

A5.32 Communities of Marmara infralittoral mud estuarine

Summary

The habitat is present in the Sea of Marmara (and Mediterranean Sea) but not the Black Sea where wave exposure is low enough to allow fine sediments to settle. It is characterized by a variable salinity range from brackish to fully marine conditions, mainly found in sheltered inlets along and after estuaries. There are three estuaries in the Sea of Marmara, the largest being the Golden Horn in the Bosphorus. The pressures and threats likely to affect the habitat are: agricultural run-off, marine traffic, 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

A5.32 Communities of Marmara infralittoral mud estuarine

There are currently no photographs available of this habitat.

Habitat description

This habitat occurs mainly in sheltered inlets along and after estuaries, where wave exposure is low enough to allow fine sediments to settle. It is characterized by a variable salinity range from brackish to fully marine conditions. In all cases, the resident populations comprise a small number of species that are strongly dominant in number and weight. These are species that are able to withstand violent variations in environmental conditions, among which salinity is only one example. Sudden influxes of salt water create recurrent disturbances that sometimes cause populations to disappear. Often, especially in shallower areas, beds of *Cymodocea nodosa* are present.

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 this specific habitat are the presence and abundance of indicated characteristic species.

Characteristic species:

Tubificoides spp , *Capitella capitata*, *Ficopomatus enigmaticus*, *Heterochaeta costata*, *Alitta succinea*, *Spio decoratus*, *Aphelochaeta marioni*, *Hydrobia acuta*, *Spisula subtruncata*, *Corophium orientale*, *Gammarus aequicauda*, *Carcinus aestuarii*, *Thalassodrilides gurwitschi*.

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 mud (A5.3)

Annex 1:

1130 Estuaries

1160 Large shallow inlets and bays

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Shallow sublittoral mud

EUSEaMap:

Shallow muds

IUCN:

9.5 Subtidal sandy-mud

9.6 Subtidal muddy

9.10 Estuaries

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.

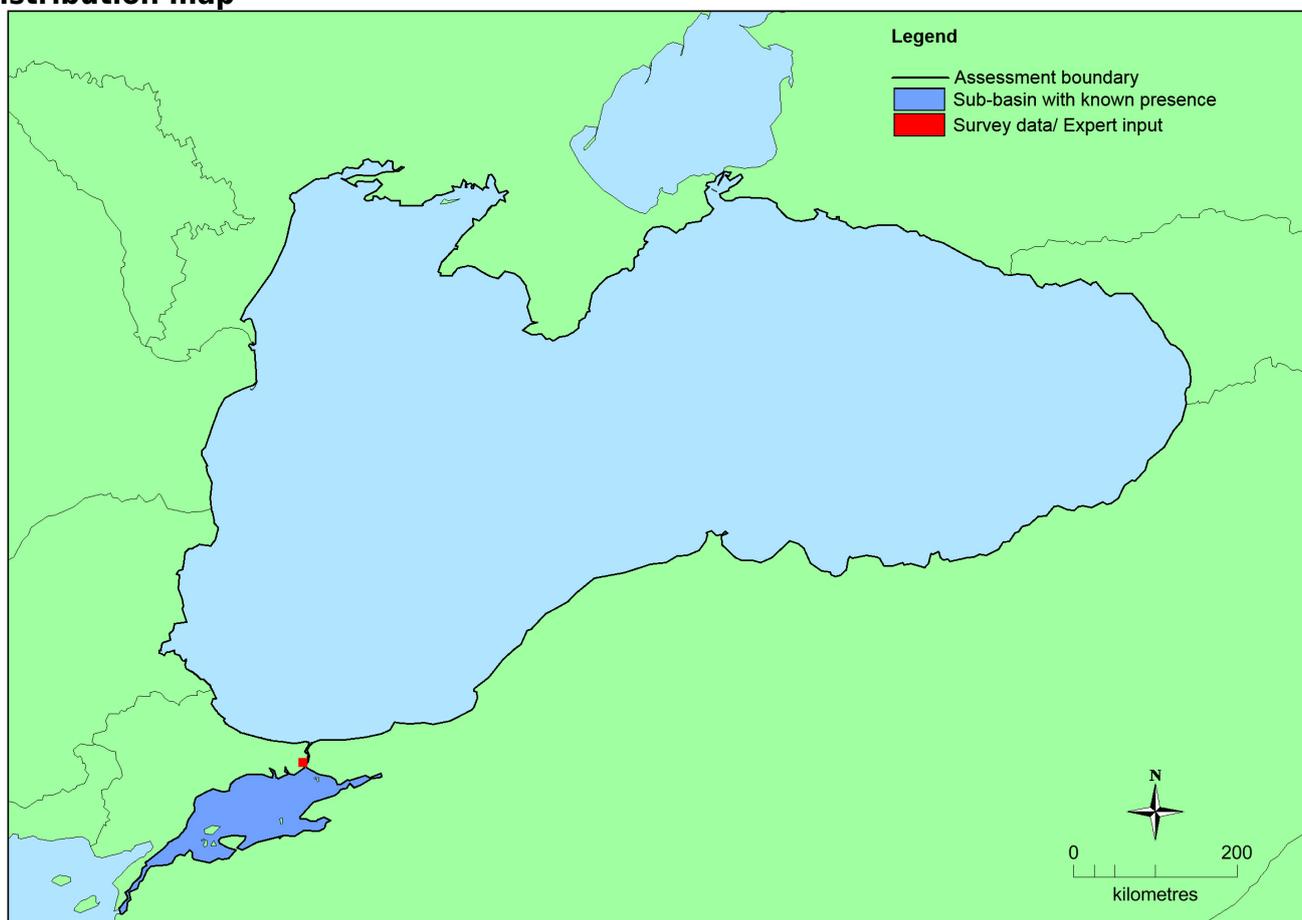
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Black Sea</i>	Sea of Marmara: Present	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>	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
<i>EU 28+</i>	100 Km ²	1	Unknown Km ²	EOO and AOO have been calculated on the available data.

Distribution map



This map has been generated based on expert opinion. The map 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?

This 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

- Average current trend in quantity (extent)

EU 28: -

EU 28+: Unknown

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

Unknown

Justification

This habitat does not occur in the Black Sea, therefore its maximum EOO for the Sea of Marmara is 11,350km². 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.

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

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

- Average current trend in quality

EU 28: -

EU 28+: Unknown

Pressures and threats

Many studies conducted within this zone show that the combined effects of urbanization, fisheries, aquaculture and sedimentation have led to a shift in associated assemblages. Hence, in general, each estuary area within the Sea of Marmara is particularly and directly subject to various human activities. Thus, this habitat is especially prone to impacts such as coastal pollution (urban, agricultural, industrial, fish-farming, etc.), coastal zone development (particularly urbanization and uncontrolled coastal infrastructures), fisheries, and contamination of sediments and biota, caused by anti-foulants and atmospheric inputs of hazardous compounds and episodic perturbations (i.e. sediment removal and illegal dumping of wreckages).

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

Some legal provisions, e.g. in fisheries, regarding estuaries and this whole zone in general exist, but 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:

1130: MMED U2

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

Recovery may be extremely slow because of the stable (nondynamic) conditions that prevail in this biotope.

Effort required

	10 years	200+ years
	Unknown	Naturally and through intervention

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+	100 Km ²	Unknown	Unknown	unknown	1	Unknown	Unknown	unknown	unknown

As the trends in quality and quantity of this 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
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)

Assessors

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Reviewers

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References

Altuğ, G., Aktan, Y., Oral, M., Topaloğlu, B., Dede, A., Keskin, Ç., İşinibilir, M., Çardak, M., Çiftçi, P. S. 2011. Biodiversity of the northern Aegean Sea and southern part of the Sea of Marmara, Turkey. *Marine Biodiversity Records* 4: 1-17.

Bakir, A. K., Katagan, T., Aker, H. V., Özcan, T., Sezgin, M., Ateş, A. S., Koçak, C., Kirkim, F. 2014. The marine arthropods of Turkey. *Turkish Journal of Zoology* 38: 765-831.

Balkis, H. 1992. A preliminary study on the macrobenthos of littoral of the Island of Marmara. *Institute of Marine Sciences and Geography, İstanbul University* 9: 309-327 (article in Turkish with an abstract in English).

Çinar, M. E., Dagli, E., Kurt Şahin, G. 2014. Checklist of Annelida from the coasts of Turkey. *Turkish Journal of Zoology* 38: 734-764.

Demir, M. 1952. Boğazlar ve adalar sahillerinin omurgasız dip hayvanları. Istanbul University Faculty of Science, *Hydrobiology Research Institute Publications* 3: 1-615 (in Turkish).

Öztürk B, Dogan A, Bitlis-Bakir B, Salman A. (2014) Marine molluscs of the Turkish coasts: an updated checklist. *Turkish Journal of Zoology* 38: 832-879.

Topaloğlu, B., Ozturk, B., Karakulak, F. S. 2004. The macrozoobenthic invertebrate fauna in the Marmara Sea. *Rapp Comm Int Mer Medit* 37: 554.

Tortonese, E. 1959. Osservazioni sul bentos del Mar di Marmara e del Bosforo. *Natura Milano* 50: 18-26 (in Turkish).