

H2.5 Temperate, lowland to montane siliceous scree

Summary

This habitat comprises siliceous screes and moraines of warm exposures, derived from a diversity of sedimentary, igneous and metamorphic rocks on the lower slopes of mountain ranges of the nemoral zone. Often the screes are mixed with fine soil. The vegetation can be completely lacking, but moss- or lichen-dominated, species-poor communities can occur on rock surfaces and fine soil accumulated in crevices can support a variety of forb- or fern-dominated vegetation. Siliceous screes in general have a lower species richness than calcareous screes but ferns can be diverse and luxuriant. Natural succession on more stable screes results in the development of scrub and woodland, not included here. Quarrying, construction of transport infrastructures and leisure activities pose threats and more accessible slopes can be affected by grazing.

Synthesis

This habitat type qualifies for a Least Concern status at the European scale because its reduction in quantity over the last 50 years is small. Reduction in quality could not be assessed despite known processes (e.g. stabilisation and encroachment of screes like in Germany or France). Yet, this status hides strong differences in context among parts of Europe and it will be worth having further examination for sub-types.

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

Further examination may be needed for screes from ancient siliceous mountain ranges (Massif Central, Harz-Eifel-Ardenne, Massif armoricain, Black-Forest, Vosges, ...) and also for a subtype of screes from the northern UK.

Habitat Type

Code and name

H2.5 Temperate, lowland to montane siliceous scree



A lowland siliceous scree with coarse elements in the Czech Republic (Photo: Milan Chytrý).



A lowland siliceous scree on a steep slope with partial moss and lichen cover in the Mosel valley of Germany (Photo: Axel Ssymank).

Habitat description

Siliceous (acidic) screes and moraines of warm exposures on the lower slopes of mountain ranges of the nemoral zone, including the Alps, Pyrenees and Hercynian ranges, also on hills and lowlands and, locally, of middle European upland or lowland sites. They consist of various volcanic, crystalline, metamorphic or sedimentary rocks with acidic to neutral reaction. Often the screes are mixed with fine soil. The vegetation can completely lack, but in other sites is represented by forb- or fern-dominated, sometimes by moss- or lichen-dominated, species-poor communities. Siliceous screes in general have a lower species richness than calcareous screes. But the diversity of fern species is higher than in calcareous screes. Examples of characteristic ferns are *Cryptogramma crispera*, *Dryopteris oreades* and *Dryopteris expansa*. The screes on warm slopes of the subalpine level of the Alps and the Pyrenees, usually composed largely of big stones or boulders, are occupied by communities of *Senecio leucophyllus*, *Taraxacum pyrenaicum*, *Galeopsis pyrenaica*, *Xatardia scabra*, *Armeria alpina*. In central Europe and the Carpathian's periphery screes are often dominated by *Achnatherum calamagrostis*, *Melica ciliata* and *Galeopsis ladanum*. Similar communities can also occur on secondary substrates, like in quarries, but they must not be treated as the habitat. Screes have a very special cold microclimate and are often inhabited by invertebrate glacial relict species.

Indicators of quality:

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

Characteristic species:

Flora, Vascular plants: *Achnatherum calamagrostis*, *Anarrhinum bellidifolium*, *Asplenium adiantum-nigrum* subsp. *onopteris*, *Biscutella flexuosa*, *Cryptogramma crispera*, *Conopodium bunioides*, *Digitalis purpurea*, *D. tjiapsi*, *Dryopteris affinis*, *D. expansa*, *D. oreades*, *D. tyrrhena*, *Epilobium collinum*, *Erysimum humile*, *Holcus setosus*, *Hylotelephium telephinum*, *Galeopsis ladanum*, *G. pyrenaica*, *Galeopsis segetum*, *G. tetrahit*, *Geranium robertianum*, *L. repens*, *L. saxatilis*, *Melica ciliata*, *Poa nemoralis*, *Reseda gredensis*, *Rumex suffruticosus*, *Santolina oblongifolia*, *Scrophularia schousboei*, *S. scorodonia*, *S. oxyrhyncha*, *Senecio leucophyllus*, *S. pyrenaicus*, *S. viscosus*, *Taraxacum pyrenaicum*, *Trisetum hispidum*, *Xatardia scabra*

Mosses: *Ceratodon purpureus*, *Rhacomitrium* spp.

Lichens: *Cladonia arbuscula*, *C. cariosa*, *C. conoicrocea*, *C. fimbriata*, *Stereocaulon incrustatum*, *S. paschale*, *Umbilicaria* spp.

Classification

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

EUNIS:

H2.5 Acid siliceous screes of warm exposures

EuroVegChecklist:

Galeopsis segetum Oberd. 1957

Galeopsis pyneraicae Rivas-Mart. 1977

Gymnogrammo-Scrophularion Rivas Goday 1964

Sesamoidion suffruticosae Ortiz et Pulgar 2000

Dryopteridion oreadis Rivas-Mart. 1977 corr. Rivas-Mart. et al. 1984

Annex 1:
8150 Medio-European upland siliceous screes

Emerald:
H2.5 Acid siliceous screes of warm exposures

MAES:
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

This habitat type is well represented across Europe.

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	75 Km ²	Decreasing	Stable
<i>Belgium</i>	Present	0.25 Km ²	Decreasing	Decreasing
<i>Bulgaria</i>	Present	unknown Km ²	Decreasing	Unknown
<i>Croatia</i>	Present	marginal Km ²	Unknown	Unknown
<i>Czech Republic</i>	Present	5 Km ²	Stable	Stable
<i>France</i>	France mainland: Present	75 Km ²	Stable	Stable
<i>Germany</i>	Present	10 Km ²	Decreasing	Decreasing
<i>Hungary</i>	Present	unknown Km ²	Unknown	Unknown
<i>Ireland</i>	Present	0.8 Km ²	Unknown	Unknown
<i>Italy</i>	Italy mainland: Present	unknown Km ²	Unknown	Unknown
<i>Poland</i>	Present	0.5 Km ²	Decreasing	Decreasing
<i>Portugal</i>	Portugal mainland: Present	20 Km ²	Stable	Unknown
<i>Romania</i>	Present	2 Km ²	Decreasing	Decreasing
<i>Slovakia</i>	Present	1 Km ²	Decreasing	Unknown
<i>Slovenia</i>	Present	0.1 Km ²	Stable	Stable
<i>Spain</i>	Spain mainland: Present	12 Km ²	Stable	Stable
<i>UK</i>	United Kingdom: Present	637 Km ²	Stable	Increasing

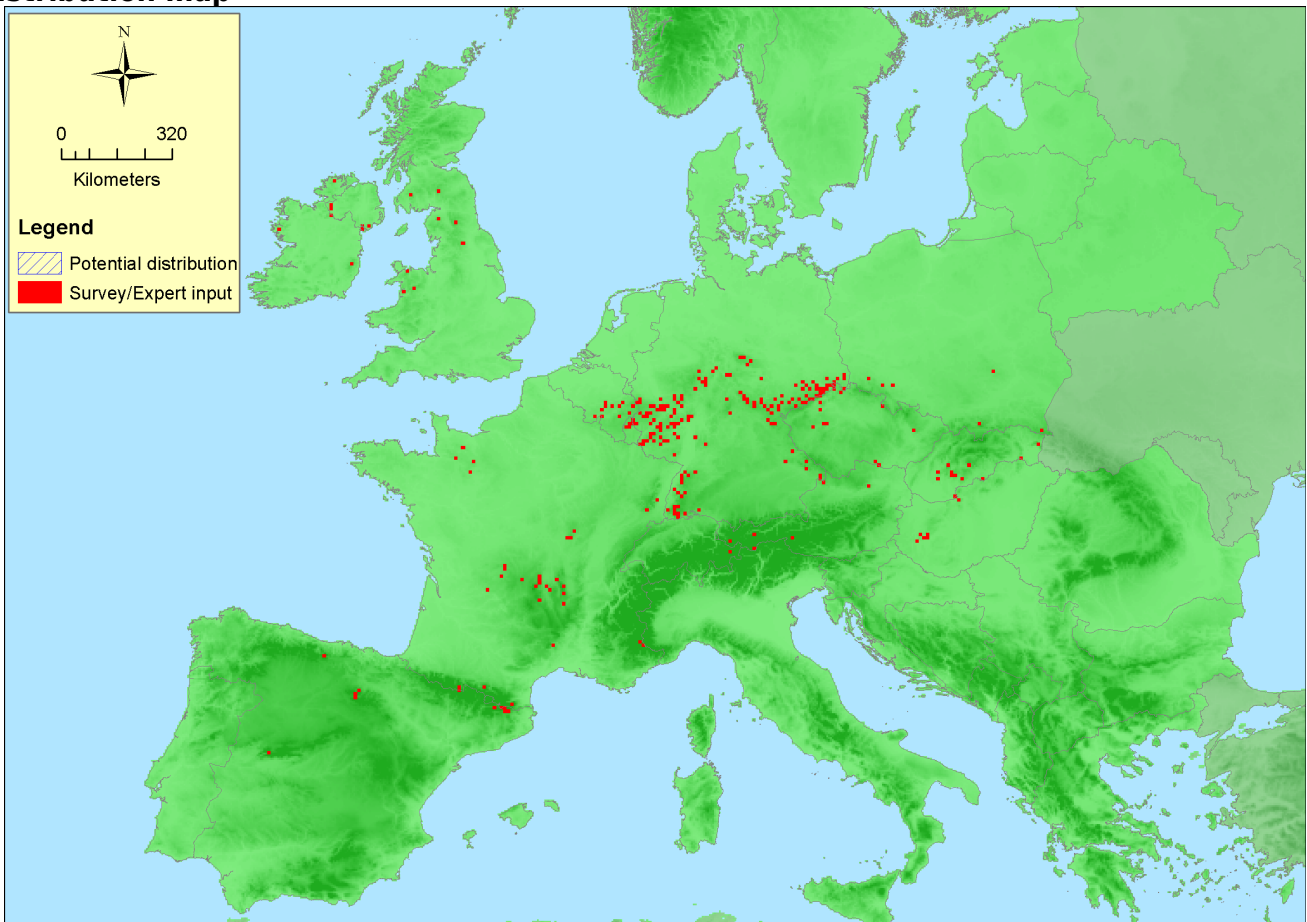
EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Bosnia and Herzegovina</i>	Present	5 Km ²	Stable	Stable

EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Former Yugoslavian Republic of Macedonia (FYROM)	Present	unknown Km ²	-	-
Switzerland	Present	150 Km ²	Decreasing	Unknown

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	>50000 Km ²	>50	835 Km ²	No significant missing data, data from the UK probably overestimated
EU 28+	>50000 Km ²	>50	985 Km ²	No significant missing data, data from the UK probably overestimated

Distribution map



The map may have data gaps through the whole range and in the Balkan particularly. Data sources: Art17, EVA.

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

95 %. The native biota (at least vascular plants, alliances) of this habitat type occur largely within the EU28. A small part is found in Ukraine as well as in non-EU Balkan countries.

Trends in quantity

The current trend is stable at the European scale, except for some countries showing a slightly decreasing trend (Bulgaria). The average decrease over the last 50 years in Europe has been slight (-5% EU28, -6 % EU28+); it has been caused by human activities, such as quarrying and infrastructure constructions (roads, tracks, urbanisation). This habitat type is far less common and faces more widespread pressures and threats than its high-mountain counterpart (H2.3 type). Ignoring the UK (overestimated, very large current area reported and stable recent trend), the average decrease would be around -10%. Decrease in quantity may also be caused to a small extent by natural processes, like scree stabilization and subsequent natural succession (encroachment). The historical trend is similar, except in Germany, where a -80% historical trend is reported due to natural succession. When reported, the future trend is stable or at worst slightly decreasing.

- 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

The range (EOO) is well above the 50,000 Km² 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 in small spots in the lowlands and low mountains, when habitat conditions are appropriate. It does have an intrinsically restricted area.

Trends in quality

A decrease in quality during the last 50 years has occurred rather locally (extent 26%) and has been limited on average (severity 17%). This reduced quality is mainly due to a loss of functionality of screes (reduced mobility), which is caused by natural succession and by nearby constructions. Natural succession is faster at lower elevation than up the mountains (cf. H2.3 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 the UK), also affects the quality. 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

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, or only locally relevant, are sheep grazing in Ireland and the UK and outdoor activities (creation of trails across screes). Natural succession is responsible for the encroachment of stabilized screes; 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

Usually there is no management need for this habitat to remain but leaving it undisturbed and undamaged. Where local glacial relics of highly endangered invertebrates are threatened by closing in with succession in small screes, management with cutting bushes/ trees can exceptionally be necessary. Natural succession should normally 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 specific regulation can be applied (e.g. no protected species or habitat, outside a protected area, outside a N2000 site).

List of conservation and management needs

Measures related to spatial planning

- Establish protected areas/sites
- Legal protection of habitats and species
- Manage landscape features

Conservation status

Annex 1:

8150: ALP XX, ATL XX, CON U1, MED FV, 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

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-5 %	unknown %	unknown %	unknown %
EU 28+	-6 %	unknown %	unknown %	unknown %

The values given above were calculated with the territorial data only, taking an average value of reduction

when ranges were provided, and downscaling the current area provided by the UK (200 km² instead of 660). The resulting values lead to the category Least Concern (LC).

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50000 Km ²	Unknown	Unknown	unknown	>50	Unknown	Unknown	unknown	unknown
EU 28+	> 50000 Km ²	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. Assessment of criteria under B lead to the category Least Concern.

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	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	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%

No value could be calculated, because there were too many missing data and there are also major inconsistencies among countries in current areas reported.

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	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	DD	DD	DD	LC	LC	LC	DD	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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