

H2.6c Eastern Mediterranean base-rich scree

Summary

This habitat comprises calcareous and ultrabasic screes, constituted by talus, boulder fields, glacier forefields, rock debris and riverine gravel banks, from the lowlands upwards to subnival levels in the eastern Mediterranean. Apart from epilithic bryophytes and lichens on rock outcrops and stable boulders, the vegetation consists mainly of specialist vascular plants adapted to the mobility of scree materials, the scarcity of fine-grained soil, mechanical disturbance, shortage of water and other physiological stresses. Towards the foothills and lowlands the habitat is rarer and more scattered but more prone to be affected by human disturbances, especially in terms of species composition. However, high mountain screes are usually well preserved, most within protected areas, and therefore in a very natural state though infrastructure development and quarrying may threaten very locally. Public awareness and scientifically-based management of this habitat type are needed.

Synthesis

This habitat is assessed as Least Concern in view of its stable trend in quantity, as there have been no declines in the last 50 years. There is no information available to calculate the past, historical or future trends in quality, but it is assumed to be stable. The calculated distribution (Area of Occupancy) is relatively small, but it is likely that it is underestimated due to data gaps.

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 assessment.

Habitat Type

Code and name

H2.6c Eastern Mediterranean base-rich scree



Mountain scree near Psiloriti, Central Crete (Photo: Gianpietro Giusso del Galdo).



Cicer incisum is a characteristic species of the high-mountain scree vegetation at Psiloriti, Central Crete (Photo: Gianpietro Giusso del Galdo).

Habitat description

This is a calcareous and ultrabasic scree, constituted by talus, boulder fields, glacier forefields, rock debris and riverine gravel banks, from lowlands upwards to subnival levels in the eastern Mediterranean. Apart from epilithic bryophytes and lichens on rock outcrops and stable boulders, the vegetation consists mainly of specialist vascular plants adapted to the mobility of scree materials, the scarcity of fine-grained soil, mechanical disturbance, shortage of water and other physiological stresses. Most plants show storage organs and considerable regeneration capacity of roots and shoots. Characteristic plant adaptive syndromes include prostrate stems, stolons, tubers, rhizomes, and radicants. Clonal reproduction is common among them. The most common plant life forms in eastern Mediterranean screes are hemicryptophytes, some of which may turn to being facultative rhizome geophytes, and chamaephytes. In contrast to temperate high-mountain screes, bulbous geophytes may play a prominent role in East Mediterranean screes. Characteristic plant growth form strategies are scree creeping, scree moving (passively), and scree accumulating. Characteristic plant genera in eastern Mediterranean screes, each with several species represented are the following: *Aethionema*, *Alyssum*, *Euphorbia*, *Heldreichia*, *Nepeta*, *Ranunculus*, *Ricotia*, *Scrophularia*, *Silene* and *Viola*.

While the plant composition in lowland screes consists mostly of widespread plant generalists and ruderal specialists but only few narrow-range endemics, there is considerable regional variation in the high mountains, as reflected by the high number of phytosociological alliances. Some alliances are restricted to oro-mediterranean levels of single mountain ranges such as Pindos or the Taurus Mountains. Characteristic plants are often narrow endemics. Most plant communities belong to three geographically vicariant vegetation classes, i.e. *Thlaspietea rotundifolii* in the northwest (and further in nemoral Europe), *Drypidetea spinosae* in the southwest (Greece and South Aegean), and *Heldreichietea* in the east (Anatolia to Israel). Local habitat variation is the result of mobility and stability of the scree and gravel, to the supply of debris by rivers or through downslope transport by gravity, to substrate grain size and chemistry.

The habitat type, as defined here, occurs from the eastern Adriatic region, (i.e. Dalmatia) and the southern part of the Dinarides, through Albania, the Balkans, western and south-central mainland Greece, the Ionian Islands, the Peloponnese and Aegean Greece, western and southern Turkey (Anatolia) and further into Syria, Lebanon, and Israel.

Indicators of quality:

Scree habitats depend on the natural, adequate and constant supply of rock debris and gravel by rivers, cliff weathering or landslides. While high-mountain screes in the eastern Mediterranean are not normally affected by human impact, talus fans and riverine gravel fills in the lowlands have often been cut off from fresh material supplies by hydrological constructions and through transforming the river regime. Habitat quality must be assessed in view of the regional variation in species composition, using endemic scree specialists as indicators. The following characteristics may be used as indicators of favorable habitat quality:

- Occurrence of rare and phytogeographically significant plants
- Presence of sizable areas of scree and gravel with adequate material supply, and with differences in slope, moisture, mobility of materials, and grain size
- Contact with natural habitats such as cliffs, high-mountain thorny cushion vegetation or riverine scrub and woodland
- Absence of gravel quarrying and mining
- Absence of hydrological and traffic constructions influencing the river regime

Characteristic species:□

Vascular plants: *Acantholimon androsaceum*, *Achillea* (*abrotanoides*, *ambrosiaca*), *Achnatherum calamagrostis*, *Aethionema* (*cordatum*, *oppositifolium*, *saxatile*, *speciosum*, *stylosum*), *Ajuga chamaepitys* subsp. *glareosa*, *Allium tauricola*, *Alopecurus textilis*, *Alyssum* (*akamasicum*, *argyrophyllum*, *bertolonii*, *chondrogynum*, *cypricum*, *fragillimum*, *handelii*, *scardicum*, *sphacioticum*, *troodi*), *Androsace* (*multiscapa*, *villosa*), *Anthemis plutonia*, *Anthriscus* (*kotschyi*, *sylvestris* subsp. *fumarioides*), *Arabis alpina* (subsp. *brevifolia*, subsp. *caucasica*), *Arenaria* (*balansae*, *conferta* subsp. *conferta*, *conferta* subsp. *serpentini*, *kotschyana* subsp. *kotschyana*), *Asperula* (*idaea*, *muscosa*, *stricta* subsp. *grandiflora*), *Astragalus* (*haussknechtii*, *oxytropifolius*, *pelliger*), *Aurinaria rupestris* subsp. *cyclocarpa*, *Bornmuellera baldaccii* (subsp. *baldaccii*, subsp. *markgrafii*, subsp. *rechingeri*), *Bubon albanicum*, *Bunium microcarpum*, *Campanula hawkinsiana*, *Cardamine* (*carnosa*, *glauca*), *Centaurea* (*cyprensis*, *idaea*), *Centranthus calcitrapae*, *Cerastium* (*cerastoides*, *gnaphalodes*), *Cicer incisum*, *Clinopodium troodi*, *Corydalis* (*blanda* subsp. *parnassica*, *rutifolia*, *solida* subsp. *incisa*, *uniflora*), *Crepis* (*frigida*, *sibthorpiana*, *willdenowii*), *Cyanus bourgaei*, *Cyclotrichium organifolium*, *Cynoglossum troodii*, *Dianthus* (*petraeus*, *sphacioticus*, *strictus* subsp. *strictus*, *strictus* subsp. *multipunctatus*, *strictus* subsp. *troodi*), *Draba cretica*, *Drypis spinosa* (subsp. *spinosa*, subsp. *jacquiniana*), *Elytrigia* (*lazica* subsp. *divaricata*, *tauri*), *Euphorbia* (*cassia* subsp. *cassia*, *cassia* subsp. *rigoi*, *deflexa*, *herniariifolia*, *pestalozzae*), *Festuca* (*adanensis*, *anatolica*), *Fritillaria crassifolia* subsp. *crassifolia*, *Fumana paphlagonica* subsp. *alpina*, *Galium* (*cilicicum*, *corrudifolium*, *incanum* subsp. *incanum*, *incanum* subsp. *centrale*, *incanum* subsp. *creticum*, *incanum* subsp. *elatius*), *Geocaryum parnassicum*, *Geranium* (*macrorrhizum*, *purpureum*, *subcaulescens*), *Grafia golaka*, *Hedysarum* (*cyprium*, *erythroleucum*), *Heldreichia* (*bourgaei*, *bupleurifolia*, *rotundifolia*), *Helianthemum hymettium*, *Heracleum* (*humile*, *sphondylium* subsp. *orsinii*), *Hyacinthella millingenii*, *Hypericum* (*confertum* subsp. *stenobotrys*, *crenulatum*), *Iberis simplex*, *Jurinea moschus* subsp. *moschus*, *Lactuca* (*glareosa*, *intricata*), *Lamium* (*cymbalariifolium*, *eriocephalum*, *garganicum* subsp. *striatum*), *Laserpitium petrophilum*, *Leucopoa spectabilis* subsp. *affinis*, *Linaria* (*corifolia*, *microsepala*), *Lindbergella sintenisii*, *Lomelosia* (*crenata* subsp. *crenata*, *sphaciotica* subsp. *sphaciotica*), *Malcolmia orsiniana* subsp. *angulifolia*, *Mattiastrum lithospermifolium*, *Melica ciliata* subsp. *magnolii*, *Minuartia* (*attica*, *juniperina*, *pichleri*, *rimarum*), *Myosotis suaveolens*, *Nepeta* (*cilicica*, *concolor*, *sphaciotica*), *Noccaea* (*sintenisii*, *zaffranii*), *Onosma troodi*, *Ormosolenia alpina* (= *Peucedanum alpinum*), *Oxyria digyna*, *Peltaria alliacea*, *Phagnalon pygmaeum*, *Poa cenisia*, *Podospermum radicosum*, *Pseudofumaria alba* subsp. *acaulis*, *Ptilostemon afer*, *Ranunculus* (*brevifolius*, *cadmicus*, *cyprius*, *radinotrichus*), *Ricotia* (*cretica*, *davisiana*, *varians*), *Rumex scutatus*, *Salvia veneris*, *Scrophularia* (*canina*, *depauperata*, *myriophylla*, *rimarum*), *Scutellaria* (*hirta*, *orientalis* subsp. *orientalis*, *orientalis* subsp. *pinnatifida*), *Senecio* (*fruticulosus*, *squalidus* subsp. *rupestris*, *thapsoides*), *Sesleria* (*phleoides*, *robusta*), *Silene* (*caesia*, *fabaria* subsp. *domokina*, *fabarioides*, *haussknechtii*, *multicaulis* subsp. *multicaulis*, *nuncupanda*, *pentelica*, *supina* subsp. *pruinosa*, *variegata*, *vulgaris* subsp. *prostrata*, *vulgaris* subsp. *vourinensis*), *Thamnosciadium junceum*, *Theligonum cynocrambe*, *Thymus* (*integer*, *leucotrichus*), *Valantia aprica*, *Valeriana bertisceae*, *Vavilovia formosa*, *Veronica* (*caespitosa*, *cuneifolia*, *tauricola*, *thessalica*), *Vicia* (*alpestris* subsp. *hypoleuca*, *canescens* subsp. *gregaria*), *Viola* (*albanica*, *calcarata* subsp. *zoysii*, *crassifolia*, *dukadjinica*, *fragrans*, *striis-notata*).

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:

Alyso sphaciotici-Valantion apricae Bergmeier 2002

Campanulion hawkinsianae Quézel 1967

Glaucion flavi Br.-Bl. ex Tchou 1948

Jurinellion moschus Parolly 1995

Peltarion alliaceae Horvatić in Domac 1957

Scrophularion depauperatae Parolly 1995

Scrophularion myriophyllae Parolly 1995

Scrophularion rimarum Parolly 1995

Silenion caesia Quézel 1964

Silenion marginatae Lakušić 1968

Annex 1:

8140 Eastern Mediterranean screes

62B0* Serpentinophilous grasslands of Cyprus

The Annex 1 Habitat 62B0* includes, but not exclusively, scree formations, hence it is part of H2.6c.

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

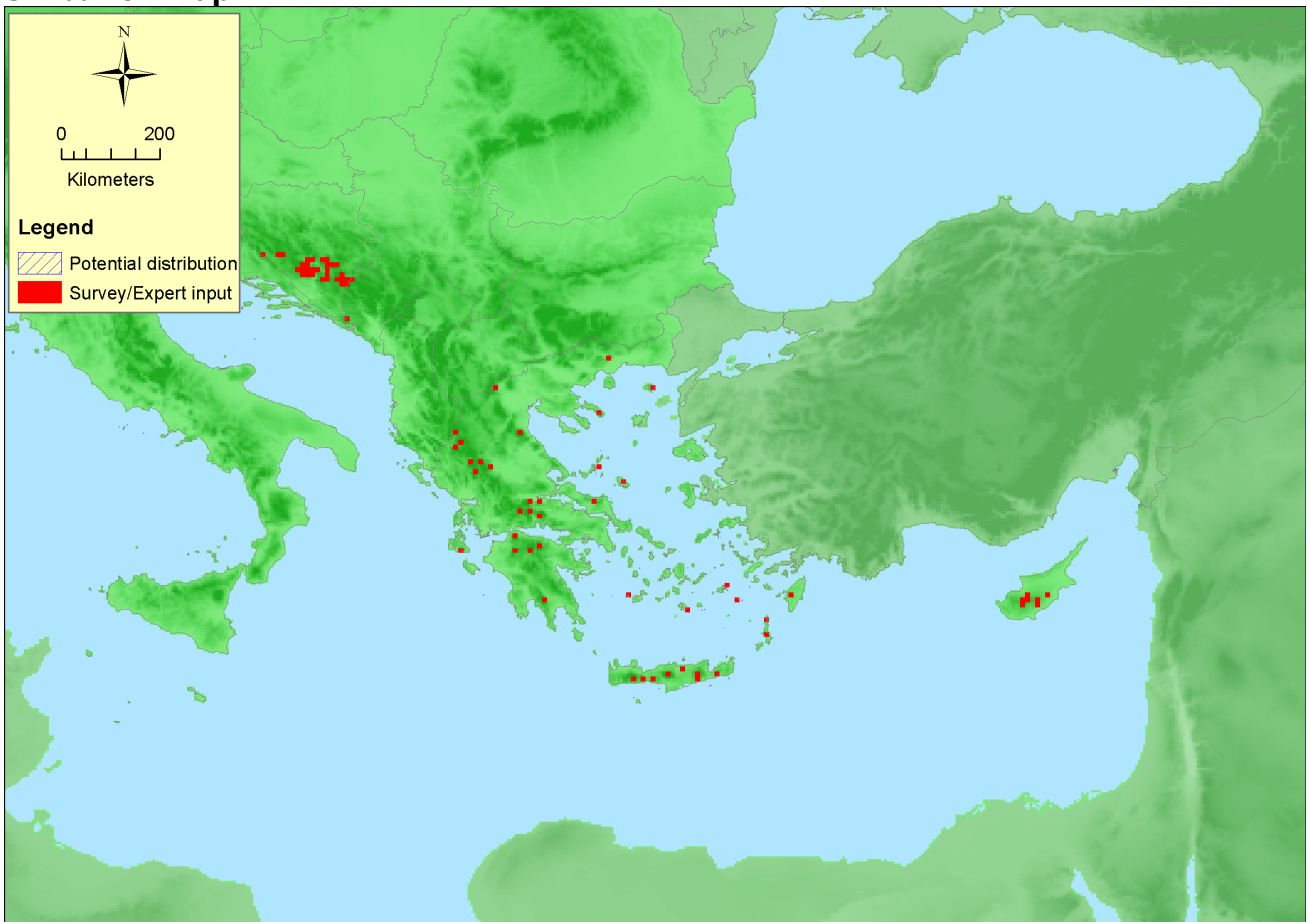
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Croatia</i>	Present	50 Km ²	Stable	Stable
<i>Cyprus</i>	Present	Unknown Km ²	Unknown	Unknown
<i>Greece</i>	Crete: Present East Aegean: Present Greece (mainland and other islands): Present	126 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)
<i>Albania</i>	Present	Unknown Km ²	Unknown	Unknown
<i>Bosnia and Herzegovina</i>	Present	10 Km ²	Stable	Stable
<i>Former Yugoslavian Republic of Macedonia (FYROM)</i>	Present	Unknown Km ²	Unknown	Unknown
<i>Montenegro</i>	Uncertain	Unknown Km ²	Unknown	Unknown
<i>Serbia</i>	Uncertain	Unknown Km ²	Unknown	Unknown

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>	465600 Km ²	48	176 Km ²	
<i>EU 28+</i>	603900 Km ²	80	186 Km ²	

Distribution map



The map is incomplete for Croatia, Montenegro and Albania. Data sources: Art17, NAT.

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

More than 80% of the current distribution of the habitat type lies within the EU 28.

Trends in quantity

Based on the available data, no quantitative reduction occurred over the last 50 years, and thus it is considered to be stable. There is no information available to project a trend for the future.

- 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 decline occurred over the last 50 years.

- 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. Therefore, the total area occupied by this habitat type is naturally very limited.

Trends in quality

While information on the quality of this habitat is scarce and incomplete, this habitat type seems to have a stable overall trend.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

Pressures and threats

Although there is no specific published information on the threats to this habitat, it can be inferred that mining and quarrying represent the most concerning human-induced threat for this habitat, while sport and leisure infrastructures seem to have less relevance. For instance, scree stabilization happened as a consequence of a road construction, which may lead to the 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

Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities

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. The habitat is present in several protected areas throughout its range. 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

Conservation status

Annex I:

62B0: MED FV

8140: MED FV

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

Recovery of this habitat is always 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	0.1 %	Unknown %	Unknown %	Unknown %
EU 28+	0.1 %	Unknown %	Unknown %	Unknown %

There has been no reduction in quantity 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

EOO values are large, but the AOO values only slightly exceed the thresholds for a threatened category (the value of 48 for the EU is an underestimation). However, it is unknown whether there has been a continuing decline in abiotic and biotic quality or whether there is a threatening process that is likely to cause declines in the next 20 years. Therefore, the habitat type is assessed as Data Deficient for criterion B1, and Least Concern under Criterion B2. The number of location is likely to be much higher than the threshold for B3, and this criterion is therefore Least Concern (LC).

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%

There is no information on past, historical and future reductions in quality, and thus the habitat is assessed as Data Deficient under Criteria C, D and 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	DD	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	DD	DD	DD	LC	DD	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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Contributors

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References

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