

H2.6b Western Mediterranean base-rich scree

Summary

This is calcareous and ultrabasic scree, constituted by boulders, rock debris and riverine gravel derived from sedimentary and metamorphic rocks, ultramafics and basic volcanics occurring through the western Mediterranean, from lowlands to the high mountains. Epilithic lichens and bryophytes may be very diverse, particularly in the mountains, where they are mostly found in crevices and other shady and humid microsites of immobile boulders. The vascular plant vegetation comprises hemicryptophytes and chamaephytes adapted to the mechanical disturbance caused by mobile scree, shortages in water supply and lack of fine-grained soil. The habitat becomes scarcer and more scattered to the foothills and lowlands and more prone to be affected by human disturbances, such as quarrying and infrastructure development but high mountain scree are usually well preserved and therefore in a very natural state. Future trends for such habitat are rather unpredictable, but most of the Mediterranean scree fall within natural reserves or protected areas. Public awareness and scientifically-based management of this habitat type are needed.

Synthesis

The habitat is assessed as Least Concern (LC) in view of its stable trend, since a reduction of less than 3% has occurred over the last 50 years. The quality of this habitat has decreased over the last 50 years, but it is not declining fast enough to qualify for a threatened category.

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, but it is a very diverse habitat, illustrated by the large amount of phytosociological alliances covered, and subhabitats with different floristic composition may be distinguished for further analysis.

Habitat Type

Code and name

H2.6b Western Mediterranean base-rich scree



Ptilostemon niveus, a characteristic species of scree vegetation, Madonie Mountains, Sicily (Photo: Gianpietro Giusso del Galdo).



Mountain scree in the Madonie Mountains of northern Sicily (Photo: Gianpietro Giusso del Galdo).

Habitat description

This is a calcareous and ultrabasic scree, constituted by boulders, rock debris and riverine gravel of the western Mediterranean, from lowlands through to the high mountains. It is composed by rock types that are sedimentary and metamorphic limestones and dolomites, further serpentinite and other ultramafic as well as silica-poor igneous volcanic rock such as basalt. Epilithic lichens and bryophytes may be very diverse, particularly in the mountains, where they are mostly found in crevices and other shady and humid microsites of immobile boulders. The vascular plant vegetation of western Mediterranean base-rich screes consists mainly of hemicryptophytes and chamaephytes adapted to the mechanical disturbance caused by mobile screes, shortages in water supply and lack of fine-grained soil. Many plants are disturbance-resilient and capable of regeneration even after being buried by moving stones. Prostrate stems, stolons, radicans, extensive root systems, storage tubers and rhizomes are common traits in the plants that are present in this habitat. Scree creeping, passive moving with mobile screes, and accumulation of scree through resilient tussocks and root stocks, thereby controlling erosion, are characteristic growth form functional strategies in Mediterranean screes. Species-rich genera of vascular plants are, among others, *Campanula*, *Iberis*, *Linaria* and *Scrophularia*. The species composition in the high mountains is particularly variable and includes many regional endemic taxa. Several phytosociological alliances restricted to subalpine and alpine levels of mountain ranges in the Iberian and Apennine Peninsulas or to the larger islands have been described. They reflect phytogeographical patterns of isolation and centers of speciation. Lowland scree and gravel vegetation is in comparison more uniform in the western Mediterranean. Most plant communities belong to the extremely variable class of *Thlaspietea rotundifolii*. Local habitat variation reflects differences in slope and substrate mobility, rock size and mineral composition, microclimate, aspect and solar radiation, humidity and precipitation.

Mediterranean base-rich screes cover extensive areas in the high mountains. In the lowlands and foothills, by contrast, they may be rare. Gravel banks occur along permanent or temporary streams. Western Mediterranean base-rich scree habitats occur from the Iberian Peninsula through southern France to the Apennines (Italy), on the Balearic Islands, Corsica, Sardinia, Sicily, and on many of the smaller islands and archipelagos of the Tyrrhenian Sea, such as the Tuscan, the Aegadian and the Aeolian, and further in the Mediterranean domain of northwest Africa (Morocco, Algeria and Tunisia).

Indicators of quality:

The dynamics of scree and gravel habitats depend on the natural constant supply of rock debris and riverine materials. When there is no supply from rock source areas above, the habitat and its vegetation will be subject to succession and gradually change in character towards grasslands, shrublands or woodlands. High-mountain screes in the western Mediterranean, underlying natural dynamics, are normally little or not affected by human impact. In contrast, riverine gravel fills in the lowlands, with their rivers, have commonly been subjected to quarrying, hydrological control or other drastic changes of the river regime. Human-made screes such as mining heaps may provide important and valuable secondary habitats, especially after long periods of abandonment. They should be considered and preserved when their quality is good, especially when primary scree habitats are absent in a wider area. The habitat quality must be assessed by taking into account the regional species pool. Scree and boulder specialists, with many endemics and relict plants among them, are useful indicators of good habitat quality.

The following characteristics may be used as indicators of favorable habitat quality:

- Occurrence of rare and phyto-geographically significant plants
- Presence of sizable areas of scree and gravel with adequate and ongoing supply of rock material through cliff, stream and river dynamics, and with local differences in slope, moisture, aspect, substrate mobility, and grain size
- Contact with natural habitats such as cliffs, high-mountain pioneer grasslands and plant cushion vegetation, or riverine scrubs and woodlands
- Absence of gravel quarrying and mining
- Absence of hydrological and traffic constructions affecting the river regime

Characteristic species:

Vascular plants: *Achillea barrelieri* subsp. *mucronulata*, *Achnatherum calamagrostis*, *Adonis distorta*, *Allium palentinum*, *Alyssum gadorense*, *Androsace ciliata*, *Andryala ragusina*, *Aquilegia pyrenaica* (subsp. *cazorlensis*, subsp. *discolor*), *Arabis alpina* subsp. *alpina*, *Arenaria bertolonii*, *Arrhenatherum* (*album*, *elatius* subsp. *sardoum*), *Biscutella valentina*, *Bunium* (*alpinum* subsp. *corydalinum*, *alpinum* subsp. *petraeum*, *macuca*), *Bupleurum ranunculoides* subsp. *ranunculoides*, *Calamagrostis pseudophragmites*, *Campanula* (*arvatica*, *cochleariifolia*, *jaubertiana*), *Carduus carlinoides*, *Centaurea* (*ceratophylla*, *delucae*, *prolongoi*), *Centranthus* (*Iecoqii*, *ruber*), *Cerastium* (*soleirolii*, *thomasii*, *tomentosum*), *Cirsium acaulon* subsp. *gregarium*, *Cochlearia aragonensis* subsp. *navarrana*, *Coincya monensis* subsp. *cheiranthos*, *Conopodium thalictrifolium*, *Crambe filiformis*, *Crepis* (*granatensis*, *oporinoides*, *pygmaea*), *Cystopteris montana*, *Doronicum grandiflorum* subsp. *braunblanquetii*, *Dryopteris* (*oreades*, *submontana*), *Echium albicans*, *Erucastrum nasturtiifolium* subsp. *sudrei*, *Eryngium glaciale*, *Erysimum* (*duriaei*, *gorbeanum*), *Euphorbia nevadensis* (subsp. *aragonensis*, subsp. *bolosii*), *Festuca glacialis*, *Galeopsis angustifolia*, *Galium* (*cespitosum*, *cometerhizon*, *corsicum*, *pyrenaicum*, *rosellum*), *Gouffeia arenarioides*, *Gymnocarpium robertianum*, *Hypochaeris robertia*, *Iberis* (*carnosa* subsp. *granatensis*, *carnosa* subsp. *hegelmaieri*, *carnosa* subsp. *nafarroana*, *ciliata*, *spatulata*), *Jurinea fontqueri*, *Lactuca* (*singularis*, *tenerrima*, *viminea* subsp. *chondrilliflora*), *Laserpitium gallicum*, *Leontodon hyoseroides*, *Leucanthemum* (*coronopifolium* subsp. *ceratophylloides*, *laciniatum*), *Leucopoa dimorpha*, *Linaria* (*aeruginea*, *badalii*, *faucicola*, *filicaulis*, *glacialis*, *propinqua*, *purpurea*, *supina*), *Minuartia cerastiifolia*, *Myosotis alpestris* var. *ambigens*, *Nepeta* (*amethystina* subsp. *amethystina*, *nepetella* subsp. *aragonensis*), *Noccaea stilosa*, *Papaver* (*ernesti-mayeri*,

lapeyrousianum), *Plantago monosperma*, *Platycapnos saxicola*, *Poa balbisii*, *Polystichum lonchitis*, *Pritzelago alpina* (subsp. *auerswaldii*, subsp. *brevicaulis*), *Ptilostemon niveus*, *Ptychotis saxifraga*, *Ranunculus* (*alpestris* ssp. *leroyi*, *parnassifolius* ssp. *Favargerii*), *Reseda valentina*, *Rumex scutatus*, *Salix breviserrata*, *Saxifraga* (*oppositifolia* subsp. *murithiana*, *oppositifolia* subsp. *paradoxa*, *oppositifolia* subsp. *speciosa*, *pedemontana* subsp. *cervicornis*, *praetermissa*), *Scrophularia canina* (subsp. *canina*, subsp. *crithmifolia*), *Scrophularia sciophila*, *Secale strictum* subsp. *strictum*, *Sedum* (*annuum brevifolium*, *monregalense*), *Senecio pyrenaicus*, *Silene* (*boryi*, *inaperta* subsp. *inaperta*, *secundiflora*), *Spergula viscosa*, *Taraxacum* sect. *Alpina*, *Tolpis staticifolia*, *Trisetum distichophyllum*, *Verbascum conocarpum*, *Veronica* (*alpina*, *mampodrensis*, *nummularia*) *Vicia glauca* subsp. *giennensis*, *Vincetoxicum hirsutiflorum* subsp. *lusitanicum*, *Viola* (*crassiuscula*, *lapeyrousiana*, *magellensis*).

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

EuroVeg Checklist:

Andryalion ragusinae Rivas Goday et Esteve 1972

Arrhenatherion sardoii Gamisans 1989

Calamagrostion pseudophragmitis Rivas-Mart. et al. 1984

Euphorbion rigidae S. Brullo et Spampinato 1990

Festucion dimorphae Bonin 1978

Glaucion flavi Br.-Bl. ex Tchou 1948

Iberido aperta-*Linarion propinqua* Penas et al. ex Díaz González et Fernández Prieto 1994

Linarion purpureae S. Brullo 1984

Petasition paradoxii Zollitsch ex Lippert 1966

Pimpinello tragi-*Gouffeion provincialis* Br.-Bl. in Br.-Bl. et al. 1952

Platycapno saxicolae-*Iberidion granatensis* Rivas Goday et Rivas-Mart. 1963

Ptilostemo casabonae-*Euphorbion cupanii* Angiolini et al. 2005

Saxifragion praetermissae Rivas-Mart. 1977

Scrophularion sciophilae O. de Bolòs 1957

Thlaspion stylosi Feoli-Chiapella et Feoli 1977

Annex 1:

8130 Western Mediterranean and thermophilous screes

Emerald:

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

MAES-2:

Sparsely or unvegetated land

IUCN:

6. Rocky areas

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

Yes

Regions

Mediterranean

Justification

The habitat represents an outstanding example for the Mediterranean biogeographic region due to the occurrence of a pool of species, mostly endemic, characterized by a high ecological specialization and a remarkable phytogeographical value.

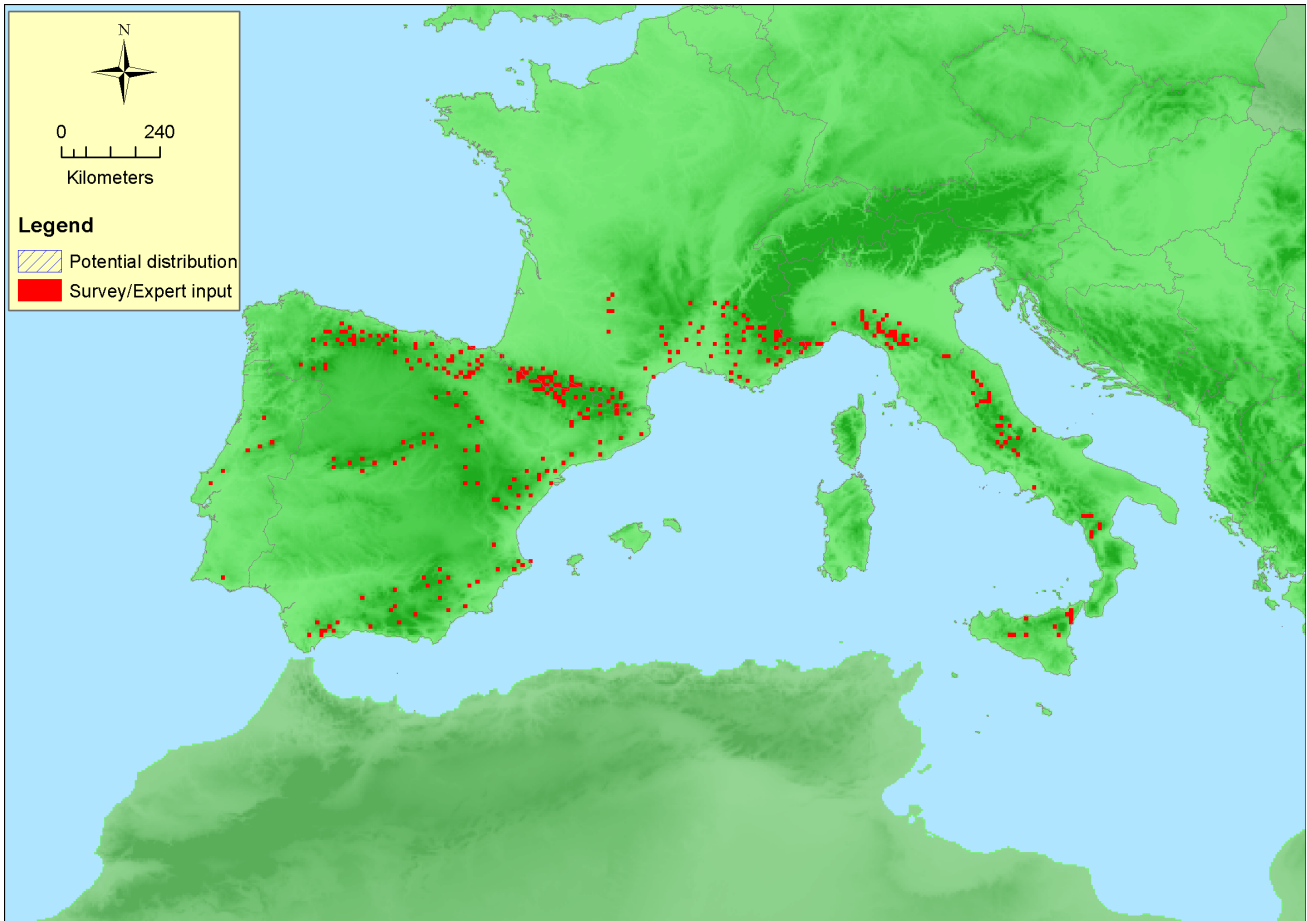
Geographic occurrence and trends

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>France</i>	Corsica: Present France mainland: Present	131 Km ²	Decreasing	Decreasing
<i>Italy</i>	Italy mainland: Present Sardinia: Present Sicily: Present	144 Km ²	Stable	Decreasing
<i>Portugal</i>	Portugal mainland: Present	5,4 Km ²	Increasing	Unknown
<i>Spain</i>	Balearic Islands: Present Spain mainland: Present	72 Km ²	Stable	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>	1548150 Km ²	351	352 Km ²	
<i>EU 28+</i>	1548150 Km ²	351	352 Km ²	

Distribution map



The map is relatively complete for the EU, but has data gaps in the Western Mediterranean islands. Data sources: Art17.

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

90% of the current distribution of the habitat type lies within the EU 28.

Trends in quantity

Considering the collected territorial information, an overall habitat reduction of less than 3% over the last 50 years is estimated. Thus, it can be considered stable. Although no specific estimation is provided for the future trends, considering its current situation, it can be realistically projected to be stable.

- 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

A very small decline has occurred over the last 50 years (i.e. 2.2 km²).

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

Yes

Justification

This habitat cannot occur everywhere, since its establishment requires very specific environmental conditions. Thus, the total area occupied is naturally very limited.

Trends in quality

During the last 50 years, an average reduction in quality (21%) slightly affected ca. 25% of the habitat

area. Lower stands seem to be significantly more sensitive to human-induced disturbances, while high mountains stands are intrinsically more protected from these. Historical and future trends cannot be estimated due to the lack of information.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

Pressures and threats

Mining and quarrying represent the most concerning human-induced threat for this habitat, while sport and leisure activities seem to have less relevance. Scree stabilization occurred as a consequence of a road construction, which may lead to a replacement of the scree vegetation with other types, such as grasslands or scrublands.

List of pressures and threats

Mining, extraction of materials and energy production

Mining and quarrying

Transportation and service corridors

Roads, paths and railroads

Paths, tracks, cycling tracks

Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities

Mountaineering, rock climbing, speleology

Skiing, off-piste

Conservation and management

The best management practice for this highly natural habitat is to leave it simply untouched, thus avoiding any human interference with its natural processes. Natural succession, if any, cannot be seen as a threat. An increase on public awareness about the biological relevance of these apparently inhospitable and sterile environments is recommended.

List of conservation and management needs

Measures related to spatial planning

Establish protected areas/sites

Manage landscape features

Measures related to special resource use

Regulating/Management exploitation of natural resources on land

Conservation status

Annex I:

8130: MED XX

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

Recovery of this habitat is possible provided that the natural geo-morphological processes are not

hampered and that undamaged sites occur nearby. There is no further information available on this issue.

Effort required

10 years	200+ years
Unknown	Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-2.2 %	Unknown %	Unknown %	Unknown %
EU 28+	-2.2 %	Unknown %	Unknown %	Unknown %

A decline of 2.2% has been calculated over the past 50 years, based on the provided territorial data. There is no information on future and historic declines. Therefore, the habitat type is assessed as Least Concern under Criterion A.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50,000 Km ²	Unknown	Unknown	Unknown	>50	Unknown	Unknown	Unknown	Unknown
EU 28+	>50,000 Km ²	Unknown	Unknown	Unknown	>50	Unknown	Unknown	Unknown	Unknown

The EOO and AOO values largely exceed the thresholds for a threatened category. Therefore, the habitat type is assessed as Least Concern under Criterion B. In addition, it is unknown whether there has been a continuing decline in spatial extent, abiotic and biotic quality; whether there is a threatening process that is likely to cause declines in the next 20 years, and whether the habitat exists at very few locations.

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	25 %	21 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	25 %	21 %	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%

A reduction in quality has been experienced in the last 50 years, affecting 25% of the extent with a 21% severity, as calculated by the territorial data information provided. Therefore, the habitat type is assessed as Least Concern under Criterion C/D.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

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

There is no information available to estimate the risk of collapse under Criterion E, and therefore it is assessed as Data Deficient.

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

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