

## A2.13 Communities of Mediterranean mediolittoral coarse sediment

### Summary

Mediolittoral coarse sediments are found along relatively exposed open shores, where wave action prevents finer sediments from settling. This habitat include shores of mobile pebbles, cobbles and gravel, sometimes with varying amounts of coarse sand. As the sediment is highly mobile and subject to high degrees of drying between tides, few species are able to survive. It is typically colonised by scavenger species that feed on various plant debris and waste material retained between the pebbles and gravel.

The habitat is especially prone to impacts associated with coastal pollution (urban, agricultural, industrial, fish-farming, etc.), coastal zone development (particularly urbanization and uncontrolled coastal infrastructures), contamination of sediments and biota, and episodic perturbations (i.e. sediment removal and illegal dumping of wreckages). There are no specific legal provisions or management measures aimed at conservation of this habitat although it does occur in some protected areas. Direct engagement of scientists and conservationists in the planning of the management process, analysis of social and economic costs and benefits of different management options, and involvement of diverse stakeholders will be essential to the successful implementation of conservation actions.

### Synthesis

This habitat is present in all the Mediterranean sub-basins although there is a lack of information on the area covered. At least 30% of all littoral habitats in the Mediterranean have disappeared over the last 50 years. It is therefore reasonable to assume that this soft substrate habitat has also suffered losses but there is insufficient information to quantify any such a trend.

This habitat has therefore been assessed as Data Deficient for both the EU 28 and EU 28+.

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

None.

### Habitat Type

#### Code and name

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No characteristic photographs of this habitat currently available.

#### Habitat description

Littoral coarse sediments are found along relatively exposed open shores, where wave action prevents finer sediments from settling. This habitat include shores of mobile pebbles, cobbles and gravel, sometimes with varying amounts of coarse sand. The sediment is highly mobile and subject to high degrees of drying between tides, while sediment particle size structure may vary seasonally, with relatively finer sediments able to settle during calmer conditions in summer. As a result, few species are able to survive in this environment. It is occupied by scavengers species that feed on various plant debris

and waste material retained between the pebbles and gravel. Beaches of mobile cobbles and pebbles tend to be devoid of macroinfauna, while gravelly shores may support limited numbers of crustaceans, polychaetes and holothurians. These communities are exposed to alternating water submersion and emersion because of variations in the water level.

One of associated biotopes consist mainly of detritus-feeding species which draw their nourishment from decaying vegetation and miscellaneous debris caught up in the shingle. It is characterised by two crustaceans, the amphipod *Gammarus olivii* and the isopod *Sphaeroma serratum*.

Indicators of quality:

Both biotic and abiotic indicators have been used to describe marine habitat quality. These include: the presence of characteristic species as well as those which are sensitive to the pressures the habitat may face; water quality parameters; levels of exposure to particular pressure, and more integrated indices which describe habitat structure and function, such as trophic index, or successional stages of development in habitats that have a natural cycle of change over time.

There are no commonly agreed indicators of quality for this habitat, although particular parameters may have been set in certain situations, e.g. protected features within Natura 2000 sites, where reference values have been determined and applied on a location-specific basis.

Characteristic species:

Crustaceans: *Echinogammarus planicrurus*, *Gammarus marinus*, *Sphaeroma serratum* and polychaete *Perinereis cultrifera*. Other species include *Pachygrapsus marmoratus*, *Allorchestes aquilinus*, *Perinereis cultrifera*, *Holothuria tubulosa*.

## **Classification**

EUNIS (v1405):

Level 4. A sub-habitat of Littoral coarse sediment (A2.1)

Annex 1:

1160 Large shallow inlets and bays

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Littoral sediment

EUSEaMap:

Not mapped.

IUCN:

## 12.3 Shingle and/ or pebble shoreline and/or beaches

Barcelona Convention (RAC/SPA)

II.3.I

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

Unknown

Justification

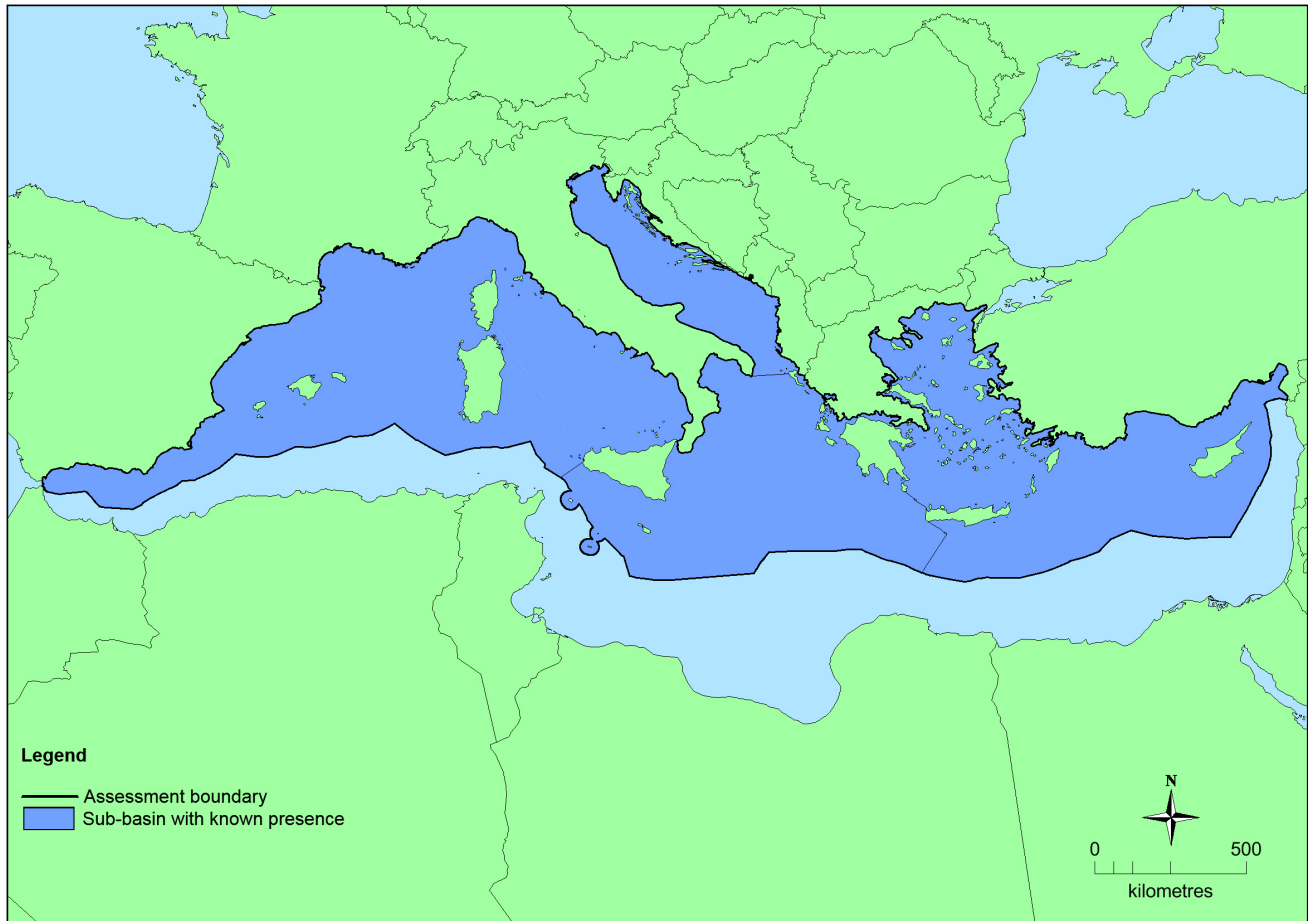
### **Geographic occurrence and trends**

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Mediterranean Sea</i>	Adriatic Sea: Present Aegian-Levantine Sea: Present Ionian Sea and the Central Mediterranean Sea: Present Western Mediterranean Sea: Present	Unknown Km <sup>2</sup>	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>	>50,000 Km <sup>2</sup>	unknown	Unknown Km <sup>2</sup>	This habitat is present in all the Mediterranean sub-basins.
<i>EU 28+</i>	>50,000 Km <sup>2</sup>	unknown	Unknown Km <sup>2</sup>	This habitat is present in all the Mediterranean sub-basins.

### **Distribution map**



This habitat occurs in all the sub-basins of the Mediterranean but there are insufficient data to produce a map of its distribution.

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

It is unknown how much of this habitat is hosted by the EU 28 in the Mediterranean.

### Trends in quantity

There is a lack of information on the extent of this habitat and trends in quantity. As at least 30% of all littoral habitats in the Mediterranean have disappeared over the last 50 years it is reasonable to assume that this soft substrate habitat has also suffered losses. These could for example, be associated with coastal development altering beach profiles, impounding areas, and the removal of sediments from beaches for construction works. A decreasing trend is considered likely but there is insufficient information to quantify such a trend.

- Average current trend in quantity (extent)

EU 28: Unknown

EU 28+: Unknown

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

No

*Justification*

This habitat does not have a small natural range as it occurs in all the Mediterranean sub-basins.

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

No

*Justification*

This habitat does not have a small natural range as it occurs in all the Mediterranean sub-basins.

## Trends in quality

Human activities have had significant negative impacts on all mediolittoral habitats types in the Mediterranean Sea and combine at multiple scales. The quality of sedimentary mediolittoral habitats, including areas of coarse sediment, is considered likely to have declined but there is insufficient information to quantify any trend.

- Average current trend in quality

EU 28: Unknown

EU 28+: Unknown

## Pressures and threats

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This habitat is especially prone to impacts from coastal pollution (urban, agricultural, industrial), coastal zone development, and sand and gravel extraction. Cleaning up detritus accumulation of *Posidonia* banks causes an overall impoverishment of the littoral ecosystem.

### List of pressures and threats

#### Mining, extraction of materials and energy production

Sand and gravel extraction

Sand and gravel quarries

Removal of beach materials

#### Urbanisation, residential and commercial development

Urbanised areas, human habitation

Industrial or commercial areas

Discharges

#### Pollution

Pollution to surface waters (limnic, terrestrial, marine & brackish)

Marine water pollution

Soil pollution and solid waste (excluding discharges)

## Conservation and management

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There are a variety of measures and regulations in place to manage this habitat. For example, in some Mediterranean countries, there are strict limits on distance from the coast for dredging of sands and gravel. Some beaches are also protected as NATURA 2000 sites. Additional beneficial actions could include; preventing activities such as coast protection works that destabilise the habitat or interfere with the natural dynamics; beach nourishment schemes using appropriate materials and developing management practices for the beach cleaning which avoid the use of heavy machinery.

### List of conservation and management needs

#### Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

#### Measures related to spatial planning

Establish protected areas/sites

Legal protection of habitats and species

Manage landscape features

## Measures related to urban areas, industry, energy and transport

Urban and industrial waste management

## Measures related to special resource use

Regulating/Management exploitation of natural resources on land

Regulating/Managing exploitation of natural resources on sea

## Conservation status

Annex 1:

1160: MMED XX

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

The capacity of this habitat to recover after it has been severely damaged is unknown.

## Effort required

## 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 %

There is a lack of information on the extent of this habitat and trends in quantity. At least 30% of all littoral habitats in the Mediterranean have disappeared over the last 50 years. It is therefore reasonable to assume that this soft substrate habitat has also suffered losses but there is insufficient information to quantify such a trend. It has therefore been assessed as Data Deficient 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 <sup>2</sup>	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
EU 28+	>50,000 Km <sup>2</sup>	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

This habitat is present in the Eastern and Western Mediterranean but the precise extent is unknown. Because of past and ongoing threats some decline in quantity and quality is likely however this cannot be quantified.

This habitat has large EOO and but due to the lack of information on its trends in quantity and quality and the fact that its overall distribution is unknown, expert opinion is this habitat should be considered Data Deficient for both the EU 28 and EU 28+.

### 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%

The data on this particular habitat are limited, but given declines in quality of mediolittoral soft substrate habitats in the Mediterranean over the last 50 years it is reasonable to assume there has been some reduction in quality. As this cannot be quantified this habitat has been assessed as Data Deficient under criteria C/D1 for both the EU 28 and EU 28+.

#### 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 to estimate the probability of collapse of this habitat type. Therefore, it 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	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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## Reviewers

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## Date of assessment

09/01/2016

## Date of review

10/04/2016

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