A1.15 Pontic Supralittoral Rock

Summary

This habitat occurs in the supralittoral zone where the rock is colonised by various lichens and bacteria. It is present throughout the Black Sea and also occurs in the Sea of Marmara. Coastal development is the most significant threat to this habitat as it can result in smothering or direct loss of the rocky surfaces which support the associated communities. Oil pollution or other chemical pollution are also threats, degrading the habitat through smothering or loss of associated species.

Protection from development, including within a protected area or part of a wider spatial planning framework, pollution control and avoidance of waste water discharges across the habitat would all benefit this habitat.

Synthesis

There is anecdotal evidence of declines in extent and quality however with no studies dedicated to this habitat in the Black Sea it is not possible to assign any quantitative information to these trends.

In the EU 28, this habitat has a restricted distribution however it is asssessed as Data Deficient because of the lack of information on trends in quantity and quality, and the fact that its overall distribution is unknown.

In the EU 28+ this habitat has a large EOO and AOO, and therefore qualifies as Least Concern under criterion B. However the habitat is assessed as Data Deficient because of the lack of information on its trends in quantity and quality.

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

A1.15 Pontic Supralittoral Rock

Pontic supralittoral rock in Mirius Bay, Maslen Nos area, Bulgaria (© D.Micu)

Pontic supralittoral rock. Sinemorets, Bulgaria (© D.Micu)

Habitat description

This habitat occurs in the rocky supralittoral zone (depth 0-5 m). It exists where the upper supralittoral rock is colonised by yellow lichens and cyanobacteria such as *Lyngbia* sp. and the lower supralittoral rock is colonised by encrusting black lichens, littorinids, isopods and barnacles. In locations of freshwater runoff and where nitrate levels are elevated the rock surfaces may be coated with green algae and a film of cyanobacteria.

Indicators of quality:

Species composition – presence of littorinid gastropod *Melaraphe neritoides*, isopod *Ligia italica,* barnacle *Chthamalus stellatus* as well as a high density of these species are indicative of a good quality habitat.

Characteristic species:

Cyanobacteria, algae and lichens are characteristic of this habitat. Typical species of cyanobacteria are *Lingbya lutea*, *L.semiplena*, and *L.confervoides* which create the olive slime covering the habitat in wet (exposed) conditions. Characteristic algae include *Feldmannia irregularis*, and *Urospora penicilliformis* and
the lichens *Xanthoria* spp., *Caloplaca* spp., *Calothri*x spp., *Brachytrichia* spp., *Verrucaria* sp. Typical invertebrates which may be present include the littorinid gastropod *Melaraphe neritoides*, the isopod *Ligia italica,* and the barnacle *Chthamalus stellatus.* The terrestrial snail *Myosotella myositis* is sometimes (rarely) found under stones in this habitat.

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 littoral rock’ (A1.1)

Annex 1:

1160 Large shallow inlets and bays

1170 Reefs

8830 Submerged or partially submerged sea caves

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Littoral rock and biogenic reef

EUSeaMap:

Not mapped

IUCN:

12.1 Rocky shoreline

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

Justification
Similar communities composed of Littorinid gastropod *Melaraphe neritoides,* the isopod *Ligia italica,* and the barnacle *Chthamalus stellatus*, all occur together in the northern Aegean Sea.

Geographic occurrence and trends

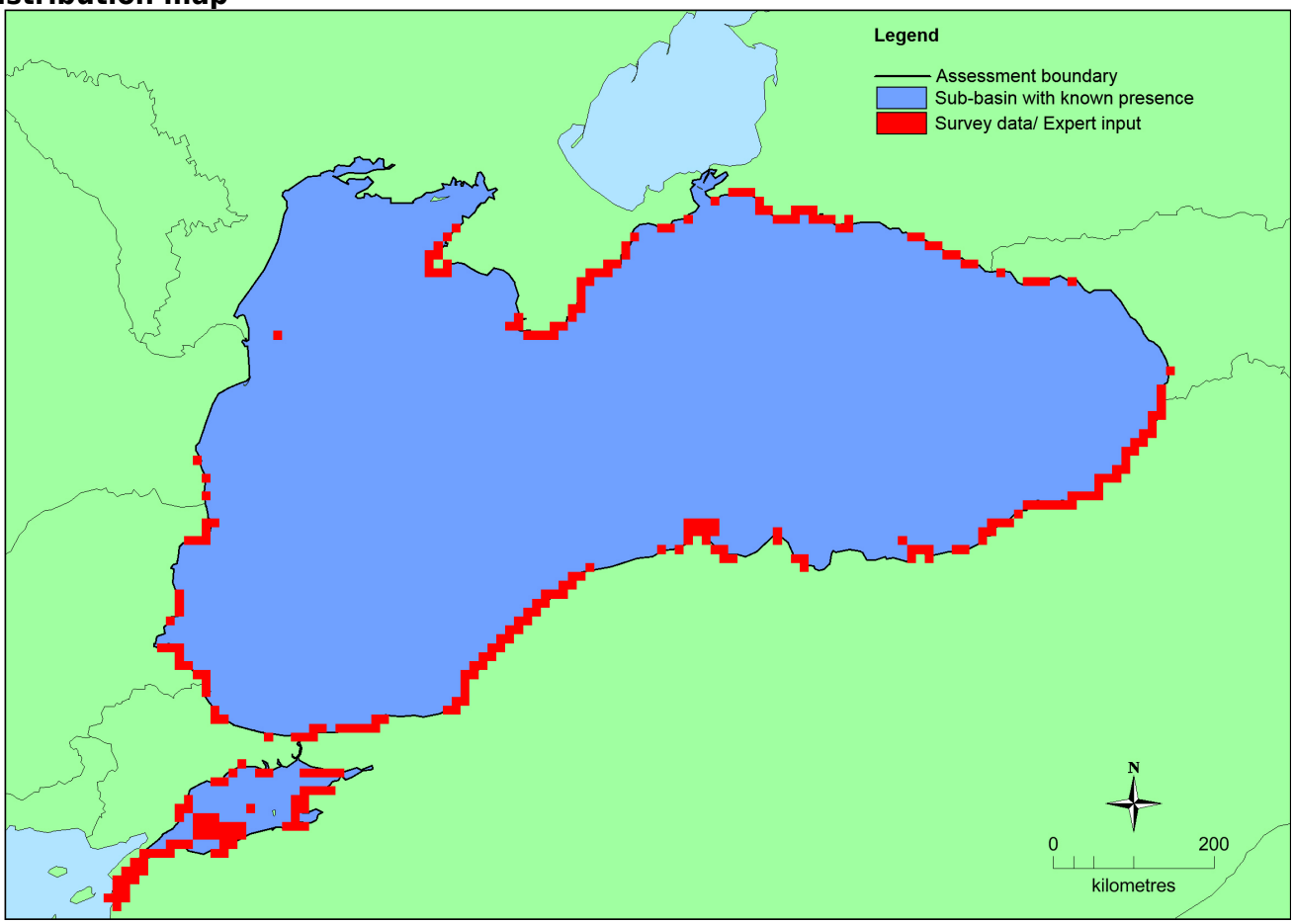
Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Black Sea	Black Sea: Present Sea of Marmara: Present	Unknown Km^2	Unknown	Unknown

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	1,1620 Km^2	22	Unknown Km^2	There is insufficient data to calculate the total area of this habitat

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28+	>50,000 Km^2	>50	Unknown Km^2	EOO and AOO have been calculated on the available data. Although this data set is known to be incomplete the figures exceed the thresholds for threatened status.

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?

Around 8% of this habitat is estimated to be hosted by EU 28 in the Black Sea.

Trends in quantity

This habitat is widespread on supralittoral rocks around the Black Sea occuring on rock surfaces as well as artificial hard surfaces such as those associated with port and harbour construction. The latter are degraded examples with fewer species.

There is anecdotal evidence of a decline in extent due to habitat destruction primarily as a result of coastal development. For example, creation of artificial beaches where there used to be a rocky coast.There is a lack of historical information on the extent of this habitat and the overall trend is unknown.

- Average current trend in quantity (extent)
  EU 28: Unknown

EU 28+: Unknown

- Does the habitat type have a small natural range following regression?
  No
  Justification
  Although it has a small natural range in the EU 28, the habitat is not believed to have declined significantly over the last 50 years. In the EU 28+ the EOO exceeds 50,000 km² therefore does not have a small natural range.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  The habitat has a small natural range in EU 28 (EOO <50,000 km^2) but the underlying factors for its occurrance are not limited as rocky coasts are well distributed throughout the Black Sea.

Trends in quality

There is insufficient information to determine any trends in quality for this habitat.

- Average current trend in quality
  EU 28: Unknown
  EU 28+: Unknown

Pressures and threats

Coastal development is the most significant threat to this habitat as it can result in smothering or direct loss of the rocky surfaces which support the associated communities. Oil pollution or other chemical pollution is another threat, degrading the habitat through smothering or loss of associated species.

List of pressures and threats

Urbanisation, residential and commercial development

Other urbanisation, industrial and similar activities

Pollution

Input of contaminants (synthetic substances, non-synthetic substances, radionuclides) - diffuse sources, point sources, acute events
Oil spills in the sea

Conservation and management

The most beneficial measure for this habitat would be protection from development. This may be within a protected area or part of a wider spatial planning framework. Pollution control and avoidance of waste water discharges across the habitat would also be beneficial.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

Measures related to spatial planning

Establish protected areas/sites

Measures related to urban areas, industry, energy and transport

Urban and industrial waste management

Conservation status

Annex 1-type:

1160: MBLS U1

1170: MBLS U1

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

There is a lack of information about the recoverability of this habitat although, because many of the associated species are pioneers, recovery may be possible over relatively short time scales. Recovery when non-rocky substrates replace rocky substrates will not be possible.

Effort required

10 years
Naturally

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 %

This habitat is known to have suffered declines in Romania and there is continuing decline in Turkey but there is insufficient data to quantify overall trends in quantity in areas hosted by EU 28 or EU 28+. This habitat has been assessed as Data Deficient under criteria A.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	11, 620 Km^2	Unknown	Unknown	No	22	Unknown	Unknown	No	No
EU 28+	>50,000 Km^2	Unknown	Unknown	No	>50	Unknown	Unknown	No	No

This habitat has a restricted geographical distribution in the EU countries of the Black Sea as the EOO is intrinsically small for the EU states. The number of localities where it occurs is also small and declines in in biotic quality are ongoing but cannot be quantified. Whilst the associated species recolonises artificial substrate these are degraded examples with fewer species.

This habitat does not have a restricted distribution in the area hosted by EU28+ but is assessed as Data Deficient because of the lack of information on its trends in quantity and quality and the fact that its overall distribution is unknown.

Within the EU 28 it is assessed as Data Deficient.

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%

Whilst there has been some decline in quality, and establishment of degraded examples on artificial surfaces, overall 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	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	DD	DD	LC	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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