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Effects of natural disturbances on environmental conditions, understory plant diversity, and functional strategies in montane forests

Supplementary Material

Supplementary Material 1. The equatations of main soil physical properties used in this study:

$$BDa = \frac{c - a}{b} \text{ [g / cm}^3\text{]}$$

where *BDa* is actual bulk density, *a* is the weight of the cylinder [g], *b* is the volume of the cylinder [cm^3], and *c* is the weight of the cylinder with soil with natural humidity state.

$$BDd = \frac{e - a}{b} \text{ [g / cm}^3\text{]}$$

where *BDd* is "dry" bulk density and *e* is the weight of the cylinder with dry soil.

$$Mw = \frac{c - e}{e - a} * 100 \text{ [\%]}$$

where *Mv* is soil moisture in volume percent.

$$Por = \frac{Dw - BDd}{Dw} * 100 \text{ [\%]}$$

where *Por* is porosity and *Dw* is the density of the solid soil phase.

$$CWCv = \frac{d - e}{b} * 100 \text{ [\%]}$$

where *CWCv* is capillary water capacity in volume percent.

$$Pa = Por - CWCv \text{ [\%]}$$

where *Pa* is air capacity.

The density of the solid soil phase (Dw) was established by the pycnometer method.

Supplementary Material 2.

	Species recored in this study	Number of occurences in each study plot type	
		Undis-turbed	Disturbed
1	*Acer pseudoplatanus*	21	19
2	*Aconitum firmum*	16	15
3	*Actaea spicata*	10	6
4	*Adenostyles alliariae*	7	7
5	*Adoxa moschatellina*	8	3
6	*Aegopodium podagraria*	1	2
7	*Ajuga reptans*	1	2
8	*Alchemilla* species	2	14
9	*Anemone nemorosa*	1	1
10	*Anthoxanthum odoratum*	1	0
11	*Aquilegia vulgaris*	1	0
12	*Arabis alpina*	3	1
13	*Aruncus dioicus*	10	4
14	*Asarum europaeum*	8	5
15	*Asplenium trichomanes*	0	1
16	*Asplenium viride*	17	9
17	*Aster bellidiastrum*	7	7
18	*Astrantia major*	6	11
19	*Athyrium distentifolium*	28	13
20	*Athyrium filix-femina*	7	29
21	*Avenella flexuosa*	27	35
22	*Calamagrostis arundinacea*	21	30
23	*Calamagrostis villosa*	20	13
24	*Calluna vulgaris*	1	2
25	*Campanula rotundifolia* agg.	14	19
26	*Cardamine amara*	1	0
27	*Cardamine flexuosa*	5	2
28	*Cardamine trifolia*	14	9
29	*Cardaminopsis arenosa*	1	11
30	*Carduus defloratus* agg.	2	0
31	*Carduus personata*	0	1
32	*Carex digitata*	13	13
33	*Carex elongata*	0	2
34	*Carex firma*	2	1
35	*Carex flacca*	0	6
36	*Carex leporina*	0	4
37	*Carex pilulifera*	0	8
38	*Carex sempervirens*	3	4
39	*Carex sylvatica*	15	18
40	*Carlina acaulis*	1	1
41	*Cerastium fontanum*	0	1
42	*Chaerophyllum hirsutum*	21	21
43	*Chrysosplenium alternifolium*	6	6
44	*Cicerbita alpina*	5	4
45	*Circaea alpina*	4	12
46	*Cirsium arvense*	0	11
47	*Cirsium erisithales*	11	12
48	*Cirsium palustre*	1	11
49	*Cirsium vulgare*	0	1
50	*Clematis alpina*	21	17
51	*Coeloglossum viride*	14	5
52	*Corallorrhiza trifida*	5	0

	Species recored in this study	Number of occurences in each study plot type	
		Undis-turbed	Disturbed
53	*Crepis paludosa*	17	18
54	*Cystopteris fragilis*	11	8
55	*Cystopteris montana*	3	1
56	*Dactylis glomerata*	0	1
57	*Dactylorhiza fuchsii*	3	1
58	*Danthonia decumbens*	0	1
59	*Daphne mezereum*	15	12
60	*Delphinium elatum*	0	1
61	*Dentaria bulbifera*	5	3
62	*Dentaria glandulosa*	20	12
63	*Deschampsia cespitosa*	4	12
64	*Digitalis grandiflora*	9	13
65	*Doronicum austriacum*	4	4
66	*Dryopteris carthusiana*	27	22
67	*Dryopteris dilatata*	30	24
68	*Dryopteris filix-mas* agg.	24	26
69	*Epilobium angustifolium*	7	27
70	*Epilobium montanum*	22	30
71	*Epipactis atrorubens*	6	4
72	*Epipactis helleborine*	2	1
73	*Epipactis* species	1	0
74	*Euphorbia amygdaloides*	7	6
75	*Euphorbia cyparissias*	0	1
76	*Euphrasia officinalis* ssp. *rostkoviana*	1	0
77	*Festuca altissima*	0	3
78	*Festuca gigantea*	0	2
79	*Fragaria vesca*	27	31
80	*Galeobdolon luteum*	29	29
81	*Galeopsis speciosa*	3	4
82	*Galium mollugo*	0	1
83	*Galium odoratum*	8	7
84	*Galium rotundifolium*	7	9
85	*Galium saxatile*	0	4
86	*Galium schultesii*	10	14
87	*Galium sylvaticum*	2	0
88	*Gentiana asclepiadea*	35	30
89	*Gentianella lutescens*	1	0
90	*Geranium phaeum*	0	1
91	*Geranium pratense*	1	7
92	*Geranium robertianum*	10	15
93	*Geranium sylvaticum*	4	0
94	*Geum montanum*	2	0
95	*Geum rivale*	0	4
96	*Geum urbanum*	0	2
97	*Gnaphalium sylvaticum*	0	2
98	*Gymnadenia conopsea*	1	6
99	*Gymnocarpium dryopteris*	20	20
100	*Gymnocarpium robertianum*	2	3
101	*Gymnocarpium* species	1	0
102	*Helianthemum nummularium*	1	0
103	*Heracleum sphondylium*	4	5
104	*Hieracium lachenalii*	5	6

	Species recored in this study	Number of occurences in each study plot type	
		Undis-turbed	Disturbed
105	*Hieracium murorum*	30	26
106	*Homogyne alpina*	37	36
107	*Hordelymus europaeus*	5	7
108	*Huperzia selago*	8	3
109	*Hylotelephium telephium* agg.	5	11
110	*Hypericum maculatum*	10	17
111	*Hypericum perforatum*	0	1
112	*Impatiens noli-tangere*	0	5
113	*Juncus conglomeratus*	0	1
114	*Juniperus communis*	0	1
115	*Laserpitium latifolium*	2	3
116	*Leontodon hispidus*	1	3
117	*Leucanthemum rotundifolium*	9	11
118	*Ligusticum mutellina*	0	1
119	*Lilium martagon*	11	8
120	*Linum catharticum*	0	5
121	*Listera cordata*	1	1
122	*Listera ovata*	19	18
123	*Lonicera nigra*	18	14
124	*Lotus corniculatus*	0	1
125	*Lunaria rediviva*	0	1
126	*Luzula luzulina*	13	6
127	*Luzula luzuloides*	18	22
128	*Luzula pilosa*	0	1
129	*Luzula sylvatica*	30	25
130	*Lycopodium annotinum*	8	7
131	*Lycopus europaeus*	1	0
132	*Lysimachia nemorum*	0	1
133	*Lysimachia nummularia*	0	2
134	*Maianthemum bifolium*	21	21
135	*Melampyrum pratense*	0	1
136	*Melampyrum sylvaticum*	3	5
137	*Mercurialis perennis*	22	17
138	*Milium effusum*	1	6
139	*Moehringia trinervia*	2	2
140	*Molinia caerulea*	0	2
141	*Moneses uniflora*	6	2
142	*Monotropa hypopitys*	1	0
143	*Mycelis muralis*	18	24
144	*Myosotis scorpioides*	5	10
145	*Myosotis sylvatica*	3	3
146	*Nardus stricta*	0	1
147	*Neottia nidus-avis*	6	1
148	*Ophrys insectifera*	0	1
149	*Orobanche flava*	0	1
150	*Orthilia secunda*	6	0
151	*Oxalis acetosella*	41	39
152	*Paris quadrifolia*	19	18
153	*Parnassia palustris*	2	6
154	*Persicaria bistorta*	1	1
155	*Petasites albus*	24	27
156	*Petasites hybridus*	1	2
157	*Phegopteris connectilis*	18	17
158	*Phyteuma orbiculare*	3	1
159	*Phyteuma spicatum*	23	20
160	*Pimpinella saxifraga* agg.	1	3
161	*Pinus mugo*	1	0
162	*Poa alpina*	1	3
163	*Poa chaixii*	0	2
164	*Poa nemoralis*	3	10
165	*Polygonatum multiflorum*	0	1
166	*Polygonatum verticillatum*	27	26
167	*Polypodium vulgare*	6	3
168	*Polystichum aculeatum*	10	11
169	*Polystichum lonchitis*	11	6
170	*Potentilla aurea*	1	1
171	*Potentilla erecta*	0	4
172	*Prenanthes purpurea*	27	28
173	*Primula elatior*	14	7
174	*Prunella vulgaris*	4	8
175	*Pulmonaria obscura*	3	5
176	*Pyrola minor*	2	0
177	*Ranunculus lanuginosus*	0	1
178	*Ranunculus platanifolius*	13	17
179	*Ranunculus repens*	1	7
180	*Rhodiola rosea*	2	0
181	*Ribes alpinum*	4	0
182	*Ribes petraeum*	4	4
183	*Rosa pendulina*	10	6
184	*Rubus hirtus*	1	2
185	*Rubus idaeus*	32	41
186	*Rubus saxatilis*	3	1
187	*Rumex acetosella*	1	1
188	*Rumex alpestris*	0	3
189	*Sambucus racemosa*	6	20
190	*Sanicula europaea*	20	22
191	*Saxifraga paniculata*	2	0
192	*Scabiosa lucida*	0	2
193	*Scrophularia nodosa*	0	2
194	*Scrophularia scopolii*	1	1
195	*Senecio nemorensis* agg.	30	34
196	*Senecio subalpinus*	2	4
197	*Sesleria tatrae*	3	4
198	*Silene dioica*	5	13
199	*Silene pusilla*	1	0
200	*Silene vulgaris*	0	1
201	*Soldanella carpatica*	29	18
202	*Solidago virgaurea*	10	14
203	*Stellaria nemorum* agg.	6	17
204	*Streptopus amplexifolius*	3	1
205	*Swertia perennis*	5	1
206	*Symphytum tuberosum*	2	1
207	*Taraxacum* species	3	6
208	*Thalictrum aquilegiifolium*	10	9
209	*Thalictrum minus*	1	0
210	*Thelypteris limbosperma*	1	0
211	*Thymus pulegioides*	2	4
212	*Tofieldia calyculata*	1	1

	Species recored in this study	Number of occurences in each study plot type	
		Undis-turbed	Disturbed
213	*Trifolium pratense*	0	3
214	*Trifolium repens*	0	1
215	*Tussilago farfara*	0	2
216	*Urtica dioica*	7	26
217	*Vaccinium myrtillus*	40	41
218	*Vaccinium vitis idaea*	14	15
219	*Valeriana sambucifolia*	2	2
220	*Valeriana tripteris*	27	21
221	*Veratrum album* ssp. *lobelianum*	8	8
222	*Veronica chamaedrys*	1	4
223	*Veronica montana*	6	1
224	*Veronica officinalis*	5	16
225	*Viola biflora*	12	11
226	*Viola palustris*	1	1
227	*Viola reichenbachiana*	11	10
228	*Viola riviniana*	1	0

Supplementary Material 3.

	Species recorded in this study	Leaf dry matter content (LDMC; %)	Specific leaf area (SLA; $mm^2\ mg^{-1}$)	Leaf area (LA; mm^2)
1	*Acer pseudoplatanus*	34.73	14.23	8365.18
2	*Aconitum firmum*	NA	NA	NA
3	*Actaea spicata*	20.18	42.23	13226.34
4	*Adenostyles alliariae*	15.38	26.49	17809.89
5	*Adoxa moschatellina*	13.67	38.45	1903.67
6	*Aegopodium podagraria*	21.52	29.54	15403.70
7	*Ajuga reptans*	17.28	39.80	3849.71
8	*Alchemilla* species	NA	NA	NA
9	*Anemone nemorosa*	21.33	25.78	2889.65
10	*Anthoxanthum odoratum*	28.35	31.20	470.02
11	*Aquilegia vulgaris*	26.93	29.72	14728.95
12	*Arabis alpina*	14.20	21.43	1184.94
13	*Aruncus dioicus*	19.60	53.14	55082.32
14	*Asarum europaeum*	16.87	28.91	2068.01
15	*Asplenium trichomanes*	42.09	19.44	1661.33
16	*Asplenium viride*	26.70	22.78	543.09
17	*Aster bellidiastrum*	13.37	29.68	938.66
18	*Astrantia major*	17.49	28.15	9163.89
19	*Athyrium distentifolium*	16.27	30.31	127829.52
20	*Athyrium filix-femina*	16.75	38.91	129879.75
21	*Avenella flexuosa*	32.96	17.50	40.58
22	*Calamagrostis arundinacea*	33.20	16.59	1111.18
23	*Calamagrostis villosa*	29.83	24.93	1110.04
24	*Calluna vulgaris*	39.79	14.42	0.83
25	*Campanula rotundifolia* agg.	24.24	26.28	210.84
26	*Cardamine amara*	13.59	43.95	1286.86
27	*Cardamine flexuosa*	12.90	41.25	661.00
28	*Cardamine trifolia*	NA	NA	NA
29	*Cardaminopsis arenosa*	20.90	23.82	143.09
30	*Carduus defloratus* agg.	15.05	11.82	1929.74
31	*Carduus personata*	NA	NA	NA
32	*Carex digitata*	28.50	27.60	360.33

	Species recorded in this study	Leaf dry matter content (LDMC; %)	Specific leaf area (SLA; $mm^2\ mg^{-1}$)	Leaf area (LA; mm^2)
33	*Carex elongata*	26.37	40.35	1081.80
34	*Carex firma*	41.68	9.79	53.34
35	*Carex flacca*	34.56	18.01	1978.09
36	*Carex leporina*	38.76	25.08	325.57
37	*Carex pilulifera*	30.73	19.43	415.80
38	*Carex sempervirens*	39.29	13.00	362.15
39	*Carex sylvatica*	31.08	30.90	1302.81
40	*Carlina acaulis*	22.36	12.23	2025.19
41	*Cerastium fontanum*	21.11	26.58	227.50
42	*Chaerophyllum hirsutum*	19.31	26.98	5286.38
43	*Chrysosplenium alternifolium*	15.21	48.32	948.33
44	*Cicerbita alpina*	13.83	37.10	14312.17
45	*Circaea alpina*	14.03	246.93	460.75
46	*Cirsium arvense*	17.62	17.45	5402.28
47	*Cirsium erisithales*	13.44	34.46	17856.32
48	*Cirsium palustre*	15.03	20.11	4323.06
49	*Cirsium vulgare*	15.54	17.11	17824.00
50	*Clematis alpina*	18.29	42.07	5194.47
51	*Coeloglossum viride*	14.66	21.41	534.67
52	*Corallorrhiza trifida*	NA	NA	NA
53	*Crepis paludosa*	13.03	49.27	5632.58
54	*Cystopteris fragilis*	24.80	21.40	1970.00
55	*Cystopteris montana*	NA	NA	NA
56	*Dactylis glomerata*	27.49	25.10	1534.99
57	*Dactylorhiza fuchsii*	11.57	31.05	1349.23
58	*Danthonia decumbens*	38.96	17.36	387.00
59	*Daphne mezereum*	22.50	25.29	841.50
60	*Delphinium elatum*	19.52	26.62	4372.29
61	*Dentaria bulbifera*	11.43	43.82	3277.43
62	*Dentaria glandulosa*	18.59	30.76	1468.78
63	*Deschampsia cespitosa*	31.34	18.37	436.87
64	*Digitalis grandiflora*	18.31	30.21	1160.00
65	*Doronicum austriacum*	12.24	61.59	8600.80
66	*Dryopteris carthusiana*	28.29	24.13	33257.42
67	*Dryopteris dilatata*	23.12	21.39	46655.00
68	*Dryopteris filix-mas* agg.	23.97	24.20	43856.27
69	*Epilobium angustifolium*	28.26	20.04	4066.90
70	*Epilobium montanum*	22.93	25.96	2187.00
71	*Epipactis atrorubens*	21.36	24.34	1052.65
72	*Epipactis helleborine*	16.67	33.00	1081.25
73	*Epipactis* species	NA	NA	NA
74	*Euphorbia amygdaloides*	24.16	38.70	556.12
75	*Euphorbia cyparissias*	33.80	20.52	10.74
76	*Euphrasia officinalis* ssp. *rostkoviana*	23.26	14.67	34.21
77	*Festuca altissima*	22.89	21.50	1791.38
78	*Festuca gigantea*	21.60	28.51	3341.00
79	*Fragaria vesca*	29.30	33.76	2089.90
80	*Galeobdolon luteum*	21.76	25.08	1564.00
81	*Galeopsis speciosa*	24.05	28.32	2617.22
82	*Galium mollugo*	25.08	25.51	39.61
83	*Galium odoratum*	16.48	26.50	207.93
84	*Galium rotundifolium*	14.35	55.28	117.20
85	*Galium saxatile*	18.85	24.32	5.00
86	*Galium schultesii*	20.96	46.44	155.15
87	*Galium sylvaticum*	15.61	53.94	317.98
88	*Gentiana asclepiadea*	19.03	23.64	3221.38

	Species recorded in this study	Leaf dry matter content (LDMC; %)	Specific leaf area (SLA; $mm^2\ mg^{-1}$)	Leaf area (LA; mm^2)
89	*Gentianella lutescens*	NA	NA	NA
90	*Geranium phaeum*	15.10	35.71	11814.48
91	*Geranium pratense*	25.80	21.27	3179.00
92	*Geranium robertianum*	14.82	27.59	1103.93
93	*Geranium sylvaticum*	24.40	30.56	10635.25
94	*Geum montanum*	28.54	14.16	681.58
95	*Geum rivale*	26.25	26.02	7792.28
96	*Geum urbanum*	28.17	34.61	3483.00
97	*Gnaphalium sylvaticum*	30.60	18.78	569.98
98	*Gymnadenia conopsea*	13.33	18.80	1136.64
99	*Gymnocarpium dryopteris*	21.53	55.90	4923.62
100	*Gymnocarpium robertianum*	26.16	25.23	6503.28
101	*Gymnocarpium* species	NA	NA	NA
102	*Helianthemum nummularium*	18.63	13.58	114.73
103	*Heracleum sphondylium*	21.37	21.34	81950.67
104	*Hieracium lachenalii*	16.84	31.15	1001.89
105	*Hieracium murorum*	15.38	44.73	1213.69
106	*Homogyne alpina*	24.43	6.09	301.23
107	*Hordelymus europaeus*	23.33	27.20	1924.75
108	*Huperzia selago*	38.49	13.31	90.20
109	*Hylotelephium telephium* agg.	6.44	20.96	936.00
110	*Hypericum maculatum*	32.18	30.15	522.52
111	*Hypericum perforatum*	32.13	26.16	152.71
112	*Impatiens noli-tangere*	13.34	45.38	1510.00
113	*Juncus conglomeratus*	36.46	3.63	2431.19
114	*Juniperus communis*	48.98	10.22	35.64
115	*Laserpitium latifolium*	18.76	11.99	5886.40
116	*Leontodon hispidus*	17.07	25.14	2125.99
117	*Leucanthemum rotundifolium*	NA	NA	NA
118	*Ligusticum mutellina*	25.41	12.59	721.43
119	*Lilium martagon*	12.04	25.84	2394.30
120	*Linum catharticum*	28.31	30.14	30.00
121	*Listera cordata*	13.60	37.51	252.05
122	*Listera ovata*	11.57	21.95	5967.38
123	*Lonicera nigra*	32.60	17.34	683.18
124	*Lotus corniculatus*	22.67	22.72	689.64
125	*Lunaria rediviva*	12.51	58.24	25329.70
126	*Luzula luzulina*	NA	NA	NA
127	*Luzula luzuloides*	27.58	30.98	974.70
128	*Luzula pilosa*	21.53	25.37	125.00
129	*Luzula sylvatica*	29.55	16.45	1125.00
130	*Lycopodium annotinum*	39.45	22.09	3.00
131	*Lycopus europaeus*	19.94	63.08	2303.70
132	*Lysimachia nemorum*	19.65	30.20	252.50
133	*Lysimachia nummularia*	21.12	27.65	150.91
134	*Maianthemum bifolium*	20.75	41.31	1705.49
135	*Melampyrum pratense*	21.53	28.31	318.42
136	*Melampyrum sylvaticum*	15.71	31.79	206.00
137	*Mercurialis perennis*	20.91	25.65	1890.50
138	*Milium effusum*	22.09	36.22	2513.74
139	*Moehringia trinervia*	14.61	36.10	221.99
140	*Molinia caerulea*	34.25	19.65	842.10
141	*Moneses uniflora*	28.36	20.38	221.56
142	*Monotropa hypopitys*	NA	NA	50.03
143	*Mycelis muralis*	12.13	52.70	2903.72
144	*Myosotis scorpioides*	14.46	49.29	604.05

	Species recorded in this study	Leaf dry matter content (LDMC; %)	Specific leaf area (SLA; $mm^2\ mg^{-1}$)	Leaf area (LA; mm^2)
145	*Myosotis sylvatica*	12.82	29.26	199.80
146	*Nardus stricta*	39.29	10.97	81.84
147	*Neottia nidus-avis*	NA	NA	NA
148	*Ophrys insectifera*	12.20	28.10	325.00
149	*Orobanche flava*	NA	NA	NA
150	*Orthilia secunda*	33.38	18.48	496.10
151	*Oxalis acetosella*	12.09	65.12	472.95
152	*Paris quadrifolia*	14.63	49.74	2481.44
153	*Parnassia palustris*	16.90	25.93	161.30
154	*Persicaria bistorta*	25.05	22.55	4403.35
155	*Petasites albus*	12.07	38.81	16667.28
156	*Petasites hybridus*	20.15	22.04	139875.00
157	*Phegopteris connectilis*	18.77	42.65	263.20
158	*Phyteuma orbiculare*	21.03	31.46	1180.36
159	*Phyteuma spicatum*	18.04	36.31	1719.57
160	*Pimpinella saxifraga* agg.	23.29	16.25	1080.00
161	*Pinus mugo*	41.91	4.19	53.14
162	*Poa alpina*	32.91	30.69	78.94
163	*Poa chaixii*	29.04	17.25	301.75
164	*Poa nemoralis*	28.27	35.11	943.24
165	*Polygonatum multiflorum*	14.95	43.73	3237.22
166	*Polygonatum verticillatum*	15.22	42.43	702.36
167	*Polypodium vulgare*	34.32	12.35	2469.88
168	*Polystichum aculeatum*	27.96	15.24	41582.94
169	*Polystichum lonchitis*	30.23	15.76	3514.17
170	*Potentilla aurea*	30.23	19.86	408.07
171	*Potentilla erecta*	36.60	24.92	143.24
172	*Prenanthes purpurea*	13.27	77.64	2429.24
173	*Primula elatior*	15.43	34.52	2831.50
174	*Prunella vulgaris*	20.76	26.40	822.03
175	*Pulmonaria obscura*	16.39	42.12	7131.19
176	*Pyrola minor*	28.12	27.05	1241.74
177	*Ranunculus lanuginosus*	15.83	NA	7112.22
178	*Ranunculus platanifolius*	17.89	20.38	16303.89
179	*Ranunculus repens*	17.83	27.63	4248.23
180	*Rhodiola rosea*	11.07	26.34	153.83
181	*Ribes alpinum*	45.63	15.87	719.85
182	*Ribes petraeum*	NA	NA	NA
183	*Rosa pendulina*	33.12	15.67	420.70
184	*Rubus hirtus*	35.45	14.20	8330.45
185	*Rubus idaeus*	35.92	20.24	7055.37
186	*Rubus saxatilis*	27.38	33.26	6265.90
187	*Rumex acetosella*	13.70	25.88	497.77
188	*Rumex alpestris*	13.81	34.97	2736.29
189	*Sambucus racemosa*	18.51	23.44	18168.86
190	*Sanicula europaea*	17.52	30.95	2281.35
191	*Saxifraga paniculata*	21.54	5.35	221.69
192	*Scabiosa lucida*	NA	14.68	NA
193	*Scrophularia nodosa*	16.46	32.10	125.00
194	*Scrophularia scopolii*	16.46	32.10	125.00
195	*Senecio nemorensis* agg.	11.23	22.30	7928.15
196	*Senecio subalpinus*	NA	NA	NA
197	*Sesleria tatrae*	NA	NA	NA
198	*Silene dioica*	12.66	32.96	3533.00
199	*Silene pusilla*	NA	NA	NA
200	*Silene vulgaris*	16.48	19.59	2116.20

	Species recorded in this study	Leaf dry matter content (LDMC; %)	Specific leaf area (SLA; $mm^2\ mg^{-1}$)	Leaf area (LA; mm^2)
201	*Soldanella carpatica*	NA	NA	NA
202	*Solidago virgaurea*	20.54	29.16	2149.85
203	*Stellaria nemorum* agg.	17.14	21.63	937.13
204	*Streptopus amplexifolius*	10.57	47.66	1803.50
205	*Swertia perennis*	15.75	21.37	NA
206	*Symphytum tuberosum*	11.38	30.79	2383.49
207	*Taraxacum* species	NA	NA	NA
208	*Thalictrum aquilegiifolium*	25.60	43.65	6271.20
209	*Thalictrum minus*	30.36	20.52	5603.29
210	*Thelypteris limbosperma*	28.90	13.40	28156.00
211	*Thymus pulegioides*	54.63	20.95	23.07
212	*Tofieldia calyculata*	27.15	2.68	354.78
213	*Trifolium pratense*	27.19	24.32	1305.06
214	*Trifolium repens*	23.48	26.70	633.49
215	*Tussilago farfara*	15.10	19.34	44966.84
216	*Urtica dioica*	26.33	28.23	5091.62
217	*Vaccinium myrtillus*	38.45	20.67	165.20
218	*Vaccinium vitis idaea*	44.01	8.74	136.06
219	*Valeriana sambucifolia*	NA	49.85	NA
220	*Valeriana tripteris*	12.67	35.58	1165.94
221	*Veratrum album* ssp. *lobelianum*	13.71	34.79	10379.67
222	*Veronica chamaedrys*	24.03	30.98	355.50
223	*Veronica montana*	29.00	36.29	568.74
224	*Veronica officinalis*	32.04	28.33	111.00
225	*Viola biflora*	16.10	57.45	467.04
226	*Viola palustris*	23.15	43.48	1443.49
227	*Viola reichenbachiana*	19.94	30.76	951.65
228	*Viola riviniana*	22.44	31.27	105.83