A5.46 Communities of Marmara infralittoral (coastal) detritic bottoms

Summary

This habitat is present in the Sea of Marmara on various substrata, from gravels and sands to shell debris from various molluscs. This habitat is usually associated with the lower infralittoral zone. In the Sea of Marmara this consists of two layers, a less saline upper layer (influenced by inflowing water from the Black Sea) and a more saline lower layer (influenced by the Mediterranean Sea). It is also found in the Mediterranean Sea, but not Black Sea. The pressures and threats likely to affect the habitat are agricultural run-off, commercial fishing, coastal development and marine water pollution. The conservation and management measures which would benefit the habitat are restoring coastal areas and marine habitats, improving water quality, establishing protected areas, management of marine traffic and managing urban and industrial waste.

Synthesis

Detailed information on the abundance and extent of this habitat is lacking. Information on the quantity and quality of this habitat including historical or recent trends is unknown. For the purposes of Red List assessment this habitat is therefore considered to be Data Deficient.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
n/a	-	Data Deficient	-

Sub-habitat types that may require further examination

None

Habitat Type

Code and name

A5.46 Communities of Marmara infralittoral (coastal) detritic bottoms

There are currently no photographs of this habitat available.

Habitat description

This habitat is usually associated with the lower infralittoral zone. In the Sea of Marmara this consists of two layers, a less saline upper layer (influenced by inflowing water from the Black Sea) and a more saline lower layer (influenced by the Mediterranean Sea). The nature of the substratum varies widely and depends largely on the typology of the adjacent coast and of nearby infralittoral formations. This implies that substrata can sometimes be gravels and sands originating from predominant local rocks, sometimes shell debris from various molluscs (mainly *Mytilus galloprovincialis).* The interstices between these various components are partially filled by a greater or lesser proportion of sand and mud*.*

Indicators of quality:

Both biotic and abiotic indicators have been used to describe marine habitat quality. These include the presence of particular species, water quality parameters, levels of exposure to a particular exposure as well as more integrated indices which describe habitat function and structure, such as trophic index, or successful stages of development in habitats that have a natural cycle of change over time. There are no known commonly agreed indicators of quality for this habitat, although particular parameters may be set

in certain situations, e.g. protected features with Natura 2000 sites, where reference values may have been determined and applied on a location-specific basis. Some potential indicators of quality for specific habitat are the presence and abundance of indicated characteristic species.

Characteristic species:

In the upper infralittoral layer, characteristic species include: *Gracilaria verrucosa, Pagurus anachoretus, Clibanarius erythropus, Ophiothrix fragilis, Astropecten irregularis, Astropecten spinulosus, Asterina gibbosa, Marthasterias glacialis, Asterias rubens, Pisidia bluteli, Pisidia longimana,* and *Botryllus schlosseri.*

In the lower infralittoral layer, characteristic species comprise: *Halymenia floresii*, *Veretillum cynomorium*, *Pteroeides spinosum*, *Philine aperta, Asterias rubens, Ocnus planci, Ciona intestinalis,* and *Phallusia mamillata.*

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

EUNIS (v1405):

Level 4. A sub-habitat of Sublittoral mixed sediments (A5.4)

Annex 1:

1160 Large shallow inlets and bays

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Shallow sublittoral coarse sediment

Shallow sublittoral mixed sediment

EUSeaMap:

Shallow coarse or mixed sediments

IUCN:

9.3 Subtidal loose rock/ pebble/ gravel

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?
No

Justification

The Sea of Marmara has distinct environmental conditions compared to the Black Sea, with conditions more similar to that of the Mediterranean Sea. As such habitats present here do not present an outstanding example of the typical characteristics of the Black Sea region.

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)
Black Sea	Sea of Marmara: 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	N/A Km^2	N/A	N/A Km^2	This habitat is only present in the Sea of Marmara therefore it does not occur in the EU28
EU 28+	13,292 Km^2	43	Unknown Km^2	EOO and AOO have been calculated on the available data.

Distribution map
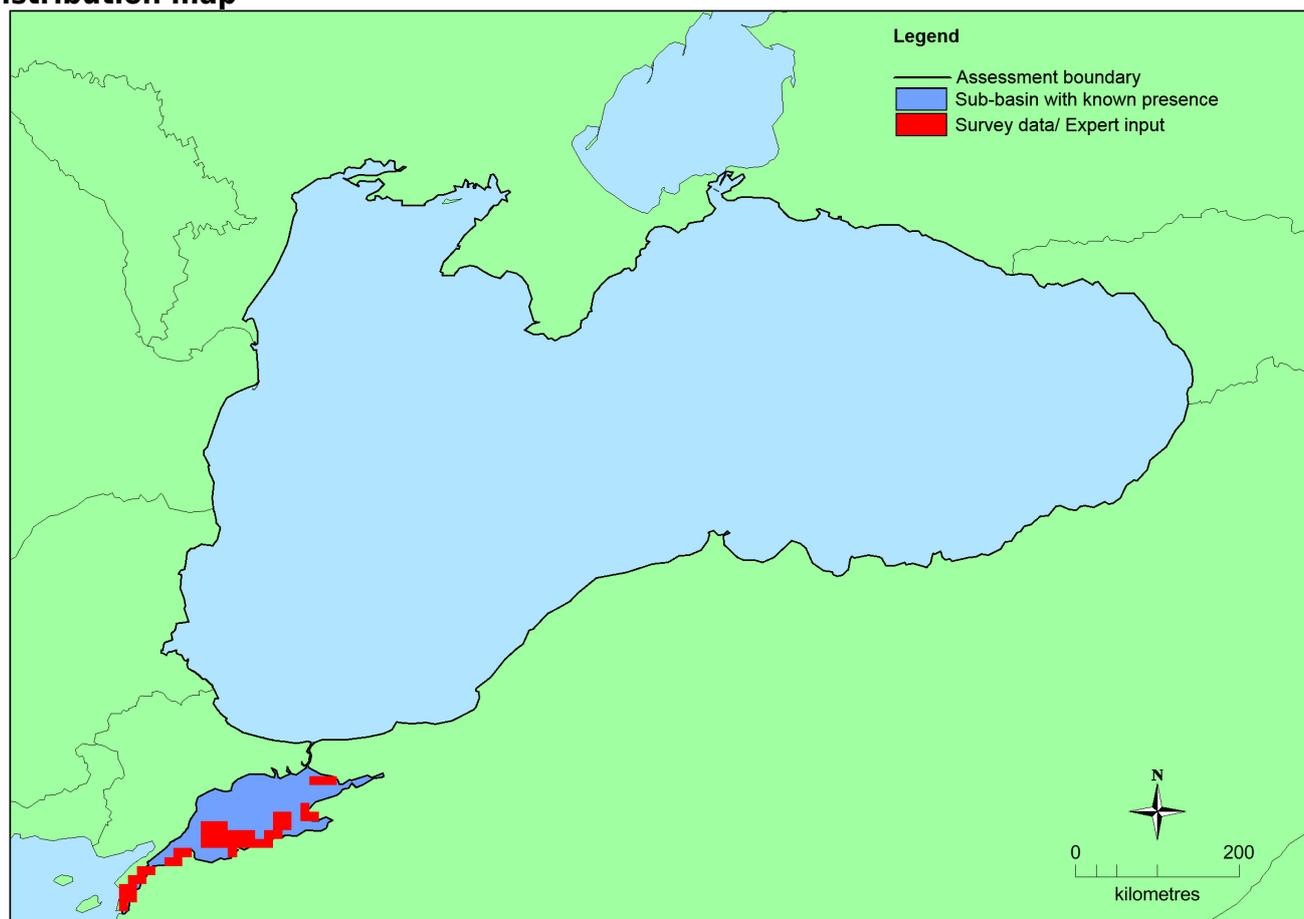
This map has been generated based on expert opinion and has been used to calculate AOO and EOO. The map should be treated with caution as it does not necessarily reflect the full distribution of the habitat.

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

The habitat is only present in the Sea of Marmara, therefore it is not present in the EU28.

Trends in quantity

There is insufficient data to accurately assess changes in quantity of the habitat

- <u>Average current trend in quantity (extent)</u>
  EU 28: -
  EU 28+: Unknown
- <u>Does the habitat type have a small natural range following regression?</u>
  Unknown
  Justification
  This habitat does not occur in the Black Sea, therefore it's maximum EOO for the Sea of Marmara is 11,
  350km^2. However, there is insufficient information to assess whether the habitat has undergone a
  significant decline (>25% of extent) in the last 50 years. This habitat also occurs in the Mediterranean
  therefore it is unlikely to have a small natural range.
- <u>Does the habitat have a small natural range by reason of its intrinsically restricted area?</u>
  No
  Justification
  This habitat does not occur in the Black Sea, however it is present in the Sea of Marmara as well as the
  Mediterranean Sea. Therefore this habitat is unlikely to have an intrinsically restricted area.

Trends in quality

There is insufficient data to accurately assess changes in quality of the habitat

- <u>Average current trend in quality</u>
  EU 28: -
  EU 28+: Unknown

Pressures and threats

This habitat is affected by human activities that increase mud transport from the coast (mainly untreated
urban waste discharge, major construction works in the maritime field, and leaching from soil). Hyper-
sedimentation may eliminate vulnerable communities, resulting in biotope homogenization and a
consequent reduction of the associated biodiversity and the exploitable living resources. The combined
effects of ongoing urbanization, fisheries, aquaculture and sedimentation are leading to a shift in
associated assemblages.

List of pressures and threats

Agriculture

Use of biocides, hormones and chemicals
Fertilisation

Urbanisation, residential and commercial development

Urbanised areas, human habitation
Industrial or commercial areas
Discharges

Biological resource use other than agriculture & forestry

Marine and Freshwater Aquaculture
Fishing and harvesting aquatic resources

Pollution

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

Marine water pollution
Soil pollution and solid waste (excluding discharges)

Conservation and management

Legislation regulating fisheries exist in this area, but precise management measures aimed at conserving this particular habitat are not in place. 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.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality
Restoring coastal areas

Measures related to marine habitats

Restoring marine habitats

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Measures related to hunting, taking and fishing and species management

Regulation/Management of fishery in marine and brackish systems

Measures related to urban areas, industry, energy and transport

Urban and industrial waste management
Managing marine traffic

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 once severely damaged is unknown.

Effort required

10 years
Unknown

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	n/a %	n/a %	n/a %	n/a %
EU 28+	unknown %	unknown %	unknown %	unknown %

There is insufficient data on changes in quantity of this habitat to determine any trends in quantity.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	n/a Km^2	-	-	n/a	n/a	-	-	n/a	n/a
EU 28+	13292 Km^2	Unknown	Unknown	unknown	43	Unknown	Unknown	unknown	unknown

AS the trends in quality and quantity of that habitat are unknown, there is insufficient data to conduct an assessment using 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	n/a %	n/a %	n/a %	n/a %	n/a %	n/a %
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	n/a %	n/a %	n/a %	n/a %	n/a %	n/a %
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	n/a %	n/a%	n/a %	n/a%	n/a %	n/a%
EU 28+	unknown %	unknown%	unknown %	unknown%	unknown %	unknown%

Experts consider there to be insufficient data to conduct an assessment using criteria C/D.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	n/a
EU 28+	unknown

There is no quantitative analysis available to estimate 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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

Overall Category & Criteria			
n/a	-	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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