

## E5.5 Subalpine moist or wet tall-herb and fern fringe

### Summary

This habitat includes tall forb and fern communities of moist, fertile soils in relatively cool and humid situations through high levels of the mountain ranges of Europe, having their optimum in the subalpine zone but also occurring in the arctic lowlands of Scandinavia. Typically they are found as strips along streams and on the edges of forests, in the shelter of large rocks, on mountain ledges and under scrub, sometimes also fringing snowbeds where they benefit from protection from winter frosts. These communities are often very rich in species and host many local and regional endemics, as well as widespread montane plants. Although vulnerable to grazing by wild herbivores and stock, the habitat is often protected by its remoteness. However, also included here are the rather weedy and eutrophic tall-forb communities near resting places of cattle. Only small losses in extent and quality have been reported.

### Synthesis

This habitat type is not threatened in both EU28 and EU28+.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Least Concern	-	Least Concern	-

### Sub-habitat types that may require further examination

There are no sub-types in need for further examination.

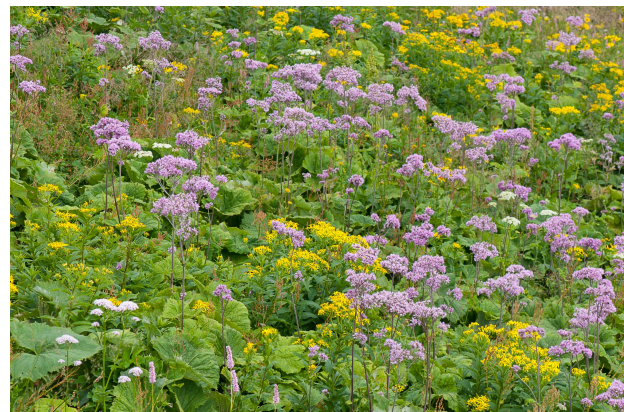
### Habitat Type

#### Code and name

E5.5 Subalpine moist or wet tall-herb and fern fringe



Striking species like *Cirsium appendiculatum* and *Angelica pancici* may dominate tall herb communities in the mountains of Vezhen Peak in the Central Balkan National Park in Bulgaria (Photo: Rossen Tzonev).



The purple-flowering *Adenostyles alliariae*, here in the National park Malá Fatra in Slovakia, is the name-giving species of the alliance *Adenostyliion alliariae* (Photo: Jürgen Dengler).

#### Habitat description

The tall forb communities of Habitat type E5.5 are found at relatively cool and humid places in low and high mountain ranges throughout Europe, with their optimum in the subalpine zone; moreover, they can be found in the arctic regions of Scandinavia. They can be seen as a vicariant of the communities of

habitat type E5.4, occurring at lower altitudes. In the mountains of Central Europe, the communities usually occur above 1,000 m altitude, but in Southern Europe they often don't grow below 1,600 m. The stands occur along streams, between large rocks, under scrub (mainly of *Sorbus aucuparia*), in mosaic with *Alnus* and *Salix* scrub, and on the edge of forests. In spite of the high atmospheric humidity, bryophytes do not play an important role in the vegetation. At all these places, snow may accumulate during winter and the vegetation is unmistakably chionophilous. Along streams, the communities may form long strips of hundreds of meters, mostly just a few meters wide, at other places they occur in the form of patches. The height of the – generally one-layered – stand reaches up to 1.5-2 m, with tall herbs and grasses as dominants, sometimes with a high cover of ferns. The cover of the vegetation is almost always 100%. The species composition of the plant communities is very diverse, with a high number of endemic species, reflecting the isolated position of these ecosystems, similar to other high-mountain vegetation types. The endemic species belong to genera like *Aconitum*, *Alchemilla*, *Angelica*, *Cirsium*, *Geum* and *Ranunculus*. From a historic-geographic point of view, the occurrence of a number of species that nowadays dominate lowland meadows is interesting, like *Arrhenatherum elatius*. Widespread species in these conspicuous mountain communities are *Adenostyles alliariae*, *Veratrum album*, *Lilium martagon* and *Cicerbita alpina*, among others. The plant diversity is reflected in the distinction of various alliances, but they all belong to the class *Mulgedio-Aconitetea*. Most of the communities are natural, but also the semi-ruderal and eutrophic tall-forb communities near resting places of cattle (assigned to the alliance *Rumicion alpini*) belong to this habitat type.

Indicators of good quality:

- High species richness
- Richness of regional endemics and rare species
- Lacking of invasive and/or ruderal species
- Dominance of tall-herbs, tall grasses or ferns

Characteristic species:

Vascular plants: *Achillea distans*, *Achillea grandifolia*, *Aconitum lamarkii*, *Aconitum lycoctonum* subsp. *vulparia*, *Aconitum napellus*, *Aconitum nevadense*, *Aconitum tauricum*, *Aconitum vulparia*, *Aconogonon alpinum*, *Adenostyles alliariae*, *Adenostyles briquetii*, *Alchemilla glabra*, *Alchemilla glaucescens*, *Alchemilla obtusa*, *Alchemilla plicatula*, *Allium schoenoprasum*, *Allium victorialis*, *Angelica pancicii*, *Aquilegia bernardii*, *Aquilegia pyrenaica* subsp. *cazorlensis*, *Athyrium distentifolium*, *Athyrium filix-femina*, *Aruncus dioicus*, *Atropa baetica*, *Betonica jacquinii*, *Blechnum spicant*, *Calamagrostis arundinacea*, *Campanula serrata*, *Campanula trachelium* subsp. *athoa*, *Cardamine raphanifolia* subsp. *acris*, *Cardamine rivularis*, *Carduus personata*, *Carex frigida*, *Carex vulpina*, *Carum carvi*, *Chaerophyllum byzantinum*, *Chaerophyllum villarsii*, *Cerinthe glabra*, *Cicerbita alpina*, *Cicerbita plumieri*, *Cicerbita pancicii*, *Cirsium appendiculatum*, *Cirsium erisithales*, *Cirsium helenioides*, *Cirsium flavispina*, *Cirsium spinosissimum*, *Cirsium tymphaeum*, *Chaerophyllum aureum*, *Crepis paludosa*, *Dactylorhiza cordigera*, *Dactylorhiza saccifera*, *Delphinium elatum*, *Digitalis grandiflora*, *Doronicum austriacum*, *Doronicum columnae*, *Doronicum corsicum*, *Doronocum grandiflorum*, *Draba nemorosa*, *Dryopteris dilatata*, *Epilobium alpinum*, *Epilobium montanum*, *Erica terminalis*, *Eryngium alpinum*, *Heracleum elegans*, *Heracleum pyrenaicum*, *Heracleum ternatum*, *Heracleum transsilvanicum*, *Heracleum verticillatum*, *Hypericum corsicum*, *Hypericum tetrapterum*, *Festuca carpatica*, *Gagea fragifera*, *Gentiana asclepiadea*, *Gentiana lutea*, *Gentiana punctata*, *Geranium asphodeloides*, *Geranium palustre*, *Geranium phaeum*, *Geranium sylvaticum*, *Geum coccineum*, *Geum rivale*, *Lactuca alpina*, *Laserpitium latifolium*, *Laserpitium longiradium*, *Leucanthemum waldsteinii*, *Leuzea rhapontica*, *Lilium martagon*, *Lunaria rediviva*, *Molopospermum peloponesiacum*, *Myositis alpestris*, *Myosotis soleirolii*, *Narcissus nevadensis*, *Narthecium reverchonii*, *Oreopteris limbosperma*, *Pedicularis foliosa*, *Peucedanum ostruthium*, *Pinguicula balcanica*, *Pinguicula corsica*, *Phleum alpinum*, *Phyteuma ovatum*, *Poa supina*, *Polygonatum verticillatum*, *Prenanthes purpurea*, *Ranunculus aconitifolius*, *Ranunculus lanuginosus*, *Ranunculus platanifolius*, *Rhodiola rosea*, *Rumex alpinus*, *Rumex arifolius*, *Rumex*

*pseudoalpinus*, *Salix helvetica*, *Salix lapponum*, *Saxifraga rotundifolia*, *Scrophularia auriculata*, *Scrophularia scopolii*, *Senecio alpinus*, *Senecio elodes*, *Senecio nemorensis*, *Senecio subalpinus*, *Telekia speciosa*, *Thalictrum aquilegifolium*, *Tozzia alpina*, *Trichophorum cespitosum*, *Trisetum fuscum*, *Trollius europaeus*, *Valeriana pyrenaica*, *Valeriana rotundifolia*, *Veratrum album*, *Viola biflora*.

### **Classification**

This habitat may be equivalent to, or broader than, or narrower than the habitats or ecosystems in the following typologies.

EUNIS:

E5.5 Subalpine moist or wet tall-herb and fern stands

EuroVegChecklist (alliances):

*Adenostylian alliariae* Br.-Bl. 1926 nom. conserv. propos.

*Dryopterido-Athyrium distentifolii* (Holub ex Sýkora et Štursa 1973) Jeník et al. 1980

*Delphinion elati* Hadac ex Hadac et al. 1969

*Cirsion flavispinae* Quézel 1953

*Doronicion corsici* Gamisans 1975

*Cirsion appendiculati* Horvat et al. 1937

*Calamagrostion villosae* Pawlowski et al. 1928

*Trisetion fusci* Krajina 1933

*Calamagrostion arundinaceae* (Luquet 1926) Oberd. 1957

*Petasition officinalis* Sillinger 1933

*Arunco-Petasition albae* Br.-Bl. et Sutter 1977

*Senecionion samniti* Bonin 1978

*Rumicion alpini* Rübél ex Scharfetter 1938

*Mulgedion alpini* Nordhagen 1943

*Polemonio acutiflori-Veratrion lobeliani* Telyatnikov 2012

*Triseto sibiricae-Aconition septentrionalis* Ermakov et al. 2000

Annex I:

6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

Emerald:

E5.5 Subalpine moist or wet tall-herb and fern stands

MAES:

Grassland

IUCN:

4.4. Temperate grassland

## Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?

Yes

Regions

Alpine

Justification

The habitat is widespread, but restricted to mountain ranges, with main occurrences in the Alps but also widespread in other mountain ranges.

### Geographic occurrence and trends

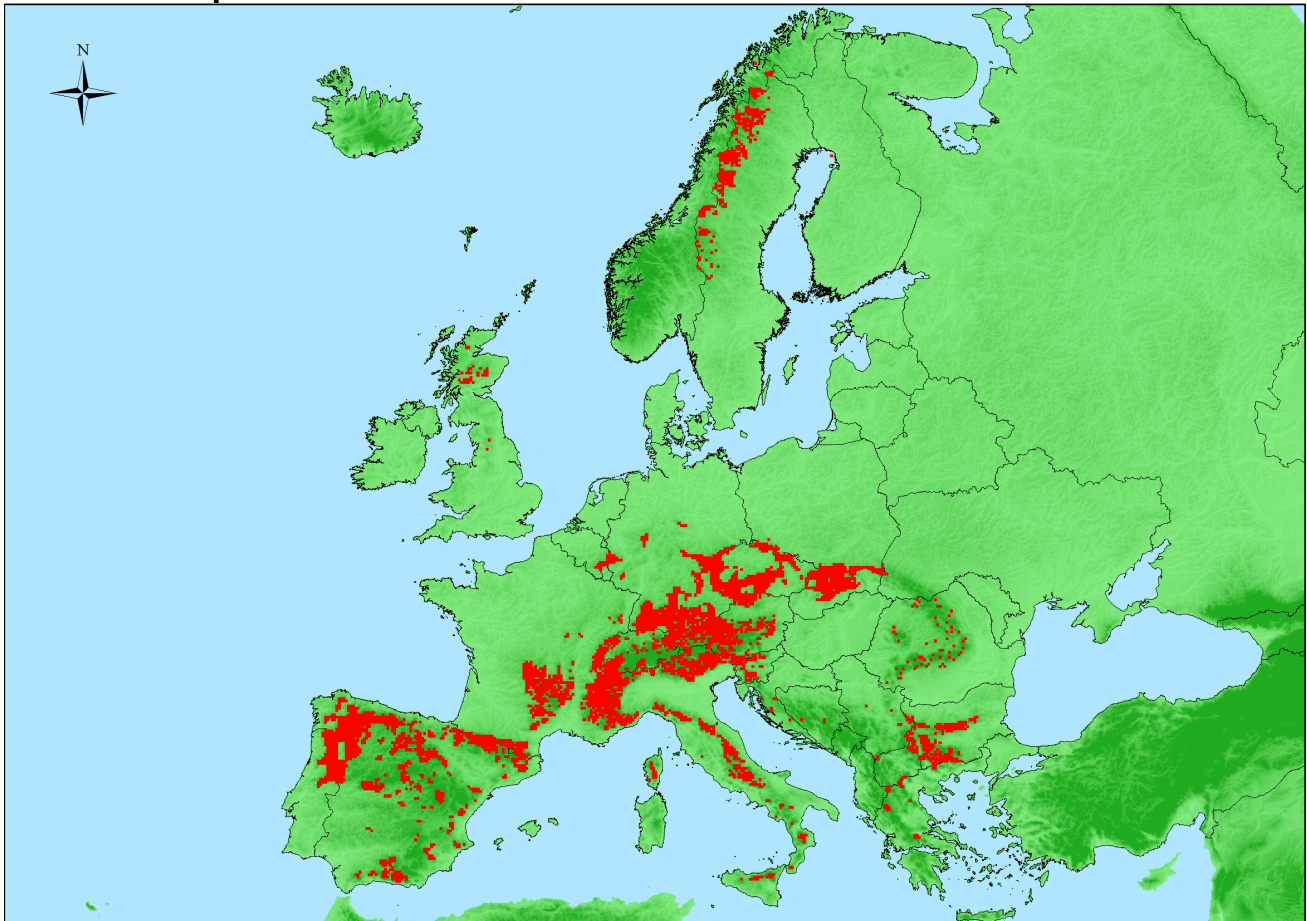
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Austria</i>	Present	250 Km <sup>2</sup>	Stable	Stable
<i>Bulgaria</i>	Present	47 Km <sup>2</sup>	Decreasing	Decreasing
<i>Croatia</i>	Present	35 Km <sup>2</sup>	Stable	Stable
<i>Czech Republic</i>	Present	8 Km <sup>2</sup>	Decreasing	Decreasing
<i>Finland</i>	Finland mainland: Present	1 Km <sup>2</sup>	Stable	Stable
<i>France</i>	France mainland: Present	750 Km <sup>2</sup>	Increasing	Stable
<i>Germany</i>	Present	10 Km <sup>2</sup>	Decreasing	Decreasing
<i>Greece</i>	Greece (mainland and other islands): Present	8 Km <sup>2</sup>	Unknown	Unknown
<i>Ireland</i>	Present	1 Km <sup>2</sup>	Stable	Stable
<i>Italy</i>	Italy mainland: Present	160 Km <sup>2</sup>	Decreasing	Decreasing
<i>Poland</i>	Present	6 Km <sup>2</sup>	Decreasing	Decreasing
<i>Romania</i>	Present	30 Km <sup>2</sup>	Decreasing	Decreasing
<i>Slovakia</i>	Present	4 Km <sup>2</sup>	Stable	Stable
<i>Slovenia</i>	Present	90 Km <sup>2</sup>	Stable	Stable
<i>Spain</i>	Spain mainland: Present	30 Km <sup>2</sup>	Stable	Stable
<i>UK</i>	United Kingdom: Present	23 Km <sup>2</sup>	Stable	Stable

EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Albania</i>	Present	2 Km <sup>2</sup>	Stable	Decreasing
<i>Bosnia and Herzegovina</i>	Present	20 Km <sup>2</sup>	Decreasing	Decreasing
<i>Former Yugoslavian Republic of Macedonia (FYROM)</i>	Present	Km <sup>2</sup>	Unknown	Decreasing
<i>Kaliningrad</i>	Present	Km <sup>2</sup>	-	-
<i>Kosovo</i>	Present	Km <sup>2</sup>	Stable	Stable
<i>Montenegro</i>	Present	Km <sup>2</sup>	-	-
<i>Norway</i>	Norway Mainland: Present	Km <sup>2</sup>	-	-
<i>Serbia</i>	Present	Km <sup>2</sup>	-	-
<i>Switzerland</i>	Present	1250 Km <sup>2</sup>	Decreasing	Decreasing

## Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	6752000 Km <sup>2</sup>	4257	1453 Km <sup>2</sup>	
EU 28+	7038800 Km <sup>2</sup>	4458	2725 Km <sup>2</sup>	

## Distribution map



Map is rather complete except for the Balkan and possibly Iceland. Data sources: EVA, Art17, GBIF.

## How much of the current distribution of the habitat type lies within the EU 28?

About 80% of the current distribution of the habitat type lies within EU28. The habitat type is probably also found in the Caucasus and Russian mountains.

## Trends in quantity

The total area that has been reported by the territorial data providers is 1,453 km<sup>2</sup> for EU28 and 2,725 km<sup>2</sup> for EU28+. Quantitative data were provided by 14 EU countries, covering > 95% of reported area, and by 3 additional EU+ countries. Data dominated strongly by France and (for EU28+) Switzerland, who reported the largest areas. The average trend for EU28 is 8.0%, for EU28+ it is -4.2 %.

- Average current trend in quantity (extent)  
EU 28: Increasing  
EU 28+: Decreasing
- Does the habitat type have a small natural range following regression?  
No  
*Justification*  
The EOO is larger than 50,000 km<sup>2</sup>.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?

No

#### *Justification*

The habitat type has a wide distribution throughout Europe (it has been reported from all together 25 countries). The size and form of the surfaces vary from long, small bands to (in size vary variable) patches.

### **Trends in quality**

We received quantitative data from 13 EU28 countries and 4 additional EU28+ countries, covering more than 95% of reported area for EU28 and EU28+. The trends are mostly affected by France and Switzerland, accounting for the largest areas. The average values of decline are 4.3% (severity 35%) for EU28 and 2.3% (severity 35%) for EU28+.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

### **Pressures and threats**

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These more or less natural communities are rather stable in extent and quality, hardly suffering from any threats. The only factor that may cause some problems is overgrazing. This concerns both the low and high mountains in Central Europe and the arctic vegetation in the north, where local changes have been reported due to overgrazing by reindeer. However, it is assumed that the overall quality of the habitat type has remained stable. At local level, mountaineering and the construction of facilities for tourism (ski pistes, houses) may result in some losses.

### **List of pressures and threats**

#### **Agriculture**

Intensive grazing

#### **Human intrusions and disturbances**

Mountaineering & rock climbing

### **Conservation and management**

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The natural conditions under which these eye-catching and species-rich communities occur are hardly affected by human interaction. Locally, the effects of mountaineering and construction of buildings and ski pistes for tourism may raise some concern, but overall the habitat type is well-preserved.

### **List of conservation and management needs**

#### **No measures**

No measures needed for the conservation of the habitat/species

### **Conservation status**

Annex 1 type:

6430: ALP U1, ATL U2, BLS U1, BOR U1, CON U1, MED U1, PAN U2, STE FV (only applying to mountainous areas, generally 1,000 m altitude, and arctic regions in Scandinavia).

### **When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?**

These natural communities are well protected. Only at a local level and at low scale, direct destruction of the habitat by the construction of tourist facilities may take place, whereas - more generally - overgrazing may lead to some losses in quality. In that case, lowering the intensity of grazing may lead the habitat restoration within a reasonable time-span.

### Effort required

20 years
Through intervention

## Red List Assessment

### Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-8.0 %	unknown %	unknown %	unknown %
EU 28+	-4.2 %	unknown %	unknown %	unknown %

The values for applying Criterion A1 are calculated from the territorial data sheets. We obtained quantitative data from 14 EU countries, covering > 95% of the reported area, plus from 3 additional EU+ countries; data are strongly dominated by France and (for EU28+) Switzerland, who reported the largest areas. No data available for applying Criteria A2a, A2b and A3.

### Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	> 50000 Km <sup>2</sup>	No	No	No	> 50	No	No	No	No
EU 28+	> 50000 Km <sup>2</sup>	No	No	No	> 50	No	No	No	No

EOO and AOO are above thresholds for applying Criterion B.

### Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	4.3 %	35 %	unknown %	unknown %	unknown %	unknown %
EU 28+	2.3 %	35 %	unknown %	unknown %	unknown %	unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown%	unknown %	unknown%	unknown %	unknown%
EU 28+	unknown %	unknown%	unknown %	unknown%	unknown %	unknown%

The values for C/D1 are calculated from the territorial data sheets. We obtained quantitative data from 13 EU28 countries and 4 additional EU28+ countries, covering more than 95% of the reported area for EU28 and EU28+; the trends are mostly affected by France (EU28) and Switzerland (EU28+), accounting for the largest areas.

### Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	unknown
EU 28+	unknown

There is no quantitative analysis available that estimates the probability of collapse of this habitat type.

### Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	LC	DD	DD	DD	LC	LC	LC	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	DD	DD	DD	LC	LC	LC	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Least Concern	-	Least Concern	-

### Confidence in the assessment

Medium (evenly split between quantitative data/literature and uncertain data sources and assured expert knowledge)

### Assessors

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### Contributors

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## References

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