

A5.237 Pontic infralittoral sands and muddy sands without macroalgae

Summary

The habitat is present in the Black Sea on areas of sandy infralittoral substrate. It is also present in the Sea of Marmara. Eutrophication is the main historic pressure on this habitat. Additional pressures include: coastal development, trawling, sand extraction and disturbance from anthropogenic activities. Conservation and management measures relevant to this habitat include: measures to maintain physical and biological integrity, improvement of water quality, pollution event response strategies, survey and monitoring programs and raised public awareness.

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 considered to be Data Deficient.

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

A5.237 Pontic infralittoral sands and muddy sands without macroalgae

There are currently no photographs of this habitat available.

Habitat description

This habitat includes all sandy habitats dominated by faunal species occurring in the infralittoral zone down to 20m depth and comprises many different Level 5 habitats. This ranges from medium to coarse grained sands on exposed beaches to off-shore infralittoral fine sand banks and includes many types of surface features at different scales (banks, ripples, mounds and burrows of infauna). The depth and waves or current exposure are important elements in defining the species composition.

Indicators of quality:

Both biotic and abiotic indicators have been used to describe marine habitat quality. These include; the presence of characteristic species and those which are sensitive to the pressures the habitat may face, water quality parameters, levels of exposure to particular pressure as well as 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:

Donax trunculus, *Upogebia pusilla*, *Lentidium mediterraneum*, *Cerastoderma glaucum*, *Mya arenaria*, *Chamelea gallina*, *Tellina tenuis*, *Anadara inaequalis*, *Cyclope neritea*, *Arenicola marina*, *Callianassidae*, *Gouldia minima*, *Donax semistriatus*, *Modiolus adriaticus*, *Solen marginatus* amphipods and *Aonides ornatus*.

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 'Shallow sublittoral/ infralittoral sand' (A5.52)

Annex 1:

1110 Sandbanks slightly covered all the time

1130 Estuaries

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

IUCN:

9.5 Subtidal sandy mud

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

Unknown

Justification

There is insufficient knowledge and information on this habitat to state whether it is an outstanding example of this biogeographic region.

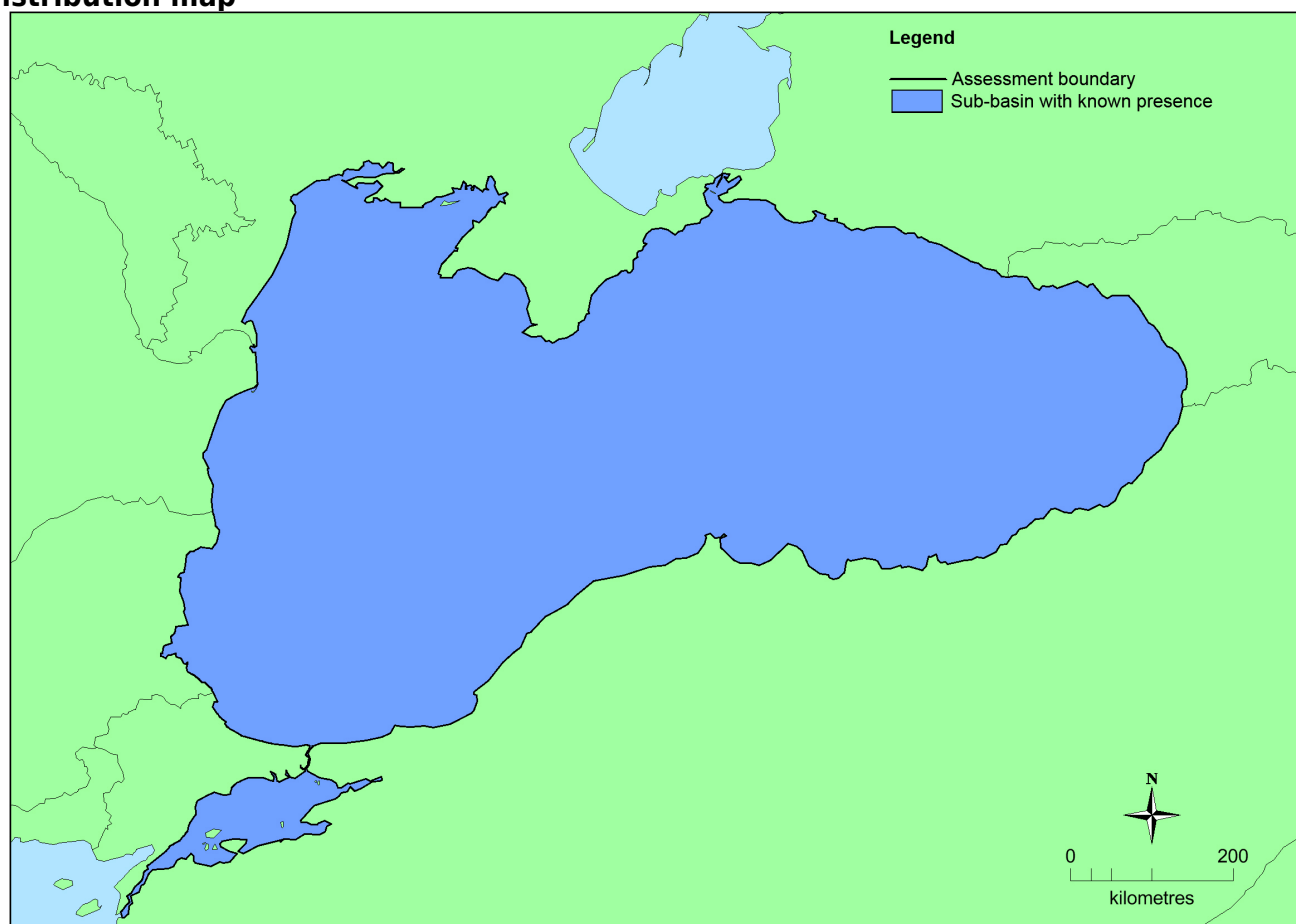
Geographic occurrence and trends

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>	Black Sea: Present 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
<i>EU 28</i>	Unknown Km ²	Unknown	Unknown Km ²	The habitat is known to occur in the Black Sea but there is insufficient data to accurately calculate EOO and AOO.
<i>EU 28+</i>	Unknown Km ²	Unknown	Unknown Km ²	The habitat is known to occur in the Black Sea but there is insufficient data to accurately calculate EOO and AOO.

Distribution map



There is insufficient data to produce a map of the distribution of this habitat.

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 EU28 in the Black Sea.

Trends in quantity

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

- Average current trend in quantity (extent)

EU 28: Unknown

EU 28+: Unknown

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

Unknown

Justification

The habitat is known to occur in the Black Sea but there is insufficient data to accurately calculate EOO and AOO. There is insufficient data to accurately assess whether the habitat has undergone a significant decline (>25% of extent) in the last 50 years.

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

Unknown

Justification

There is insufficient data and knowledge on this habitat to state whether it has a small natural range by reason of 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: Unknown

EU 28+: Unknown

Pressures and threats

Eutrophication as a result of nutrient enrichment (N, P and organic matter) is the most significant historic pressure on the habitat. Anoxic and hypoxic conditions due to eutrophication caused mass mortalities in benthic communities. Since the 1990s this pressure has reduced due to tighter controls on pollution in the catchment of the Danube and other rivers which enter the north-west Black Sea. Whilst this pressure is now reduced it is still a threat. This is especially true for non EU countries surrounding the Black Sea which are not bound by the agreements such as the Water Framework Directive (WFD).

The habitat is sensitive and vulnerable to:

Coastal developments including the construction of marinas and slipways, sediment extraction, the widening and dredging of channels, creation of artificial beaches, road developments and sea defenses. These activities may alter the hydrological regime which will in turn affect the character and viability of the habitat.

Trawling is causing deterioration and habitat destruction by damaging benthic communities both directly and indirectly through effects such as smothering and altering the sediment characteristics.

Sand extraction can lead to habitat destruction. Marine sand is an important building material in the Black Sea therefore sand extraction is considered likely to increase in tandem with other development pressures in the region.

List of pressures and threats

Urbanisation, residential and commercial development

Other urbanisation, industrial and similar activities

Biological resource use other than agriculture & forestry

Fishing and harvesting aquatic resources

Professional active fishing

Pollution

Nutrient enrichment (N, P, organic matter)

Natural System modifications

Human induced changes in hydraulic conditions

Removal of sediments (mud...)

Extraction of sea-floor and subsoil minerals (e.g. sand, gravel, rock, oil, gas)

Conservation and management

Conservation and management measures which would benefit this habitat include measures to maintain physical and biological integrity, including sand extraction control and regulation, improvement of water quality management outside EU member states, coastal development controls, prohibition of bottom trawling, survey and monitoring programmes, raised public awareness of ecological value and vulnerability of the habitat.

List of conservation and management needs

Measures related to marine habitats

Other marine-related measures

Measures related to spatial planning

Establish protected areas/sites

Measures related to urban areas, industry, energy and transport

Other measures

Conservation status

Annex 1:

1160: MBLS U1, MMED XX

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

There is insufficient data and knowledge of this habitat to assess its capacity to recover

Effort required

10 years
Unknown

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 insufficient data on changes in quantity of this habitat to undertake an assessment using criterion A.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	unknown Km ²	Unknown	Unknown	unknown	unknown	Unknown	Unknown	unknown	unknown
EU 28+	unknown Km ²	Unknown	Unknown	unknown	unknown	Unknown	Unknown	unknown	unknown

The precise extent of the habitat is unknown. Therefore there is insufficient data to produce EOO and AOO figures.

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%

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	unknown
EU 28+	unknown

There is no quantitative analysis available that estimates 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	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

Overall Category & 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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References

Anon. 2006. *The northwestern part of the Black Sea: biology and ecology*. Kiev: Naukova Dumka. 701pp.

Arnoldi, L. V. 1949. Materials on the quantitative study of the Black Sea zoobenthos. II Karkinitzky Bay (in Russian). *Proceedings of the Sevastopol Biological Station*: 8.

Bacescu, M. C., Muller G. I., Gomoiu, M-T. 1971. Cercetari de ecologie bentica in Marea Neagra (analiza cantitativa, calitativa si comparata a faunei bentice pontice). *Ecologie Marina* vol. IV. Editura Academiei R.S.R., Bucuresti, 357 pp..

Bacescu M., 1977. Les biocenoses benthiques de la Mer Noire. *Biologie des eaux saumâtres de la Mer Noire, Première partie*: 128-134.

Borisenko A. M. 1946. *Quantitative accounting of benthic fauna of the Tendra Bay*, Kara Dag. 201p

Chernyakov D. A. 1995. *Natural-aquatic landscape complexes of the Tendra and Egorlyk bays and monitoring of their state in Black Sea Biosphere Reserve*

Kiseleva, M. I. 1981. *Benthos of Black Sea mobile substrates*. Naukova dumka, Kiev, pp 165.

Konsulov, A. 1998. *Black Sea Biological Diversity: Bulgaria. Volume 5 of Black Sea environmental series*. United Nations Publications, New York, USA.

Kopyi, V. G, Bondarenko, L.V. 2009. Benthos of sand habitat near splash zone of Karadag. *Proc. of the V Intern. scient-pract. conf. (Simferopol)*: 294-298.

Kopyi, V. G. Bondarenko, L. V. 2012. The community of the macrozoobenthos of mediolittoral zone of Western Crimea. Biodiversity and sustainable development: Abstracts of the II Intern. *scientific and practic Conf., Simferopol*: 189-192.

Marinov, T. 1990. *The zoobenthos from the Bulgarian Sector of the Black Sea*. Publishing house of the Bulgarian Academy of Sciences, Sofia, pp 195 (in Bulgarian).

Micu D, Todorova V., 2007. *A fresh look at the western Black Sea biodiversity*. MarBEF Newsletter No 7, pp 26-28.

Micu, D. 2008. Open Sea and Tidal Areas. In: Gafta D. and Mountford J.O. (eds.) *Natura 2000 Habitat Interpretation Manual for Romania*. EU publication no. EuropeAid/121260/D/SV/RO, 101pp. ISBN 978-973-751-697-8.

Micu, D., Zaharia, T., Todorova, V. 2008. Natura 2000 habitat types from the Romanian Black Sea. In: Zaharia T, Micu D, Todorova V, Maximov V, Niță V. *The development of an indicative ecologically coherent network of marine protected areas in Romania*. Romart Design Publishing, Constanta, Romania.

Moncheva. S., Todorova, V., (eds). 2013. *Initial assessment of the marine environment*. Article 8, MSFD 2008/56/EC and NOOSMV (2010). 500p

Petranu, A. 1997. *Black Sea Biological Diversity: Romania. Volume 4 of the Black Sea Environmental Series*. United Nations Publications, New York, USA.