

A3.71: Robust faunal cushions and crusts in Atlantic infralittoral surge gullies and caves

Summary

This is an infralittoral rocky habitat of surge gullies and shallow caves in areas subject wave surge. It is found on open rocky coasts in areas exposed to moderate or stronger wave action. The rock surfaces are typically colonised by faunal communities of encrusting or cushion sponges, colonial ascidians, short turf-forming bryozoans, anthozoans, barnacles and, where there is sufficient light, by red seaweeds.

The habitat is sensitive to increased siltation and smothering as the associated biotopes are dominated by sessile filter feeders. There are few conservation and management measures specifically directed at this habitat although some are within designated protected areas. Codes of Conduct which provide guidance on avoiding damage to the habitat are promoted in some areas where cave diving takes place.

Synthesis

This habitat has a large natural range in the North East Atlantic region extending from the Canaries and Azores in the west to the Skagerrak coast of Sweden. There are insufficient data to identify and trends although both increases and decreases in extent are to be expected through the natural process of erosion.

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	-

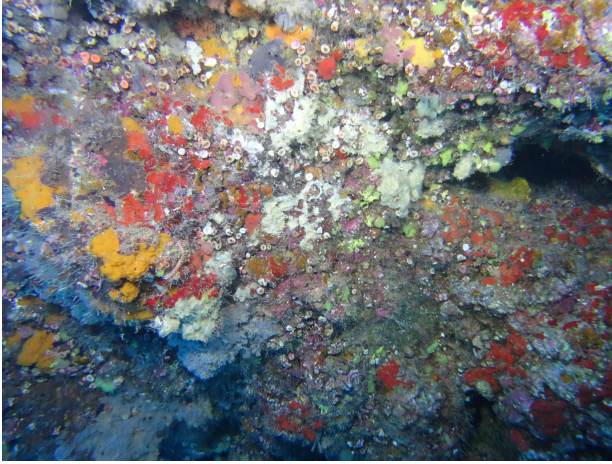
Sub-habitat types that may require further examination

None.

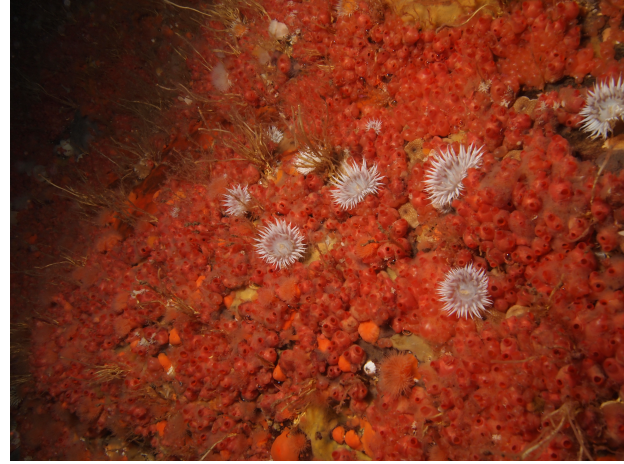
Habitat Type

Code and name

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Sponges and anthozoans in a sublittoral cave system, Puerto del Carmen, Lanzarote, (© F.Otero).



Dense carpet of sea squirts, anemones and hydroids on a surge gully rock face, Isle of Man, (© C.Wood/Marine Conservation Society).

Habitat description

Infralittoral rocky habitats subject to strong wave surge conditions, as found in surge gullies and shallow caves, on open rocky coasts with moderate or greater wave action. This habitat is typically colonised by faunal communities of encrusting or cushion sponges, colonial ascidians, short turf-forming bryozoans, anthozoans, barnacles and, where there is sufficient light, by red seaweeds.

The surge gullies and caves usually consist of vertical bedrock walls, occasionally with overhanging faces, and support communities which reflect the degree of wave surge they are subject to, and any scour from mobile substrata on the cave/gully floors. The larger cave and gully systems typically show a marked zonation from the entrance to the rear of the gully/cave as wave surge increases and light reduces. This is reflected in communities of anthozoans, ascidians, bryozoans and red seaweeds near the entrance, leading to sponge crust-dominated communities and finally barnacle and spirobid worm communities in the most severe surge conditions. Gully/cave floors usually have mobile boulders, cobbles, pebbles or coarse sediment. The mobile nature of the gully/cave floors leads to communities of encrusting species, tolerant of scour and abrasion or fast summer-growing ephemeral species. The lower zone of the gully side walls are also often scoured, and typically colonised by coralline crusts and barnacles. Winter storms may result in scouring on gully/cave walls whilst some ephemeral growth may occur in calmer summer months.

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 overtime.

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:

Frequently recorded species in this habitat include *Clathrina coriacea*, *Halichondria paicea*, *Metridium senile*, *Corynactis viridis*, *Balanus crenatus*, *Polyclium aurantium*, Didemnidae and Corallinaceae. Occasionally recorded are *Pachymatisma johnstonia*, *esperipsis fucorum*, *Myxilla incrustans*, *Tubularia indivisa*, *Alcyonium digitatum*, *Urticina feline*, *Sargatia elegans*, *Pomatoceros triqueter*, *Cancer pagurus*, *Calliostoma zizyphinum*, *Asterias rubens*, *Echinus esculentus* and *Botryllus schlosseri*.

Classification

EUNIS (v1405):

Level 4. A sub-habitat of 'Atlantic infralittoral rock' (A3.7).

Annex 1:

1170 Reefs

8330 Submerged or partially submerged sea caves

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

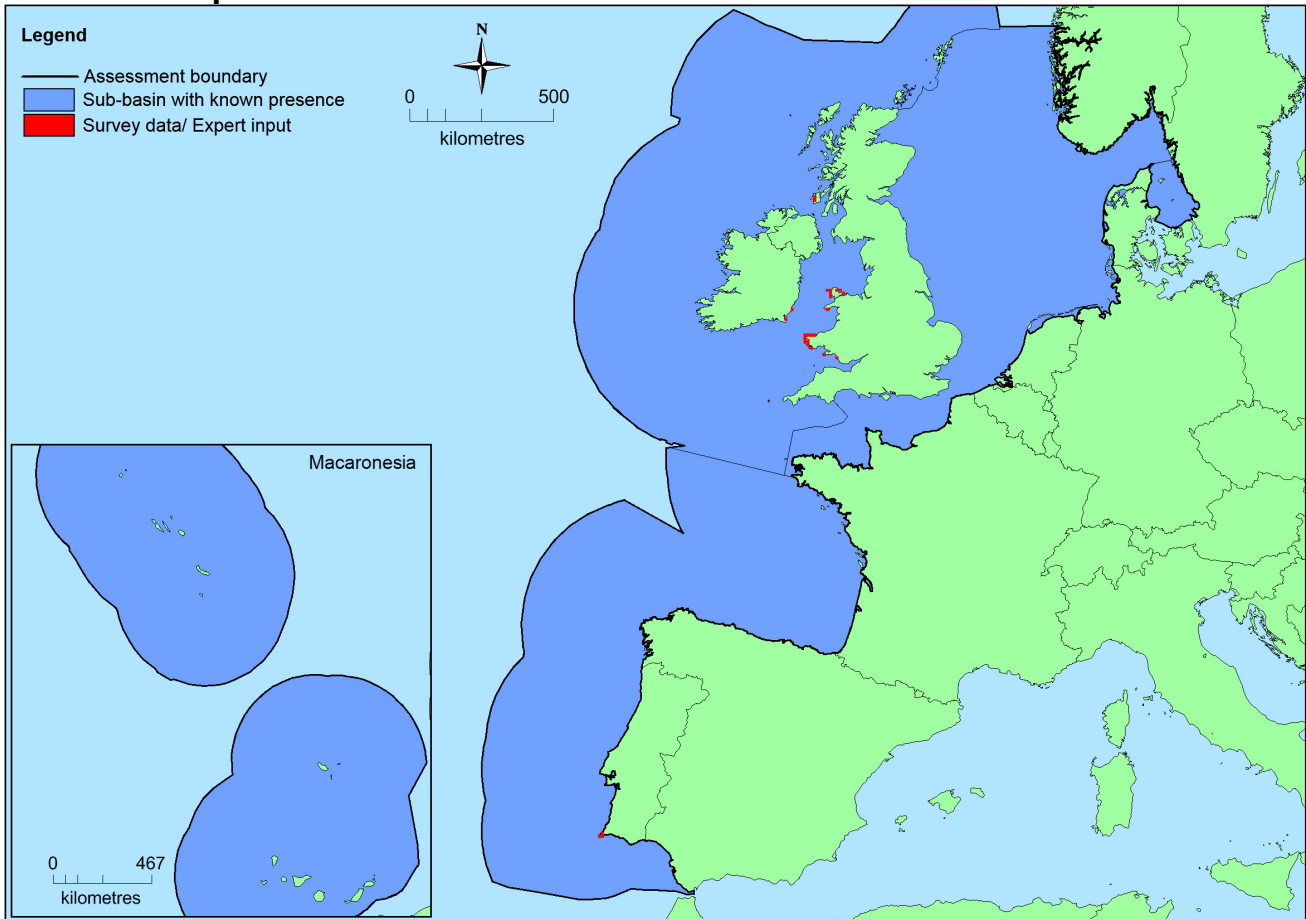
Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>North-East Atlantic</i>	Bay of Biscay and the Iberian Coast: Present Celtic Seas: Present Greater North Sea: Present Macaronesia: Present Kattegat: Present	Unknown 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
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	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	293,633 Km ²	>35	Unknown Km ²	Based on a limited data set. AOO is known to be an underestimate.
EU 28+	>293,633 Km ²	>35	Unknown Km ²	Based on a limited data set. AOO is known to be an underestimate.

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, Channel Islands, Isle of Man). 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

The full extent and quantity of this habitat in the North East Atlantic region is unknown. Evidence of any trends in extent of occurrence is very sparse although there are limited data from a few long-term monitoring sites in caves. Both increases and decreases are to be expected through the natural process of erosion.

- 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

This habitat has a large natural range in the North East Atlantic being present in locations as widely separated as the Azores, the west coast of Ireland, the east coast of Shetland and the west and south coast of the Outer Hebrides.

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

No

Justification

This habitat has a large natural range in the North East Atlantic being present in locations as widely separated as the Azores, the west coast of Ireland, the east coast of Shetland and the west and south coast of the Outer Hebrides.

Trends in quality

The overall quality of this habitat in the North East Atlantic region is unknown although some localised declines have been reported.

- Average current trend in quality

EU 28: Unknown

EU 28+: Unknown

Pressures and threats

This habitat is sensitive to increased siltation and smothering, as the associated biotopes are dominated by sessile filter feeders. Activities which may cause this include coastal construction and protection works, dredging and the disposal of dredge spoil. Some types of pollution (e.g. oil spills) may have a similar effect however if the exposure conditions are unchanged the impacts may be short lived.

List of pressures and threats

Pollution

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

Natural System modifications

Human induced changes in hydraulic conditions

Modification of hydrographic functioning, general

Siltation rate changes, dumping, depositing of dredged deposits

Conservation and management

There are few conservation and management measures specifically directed at this habitat although some are within designated protected areas. Codes of Conduct which provide guidance on avoiding damage to these habitat are promoted in some areas where cave diving takes place.

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:

1170: MATL U2, MMAC FV

8330 MATL XX, MMAC XX

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

Unknown. Surge gully habitats develop in conditions of moderate to severe exposure to wave action. They are likely to be able to recover if there is successful settlement of larvae and conditions are favourable. Timescales for recovery will depend on the species which dominate as some are essentially annual such as the sea squirts *Cliona intestinalis* and *Ascidella aspersa* and others such as the soft coral *Alcyonium digitatum* colonies are more than 10 years old.

Effort required

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 although both increases and decreases are to be expected through the natural process of erosion. This habitat 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	No	>35	Unknown	Unknown	No	No
EU 28+	>50000 Km ²	Unknown	Unknown	No	>35	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 >50,000km² therefore it does not have a restricted geographical distribution. The AOO has been estimated as 35 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

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Reviewers

S.Beal.

Date of assessment

30/10/2015

Date of review

19/01/2016

References

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