.	+	.	.	.	.	.	.
	Pedicularis hacquetii	E1	.	.	.	.	+	+	.	.	.	.	.	.
	Epilobium collinum	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Valeriana montana	E1	.	.	.	.	+	.	.	.	.	.	.	.
	Dryopteris villarii	E1	.	.	.	+	.	.	.	.	.	.	.	.
AT	***Asplenietea trichomanis***													
	Saxifraga hostii	E1	.	.	+	+	+	+	.	.	.	.	.	.
	Bupleurum petraeum	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Festuca stenantha	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Primula auricula	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Sedum maximum	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Valeriana saxatilis	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Asplenium ruta-muraria	E1	.	.	r	.	.	.	.	.	.	.	.	.
VP	***Vaccinio-Piceetea***													
	Aposeris foetida	E1	+	+	.	.	+	+	+	2	+	1	1	+
	Luzula luzuloides	E1	+	.	+	.	.	.	.	.	.	.	2	.
	Solidago virgaurea	E1	.	.	+	+	.	.	+	.	.	.	.	.
	Gentiana asclepiadea	E1	+	.	.	+	+	.	.	.	.	.	.	.
	Luzula sylvatica	E1	+	+	.	.	.	.	+	.	.	.	.	.
	Picea abies	E2a	.	.	.	.	.	.	.	+	.	.	.	.
	Vaccinium myrtillus	E1	1	.	.	.	.	.	+	.	.	.	.	.
	Valeriana tripteris	E1	+	.	.	.	.	.	.	.	.	.	.	.
	Clematis alpina	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Homogyne alpina	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Homogyne sylvestris	E1	r	.	.	.	.	.	.	.	.	.	.	.
	Maianthemum bifolium	E1	+	.	.	.	.	.	.	.	.	.	.	.
	Veronica urticifolia	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Dryopteris expansa	E1	+	.	.	.	.	.	.	.	.	.	.	.
	Polystichum lonchitis	E1	+	.	.	.	.	.	.	.	.	.	.	.
EP	***Erico-Pinetea***													
	Cirsium erisithales	E1	r	1	1	1	+	+	+	2	1	+	1	.
	Calamagrostis varia	E1	.	.	.	.	.	.	+	+	.	.	.	.
	Chamaecytisus hirsutus subsp. *ciliatus*	E1	.	.	+	+	+	+	.	r	.	.	.	.
	Peucedanum austriacum var. *rablense*	E1	+	.	1	+	.	.	.	+	.	.	.	.
	Rubus saxatilis	E1	1	.	+	+	.	+	.	.	.	.	.	.
	Carex ornithopoda	E1	.	.	+	.	.	+	.	.	.	.	.	+
	Erica carnea	E1	.	.	+	.	.	.	.	.	.	.	.	.
	Juniperus alpina	E2a	.	.	.	+	.	.	.	.	.	.	.	.
	Pinus mugo	E2a	.	.	.	.	.	.	.	.	.	.	.	.
F	***Fagetalia sylvaticae***													
	Knautia drymeia	E1	+	1	.	+	+	1	1	+	+	1	1	1
	Mercurialis perennis	E1	+	.	+	.	1	1	+	+	+	.	+	.
	Lilium martagon	E1	.	.	.	+	.	.	+	+	.	+	+	.
	Myosotis sylvatica	E1	.	.	.	+	+	+	+	+	.	.	.	.
	Acer pseudoplatanus	E2a	+	+	+	.	.	.	.	.	.	.	.	.
	Galium laevigatum	E1	1	+	+	.	.	+	.	.	.	.	.	.

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
.	.	.	.	+	+	+	+	+	.	+	+	.	.	.	.	.	7	24	7	35	.	.
.	.	+	.	+	.	+	.	+	.	.	.	.	.	.	.	.	6	21	4	20	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	+	.	.	.	.	.	.	+	+	.	.	.	.	.	.	7	24	5	25	.	.
.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	r	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
1	+	.	.	+	+	.	.	+	.	+	+	1	.	+	+	+	21	72	15	75	4	80
1	+	+	.	+	+	.	+	.	.	.	+	+	1	1	+	1	15	52	8	40	5	100
.	.	.	.	.	.	.	.	.	.	.	.	+	+	1	+	.	7	24	1	5	4	80
.	+	.	.	.	+	.	.	.	.	.	+	.	.	.	.	.	6	21	4	20	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	1	5	.	.
.	.	.	.	.	.	.	+	.	.	.	.	.	+	.	.	.	3	10	2	10	1	20
.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	3	10	1	5	1	20
.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	2	7	.	.	1	20
.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
+	+	1	1	1	1	1	1	+	+	+	+	+	+	+	+	+	28	97	19	95	5	100
.	.	+	.	.	.	+	+	2	+	+	.	.	.	.	.	.	8	28	8	40	.	.
+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	21	4	20	.	.
.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	5	17	2	10	.	.
.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	5	17	2	10	.	.
.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	4	14	3	15	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	1	3	.	.	1	20
+	+	+	+	.	+	.	+	.	.	.	+	1	1	1	1	1	23	79	15	75	5	100
.	1	1	1	.	1	1	1	+	.	.	.	.	.	+	.	.	16	55	13	65	1	20
+	.	+	.	.	.	.	.	.	.	.	.	+	+	+	+	+	12	41	6	30	5	100
.	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	7	24	6	30	.	.
.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	14	1	5	.	.

	Number of relevé (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12
	Dryopteris filix-mas	E1	+	.	.	+	.	.	.	.	.	.	.	.
	Melica nutans	E1	.	.	.	.	+	+	+	.	.	.	.	.
	Symphytum tuberosum	E1	.	.	.	.	.	.	.	+	.	.	+	.
	Campanula trachelium	E1	.	.	.	.	+	+	.	.	.	.	.	.
	Epilobium montanum	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Galeobdolon flavidum	E1	+	.	.	.	.	+	.	.	.	.	.	.
	Polygonatum multiflorum	E1	.	.	.	.	+	+	.	.	.	.	.	.
	Rhamnus fallax	E2a	r	.	.	.	+	.	.	.	.	.	.	.
	Fagus sylvatica	E2a	.	r	.	.	.	.	.	.	.	.	.	.
	Paris quadrifolia	E1	+	.	.	.	.	.	.	.	.	.	.	.
	Poa nemoralis	E1	+	.	.	.	.	.	.	.	.	.	.	.
	Scrophularia nodosa	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Polystichum aculeatum	E1	.	+	.	.	.	.	.	.	.	.	.	.
QP	***Quercetalia pubescentis***													
	Convallaria majalis	E1	1	.	+	.	+	.	.	.	.	.	.	.
	Melittis melissophyllum	E1	.	.	.	.	.	.	.	.	.	.	+	.
	Arabis hirsuta	E1	.	.	+	.	.	+	.	.	.	.	.	.
QF	***Querco-Fagetea***													
	Ornithogalum pyrenaicum	E1	.	.	.	.	1	+	+	+	+	+	+	+
	Carex digitata	E1	.	.	.	.	+	+	+	+	.	.	.	.
	Anemone nemorosa	E1	+	.	.	.	+	.	.	+	.	.	.	.
	Primula vulgaris	E1	.	.	.	.	.	.	.	1	.	+	.	.
	Listera ovata	E1	.	.	.	.	.	.	.	.	.	.	.	1
O	**Other species (Druge vrste)**													
	Rubus idaeus	E2a	.	.	.	.	.	.	.	.	.	.	.	.
	Dactylorhiza maculata agg.	E1	.	.	.	.	.	.	.	.	.	+	+	+
	Tussilago farfara	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Vicia sp.	E1	r	.	+	.	.	.	.	.	.	.	.	.
	Festuca gigantea	E1	.	.	.	.	.	.	.	.	.	.	.	.
	Galeopsis speciosa	E1	.	.	.	.	.	.	.	.	.	.	.	.
M	**Mosses (Mahovi)**													
	Tortella tortuosa	E0	.	.	+	+	.	.	.	.	.	.	.	.
	Ctenidium molluscum	E0	+	.	.	.	.	.	.	.	.	.	.	.
	Rhytidiadelphus triquetrus	E0	+	.	.	.	.	.	.	.	.	.	.	.

Abbreviations in Table 1 (Okrajšave v tabeli 1)
Phytosociological groups and their authors (Fitocenološke enote in njihovi avtorji)

AV *Alnion viridis* Aichinger 1933
A *Adenostyletalia* G. &. J. Br.-Bl. 1931
MU *Mulgedio-Aconitetea* Hadač & Klika in Klika 1948
CA *Caricion austroalpinae* Sutter 1962
CF *Caricion ferrugineae* G. & J. Br.-Bl. 1931
ES *Elyno-Seslerietea* Br.- Bl. 1948
PT *Poo alpinae-Trisetalia* Ellmauer & Mucina 1993
MA *Molinio-Arrhenatheretea* R. Tx. 1937 em. R. Tx. 1970
FB *Festuco-Brometea* Br.-Bl. & R. Tx. 1943
TG *Trifolio-Geranietea* Th. Müller 1961
CU *Calluno-Ulicetea* Br.-Bl. & R. Tx. ex Klika 1948
TR *Thlaspietea rotundifolii* Br.-Bl. in Br.-Bl. & Jenny 1926
AT *Asplenietea trichomanis* Br.-Bl. in Meier & Br.-Bl. 1934
VP *Vaccinio-Piceetea* Br.-Bl. 1939 emend. Zupančič (1976) 2000
EP *Erico-Pinetea* I. Horvat 1959
F *Fagetalia sylvaticae* Pawł. in Pawł. & al. 1928
QP *Quercetalia pubescentis* Klika 1933
QF *Querco-Fagetea* Br.-Bl. & Vlieg. 1937
O Other species (Druge vrste)
M Mosses (Mahovi)

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	4	14	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	3	15	.	.
.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	3	10	3	15	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	+	.	.	.	.	.	.	r	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	1	5	.	.
+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	10	3	15	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	1	5	.	.
.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	11	38	9	45	2	40
.	.	.	+	.	.	.	.	.	+	.	.	.	.	.	.	.	6	21	6	30	.	.
.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	5	17	2	10	2	40
.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	4	14	4	20	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	1	1	1	3	.	.	.	.	.	+	.	.	.	.	.	5	17	5	25	.	.
.	.	.	.	.	.	.	.	.	.	.	r	.	.	.	.	.	4	14	4	20	.	.
.	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	2	7	2	10	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	1	3	1	5	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	7	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	.	.

Parent material (geološka podlaga)

A – limestone (apnenec)
L – marl (lapor)
G – clay slates (skrilavi glinavci)

Soil types (Talni tipi)

R – Rendzina (rendzina)
Li – Lithosols (litosol)
EC – Eutric Cambisols (evtrična rjava tla)

Localities of relevés (Lokalitete popisov): **1, 2, 3**: Lisec (9749/4), leg. & det. I. Dakskobler, 7. 8. 2001; **4**: Lisec (9749/4), leg. & det. I. Dakskobler, 14. 8. 2002; **5, 6**: Home, under Črna gora ridge (Home, pod grebenom Črne gore) – 9749/4, leg. & det. I. Dakskobler, 11. 6. 2003; **7**: Blehe at Šoštar (Blehe pri Šoštarju) – 9749/4, leg. & det. I. Dakskobler, 11. 7. 2002; **8**: Slatnik (9750/3), leg. & det. I. Dakskobler, 31. 7. 2003; **9**: Štuke under Mt. Črna prst (Štuke pod Črno prstjo) – 9749/4, leg. & det. I. Dakskobler, 31. 7. 2003; **10, 11, 12, 13, 14**: Krevle under Kobla (Krevle pod Koblo) – 9749/4, leg. & det. I. Dakskobler, 16. 7. and (in) 24. 8. 2004; **15, 16, 17, 18, 19, 20**: Mt. Porezen – southern slopes (Porezen, južna pobočja) – 9849/2, leg. & det. I. Dakskobler, 2. 9. 2004; **21, 22, 23, 24**: Mt. Porezen – southern slopes (Porezen, južna pobočja) – 9849/2, leg. & det. G. Seljak, 15. 8. 1974; **25, 26, 27, 28, 29**: Štuke under Mt. Črna prst (Štuke pod Črno prstjo) – 9749/4, leg. & det. I. Dakskobler, 31. 7. 2003.

Table 2: Synoptic table of communities with *Eryngium alpinum* (species with low frequency are excluded)
Tabela 2: Sintezna tabela združb z vrsto *Eryngium alpinum* (vrste z nizko stalnostjo niso upoštevane)

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Alnion viridis																
Salix appendiculata	E2a	14	10	.	.	.	.	.	.	.	10	.	.	11	.	.
Alchillea macrophylla	E1	.	.	.	.	.	20	20	.	.	.	.	.	.	.	.
Alnus viridis	E2a	.	.	.	.	.	.	20	.	.	.	.	8	5	.	.
Ribes petraeum	E2	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Salix waldsteiniana	E2a	.	.	.	.	.	.	.	.	.	.	.	.	58	.	.
Salix glabra	E2a	.	.	.	.	.	.	.	.	.	.	.	.	26	.	.
Adenostyletalia																
Silene vulgaris subsp. *antelopum* (inc. *S. vulgaris*)	E1	50	75	60	.	72	50	60	67	100	.	67	15	5	.	.
Astrantia major	E1	39	15	100	50	.	60	100	.	.	.	100	.	.	.	.
Lathyrus occidentalis var. *montanus* (inc. *L. laevigatus*)	E1	32	60	100	39	39	20	100	17	25	.	100	23	.	90	50
Pleurospermum austriacum	E1	25	55	.	.	11	.	.	.	.	.	.	.	16	.	.
Polygonatum verticillatum	E1	25	30	80	22	11	20	20	17	.	30	.	.	5	.	.
Senecio fuchsii (inc. *S. nemorensis* s. lat.)	E1	18	45	100	.	.	10	.	.	.	50	.	.	5	.	.
Heracleum montanum	E1	11	65	80	11	39	80	80	50	.	.	.	.	26	.	.
Allium victorialis	E1	11	5	100	.	72	.	.	.	.	10	.	.	5	.	.
Centaurea montana	E1	7	20	.	56	11	.	100	83	.	.	.	.	5	.	.
Calamagrostis arundinacea	E1	7	10	40	.	.	.	.	.	.	.	.	.	5	.	.
Aconitum angustifolium	E1	7	5	.	.	.	.	.	.	.	.	.	15	11	.	.
Angelica sylvestris	E1	4	20	.	.	.	.	20	.	.	.	.	8	.	.	.
Achillea distans	E1	4	.	60	.	.	30	.	50	.	.	.	15	.	.	.
Silene dioica	E1	4	.	.	.	6	10	.	17	.	50	.	.	.	.	.
Eryngium alpinum	E1	.	100	100	11	100	10	100	17	25	30	.	.	.	30	10
Crepis pyrenaica	E1	.	35	.	28	44	80	20	17	.	.	.	8	.	.	.
Thalictrum aquilegiifolium	E1	.	20	20	.	17	60	60	.	.	.	.	8	5	.	.
Aconitum degenii subsp. *paniculatum*	E1	.	15	20	.	6	40	.	.	.	.	.	.	.	.	.
Senecio cacaliaster	E1	.	10	20	.	33	.	.	.	.	.	.	.	.	.	.
Geum rivale	E1	.	10	.	.	11	20	.	.	.	10	.	8	.	.	.
Rhodiola rosea	E1	.	10	.	.	.	.	.	17	.	10	.	8	.	.	.
Viola pyrenaica	E1	.	10	.	.	.	10	.	.	.	.	.	.	.	.	.
Crepis paludosa	E1	.	5	.	.	.	10	20	.	.	.	.	.	21	.	.
Cirsium carniolicum	E1	.	5	.	.	.	.	.	.	50	.	.	.	.	.	.
Elymus caninus	E1	.	5	.	.	.	30	20	.	.	.	.	.	.	.	.
Hieracium prenanthoides	E1	.	.	20	28	.	50	100	67	.	.	.	.	.	.	.
Epilobium alpestre	E1	.	.	.	.	6	10	.	.	.	.	.	.	.	.	.
Stemmacantha rhapontica	E1	.	.	.	.	.	100	.	.	.	.	.	23	.	.	.
Hieracium umbrosum (*H. prenanthoides* x *H. sylvaticum*)	E1	.	.	.	.	.	20	.	.	.	.	.	.	.	.	.
Molopospermum peloponnesiacum	E1	.	.	.	.	.	20	.	.	.	.	.	.	.	.	.
Carduus personata	E1	.	.	.	.	.	10	.	.	.	.	.	.	11	.	.
Saxifraga rotundifolia	E1	.	.	.	.	.	10	.	33	.	10	.	.	5	.	.
Peucedanum ostruthium	E1	.	.	.	.	.	10	.	50	.	.	.	.	.	.	.
Stemmacantha heleniifolia	E1	.	.	.	.	.	.	100	.	.	.	.	.	.	.	.
Hugueninia tanacetifolia (Sysimbrium tanacetifolium)	E1	.	.	.	.	.	.	.	33	.	.	.	.	.	.	.
Athyrium filix-femina	E1	.	.	.	.	.	.	.	.	.	50	.	.	.	.	.
Mulgedio-Aconitetea																
Veratrum album s. lat.	E1	25	45	100	6	6	30	40	83	100	50	100	69	47	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Hypericum maculatum	E1	18	85	100	.	28	10	40	.	75	.	.	31	.	.	.
Aconitum lycoctonum agg.	E1	18	80	20	11	72	80	.	33	25	70	.	31	21	.	.
Rumex alpestris	E1	11	60	100	.	61	90	40	100	100	10	.	15	5	.	.
Geranium sylvaticum	E1	7	20	.	38	22	100	80	100	.	50	.	15	21	.	.
Chaerophyllum villarsii (inc. *C. hirsutum*)	E1	4	45	100	.	.	80	100	17	100	.	33	54	26	.	.
Carduus carduelis	E1	4	15	100	.	67	.	.	.	100	30	.	23	.	.	.
Myrrhis odorata	E1	4	.	.	.	11	20	.	83	100	30	.	.	.	.	.
Ranunculus platanifolius	E1	.	15	60	28	.	10	.	.	100	30	.	.	.	.	.
Chaerophyllum aureum	E1	.	10	.	.	61	10	.	.	.	50	.	.	.	.	.
Hypericum richeri	E1	.	.	.	89	.	.	.	17	.	30	.	.	.	90	90
Knautia dipsacifolia	E1	.	.	.	44	.	40	60	.	.	.	.	.	.	.	.
Viola biflora	E1	.	.	.	.	11	20	80	33	.	30	.	46	79	.	.
Aconitum napellus	E1	.	.	.	.	.	90	.	.	.	10	.	.	.	.	.
Alchemilla vulgaris agg. (inc. *A. alpestris*)	E1	.	.	.	.	.	50	30	50	75	.	.	.	.	.	.
Cirsium helenioides	E1	.	.	.	.	.	30	.	.	.	.	.	.	.	.	.
Primula elatior	E1	.	.	.	.	.	20	.	.	.	.	33	31	.	.	.
Phyteuma ovatum	E1	.	.	.	.	.	20	.	67	.	.	.	.	5	.	.
Urtica dioica	E1	.	.	.	.	.	10	.	17	.	10	.	.	.	.	.
Ranunculus aconitifolius	E1	.	.	.	.	.	.	60	.	.	.	.	.	.	.	.
Adenostyles alliariae	E1	.	.	.	.	.	.	.	83	.	70	.	.	5	.	.
Cerinthe glabra	E1	.	.	.	.	.	.	.	17	.	10	.	.	.	.	.
Cirsium montanum	E1	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Senecio subalpinus	E1	.	.	.	.	.	.	.	.	25	.	.	.	.	.	.
Cicerbita alpina	E1	.	.	.	.	.	.	.	.	.	90	.	.	.	.	.
Doronicum austriacum	E1	.	.	.	.	.	.	.	.	.	70	.	.	.	.	.
Millium effusum	E1	.	.	.	.	.	.	.	.	.	50	.	.	.	.	.
Scabiosa leucophylla	E1	.	.	.	.	.	.	.	.	.	30	.	.	.	.	.
Laserpitium arhangelicum	E1	.	.	.	.	.	.	.	.	.	10	.	.	.	.	.
Doronicum columnae	E1	.	.	.	.	.	.	.	.	.	10	.	.	.	.	.
Caricion austroalpinae																
Centaurea haynaldii subsp. *julica*	E1	89	85	80	.	.	.	.	.	.	.	.	.	.	.	.
Gentiana lutea subsp. *symphyandra*	E1	68	20	20	.	.	.	.	.	.	.	.	.	.	50	50
Koeleria eriostachya (inc. *K. carniolica*)	E1	61	50	80	.	.	.	.	.	.	.	100	46	21	.	10
Laserpitium peucedanoides	E1	57	10	20	.	6	.	.	.	.	.	67	77	89	10	90
Scorzonera rosea	E1	50	55	100	.	22	.	.	.	.	.	100	8	5	.	.
Allium ericetorum	E1	36	10	40	.	.	.	.	.	.	.	.	.	.	10	10
Festuca calva	E1	29	30	20	.	.	.	.	.	.	.	.	.	.	.	.
Asperula aristata s. lat.	E1	25	.	.	.	.	.	.	.	.	.	.	.	.	.	30
Pedicularis elongata subsp. *julica*	E1	7	.	.	.	.	.	.	.	.	.	.	8	5	.	.
Heracleum austriacum subsp. *siifolium*	E1	.	15	20	.	.	.	.	.	.	.	100	46	47	.	.
Scorzonera aristata	E1	.	.	.	.	17	.	.	.	.	.	.	8	11	.	.
Carex austroalpina	E1	.	.	.	.	.	20	.	.	.	.	.	8	.	.	.
Ranunculus hybridus	E1	.	.	.	.	.	.	.	.	.	.	.	8	47	.	.
Trifolium noricum	E1	.	.	.	.	.	.	.	.	.	.	.	8	.	.	.
Caricion ferrugineae																
Serratula tinctoria subsp. *macrocephala*	E1	82	85	100	6	.	.	.	.	.	.	100	8	11	70	70
Carex ferruginea	E1	11	80	.	.	28	20	.	17	100	.	100	100	100	30	90
Crepis bocconi	E1	.	10	40	6	.	.	.	.	.	.	100	8	11	50	30
Knautia longifolia	E1	.	.	.	.	50	.	.	.	.	.	.	46	.	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Pedicularis foliosa	E1	.	.	.	.	.	60	20	33	.	.	.	.	.	.	.
Festuca violacea	E1	.	.	.	.	.	30	.	33	.	.	.	.	.	.	.
Trifolium badium	E1	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Pedicularis rostratospicata	E1	.	.	.	.	.	.	.	.	.	.	100	.	.	.	.
Hedysarum hedysaroides	E1	.	.	.	.	.	.	.	.	.	.	.	.	16	.	.
Anemone baldensis	E1	.	.	.	.	.	.	.	.	.	.	.	.	16	.	.
Caricion firmae																
Selaginella selaginoides	E1	.	.	.	.	.	.	.	.	.	.	33	38	63	.	.
Dryas octopetalla	E1	.	.	.	.	.	.	.	.	.	.	.	15	26	.	.
Helianthemum alpestre	E1	.	.	.	.	.	.	.	.	.	.	.	8	11	.	.
Phyteuma sieberi	E1	.	.	.	.	.	.	.	.	.	.	.	8	11	.	.
Carex firma	E1	.	.	.	.	.	.	.	.	.	.	.	.	26	.	.
Arctostaphylos alpina	E1	.	.	.	.	.	.	.	.	.	.	.	.	11	.	.
Elyno-Seslerietea																
Betonica alopecuros	E1	96	90	60	.	56	.	.	.	.	.	.	62	42	50	.
Sesleria caerulea subsp. *calcaria*	E1	93	45	.	78	.	.	.	17	.	.	.	38	79	.	.
Helianthemum grandiflorum	E1	89	60	.	83	33	40	.	.	.	.	100	62	26	.	10
Scabiosa lucida s. lat.	E1	82	85	20	94	72	20	60	.	.	.	100	46	16	.	.
Phyteuma orbiculare	E1	79	55	.	83	6	10	.	33	.	.	.	23	79	50	90
Carduus crassifolius	E1	79	20	.	.	.	.	.	.	.	.	.	.	.	.	.
Carex sempervirens	E1	71	20	.	89	.	10	20	.	.	.	100	85	47	10	10
Campanula witasekiana	E1	64	50	100	.	.	.	.	.	.	.	.	.	.	.	.
Pulsatilla alpina	E1	57	25	20	72	28	40	100	50	.	.	100	62	74	.	10
Leucanthemum cf. *maximum* (inc. *L. vulgare*)	E1	46	20	.	89	.	70	60	.	.	.	100	38	21	70	90
Thymus alpigenus	E1	36	10	.	.	.	.	.	.	.	.	.	15	16	.	.
Galium anisophyllon	E1	32	10	20	83	6	.	.	.	.	.	.	62	32	10	30
Rhinanthus glacialis	E1	29	30	60	.	22	.	.	.	.	.	.	8	32	.	.
Ranunculus montanus	E1	29	20	.	17	.	.	.	11	.	.	67	.	11	.	.
Cerastium strictum (inc. *C. ciliatum*)	E1	29	10	.	.	.	30	.	.	.	.	100	46	11	10	.
Astrantia bavarica	E1	21	20	.	.	.	.	.	.	.	.	.	77	68	.	.
Anthyllis vulneraria subsp. *alpestris*	E1	21	20	.	89	6	.	.	.	.	.	100	23	21	.	30
Linum julicum (inc. *L. alpinum*)	E1	21	15	.	56	.	.	.	.	.	.	.	31	53	10	10
Acinos alpinus	E1	18	10	.	67	11	40	.	.	.	.	.	15	.	.	.
Gentiana verna	E1	18	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Astragalus penduliflorus	E1	18	.	.	.	39	60	.	.	.	.	.	.	.	.	.
Hieracium villosum	E1	14	10	.	6	11	.	.	.	.	.	67	23	26	.	.
Polygonum viviparum	E1	14	10	.	6	.	.	.	33	.	.	100	69	74	.	.
Campanula thyrsoides	E1	14	.	.	83	.	.	.	.	.	.	.	.	.	.	.
Thesium alpinum	E1	11	.	.	56	17	10	.	.	.	.	33	8	5	.	.
Pimpinella alpina	E1	11	.	.	.	.	.	.	.	.	.	.	46	5	.	.
Gentianella anisodonta	E1	7	.	.	.	.	.	.	.	.	.	33	15	16	.	.
Achillea clavenae	E1	4	.	.	.	.	.	.	.	.	.	.	31	16	10	.
Thesium pyrenaicum	E1	4	.	.	22	.	.	.	.	.	.	.	.	5	.	.
Senecio abrotanifolius	E1	4	.	.	.	.	.	.	.	.	.	.	8	11	.	.
Bartsia alpina	E1	4	.	.	.	.	.	.	.	.	.	.	31	47	10	30
Euphrasia picta	E1	.	10	.	.	.	.	.	.	.	.	33	8	.	.	.
Anemone narcissiflora	E1	.	5	.	17	.	.	40	33	.	10	.	.	47	.	.
Poa alpina	E1	.	5	20	.	6	.	.	50	.	.	100	54	16	.	.
Gentiana lutea s. lat. (inc. subsp. *vardjanii*)	E1	.	5	.	94	.	40	80	33	.	.	.	.	5	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Carduus defloratus	E1	.	.	.	89	6	100	80	17	.	.	.	.	.	.	.
Centaurea scabiosa subsp. *alpestris*	E1	.	.	.	56	.	40	80	.	.	.	33	.	.	.	.
Senecio doronicum	E1	.	.	.	33	.	50	.	17	.	.	33	8	.	50	.
Aster alpinus	E1	.	.	.	22	.	.	.	.	.	.	.	8	.	.	.
Alchemilla velebitica (inc. *A. conjuncta*)	E1	.	.	.	22	.	.	.	.	.	.	.	38	.	.	.
Aster bellidiastrum	E1	.	.	.	17	.	.	.	.	.	.	100	31	74	10	50
Potentilla crantzii	E1	.	.	.	17	11	.	.	.	.	.	33	23	.	.	.
Polygala alpestris	E1	.	.	.	17	.	.	.	.	.	.	.	.	5	.	.
Euphrasia salisburgiensis	E1	.	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Nigritella nigra agg.	E1	.	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Arabis ciliata	E1	.	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Myosotis alpestris	E1	.	.	.	6	.	.	.	17	.	.	.	38	5	.	.
Festuca norica	E1	.	.	.	.	94	.	.	.	.	.	33	.	.	.	.
Betonica hirsuta (*Stachys pradica*)	E1	.	.	.	.	22	.	.	.	.	.	.	.	.	.	.
Horminium pyrenaicum	E1	.	.	.	.	.	20	.	.	.	.	.	.	5	.	.
Helictotrichon parlatorei	E1	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Ligusticum mutellina	E1	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Plantago atrata	E1	.	.	.	.	.	.	.	.	.	.	33	.	.	.	.
Ranunculus carinthiacus	E1	.	.	.	.	.	.	.	.	.	.	.	54	11	.	.
Juncus monanthos	E1	.	.	.	.	.	.	.	.	.	.	.	46	26	.	.
Salix alpina	E1	.	.	.	.	.	.	.	.	.	.	.	15	5	.	.
Pedicularis rostratocapitata	E1	.	.	.	.	.	.	.	.	.	.	.	15	37	.	.
Arabis vochinensis	E1	.	.	.	.	.	.	.	.	.	.	.	8	11	.	.
Pedicularis verticillata	E1	.	.	.	.	.	.	.	.	.	.	.	.	11	10	10
Seslerietalia juncifoliae																
Festuca pungens (*F. bosniaca*)	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	70	70
Thymus balcanus	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	30	30
Dianthus monanthos	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	30	30
Festuca amethystina	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	30	30
Bromus reptans	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	10	30
Iris variegata	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	10	.
Pedicularis hoermanniana	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	10	.
Sesleria juncifolia	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	10	.
Juncetea trifidi																
Parnassia palustris	E1	5	.	.	.	11	.	.	.	.	.	.	46	32	.	.
Agrostis schraderiana	E1	.	.	.	.	44	.	.	.	.	.	.	.	.	.	.
Crepis conyzifolia	E1	.	.	.	.	33	.	.	.	.	.	.	.	.	.	.
Phyteuma betonicifolium	E1	.	.	.	.	22	30	.	.	.	.	.	.	.	.	.
Festuca paniculata (*F. spadicea*)	E1	.	.	.	.	22	.	.	17	.	.	.	.	.	.	.
Calycocorsus stiptatus (*Willemetia stiptata*)	E1	.	.	.	.	22	.	.	.	.	.	.	.	.	.	.
Hypochoeris uniflora	E1	.	.	.	.	17	.	.	17	.	.	.	.	.	.	.
Phleum alpinum	E1	.	.	.	.	11	.	.	33	.	.	.	.	.	.	.
Helictotrichon versicolor (*Avenochloa v.*)	E1	.	.	.	.	11	.	.	.	.	.	.	.	.	.	.
Centaurea nervosa	E1	.	.	.	.	.	40	80	.	.	.	.	8	.	.	.
Potentilla grandiflora	E1	.	.	.	.	.	40	.	.	.	.	.	.	.	.	.
Dracocephalum ruyschiana	E1	.	.	.	.	.	30	.	.	.	.	.	.	.	.	.
Poa variegata	E1	.	.	.	.	.	20	.	.	.	.	.	.	.	.	.
Centaurea uniflora	E1	.	.	.	.	.	.	.	33	.	.	.	.	.	.	.
Alchemilla hybrida	E1	.	.	.	.	.	.	.	.	.	.	67	.	.	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Botrychium lunaria	E1	.	.	.	.	.	.	.	.	.	.	33	8	.	.	.
Anthoxanthum nipponicum (*A. alpinum*)	E1	.	.	.	.	.	.	.	.	.	.	.	46	.	.	.
Scheuchzerio-Caricetea fuscae																
Tofieldia calyculata	E1	.	.	.	.	.	.	.	.	.	.	.	23	58	.	.
Pinguicula alpina	E1	.	.	.	.	.	.	.	.	.	.	.	.	32	.	.
Poo alpinae-Trisetalia																
Festuca nigrescens (inc. *F. rubra* agg.)	E1	54	75	100	22	.	40	.	.	.	.	100	77	21	50	10
Trollius europaeus	E1	50	60	100	22	39	30	20	83	.	.	100	69	37	.	.
Traunsteinera globosa	E1	36	5	.	22	.	.	.	.	.	.	67	.	11	.	.
Phleum hirsutum	E1	29	50	100	.	6	40	.	.	.	.	100	.	.	.	.
Pimpinella major subsp. *rubra* (inc. *P. major*)	E1	25	55	100	28	61	.	60	50	.	.	.	.	.	.	.
Crocus vernus subsp. *albiflorus*	E1	25	10	40	6	.	.	.	.	.	.	.	.	11	.	.
Campanula scheuchzeri	E1	21	10	.	.	33	10	40	.	.	.	67	38	58	90	70
Ranunculus nemorosus	E1	11	50	.	.	61	10	.	.	.	.	100	46	5	.	.
Polygonum bistorta	E1	4	.	.	.	.	20	100	83	.	.	.	.	.	.	.
Agrostis tenuis	E1	.	40	80	.	56	30	80	.	.	.	67	.	.	.	.
Deschampsia caespitosa	E1	.	15	.	.	11	.	.	.	.	.	.	15	.	.	.
Paradisea liliastrum	E1	.	.	.	44	.	10	.	.	.	.	.	.	.	.	.
Trisetum flavescens s. lat.	E1	.	.	.	33	.	.	100	83	100	.	67	.	.	.	.
Campanula rhomboidalis	E1	.	.	.	22	.	.	100	17	.	.	.	.	.	.	.
Crepis mollis	E1	.	.	.	6	.	.	80	.	.	.	.	.	.	.	.
Centaurea pseudophrygia	E1	.	.	.	.	50	.	.	.	.	.	33	.	.	70	.
Helictotrichon pubescens (*Avenochloa p.*)	E1	.	.	.	.	11	20	.	17	.	.	.	.	.	.	.
Knautia transalpina	E1	.	.	.	.	.	30	.	.	.	.	.	.	.	.	.
Tephroseris aurantiaca	E1	.	.	.	.	.	.	.	50	.	.	.	.	.	.	.
Viola tricolor	E1	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Narcissus stellaris (*N. radiiflorus*)	E1	.	.	.	.	.	.	.	.	.	.	100	.	.	10	10
Rhinanthus alpinus	E1	.	.	.	.	.	.	.	.	.	.	100	.	.	.	.
Crepis aurea	E1	.	.	.	.	.	.	.	.	.	.	.	31	5	.	.
Phleum rhaeticum	E1	.	.	.	.	.	.	.	.	.	.	.	15	.	.	.
Molinio-Arrhenatheretea																
Lotus corniculatus	E1	43	30	20	94	6	10	.	.	.	.	100	77	26	.	.
Galium mollugo agg.	E1	29	75	40	67	39	20	.	.	100	.	.	15	5	90	30
Leontodon hispidus	E1	29	40	40	28	11	10	.	.	.	30	.	31	32	90	50
Dactylis glomerata	E1	25	80	60	72	89	100	100	50	.	.	33	31	5	.	.
Trifolium pratense	E1	11	10	.	39	6	60	.	33	.	.	67	.	21	.	.
Lathyrus pratensis	E1	11	5	20	44	11	.	.	17	100	.	.	.	.	.	.
Achillea millefolium agg.	E1	4	40	.	33	22	10	40	.	.	.	.	.	.	.	.
Veronica chamaedrys	E1	.	10	.	11	11	40	.	.	.	.	.	8	.	.	.
Tragopogon pratensis subsp. *orientalis*	E1	.	5	.	44	11	20	.	.	.	.	.	.	.	.	.
Valeriana officinalis	E1	.	5	.	67	.	50	40	17	.	30	.	.	.	.	.
Vicia sepium	E1	.	5	.	22	.	30	.	.	.	.	.	23	.	.	.
Molinia caerulea subsp. *arundinacea*	E1	.	.	20	.	.	.	.	.	.	.	.	.	.	.	30
Rhinanthus alecterolophus	E1	.	.	.	78	.	.	.	.	.	.	.	.	.	.	.
Alopecuros pratensis	E1	.	.	.	.	11	.	.	.	.	.	.	.	.	.	.
Stellaria graminea	E1	.	.	.	.	17	.	.	.	.	.	.	.	.	.	.
Dianthus superbus	E1	.	.	.	.	.	20	.	.	.	.	.	.	.	.	.
Vicia cracca	E1	.	.	.	.	.	10	.	.	.	.	.	8	.	.	.
Ranunculus acris	E1	.	.	.	.	.	10	.	.	.	.	.	.	.	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Poa pratensis	E1	.	.	.	.	.	10	.	17	.	.	.	.	.	.	.
Festuca pratensis s. lat.	E1	.	.	.	.	.	.	.	33	.	.	.	.	.	.	.
Anthriscus sylvestris	E1	.	.	.	.	.	.	.	33	.	.	.	.	.	.	.
Trifolium repens	E1	.	.	.	.	.	.	.	.	.	.	.	23	.	.	.
Festuco-Brometea																
Bromus erectus agg.	E1	89	70	100	28	.	.	.	.	.	.	.	8	16	.	.
Carex humilis	E1	86	35	.	.	.	.	.	.	.	.	.	.	.	.	.
Buphthalmum salicifolium	E1	82	70	20	.	22	20	.	.	.	.	100	8	26	70	50
Prunella grandiflora	E1	75	50	20	33	61	10	20	.	.	.	100	46	16	.	.
Carlina acaulis s. lat.	E1	71	65	100	39	22	10	40	.	.	.	67	23	11	90	90
Gymnadenia conopsea	E1	71	5	.	67	6	.	.	.	.	.	67	8	26	10	90
Dianthus monspessulanus	E1	64	30	100	11	.	.	.	.	.	.	.	.	.	.	.
Linum viscosum	E1	61	40	.	.	.	.	.	.	.	.	.	.	.	.	.
Centaurea triumfettii	E1	50	5	.	.	39	.	.	17	.	.	100	15	.	.	10
Campanula glomerata	E1	46	40	20	78	.	.	.	.	.	.	.	.	.	.	.
Thlaspi praecox	E1	39	5	.	.	.	.	.	.	.	.	.	.	.	.	.
Stachys recta s. lat.	E1	25	5	.	.	6	10	.	.	.	.	.	.	.	.	.
Hippocrepis comosa	E1	21	5	20	78	.	.	.	.	.	.	.	8	.	.	.
Globularia cordifolia	E1	21	.	.	22	.	.	.	.	.	.	.	.	.	.	.
Allium senescens	E1	18	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Briza media	E1	14	10	20	22	50	30	60	.	.	.	100	.	.	.	.
Brachypodium pinnatum agg.	E1	14	5	.	11	.	.	.	.	.	.	.	.	.	.	.
Allium carinatum subsp. *pulchellum*	E1	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Carex flacca	E1	11	25	.	28	.	10	.	.	.	.	.	.	.	.	.
Cuscuta epithymum	E1	11	.	.	22	.	.	.	.	.	.	33	.	.	.	.
Galium lucidum	E1	7	.	.	.	.	.	.	.	.	10	.	31	.	.	.
Teucrium chamaedrys	E1	4	.	.	22	.	.	.	.	.	.	.	.	.	.	.
Thymus serpyllum	E1	.	.	.	83	.	.	20	.	.	.	.	.	.	.	.
Euphorbia verrucosa	E1	.	.	.	83	.	.	.	.	50	.	67	.	.	.	.
Linum catharticum	E1	.	.	.	61	.	.	.	.	.	.	67	.	5	.	.
Sideritis hyssopifolia	E1	.	.	.	61	.	.	.	.	.	.	.	.	.	.	.
Euphorbia cyparissias	E1	.	.	.	44	.	50	60	33	.	.	.	.	.	.	.
Festuca ovina agg.	E1	.	.	.	44	.	.	.	.	.	.	.	.	.	.	.
Koeleria pyramidata	E1	.	.	.	33	39	20	.	.	.	.	.	15	.	.	.
Plantago media	E1	.	.	.	22	.	.	.	.	.	.	33	.	.	.	.
Campanula rotundifolia s. lat.	E1	.	.	.	22	.	.	.	.	.	.	.	.	.	.	.
Pimpinella saxifraga	E1	.	.	.	17	.	.	.	.	.	.	.	.	.	10	10
Trifolium montanum	E1	.	.	.	11	6	.	.	.	.	.	100	.	.	.	.
Veronica teucrium	E1	.	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Genista tinctoria	E1	.	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Helictotrichon pratense	E1	.	.	.	.	.	.	20	.	.	.	.	.	.	.	.
Galium verum	E1	.	.	.	.	.	.	.	33	.	.	.	.	.	.	.
Plantago serpentina	E1	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Trifolio-Geranietea																
Laserpitium siler	E1	100	55	20	83	56	.	20	.	.	.	.	8	11	.	.
Laserpitium latifolium	E1	82	80	100	100	61	90	100	50	.	.	33	.	.	.	.
Thalictrum minus	E1	68	65	20	6	.	40	.	.	.	.	.	.	.	.	.
Lilium carniolicum	E1	61	65	.	.	.	.	.	.	.	10	.	8	.	10	50
Arabis pauciflora (Fourraea alpina)	E1	54	55	.	44	.	20	.	.	.	.	.	.	.	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Tanacetum corymbosum subsp. *clusii* ?	E1	50	50	100	.	.	.	.	.	.	.	.	.	.	.	.
Iris graminea	E1	50	45	.	.	.	.	.	.	.	.	.	.	.	.	.
Vicia sylvatica	E1	46	55	60	.	.	40	.	.	.	.	67	.	.	.	.
Polygonatum odoratum	E1	43	10	.	44	.	.	.	.	.	.	.	.	.	.	.
Libanotis sibirica subsp. *montana* (*Seseli libanotis*)	E1	36	25	80	83	11	10	.	.	.	.	.	8	11	.	.
Silene nutans	E1	32	.	.	56	6	10	.	.	.	.	.	8	.	.	.
Anthericum ramosum	E1	29	5	.	11	.	.	.	.	.	.	.	.	.	.	.
Trifolium rubens	E1	18	.	.	.	11	.	.	.	.	.	.	.	.	.	.
Verbascum alpinum	E1	11	30	.	.	.	.	.	.	.	.	.	.	.	.	.
Orobanche laserpitio-sileris	E1	11	.	.	6	.	.	.	.	.	.	.	.	.	.	.
Viola hirta	E1	7	.	.	44	.	.	.	.	.	.	.	.	.	.	.
Vincetoxicum hirundinaria	E1	7	.	.	17	.	10	.	.	.	.	.	.	.	.	.
Digitalis grandiflora	E1	4	.	.	39	.	.	60	.	.	.	.	.	.	.	.
Clinopodium vulgare	E1	4	5	.	.	17	20	60	.	.	.	.	.	.	.	.
Hypericum perforatum	E1	.	5	.	.	28	.	.	.	.	.	.	.	.	.	.
Dianthus barbatus	E1	.	.	40	.	72	.	.	.	.	.	.	.	.	.	.
Origanum vulgare	E1	.	.	.	55	39	.	20	.	.	.	.	.	.	.	.
Aconitum anthora	E1	.	.	.	78	.	.	.	.	.	.	.	.	.	.	.
Bupleurum falcatum	E1	.	.	.	50	.	.	.	.	.	.	.	.	.	.	.
Bupleurum longifolium	E1	.	.	.	33	.	.	.	.	.	.	.	.	.	.	.
Geranium sanguineum	E1	.	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Campanula rapunculoides	E1	.	.	.	.	.	10	.	.	.	.	.	.	.	.	.
Trifolium alpestre	E1	.	.	.	.	.	.	60	.	.	.	.	.	.	.	.
Lilium bulbiferum	E1	.	.	.	.	.	.	.	.	.	.	100	.	.	.	.
Calluno-Ulicetea																
Anthoxanthum odoratum	E1	11	10	40	72	11	40	.	17	.	.	100	8	11	.	.
Potentilla erecta	E1	.	10	40	.	17	.	60	.	.	.	.	.	5	.	.
Phyteuma zahlbruckneri	E1	.	5	100	.	.	.	.	.	.	.	.	.	.	.	.
Coeloglossum viride	E1	.	5	.	6	.	.	.	.	.	.	.	23	21	.	.
Carex pallescens	E1	.	.	20	.	.	.	.	.	.	.	.	.	.	.	.
Galium pumilum	E1	.	.	20	.	.	40	.	17	.	.	100	.	.	.	.
Arnica montana	E1	.	.	.	.	.	.	20	.	.	.	33	.	5	.	.
Potentilla aurea	E1	.	.	.	.	.	.	.	17	.	.	100	.	.	.	.
Meum athamanticum	E1	.	.	.	.	.	.	.	17	.	.	.	.	.	.	.
Gentiana pannonica	E1	.	.	.	.	.	.	.	.	.	.	.	.	11	.	.
Luzula campestris	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	10	.
Thlaspietea rotundifolii																
Ligusticum seguieri	E1	29	35	.	.	.	.	.	.	.	.	.	.	.	.	.
Biscutella laevigata	E1	18	5	.	.	.	.	.	17	.	.	.	23	63	.	10
Adenostyles glabra	E1	7	20	.	.	.	30	.	.	.	.	.	15	32	.	.
Rumex scutatus	E1	4	.	.	.	.	40	20	.	.	.	.	8	.	.	.
Petasites paradoxus	E1	4	.	.	.	.	20	.	.	.	.	.	.	.	.	.
Pedicularis hacquetii	E1	.	10	.	.	6	.	.	.	.	.	.	.	.	.	.
Valeriana montana	E1	.	5	.	72	.	20	.	.	.	.	.	.	5	10	10
Dryopteris villarii	E1	.	.	.	.	6	.	.	.	.	.	.	.	11	.	.
Ranunculus breyninus	E1	.	.	.	.	.	.	20	.	.	.	.	.	.	.	.
Soldanella alpina	E1	.	.	.	.	.	.	.	17	.	.	33	54	58	.	.
Arabis alpina	E1	.	.	.	.	.	.	.	.	.	10	.	.	5	.	.
Homogyne discolor	E1	.	.	.	.	.	.	.	.	.	.	.	38	26	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Salix retusa	E1	.	.	.	.	.	.	.	.	.	.	.	15	11	.	.
Achillea atrata	E1	.	.	.	.	.	.	.	.	.	.	.	15	5	.	.
Festuca nitida	E1	.	.	.	.	.	.	.	.	.	.	.	15	11	.	.
Soldanella minima	E1	.	.	.	.	.	.	.	.	.	.	.	15	5	.	.
Silene alpestris	E1	.	.	.	.	.	.	.	.	.	.	.	23	32	.	.
Trifolium pallescens	E1	.	.	.	.	.	.	.	.	.	.	.	23	.	.	.
Astrantia carniolica	E1	.	.	.	.	.	.	.	.	.	.	.	.	37	.	.
Hieracium bifidum	E1	.	.	.	.	.	.	.	.	.	.	.	.	16	.	.
Athamanta cretensis	E1	.	.	.	.	.	.	.	.	.	.	.	.	16	.	.
Cerastium carinthiacum	E1	.	.	.	.	.	.	.	.	.	.	.	.	16	.	.
Crepis kerneri	E1	.	.	.	.	.	.	.	.	.	.	.	.	11	.	.
Aquilegia bertolonii	E1	.	.	.	.	.	.	.	.	.	.	.	.	11	.	.
Asplenietea trichomanis																
Primula auricula	E1	25	5	.	.	.	.	.	.	.	.	.	.	.	.	.
Saxifraga hostii	E1	21	25	.	.	6	.	.	.	.	.	.	.	.	.	.
Saxifraga crustata	E1	11	.	.	.	.	.	.	.	.	.	.	.	5	.	.
Dianthus sylvestris	E1	7	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Sedum album	E1	4	.	.	27	.	.	.	.	.	.	.	.	.	.	.
Kernera saxatilis	E1	.	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Asplenium viride	E1	.	.	.	.	.	.	.	.	.	.	.	15	16	.	.
Valeriana saxatilis	E1	.	.	.	.	.	.	.	.	.	.	.	8	53	.	.
Paederota lutea	E1	.	.	.	.	.	.	.	.	.	.	.	8	37	.	.
Saxifraga aizoides	E1	.	.	.	.	.	.	.	.	.	.	.	8	11	.	.
Valeriana elongata	E1	.	.	.	.	.	.	.	.	.	.	.	.	11	.	.
Vaccinio-Piceetea																
Picea abies	E2a	57	10	20	.	.	10	.	.	.	.	.	.	21	.	.
Aposeris foetida	E1	43	75	80	.	.	.	.	.	.	.	100	38	21	.	.
Rosa pendulina	E1	7	20	.	28	6	40	40	.	.	.	.	.	5	.	.
Solidago virgaurea s. lat.	E1	7	5	80	72	6	80	.	.	.	10	.	15	21	10	10
Luzula luzuloides	E1	4	40	100	.	.	10	.	.	.	.	.	.	.	.	.
Gentiana asclepiadea	E1	.	20	.	.	6	10	.	.	.	50	.	.	11	.	.
Luzula sylvatica s. lat.	E1	.	5	.	17	22	.	.	17	.	30	.	15	16	.	.
Vaccinium myrtillus	E1	.	5	20	.	.	.	.	.	.	.	.	15	5	.	.
Veronica urticifolia	E1	.	5	.	.	.	10	.	.	.	.	.	.	5	.	.
Valeriana tripteris	E1	.	.	20	.	.	.	.	.	.	.	.	8	16	.	.
Hieracium sylvaticum	E1	.	.	.	44	.	.	.	17	.	.	.	8	.	.	.
Homogyne alpina	E1	.	.	.	6	.	.	40	.	.	.	.	23	11	.	.
Polystichum lonchitis	E1	.	.	.	.	.	10	.	17	.	.	.	.	11	.	.
Geranium rivulare	E1	.	.	.	.	.	.	20	.	.	.	.	.	.	.	.
Oxallis acetosella	E1	.	.	.	.	.	.	.	.	.	10	.	.	.	.	.
Larix decidua	E1	.	.	.	.	.	.	.	.	.	.	.	8	11	.	.
Homogyne sylvestris	E1	.	.	.	.	.	.	.	.	.	.	.	.	32	10	70
Laserpitium krapfii	E1	.	.	.	.	.	.	.	.	.	.	.	.	.	10	.
Erico-Pinetea																
Cirsium erisithales	E1	82	95	100	.	50	20	.	.	.	30	33	.	26	10	90
Chamaecytisus hirsutus subsp. *ciliatus*	E1	75	20	.	.	.	.	.	.	.	.	.	.	.	.	.
Genista radiata	E1	75	25	.	.	.	.	.	.	.	.	.	8	.	.	.
Calamagrostis varia	E1	68	40	.	61	33	50	60	.	.	.	.	.	16	90	70
Erica carnea	E1	43	.	.	.	.	.	.	.	.	.	.	.	16	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Peucedanum austriacum var. *rablense*	E1	36	10	.	.	22	.	.	.	.	10	.	.	.	.	.
Rubus saxatilis	E1	14	10	.	.	22	.	.	17	.	.	.	.	11	.	.
Carex ornithopoda	E1	14	15	.	17	.	.	.	.	.	.	.	38	11	10	.
Aquilegia nigricans (inc. *A. vulgaris*)	E1	11	.	.	6	.	.	.	.	.	10	.	.	.	.	.
Juniperus alpina	E2a	7	.	.	6	.	.	.	.	.	.	.	.	5	30	50
Pinus mugo	E2a	4	.	20	.	.	.	.	.	.	.	.	.	11	.	.
Epipactis atrorubens	E1	.	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Cotoneaster integerrima	E1	.	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Coronilla vaginalis	E1	.	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Rhododendron hirsutum	E2a	.	.	.	.	.	.	20	.	.	.	.	31	26	.	.
Gymnadenia odoratissima	E1	.	.	.	.	.	.	.	.	.	.	.	15	11	.	.
Rhodothamnus chamaecistus	E1	.	.	.	.	.	.	.	.	.	.	.	8	16	.	.
Fagetalia sylvaticae																
Mercurialis perennis	E1	71	65	20	39	44	.	.	.	.	10	.	.	11	.	.
Knautia drymeia	E1	57	75	100	.	.	.	.	.	100	.	67	.	32	.	.
Cyclamen purpurascens	E1	32	.	.	.	.	.	.	.	.	.	.	.	5	.	.
Lilium martagon	E1	21	30	100	72	44	70	20	33	.	.	33	15	11	.	.
Melica nutans	E1	14	15	.	.	.	.	.	.	.	.	.	.	.	.	.
Symphytum tuberosum	E1	14	15	.	.	.	.	.	.	.	30	.	.	.	.	.
Rhamnus fallax (inc. *R. alpina)*	E2a	11	5	.	17	.	.	.	.	.	.	.	.	.	.	.
Fagus sylvatica	E2a	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Acer pseudoplatanus	E2a	4	5	.	.	.	.	.	.	.	10	.	.	.	.	.
Galium laevigatum (inc. *G. aristatum*)	E1	4	5	.	.	.	10	.	.	.	.	.	.	5	.	.
Lonicera alpigena	E2a	4	.	.	6	11	10	.	.	.	.	.	.	.	.	.
Omphalodes verna	E1	.	35	.	.	.	.	.	.	.	.	.	.	.	.	.
Myosotis sylvatica s. lat.	E1	.	30	.	.	11	10	.	50	.	10	.	.	.	.	.
Dryopteris filix-mas	E1	.	10	.	.	.	.	.	.	.	50	.	8	.	.	.
Campanula trachelium	E1	.	10	.	.	6	10	.	.	.	.	.	.	.	.	.
Epilobium montanum	E1	.	10	.	6	.	.	20	17	.	.	.	8	.	.	.
Polygonatum multiflorum	E1	.	10	.	.	.	.	.	.	.	.	.	.	.	.	.
Galeobdolon flavidum	E1	.	5	.	.	11	30	.	.	.	10	.	.	.	.	.
Scrophularia nodosa	E1	.	5	.	.	.	.	.	.	.	10	.	.	.	.	.
Daphne mezereum	E2a	.	.	.	17	6	.	.	.	.	30	.	.	5	.	.
Phyteuma spicatum	E1	.	.	.	17	.	.	20	.	.	.	.	.	.	.	.
Sorbus mougeotii	E2	.	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Narcissus pseudonarcissus	E1	.	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Laburnum alpinum	E2	.	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Poa nemoralis	E1	.	.	.	6	17	50	.	33	.	.	.	.	.	.	.
Cardamine heptaphylla	E1	.	.	.	6	.	20	.	.	.	.	.	.	.	.	.
Euphorbia dulcis	E1	.	.	.	.	.	20	.	50	.	.	.	.	.	.	.
Aruncus dioicus	E1	.	.	.	.	.	10	.	.	.	30	.	.	.	.	.
Ranunculus lanuginosus	E1	.	.	.	.	.	.	40	.	.	30	.	.	.	.	.
Luzula nivea	E1	.	.	.	.	.	.	20	.	.	.	.	.	.	.	.
Scopolia carniolica	E1	.	.	.	.	.	.	.	.	.	50	.	.	.	.	.
Cardamine trifolia	E1	.	.	.	.	.	.	.	.	.	50	.	.	.	.	.
Paris quadrifolia	E1	.	.	.	.	.	.	.	.	.	30	.	.	.	.	.
Lunaria rediviva	E1	.	.	.	.	.	.	.	.	.	30	.	.	.	.	.
Vicia oroboides	E1	.	.	.	.	.	.	.	.	.	30	.	.	.	.	.
Stellaria montana	E1	.	.	.	.	.	.	.	.	.	30	.	.	.	.	.

Successive number (Zaporedna številka popisa)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of relevés (Število popisov)		28	20	5	18	18	10	5	6	4	14	3	13	19	11	11
Sign for syntaxon (Oznaka sintaksona)		CjLs	CfEa	AvEa	CLl	AvEa	EC	PbEa	MyA	Cf-H	AaDa	Cf	Cf	Cf	CCp	HrCf
Euphorbia carniolica	E1	.	.	.	.	.	.	.	.	.	10	.	.	.	.	.
Aremonia agrimonoides	E1	.	.	.	.	.	.	.	.	.	10	.	.	.	.	.
Quercetalia pubescentis																
Peucedanum schottii	E1	32	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Convallaria majalis	E1	25	5	.	6	.	.	.	.	.	.	.	.	.	.	.
Melittis melissophyllum	E1	21	15	.	.	.	.	.	.	.	.	.	.	.	.	.
Sorbus aria	E2	18	.	.	17	.	.	.	.	.	.	.	.	.	.	.
Primula veris s. lat.	E1	14	.	.	67	.	.	.	.	.	.	.	8	.	.	.
Arabis hirsuta s. lat.	E1	11	5	.	11	.	.	.	.	.	.	.	.	.	.	.
Orchis mascula s. lat.	E1	7	.	.	11	.	.	.	.	.	.	.	.	.	.	.
Pulmonaria angustifolia	E1	.	.	.	.	.	40	.	.	.	.	.	.	.	.	.
Querco-Fagetea																
Ornithogalum pyrenaicum	E1	25	45	40	.	.	.	.	.	.	.	.	.	.	.	.
Anemone nemorosa	E1	25	10	40	.	.	.	.	.	.	.	.	.	.	.	.
Primula vulgaris	E1	25	20	.	.	.	.	.	.	.	.	.	.	.	.	.
Carex digitata	E1	14	30	.	.	.	.	.	.	.	.	.	8	5	.	.
Listera ovata	E1	14	5	.	.	.	.	.	.	.	.	.	.	.	.	.
Veratrum nigrum	E1	.	.	.	.	.	10	.	.	.	.	.	.	.	.	.
Carex montana	E1	.	.	.	.	.	.	.	.	.	.	33	.	.	.	.
Other species (Druge vrste)																
Juniperus communis	E2a	18	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dactylorhiza maculata agg.	E1	7	20	.	.	.	.	.	.	.	.	.	.	.	.	.
Rubus idaeus	E2a	4	25	.	.	17	40	.	.	.	30	.	.	.	.	.
Tussilago farfara	E1	.	10	.	.	.	.	.	.	.	10	.	.	.	.	.
Fragaria vesca (inc. *Fragaria* sp.)	E1	.	.	.	.	6	.	40	.	.	.	.	.	.	.	.
Stachys alpina	E1	.	.	.	.	6	20	60	.	.	.	.	.	.	.	.
Agrostis stolonifera	E1	.	.	.	.	.	20	.	.	.	.	.	.	.	.	.
Elymus repens	E1	.	.	.	.	.	10	.	.	.	.	.	.	.	.	.
Epilobium angustifolium	E1	.	.	.	.	.	20	.	.	.	.	.	.	.	.	.
Geum urbanum	E1	.	.	.	.	.	.	40	.	.	.	.	.	.	.	.
Galeopsis tetrahit	E1	.	.	.	.	.	.	40	.	.	.	.	.	.	.	.
Rumex alpinus	E1	.	.	.	.	.	.	.	33	.	.	.	.	.	.	.
Sorbus aucoparia	E2a	.	.	.	.	.	.	.	17	.	.	.	8	5	.	.

Sources to Table 2 (Viri za tabelo 2):

1 *Centaureo julici-Laserpitietum sileris* nom. prov., the southern Julian Alps, Dakskobler (2003a, supplemented);
2 *Carici ferrugineae-Eryngietum alpinae* ass. nova – the southern Julian Alps: Mts. Črna prst and Porezen, this study, Tab 1, relevés 5–24;
3 *Allio victorialis-Eryngietum alpinae* nom. prov. var. *Seratula macrocephala* prov., the southern Julian Alps – Štuke under Mt. Črna prst, this study, relevés 25–29;
4 *Campanulo-Laserpitietum latifoliae*, the High Jura, Béguin (1972);
5 *Allio victorialis-Eryngietum alpinae* nom. prov., Austria, the Carnic Alps (Karnische Alpen), Franz (2004 mscr.);
6 *Eryngio-Centaureetum rhaponticae*, the Swiss Central Alps, Sutter (1978);
7 *Polygono bistortae-Eryngietum alpini*, Vanoise, the French Alps, Gehu-Franck & al. (1984);
8 *Myrrhido-Adenostyletum*, the southwestern (French) Alps, Braun-Blanquet (1969);
9 Transition between the association *Caricetum ferrugineae* s. lat. and tall herbs community – Mt. Golica, the Karavanke, Aichinger (1933);

10 *Adenostylo-Doronicetum*, the Dinaric mountains, Horvat in Horvat & al. (1974);
11 *Caricetum ferrugineae* s. lat. – Mt. Golica, the Karavanke, Aichinger (1933);
12 *Caricetum ferrugineae* s. lat., the Julian Alps, the Krn mountain range, Surina (2004);
13 *Caricetum ferrugineae* s. lat., the southern Julian Alps, the Tolmin-Bohinj ridge, Dakskobler (2004, mscr.);
14 *Calamagrostio-Centaureetum pseudophrygiae*, Croatia, the northern part of the Dinaric mountains, Horvat in Horvat & al. (1974);
15 *Hyperico grisebachii-Caricetum ferugineae*, Croatia, the northern part of the Dinaric mountains, Horvat in Horvat & al. (1974).