

## H2.6a Temperate, lowland to sub-montane base-rich scree

### Summary

This habitat comprises scree slopes of mostly coarse, unstabilized material derived from calcareous and dolomitic bedrocks in the lowlands, foothills and sub-montane zone of temperate Europe. Vegetation can be completely lacking, but rock surfaces can have bryophyte and lichen communities and, where crevices accumulate soil, the vascular contingent can be diverse and lush. Natural succession following stabilization of scree slopes allows encroachment of shrubs and trees, vegetation not included here. The habitat is widely threatened by quarrying and the construction of transport infrastructures, and by leisure activities. Quality is also affected by sheep grazing in some regions. Such situations need careful pastoral management.

### Synthesis

This habitat type qualifies for a Least Concern status, both for EU28 and EU28+ because average trends in quantity and quality are slight. Looking at the upper limit of decrease – the worst decrease – calculated with the data (around -20% over the last 50 years), the Nearly Threatened category could be assigned with justification, but quality, consistency and completeness are not sufficient enough to do so.

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 subhabitats have been distinguished for further analysis.

### Habitat Type

#### Code and name

H2.6a Temperate, lowland to sub-montane base-rich scree



A thermophilous and mobile low-land base-rich scree with characteristic species *Achnatherum calamagrostis* in Domogled, Romania (Photo: Milan Chytrý).



A low-land base-rich scree with medium-sized elements with characteristic species *Gymnocarpium robertianum* in Trzy-Korony, Poland (Photo: Milan Chytrý).

#### Habitat description

Mostly coarse, unstabilized, dry, sunny, calcareous and marble scree slopes of the colline and montane levels of the low- to mid-altitude levels of the temperate European reliefs, including the piedmonts of the Alps, Jura, Pyrenees, Carpathians and Hercynian ranges. They are located on the slopes of mountains, hills, but also in gorges. The vegetation can completely lack, but in other cases is represented by forb- or fern-

dominated communities. The main plant species are *Achnatherum calamagrostis*, *Melica ciliata*, *Galeopsis angustifolia*, *Rumex scutatus*, *Vincetoxicum hirundinaria* and the ferns *Gymnocarpium dryopteris*. The fern swards colonize often slightly damp parts of screes. Other species in these more mesophilous screes are *Eupatorium cannabinum*, *Valeriana officinalis*, *Galeopsis ladanum*. The vegetation mostly belongs to the alliances *Stipion calamagrostis* and *Arabidion alpinae*. The plant communities of calcareous screes of the Paris basin and its periphery (*Leontodontion hyoseroidis*) have many rare or endemic plants, like the endangered endemic *Viola hispida*. The screes of the Eastern Carpathians are characterized by the presence of numerous sub-Mediterranean thermophilous species and some Balkan-Carpathian subendemics, which penetrate northwards from the south to the sunny and warm habitats. Carpathian endemics on screes in Romania are amongst others *Silene nutans* subsp. *dubia* and *Thymus comosus*. Similar communities can occur on secondary substrates, like quarries.

Indicators of quality:

The following characteristics may be considered as indicators of good quality:

- natural erosion processes
- absence of non-native species (e.g. *Robinia pseudacacia* may support the processes of stabilisation of screes and extinction of the typical flora)
- presence of habitat rare, endemic and relict species
- absence of human activities, like grazing.

Characteristic species:

Flora

Vascular plants: *Achnatherum calamagrostis*, *Aethionema saxatile*, *Anthericum ramosum*, *Arabis alpina*, *Biscutella neustriaca*, *Calamagrostis varia*, *Campanula rapunculoides*, *Cardaminopsis arenosa*, *Cystopteris fragilis*, *Eupatorium cannabinum*, *Euphorbia waldsteinii*, *Galeopsis angustifolia*, *Galeopsis ladanum*, *Galium timeroi* subsp. *fleurotii*, *Gymnocarpium robertianum*, *Festuca xanthina*, *Hieracium bifidum*, *Iberis durandii*, *I. violetii*, *Lamium garganicum* subsp. *laevigatum*, *Leontodon hyoseroides*, *Linaria supina*, *Melica ciliata*, *Microrhynchium minus*, *Moehringia muscosa*, *Parietaria officinalis*, *Poa nemoralis*, *Rumex scutatus*, *Senecio rupestris*, *Sesleria albicans*, *Scrophularia juratensis*, *Silene hayekiana*, *Silene nutans* subsp. *dubia*, *S. vulgaris* subsp. *glareosa*, *Sisymbrium supinum*, *Silene nutans* subsp. *dubia*, *Thymus comosus*, *Vincetoxicum hirundinaria*, *Valeriana officinalis*, *Viola hispida*. Mosses: *Ceratodon purpureus*, *Conocephalum conicum*, *Eurhynchium schleicheri*, *Homalothecium sericeum*, *Mnium stellare*, *Plagiomnium affine*, *Tortella tortuosa*.

### Classification

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

EUNIS:

H2.6 Calcareous and ultra-basic screes of warm exposures

EuroVegChecklist:

*Stipion calamagrostis* Jenny-Lips ex Br.-Bl. 1948

*Leontodontion hyoseroidis* Duvigneaud et al. 1970

*Arabidion alpinae* Beguin 1972

Annex 1:

8160\* Medio-European calcareous scree of hill and montane levels

Emerald:

H2.6 Calcareous and ultra-basic screes of warm exposures

MAES-2:

Sparsely vegetated land

IUCN:

6. Rocky Areas [e.g. inland cliffs, mountain peaks

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

No

Justification

No. This habitat type occurs frequently in the alpine region, but it is also well distributed - though scattered - in the continental and atlantic biogeographical regions.

**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	11 Km <sup>2</sup>	Decreasing	Decreasing
<i>Belgium</i>	Present	1 Km <sup>2</sup>	Decreasing	Decreasing
<i>Bulgaria</i>	Present	unknown Km <sup>2</sup>	Decreasing	Decreasing
<i>Croatia</i>	Present	marginal Km <sup>2</sup>	Unknown	Unknown
<i>Czech Republic</i>	Present	1 Km <sup>2</sup>	Stable	Decreasing
<i>France</i>	France mainland: Present	75 Km <sup>2</sup>	Decreasing	Decreasing
<i>Germany</i>	Present	7 Km <sup>2</sup>	Decreasing	Decreasing
<i>Hungary</i>	Present	unknown Km <sup>2</sup>	Unknown	Unknown
<i>Ireland</i>	Present	20 Km <sup>2</sup>	Decreasing	Unknown
<i>Italy</i>	Italy mainland: Present	unknown Km <sup>2</sup>	Unknown	Unknown
<i>Poland</i>	Present	0.2 Km <sup>2</sup>	Decreasing	Decreasing
<i>Romania</i>	Present	7 Km <sup>2</sup>	Stable	Decreasing
<i>Slovakia</i>	Present	3.9 Km <sup>2</sup>	Decreasing	Stable
<i>Slovenia</i>	Present	35 Km <sup>2</sup>	Stable	Stable
<i>Spain</i>	Spain mainland: Present	70 Km <sup>2</sup>	Stable	Stable
<i>UK</i>	United Kingdom: Present	6 Km <sup>2</sup>	Stable	Increasing

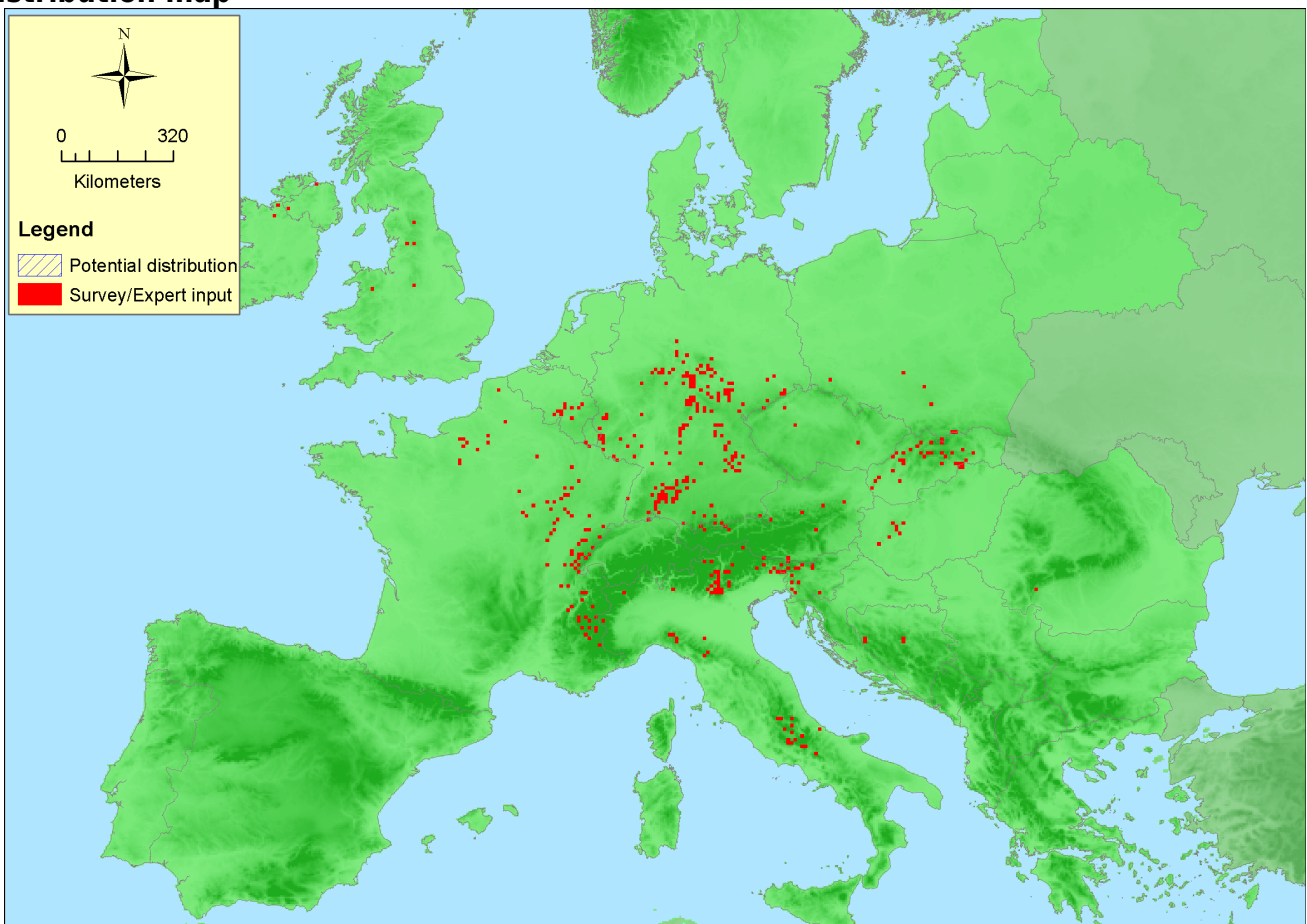
EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Bosnia and Herzegovina</i>	Present	2 Km <sup>2</sup>	Stable	Decreasing
<i>Former Yugoslavian Republic of Macedonia (FYROM)</i>	Present	unknown Km <sup>2</sup>	Unknown	Unknown

EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Switzerland	Present	150 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	1741550 Km <sup>2</sup>	400	237 Km <sup>2</sup>	Important missing data from Italy. Data from Poland and Bosnia-Herzegovina are not included due to late arrival of data.
EU 28+	1741550 Km <sup>2</sup>	404	387 Km <sup>2</sup>	Important missing data from Italy. Data from Poland and Bosnia-Herzegovina are not included due to late arrival of data.

### Distribution map



The map is relatively complete for the EU, with missing points in the Cantabrian mountains, but incomplete in the Balkan and Switzerland. Data sources: Art17, NAT.

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

95%. The native biota (especially plants) has a narrow distribution from a world point of view. The entire distribution is inside EU28+ countries, except a very small part in Ukraine.

### Trends in quantity

The current trends are reported as stable in most countries. The past trend over the last 50 years is on

average slight at the EU scale (-12% EUR28+; -9% EUR28). The same trend calculated with the upper limits of ranges – when provided – reaches -20% for EU28+ and -17% for EU28. Reported changes are variable among countries, reflecting a variable level of knowledge and/or perception. Austria, Germany and Switzerland have reported quite higher values than other countries. The average trend seem nevertheless realistic. The decline is mainly caused by human activities such as quarrying and the construction of transportation infrastructures. The decrease in quantity is also be caused by the natural process of scree stabilization and subsequent natural succession (encroachment). The historical decrease has been reported with the same pattern (no precise figure is available). The future trend is said to be stable or slightly decreasing (no precise figure is available).

- Average current trend in quantity (extent)

EU 28: Stable

EU 28+: Stable

- Does the habitat type have a small natural range following regression?

No

*Justification*

No. The natural range of this habitat type is large (well above 50,000 Km<sup>2</sup> threshold) and no important decline has occurred during the last 50 years.

- Does the habitat have a small natural range by reason of its intrinsically restricted area?

Yes

*Justification*

This habitat type occurs only a small spots in the lowlands and low mountains, when habitat conditions are appropriate. I does have an intrinsically restricted area.

## **Trends in quality**

The decrease in quality over the last 50 years is on average more than simply local (extent 12% EUR28, 30% EUR28+) and the changes are fairly significant (severity 30% EUR28, 26% EUR28+). The reported values are rather consistent among countries. Therefore, the calculated trend may be considered realistic. This reduced quality is mainly due to a loss of functionality of screes (reduced mobility), which is caused by nearby quarries and constructions or by natural succession. Natural succession is faster at lower elevation than up the mountains (cf. H2.4 type). Roads often go across screes and reduce their mobility by cutting the slow flow of scree materials (stones). Erosion and alteration of cliffs above screes release materials regularly; any securing of such cliffs prevents screes from functioning normally. Sheep grazing, which is reported as a threat in Ireland and UK, also affects the quality. Problems of invasive species are reported in Ireland (*Epilobium brunescens*, a plant introduced from New Zeland). Historical and future trends cannot be described owing to a lack of data.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

## **Pressures and threats**

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Human-induced and natural-processes-dependent threats are of equal relevance for this habitat. Human-induced threats comprise quarrying of natural sites with cliffs and screes, and the constructions of transportation infrastructure. Of less concern are sheep grazing in (Ireland and the UK) and outdoor activities (creation of trails across screes). The natural process of scree stabilisation is responsible for the encroachment and natural afforestation of stabilized screes (natural succession); it is reported as the main threat in Germany.

## **List of pressures and threats**

## Mining, extraction of materials and energy production

Mining and quarrying

## Transportation and service corridors

Roads, paths and railroads

## Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities

## Natural biotic and abiotic processes (without catastrophes)

Biocenotic evolution, succession

## Conservation and management

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There is no management need for this highly natural habitat to remain but leaving it undisturbed and undamaged. Natural succession should not be considered as a problem because it is not human-induced. Conservation is then effective when free evolution is possible, like within protected areas. 'Manage landscape features' refers to the need to better protect this kind of habitats showing a high degree of naturalness in land-use planning, especially when no other specific regulation can be applied (no protected species or habitat, outside a protected area, outside a N2000 site).

### List of conservation and management needs

#### Measures related to spatial planning

Manage landscape features

### Conservation status

Annex I:

8160: ALP FV, ATL U2, CON U1, PAN FV

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

The habitat has some capacity to recover naturally but it is dependent on some geomorphological processes which are very slow (erosion). As far as we know, there is no experiment of restoration of screes.

### Effort required

200+ years
Naturally

## Red List Assessment

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### Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	9 %	unknown %	unknown %	unknown %
EU 28+	12 %	unknown %	unknown %	unknown %

The values given above were calculated with the territorial data only. The lower and upper limits of decrease are the following : EUR28+ [-6/-20%], EUR28 [-4/-17%].

## 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>	Unknown	Unknown	unknown	>50	Unknown	Unknown	unknown	unknown
EU 28+	> 50000 Km <sup>2</sup>	Unknown	Unknown	unknown	>50	Unknown	Unknown	unknown	unknown

Sub-criteria of B1 and B2 are not evaluated because the values for EOO and AOO are well above the thresholds.

## 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	12 %	30 %	unknown %	unknown %	unknown %	unknown %
EU 28+	30 %	26 %	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 were calculated with the territorial data of a large subset of countries providing data on the reduction in quality. This allowed for the calculation of a realistic trends. The ranges of degradation of quality lead to the conclusion Least concern for EU28 and EU28+.

## 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

Overall Category & 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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