

## A3.1x Pontic exposed upper infralittoral rock with rock borers

### Summary

The habitat is present in the Black Sea on limestone in the upper infralittoral zone in areas of low to moderate exposure and is characterized by rock boring species such as *Petricola lithophaga*. Eutrophication is the main historic pressure on this habitat. Additional pressures include: coastal development, chemical pollution and although pollution has been reduced, eutrophication is still an existing threat and one that could re-emerge in the future. Conservation and management measures relevant to this habitat include: measures to maintain physical and biological integrity, improvement of water quality, coastal development controls, contingency plans in case of pollution events, survey and monitoring programs, raised public awareness of the habitat’s ecological value and vulnerability.

### 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

A3.1x Pontic exposed upper infralittoral rock with rock borers

There are no photographs of this habitat currently available.

#### Habitat description

Soft rocks (limestone) occurring in the infralittoral zone in areas of low to moderate exposure. The softer nature of limestone rocks makes them suitable for rock boring species such as *Petricola lithophaga*, which are the diagnostic feature of this habitat.

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:

*Petricola lithophaga*.

### 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 infralittoral rock' (A3.1)

Annex 1:

1170 Reefs

8330 Submerged or partially submerged sea caves

MAES:

Marine - Coastal

MSFD:

Shallow sublittoral rock and biogenic reef

EUSeaMap:

Shallow photic 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.

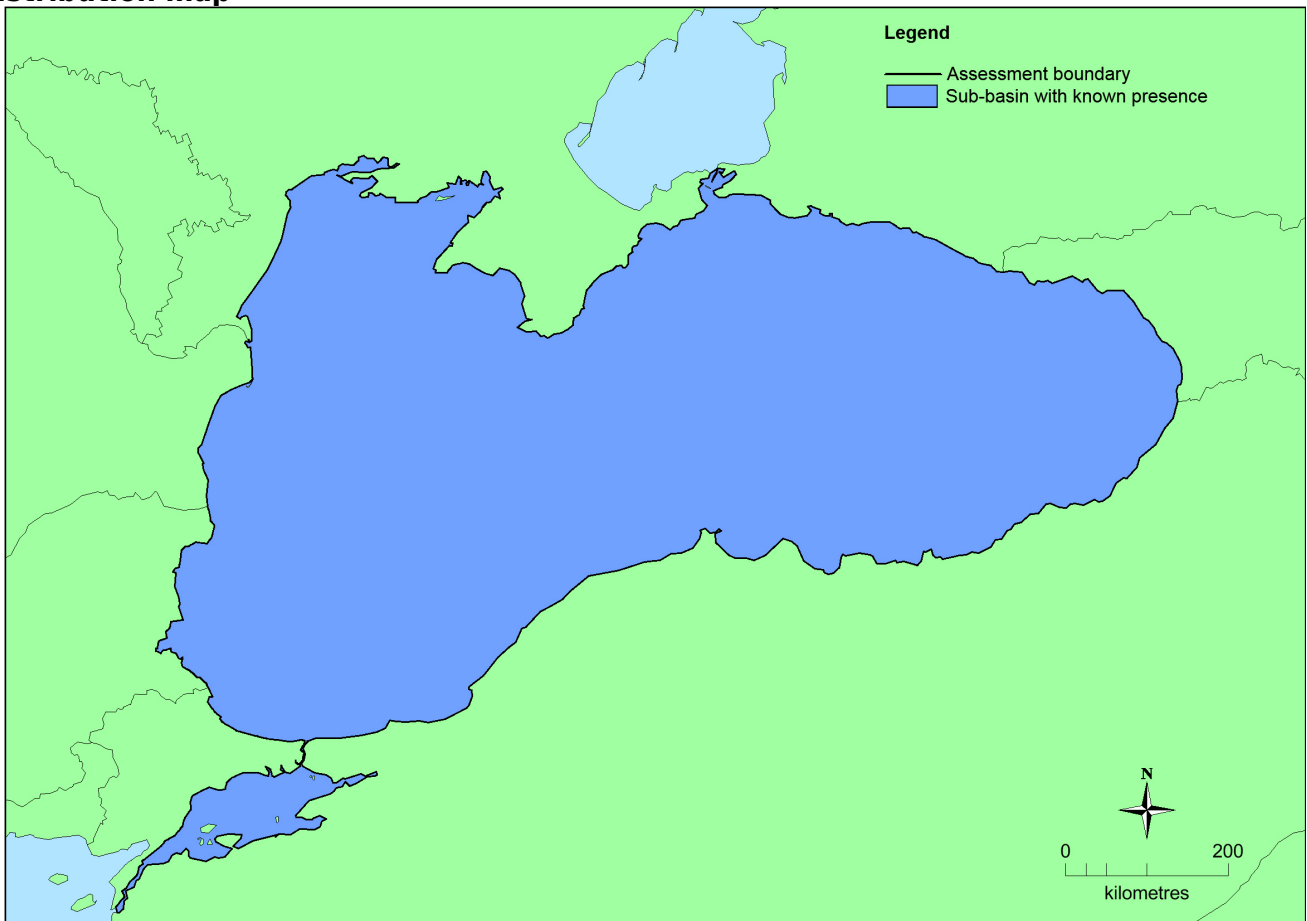
### Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Black Sea</i>	Black Sea: Present Sea of Marmara: Present	Unknown Km <sup>2</sup>	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 <sup>2</sup>	Unknown	Unknown Km <sup>2</sup>	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 <sup>2</sup>	Unknown	Unknown Km <sup>2</sup>	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. However the sub-basins of which this habitat is likely to occur in have been indicated.

### 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 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. Since the 1990s, this pressure has declined 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).

Coastal development both now and in the future are a pressure on this habitat. These include: 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.

Chemical pollution is a threat of current and future importance which at its most severe can result in species 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.

### **List of pressures and threats**

#### **Urbanisation, residential and commercial development**

Other urbanisation, industrial and similar activities

#### **Pollution**

Nutrient enrichment (N, P, organic matter)

Input of contaminants (synthetic substances, non-synthetic substances, radionuclides) - diffuse sources, point sources, acute events

#### **Climate change**

Changes in abiotic conditions

Temperature changes (e.g. rise of temperature & extremes)

### **Conservation and management**

---

Conservation and management measures which would benefit this habitat include implementing measures to maintain physical and biological integrity, including pollution control and regulation; improvement of

water quality management outside EU member states; coastal development controls; contingency plans to be followed in the event of a major pollution incident; survey and monitoring programmes; raised public awareness of ecological value and vulnerability; and implementing measures to reduce global warming and sea level rise.

## 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:

1170: MBL5 U1, MMED

## 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 <sup>2</sup>	Unknown	Unknown	unknown	unknown	Unknown	Unknown	unknown	unknown
EU 28+	unknown Km <sup>2</sup>	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)

## Assessors

S. Beal, G. Komakhidze, D. Micu, V. Mihneva, N. Milchakova, B. Yokes

## Contributors

S. Beal, G. Komakhidze, D. Micu, V. Mihneva, N. Milchakova, B. Yokes

## Reviewers

N. Sanders

## Date of assessment

19/03/2015

## Date of review

12/01/2016

## 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 saumâtres de la Mer Noire, Première partie*: 128-134.

Çulha, M., Bat, L., Türk Çulha, S. & Çelik, M.Y. 2010. Benthic mollusk composition of some facies in the upper-infralittoral zone of the southern Black Sea, Turkey. *Turkish Journal of Zoology* 34: 523-532.

Gönlügür Demirci, G. 2005. Sinop Yarımadasının (Orta Karadeniz) Mollusca Faunası. *Science and Engineering Journal of Fırat University*17(3): 565-572.

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

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* 7:26-28.

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.

Teyubova V.F. 2012. *The diversity and ecological features macrophytobenthos the Russian sector of the Black Sea.*, Dissertation on competition degree of candidate of biological sciences, 280 pp.

Zaitsev, Y. P., Alexandrov, B. G. 1998. *Black Sea Biological Diversity: Ukraine. Volume 7 of the Black Sea Environmental Series*. United Nations Publications, New York, USA.