A3.3w Invertebrate-dominated Pontic lower infralittoral rock

Summary

The habitat is present in the Black Sea on areas of lower infralittoral rock. It is also present in the Sea of Marmara. This habitat includes areas of both hard and soft rocky substrates in low light, sheltered by wave action due to the depth, but may be exposed to strong currents. Eutrophication is the main historic pressure on this habitat. Additional pressures include: coastal development, siltation, chemical pollution, plastic pollution and disturbance from human activities. Conservation and management measures relevant to this habitat include: measures to maintain physical and biological integrity, improvement of water quality, coastal development controls 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

A3.3w Invertebrate-dominated Pontic lower infralittoral rock

There are currently no photographs available of this habitat.

Habitat description

Present in the lower infralittoral zone of rocky reefs. Dominated by invertebrates, although there is still some light that would allow algae to develop. Several subtypes have been described:

-A3.3wa Lower infralittoral rock dominated by *Mytilus galloprovincialis*

-A3.3wb Lower infralittoral rock covered by crusts of colonial ascidians (*Botryllus schlosseri*), hydrozoans, bryozoans and sponges

-A3.3wc Lower infralittoral rock with colonies of erect sponges (*Halichondria spp., Haliclona spp.)*

-A3.3wd Lower infralittoral rock with extensive hydrozoan (*Obelia longissima)* canopies

-A3.3we Lower infralittoral soft rock with Pholadidae

-A3.3wf Lower infralittoral rock dominated by solitary ascidians (*Molgula manhattensis*)

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:

Mytilus galloprovincialis, colonial ascidians (*Botryllus schlosseri*), hydrozoans, bryozoans and sponges, colonies of erect sponges (*Halichondria spp., Haliclona spp.*), large hydrozoan (*Obelia longissima*) canopies, Pholadidae and solitary ascidians (*Molgula manhattensis*).

Classification

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

EUNIS (2004):

Level 4. A sub-habitat of A3- Infralittoral rock

Annex 1:

1170 Reefs

8330 Submerged or partially submerged sea caves

MAES:

Marine - Coastal

MSFD:

Shallow sublittoral rock and biogenic reefs

EUSeaMap:

Shallow photic rock or biogenic reef

Shallow aphotic rock or biogenic reef

IUCN:

9.2 Subtidal rock and rocky reefs

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.

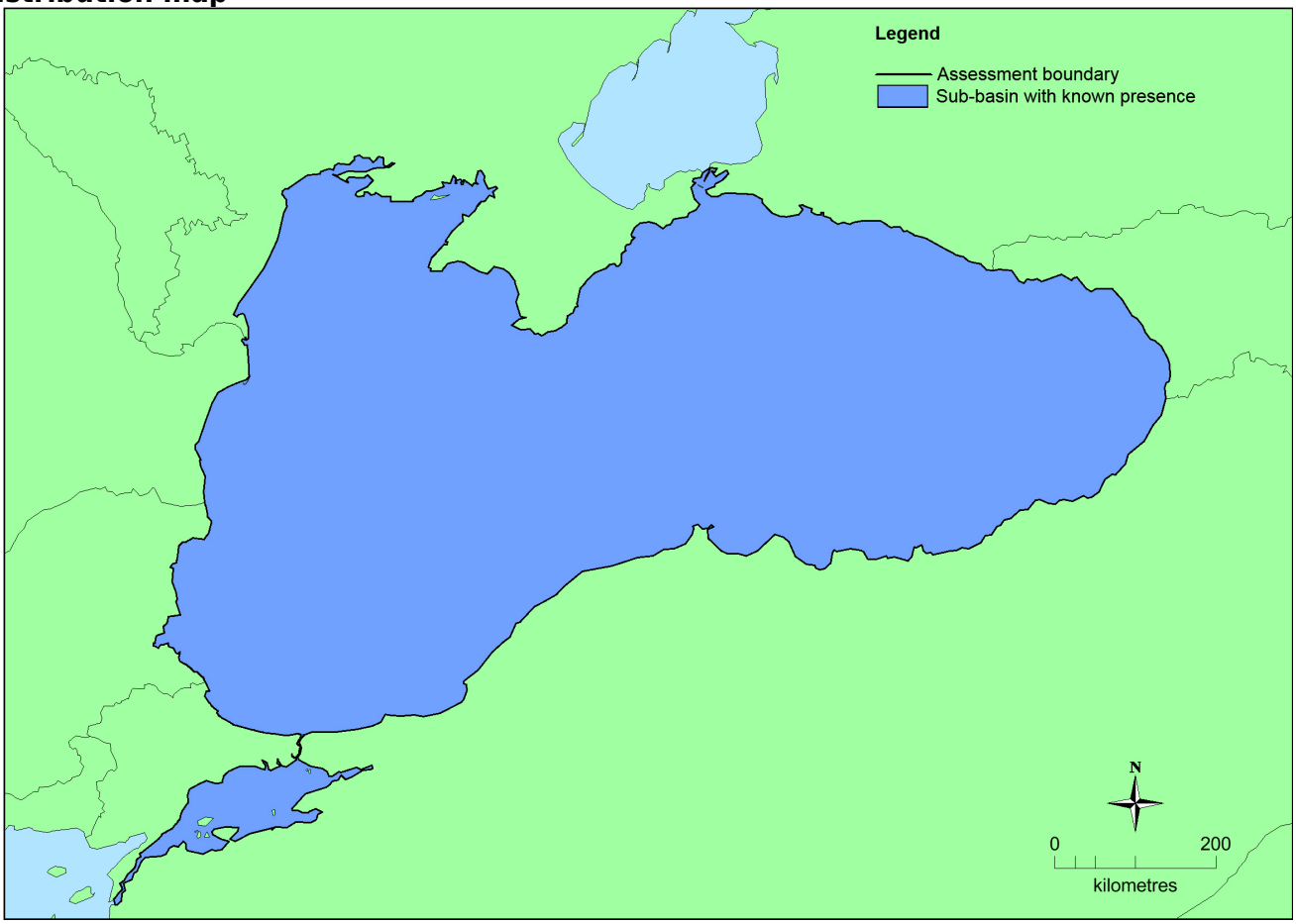
Geographic occurrence and trends

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 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 but it remains 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 defences. These activities may alter the hydrological regime which will in turn affect the character and viability of the habitat.

- Siltation. The resettling of suspended sediment can smother filter feeding organisms as well as inhibiting the growth of some species. Siltation is typically caused by dredging, trawling and other activities which disturb bottom sediments.

- Chemical pollution at its most severe can result in species can lead to mortality. High mortality rates can lead to a reduction in extent. Lower mortality rates will result in a reduction in habitat quality. Chemical pollution may also affect the size and growth rate of some of the associated fauna.

- Plastic pollution at its most severe can lead to mortality. Micro particles of plastic can be ingested by faunal species resulting in illness, functional impairment or death of the animals, producing a reduction in habitat quality.

- Mobile demersal dredging and trawling. This causes habitat destruction leading to in a reduction in extent and quality.

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)
Input of contaminants (synthetic substances, non-synthetic substances, radionuclides) - diffuse sources, point sources, acute events
Marine macro-pollution (i.e. plastic bags, styrofoam)

Natural System modifications

Siltation rate changes, dumping, depositing of dredged deposits

Conservation and management

Conservation and management measures which would benefit this habitat include the implementation of measures to maintain physical and biological integrity, including pollution control and regulation, improvement of water quality management outside EU member states, coastal development controls, raised public awareness of ecological value and vulnerability.

List of conservation and management needs

Measures related to marine habitats

Other marine-related measures

Measures related to spatial planning

Establish protected areas/sites

Conservation status

Annex 1:

1170: 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 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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