A5.a Fauna-dominated Pontic infralittoral cobbles and gravels

Summary

The habitat is present in the Black Sea and the Sea of Marmara on areas of infralittoral cobbles and gravels. The main pressures impacting this habitat include eutrophication, chemical pollution, physical disturbance from dredging and trawling and siltation. Conservation and management measures relevant to this habitat include: measures to maintain physical and biological integrity, improvement of water quality and pollution event response strategies.

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.a Fauna-dominated Pontic infralittoral cobbles and gravels

There are currently no photographs available of this habitat.

Habitat description

This habitat is defined by faunal communities present in infralittoral coarse sediments including pebbles, cobbles, fine gravels, coarse sands and shell hash. The habitat comprises a diverse range of communities which include: sparse fauna on pebbles and gravels, environments beneath cobbles and gravels and shell hash with well defined characteristic species (Branchiostoma lanceolatum - Protodorvillea kefersteini - Ophelia limacina). This biotope is found in coastal surge zones, as well as on wave lashed bottoms in open coast environments and deposits affected by unidirectional currents. Typical characterising species in coarse sand and shell gravel environments include the lancelet *Branchiostoma lanceolatum* and polychaetes *Protodorvillea kefersteini* and *Ophelia limacina*.

Indicators of quality:

Both biotic and abiotic indicators have been used to describe marine habitat quality. These include; the presence of characteristic species and species 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:

Spirobranchus triqueter, Branchiostoma lanceolatum, Protodorvillea kefersteini, Ophelia limacina, Flexopecten glaber ponticus and *Polititapes aureus.*

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 'Pontic shallow/ infralittoral coarse sediment' (A5.5)

Annex 1:

1110 Sandbanks slightly covered all the time

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

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

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?

Unknown

Justification

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

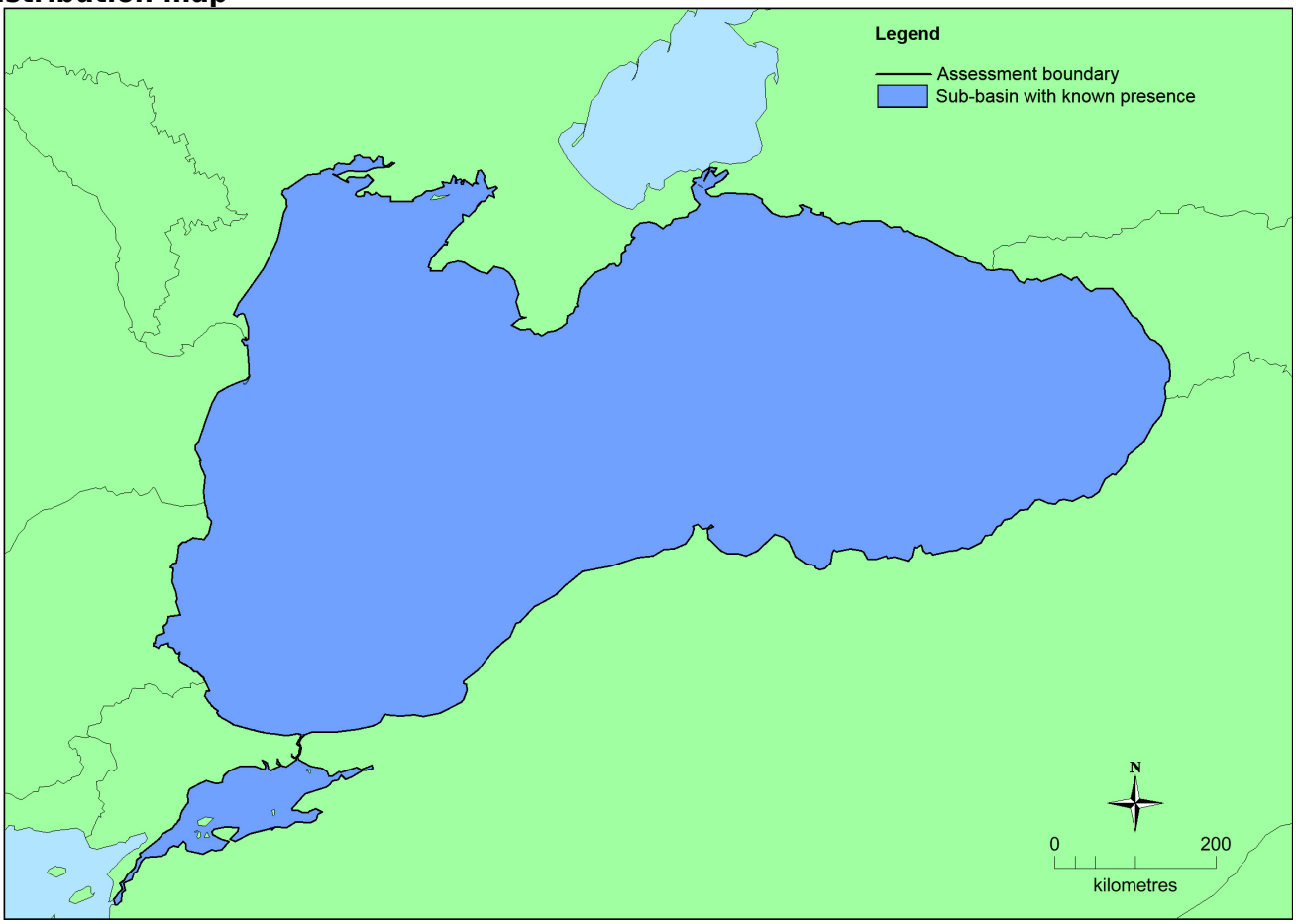
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Black Sea	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
EU 28	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.
EU 28+	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 in sufficient 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 in sufficient 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 continuing threat in the current and future periods. 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).

Demersal trawling and dredging by commercial fisheries is a current and future threat to the habitat. Trawling and dredging can damage the habitat and associated benthic communities both directly and indirectly. Trawl and dredge gear can directly impact the habitat by damaging and/or removing species. Trawling can also act directly to reduce the complexity of the habitat, smoothing out microhabitats, and thereby reducing biodiversity. Indirect impacts of trawling include smothering and alteration of sediment characteristics. Demersal trawling and dredging is prohibited in some states, however, illegal demersal fishing is still an issue in these areas.

Siltation is a current and future threat to the habitat. The resettling of suspended sediment can smother filter feeding organisms as well as inhibit the growth of some species. Siltation is typically caused by navigation channel dredging, demersal trawl and dredge fishing and other activities which disturb bottom sediments.

Chemical pollution is a threat of current and future importance which at its most severe can result in high levels of species mortality. High mortality rates can lead to a reduction in habitat/community extent. Lower mortality rates will result in a reduction in habitat quality. Chemical pollution may also affect growth rate and size of some fauna.

List of pressures and threats

Biological resource use other than agriculture & forestry

Fishing and harvesting aquatic resources
Professional active fishing

Pollution

Nutrient enrichment (N, P, organic matter)
Input of contaminants (synthetic substances, non-synthetic substances, radionuclides) - diffuse sources, point sources, acute events

Natural System modifications

Siltation rate changes, dumping, depositing of dredged deposits

Conservation and management

Conservation and management measures which would benefit this habitat include survey and monitoring programmes, measures to maintain physical and biological integrity, including pollution control and regulation, improvement of water quality management outside EU member states, contingency plans to be followed in the event of a major pollution incident.

List of conservation and management needs

Measures related to marine habitats

Other marine-related measures

Measures related to urban areas, industry, energy and transport

Other measures

Conservation status

Annex 1:

No relationship

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 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	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
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

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 saumatres de la Mer Noire, Premiere partie*: 128-134.

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, Niţă V. *The development of an indicative ecologically coherent network of marine protected areas in Romania*. Romart Design Publishing, Constanta, Romania.