

B2.1b Mediterranean and Black Sea coastal shingle beach

Summary

This habitat includes shingle and cobble beaches formed on dynamic coasts around the Mediterranean and Black seas where waves, mostly in winter, weather cliffs and redeposit the eroded material. Mixed with shells and decaying alga and sea grass washed ashore, it provides a nitrogen-rich surface for patchy and sporadic colonisation by annuals and some perennials, also sometimes weedy assemblages. Though widespread, its stands are narrow and localised and highly vulnerable to tourist recreation and coastal development.

Synthesis

The habitat type is assessed as Least Concern under all criteria for which data were available. The reduction in quantity is relatively small (-18%) and the same goes for the degradation in quality, while the habitat is relatively widespread along the Mediterranean and Black Sea coasts.

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 Mediterranean and Black Sea shingle beaches, as these sub-habitats have a different species combination.

Habitat Type

Code and name

B2.1b Mediterranean and Black Sea coastal shingle beach



B2.1b Gravel drift line with *Crambe maritima*, Stranzha Natural Park, Bulgaria (Photo: Rossen Tzonev).



B2.1b Coastal shingle with *Glaucium flavum* and *Malcolmia maritima* on the Island of Corfu, Greece (Photo: John Janssen).

Habitat description

This habitat represents beaches with pebbles or small- to medium-sized cobbles (as opposed to sand beaches of type B1.1b). Typically, the stones' size ranges from 2 mm to 200 mm diameter. The habitat is mainly formed on abrasive coasts, where sea waves (mostly in winter) weather physically the coastal cliffs. The eroded material forms shingle beaches, where different size of stones are mixed with mollusc

shells, algae and sea grasses (*Zostera* spp., *Posidonia oceanica*) that are washed ashore. These deposits are normally rich in nitrogen due to the high quantity of decaying plant and animal remnants. In most sites there is no vegetation in this habitat, but in some places communities of annual and even perennial plants may occur, most frequent from the class *Cakiletea maritimae*. Sometimes semi-ruderal and nitrophilic coenoses can be developed as well. All communities have open structure and usually very low cover. The most typical plants are *Argusia sibirica*, *Crambe maritima*, *Matthiola sinuata*, *Glaucium flavum*, *Euphorbia peplis* and *Salsola kali*. In the thermo-Mediterranean zone, some large coastal gravel banks may be partially colonised by evergreen woodland or riparian thickets dominated by *Quercus ilex*, *Tamarix africana* or *Vitex agnus-castus*. Such habitats are not included in this habitat type, but are considered under the relevant scrub and forest types.

These shingle beaches are rare along the western Black Sea coasts, but more common along the Mediterranean coasts, although sometimes they cannot be clearly distinguished from sand beaches.

Indicators of quality:

Well conserved shingle beaches host mostly annuals, but also by some perennials. Although this habitat is mobile in nature and thus adapted to natural disturbances, intense human disturbances may cause the complete removal of vegetation cover. Indicators of good quality are:

- the persistence of low vegetation cover
- diversity and dominance of annual species and presence of some perennials
- absence of active tourist pressure or anthropogenic structures on the beaches that prevent the drift accumulation
- absence of alien species such as *Cenchrus spinifex* and *C. longispinus*.

Characteristic species:

Vascular plants: *Atriplex hastata*, *A. glabriuscula*, *A. tatarica*, *Argusia sibirica*, *Beta vulgaris* subsp. *maritima*, *Cakile maritima*, *Crambe maritima*, *Elytrigia juncea*, *Eryngium maritimum*, *Euphorbia peplis*, *Glaucium flavum*, *Lactuca tatarica*, *Leymus racemosus*, *Malcolmia maritima*, *Matthiola sinuata*, *M. tricuspidata*, *Medicago marina*, *Achillea maritima*, *Polygonum maritimum*, *P. mesembrium*, *Raphanus raphanistrum* subsp. *landra*, *Salsola kali*, *Sporobolus pungens*, *Xanthium orientale* subsp. *italicum*

Invertebrates: *Orchestia gammarela*, *Fucelia maritima*, *Thoracochoaeta brachystoma*, *Aleochara algarum*, *Labidura riparia*

Birds: *Arenaria interpres*, *Calidris alba* (during migration and wintering)

Classification

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

EUNIS:

B2.1 Shingle beach driftlines

B2.2 Unvegetated mobile shingle beaches above the driftline

B2.3 Upper shingle beaches with open vegetation

EuroVegChecklist:

Euphorbion peplidis Tx. ex Oberd. 1952

Cakilion euxinae Géhu et al. 1994

Annex 1:

1210 Annual vegetation of drift lines

1220 Perennial vegetation of stony banks

Emerald:

B2.1 Shingle beach driftlines

B2.3 Upper shingle beaches with open vegetation

MAES:

Coastal

IUCN:

12.3 Shingle and/or Pebble Shoreline and/or Beaches

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

Yes

Regions

Black Sea

Mediterranean

Justification

The habitat is representative of the climatic, geomorphological and biotic conditions of Mediterranean and less of Black Sea regions.

Geographic occurrence and trends

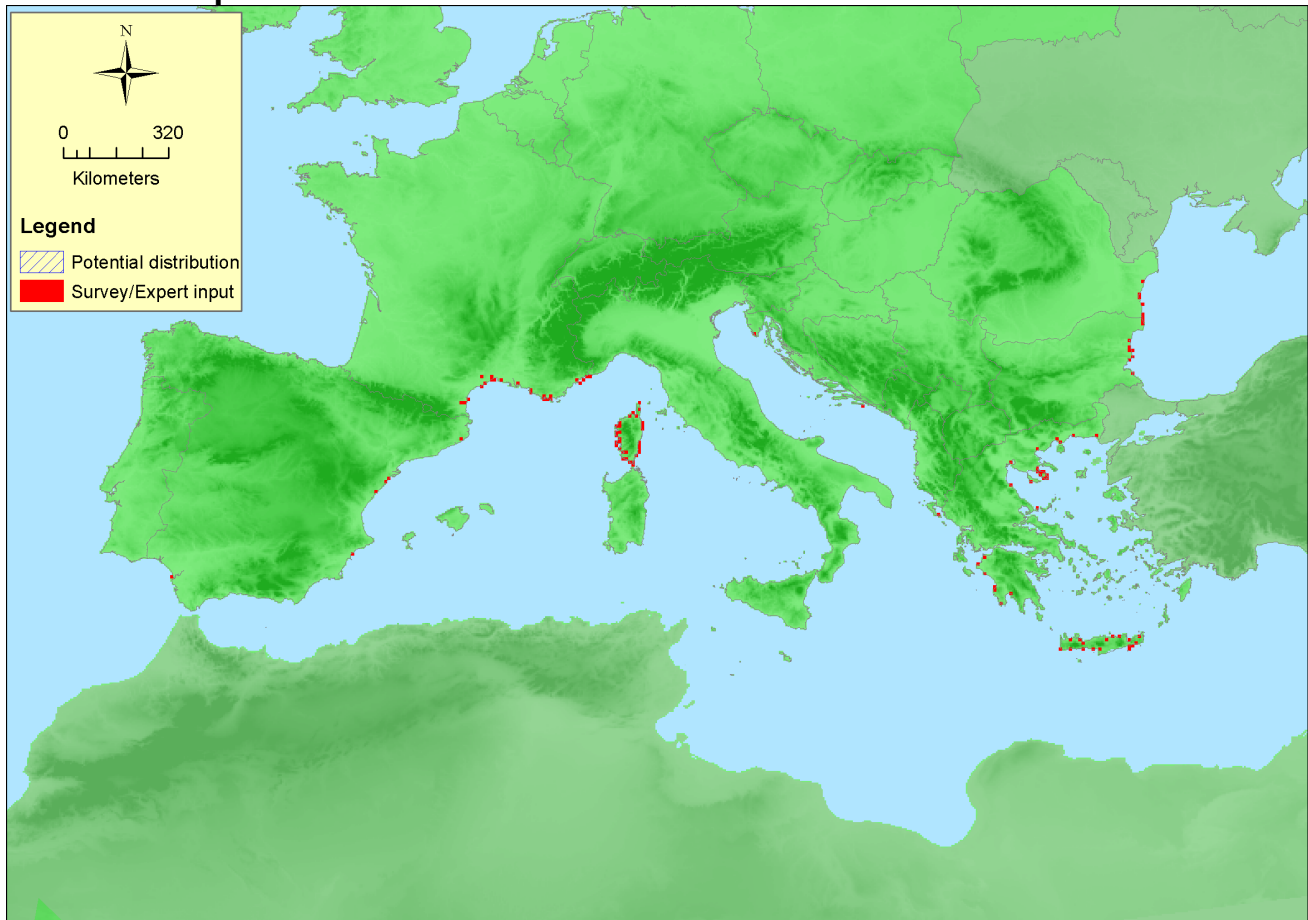
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Bulgaria</i>	Present	0.82 Km ²	Decreasing	Decreasing
<i>Croatia</i>	Present	0.14 Km ²	Decreasing	Decreasing
<i>Cyprus</i>	Present	1 Km ²	Stable	Decreasing
<i>Greece</i>	Crete: Present Greece (mainland and other islands): Present	9.1 Km ²	Decreasing	Decreasing
<i>Italy</i>	Italy mainland: Present Sardinia: Present Sicily: Present	Unknown Km ²	Decreasing	Decreasing
<i>Malta</i>	Present	Unknown Km ²	Unknown	Unknown
<i>Portugal</i>	Portugal mainland: Present	Km ²	Unknown	Unknown
<i>Romania</i>	Present	Unknown Km ²	Unknown	Unknown
<i>Slovenia</i>	Present	0.04 Km ²	Stable	Stable
<i>Spain</i>	Balearic Islands: Present Canary Islands: Uncertain 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>	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
EU 28	2191400 Km ²	117	11.4 Km ²	
EU 28+	2201700 Km ²	119	11.4 Km ²	

Distribution map



Map is incomplete, especially in Italy and Croatia. Data sources: EVA, GBIF.

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

Probably more than 50%. The habitat occurs in other Black Sea countries, such as Turkey, Ukraine, Georgia and Russia, and also in some other Mediterranean countries like Albania, Montenegro, and those along the African and Asian coasts.

Trends in quantity

The decrease is about -18% for EU over about the last 50 year. After 1960 the habitat has been decreased about 20% in Greece, 30% in Croatia and 5% in Bulgaria, mostly because of the touristic development along the coastal areas. The percentage of reduction in Italy is not known, while in Slovenia and Cyprus the habitat is almost stable. The slight decrease is expected to continue in Bulgaria, but in Slovenia, Greece and Cyprus it is expected to remain stable. The tendencies in quantity are not known for Romania, Spain, Malta and additional EU28+ countries.

- 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 is widespread along the Mediterranean and Black Sea shorelines.

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

No

Justification

Although the habitat has been degraded in many sites, there is no significant decline of its total distribution.

Trends in quality

The extent of degradation is about 19%, while the severity of degradation is 36%. These trends have been calculated on the basis of the reported negative trends in quality (extent and severity) by Bulgaria (30%), Greece (20%) and Croatia (50%) in the territorial data. The habitat is also being degraded in Italy and Cyprus, but the extent and severity of degradation are unknown. It is stable in Slovenia. The decline is mostly because of the touristic development and utilization of coastal areas. The trends in quality are not known for Romania, Spain, Malta and additional EU28+ countries.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

Pressures and threats

The most important threats are the urbanisation and human habitation caused by touristic development and the pollution of beaches. Less important threats are caused by invasive species and the modification of coastal areas from the construction of infrastructures etc.

List of pressures and threats

Urbanisation, residential and commercial development

Urbanised areas, human habitation

Pollution

Soil pollution and solid waste (excluding discharges)

Invasive, other problematic species and genes

Invasive non-native species

Natural System modifications

Dykes, embankments, artificial beaches, general
Sea defense or coast protection works, tidal barrages

Conservation and management

The most important conservation measure is the strict protection of the coastal shingle and the restoration of their natural ecological functions.

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

Conservation status

Annex 1:

1210: BLS 1U1, MED U1

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

The habitat has some capacity to recover naturally, but this depends on the slow geological processes. It could be restored in some areas by restabilising a natural contact zone between sea waves and coastal cliffs.

Effort required

20 years	200+ years
Through intervention	Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-18 %	unknown %	unknown %	unknown %
EU 28+	-18 %	unknown %	unknown %	unknown %

The habitat has been decreased about 20% in Greece, 5% in Bulgaria and 30% in Croatia during the last 40 to 60 years. In total, it has been reduced from 13 km² to 11 km² or nearly 18%. The habitat is also decreasing in Italy but quantitative data do not exist. There is no information on the trends for Romania, Spain, Malta, as well as for countries outside the EU28. Also no data are available on longer historical trends. In future a small further decline is expected, but quantitative data are not available.

Criterion B: Restricted geographic distribution

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

EOO, AOO and number of locations are much larger than the thresholds for 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	19 %	36 %	unknown %	unknown %	unknown %	unknown %
EU 28+	19 %	36 %	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%

The overall extent and severity were calculated from reported data from Bulgaria, Slovenia, Italy, Cyprus, Croatia and Greece as weighted average. The above-mentioned countries could not provide enough information on the long historical or future trends in quality (C/D2, C/D3, C2, C3, and D2). The changes in quality are both abiotic (changes in hydraulic conditions, climate changes) and biotic, thus C/D1 has not been split into C1 and D1. Results for EU28 and EU28+ are similar, as the additional EU28+ countries only cover a small part of the area.

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

Overall Category & Criteria			
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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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