

B3.4b Mediterranean and Black Sea soft sea cliff

Summary

Coastal soft cliffs around the Mediterranean and Black Seas that consist of readily-eroded clays, shales and sands have usually gently sloping and often unstable surfaces with a mixture of open soils, pioneer vegetation and scrub and flushes influenced by percolating waters. This habitat is poorly known and there is little information on its ecological and floristic features or status. Tourist and industrial development threaten the habitat and allow the invasion alien and non-typical species. The most important conservation measure necessary is strict protection of the coastal shores, in order to maintain their natural conditions. Artificial restoration of this habitat is impossible.

Synthesis

This habitat is poorly known, with for example incomplete data on distribution, resulting in unreliable values for area of occupancy (AOO) and extent of occurrence (EOO). The available quantitative data on trends in quality and quantity come from only one Mediterranean country (Portugal) and one Black Sea country (Romania). The available data indicates an assessment of Least Concern, but given the lack of data from several countries with possibly large area (e.g. France, Spain and Italy), this habitat is assessed as Data Deficient.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Data Deficient	-	Data Deficient	-

Sub-habitat types that may require further examination

No sub-habitats have been distinguished for further analysis.

Habitat Type

Code and name

B3.4b Mediterranean and Black Sea soft sea cliff



Soft coastal cliffs on Cape Emine, Burgas Region, Bulgaria (Photo: Rossen Tzonev).



Calcareous soft sea cliffs in the north of the Greek island of Corfu (Photo: John Janssen).

Habitat description

This habitat is formed by coastal soft cliffs and rocks (clays, friable sands, shales and glacial deposits) that

are poorly resistant to the natural processes of erosion on the coasts of the Mediterranean and Black Sea, and in the southern Atlantic parts of Europe (northwards up to Porto, Portugal). These cliffs are subject to frequent slumps and land slips caused by erosion (e.g. waves, rain, winter storms, and groundwater percolating through the cliffs). The soft-sea cliffs frequently form borders with hard cliffs, giving rise to more complex habitats. On most soft cliff sites there are a range of micro-habitats formed by the fracture water streaming down the rocks, plus mosaics from open rocks and small patches of grassland and shrubs. In comparison to many coastal cliffs formed by granite, limestone and chalk, soft lithologies often form low, shallow, sloping cliffs which are more easily colonized by vegetation. However, the soft cliffs also erode much quicker than hard cliffs and vegetation is therefore restricted to pioneer stages in many places. Soft cliffs may support scrub similar to that on dunes with species like *Hippophae rhamnoides*, *Juniperus* spp. and *Crataegus monogyna*. On the western Black Sea coast many steppe and halophytic species, like *Camphorosma monspeliaca*, *Matthiola odoratissima* and *Peganum harmala*, may inhabit the chalk deposits over the sea. The single Black Sea locality of *Hippophae rhamnoides* outside the Danube Delta also occurs on soft sea-cliffs. Soft-sea cliffs are threatened by some natural causes such as slumping and landslips, which are sometimes of a cyclical nature. They can also be damaged through insensitive cliff top management and artificial drainage. Other threats include tourist development of the coastal area, pollution and nitrification of the coastal cliffs, and increase of non-typical ruderal species.

Indicators of quality:

- High species and micro-habitat richness
- Presence of rare and/or threatened species
- Low number of nitrophilous ruderals and alien species
- Absence of human infrastructure on the top of coastal cliffs

Characteristic species:

Flora: *Camphorosma monspeliaca*, *Crataegus monogyna*, *Hippophae rhamnoides*, *Juniperus* spp., *Matthiola odoratissima*, *Peganum harmala*

Fauna: *Puffinus yelkouan*, *Oenanthe pleshanka*

Classification

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

EUNIS:

B3.4 Soft sea-cliffs

EuroVegCehcklist:

unknown

Annex I:

1240 Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp.

Emerald:

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MAES:

Coastal

IUCN:

13.1. Sea Cliffs and Rocky Offshore Islands

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

No

Justification

The habitat is not an outstanding example for Black Sea and Mediterranean Biogeographic regions as the habitat is very rare throughout its range and does not contain any endemic plant species, as far as is known.

Geographic occurrence and trends

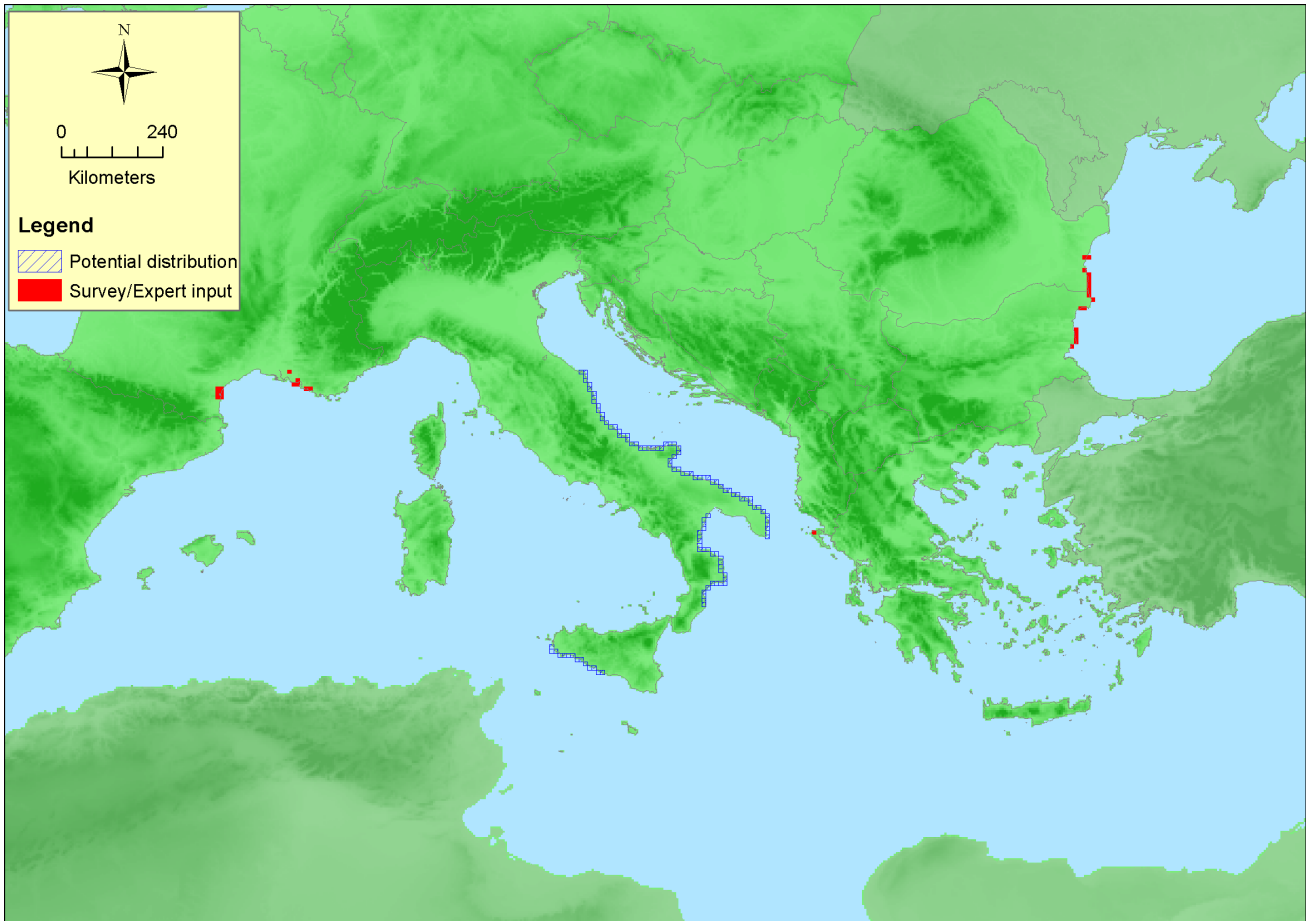
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Bulgaria</i>	Present	Unknown Km ²	Unknown	Unknown
<i>France</i>	Corsica: Present France mainland: Present	Unknown Km ²	Unknown	Decreasing
<i>Greece</i>	Crete: Uncertain East Aegean: Uncertain Greece (mainland and other islands): Present	Unknown Km ²	Unknown	Unknown
<i>Italy</i>	Italy mainland: Present Sardinia: Present Sicily: Present	Unknown Km ²	Unknown	Unknown
<i>Portugal</i>	Portugal mainland: Present	0.8 Km ²	Decreasing	Decreasing
<i>Romania</i>	Present	1.5 Km ²	Decreasing	Decreasing
<i>Spain</i>	Spain mainland: Present	Unknown Km ²	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)
<i>Albania</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>	1017450 Km ²	31	Unknown Km ²	EOO incl. potential/AOO excl. potential
<i>EU 28+</i>	1017450 Km ²	31	Unknown Km ²	EOO incl. potential/AOO excl. potential

Distribution map



Map with many data gaps. Data sources: Exp, Art17.

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

Probably more than 50% of the habitat type lies within the EU28. However this is a rough guess as data is lacking from several countries, and also the distribution outside Europe is poorly known.

Trends in quantity

Based on the available data from Portugal and Romania, there has been a 41% decline in the quantity of this habitat in the last 40 to 60 years. However, the habitat is poorly known in all countries where it occurs, and the trends are also not well known. In Romania, there has been a decline of around 20% as a result of natural (erosion) and anthropogenic factors (mostly touristic and industrial development in coastal areas). In Portugal, there has been a decline of 60% as a result of direct disturbance to the habitat. In Bulgaria, France, Spain and Italy the trends in quantity are unknown. At the EU28 level, the trend in quantity is probably decreasing, but the data are too few to give average quantitative figures. At the EU28+ level the trend in quantity is unknown.

- Average current trend in quantity (extent)

EU 28: Decreasing

EU 28+: Unknown

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

No

Justification

The range of the habitat is large, covering the whole Mediterranean and Black Sea coast, even if the habitat is rare within this range.

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

Yes

Justification

The area of the habitat is restricted as relatively soft geological bedrocks forming cliffs at the coasts are relatively rare.

Trends in quality

Based on the available data from Portugal and Romania, there has been a slight decline (45% severity) affecting 14% of the extent of the habitat over the last 50 years. The decline in Romania has been mostly caused by anthropogenic changes, and the decline in Portugal has been caused by direct disturbance. The trends in quality for Bulgaria, Spain, France and Italy are unknown. At the EU28 level, the trend in quantity is probably decreasing but the data are too few to provide average European trends, and at the EU 28+ level the trend in quality is unknown.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Unknown

Pressures and threats

The major threats are new urbanized areas and human habitation because of touristic development in coastal areas, some natural catastrophic events, and invasive alien or non-typical species.

List of pressures and threats

Urbanisation, residential and commercial development

Urbanised areas, human habitation
Continuous urbanisation

Invasive, other problematic species and genes

Invasive non-native species
Problematic native species

Natural biotic and abiotic processes (without catastrophes)

Abiotic (slow) natural processes
Erosion
Silt up

Conservation and management

The most important conservation measure necessary is strict protection of the coastal shores, in order to maintain their natural conditions. Artificial restoration of the habitat is impossible.

List of conservation and management needs

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Conservation status

Annex I:

1240: BLS U1, MED U1

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

The habitat has little capacity to recover because it results from natural geological and geomorphological processes.

Effort required

200+ years
Naturally

Red List Assessment

Criterion A: Reduction in quantity

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

Available data from Portugal and Romania show there has been a 41% reduction in quantity in the past forty to sixty years in the habitat. However, there is no quantitative data on the reduction in quantity in any other countries. There is also no information on historical or future reductions and this habitat is therefore assessed as Data Deficient under Criterion A.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EEO	a	b	c	AOO	a	b	c	
EU 28	Unknown Km ²	Yes	Unknown	Unknown	Unknown	Yes	Unknown	Unknown	Unknown
EU 28+	Unknown Km ²	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Both the AOO and EEO of this habitat are unknown. The habitat probably occurs at more than 10 locations but this is also unknown. This habitat is therefore assessed as Data Deficient under 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	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%

Available data from Portugal and Romania show there has been a slight decline (45% severity) affecting 14% of the extent of the habitat in the past forty to sixty years (calculated through a weighted average). The decline in Romania has been mostly caused by anthropogenic changes, and the decline in Portugal has been caused by direct disturbance. The changes in quality are both abiotic (waste, trampling) and biotic (invasive species, changes in species composition). There is no information from France, Italy, Spain, Greece and Bulgaria. There is also no information on long historical or future trends in quality. The available information is not enough to determine the reduction in abiotic and/or biotic quality at the EU 28 or EU 28+ regions, and this habitat is therefore assessed as Data Deficient 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 quantitative analysis available that estimates the probability of collapse of this habitat type, and it is therefore assessed as Data Deficient under Criterion E.

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	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	DD	DD	DD	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
Data Deficient	-	Data Deficient	-

Confidence in the assessment

Low (mainly based on uncertain or indirect information, inferred and suspected data values, and/or limited expert knowledge)

Assessors

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Contributors

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