A2.82: Vegetated (ephemeral) Atlantic littoral mixed sediment

Summary

This habitat is associated with littoral mixed substrata (pebbles and cobbles overlying sand or mud) that may be subject to variations in salinity and/or siltation, characterised by dense blankets of ephemeral green and red seaweeds. It is found primarily on enclosed stony shores sheltered from wave action with weak to moderate tidal streams. The habitat is sensitive to substratum loss, smothering, changes in wave exposure and any changes in the emergence regime, mainly resulting from coastal modifications or protection works and hydrocarbon contamination. Abrasion, and other types of physical disturbance will lead to displacement of organisms and severe changes in the biodiversity of the habitat.

Beneficial management measures for this habitat include the regulation coastal developments and hard coastal defence structures. Additionally, water quality improvement programmes to reduce the risk of toxic contamination or nutrient inputs leading to eutrophication are important measures.

Synthesis

Survey information confirms that this habitat has a widespread distribution in the North East Atlantic however there is insufficient information to determine whether there have been any historical, recent and possible future trends in quantity or quality.

This habitat has a large EOO and AOO, and therefore qualifies as Least Concern under criterion B. However the habitat is assessed as Data Deficient both at the EU 28 and EU 28+ levels given the lack of information on its area and any trends in quantity and quality.

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

A2.82: Vegetated (ephemeral) Atlantic littoral mixed sediment

No characteristic photographs of this habitat are currently available.

Habitat description

This habitat comprises littoral mixed substrata (pebbles and cobbles overlying sand or mud) that are subject to variations in salinity and/or siltation, characterised by dense blankets of ephemeral green and red seaweeds. This habitat is found primarily on enclosed stony shores sheltered from wave action with weak to moderate tidal streams and often subject to variable levels of salinity. It is found predominately in the mid shore zone above, or at the same level as, the biotope dominated by the barnacles *S. balanoides* and/or *E. modestus* and *Littorina* spp. If it is found in the upper shore region it can be backed by saltmarsh species such as *Salicornia* sp. and *Spartina* sp. Below are biotopes dominated by the wracks *Fucus serratus* or *Fucus vesiculosus* or by *M. edulis* or by the polychaete *Hediste diversicolor* and the tellin *Macoma balthica* depending on the substratum.

Eulittoral pebble and boulder beaches in the Macaronesian archipelagos are mainly located at the mouth of steep brook valleys (Barrancos). At depths where wave action is only slight, stable ecosystems can develop with species-rich plant covers, lodging many different animals. In the eulittoral the biota is reduced to a few small turf green and red seaweeds (usually *Ulva* species and *Gelidium pusillum*), but in the infralittoral, several species of red seaweeds occur, such as *Ellisondia officinalis*, *Halophytis incurva* and members of the family Liagoraceae, also brown seaweeds, like *Stypocaulon scoparium* and *Sargassum* spp. Among the faunal components, limpets (*Patella* spp.), periwinkles (*Osilinus* spp.) and crabs (*Pecnon gibbessi*) are common species.

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 main species present are *Enteromorpha intestinalis*, *Ulva lactuca* and *Porphyra* spp., along with colonial diatoms covering the surface of the substratum. Small numbers of other species such as barnacles *Semibalanus balanoides* and *Elminius modestus* are confined to any larger cobbles and pebbles or on the shells of larger individuals of the mussel *Mytilus edulis*. The crab *Carcinus maenas* and the winkle *Littorina littorea* can be present among the boulders, cobbles and seaweeds, while gammarids can be found in patches underneath the cobbles. In common with the other habitats found on mixed substrata, patches of sediment are typically characterised by infaunal species including bivalves, for example, *Cerastoderma edule* and the polychaete *Arenicola marina* and the polychaete *Lanice conchilega*. This is a habitat with a low species diversity and the number of species in the characterising species list is due to a variation in the species composition from site to site, not to high species richness at individual sites.

Classification

EUNIS (v1405):

Level 4. A sub-habitat of 'Atlantic littoral mixed sediment' (A2.8).

Annex 1:

1160 Large shallow inlets and bays

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal.

MSFD:

Littoral Sediment

EUSeaMap:

Not mapped.

IUCN:

12.2 Sandy Shorelines and/or Beaches, Sand Bars, Spits etc.

12.3 Shingle and/or Pebble Shoreline and/or Beaches

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

<u>Justification</u>
There is insufficient information available for this habitat to comment on whether it is an outstanding example a North East Atlantic habitat.

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)
North-East Atlantic	Bay of Biscay and the Iberian Coast: Present Celtic Seas: Present Kattegat: Present Greater North Sea: Present Macaronesia: 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
EU 28	319,639 Km^2	121	Unknown Km^2	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.
EU 28+	>319,639 Km^2	>121	Unknown Km^2	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
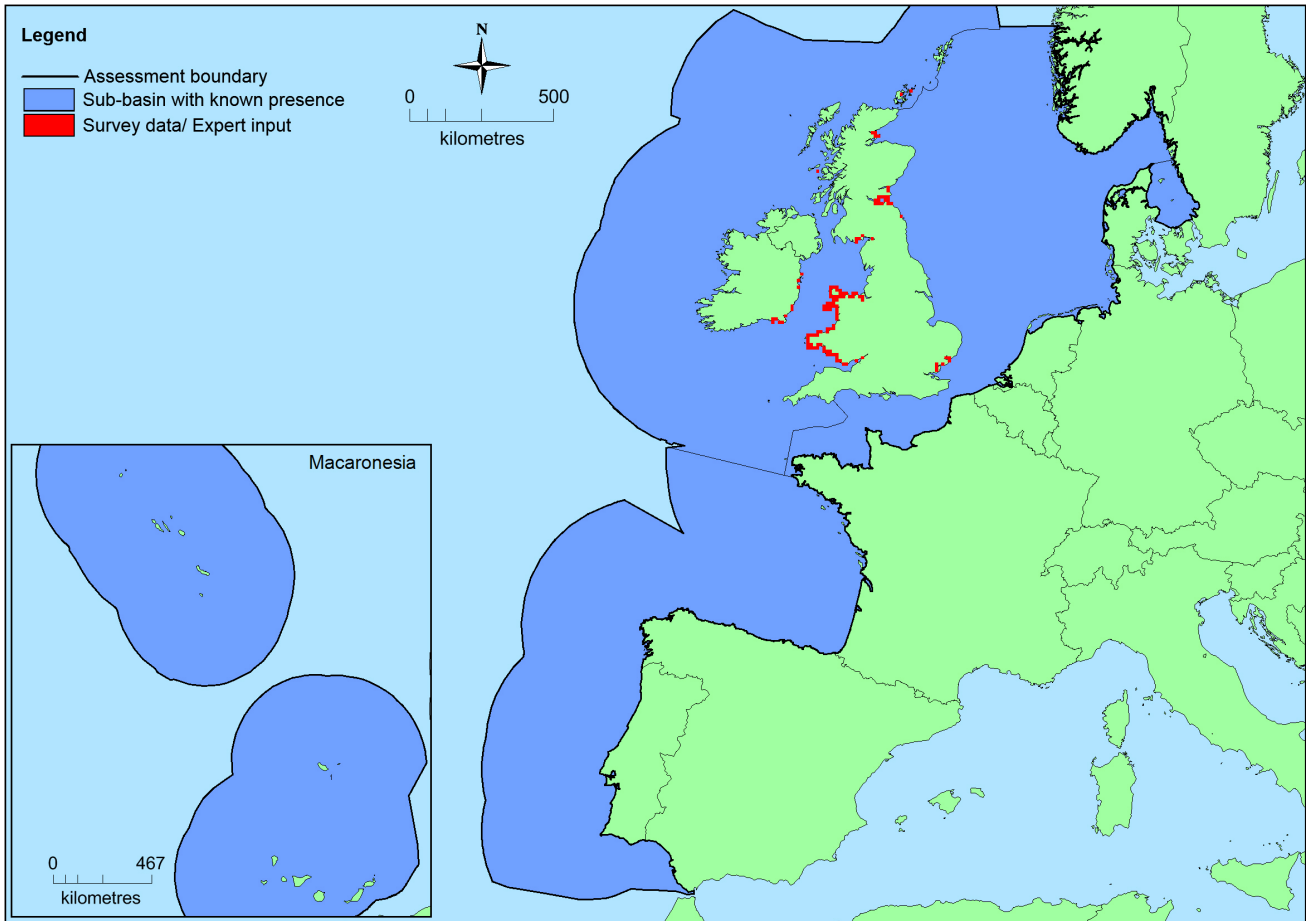
There are insufficient data to provide a comprehensive and accurate map of the distribution of this habitat. This map has been generated using EMODnet data from modelled/surveyed records for the North East Atlantic (and supplemented with expert opinion where applicable) (EMODnet 2010). EOO and AOO have 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 more than 90% but there is insufficient information to establish the exact figure.

Trends in quantity

There is insufficient information to determine any trends in historical or current quantity of this habitat. Future trends have not been estimated.

- 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 does not have a small natural range as EOO exceeds 50,000km^2.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  This habitat does not have a small natural range as EOO exceeds 50,000km^2.

Trends in quality

There is insufficient information to determine any trends in historical or current quality of this habitat. Future trends have not been estimated.

- Average current trend in quality
  EU 28: Unknown
  EU 28+: Unknown

Pressures and threats

This habitat is sensitive to substratum loss and smothering, mainly resulting from activities such as coastal construction or coastal protection works. Smothering may prevent feeding and respiratory flows through the biological communities and the species may not survive burial. Moreover, the decrease in wave exposure and also any changes in the emergence regime, due to coastal modifications will have a detrimental impact on the habitat.

Abrasion, habitat destruction and any kind of physical disturbance will lead to displacement of organisms and severe changes in the diversity of the habitat. Hydrocarbon contamination (eg. oil spills) may lead to smothering of the associate fauna and flora.

List of pressures and threats

Pollution

Marine water pollution
    Oil spills in the sea
    Toxic chemical discharge from material dumped at sea

Natural System modifications

Human induced changes in hydraulic conditions
    Modification of hydrographic functioning, general
    Dykes, embankments, artificial beaches, general
    Sea defense or coast protection works, tidal barrages

Conservation and management

This habitat is afforded some protection within Marine Protected Areas. Additional beneficial management measures finclude the regulation of coastal developments and the construction of hard coastal defence structures, as well as water quality improvement programmes to reduce the risk of toxic contamination and of nutrient inputs leading to eutrophication.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

Measures related to marine habitats

Other marine-related measures

Measures related to spatial planning

Other spatial measures

Conservation status

Annex 1:

1160: MATL U2, MMAC FV

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	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 therefore 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^2	Unknown	Unknown	No	>50	Unknown	Unknown	No	No
EU 28+	>50,000 Km^2	Unknown	Unknown	No	>50	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^2 and AOO >50, this exceeds the thresholds for a threatened category on the basis of restricted geographic distribution. Trends are unknown but the distribution of the habitat is such that the identified threats are unlikely to affect all localities at one. This habitat has therefore been assessed as Least Concern under Criteria B1(c), B2 (c) & B3 and Data Deficient under 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 %	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)

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References

European Environment Agency. 2014. EUNIS habitat type hierarchical view. Available at: http://eunis.eea.europa.eu/habitats-code-browser.jsp (Accessed: 22/08/14).

Haroun, R., Gil-Rodriguez, M.C., Wildpretde la Torre, W., et al., 2008. Marine Plants of the Canary Islands,

BlaBla Ediciones, Las Palmas, Gran Canaria, Spain. 380pp.

Tempera, F., E. Atchoi, P. Amorim, J. Gomes-Pereira and J. Gonçalves. 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.