

A5.46. Communities of Mediterranean upper circalittoral coastal detritic bottoms

Summary

This habitat occupies a considerable area of the Eastern and Western Mediterranean. It occurs in the coastal detritic bottom of large bays and open seas on terrigenous and organogenous gravel at 30-100 metres of depth. Depending of the hydrodynamics and environmental conditions some particular facies or dominance of species may develop. The main pressures on this habitat are the increase of fine sedimentation and pollution that can produce changes in the associated communities, the lost of diversity and a shift to a different habitat dominated by more tolerant species. Ensuring a reduction of inputs such as fine matter, pollutants and organic matter, which affect the water quality, designating Marine Protected Areas (MPAs) where this habitat occurs and increasing the knowledge and monitoring of its distribution and ecology will assist to conserve and evaluate appropriate conservation measures for the future.

Synthesis

This is a very poorly studied habitat type and only a few reports exist regarding its distribution. The trends in quantity and quality in the past 50 years are unknown, and there is no information on historic or future trends. Moreover, quantitative data on quality or quantity is lacking and the territorial data does not provide information for most Mediterranean countries. It has a large Extent of Occurrence (EOO) and Area of Occupancy (AOO), and therefore it qualifies as Least Concern under Criterion B. However, the habitat is assessed as Data Deficient both at the EU 28 and the EU 28+ levels because of the lack of information on its trends in quantity and quality.

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 are currently available.

Habitat description

This habitat occurs in big bays and opens seas, on a substratum whose nature varies widely and depends largely on the typology of the nearby coast and of nearby infralittoral rock formations. It occurs on terrigenous and organogenous sediment: gravel with a sandy-muddy filling originating from predominant local rocks, sometimes shell debris from various molluscs, debris from big calcified bryozoans, tests of echinoderms or of some dead melobesies (coralline red algae *Melobesia* spp). The interstices between these various components of coarse sands and gravel are partially filled by a greater or lesser proportion of sand and mud. The muddy portion is usually less than 20%, but various more or less muddy types exist.

It develops at depths of between 30 and 100 metres, usually as an extension at depth of the biocenosis of well sorted fine sands. Some facies with epiflora and epifauna may present, depending on certain currents. These may be characterised by brittlestars, colonial ascidians and by big colonies of arborescent bryozoans, unattached or fixed to small substrata.

Indicators of quality:

Some species are indicators of more particular environmental conditions such as the echinoderms (*Echinocyamus pusillus*, *Spatangus purpureus*, *Astarte fusca*), the bivalves (*Cardium minimum*, *Venus ovata*, *Dentalium inaequicostatum*), the opisthobranch mollusc *Philine aperta*, or species with a wide ecological distribution in loose substrata.

Characteristic species:

Phytobenthos: *Cryptonemia tunaeformis*, the many-branched calcareous rhodophytes (*Phymatholithon calcareum*, *Mesophyllum coralloides*, *Lithothamnion fruticulosum*), *Peyssonnelia* spp.

Zoobenthos: *Bubaris vermiculata*, *Suberites domuncula* (sponges); *Sarcodyctyon catenatum* (cnidarians); *Astropecten irregularis*, *Anseropoda placenta*, *Genocidaris maculata*, *Luidia ciliaris*, *Ophioconis forbesi*, *Psammechinus microtuberculatus*, *Paracucumaria hyndmani* (echinoderms); *Limea loscombei*, *Propeamussium incomparabile*, *Chlamys flexuosa*, *Laevicardium oblungum*, *Cardium deshayesi*, *Tellina donacina*, *Eulima polita*, *Turitella triplicata* (molluscs); *Hermione hystrix*, *Petta pusilla* (polychaetes); *Conilera cylindracea*, *Paguristes oculatus*, *Anapagurus laevis*, *Ebalia tuberosa*, *Ebalia edwardsi* (crustaceans); *Molgula oculata*, *Microcosmus vulgaris*, *Polycarpia pomaria*, *Polycarpia gracilis* (ascidians).

Classification

EUNIS (v1405):

Level 4. A sub-habitat of 'Mediterranean circalittoral mixed sediment' (A5.4).

Annex 1:

1160 Large shallow inlets and bays

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Shallow sublittoral sediment (coarse, sand, mud, mixed)

EUSeaMap:

Shallow sands

Shallow muds

Shallow coarse or mixed sediments

IUCN:

9.3 Subtidal loose rock/ pebble/ gravel

9.4 Subtidal sandy

9.6 Subtidal sandy-mud

Barcelona code:

IV.2.2. Biocenosis of the coastal detritic

and the different facies :

- IV.2.2.8. Facies with *Ophiura texturata*
- IV.2.2.9. Facies with Synascidies
- IV.2.2.10. Facies with large bryozoans

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

Unknown

Justification

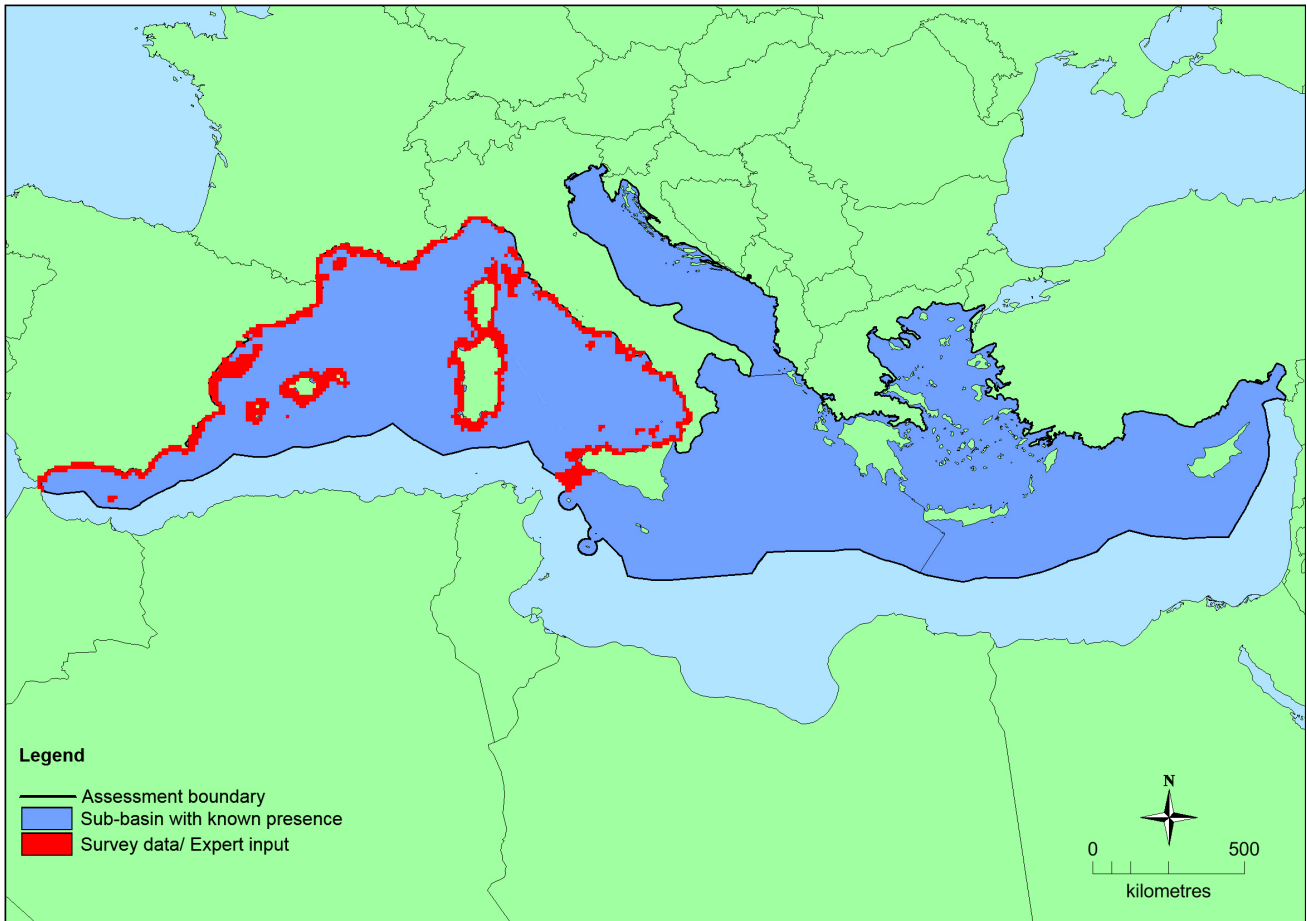
Geographic occurrence and trends

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 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>	1,052,686 Km ²	1168	Unknown Km ²	EOO and AOO have been calculated on the available data. Although this data set is known to be incomplete the figures exceed the thresholds for threatened status.
<i>EU 28+</i>	>1,052,686 Km ²	>1168	Unknown Km ²	EOO and AOO have been calculated on the available data. Although this data set is known to be incomplete the figures exceed the thresholds for threatened status.

Distribution map



There are insufficient data to provide a comprehensive and accurate map of the distribution of this habitat. This map has been generated by IUCN using EMODnet data from modelled/surveyed records from the Mediterranean (and supplemented with expert opinion where applicable) (EMODnet, 2015). EOO and AOO have been calculated on the available data presented in this map however these should be treated with caution as expert opinion is that this is not the full distribution of the habitat.

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

This habitat occurs in the EU 28+. The percentage hosted by the EU 28 is therefore less than 100% but there is insufficient information to establish the proportion.

Trends in quantity

The extent of this habitat is still poorly known, and the studies conducted have mostly focused on the description of the benthic assemblages in relation to sediment characteristics.

- 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 km².
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
 No
Justification
 The habitat is widespread and present along the Mediterranean coast.

Trends in quality

There are no available studies that evaluate the trends in quality over the last 50 years, and no information regarding trends has been provided by territorial experts for a good part of its range. For the western and central Mediterranean expert opinion is that this habitat is stable.

- Average current trend in quality

EU 28: Stable

EU 28+: Unknown

Pressures and threats

Coastal activities such as urban wastewater discharge, pollutants and marine-coastal infrastructures can increase sedimentation (brought down in the rivers and other human activities) and potentially degrade the habitat by increasing the mud fraction. Moreover, it can cause some sub-habitats or facies to disappear (e.g. *Lithothamnium*, big bryozoans, ascidian beds), decrease diversity and productivity (including of commercial species) and change the faunal and floral composition.

List of pressures and threats

Urbanisation, residential and commercial development

Urbanised areas, human habitation

Discharges

Pollution

Pollution to surface waters by industrial plants

Diffuse pollution to surface waters via storm overflows or urban run-off

Diffuse pollution to surface waters due to household sewage and waste waters

Conservation and management

Basic knowledge on the habitat and the distribution of this habitat in the Mediterranean, as well as on the associated assemblages, and species biology (distribution, abundance, habitat preferences, life-cycles), as well as monitoring data on trends is needed to determine the most useful conservation measures.

In areas where the habitat is affected, it is recommended to reduce anthropogenic waste, particularly domestic and industrial wastewater that is still loaded with fine matter, pollutants and organic matter. The designation of protected areas can provide a local focus for such action as well as for monitoring and investigation programmes relating to this habitat.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

Measures related to marine habitats

Other marine-related measures

Measures related to spatial planning

Establish protected areas/sites

Conservation status

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

The increase of fine terrigenous-origin particles can change the composition of flora and fauna and shift the habitat and the dominant facies, if any, to other types. It is unknown how easily these communities can recover, but a reduction of the impact should allow some recovery to previous conditions.

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 current trend in quantity is unknown, and there is insufficient information on past or future reductions in quantity for this habitat. It is therefore 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 ²	Unknown	Unknown	No	>50	Unknown	Unknown	No	No
EU 28+	>50,000 Km ²	Unknown	Unknown	No	>50	Unknown	Unknown	No	No

This habitat is present in the Eastern and Western Mediterranean basins. The precise extent is unknown however as EOO >50,000km² and AOO>50, this exceeds the thresholds for a threatened category on the basis of restricted geographic distribution. There is insufficient information to determine any trends in spatial extent, abiotic and biotic quality. The nature and size of threats to this habitat and the distribution data which are available suggest that no known threats are unlikely 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.

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%

There is insufficient data from different Mediterranean regions on which to assess criteria C/D and to ascertain if there is a substantial or slight reduction in the abiotic or biotic quality of the habitat. Expert opinion believed the quality of the habitat is stable along part of its range. Therefore, the habitat type is assessed as Data Deficient under Criterion 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 the habitat type 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)

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Date of assessment

15/12/2015

Date of review

17/03/2016

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