

## A5.25 Communities of Mediterranean circalittoral well-sorted fine sands

### Summary

This habitat comprises clean fine sands with less than 5% silt/clay in water deeper than 30-35 m, either on the open coast or near, depending on geographical area. Circalittoral well-sorted fine sands are usually an extension at depth of the infralittoral and circalittoral very shallow fine sands. The sediment is of homogeneous granulometry and of mixed origin: terrigenous and organogenous and polychaetes, bivalves and echinoderms make up part of the infauna.

The major pressure on this habitat is fishing activities, mainly trawl fishing as well as sand mining activities, which alter seabed structure and biodiversity. The broad distribution of this habitat makes it likely to occur in protected areas. A wide survey to assess the distribution of this habitat is needed in order to better evaluate its conservation and management. The designation of reference sites for long monitoring trends will assist to examine the trends in this habitat. Moreover, improving spatial and strategic planning of human activities, in particular aquaculture, sand mining, and demersal fisheries as well as regulation discharges to the marine environment would benefit this habitat.

### Synthesis

The whole circalittoral zone is under heavy fishing impact that can cause severe changes on soft sediment habitats. There can be increases in one area and decreases in others however the overall trend in quantity and extent is unknown at present. There have been declines in the quality of this habitat as a result of the fishing and aquaculture industry, suspension of sediment enriched in organic matter and localised pollution. This habitat has a large EOO and AOO, and therefore qualifies as Least Concern under criterion B. However the habitat is assessed as Data Deficient both at the EU 28 and EU 28+ levels given the lack of information on its trends in quantity and quality and the fact that its overall distribution is unknown.

| 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

A5.25 Communities of Mediterranean circalittoral well-sorted fine sands

No characteristic photographs currently available for this habitat.

#### Habitat description

Clean fine sands with less than 5% silt/clay in water deeper than 30-35 m, either on the open coast or near, depending on geographical area. Circalittoral well-sorted fine sands are usually an extension at depth of the infralittoral and circalittoral very shallow fine sands. The sediment is of homogeneous granulometry and of mixed origin: terrigenous and organogenous. Existence of bottom currents is quite common. Bivalves and polychaetes are part of the infaunal communities.

Indicators of quality:

There are no commonly agreed indicators of quality for this habitat, thus both standard biotic and abiotic indicators have been used to describe marine habitat quality. Habitat is in the most geographical areas under impact of strong fisheries activities, particularly trawling and dredging, thus the presence of characteristic commercially exploited species may indicate a quality of the habitat. Presence and abundance of characteristic species can also be used as an indicator of habitat quality.

Characteristic species:

Polychaetes: *Hyalinoecia tubicola*, *Laetmonice hystrix*, *Galathowenia oculata*; Bivalves: *Abra prismatica*, *Clausinella fasciata*, *Parvicardium scabrum*, *Pitar rudis*, *Striarca lactea*; echinoderms: *Anseropoda placenta*; *Holothuria forskali*. pelecypod molluscs (e.g. *Donax venustus*, *Tellina pulchella*, *Tellina planata*, *Cardium tuberculatum*), gastropods (e.g. *Nassa mutabilis* and *Neverita josephina*), crustaceans (e.g. *Crangon crangon* and *Iphinoe josephina*) and small fish (e.g. *Gobius microps*, *Callionymus belenus*, *Solea solea* and *Trachinus draco*).

## **Classification**

EUNIS (v1405):

Level 4. A sub-habitat of Circalittoral Sand (A5.2).

Annex 1:

None

MAES:

Marine - Coastal

Marine - Shelf

MSFD:

Shallow sublittoral sand

Shelf sublittoral sand

EUSeaMap:

Shallow sands

Shelf sands

IUCN:

9.4 Subtidal sandy

## 9.5 Subtidal sandy-mud

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

Unknown

#### Justification

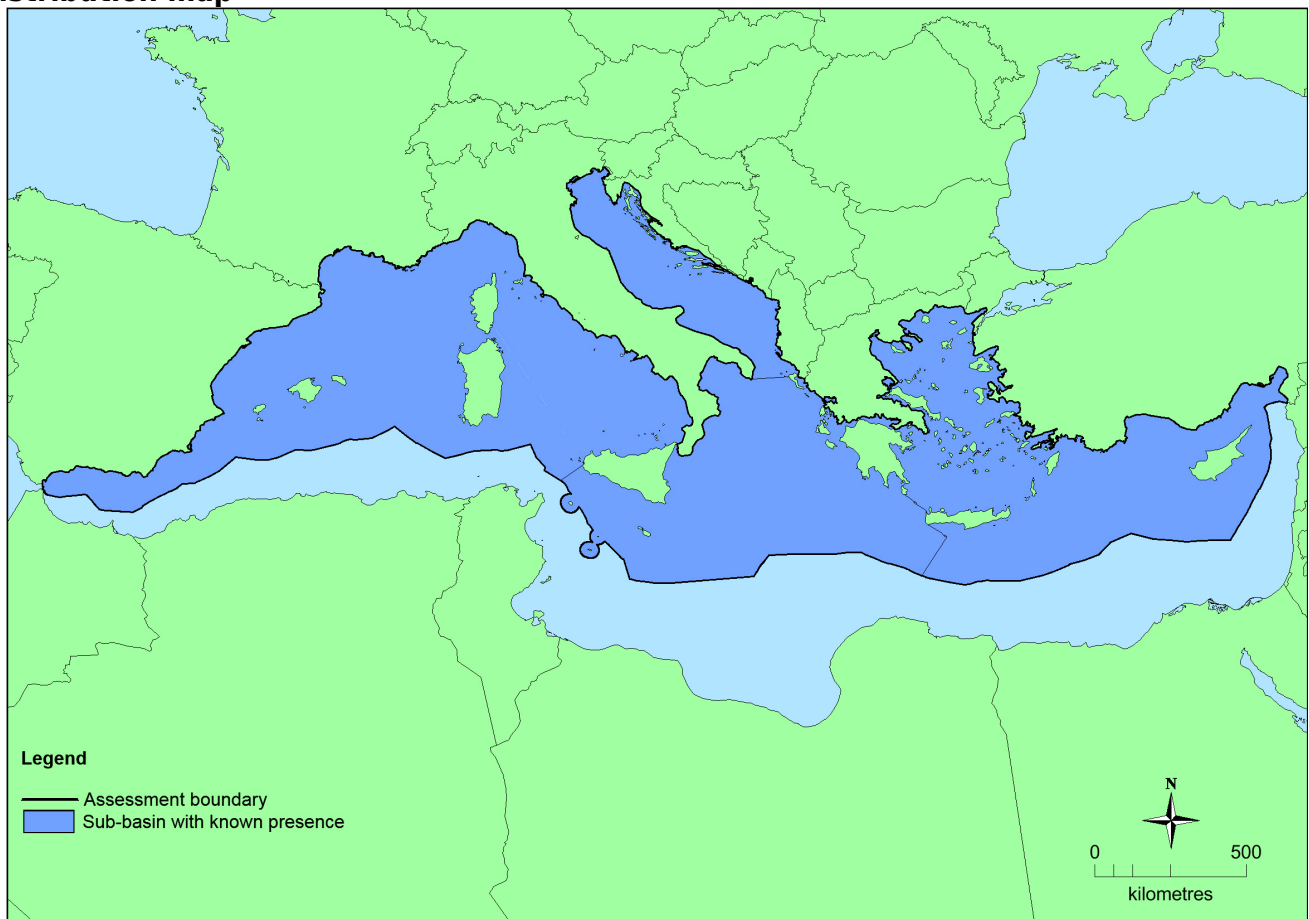
#### Geographic occurrence and trends

| 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<br>Aegian-Levantine Sea: Present<br>Ionian Sea and the Central Mediterranean Sea: Present<br>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>    | >50                     | 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>    | >50                     | Unknown Km <sup>2</sup>      | This habitat is present in all the Mediterranean sub-basins. |

#### Distribution map



This habitat is known to occur in all sub-basins in the Eastern and Western Mediterranean but there is 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 but it does occur in the EU 28+.

### **Trends in quantity**

This habitat is common in the Mediterranean and known to be widely distributed although there is a lack of information on the precise area of coverage. There are no reports about the trends on this habitat from individual countries and specific information regarding the trends of the different sub-habitats is missing. There have been changes in the extent of this habitat in particular locations due to human interventions. For example about 45 % of the sediments that would be delivered by rivers to the Mediterranean annually are either retained behind dams or extracted from river beds for sand and gravel, leading to an overall deficit of sediments on the coast. Groynes and breakwaters, seawalls and jetties built along naturally low sedimentary shores have also caused severe losses and alterations of shallow sedimentary habitats. The overall trend for this habitat throughout the EU 28 and EU 28+ is unknown.

- 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*

The habitat has an EOO larger than 50,000 km<sup>2</sup>.

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

No

*Justification*

The habitat has an EOO larger than 50,000 km<sup>2</sup>.

### **Trends in quality**

Studies in particular locations have shown declines in quality of this habitat, for example associated with aquaculture and demersal fisheries which have affected both species composition and abundance. Degraded water quality, for example through eutrophication has also affected some locations. These threats are both current and are likely to continue to cause declines in quality of this habitat.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

### **Pressures and threats**

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Heavy fishing disturbs muddy and sandy bottoms, causing dramatic changes in the structure of both the physical support system and the related biological assemblages. It has been noted that trawls and dredges scrape or plough the seabed, resuspend sediment, change grain size and sediment texture, destroy bedforms, and remove or scatter non-target species. To these effects can be added the increase in the amount of suspended nutrients and organic matter. Apart of direct effects related to the use of bottom gears indirect effects on the ecosystem may extend far beyond the direct. Eutrophic processes may be enhanced leading to hypoxia in sensitive soft bottom areas (as in the northern Adriatic) and the quantity of hydrogen sulphide released from sediments may increase. The anthropic re-suspension of sediment enriched in organic matter can eliminate macrophyte, benthos and demersal fish approaching their

hypoxia tolerance limit; the changed ecosystem structure favours species adapted or tolerant to hypoxic conditions. Trawling and dredging can also play a role affecting the intensity and duration of naturally occurring seasonal hypoxic crises in some places. In the north Adriatic Sea the first signs of hypoxia started around 1960 and developed into severe anoxic events over the past decades. Sand extraction is an additional pressure on this habitat.

### **List of pressures and threats**

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

Sand and gravel extraction

#### **Urbanisation, residential and commercial development**

Urbanised areas, human habitation

Discharges

#### **Biological resource use other than agriculture & forestry**

Marine and Freshwater Aquaculture

Fishing and harvesting aquatic resources

#### **Pollution**

Marine water pollution

Soil pollution and solid waste (excluding discharges)

## **Conservation and management**

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The broad distribution of this habitat makes it likely to occur in protected areas, however detailed information is missing. A wide survey to assess the distribution of this habitat is needed in order to better evaluate its conservation and management. The designation of reference sites for long monitoring trends will assist to examine the trends in this habitat. Moreover, improving spatial and strategic planning of human activities, in particular aquaculture, sand mining, and demersal fisheries as well as regulation discharges to the marine environment would benefit this habitat.

### **List of conservation and management needs**

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

Restoring/Improving water quality

Restoring coastal areas

#### **Measures related to spatial planning**

Other spatial measures

Establish protected areas/sites

Legal protection of habitats and species

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

Urban and industrial waste management

Managing marine traffic

### **Conservation status**

Annex 1: No directly equivalent types

**When severely damaged, does the habitat retain the capacity to recover its typical**

## character and functionality?

The capacity for this habitat to recover once 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 % |

The whole circalittoral zone is under heavy fishing impact that can cause a severe changes of the habitat. It is likely but unknown whether this has resulted in any habitat loss. This habitat has therefore been assessed as Data Deficient under Criteria 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 | No | >50 | Unknown | Unknown | No | No |
| EU 28+      | >50,000 Km <sup>2</sup> | Unknown | Unknown | No | >50 | Unknown | Unknown | No | No |

This habitat is present in the Eastern and Western Mediterranean basins. The precise extent is unknown but estimated as EOO >50,000km<sup>2</sup> and AOO >50 which exceeds the thresholds for a threatened category on the basis of restricted geographic distribution.

The habitat is known to have declined in quality although this cannot be quantified at the present time. The nature and size of threats to this habitat and the distribution data which are available suggest that no known threats are likely to affect all localities at once. This habitat has therefore been assessed as Least Concern under criteria B1c, B2c and B3 and Data Deficient for all other criteria 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%          |

This habitat has declined in quality over the last 50 years. Such declines are likely to continue as the major threats abiotic and biotic factors caused by fishing and aquaculture industry are likely to continue however the scale of the decline cannot be quantified at the present time. This habitat has therefore been assessed as Data Deficient under criteria 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 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 | LC | LC | LC | DD   | DD   | DD   | DD | DD | DD | DD | DD | DD | DD |
| EU28+ | DD | DD  | DD  | DD | LC | LC | LC | 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**

A. Soldo.

**Contributors**

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**Reviewers**

S.Gubbay and N.Sanders.

**Date of assessment**

13/01/2016

**Date of review**

21/04/2016

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