

## A4.11. Faunal communities on very tide-swept Atlantic upper circalittoral rock

### Summary

This habitat develops in extremely wave-exposed to exposed conditions where circalittoral bedrock and boulders are subject to strong or very strong tidal streams. It is typically found in tidal straits and narrows and is characterised by species that are capable of maintaining a foothold under these conditions. The habitat is sensitive to increased siltation and smothering, and algal blooms are also known to have had an impact. There are few conservation and management measures specifically directed at this habitat. Some are within designated protected areas and can therefore benefit from general measures which regulate activities in such areas and aim to prevent deterioration in water quality.

### Synthesis

There is a lack of comprehensive information on the distribution and abundance of this habitat in the North East Atlantic however as it is known to occur in locations as widely separated as the Azores, the west coast of Ireland, St.Kilda to the west of the Outer Hebrides, and the east coast of Shetland it is not considered to have a small natural range or occur in just a few locations. There is insufficient information to provide an overall estimate of historical, recent and possible future trends in quantity and quality.

This habitat has large EOO and therefore qualifies as Least Concern under criterion B1. The AOO figure is known to be an underestimate. Given the lack of information on trends in quantity and quality, and the fact that the overall distribution is unknown, expert opinion is this habitat should be considered Data Deficient 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
Data Deficient	-	Data Deficient	-

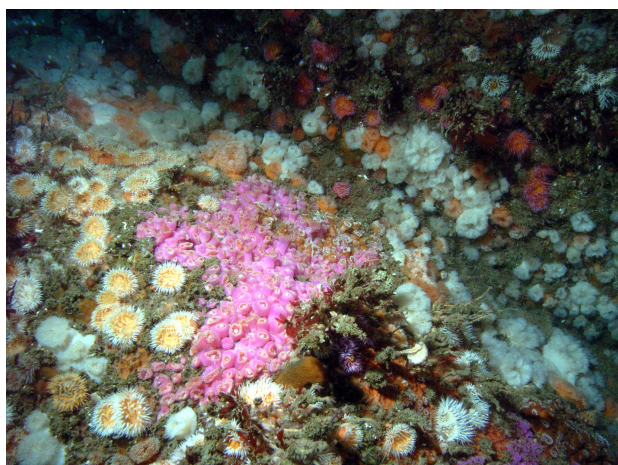
### Sub-habitat types that may require further examination

None.

### Habitat Type

#### Code and name

A4.11. Faunal communities on very tide-swept Atlantic upper circalittoral rock



## Habitat description

This habitat develops in extremely wave-exposed to exposed conditions where circalittoral bedrock and boulders are subject to strong or very strong tidal streams. It is typically found in tidal straits and narrows and is characterised by species that are capable of maintaining a foothold under these conditions. They either form a flat, adherent crust, as in the case of the barnacle *Balanus crenatus*, or have strong attachment points and are flexible, bending with the tide, such as the turf of the hydroid *Tubularia indivisa*.

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.

Characteristic species:

The characteristic species are determined by tidal stream strength. In strongly tide-swept wave exposed, situations there can be high abundance of the robust hydroid *Tubularia indivisa* and barnacle *Balanus crenatus*, the cushion sponges *Halichondria panicea* and *Myxilla incrustans* and *Alcyonium digitatum*. The anemones *Sagartia elegans*, *Actinothoe sphyrodeta*, *Urticina felina*, *Corynactis viridis* and *Metridium senile* are all found within this complex. Other species present in this high-energy complex are the sponges *Esperiopsis fucorum* and *Pachymatisma johnstonia*, the bryozoans *Alcyonidium diaphanum* and *Flustra foliacea*, and the hydroid *Sertularia argentea*. Where turbidity levels are high sponges such as *Esperiopsis fucorum*, *Pachymatisma johnstonia*, *Hemimycale columella*, *Dysidea fragilis* and *Clathrina coriacea* may be present. Mobile species include the starfish *Asterias rubens* and *Henricia oculata*, the crab *Cancer pagurus* and the whelk *Nucella lapillus* may also be present.

## Classification

EUNIS (v1405):

Level 4. A sub-habitat of 'Atlantic circalittoral rock' (A4.1)

Annex 1:

1170 Reefs

MAES:

Marine - Marine inlets and transitional waters

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

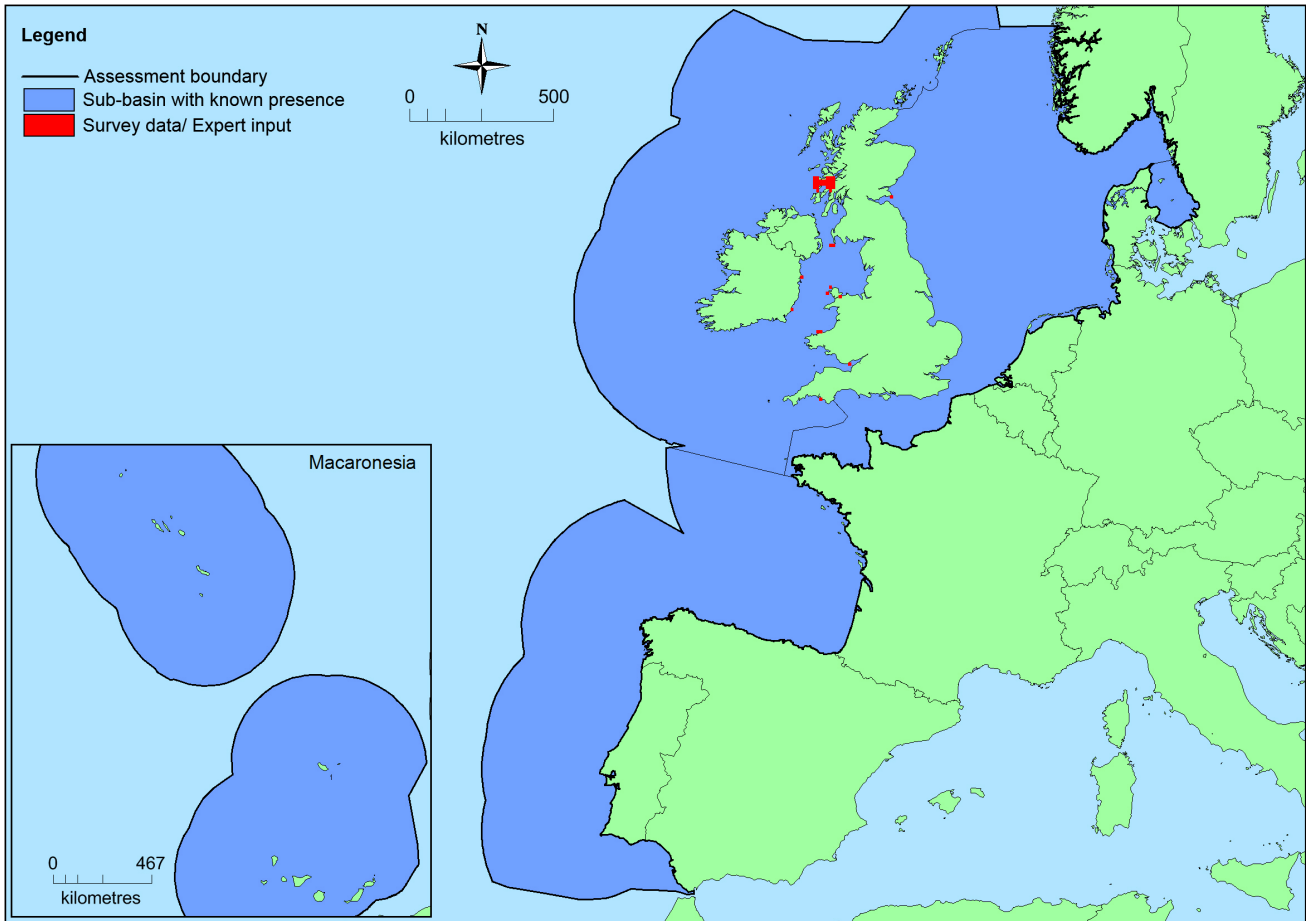
### **Geographic occurrence and trends**

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 <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
<i>EU 28</i>	>137,964 Km <sup>2</sup>	>39	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>	>137,964 Km <sup>2</sup>	>39	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**



There are insufficient data to provide a comprehensive and accurate map of the distribution of this habitat. This map has been generated using EMODnet data from modelled/surveyed records for the North East Atlantic (and supplemented with expert opinion where applicable) (EMODnet 2010). 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 is not the full distribution of the habitat.

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

This habitat occurs in the EU 28+ (e.g. Norway, Isle of Man, Channel Islands). The percentage hosted by the EU 28 is likely to be between 85-90% but there is insufficient information to establish the exact figure.

### Trends in quantity

There is a lack of information on the full extent and quantity of this habitat in the North East Atlantic region and any trends in quantity.

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

No

#### *Justification*

There is a lack of comprehensive information on the distribution and abundance of this habitat in the North East Atlantic however as it is known to occur in locations as widely separated as the Azores, the west coast of Ireland, St.Kilda to the west of the Outer Hebrides, and the east coast of Shetland it is not considered to have a small natural range.

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

No

### *Justification*

There is a lack of comprehensive information on the distribution and abundance of this habitat in the North East Atlantic however as it is known to occur in locations as widely separated as the Azores, the west coast of Ireland, St.Kilda to the west of the Outer Hebrides, and the east coast of Shetland it is not considered to have a small natural range.

### **Trends in quality**

There is a lack of information on any trends in quality of this habitat in the North East Atlantic region however it may be subject to considerable seasonal, annual and longer term fluctuations. A long term study on the Swedish west coast, for example, showed an area dominated by ascidians from 1970-81 then by the tube worm *Pomatoceros* from 1982-93 with ascidians only beginning to reappear in the mid-nineties.

- Average current trend in quality

EU 28: Unknown

EU 28+: Unknown

### **Pressures and threats**

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This habitat is sensitive to increased siltation and smothering, as the associated biotopes are dominated by sessile filter feeders. Algal blooms have impacted circalittoral faunal turf communities in Scandinavia and there may be some effects associated with the use of towed fishing gear through direct impact, and by resuspending sediment.

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

#### **Biological resource use other than agriculture & forestry**

Fishing and harvesting aquatic resources

#### **Pollution**

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

Nutrient enrichment (N, P, organic matter)

#### **Natural System modifications**

Human induced changes in hydraulic conditions

### **Conservation and management**

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There are few conservation and management measures specifically directed at this habitat. Some are within designated protected areas and can therefore benefit from general measures which regulate activities in such areas and aim to prevent deterioration in water quality.

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

#### **Measures related to marine habitats**

Other marine-related measures

#### **Measures related to spatial planning**

Establish protected areas/sites

### **Conservation status**

Annex 1:

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

Information is limited, but it is clear that a number of the more prominent members of this habitat are relatively long lived, and fairly slow growing such as sea fans and cup corals. It may be concluded that because of this communities which they dominate will be relatively stable with time, but that when they are damaged recovery to their original complexity may be slow. This recovery will be hindered by the fact that for a number of species recruitment can be very spasmodic, particularly for species near the limits of their geographical range.

**Effort required**

10 years	20 years
Naturally	Naturally

**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 information to determine any overall trends in quantity of this habitat in the North East Atlantic. This habitat has been assessed as Data Deficient 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	>50,000 Km <sup>2</sup>	Unknown	Unknown	No	>39	Unknown	Unknown	No	No
EU 28+	>50,000 Km <sup>2</sup>	Unknown	Unknown	No	>39	Unknown	Unknown	No	No

This habitat has a large natural range in the North East Atlantic region. The precise extent is unknown however as EOO >50,000km<sup>2</sup> therefore it does not have a restricted geographical distribution. The AOO has been estimated as 39 indicating it is only present in a small number of 10 x 10km grid squares but this is known to be an underestimate. There is a lack of information on trends.

The known 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 B1 (c), B2 (c) and B3 and Data Deficient under criteria B1 (a,b) and B2 (a,b) for both the EU 28 and 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 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	DD	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
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

North East Atlantic Working Group: S. Gubbay, G. Saunders, H. Tyler-Walters, N. Dankers, F.Otero-Ferrer, J. Forde, K. Fürhaupter, R. Haroun Tabraue, N. Sanders.

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### Reviewers

J.Leinikki.

### Date of assessment

25/08/2015

### Date of review

## References

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Connor, D.W., Allen, J.H., Golding, N. *et al.* 2004. The Marine Habitat Classification for Britain and Ireland Version 04.05 JNCC. [online] Peterborough: ISBN 1 861 07561 8. Available at: [http://jncc.defra.gov.uk/pdf/04\\_05\\_introduction.pdf](http://jncc.defra.gov.uk/pdf/04_05_introduction.pdf). (Accessed: 30/08/2014).

European Environment Agency. 2014. EUNIS habitat type hierarchical view. Available at: <http://eunis.eea.europa.eu/habitats-code-browser.jsp>. (Accessed: 22/08/2014).

Lundälv, T. 1996. Project Väderöarna: 10-årsjubilerande rekordhällare I havsövervakning. *Havsutsikt* 1: 10.

Lundälv, T. and Christie, H. 1986. Comparative trends and ecological patterns of rocky subtidal communities in the Swedish and Norwegian Skagerrak area. *Hydrobiologia* 142: 71-80.

Tempera, F., Atchoi, E., Amorim, P., Gomes-Pereira, J., and Gonçalves, J. 2013. *Atlantic Area Marine Habitats. Adding new Macaronesian habitat types from the Azores to the EUNIS Habitat Classification*. Horta: MeshAtlantic, IMAR/DOP-UAç, p.126.