

A1.17: Low coverage of fauna and flora of mediolittoral rock and boulders

Summary

This habitat occurs in very exposed conditions, on intertidal rocky shores. The rock surfaces are colonised by lichens, barnacles, limpets, mussels and fucoids but not organised in communities. There is a high percentage of bare rock and a low species diversity. This is a naturally resilient habitat but also subject to considerable natural variability (for example following storm damage) making trends difficult to distinguish. Although relatively robust it is vulnerable to pollution incidents such as oil spills on a local level and, on a regional sea level, to climate change.

There are limited opportunities and need for specific conservation and management measures to be directed at this habitat. More general beneficial measures include pollution control and regulation, contingency plans to be followed in the event of major pollution incidents, and measures to reduce global warming and sea level rise.

Synthesis

This habitat is believed to have a large natural range but there are insufficient data for accurate calculation of EOO and AOO. Expert opinion is that although there may have been some short term and cyclical changes in the extent of this habitat, it is most likely to have been stable over the last 50 years. For the purposes of Red List assessment it is therefore considered to be Least Concern for both the EU 28 and EU 28+.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Least Concern	-	Least Concern	-

Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

A1.17: Low coverage of fauna and flora of mediolittoral rock and boulders



Littoral zone in wave exposed locations being used as a grey seal haul out site. Start Point, Devon, UK (© A.R.Davis)

Habitat description

This habitat can be very extensive. It occurs in very exposed conditions, comprising rocks and boulders in upper, mid- and lower mediolittoral with lichens, barnacles, limpets, mussels and fucoids but not organised in communities. There is a high percentage of bare rock and a low species diversity.

Indicators of quality:

Both biotic and abiotic indicators have been used to describe marine habitat quality. These include: the presence of characteristic species as well as those which are sensitive to the pressures the habitat may face; water quality parameters; levels of exposure to particular pressure, 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. Indicators which have been developed for the assessment of ecological quality of coastal water bodies for the Water Framework Directive (WFD) that are relevant to this habitat include a consideration of macroalgae species richness, proportions of different taxa of algae present, and the abundance and coverage of the rocky surfaces by typical species.

Characteristic species:

In the upper mediolittoral, the habitat is characterised by significant areas of bare rock, the rare presence of barnacles, including *Chthamalus montagui* and *Semibalanus balanoides*, limpets *Patella vulgata* and a few patches of the lichen *Verrucaria maura* and *Lichina pygmaea*. Few scattered patches of *Pelvetia canaliculata* and/or *Fucus spiralis* can also be observed. In the mid and lower mediolittoral zones, bare rock is also dominant and the same species of barnacles and limpets can be observed but lichens and fucoids characteristic of the upper eulittoral zone are replaced by patches of *Fucus vesiculosus*, *Fucus serratus* and the presence of mixed red algal turf *Mastocarpus stellatus*, *Caulacanthus ustulatus*, *Osmundea pinnatifida*. Damp cracks and crevices in the rock may provide a refuge for small individuals of the mussel *Mytilus edulis*, *Nucella lapillus*, *Littorina littorea*, *Littorina saxatilis* and a few individuals of *Actinia equina*. This habitat is characterized by its very low diversity but can cover large rock surfaces.

Classification

EUNIS (v1405)

Level 4. A sub-habitat of 'High energy littoral rock' (A1.1).

Annex 1:

1170 Reefs

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?

Yes

Regions

Atlantic

Justification

This habitat is typical of very exposed rocky shores in the North East Atlantic region.

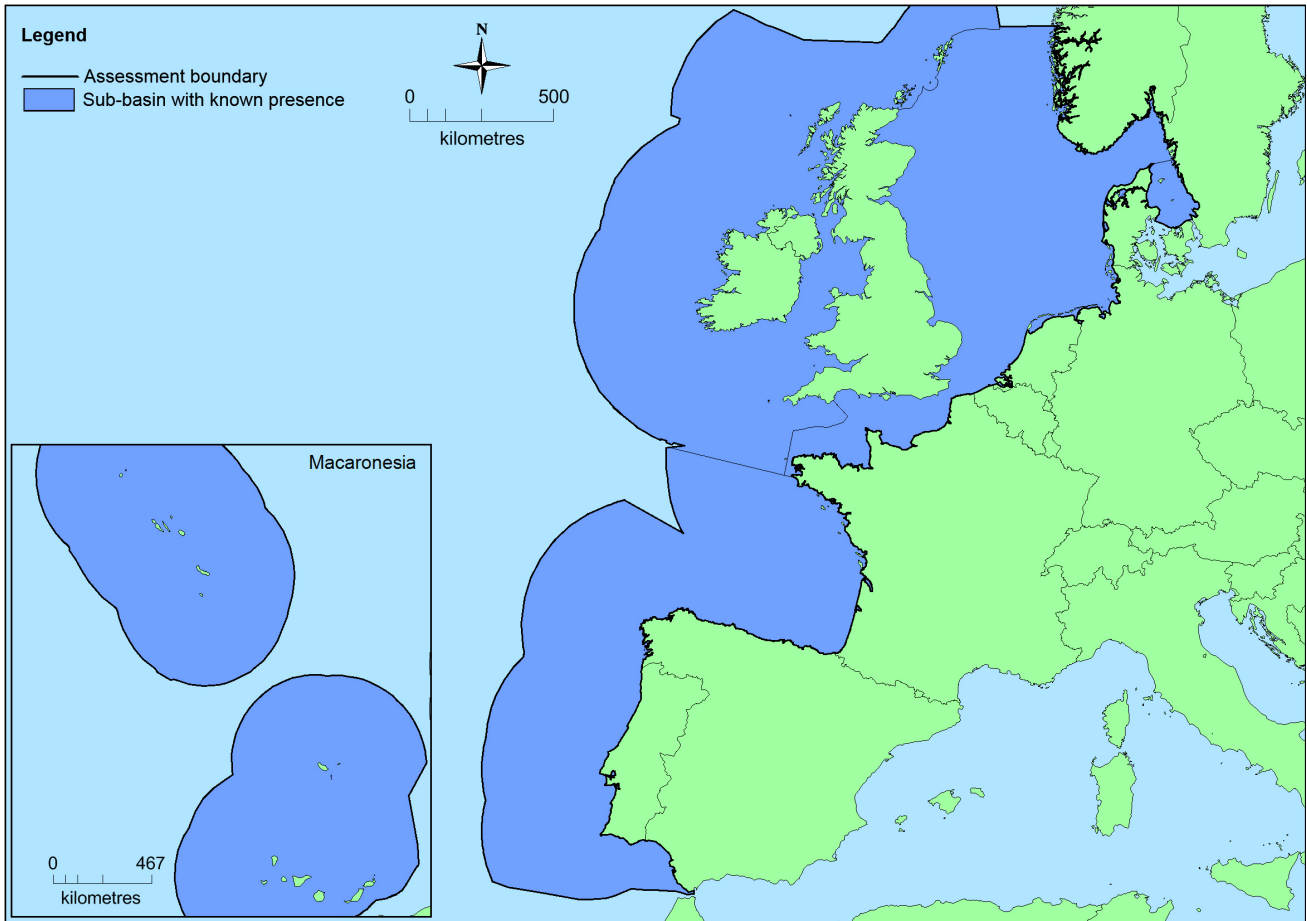
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>North-East Atlantic</i>	Bay of Biscay and the Iberian Coast: Present Celtic Seas: Present Kattegat: Present Greater North Sea: Present Macaronesia: Present	Unknown Km ²	Stable	Stable

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>	unknown Km ²	unknown	unknown Km ²	Insufficient records for reliable estimate.
<i>EU 28+</i>	unknown Km ²	unknown	unknown Km ²	Insufficient records for reliable estimate.

Distribution map



This map has been generated using EMODnet data from modelled/surveyed records for the North East Atlantic (EMODnet 2010). There are insufficient data to provide a comprehensive and accurate map of the distribution of this habitat or for calculation of EOO and AOO.

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

Unknown.

Trends in quantity

The extent of wave-exposed mediolittoral rock and boulders is unlikely to have changed significantly (>25%) in extent over the last 50 years however change is a key feature of the associated communities. For example even when considered stable, the abundance of the barnacles can fluctuate significantly within seasons and interannually, as well as spatially. Severe winters and extreme events such as El Nino result in the most rapid changes. There have been localised losses/damage to this habitat e.g. following oil spills, as well as recovery. This pattern is considered likely to continue.

- Average current trend in quantity (extent)

EU 28: Stable

EU 28+: Stable

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

Unknown

Justification

This habitat is believed to have a large natural range in the North East Atlantic region but EOO cannot be calculated due lack of data.

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

Unknown

Justification

This habitat is believed to have a large natural range in the North East Atlantic region but EOO cannot be calculated due lack of data.

Trends in quality

Change is a key feature of this habitat and even when considered stable. For example the abundance of the barnacle component can fluctuate significantly within seasons and interannually, as well as spatially. Hindcasting indicates shifts in one of the few associated species, the barnacle *S. balanoides* whose distribution shifted around 300 km northwards since the 1870s.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

Pressures and threats

This is a relatively robust habitat as it develops on wave exposed rocky shores although it is vulnerable to a number of pressures. The two which are mostly likely to have an impact are pollution incidents such as oil spills and climate change. In the latter case it has been suggested that climate change may not lead to a simple poleward shift in the distribution of intertidal organisms on rocky shores but could cause localised extinctions in a series of hot-spots due to the inability of species to spread to suitable habitats.

List of pressures and threats

Pollution

Marine water pollution

Oil spills in the sea

Climate change

Changes in abiotic conditions

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

Wave exposure changes

Sea-level changes

Changes in biotic conditions

Habitat shifting and alteration

Migration of species (natural newcomers)

Conservation and management

There are limited opportunities and need for specific conservation and management measures directed at this habitat.

More general beneficial measures include pollution control and regulation, contingency plans to be followed in the event of major pollution incidents, and 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

Other spatial measures

Conservation status

Annex 1:

1170: MATL U2, MMAC FV

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

This is a very dynamic habitat with few associated species. Those which do occur are adept at colonising empty space hence it has a high capacity to recover. Timescales for recovery will depend on removal of the impact as well as the availability of larvae and successful spatfalls.

Effort required

10 years
Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	0 %	Unknown %	Unknown %	Unknown %
EU 28+	0 %	Unknown %	Unknown %	Unknown %

Expert opinion is that although there may have been some short term and cyclical changes in the extent of this habitat, it is most likely to have been stable over the last 50 years. It has therefore been assessed as Least Concern under criterion A for both the EU 28 and EU 28+.

Criterion B: Restricted geographic distribution

Criterion B	B1			B2				B3	
	EOO	a	b	c	AOO	a	b		c
EU 28	Unknown Km ²	No	No	Unknown	Unknown	No	No	Unknown	Unknown
EU 28+	unknown Km ²	No	No	Unknown	unknown	No	No	Unknown	Unknown

This habitat most probably has a large range but significant shortcomings in available mapping data mean that reliable figures for EOO and AOO cannot be derived at the present time. This habitat has therefore been assessed as Data Deficient under 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	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 on which to assess 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	LC	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	DD

Overall Category & Criteria			
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Least Concern	-	Least Concern	-

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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Contributors

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Reviewers

S.Beal.

Date of assessment

19/08/2015

Date of review

14/12/15

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