

## A1.34: Communities of sheltered Mediterranean lower mediolittoral rock

### Summary

This habitat is widely distributed in the Mediterranean in sheltered rocky areas. The rock surfaces are dominated by algae, the characteristic species depending on the local conditions. The main pressures and threats are associated with substratum loss due to direct destruction by human modifications of the coastline from building and harbour development, poor water quality and marine debris. Beneficial actions include those which improve water quality and the regulation of coastal development. Further work is needed to identify management measures to support the conservation of this habitat including the establishment of reference sites to assist with monitoring trends.

### Synthesis

This habitat has a wide geographical distribution but despite most of the Mediterranean coast being rocky, quantitative data on its extent is scarce. Given the past development of harbours, dikes and others coastal structures it is clear that the habitat has suffered a decline in extent. Expert opinion is that this has probably not exceeded 20% over the last 50 years and therefore the habitat is assessed as Least Concern for the EU 28 based on criteria A1 and B.

For EU28+, the habitat has a large EOO, and therefore it qualifies as Least Concern under Criterion B. However, the habitat is assessed as Data Deficient at EU 28+ level given the 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
Least Concern	-	Data Deficient	-

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

The biotope dominated by *Nemoderma tingitanum* because of its sensitivity to pollution.

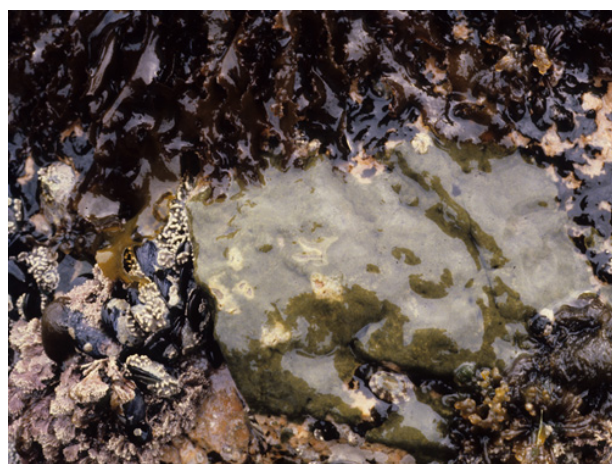
### Habitat Type

#### Code and name

A1.34: Communities of sheltered Mediterranean lower mediolittoral rock



Abundant growth of *Ceramium ciliatum* on sheltered mediolittoral rock along the Catalan coast, Spain (© Littoral Cartography Group, CEAB, CSIC h).



The subhabitat of *Nemoderma tingitanum* along the Catalan coast, Spain (© E.Ballesteros).

## Habitat description

This habitat develops on the lower horizon of mediolittoral rock in areas sheltered from wave action and currents although some of the associated species may also thrive on moderately exposed shores. The rock surfaces are dominated by algae, the characteristic species depending on the local conditions. In areas of gently almost horizontal slopes, the red algae *Ceramium ciliatum* can form an almost continuous carpet. There may be distinctive crusts of the brown algae *Nemoderma tingitatum* on the smooth rocky shores where there is moderate to low wave action, and in nutrient enriched areas the green algae of the genus *Ulva* dominates and may exclude settlement of other species of algae.

Indicators of quality:

The only biotope which might be sensitive to pollution and man-induced impacts is that dominated by *Nemoderma tingitanum*. Reduction in the total percent cover of this species and overall species richness can indicate a decrease on ecological quality. Both the biotopes of *Ceramium ciliatum* and *Ulva* spp. show extraordinary resilience to environmental impacts and they appear even in degraded environments. A "Quality of Rocky Bottoms index" (CFR by its Spanish acronym) used in Spanish Atlantic waters for the assessment of macroalgae communities on rocky shores may have some potentially application in assessment of quality of this habitat.

Characteristic species:

Rhodophyta (red algae)- *Ceramium ciliatum*, *Corallina elongata*, *Hypnea musciformis*, *Gelidium pusillum*, *Callithamnion granulatum*, *Gastroclonium clavatum*, *Laurencia pyramidalis*, *Ceramium diaphanum*, *Polysiphonia sertularioides*.

Phaeophyta (brown algae)- *Nemoderma tingitanum*, *Scytosiphon lomentaria*, *Sphacelaria cirrosa*.

Chlorophyta (green algae)- *Ulva prolifera*, *Ulva compressa*, *Ulva intestinalis*, *Ulva fasciata*, *Ulva rigida*, *Cladophora albida*, *Cladophora sericea*, *Cladophora vagabunda*, *Chaetomorpha aerea*, *Cladophora dalmaica*, *Cladophora laetevirens*.

Cnidaria- *Actinia schmidtii*.

Bivalvia- *Mytilus galloprovincialis*.

Gastropoda- *Patella ulyssiponensis*, *Patella caerulea*, *Phorcus turbinatus*, *Stramonita haemastoma*, *Phorcus articulatus*.

Cirripedia- *Chthamalus montagui*.

Isopoda- *Ligia italica*.

Decapoda- *Pachygrapsus marmoratus*.

## Classification

EUNIS (v1405).

Level 4. A sub-habitat of A1.3 Low energy littoral rock.

Annex 1:

1160 Large shallow inlets and bays

1170 Reefs

MAES:

Marine - Inlets and transitional waters

Marine - Coastal

MSFD:

Littoral rock and biogenic reef

EUSeaMap:  
Not mapped

IUCN:  
12.1 Rocky shoreline

Barcelona Convention (RAC/SPA):  
II. 4. 2. Biocenosis of the lower mediolittoral rock

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

Unknown

Justification

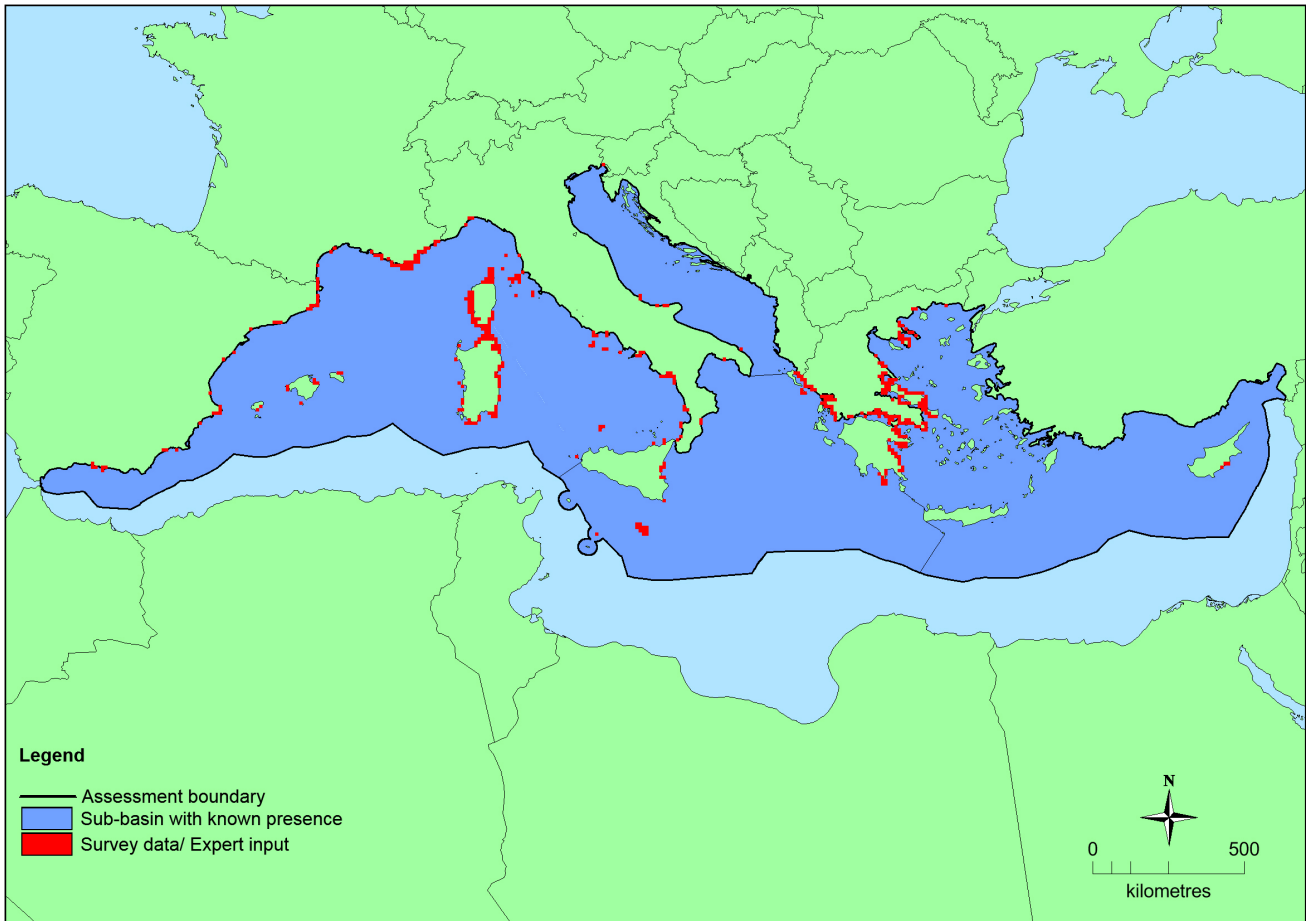
**Geographic occurrence and trends**

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Mediterranean Sea</i>	Adriatic Sea: Present Aegian-Levantine Sea: Present Ionian Sea and the Central Mediterranean Sea: Present Western Mediterranean Sea: Present	Unknown Km <sup>2</sup>	Decreasing	Unknown

**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>	2,000,004 Km <sup>2</sup>	359	Unknown Km <sup>2</sup>	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.
<i>EU 28+</i>	>2,000,004 Km <sup>2</sup>	>359	Unknown Km <sup>2</sup>	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 using data from IUCN and the European Environment Agency (EEA), and supplemented with expert opinion. EOO and AOO have been calculated on the available data presented in this map however these should be treated with caution as expert opinion is that this may not indicate the full distribution of the habitat.

### How much of the current distribution of the habitat type lies within the EU 28?

This habitat is present in the EU 28+. The percentage is unknown.

### Trends in quantity

This habitat is common along Mediterranean shores and is widely distributed. Nevertheless, research and monitoring has only been carried out at a few sites and there are no reports on the trends in loss of this habitat from individual countries. The quantity of loss of the habitat can be inferred from the amount of coastal construction (such as breakwaters, harbours, jetties and seawalls) since the second half of the 20th century for EU 28 which suggests approximately 20% has been lost from rocky shorelines overall. The proportion of loss specifically for this sheltered rocky habitat is unknown.

- Average current trend in quantity (extent)

EU 28: Decreasing

EU 28+: Decreasing

- Does the habitat type have a small natural range following regression?

No

*Justification*

The habitat does not have a small natural range as the EOO larger than 50,000 km<sup>2</sup>.

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

No

*Justification*

This habitat is widespread along the Mediterranean coast and does not have an intrinsically restricted area.

## **Trends in quality**

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

- Average current trend in quality

EU 28: Unknown

EU 28+: Unknown

## **Pressures and threats**

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The main pressures and threats on this habitat are associated with substratum loss due to direct destruction by human modifications of the coastline from building and harbour development, poor water quality, and marine debris.

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

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

Disposal of household / Recreational facility waste

Disposal of industrial waste

#### **Pollution**

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

Oil spills in the sea

#### **Natural System modifications**

Reclamation of land from sea, estuary or marsh

Infilling of ditches, dykes, ponds, pools, marshes or pits

#### **Natural biotic and abiotic processes (without catastrophes)**

Eutrophication (natural)

## **Conservation and management**

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This habitat is widespread and common and therefore likely to be present within some protected areas although it may not be subject to specific conservation measures. Beneficial actions include those which improve water quality and the regulation of coastal development in order to avoid both direct and indirect damage. Further work is needed to identify management measures to support the conservation of this habitat including the establishment of reference sites to assist with monitoring trends.

### **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

### **Conservation status**

Annex 1:

1160 MMED XX

1170 MMED XX

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

Unknown.

**Effort required**

**Red List Assessment**

**Criterion A: Reduction in quantity**

Criterion A	A1	A2a	A2b	A3
EU 28	<20 %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	Unknown %

Based on the information available it is inferred that by 2015 at least 20% of this habitat had been lost over the last 50 years in the EU 28. This is primarily due to coastal development. This habitat has therefore been assessed as Least Concern under criteria A1 for EU 28 and Data Deficient for the EU 28+.

**Criterion B: Restricted geographic distribution**

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50,000 Km <sup>2</sup>	Yes	Yes	No	>50	Yes	Yes	No	No
EU 28+	>50,000 Km <sup>2</sup>	Unknown	Unknown	No	>50	Unknown	Unknown	No	No

The habitat has a widespread distribution in the Mediterranean Sea, with an EOO larger than 50,000 km<sup>2</sup> and an AOO larger than 50 km<sup>2</sup>, exceeding the thresholds for a threatened Category even though a continuing decline in the spatial extent is considered likely. The distribution of the habitat is such that the identified threats are unlikely to affect all localities at once. This habitat has therefore been assessed as Least Concern under criteria B for the EU 28 and under criteria B1c, B2c and B3 for the EU 28+ and Data Deficient for all other criteria,

**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 %	slight %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	slight %	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%

The assessment of reduction in abiotic and/or biotic quality is not possible due to the lack of studies and data on past state conditions. However, the increasing urbanization of the Mediterranean coast will continue have a slight to moderate impact of this habitat although the extent affected is unknown. Since there are no studies available on the past and current conditions to calculate the reductions in abiotic and/or biotic quality, the habitat type is assessed as Data Deficient under Criterion C/D, C and 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. Therefore, it is assessed as Data Deficient under Criterion E.

**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	LC	DD	DD	DD	LC	LC	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	LC	LC	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
Least Concern	-	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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**Reviewers**

S.Gubbay.

**Date of assessment**

13/11/2015

**Date of review**

18/12/2015

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