

B3.4a Atlantic and Baltic soft sea cliff

Summary

Coastal loamy cliffs, with a bedrock of clays, shales or loamy sands, erode much quicker than cliffs with a hard bedrock, and therefore usually have a less steep slope and are often unstable. Along the Atlantic and Baltic coasts, they harbour relatively common widespread species, even though a range of different micro-habitats may be found with ephemeral plant communities on the bare sediments, rank grasslands and scrub on more stable ground and flush vegetation around seepages. They have rarely been recognised or surveyed in European habitat classifications and therefore relatively few data on the habitat are available. The most serious threats relate to natural erosion, tourism, urbanisation and invasion of non-native plant species.

Synthesis

There are relatively few data on this habitat available and provided information is only from EU28 countries. Overall there is a negative trend in quantity, but just not severe enough to meet the threshold for Near Threatened. Some negative trends in quality were indicated as well, but here data are deficient for an overall European assessment.

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

A main division could be made in Atlantic and Baltic sub-habitats, but data are too limited to assess these subtypes independently.

Habitat Type

Code and name

B3.4a Atlantic and Baltic soft sea cliff



Soft coastal cliff on the Latvian coast of the Baltic Sea (Photo: John Janssen).



Soft cliff with flowering *Armeria maritima* along the Channel coast near Boulogne-sur-mer, France (Photo: John Janssen).

Habitat description

The habitat refers to coastal loamy cliffs, with a bedrock of clays, shales or loamy sands, sometimes mixed with layers of pebbles, peat or gravel, which erode much quicker than cliffs with a hard bedrock. Erosion

may be caused by storms, rain, waves and seepage from the inland, causing landslides, resulting in many sites in less steep cliffs than hard cliffs. The vegetation cover is low, with pioneer species prevailing, but sometimes with more closed grassland, shrubs and trees on the highest and less eroded parts, and also on parts of the cliff that have shifted downward by landslides. Because of soil movements and water streaming down the rock, many micro-habitats exist. Differences in bedrock layers, sediment size, soil chemistry, water flow and erosion patterns result in a widely varied habitat, with different species composition in different places.

In general, most species on the Atlantic and Baltic soft sea cliffs are common, widely spread ruderal species, that have adaptations to survive the turbulent conditions, for example deep rooting systems, broad spreading rhizomes or stolones, or a short life cycle. Examples of such common pioneers are *Tussilago farfara*, *Calamagrostis epigejos*, *Petasites spurius*, *Petasites hybridus*, *Hieracium umbellatum*, *Equisetum arvense* and *Arabidopsis thaliana*. Where grasslands succeed to develop *Cynosurus cristatus*, *Dactylis glomerata*, *Daucus carota* subsp. *gummifer*, *Agrostis* spp and *Festuca* spp are found. Several salt-tolerant species may be found, like *Plantago coronopus*, *Armeria maritima* and *Plantago maritima*. A rather characteristic species combination on soft cliffs along the Channel is *Brassica oleracea* and *Silene maritima*. Several rare species may be found on Baltic soft cliffs, like *Linaria loeselii*, *Tragopogon heterospermus* and *Alyssum gmelinii*. Scrub communities with *Rubus* sp., *Ulex* sp., *Prunus spinosa* can develop on long-time stable parts of the cliffs. On seepage areas *Phragmites australis*, *Salix* ssp and *Alnus glutinosa* may settle. *Rumex rupestris*, *Apium graveolens*, *Sonchus maritimus* and *Sonchus arvensis* grow together on soft cliffs of the western most coasts of the UK, France and Spain.

Coastal soft cliffs are a much rarer habitat than hard cliffs along the Atlantic coasts and in the northern and Baltic coast, but are relatively common on the southern and eastern shores of the Baltic Sea, with some large examples in the Wolinski National Park in Poland. More rarely soft cliffs are found in the Wadden Sea (for example the red cliffs of Sylt) and along the Channel coasts.

Indicators of good quality:

- diversity in micro-habitats, resulting in rich structural diversity
- diversity between cliffs in different localities and along the altitudinal gradient
- absence of invasive species

Characteristic species:

Flora: Armeria maritima, Brassica oleracea, Calamagrostis epigejos, Equisetum arvense, Hieracium umbellatum, Plantago coronopus, Petasites hybridus, Petasites spurius, Plantago maritima, Silene vulgaris subsp. maritima, Tussilago farfara

Classification

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

EUNIS:

B3.1 Supralittoral rock (lichen or splash zone)

B3.2 Unvegetated rock cliffs, ledges, shores and islets

B3.3 Rock cliffs, ledges and shores, with angiosperms

EuroVegChecklist (alliances):

Silenion maritimae Malloch 1971

Brassicion oleraceae Rivas-Martinez et al. 99

and many more...

Annex I:

1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts

Emerald:

-

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 occurs localised along the Atlantic and Baltic coasts and seldom harbours endemic plant or animal species.

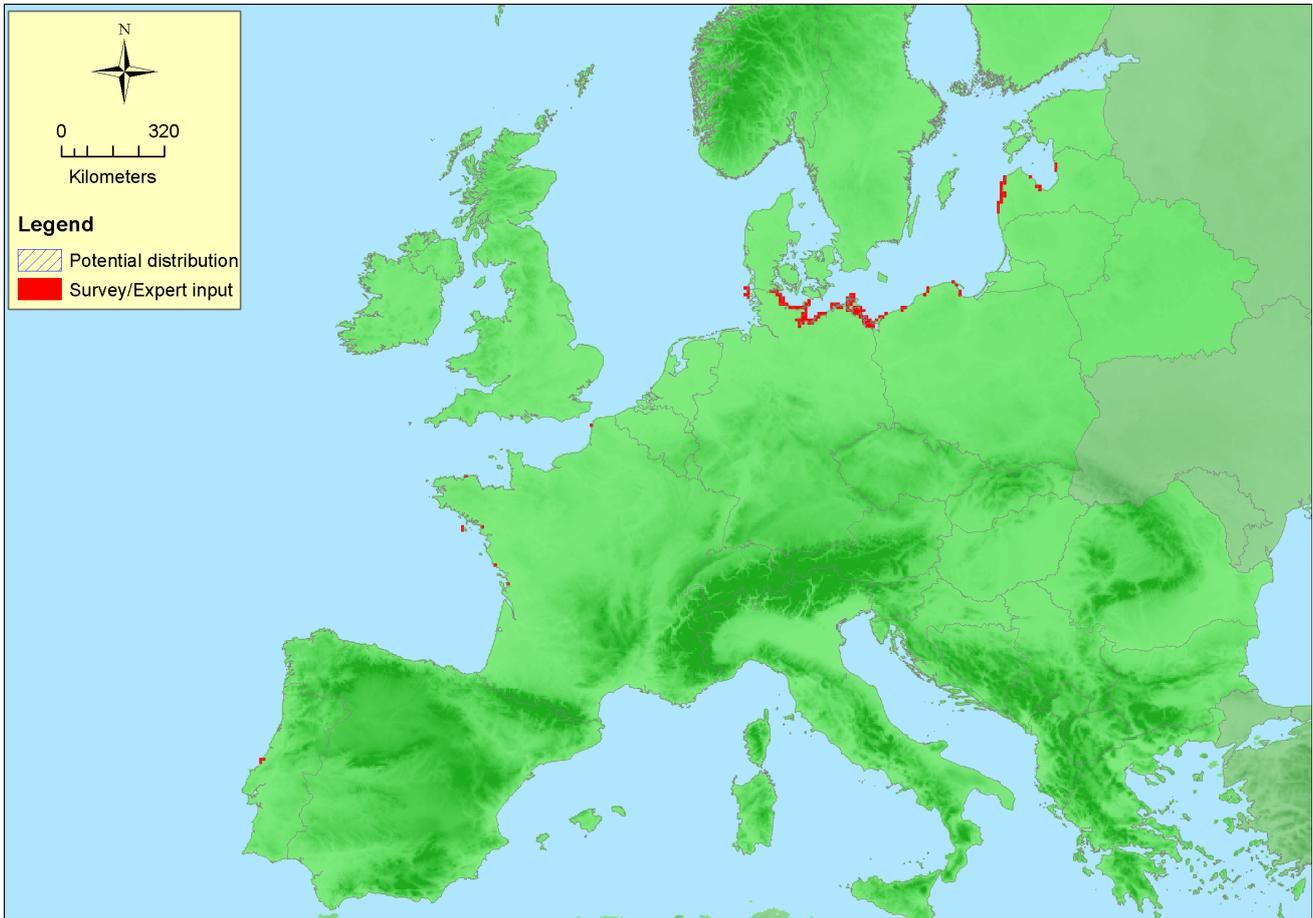
Geographic occurrence and trends

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>Denmark</i>	Present	Unknown Km ²	Unknown	Unknown
<i>Germany</i>	Present	8 Km ²	Decreasing	Decreasing
<i>Ireland</i>	Present	64-98 Km ²	Unknown	Unknown
<i>Latvia</i>	Present	0.5 Km ²	Unknown	Decreasing
<i>Poland</i>	Present	3.5 Km ²	Decreasing	Unknown
<i>Portugal</i>	Portugal Azores: Uncertain Portugal mainland: Present	0.2 Km ²	Decreasing	Decreasing
<i>Spain</i>	Spain mainland: Present	2.4 Km ²	Decreasing	Decreasing
<i>UK</i>	Northern Island: Uncertain United Kingdom: Present	1500 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>	919000 Km ²	138	> 72 Km ²	
<i>EU 28+</i>	919000 Km ²	138	> 72 Km ²	

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?

> 80%, possibly more. However, the geographical range outside the EU28 is not well known.

Trends in quantity

On average there is an overall EU28 trend in quantity of -21% based on data from 6 countries, covering about 36% of the area. Especially from the UK (with the largest amount of soft cliffs) quantitative trend data is missing. The EU28+ trend is the same as the EU28, as no data for EU28-countries were available, and the amount of the habitat outside the EU is expected to be relatively low.

- Average current trend in quantity (extent)
EU 28: Decreasing
EU 28+: Decreasing
- Does the habitat type have a small natural range following regression?

No

Justification

The habitat has a large distribution range.

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

Yes

Justification

The habitat is restricted due to limited amounts of soft geological bedrock forming coastal cliffs.

Trends in quality

There are too limited data to analyse trends in quality. Only Germany and France (out of 9 relevant countries) provided quantitative data on trends in quality. The indication of these two countries are

negative trends.

- Average current trend in quality
EU 28: Decreasing
EU 28+: Decreasing

Pressures and threats

Most serious threats are related to tourism (walking), urbanisation, building of hard sea defences, natural erosion (increased by sea level rise in future), and invasion of non-native plant species.

List of pressures and threats

Urbanisation, residential and commercial development

Discontinuous urbanisation

Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities
Trampling, overuse

Invasive, other problematic species and genes

Invasive non-native species

Natural biotic and abiotic processes (without catastrophes)

Erosion

Conservation and management

Strict protection of coastal sites is the best conservation measure for this habitat.

List of conservation and management needs

Measures related to spatial planning

Establish protected areas/sites

Conservation status

Annex I:

1230: ATL U1, BOR FV, CON FV

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

The habitat has no capacity to recover naturally because it is the result 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	-24 %	unknown %	unknown %	unknown %
EU 28+	-24 %	unknown %	unknown %	unknown %

The average trend in quantity is -24% for EU28+ and EU28+ based on 6 out of 9 relevant EU28 countries, covering about 37% of the reported area. Important quantitative data from the UK is missing. Not enough data on long term historical or future trends has been provided. The conclusion for criterion A is Least Concern, although the negative trend is very close to the threshold for Near Threatened.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50000 Km ²	No	No	No	>50	No	No	No	No
EU 28+	>50000 Km ²	No	No	No	>50	No	No	No	No

The AOO and EOO are larger than the thresholds for criterion B, and the habitat occurs in many locations. Presently there are no continuing declines or future threats. The conclusion for criterion B is 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%

Very few quantitative data on trends in quality are available. Only Germany and France provided complete data, both indicating negative trends. However, with so limited data, the conclusion on criterion C/D is "Data Deficient".

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			
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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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References

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