

## A1.42 Pontic mediolittoral rock pools

### Summary

The habitat is found on mediolittoral rocks in Romania, Bulgaria and Turkey as well as occurring in Crimea (Tarhankut peninsula). It has a restricted distribution based on the presence of rocks with complex erosion formations in the mediolittoral zone and develops slowly because it depends on erosion of rock surfaces. The main pressures affecting this habitat are coastal development and eutrophication. Protection from the direct and indirect effect of coastal development will benefit this habitat as well as controls of land-based pollutants which discharge out to sea.

### Synthesis

Because of its restricted distribution and extent of decline in the recent past (between 25 and 30% since 1965) expert opinion is that this habitat should be assessed as Near Threatened under Criterion A1.

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 a lack of information on its trends in quantity and quality and the fact that its overall distribution is unknown.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Near Threatened	A1	Data Deficient	-

### Sub-habitat types that may require further examination

None

### Habitat Type

#### Code and name

A1.42 Pontic mediolittoral rock pools



Rock pool habitat at Cape Shabla, Bulgaria (© D.Micu).



Rock pool habitat at Cape Shabla, Bulgaria (© D. Micu).

#### Habitat description

Rockpools occur where the topography of the shore allows seawater to be retained within depressions in

the bedrock producing 'pools' on the retreat of overwashing waves. Alternatively seawater might be circulated by the surge through channels in the rock. As rockpool communities are permanently submerged they are not directly affected by height on the shore and normal rocky shore zonation patterns do not apply. For this reason rockpools have been dealt with as a separate habitat type, apart from the scheme of wave exposure and shore height. Four main rockpool habitat subtypes have been described:

A1.422 Pontic Upper mediolittoral shallow rockpools with green algae (*Ulva* spp. and *Cladophora* spp.)

A1.415 Pontic Upper mediolittoral deep rockpools with juveniles of *Mytilus galloprovincialis* and *Pachygrapsus marmoratus*

A1.41A Pontic Mediollittoral rockpools with anemones (*Actinia equina* and *Diadumene lineata*)

A1.41B Pontic Mediollittoral rockpools with articulated corallines and Ceramiales.

Indicators of quality:

Suitable biotic indicators of quality include: *Gobiesocidae*, *Diadumene lineata* and crabs *Pachygrapsus marmoratus*, *Eriphia verrucosa*. Suitable abiotic indicators of quality include: water clarity and nutrient levels. There is insufficient information to set indicator thresholds required for monitoring purposes.

Characteristic species:

Species typically found in Pontic mediollittoral rockpools include *Cladophora*, *Ulva*, Ceramiales and Corallinales. Also present are *Mytilus*, *Mytilaster*, *Pachygrapsus*, *Actinia equina*, *Diadumene lineata* and small fish.

### **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 'Features of littoral rock' (A1.4.)

Annex 1:

1170 Reefs

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Littoral rock and biogenic reef

EUSaMap:

Not mapped

IUCN:

## 12.1 Rocky shoreline

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

Unknown

#### Justification

Rockpools are a common feature of mediolittoral hard substrate throughout Europe but it is unclear if they should be considered an outstanding example.

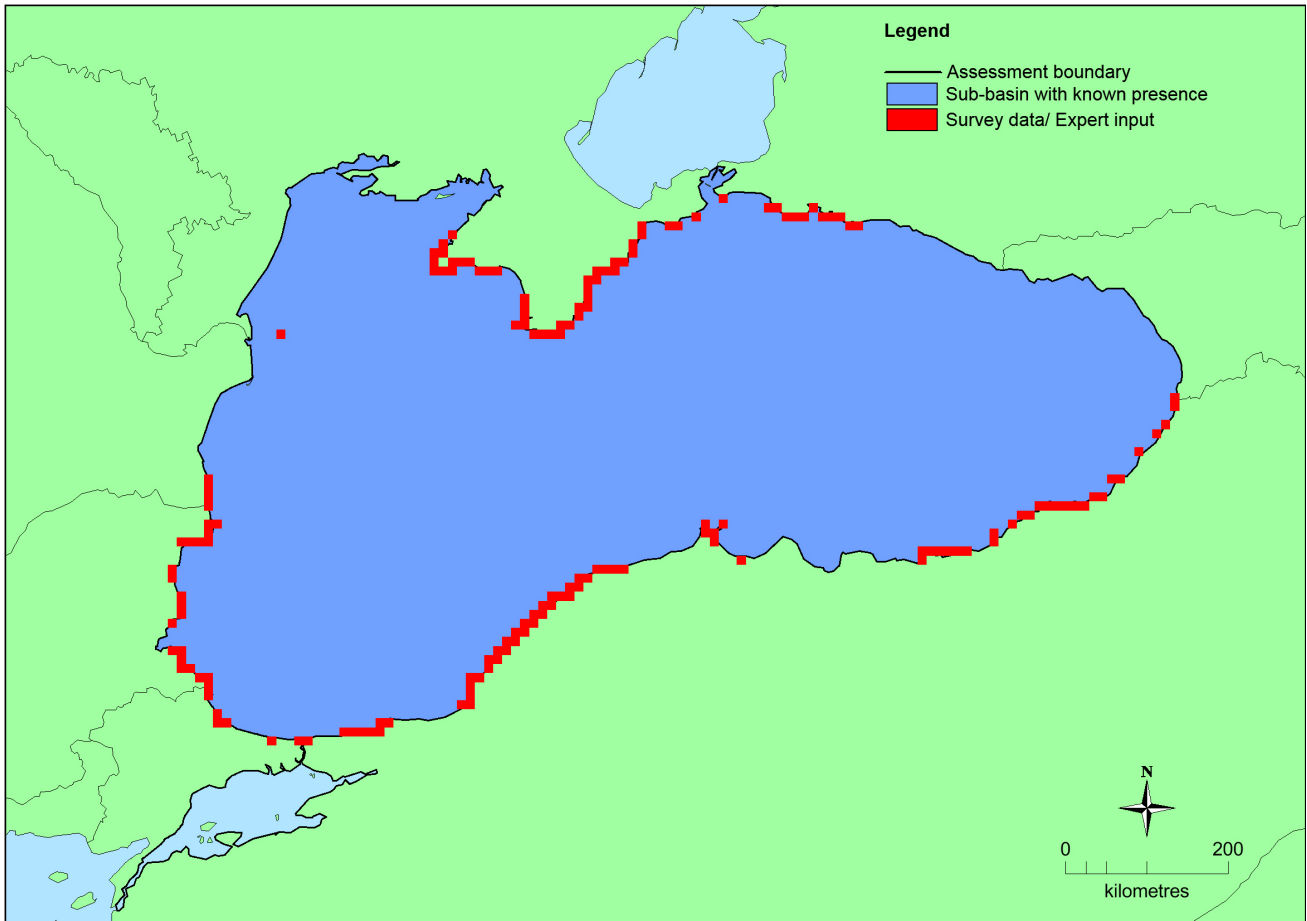
### Geographic occurrence and trends

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	Unknown Km <sup>2</sup>	Decreasing	Decreasing

### 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>	10,743 Km <sup>2</sup>	25	Unknown Km <sup>2</sup>	Area estimates are available at some localities. However, these are only a small proportion of occurrences. Most locality data is available as points only and cannot be used to calculate area.
<i>EU 28+</i>	444,810 Km <sup>2</sup>	161	Unknown Km <sup>2</sup>	Area estimates are available at some localities. However, these are only a small proportion of occurrences. Most locality data is available as points only and cannot be used to calculate area.

### 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 16% of this habitat is estimated to be hosted by the EU 28 in the Black Sea.

### Trends in quantity

Historically (pre-1965), expert opinion is that this habitat was stable in Turkey, Romania and Bulgaria. This is due to the lack of pressures present during this period (e.g. low levels of coastal development).

In the recent past (1965 to present day) the quantity (extent) of the habitat has reduced significantly, with an estimated loss of more than 90% since 1971. Coastal development and coastal protection works are the main reasons. In Turkey the habitat extent has remained stable in the last 50 years due to the remote location and low development pressure in areas where it occurs.

In the future the habitat is expected to remain stable in Turkey because of the remote localities of the habitat. In Bulgaria the extent is also expected to remain stable as all remaining localities are within protected areas. In Romania there is a continuing risk from coastal development. There are now very few localities where the habitat is present and a risk of collapse if development pressures increase in that country.

- Average current trend in quantity (extent)  
 EU 28: Decreasing  
 EU 28+: Stable
- Does the habitat type have a small natural range following regression?  
 Yes  
*Justification*

The habitat has a small natural range following regression in the EU countries. This is not the case in the EU 28+ where the EOO exceeds 50,000 km<sup>2</sup>. Although the habitat has undergone an important decline in the last 50 years, this decline has now halted. The habitat extent is now stable but coastal development may continue to cause declines in Romania.

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

Yes

#### *Justification*

The habitat has a small natural range in EU 28 (EOO < 50,000 km<sup>2</sup>). It develops on flat rocky surfaces prone to erosion and close to the mean water height. This situation is uncommon in the Black Sea and therefore the underlying factors for its occurrence are limited.

## **Trends in quality**

There are no quantitative quality data available for the habitat. However, expert opinion is that the quality is likely to have been stable historically (pre-1965) and decreased in the recent past (1965 to present day). If current abiotic conditions continue the quality is expected to remain stable or improve slowly into the future.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

## **Pressures and threats**

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The most significant threat posed to the habitat is coastal development leading to habitat destruction. This threat is of past, current and future importance. Currently and into the future it is the greatest threat in Romania.

Pollution poses a significant threat to the habitat. This can be eutrophication from nutrient enrichment (N, P and organic matter); oil pollution or marine litter. All have the potential to reduce the abiotic quality of the habitat which will, in turn, lead to a reduction in biotic quality.

## **List of pressures and threats**

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

Other urbanisation, industrial and similar activities

### **Pollution**

Nutrient enrichment (N, P, organic matter)

Oil spills in the sea

Input of litter (solid waste matter)

### **Geological events, natural catastrophes**

Storm, cyclone

## **Conservation and management**

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Protection from the direct and indirect effect of coastal development will benefit this habitat as well as controls of land-based pollutants which discharge out to sea. This habitat is only protected in Bulgaria at the present time.

## **List of conservation and management needs**

## Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

## Measures related to spatial planning

Other spatial measures

Establish protected areas/sites

Legal protection of habitats and species

## Measures related to urban areas, industry, energy and transport

Urban and industrial waste management

## Conservation status

Annex 1-type:

1160: MBL5 U1

1170: MBL5 U1

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

This habitat cannot recover from loss of extent and/or distribution. However, it can recover from reduction in quality. Recovery can occur relatively quickly (within 10 years) if the decline is caused by pollution. This can be achieved by either controlling pollution inputs or from water recharge after storms.

## Effort required

10 years
Naturally

## Red List Assessment

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### Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	25-30 %	unknown %	unknown %	unknown %
EU 28+	<25 %	unknown %	unknown %	unknown %

For areas hosted by the EU expert opinion is that there has been an approximately 25–30% reduction in habitat extent since 1965. The most significant losses (>80%) have occurred in Romania. However, there are more occurrences of the habitat in Bulgaria and the reduction in extent has been less significant. Therefore the total reduction in the EU is estimated between 25 and 30%.

In the EU 28+ expert opinion suggests that the reduction in habitat has been less than 25% since 1965. The most significant losses have been in Romania (>80%), however, this is counter-balanced by fewer losses in other countries.

### Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	10,743 Km <sup>2</sup>	No	No	No	25	No	No	No	No
EU 28+	>50,000 Km <sup>2</sup>	No	No	No	>50	No	No	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 small and there have been significant declines in the recent past which have left the habitat in a fragile state. Declines in spatial extent, abiotic and biotic quality are now believed to have halted and declines over the next 20 years are considered unlikely.

This habitat does not have a restricted distribution in the area hosted by EU 28+.

### 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	NT	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	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
Near Threatened	A1	Data Deficient	-

### Confidence in the assessment

Medium (evenly split between quantitative data/literature and uncertain data sources and assured expert knowledge)

### Assessors

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### Date of assessment

15/07/2015

### Date of review

18/01/2016

## References

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