

## E5.4 Moist or wet tall-herb and fern fringe of the lowlands

### Summary

This habitat comprises tall-herb and fern-dominated communities of moist, sometimes flooded, nutrient-rich soils in the lowlands and lower mountain areas of Europe, up to the subalpine zone, through the nemoral, boreal and submediterranean regions. The relatively species-rich vegetation may be found in river floodplains, along smaller watercourses, in the shade at the edge of woodlands, often as narrow strips, and, as secondary vegetation after the abandonment of pastures and especially meadows. The species composition is quite diverse, depending on the altitude, geographic distribution and location in the landscape, reflecting the composition of the surrounding communities or previous stages in succession. Major threats are changes in the hydrological conditions, both on the landscape and site level, and agricultural intensification, especially eutrophication; and also urbanisation and ongoing infrastructural developments. Losses in extent and quality have been widespread and substantial.

### Synthesis

Based on a reduction in quantity over the past 50 years, this habitat type has received the Red List status Vulnerable (VU) in both EU28 and EU28+. Furthermore, a substantial reduction in biotic and abiotic quality has resulted in a Near Threatened status (NT).

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Vulnerable	A1	Vulnerable	A1

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

Although the habitat type is showing a large variation in floristic composition, it is rather difficult to divide it in overall sub-types, whereas the effects on quality and quantity probably refer to the whole range of the habitat type. In conclusion, no sub-types are in need for further examination.

### Habitat Type

#### Code and name

E5.4 Moist or wet tall-herb and fern fringe of the lowlands



Tall forb community with *Angelica sylvestris* in the small canyon of the Chernelka River, in the central parts of Northern Bulgaria (Photo: RossenTsonev).



Nitrophilous swamp vegetation with flowering *Senecio paludosus* and *Thalictrum flavum* of the alliance *Filipendulion* in a floodplain in the Netherlands, along the river Rhine (Photo: John Janssen).

## Habitat description

Tall-herb and fern communities of this habitat type are widespread in the nemoral, boreal and submediterranean parts of Europe. These include stands of tall herbs and ferns in the lowlands, hills and low mountain ranges up to the subalpine zone. In general, this refers to areas below 1,000 meters of altitude. Such tall herb communities are mostly found along watercourses, in wet meadows and in the shade at the edge of woodlands. The rather species-rich vegetation is dominated by 1 to 1.5 m (sometimes even more than 2 m), tall forbs and grasses, sometimes mixed with lianes such as *Calystegia sepium* and *Cuscuta europaea*. Usually the stands cover narrow strips (up to 2–3 m, often narrower). The communities are generally rich in flowers, attracting lots of insects, especially butterflies. The site conditions are moist to wet and generally nitrogen-rich; the substrates are often seasonally or even permanently submerged. As a result, many of the prevailing species may grow both in the water (shallow water 0.10–0.20 m deep) and on over-wet soils. The species composition is diverse, depending on the altitude and location in the landscape, reflecting the composition of the surrounding communities. In floodplains and along running water streams in more hilly regions, mostly on clay and gravel grounds, the communities are characterized by species like *Althaea officinalis*, *Epilobium hirsutum*, *Eupatorium cannabinum*, *Symphytum officinale* and various species of the genus *Angelica*, representing alliances of the order *Convolvuletalia sepium*. As such communities are found widespread over Europe, floristic differences may be observed in line with the geographic distribution (atlantic, subatlantic, boreal, submediterranean and central European). In abandoned meadows and places of secondary origin, e.g. along canals and ponds, ruderal species and neophytes (such as *Impatiens glandulifera* and *Solidago gigantea*) are frequent companions. The vegetation here is often assigned to the order *Molinietales*. In the shade of the edge of woodlands, in forest clearings on wet soils, and in humid ravines, tall forb communities may develop that show quite some similarity with fringe communities of habitat type E5.2a. Such communities are assigned to the order *Circaeo lutetianae-Stachyetales sylvaticae* and may include species like *Aegopodium podagraria*, *Brachypodium sylvaticum*, *Circaea lutetiana*, and *Stachys sylvatica*. In spite of all this variation, it is not easy and therefore not recommended to define subtypes.

Indicators of good quality:

- Lack of invasive species
- Dominance of tall-herbs and lianes
- Absence of shrubs and trees
- No dominance of nitrophilous species like *Urtica dioica* and *Galium aparine*
- High species richness

Characteristic species:

Flora, Vascular plants: *Achillea ptarmica*, *Aegopodium podagraria*, *Agrostis stolonifera*, *Alliaria petiolata*, *Althaea officinalis*, *Angelica archangelica*, *Angelica heterocarpa*, *Angelica sylvestris*, *Anthriscus sylvestris*, *Aristolochia clematidis*, *Artemisia vulgaris*, *Aruncus vulgaris*, *Atriplex sagittata*, *Ballota nigra*, *Brachypodium sylvaticum*, *Calystegia sepium*, *Calystegia sylvatica*, *Carduus crispus*, *Carex pendula*, *Chenopodium ambrosioides*, *Chaerophyllum aromaticum*, *Chaerophyllum hirsutum*, *Circaea lutetiana*, *Conyza primulifolia*, *Crepis paludosa*, *Cucubalus baccifer*, *Cuscuta europaea*, *Cynanchum acutum*, *Dipsacus fullonum*, *Dipsacus laciniatus*, *Dorycnium rectum*, *Dryopteris filix-mas*, *Echinochloa crus-galli*, *Echinocystis lobata*, *Epilobium hirsutum*, *Eupatorium cannabinum*, *Euphorbia lucida*, *Equisetum ramosissimum*, *Equisetum telmateia*, *Fallopia dumetorum*, *Festuca gigantea*, *Filipendula ulmaria*, *Fragaria vesca*, *Galeopsis speciosa*, *Galium aparine*, *Geranium palustre*, *Geranium phaeum*, *Geranium robertianum*, *Geum rivale*, *Geum urbanum*, *Glechoma hederacea*, *Glycyrrhiza echinata*, *Heracleum sibiricum*, *Humulus lupulus*, *Impatiens balfourii*, *Impatiens glandulifera*, *Impatiens noli-tangere*, *Inula helenium*, *Inula viscosa*, *Ipomoea sagittata*, *Lamium maculatum*, *Lapsana communis*, *Leersia oryzoides*, *Leonurus cardiaca*, *Lycopus europaeus*, *Lythrum salicaria*, *Lysimachia vulgaris*, *Lunaria rediviva*, *Mentha longifolia*, *Mycelis muralis*,

*Myosoton aquaticum*, *Parietaria officinalis*, *Petasites albus*, *Petasites hybridus*, *Phalaris arundinacea*, *Physalis alkekengi*, *Poa nemoralis*, *Poa sylvicola*, *Pseudolysimachion longifolium*, *Pulicaria dysenterica*, *Rubus caesius*, *Rumex conglomeratus*, *Salvia glutinosa*, *Scrophularia umbrosa*, *Silene dioica*, *Smyrniium perfoliatum*, *Solidago gigantea*, *Stachys sylvatica*, *Symphytotrichum lanceolatum*, *Symphytum officinale*, *Tanacetum vulgare*, *Telekia speciosa*, *Trollius europaeus*, *Urtica dioica*, *Valeriana sambucifolia*, *Viola alba*.  
Only in Madeira: *Ageratina adenophora*, *Asparagus asparagoides*, *Bidens pilosa*, *Cardiospermum grandifolium*, *Ipomoea acuminata*, *Rubus ulmifolius*, *Tropaeolum majus*.

Bryophytes: *Brachythecium rivulare*, *Brachythecium rutabulum*, *Eurhynchium striatum*, *Plagiomnium cuspidatum*, *Plagiomnium elatum*, *Plagiomnium undulatum*.

Fauna

Invertebrates: *Larinioides cornutus*, *Gryllotalpa gryllotalpa*, *Calopteryx virgo*, *Amara sp.pl.*

Vertebrates: *Neomys anomalus*, *Crocidura leucodon*.

### **Classification**

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

EUNIS:

E5.4 Moist or wet tall-herb and fern fringes of the lowlands

EuroVegChecklist:

*Impatienti noli-tangere-Stachyion sylvaticae* Görs ex Mucina 1993

*Aegopodion podagrariae* Tx. 1967 nom. conserv. propos.

*Senecionion fluviatilis* Tx. ex Moor 1958

*Archangelicion litoralis* Scamoni et Passarge 1963

*Nardosmion laevigatae* Klotz et Köck 1986

*Cynancho-Convolvulion sepium* Rivas Goday et Rivas-Mart. ex Rivas-Mart. 1977

*Dorycnio recti-Rumicion conglomerati* Gradstein et Schmittenberg 1977

*Ipomoeo acuminatae-Ageratinion adenophorae* Espírito-Santo et al. 2004

*Filipendulo-Petasition* Br.-Bl. ex Duvigneaud 1949

*Conioselinion tatarici* Golub et al. 2003

*Althaeion officinalis* Golub et Mirkin in Golub 1995

*Euphorbion palustris* Ageleulov et Golub in Golub 1995

*Lythro-Euphorbion* Mirkin et Naumova 1986

Annex I:

6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (pro parte)

Emerald:

E5.4 Moist or wet tall-herb and fern fringes and meadows

MAES-2:

Grassland

IUCN:

4.4. Temperate grassland

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

No

Justification

The habitat type has a wide distribution throughout Europe. Its occurrence has been reported from 36 countries (25 territorial data sheets have been sent in).

### **Geographic occurrence and trends**

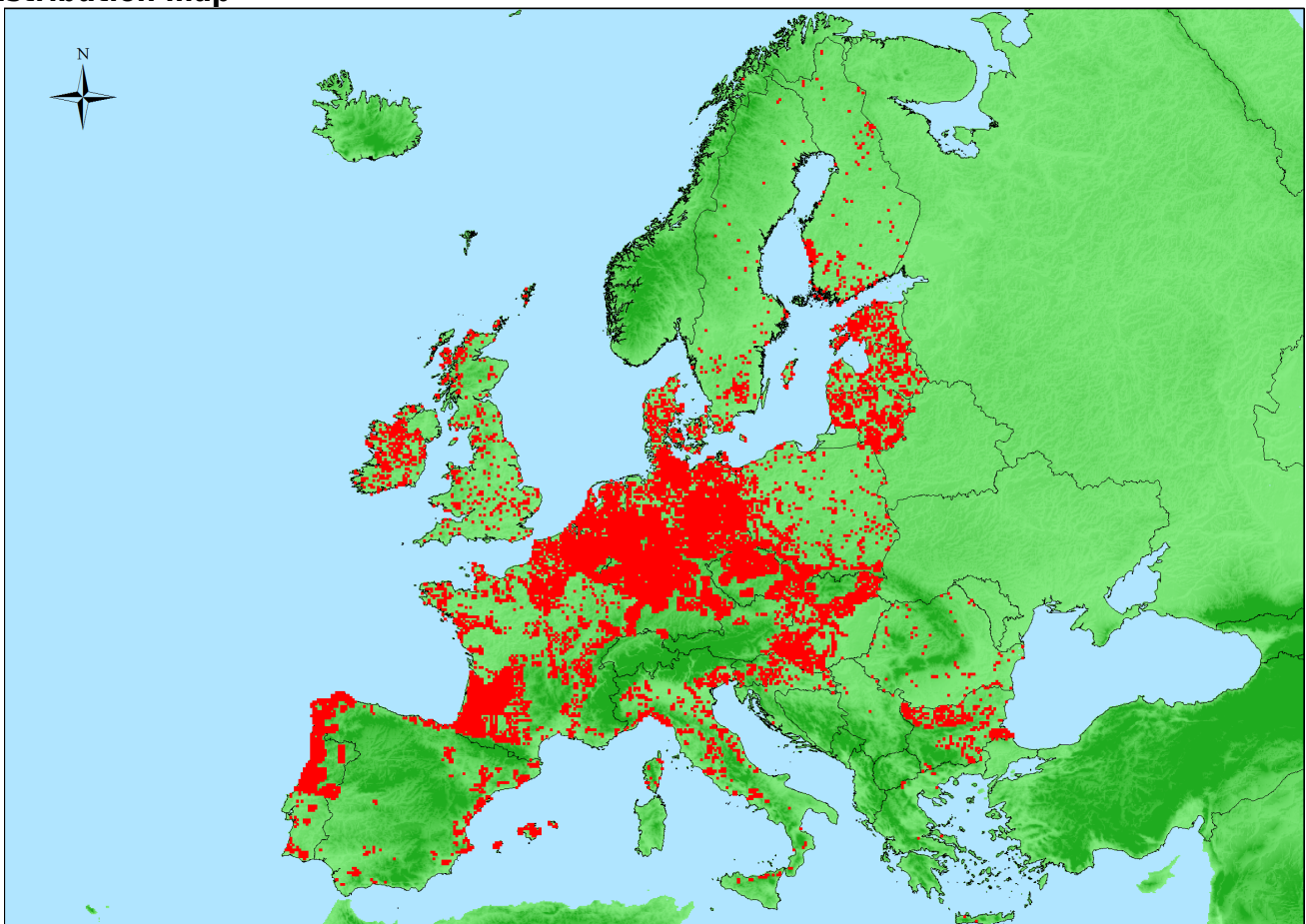
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Austria</i>	Present	70 Km <sup>2</sup>	Unknown	Decreasing
<i>Belgium</i>	Present	130 Km <sup>2</sup>	Stable	Decreasing
<i>Bulgaria</i>	Present	122 Km <sup>2</sup>	Decreasing	Decreasing
<i>Croatia</i>	Present	2 Km <sup>2</sup>	Stable	Decreasing
<i>Czech Republic</i>	Present	2 Km <sup>2</sup>	Decreasing	Decreasing
<i>Estonia</i>	Present	20 Km <sup>2</sup>	Unknown	Unknown
<i>Finland</i>	Finland mainland: Present	40 Km <sup>2</sup>	Decreasing	Decreasing
<i>France</i>	France mainland: Present	1500 Km <sup>2</sup>	Decreasing	Decreasing
<i>Germany</i>	Present	380 Km <sup>2</sup>	Decreasing	Decreasing
<i>Greece</i>	Greece (mainland and other islands): Present	8 Km <sup>2</sup>	Unknown	Unknown
<i>Hungary</i>	Present	27 Km <sup>2</sup>	Decreasing	Decreasing
<i>Ireland</i>	Present	2 Km <sup>2</sup>	Unknown	Unknown
<i>Italy</i>	Italy mainland: Present	135 Km <sup>2</sup>	Decreasing	Decreasing
<i>Latvia</i>	Present	16 Km <sup>2</sup>	Unknown	Decreasing
<i>Lithuania</i>	Present	19 Km <sup>2</sup>	Decreasing	Decreasing
<i>Luxembourg</i>	Present	Km <sup>2</sup>	-	-
<i>Netherlands</i>	Present	24 Km <sup>2</sup>	Decreasing	Decreasing
<i>Poland</i>	Present	123 Km <sup>2</sup>	Decreasing	Decreasing
<i>Portugal</i>	Portugal mainland: Present	14 Km <sup>2</sup>	Decreasing	Unknown
<i>Romania</i>	Present	40 Km <sup>2</sup>	Increasing	Unknown
<i>Slovakia</i>	Present	20 Km <sup>2</sup>	Decreasing	Decreasing
<i>Slovenia</i>	Present	15 Km <sup>2</sup>	Stable	Decreasing
<i>Spain</i>	Spain mainland: Present	83 Km <sup>2</sup>	Stable	Unknown
<i>UK</i>	United Kingdom: Present	Km <sup>2</sup>	-	-

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	Km <sup>2</sup>	-	-
<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>	-	-
<i>Iceland</i>	Present	Km <sup>2</sup>	-	-
<i>Kaliningrad</i>	Present	Km <sup>2</sup>	-	-
<i>Kosovo</i>	Present	Km <sup>2</sup>	-	-
<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	60 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
<i>EU 28</i>	8419250 Km <sup>2</sup>	11516	2793 Km <sup>2</sup>	
<i>EU 28+</i>	8532750 Km <sup>2</sup>	11709	2873 Km <sup>2</sup>	

### Distribution map



Map is incomplete in many sites (a.o. Poland, Iceland, Balkan) but potential distribution is given for the EU. Data sources: EVA, Art17.

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

About 60% of the current distribution of the habitat type lies within EU28. The distribution of this habitat types reaches into Asia.

### Trends in quantity

The total area that has been reported by the territorial data providers is 2,800 km<sup>2</sup> for EU28 and 2,850 km<sup>2</sup> for EU28+. We received quantitative data from 18 EU28 countries, covering > 95% of the reported area, plus from 2 additional EU28+ countries. The data are strongly dominated by France, reporting about 50% of the total area. The average trend for EU28 is -32.8%, the average trend for EU28+ is -32.6%.

- Average current trend in quantity (extent)

EU 28: Decreasing

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 36 countries). The surface of the sites is generally quite small, although the communities may occur in bands over rather long distances (along water courses) or in rather extensive patches (e.g. in floodplains and abandoned meadows).

### Trends in quality

Quantitative data were provided by 16 EU28 countries and 3 additional EU28+ countries, covering about 90% of the reported area (for EU28 and EU28+). Data are strongly dominated by France. Within the EU28 countries 46% is declining (with 52 % severity). For the EU28+ countries similar average values have been reported.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

## Pressures and threats

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The main threats are changes in water regimes of the major river systems and tributaries in Europe as well as agricultural intensification; the latter concerns fertilisation as well as draining practices. Other major losses are due to direct habitat destruction (e.g. as a consequence of urbanisation and infrastructural works). The habitat may temporarily benefit from abandoning of mowing (and to a lesser extent grazing), but further succession generally leads within rather short periods to shrubland and woodlands.

### List of pressures and threats

#### Agriculture

Agricultural intensification

Fertilisation

#### Urbanisation, residential and commercial development

Urbanised areas, human habitation

## Natural System modifications

Canalisation & water deviation  
Flooding modifications  
Modification of hydrographic functioning, general  
Water abstractions from groundwater

## Conservation and management

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Although these tall forb communities are still occurring over large areas in Europe, there are ongoing risks for further degradation. This applies particularly to the (more or less) natural communities of this type, for which appropriate measurements are needed to safeguard the relevant hydrological conditions. In addition, further intensification of agricultural practices (fertilisation, drainage) has to be called to an end.

### List of conservation and management needs

#### Measures related to wetland, freshwater and coastal habitats

Restoring/Improving the hydrological regime

### 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 lowlands and montane areas up to max. 1,000 m altitude).

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

Depending on the type of damage, restoration may be possible. Relatively easy is to lower the amount of fertilisation, as far as the abiotic conditions are still intact. Most problematic is restoring the hydrologic regime, as these tall forb communities easily transform into dense stands that are dominated by *Urtica dioica*, *Galium aparine* and other nitrophilous competitors.

### Effort required

20 years
Through intervention

## Red List Assessment

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### Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-32.8 %	unknown %	unknown %	unknown %
EU 28+	-32.6 %	unknown %	unknown %	unknown %

The values for A1 are calculated from the territorial data sheets. No data are 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>	Yes	Yes	No	> 50	Yes	Yes	No	No

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28+	> 50000 Km <sup>2</sup>	Yes	Yes	No	> 50	Yes	Yes	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	46 %	52 %	unknown %	unknown %	unknown %	unknown %
EU 28+	46 %	52 %	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 that we obtained from 19 countries, covering about 90% of the reported area (for EU28 and EU28+); data are strongly dominated by figures provided for France. No data are available for applying Criteria C/D2 and C/D3. The degradation in quality refers to both biotic features and abiotic circumstances.

### 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	VU	DD	DD	DD	LC	LC	LC	NT	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	VU	DD	DD	DD	LC	LC	LC	NT	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
Vulnerable	A1	Vulnerable	A1



## **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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## **Reviewers**

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## **Date of assessment**

02/04/2016

## **Date of review**

24/04/2016

## **References**

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Dierschke, H. (1996). Syntaxonomische Stellung von Hochstauden-Gesellschaften, insbesondere aus der Klasse Molinio-Arrhenateretea (Filipendulion). *Berichte der Reinhold-Tüxen-Gesellschaft* 8: 145-157.