

Communities of Marmara mediolittoral caves and overhangs

Summary

The habitat is present in the Sea of Marmara. The mediolittoral caves and overhangs are a special habitat whose main distinctive trait is the low irradiance. Canopy-forming macroalgae are overall absent whilst encrusting rhodophytes are preponderant. The pressures and threats likely to affect the habitat are coastal development, marine water pollution, marine traffic, invasive species and climate change. The caves are currently protect by the EU Habitats Directive. Conservation and management measures which would benefit the habitat are regulating commercial fishing activities and establishing protected areas,

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 therefore considered to be Data Deficient.

| Overall Category & Criteria | | | |
|-----------------------------|-------------------|-------------------|-------------------|
| EU 28 | | EU 28+ | |
| Red List Category | Red List Criteria | Red List Category | Red List Criteria |
| n/a | - | Data Deficient | - |

Sub-habitat types that may require further examination

None

Habitat Type

Code and name

Communities of Marmara mediolittoral caves and overhangs

There are currently no photographs of this habitat available.

Habitat description

The mediolittoral caves and overhangs are a special habitat whose main distinctive trait is the low irradiance. Algal growth is thus restricted to a very few species that can withstand low light levels, low to high hydrodynamism, and extended periods of desiccation. Canopy-forming macroalgae are overall absent whilst encrusting rhodophytes are preponderant. The communities are, however, very poor in species. Two species of Rodophyta dominate: *Hildenbrandia rubra* and *Phymatholiton lenormandii*, which shape the habitat Eunis A1.144b.

Indicators of quality

Both biotic and abiotic indicators have been used to describe marine habitat quality. These include the presence of particular species, water quality parameters, levels of exposure to a particular exposure as well as more integrated indices which describe habitat function and structure, such as trophic index, or successful stages of development in habitats that have a natural cycle of change over time. There are no known commonly agreed indicators of quality for this habitat, although particular parameters may be set in certain situations, e.g. protected features with Natura 2000 sites, where reference values may have been determined and applied on a location-specific basis. Some potential indicators of quality for this specific habitat are the presense of the characterissitc species mentioned.

Characteristic species

Rhodophyta (red algae): *Hildenbrandia rubra.*, *Phymatolothon lenormandii.*, *Gymnothamnion elegans.*, *Corallina elongata.*, Isopoda: *Ligia italica.*, Cirripedia: *Perforatus perforatus.*, *Chthamalus stellatus.*, and *Chthamalus montagui.*

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 (new definition): 'Communities of Mediterranean mediolittoral caves and overhangs' (A1.44).

Annex 1:

8330 Submerged or partially submerged sea caves

MAES:

Marine – Coastal Littoral rock and biogenic reef

MSFD:

Littoral rock and biogenic reef

EUSEaMap:

Not mapped

IUCN:

Rocky shoreline

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

No

Justification

The Sea of Marmara has distinct environmental conditions compared to the Black Sea, with conditions more similar to that of the Mediterranean Sea. As such habitats present here do not present an outstanding example of the typical characteristics of the Black Sea region.

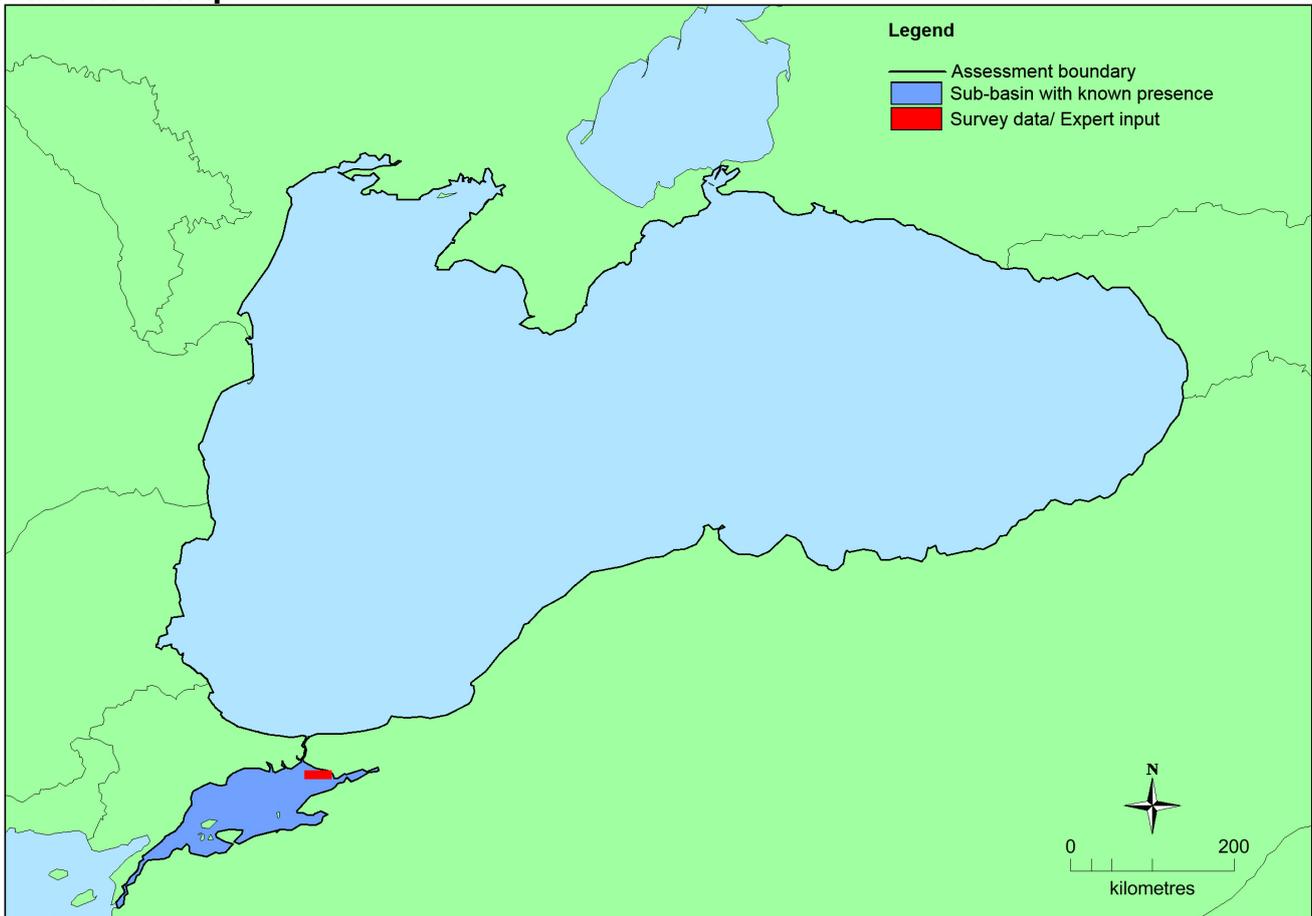
Geographic occurrence and trends

| 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> | 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 | N/A Km ² | N/A | N/A Km ² | This habitat is only present in the Sea of Marmara therefore it does not occur in the EU28 |
| EU 28+ | 300 Km ² | 3 | Unknown Km ² | EOO and AOO have been calculated on the available data. |

Distribution map



This map has been generated based on expert opinion and 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?

The habitat is only present in the Sea of Marmara, therefore it is not present in the EU28.

Trends in quantity

There is insufficient data to accurately assess changes in quantity of the habitat

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

Justification

This habitat occurs only in the Sea of Marmara, which has in total already an area below 50,000km², the

threshold for small natural range. But the habitat is known to occur also in the Mediterranean Sea. No data are available for habitat regression.

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

No

Justification

This habitat does not occur in the Black Sea, however it is present in the Sea of Marmara as well as the Mediterranean Sea. Therefore this habitat is unlikely to have 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: -

EU 28+: Unknown

Pressures and threats

The characteristic species of this habitat are typically resistant to environmental stress. Coastal development such as harbour or dock constructions in nearby areas can alter the environmental conditions that shape the peculiar assemblages in this habitat.

List of pressures and threats

Transportation and service corridors

Port areas

Marine constructions

Improved access to site

Urbanisation, residential and commercial development

Urbanised areas, human habitation

Discharges

Pollution

Pollution to surface waters (limnic, terrestrial, marine & brackish)

Marine macro-pollution (i.e. plastic bags, styrofoam)

Invasive, other problematic species and genes

Invasive non-native species

Climate change

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

Sea-level changes

Conservation and management

Marine cave habitats are protected by the EU Habitats Directive (92/43/EEC) under the name “Submerged or partially submerged sea caves” (Habitat code 8330). Semi-dark and dark cave communities have been included in two Action Plans by UNEP-MAP-RAC/SPA (2008 and 2015 respectively), adopted by contracting parties of the Barcelona Convention specifically aiming at their conservation.

The creation of an appropriate Marine Caves' Register at the country level with an assessment of their ecological status, adequate regulations to protect these environments and further research to understand its diversity and function are recommended.

List of conservation and management needs

Measures related to marine habitats

Other marine-related measures

Measures related to spatial planning

Other spatial measures

Establish protected areas/sites

Legal protection of habitats and species

Measures related to hunting, taking and fishing and species management

Regulation/Management of fishery in marine and brackish systems

Conservation status

Annex 1:

8330: MBLS U1, MMED U1.

Marine caves are also habitat for some species of endangered bats and they are also a significant habitat for resting and reproduction of the endangered Mediterranean monk seal (*Monachus monachus*). As such, breeding and resting caves in countries like Turkey, have been designated as a First Degree Natural Asset, stopping part of the coastal development and destruction of caves in certain areas.

In general, their conservation status is 'unknown' in the Mediterranean.

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

The habitat might be able to recover after exposure to certain environmental stresses, however depending of the stressor it might not be able to recover at all (e.g. when invaded by invasive algae or when building works take place in the surrounding area).

Effort required

| |
|----------|
| 10 years |
| Unknown |

Red List Assessment

Criterion A: Reduction in quantity

| Criterion A | A1 | A2a | A2b | A3 |
|-------------|-----------|-----------|-----------|-----------|
| EU 28 | n/a % | n/a % | n/a % | n/a % |
| EU 28+ | unknown % | unknown % | unknown % | unknown % |

There is insufficient data on changes in quantity of this habitat to determine any trends in quantity.

Criterion B: Restricted geographic distribution

| Criterion B | B1 | | | | B2 | | | | B3 |
|-------------|---------------------|---------|---------|---------|-----|---------|---------|---------|---------|
| | EOO | a | b | c | AOO | a | b | c | |
| EU 28 | n/a Km ² | - | - | n/a | n/a | - | - | n/a | n/a |
| EU 28+ | 300 Km ² | Unknown | Unknown | unknown | 3 | Unknown | Unknown | unknown | unknown |

As the trends in quality and quantity of this habitat are unknown there is insufficient data to conduct an

assessment using criterion B.

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 | n/a % | n/a % | n/a % | n/a % | n/a % | n/a % |
| 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 | n/a % | n/a % | n/a % | n/a % | n/a % | n/a % |
| 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 | n/a % | n/a % | n/a % | n/a % | n/a % | n/a % |
| 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 | n/a |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 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 |
| n/a | - | 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

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References

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