

B1.1b Mediterranean and Black Sea sand beach

Summary

This habitat is largely unvegetated linear feature of sheltered coastlines around the Mediterranean and Black Seas, with a fragmentary and sporadic vegetation cover developing on the accumulated sands, gravel and decaying plant material. Typically, the vegetation cover comprises scattered annual halophytes although pioneer dune perennials can appear where sand ridges get pushed by storms beyond the normal tidal limit. Although the habitat naturally comes and goes, recovering from fleeting interruptions, more lasting or repeated damage can be done by coastal tourism with beach cleaning, urbanisation and coastal erosion.

Synthesis

The overall analysis of data leads to the category Least Concern (LC) based on relatively small negative trends in quantity and quality over the last 50 years. The habitat has experienced a reduction in abiotic and biotic quality over the last 50 years affecting 31% of the extent of the habitat with a 56% of relative severity, but these values are slightly to low to meet the Near Threatened thresholds.

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

The ecological conditions for habitat are relatively homogeneous within the Mediterranean region and the Black Sea region, but based on different species composition of the plant communities, sub-habitats could be considered for these two regions.

Habitat Type

Code and name

B1.1b Mediterranean and Black Sea sand beach



Upper beach annual vegetation at Kamchia Sands, south of Varna (Bulgaria) with *Cakile maritima* subsp. *euxina*. (Photo: John Janssen).



Upper beach with annual vegetation on volcanic sediments (Furbara, Lazio coast, Italy). *Cakile maritima* plants grow among drift material that accumulates naturally. (Photo: Alicia Acosta).

Habitat description

The habitat is represented by the lowest level of the supralittoral, just above the mean normal tide limit, where the drift material accumulates and the sand may be enriched with nitrogenous organic matter. It

comprises beaches along the Mediterranean Sea, the Black Sea and on the Macaronesian islands. These beaches are sandy, sometimes composed of a mixture of gravel and sand, but pure gravel shores are distinguished as a separate shingle type (habitat B2.1-6b). Typically on these beaches there is very sparse vegetation cover composed mainly of few annuals. The vegetation belongs to the Class *Cakiletea maritima*, whose plant communities have a very low cover, sometimes not more than 1%. The species occur on drift lines along the surf line, where the salinity usually is very high. Examples of typical halophilous species are *Cakile maritima* (*Cakile maritima* subsp. *aegyptica* is accepted for the Mediterranean and *Cakile maritima* subsp. *euxina* is accepted for the Black sea), *Salsola kali*, *Salsola kali* subsp. *ruthenica* and *Xanthium strumarium*. On sandy beaches rarely visited by people some perennial psammophytes also occur, such as *Polygonum maritimum* and *Euphorbia peplis* while *Crambe maritima* and *Polygonum mesembrium* could be mentioned for the Black Sea. On Macaronesian islands also *Atriplex glauca* subsp. *ifniensis* is characteristic. During storms, the highest parts of the beaches are sporadically inundated by sea water, which sometimes cause drastic changes in the species composition. Sandy beach ridges, which represent the most initial phase of the dune-forming, may also host pioneer species of the Class *Ammophiletea* consisting mainly of geophytes and hemicryptophytes such as *Elymus farctus*, *Leymus racemosus* and *Eryngium maritimum*. In the Black Sea, the first stages of shifting dunes can be observed at the coastal sand strips at the surf line and up to 30 m inside the beach where the tidal difference is very small. Due to human pressure, beaches may remain without any vegetation even though the habitat could be still suitable for many arthropods. The complete lack of vegetation on the upper beach is a very common phenomenon caused by excessive trampling and, in particular, by the mechanical cleaning of the beach which, together with the litter, removes all living plants. The typical floristic and community structure can be observed mainly in isolated and rarely visited beaches. In good conditions the beaches have vegetation represented mostly by annuals including also some perennials. This habitat is naturally strongly dynamic but when the human impact increases, plant species may disappear completely.

Indicators of good quality:

In good conditions the beaches have vegetation represented mostly by annuals including also some perennials. This habitat is naturally strongly dynamic but when the human impact increases, plant species may disappear completely. Indicators for good quality are:

- presence of characteristic plant species (mainly annuals with few perennials)
- presence of some beach litter (natural beach litter, with few or without anthropogenic litter)
- lack of intense tourist trampling or anthropogenic structures
- lack of alien species, such as *Cenchrus incertus*.

Characteristic species:

Flora

Vascular plants: *Cakile maritima*, *Salsola kali*, *Salsola kali* subsp. *ruthenica*, *Xanthium strumarium*, *Euphorbia peplis*, *Polygonum maritimum*, *P. mesembrium*, *Crambe maritima*. Other species: *Argusia sibirica*, *Eryngium maritimum*, *Elymus farctus*, *Leymus racemosus*, *Matthiola tricuspidata*, *Raphanus maritimus*.

Fauna

Invertebrates: *Orchestia bottae*, *Cicindela hybrida*, *Hecamede albicans*, *Tethina cinerea*, *Hersodromya curtipennis*.

Birds: *Charadrius dubius*, *Ch. alexandrinus*.

Classification

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

EUNIS:

B1.1 Sand beach driftlines

B1.2 Sand beaches above the driftline

EuroVegChecklist:

Atriplicion nudicaulis Golub et al. 2003

Euphorbion peplidis Tx. ex Oberd. 1952

Cakilion euxinae Géhu et al. 1994

Annex I:

1210 Annual vegetation of drift lines

Emerald:

B1.1 Sand beach driftlines

MAES-2:

Coastal

IUCN:

12.2. Sandy Shoreline and/or Beaches, Sand Bars, Spits, etc.

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

Yes

Regions

Black Sea

Mediterranean

Justification

This habitat is restricted to the Mediterranean and Black Sea region. It is highly dynamic and area, species composition, and structure may vary from year to year in both biogeographic regions.

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	6.7 Km ²	Decreasing	Decreasing
<i>Croatia</i>	Present	unknown Km ²	Unknown	Unknown
<i>Cyprus</i>	Present	1 Km ²	Stable	Stable
<i>France</i>	Corsica: Present France mainland: Present	20 Km ²	Stable	Decreasing
<i>Greece</i>	Crete: Present	9.1 Km ²	Stable	Stable
<i>Italy</i>	Italy mainland: Present Sardinia: Present Sicily: Present	109 Km ²	Stable	Decreasing

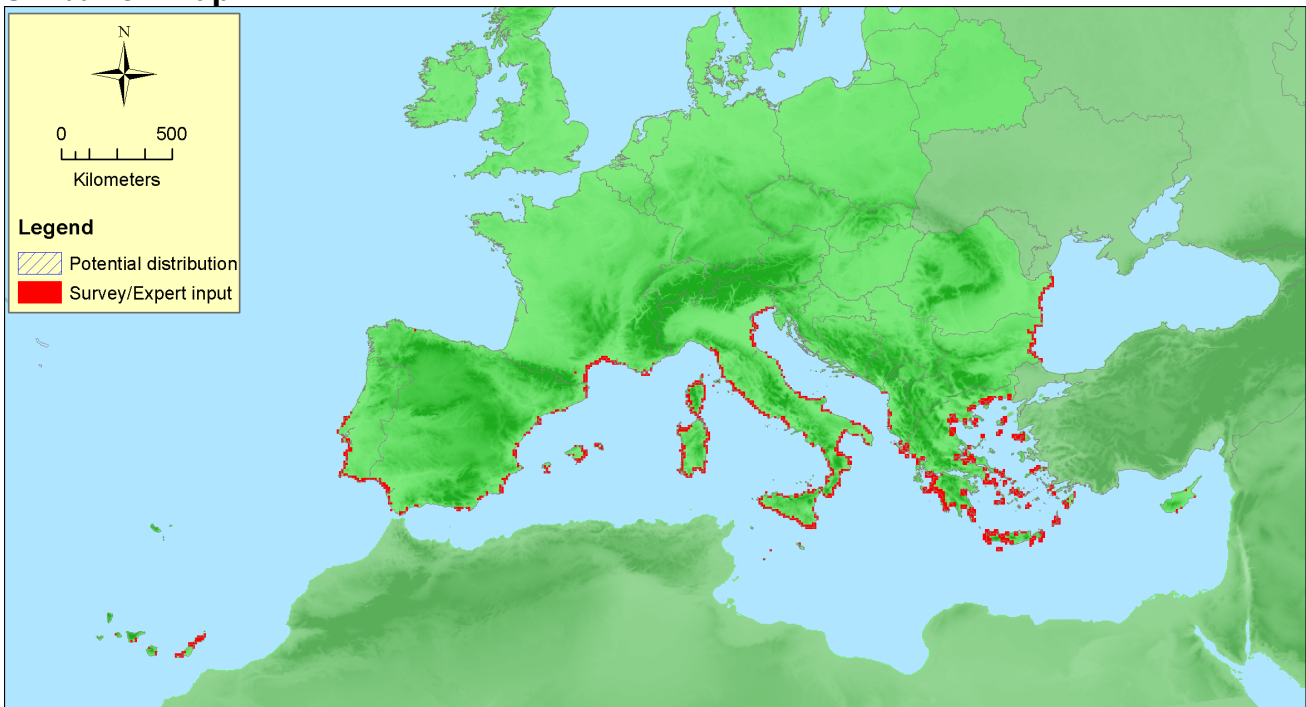
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Malta</i>	Present	unknown Km ²	Unknown	Unknown
<i>Portugal</i>	Madeira: Uncertain Portugal Azores: Uncertain Portugal mainland: Present Savage Islands: Uncertain	19 Km ²	Decreasing	Decreasing
<i>Romania</i>	Present	3 Km ²	Decreasing	Decreasing
<i>Slovenia</i>	Present	unknown Km ²	Unknown	Unknown
<i>Spain</i>	Balearic Islands: Present Canary Islands: Present Spain mainland: Present	90 Km ²	Decreasing	Decreasing

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>Montenegro</i>	Present	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>	5073700 Km ²	1920	170.49 Km ²	
<i>EU 28+</i>	5073700 Km ²	1936	170.49 Km ²	

Distribution map



The map is rather complete, with data gaps in Croatia, Montenegro, Albania. Data sources: EVA, BOHN, ART17.

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

Ca 95% of the habitat type is within the EU28. The habitat is least represented out of the EU28 (mostly in

Albania)

Trends in quantity

The trend in quantity (over the past 50 years) is slightly decreasing (3.3%). However, in Italy, France and Portugal (where occur the 90% of the habitat) the trend is relatively stable, while on the coasts of Black Sea (Bulgaria and Romania) have been observed a slight decrease. Only in Spain the reduction in quantity reaches the 40%. This is mainly due to erosion processes and to the increase of beach tourism, especially in high urbanized areas. This pressures are expected to continue in the future, nevertheless, as this is a pioneer habitat, the estimated future trend in quantity is a very low decline (1.2%). Since 50-250 years ago about 18% of the potential area has been lost, especially in Spain.

The recent, future and historical trends have been calculated on the basis of the available territorial data (km²). These data are referred to different years, but we assume that the habitat area is the same in the year of reference as in the year where the data was provided.

- 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 EOO is larger than 50,000 km².

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

No

Justification

The habitat is widespread in the Mediterranean and in the Black sea. Outside Europe this habitat is also present in the Mediterranean Nord Africa and Asian countries. Moreover, two of the most typical species of this habitat, *Cakile maritima* and *Salsola kali* are present in many beaches around the world (including America and Australasia).

Trends in quality

The most severe damage in quality especially affected countries with small extent of habitat (Bulgaria, Spain), while where the habitat is most widespread, the extent and the severity of degradation is moderate. The average degraded area in the last 50 years is 31% with a severity of 56%, as has been calculated from territorial data of 5 countries, covering large parts of the area. These data are referred to different years, but we assume that the habitat area is the same in the year of reference as in the year where the data was provided.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

Pressures and threats

The main pressures and threats affecting the habitat are: urbanization, expansion of infrastructures and disturbance by outdoor activities, trampling by the tourists on the beach and in some cases also the use of motorized vehicles. Moreover, in some areas the habitat could be seriously threatened by coastal erosion. Finally, it should be noted that the mechanical cleaning of the beaches is widespread during spring and summer season and it is related to the intense reduction in extent and decline in quality of this habitat.

List of pressures and threats

Mining, extraction of materials and energy production

Removal of beach materials

Urbanisation, residential and commercial development

Urbanised areas, human habitation

Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities
Trampling, overuse

Natural biotic and abiotic processes (without catastrophes)

Erosion

Conservation and management

This habitat is threatened mainly by urbanization and outdoor activities during the summer. Necessary conservation measures are restoration, legal protection of habitat and species and waste management. Special attention should be paid to mechanical cleaning of beaches that not only removes waste (beach litter) but also pioneer plants, particularly important for the stabilization of the sand.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring coastal areas

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Measures related to urban areas, industry, energy and transport

Urban and industrial waste management

Conservation status

Annex I type:

1210: BLS U1, CON U1, MAC U1, MED U2

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

As this habitat is mainly composed by pioneer annuals plant species it could recover rapidly naturally, probably in less than 10 years.

Effort required

10 years
Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-3.3 %	-1.2 %	Unknown %	-18 %
EU 28+	-3.3 %	-1.2 %	Unknown %	-18 %

The recent, future and historical trends have been calculated on the basis of the available territorial data (km²). These data are referred to different years, but we assume that the habitat area is the same in the year of reference as in the year where the data was provided. The calculated trend in the last 50 years is a reduction of 3.3% (Criterion A1). This habitat has suffered historically a much larger reduction in quantity due to human pressure, especially in Spain. The average historical reduction in quantity (since ca. 1750) was estimated of about 18% (Criterion A3). The reduction is expected to be smaller (1.2%) over the next 50 years (Criterion A2a). Thus, the habitat 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	>50000 Km ²	Yes	Yes	No	>50	Yes	Yes	No	No
EU 28+	>50000 Km ²	Yes	Yes	No	>50	Yes	Yes	No	No

The geographic distribution of this habitat (EOO and AOO) is very large across many countries (>50.000 km²). Criteria B1a and B2a are met due to the continuing decline experienced either in abiotic (ii) or biotic (iii) quality. The number of locations is probably very large. Thus, this habitat is assessed as Least Concern 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	31 %	56 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	31 %	56 %	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%

Data available only for Criterion C/D1. The trends in quality have been calculated on the basis of the available territorial data (km²) from 5 countries, covering about 90% of the reported area. These data are referred to different years, but we assume that the habitat area is the same in the year of reference as in the year where the data was provided. The reduction in quality over the last 50 years is assessed as intermediate with the extent affected to be 31% and the relative severity 56%, so above the threshold of 50%. The current trend regarding the biotic and abiotic quality is decreasing. With these figures, this

habitat is assessed as Near Threatened under Criterion C/D1.

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. Thus, this habitat is 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	LC	LC	DD	LC	LC	LC	LC	NT	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	LC	DD	LC	LC	LC	LC	NT	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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