Sparse or no macrofaunal community on Baltic upper circalittoral coarse sediment and shell gravel

Summary

This is a Baltic Sea benthic habitat in the upper circalittoral where at least 90% of the substrate is coarse sediment or shell gravel. It is present in all the Baltic Sea sub-basins, typically in depths below 30 m in high energy exposure areas. Macrofauna, epifauna and infauna are generally sparse or absent. There is a lack of quantitative data on pressure and threats as well distribution, extent and quality. No specific pressures, threats, conservation or management measures have been identified for this habitat.

Synthesis

The habitat is believed to have been stable over the last 50 years and no change is expected in the near future.

The overall assessment for this EUNIS level 4 habitat has been based on the HELCOM (2013) assessments for the associated HELCOM HUB biotopes. Draft assessments were derived using a weighted approach whereby the HELCOM assessment outcomes were assigned a score. This was averaged across the relevant biotopes. The outcomes were reviewed by Baltic experts to reach a final conclusion. HELCOM (2013) assessed one relevant Baltic biotope (AB.I4U1) as Least Concern (A1). A second biotope (AB.E4U) was Not Evaluated. There is no additional data or information to update the assessment outcome past the HELCOM 2013 assessment. With no additional data available the current expert opinion is that this habitat should be assessed as Least Concern 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
Least Concern	-	Least Concern	-

Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

Sparse or no macrofaunal community on Baltic upper circalittoral coarse sediment and shell gravel

Description	No characteristic photographs of this habitat currently available

Habitat description

This is a Baltic Sea benthic habitat in the upper circalittoral where at least 90% of the substrate is coarse sediment or shell gravel according to the HELCOM HUB classification. It is typically encountered in depths below 30 m in high energy exposure areas. Macrofauna, epifauna and infauna are generally sparse or absent. Where the habitat is dominated by meiofauna' (AB.I4U1) they constitute at least 50% of the biomass.

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 havebeen determined and applied on a location-specific basis.

Characteristic species:

In the biotope dominated by meiofauna the main species groups present are Oligochaetes, Ostracods and Nematodes.

Classification

EUNIS:

The closest correspondence in EUNIS (2004) level 4 is A5.11 Infralittoral coarse sediment in low or reduced salinity

Annex 1:

The relationship between HUB biotopes and Annex 1 habitats has not yet been mapped by HELCOM, however this habitat may occur in the following Annex 1 habitats:

1110 Sandbanks slightly covered all the time

1160 Large shallow inlets and bays

1650 Boreal Baltic narrow inlets

MAES:

Marine - Marine inlets and transitional waters

Marine – Coastal

MSFD:

Shallow sublittoral coarse sediment Shelf sublittoral coarse sediment

EUSeaMap:

Shallow coarse or mixed sediments

IUCN:

9.3 Subtidal Loose Rock/Pebble/Gravel

Other relationships:

Level 5 of the HELCOM HUB (2013) classification:

AB.E4U Baltic aphotic shell gravel characterised by no macrocommunity

AB.I4U: Baltic aphotic coarse sediment characterised by no macrocommunity. The latter has one biotope on HUB level 6; 'Baltic aphotic coarse sediment dominated by meiofauna' (AB.I4U1).

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

Justification

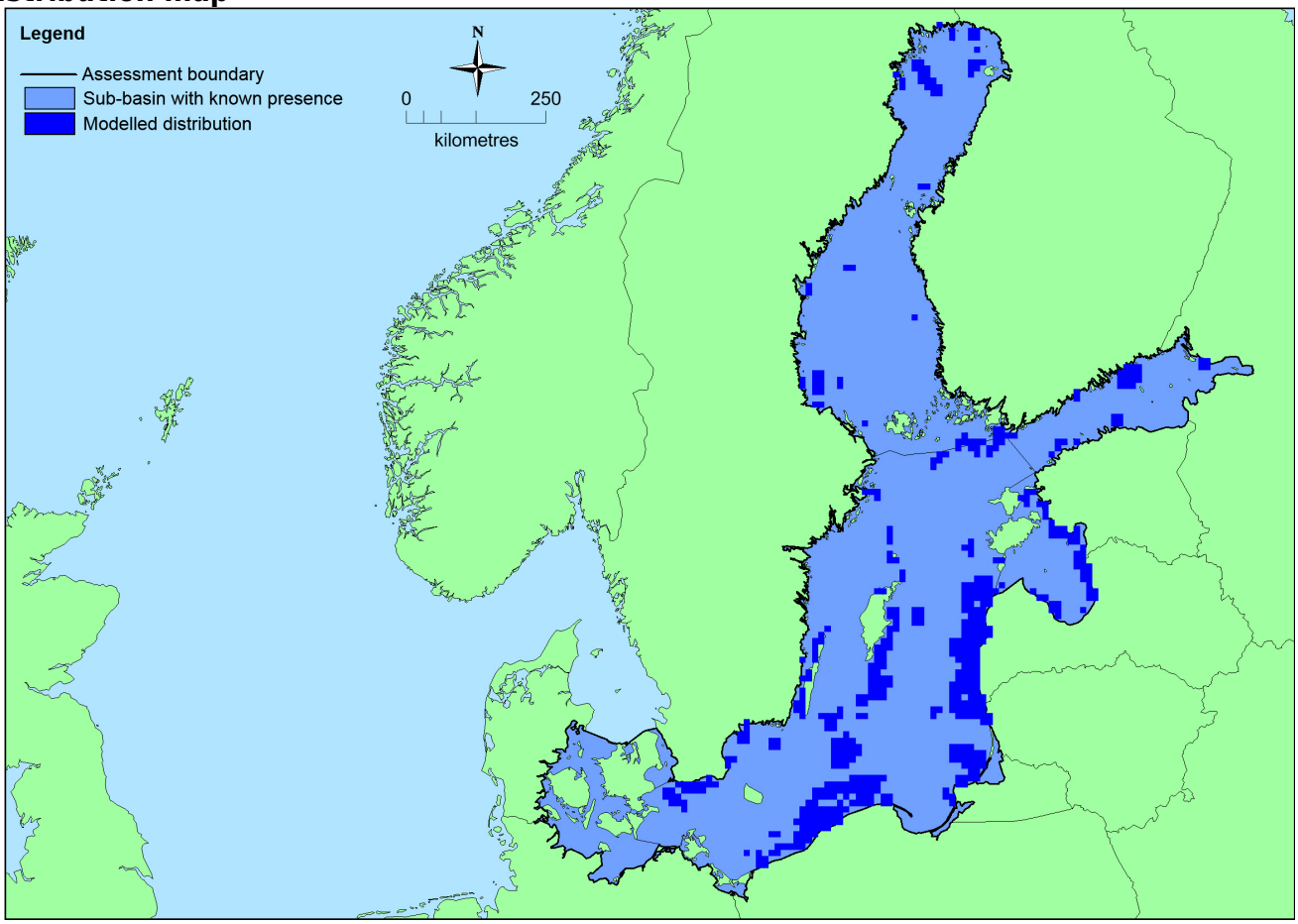
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Baltic Sea	Baltic Proper: Present Belt Sea: Present Gulf of Bothnia: Present Gulf of Finland: Present Gulf of Riga: Present The Sound: Present	Unknown Km^2	Stable	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	>50,000 Km^2	Unknown	Unknown Km^2	This habitat is present in all the Baltic sub-basins however there is insufficient information for accurate calculation of EOO and AOO.
EU 28+	>50,000 Km^2	Unknown	Unknown Km^2	This habitat is present in all the Baltic sub-basins however 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. This map has therefore been generated using the modelled data available on EMODnet for EUNIS level 3 habitats in the Baltic Sea (EMODnet, 2010). This means it indicates potential areas in which this habitat may occur, not the actual distribution of this EUNIS level 4 habitat. EOO and AOO cannot be calculated at the present time, although the habitat is known to occur in all the Baltic Sea sub-basins.

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

This habitat occurs in the EU 28+ (Russia). The percentage hosted by EU 28 is therefore less than 100% but there is insufficient information to establish the proportion. This habitat may be present in other European regional seas.

Trends in quantity

This habitat is present in all the sub-basins of the Baltic Sea. Although poorly studied the current trend is

considered to be stable. There are no data on historic trends nor any estimates of future trends.

- Average current trend in quantity (extent)
  EU 28: Stable
  EU 28+: Stable
- Does the habitat type have a small natural range following regression?
  No
  Justification
  This habitat occurs in all the Baltic Sea sub-basins therefore does not have a small natural range.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  This habitat occurs in all the Baltic Sea sub-basins therefore does not have a small natural range.

Trends in quality

No information is available for trends in quality for this habitat.

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

Pressures and threats

This habitat is poorly studied with no information on specific pressures and threats at the present time.

List of pressures and threats

-

Conservation and management

No conservation or management measures have been identified specifically for this habitat.

List of conservation and management needs

-

Conservation status

Annex 1:

1110: MBAL U1

1160: MBAL U2

1650: MBAL U2

HELCOM (2013) assessments:

1110 VU C1

1160 VU C1

1650 VU C1

HELCOM (2013) assessed two biotope AB.I4U1 as LC(A1) and AB.E4U (NE).

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	0 %	Unknown %	Unknown %	Unknown %
EU 28+	0 %	Unknown %	Unknown %	Unknown %

The area covered by this habitat is believed to have been stable over the last 50 years and there is no information on historic or future reductions. This habitat is therefore assessed as Least Concern 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	No	No	Unknown	Unknown	No	No	Unknown	Unknown
EU 28+	>50,000 Km^2	No	No	Unknown	Unknown	No	No	Unknown	Unknown

This habitat is present in all the Baltic Sea sub-basins therefore the EOO is likely to exceed 50,000 km^2. The AOO is unknown. The habitat is believed to have been stable over the past 50 years, therefore there is no continuing decline in extent. Quality trends are unknown. This habitat has therefore been assessed as Data Deficient under criterion B for 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 make an overall assessment of 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	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	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
Least Concern	-	Least Concern	-

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
M. Calix.

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09/07/2015

Date of review
16/02/2016

References

HELCOM. 2013. Red List of Baltic Sea underwater biotopes, habitats and biotope complexes. Baltic Sea Environment Proceedings138 Helsinki Commission