

E5.3 *Pteridium aquilinum* stand

Summary

Pteridium aquilinum is naturally a forest fern held in check by the shade of shrubs and trees but, without this cover, and lacking the traditional management of cutting and trampling by cattle, it readily establishes itself as dominant in these bracken stands, overwhelming other vegetation. Spreading vigorously by rhizome extension, the dense shade of the fronds and thick accumulating litter inhibit associated floras, a feature now of many pastoral landscapes less traditionally managed than before. As a consequence of these features, the habitat type is not considered to be of high conservation value. On the contrary, especially in the Atlantic and Subatlantic region of Europe, it can be a threat to other habitats and is sometimes actively controlled by chemical spraying.

Synthesis

This habitat type is not endangered in either EU28 or 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

No sub-habitats have been distinguished for further analysis.

Habitat Type

Code and name

E5.3 *Pteridium aquilinum* stand



Bracken field in Ireland, where this Red List type is widely distributed (Photo: Bas van Gennip).



In the Scottish highlands, like here on the Isle of Mull, dense stands of *Pteridium aquilinum* may dominate the hillsides (Photo: Joop Schaminée).

Habitat description

In the humid regions of Europe bracken (*Pteridium aquilinum*) may form species-poor 1 to 2 meter high stands on deeper, acidic to neutral, well drained, well aerated and poor to relatively fertile soils. The associated species assemblage may vary depending on the context in which the bracken stands develop, particularly with the acidity and fertility of the soil and the density of the cover of fronds. On less acid soils, the herbaceous associates may be those of mesotrophic grasslands and it may be mixed with bramble species (*Rubus*), scattered scrubs (*Crataegus*, *Prunus*) or trees (*Fraxinus*, *Quercus*), forming

transitions towards Red List scrubs F3.1b and F3.1e. In other cases it may contain components of heath or acidic grassland, for example *Vaccinium myrtillus*, *Galium saxatile*, *Potentilla erecta* or *Anthoxanthum odoratum*.

Bracken is probably naturally a forest fern held in check by the shade of a canopy of trees and shrubs but it is found as this habitat in forest gaps and clearings, along forest margins, in heathlands, in drained bog areas, on burnt sites, being a component of agricultural or heathland areas and rarely occurring also in coastal dunes. Bracken can colonise open ground in such habitats by spore dispersal, but this is a relatively rare phenomenon. More usually the species expands from existing populations by vegetative rhizome spread, slowly forming larger clonal stands. Once established the species creates a hostile environment for other plants, by producing dense summer shade and large amounts of slowly-rotting litter. The result is a relatively species-poor habitat, not considered of high value from a nature conservation point-of-view. In many cases it is rather considered as a threat to other habitats, like grasslands and heathlands, developing as a result of abandonment of traditional management in which it was often cut and used as bedding for farm animals and also held in check by trampling of cattle.

The main distribution covers the Atlantic and Subatlantic lowlands and mountains of Europe, being most widespread in Ireland, the British Isles and Brittany (France). Further eastwards *Pteridium aquilinum* is mainly restricted to the humid microclimate of forests. More species-rich tall herb stands dominated by this species are widespread but not very common, and mostly confined to temperate mountains. In boreal and warm Mediterranean regions the conditions are less optimal for the habitat to develop.

Indicators of good quality:

- Being part of a landscape mosaic with heathlands, forests and grasslands
- No co-dominance of trees and shrubs

Characteristic species:

Flora: Vascular plants: *Agrostis capillaris*, *Anthoxanthum odoratum*, *Dactylis glomerata*, *Festuca ovina* agg., *Galium saxatile*, *Holcus lanatus*, *Holcus mollis*, *Potentilla erecta*, *Pteridium aquilinum*, *Rosa* spp., *Rubus idaeus*, *Rubus ulmifolius*, *Rubus* sect. *Rubus*, *Sarothamnus scoparius*, *Teucrium scorodium*, *Ulex europaeus*, *Vaccinium myrtillus*.

Classification

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

EUNIS:

No relationship

EuroVegChecklist:

The habitat comprises basal communities of several classes and alliances, including:

Violion caninae Schwickerath 1944 (marginal)

Genisto pilosae-Vaccinion Br.-Bl. 1926 (marginal)

Epilobion angustifolii Oberd. 1957 (marginal)

Lonicero-Rubion silvatici Tx. et Neumann ex Wittig 1977 (marginal)

Pruno spinosae-Rubion ulmifolii O. de Bolòs 1954 (marginal)

Molinio-Quercion roboris Scamoni et Passarge 1959 (marginal)

Annex I:

No relationship

Emerald:

No relationship

MAES-2:

Heathland and shrub

IUCN:

3.4 Temperate shrub

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

No

Justification

The type has a wide distribution throughout Europe, with its optimum in the Atlantic regions, recorded from 33 countries.

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	Km ²	-	-
<i>Belgium</i>	Present	5 Km ²	Stable	Stable
<i>Bulgaria</i>	Present	Km ²	-	-
<i>Croatia</i>	Present	240 Km ²	Increasing	Stable
<i>Czech Republic</i>	Present	10 Km ²	Stable	Stable
<i>Denmark</i>	Present	Km ²	-	-
<i>Estonia</i>	Present	Km ²	-	-
<i>France</i>	Corsica: Present France mainland: Present	2000 Km ²	Increasing	Unknown
<i>Germany</i>	Present	Km ²	-	-
<i>Greece</i>	Greece (mainland and other islands): Present	Km ²	-	-
<i>Latvia</i>	Present	3 Km ²	Unknown	Unknown
<i>Lithuania</i>	Present	1.5 Km ²	Decreasing	Unknown
<i>Luxembourg</i>	Present	Km ²	-	-
<i>Netherlands</i>	Present	6 Km ²	Increasing	Stable
<i>Poland</i>	Present	Km ²	-	Stable
<i>Portugal</i>	Portugal mainland: Present	217 Km ²	Increasing	Unknown
<i>Romania</i>	Present	Km ²	-	-
<i>Slovakia</i>	Present	Km ²	-	-
<i>Slovenia</i>	Present	Km ²	-	-
<i>Spain</i>	Balearic Islands: Present Spain mainland: Present	Km ²	-	-

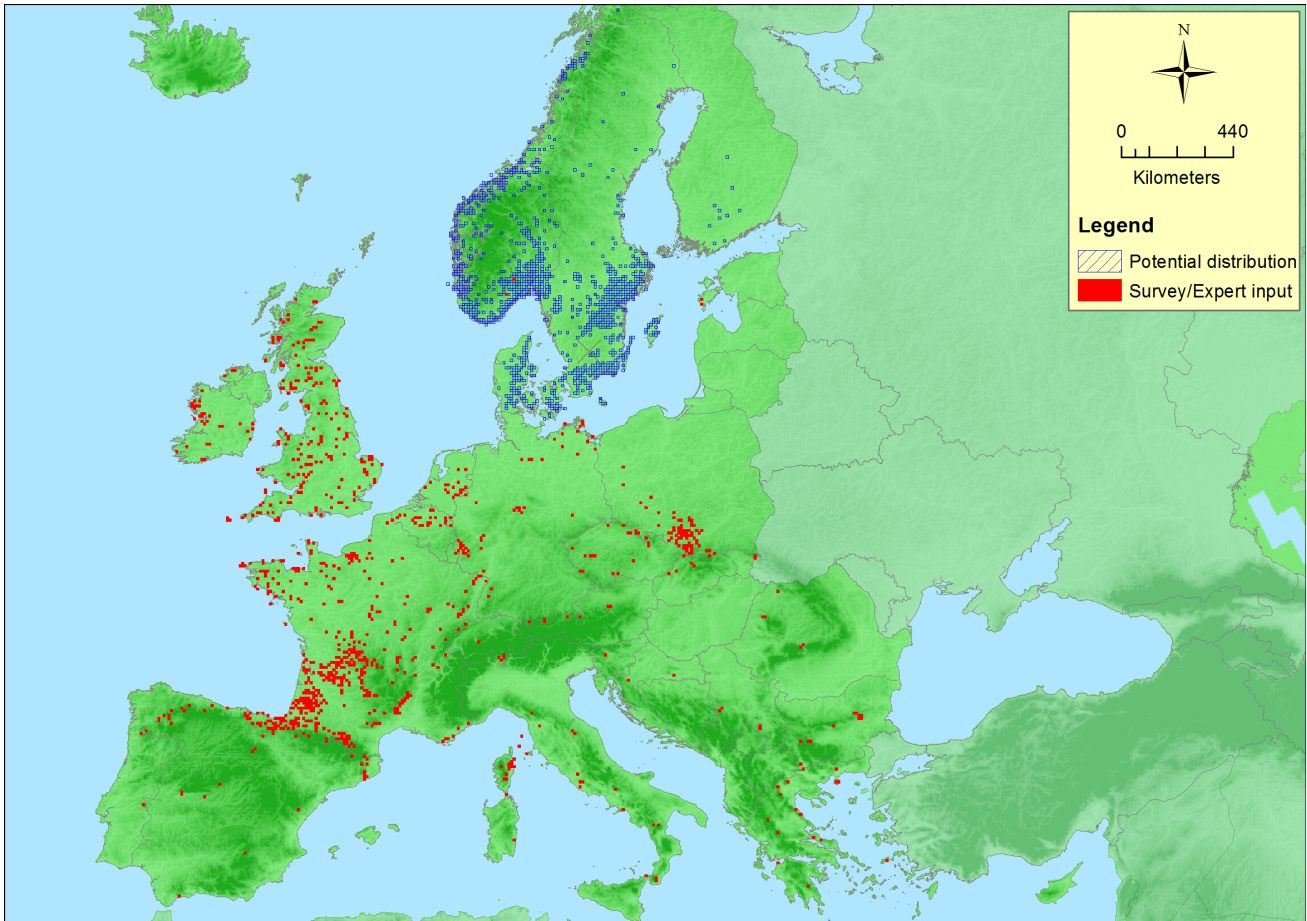
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Sweden</i>	Present	Km ²	-	-
<i>UK</i>	United Kingdom: Present	3700 Km ²	Decreasing	Stable

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	10 Km ²	Increasing	Increasing
<i>Bosnia and Herzegovina</i>	Present	40 Km ²	Increasing	Stable
<i>Former Yugoslavian Republic of Macedonia (FYROM)</i>	Present	Km ²	-	-
<i>Kaliningrad</i>	Present	Km ²	-	-
<i>Kosovo</i>	Present	Km ²	-	-
<i>Montenegro</i>	Present	Km ²	-	-
<i>Norway</i>	Norway Mainland: Present	Km ²	-	-
<i>Serbia</i>	Present	Km ²	-	-
<i>Switzerland</i>	Present	70 Km ²	Increasing	Stable

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>	6961650 Km ²	1611	6573 Km ²	AOO and EOO incl. potential distribution
<i>EU 28+</i>	7218900 Km ²	2180	6683 Km ²	AOO and EOO incl. potential distribution

Distribution map



Map is incomplete in many sites but potential distribution is given for Scandinavia. Data sources: EVA, GBIF.

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

Pteridium aquilinum has a worldwide distribution, but it is unknown to what extent outside Europe the species is able to develop *Pteridium* fields in the sense of the habitat type. Within Europe, more than 90% of the current distribution is situated within EU28. Outside EU28 the habitat type is found, for instance, in Norway.

Trends in quantity

The largest area of this habitat type is found in Great Britain, where active management by chemical spraying is carried out to reduce the occupied surface. In other countries the area of the type is stable or increasing and the average trend is EU28: +5.1%, EU28+: +5.4% The calculations are strongly influenced by the data for the UK and France. These two countries are showing an opposite trend, from 10% decrease (UK) to 50% increase (France) over the last 50 years. Future trend (EU28 and EU28+) is probably more or less stable, partly depending on management activities in the Atlantic regions.

- Average current trend in quantity (extent)
 EU 28: Increasing
 EU 28+: Increasing
- Does the habitat type have a small natural range following regression?
 No
Justification
 The EOO is larger than 50,000 km²
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
 No

Justification

The types has a wide distribution throughout Europe (it has been recorded from 33 countries). The surface of the sites can be quite large (up to several hectares).

Trends in quality

The overall quality in the various regions seems to be stable.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

Pressures and threats

Pteridium fields are more a problem than a habitat type that needs protection and careful management. Without traditional management, especially in the Atlantic region, bracken is able to overrun other plant communities, like heathlands and grasslands, that are considered more important from a conservation point of view.

List of pressures and threats

No threats or pressures

No threats or pressures

Conservation and management

When established, *Pteridium aquilinum* is able to overwhelm the surrounding vegetation, even at the landscape level. This is happening at a large scale in the Atlantic regions of Europe, where measures are being taken to remove the stands of this habitat type instead of supporting it.

List of conservation and management needs

No measures

No measures needed for the conservation of the habitat/species

Conservation status

There is no Annex I type assigned to this habitat type.

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

The habitat type is generally favoured by human interaction like overgrazing, mining and other disturbances that offers free space to *Pteridium aquilinum*. When *Pteridium* fields are damaged, they are able to recover the lost terrain rather easily and quickly,

Effort required

10 years
Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	+5.1 %	unknown %	unknown %	unknown %
EU 28+	+5.4 %	unknown %	unknown %	unknown %

The values for A1 are calculated from the territorial data sheets. No data (%) available for 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 ²	No	-		>50	No	-		
EU 28+	>50000 Km ²	No	-		>50	No	-		

EOO, AOO and number of locations are above thresholds for evaluating 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	0.4 %	30 %	unknown %	unknown %	unknown %	unknown %
EU 28+	0.4 %	30 %	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 %	u %

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, which we obtained from 32 countries. No data available for 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	LC	DD	DD	DD	LC	LC	LC	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD

	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

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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References

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