

A4.25 Faunal communities on variable salinity Atlantic circalittoral rock

Summary

This habitat and the associated biotopes develop under a narrow range of conditions where bedrock occurs in variable/reduced salinity, usually where an estuary exits towards the sea through a narrow submerged river gorge. It is characterized by sponges tolerant of variable salinity, barnacles and a sparse hydroid and bryozoan turf. Especially where low salinity is frequently present, ‘groves’ of the peacock worm *Sabella pavonina* may be present and beds of mussels, *Mytilus edulis*, may be present but may be ephemeral.

This habitat is vulnerable to substratum removal and increased turbidity levels which would result in smothering and loss of faunal populations. Interaction with mobile fishing gear is likely to damage or remove individuals from the substratum. Changes in the hydraulic conditions, for example, through the construction of tidal barrages, and the discharge of contaminants can also threaten this habitat.

Beneficial management and conservation measures include protection within Marine Protected Areas, the regulation of fishing methods which could damage, or disturb seabed communities, and the control of dredging activity adjacent to this habitat. The unusual nature and rarity of occurrence of the associated biotopes needs to be accounted for in the management of locations and in ecological impact assessments.

Synthesis

The conditions which favour the occurrence of this habitat are rare in the North East Atlantic however EOO exceeds 50,000km² because it is present in locations as widespread as Loch Etive on the west coast of Scotland and the Tamar estuary in south west England (occurring naturally in, perhaps, less than 200 km²).

Although not considered likely to occur in many locations it is unlikely that the available data show its full distribution. It exceeds the threshold for threatened status on the basis of a small range but there is a lack of information on trends. This habitat has therefore been assessed as 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 because although the two associated biotopes A4.251 and A4.252 are very different in characterising species and biogeographical occurrence, their rarity of occurrence and their sensitivity to pressures/activities are considered similar.

Habitat Type

Code and name

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Cushion sponges and hydroids ('Piped' *Halichondria*, *Tubularia indivisa*, *Amphilectus tucorum*), on turbid tide-swept variable salinity sheltered circalittoral rock, Dockyard Bank, UK (© S.Hiscock/JNCC).



Cushion sponges and hydroids on turbid tide-swept variable salinity sheltered circalittoral rock. Milford Haven, Wales (© K.Hiscock/JNCC).

Habitat description

This habitat type occurs on wave-sheltered, variable/reduced salinity bedrock and boulders, subject to moderately strong to weak tidal streams. There may be large growths of the brackish-tolerant sponge *Halichondria bowerbanki*. It is characterised by sponges tolerant of variable salinity, barnacles and a sparse hydroid and bryozoan turf. Especially where low salinity is frequently present, 'groves' of the peacock worm *Sabella pavonina* may be present. Beds of mussels, *Mytilus edulis*, may also be present but may be ephemeral.

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:

This habitat supports a suite of sponge species able to tolerate the variable salinity conditions such as *Hymeniacion perleve*, *Suberites ficus*, *Halichondria panicea*, *Halichondria bowerbanki*, *Cliona celata* and *Leucosolenia botryoides*. The tassellated form of the sponge *Amphilectus fucorum* and the filigree worm *Salmacina dysteri* are frequently present. The barnacle *Balanus crenatus* is frequently recorded in this complex. A sparse hydroid/bryozoan turf composed primarily of *Nemertesia antennina*, *Nemertesia ramosa*, *Plumularia setacea*, *Alcyonidium diaphanum* and *Bugula plumosa* is often recorded with seasonal occurrence of often dense *Tubularia indivisa*. Other species recorded are the ascidians *Clavelina lepadiformis*, *Morchellium argus* *Distomus variolosus* and *Dendrodoa grossularia*, the anemones *Metridium senile* and *Sagartia troglodytes*, the starfish *Asterias rubens* and the crab *Carcinus maenas*.

Classification

EUNIS (v1405):

Level 4. A sub-habitat of 'Atlantic circalittoral rock' (A4.2).

Annex 1:

1130 Estuaries

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

9.10 Estuaries

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

No

Justification

This habitat and especially the associated biotope 'Cushion sponges and hydroids on tide-swept sheltered circalittoral rock (A4.251)' is typical of ria environments which are a characteristic physiographic feature of some inlets in south-west Britain and possibly in other locations on the western seaboard of Europe. It is a rare habitat in the North East Atlantic.

Geographic occurrence and trends

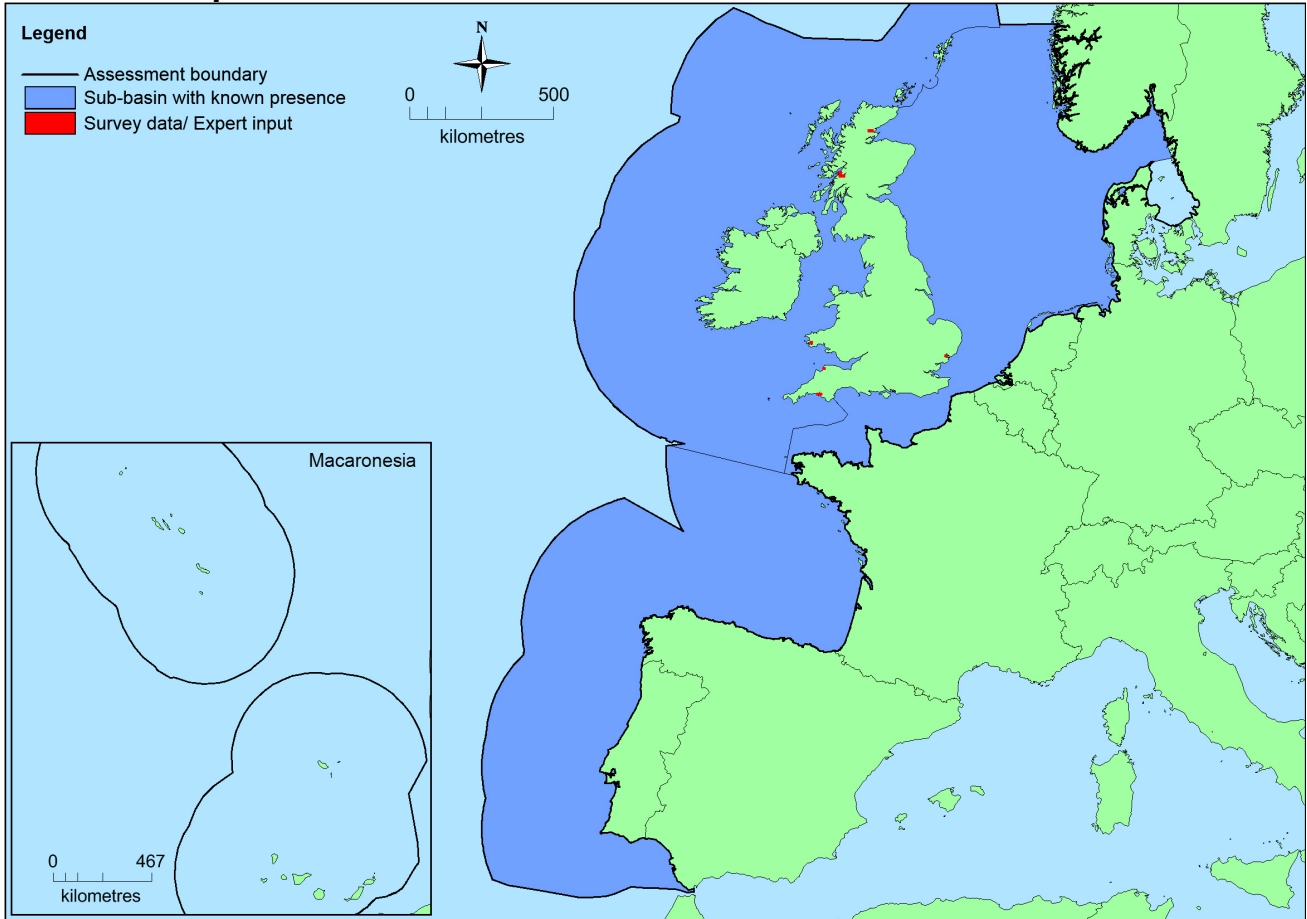
Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>North-East Atlantic</i>	Bay of Biscay and the Iberian Coast: Present Celtic Seas: Present Greater North Sea: Present Kattegat: Present	Unknown Km ²	Unknown	Unknown

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
<i>EU 28</i>	209,008 Km ²	unknown	Unknown Km ²	There is insufficient information for accurate calculation of EOO and AOO.

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28+	>209,008 Km ²	unknown	Unknown Km ²	There is insufficient information for accurate calculation of EOO and AOO.

Distribution map



There are insufficient data to provide a comprehensive and accurate map of the distribution of this habitat but the main locations where it occurs in Britain are shown. This map has been generated using EMODnet data from surveyed records for the North East Atlantic (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?

Unknown.

Trends in quantity

The quantity of this habitat is unknown. It has a restricted geographic distribution, occurring naturally in, perhaps, less than 200 km².

There is insufficient information to determine any historical or recent trends in the quantity of this habitat in the North East Atlantic although it is known to still be present in most locations where it has been recorded in historic times.

- 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

The conditions which favour the occurrence of this habitat are rare in the North East Atlantic however EOO exceeds 50,000km² because of recorded presence in locations as widespread as Loch Etive on the west coast of Scotland and the Tamar estuary in south west England.

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

No

Justification

The conditions which favour the occurrence of this habitat are rare in the North East Atlantic however the EOO exceeds 50,000km² because of recorded presence in locations as widespread as Loch Etive on the west coast of Scotland and the Tamar estuary in south west England.

Trends in quality

Trends in quality are unknown although there are some monitoring studies, mainly associated with reporting 'Favourable conservation status' for the EU Habitats Directive, which suggest that habitat quality is being maintained at sites in south-west Britain.

- Average current trend in quality

EU 28: Unknown

EU 28+: Unknown

Pressures and threats

The majority of the species within the associated biotopes are permanently attached to the substratum or are slow moving therefore substratum removal would result in loss of faunal populations. Siltation is likely to limit or prevent feeding in many of the characteristic taxa of this habitat, in particular the ascidians and sponges. Sudden smothering will also result in suffocation and, if not removed by tidal currents or wave action eventually death. Mobile fishing gear, straying from their intended grounds will damage or remove individuals from the substratum. Most of the associated fauna are sessile organisms that are unable to re-attach to the substratum once detached and are thus highly intolerant to physical removal. Changes in the hydraulic conditions, for example, through the construction of tidal barrages, and the discharge of contaminants can also threaten this habitat.

List of pressures and threats

Biological resource use other than agriculture & forestry

- Fishing and harvesting aquatic resources
 - Professional active fishing
 - Demersal seining

Pollution

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

Natural System modifications

- Human induced changes in hydraulic conditions

Conservation and management

This habitat is afforded some protection within Marine Protected Areas. Beneficial management measures include the regulation of fishing methods and control of any activity, including the discharge of contaminants, which damages or disturbs seabed communities. The unusual nature and rarity of

occurrence of the associated biotopes needs to be accounted for in the management of locations and in ecological impact assessments.

List of conservation and management needs

Measures related to spatial planning

Other spatial measures
Establish protected areas/sites

Measures related to hunting, taking and fishing and species management

Regulation/Management of fishery in marine and brackish systems

Conservation status

Annex 1-type

1130: MATL U2.

1170: MATL U2, MMAC FV

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

The species that characterise this habitat are generally resilient to adverse impacts. The MarLIN sensitivity review for one of the associated biotopes (A4.252 *Halichondria bowerbanki*, *Eudendrium arbusculum* and *Eucratea loricata* on reduced salinity mixed substrata) suggests 'High' or 'Very high' recovery potential and the highest sensitivity as 'Moderate'.

Effort required

10 years
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 %

The extent of this habitat is unknown although it is known to have a restricted geographic distribution, occurring in, perhaps, less than 200 km² of natural situations. It is 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 ²	Unknown	Unknown	Unknown	> 10	Unknown	Unknown	Unknown	No
EU 28+	>50,000 Km ²	Unknown	Unknown	Unknown	>10	Unknown	Unknown	Unknown	No

The conditions which favour the occurrence of this habitat are rare in the North East Atlantic however EOO exceeds 50,000km² because it is present in locations as widespread as Loch Etive on the west coast of Scotland and the Tamar estuary in south west England. Currently the habitat has been recorded at only a very few locations (6 known locations, all in Britain), and therefore capable of becoming critically

endangered or collapsed within a very short time period. This is however believed to be an incomplete data set. This habitat is Least Concern under B3 and Data Deficient for all other criteria 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	DD	DD	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	DD	DD	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

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Contributors

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Reviewers

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