A2.42 Species-rich Atlantic littoral mixed sediment

Summary

This habitat type occurs in the mid- and lower-shore as an extension of a shallow sublittoral biotope and consists of sheltered mixed sediments, usually subject to variable salinity conditions. It is sensitive to substratum loss, mainly deriving from coastal construction and coast protection activities, which might alter hydrological conditions. Additionally, chemical contamination, debris or other pollutants might lead to anoxic conditions or smothering of the benthic organisms, favouring the presence of opportunistic species. Climate change and sea temperature change will affect the associated fauna and flora or may favour the establishment and proliferation of invasive non-indigenous species.

Beneficial conservation management measures for this habitat, include protection within Marine Protected Areas and integrated coastal management schemes, water quality improvement programmes, regulation of coastal development and the construction and of hard coastal defence structures. Control of invasive species should also be considered.

Synthesis

There is insufficient information to make an overall assessment of the distribution and trends in quality or quantity of this habitat over the last 50 years. This habitat is therefore 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.

Habitat Type

Code and name

A2.42 Species-rich Atlantic littoral mixed sediment

Mixed sediment shore with Cirratulids and *Cardium edule*, Milford Haven, Wales (© P.Brazier/JNCC).

Habitat description

This habitat is characterised by sheltered mixed sediments, usually subject to variable salinity conditions.

It is found on the mid- and lower shore and is an extension of a shallow sublittoral habitat. The infauna is very diverse, dominated by a range of polychaetes.

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:

Polychaetes including *Exogone naidina*, *Sphaerosyllis taylori*, *Pygospio elegans*, *Chaetozone gibber*, *Cirriformia tentaculata*, *Aphelochaeta marioni*, *Capitella capitata*, *Mediomastus fragilis*, and *Melinna palmata*. The oligochaete worms *Tubificoides benedii* and *T. pseudogaster* are abundant, as is the cockle *Cerastoderma edule*. A large range of amphipods may occur, including *Melita palmata, Microprotopus maculatus*, *Aora gracilis* and *Corophium volutator*. The bivalves *Abra alba* and *A. nitida* may occur. The barnacle *Elminius modestus* may be abundant where the sediment has stones on the surface.

Classification

EUNIS (v1405):

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

Annex 1

1140 Mudflats & sandflats not covered at low tide

1160 Large shallow inlets and bays

MAES

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD

Littoral Sediment

EUSeaMap

Not mapped

IUCN

9.5 Subtidal Sandy-Mud

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)
North-East Atlantic	Celtic Seas: Present Greater North Sea: Present Bay of Biscay and the Iberian Coast: Uncertain Kattegat: Uncertain Macaronesia: Uncertain	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	Unknown Km^2	Unknown	Unknown Km^2	Insufficient records for reliable estimate.
EU 28+	Unknown Km^2	Unknown	Unknown Km^2	Insufficient records for reliable estimate.

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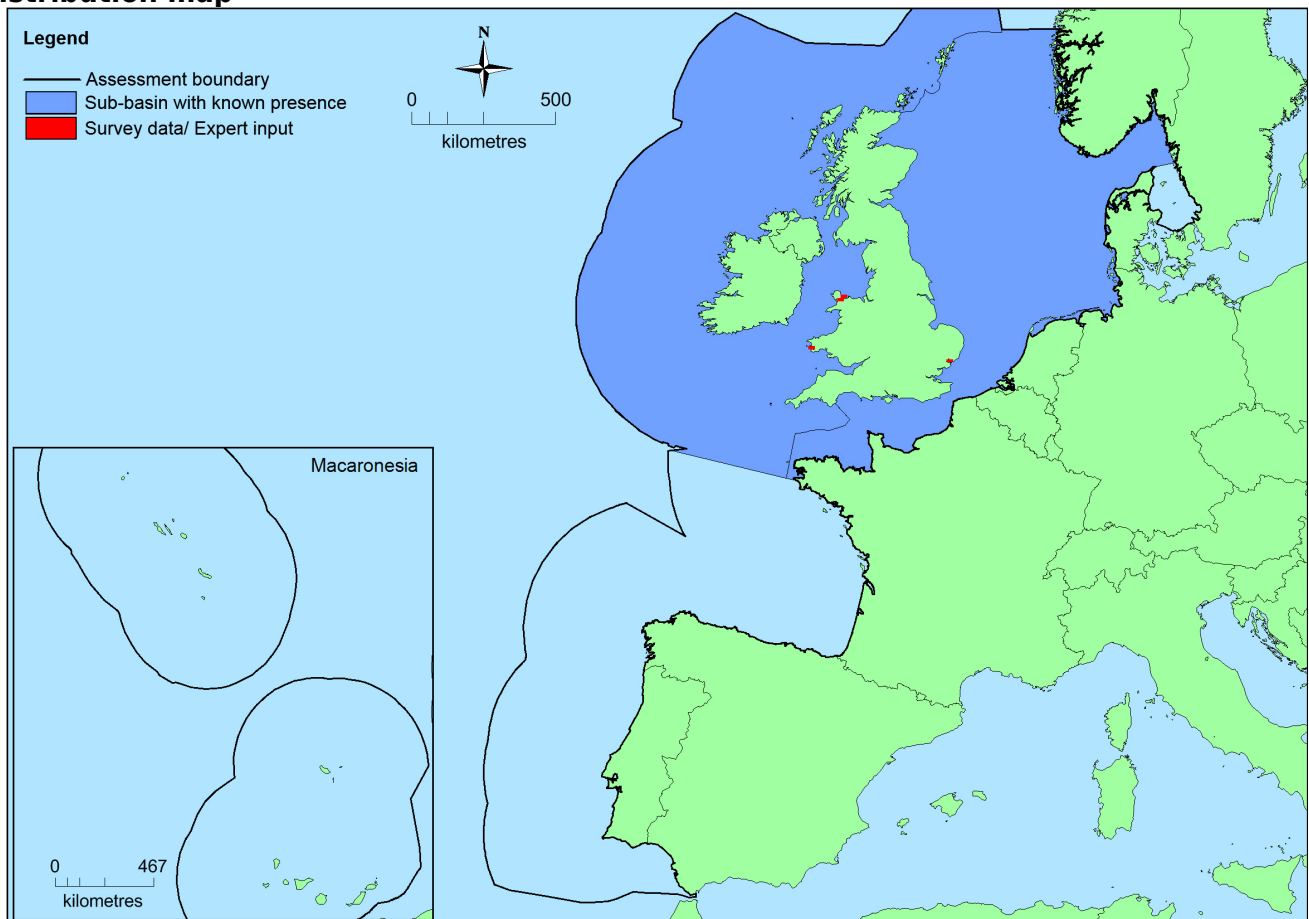
This map has been generated using EMODnet data from modelled/surveyed records for the North East Atlantic (and supplemented with expert opinion where applicable) (EMODnet 2010). There are insufficient data to provide a comprehensive and accurate map of the distribution of this habitat or for calculation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

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

Unknown as data only available for the UK occurrence of this habitat on EMODnet.

Trends in quantity

There is insufficient information to determine any trends in quantity of this habitat.

- Average current trend in quantity (extent)
  EU 28: Unknown
  EU 28+: Unknown
- Does the habitat type have a small natural range following regression?
  Unknown
  Justification
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  Unknown
  Justification

Trends in quality

There is insufficient information to determine any trends in quantity of this habitat.

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

Pressures and threats

This habitat is sensitive to substratum loss, mainly deriving from coastal construction and coastal protection activities, which might alter the hydrological conditions of the ecosystem. A potential increase in water flow rate and in wave exposure resulting from these activities will have a serious impact on the habitat.

Chemicals contamination (eg. heavy metals, TBT's, PCB's) released as a result of construction and maintenance processes, or any kind of pollution (oil spills, land run-off contamination), might lead to anoxic conditions or smothering of the benthic organisms and might favour the establishment of opportunistic species, which could subsequently lead to a change in community structure and a loss of habitat biodiversity

Climate change, sea temperature change and associated rising sea level, surge levels and wave climate as well as freshwater discharge, are likely to affect this habitat and its associate fauna and flora. Additionally, climate change may favour the establishment of invasive species, or may cause the displacement, or loss, of those unable to adapt.

List of pressures and threats
Pollution

Marine water pollution

Invasive, other problematic species and genes

    Invasive non-native species

Natural System modifications

    Human induced changes in hydraulic conditions
        Landfill, land reclamation and drying out, general
        Removal of sediments (mud...)
        Modification of hydrographic functioning, general
        Siltation rate changes, dumping, depositing of dredged deposits
        Dykes, embankments, artificial beaches, general

Climate change

    Changes in abiotic conditions
        Flooding and rising precipitations
        Water flow changes (limnic, tidal and oceanic)
        Wave exposure changes
        Sea-level changes
    Changes in biotic conditions
        Habitat shifting and alteration

Conservation and management

This habitat falls within some Marine Protected Areas. Integrated coastal zone management which includes spatial planning measures controlling land claim and other activities that may cause changes in hydrological conditions are examples of beneficial measures. Other management measures include the regulation of activities which damage or disturb shore communities, regulation of coastal developments and hard coastal defence structures, measures to reduce global warming and sea level rise; and controls on the potential introduction of invasive species.

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:

1140: MATL U2, MMAC XX

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 available on which to determine any historical, recent or potential future trends of this habitat. It 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	unknown Km^2	Unknown	Unknown	unknown	unknown	Unknown	Unknown	unknown	unknown
EU 28+	unknown Km^2	Unknown	Unknown	unknown	unknown	Unknown	Unknown	unknown	unknown

Significant shortcomings in available mapping data mean that reliable figures for EOO and AOO cannot be derived at the present time. There is also a lack of information on trends. This habitat has therefore been assessed as Data Deficient under criterion 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	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	DD	DD	DD	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
G. Saunders & C. Karamita.

Contributors
C. Karamita and the 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

Reviewers
J.Leinikki.

Date of assessment
08/12/2015

Date of review
12/01/2016

References

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. Availiable at: 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).

MarLIN (Marine Life Information Network) .2015. MarLIN - The Marine Life Information Network. Available at: http://www.marlin.ac.uk/habitats.php. (Accessed: 18/11/2015).