

Infaunal communities of Baltic upper circalittoral sand not dominated by bivalves

Summary

This habitat is typical of upper circalittoral sand communities throughout the Baltic although one of the component biotopes (where midge larvae dominate) is more typical of Bothnian Bay and large lagoons in the southern parts of the Baltic. No specific pressures and threats or conservation management measures have been identified for this habitat.

Synthesis

The presence of this habitat type in the Baltic is well known. It occurs in all the sub-basins and is mostly considered to have been stable over the last 50 years although there has been some increase in the extent of the biotope which is dominated by multiple infaunal polychaetes such as *Pygospio elegans*, *Marenzelleria* spp. and *Hediste diversicolor*, and some decrease where *Monoporeia affinis* dominates.

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 the three biotopes AB.J3M4, AB.J3N1 and AB.J3P1 as Least Concern (A1). Current expert opinion is that because the habitat is considered to be stable and has a wide geographical distribution it 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	-

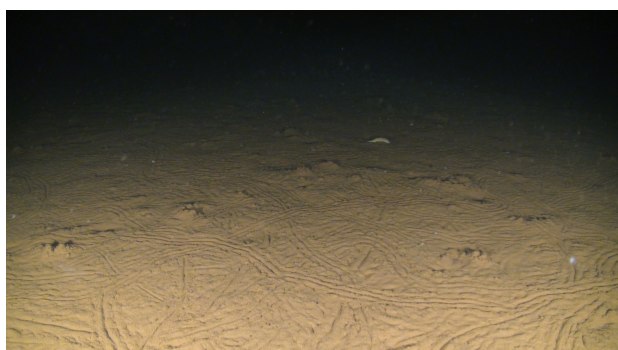
Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

Infaunal communities of Baltic upper circalittoral sand not dominated by bivalves



Description

Upper circalittoral sand habitat with an absence of sessile epibenthic macrofauna, Bothnian Bay (© OCEANA).

Habitat description

This habitat occurs on Baltic aphotic bottoms with at least 90% coverage of sand according to the HELCOM HUB classification. Sessile/semi-sessile epibenthic macrofauna are generally not present while the biomass of infauna is typically dominated by polychaetes, crustaceans, or insect larvae. This habitat is encountered in sand typically at depths below 30m in moderate to high energy exposure areas. Three associated biotopes have been identified variously characterised by infaunal polychaetes (*Pygospio elegans*, *Marenzelleria* spp. and *Hediste diversicolor*), crustaceans (*Monoporeia affinis* and *Saduria entomon*) or midge larvae (Chironomidae). These species groups 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 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. Diversity, abundance and biomass of fauna are potential indicators of quality.

Characteristic species:

Pygospio elegans, *Marenzelleria* spp., *Hediste diversicolor*, *Ophelia* spp., *Travisia forbesii*, *Monoporeia affinis*, *Saduria entomon* and insect larvae (Chironomidae).

Classification

EUNIS:

The closest correspondence in EUNIS (2004) level 4 is

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

1130 Estuaries

1160 Large shallow inlets and bays

1650 Boreal Baltic narrow inlets

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Shallow sublittoral sand

EUSeaMap:

Shallow sands

IUCN:

9.4 Subtidal Sandy

Other relationships:

Level 5 of the HELCOM HUB (2013) classification:

AB.J3M Baltic aphotic sand characterized by infaunal polychaetes

AB.J3N Baltic aphotic sand characterized by infaunal crustaceans.

AB.J3P Baltic aphotic sand characterized by infaunal insect larvae

Level 6 of the HELCOM HUB classification:

'Baltic aphotic sand dominated by multiple infaunal polychaete species: *Pygospio elegans*, *Marenzelleria* spp. and *Hediste diversicolor*' (AB.J3M4).

'Baltic aphotic sand dominated *Monoporeia affinis* and *Saduria entomon*' (AB.J3N1).

'Baltic photic sand dominated by midge larvae (Chironomidae)' (AA.J3P1).

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

Yes

Regions

Baltic

Justification

This habitat is typical of upper circalittoral sand communities throughout the Baltic although one of the biotopes (where midge larvae dominate) is more typical of Bothnian Bay and large lagoons in the southern parts of the Baltic.

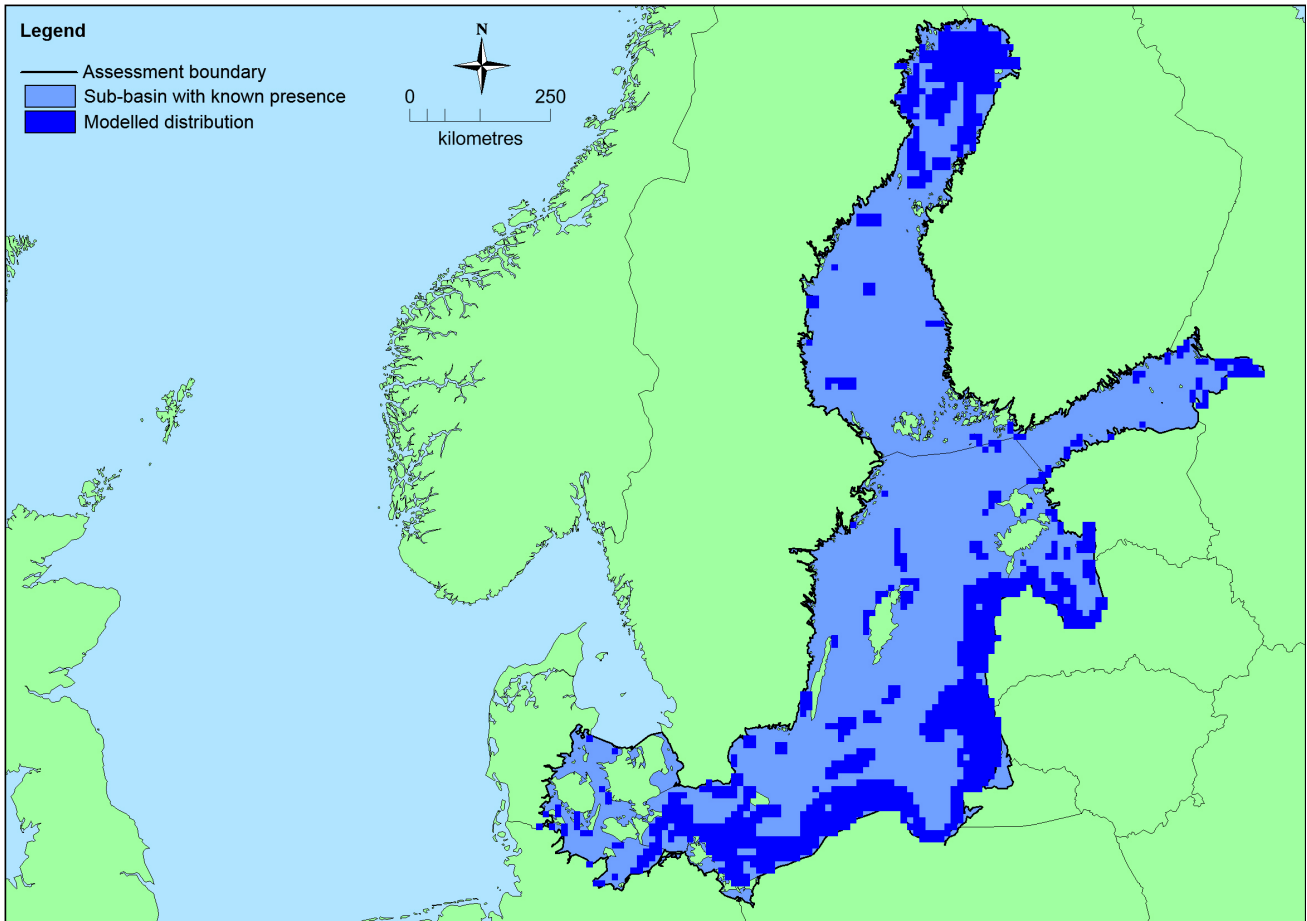
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Baltic Sea</i>	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	Stable

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>	>50,000 Km ²	Unknown	Unknown Km ²	This habitat is present in all the Baltic sub-basins therefore EOO is likely to exceed 50,000km ²
<i>EU 28+</i>	>50,000 Km ²	Unknown	Unknown Km ²	This habitat is present in all the Baltic sub-basins therefore EOO is likely to exceed 50,000km ²

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.

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.

Trends in quantity

This habitat is mostly considered to have been stable over the last 50 years although there has been some increase in the extent of the biotope which is dominated by multiple infaunal polychaete species such as *Pygospio elegans*, *Marenzelleria* spp. and *Hediste diversicolor* and decrease in areas dominated by *Monoporeia affinis*. There are no historic data and no future estimates.

- 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 Baltic Sea sub-basins so 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 Baltic Sea sub-basins so does not have a small natural range.

Trends in quality

The quality of the two associated biotopes (of three) which have been studied appears to be good. There are no quantitative historical data and no estimated future trends.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

Pressures and threats

No pressures and threats specific to this habitat have been identified.

List of pressures and threats

-

Conservation and management

No conservation and management measures have been identified specific to this habitat.

List of conservation and management needs

No measures

No measures needed for the conservation of the habitat/species

Conservation status

Annex 1:

1110: MBAL U1

1130: MBAL U2

1160: MBAL U2

1650: MBAL U2

HELCOM (2013) assessments:

1110 VU C1

1130 CR C1

1160 VU C1

1650 VU C1

HELCOM (2013) have assessed biotopes AB.J3M4, AB.J3N1 and AB.J3P1 as LC(A1).

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 %

This habitat occurs in all the Baltic Sea sub-basins and, based on expert opinion, is that it considered to have been mostly stable over last 50 years. It has therefore been assessed as Least Concern under Criteria 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

A lack of a comprehensive of quantitative data on the area covered by this habitat in the Baltic means that precise figures for EOO and AOO could not be calculated however as it is present in all Baltic sea sub-basins and is common throughout the Baltic the EOO is likely to exceed 50,000km² and AOO exceed 50. Future trends are unknown although as it is currently considered to be stable in terms of quantity. This habitat has therefore been assessed as Least Concern under criteria 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 considered 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	LC	DD	DD	DD	LC	LC	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	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
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

S. Gubbay and N. Sanders.

Contributors

HELCOM RED LIST Biotope Expert Team 2013 and Baltic Sea Working Group for the European Red List of Habitats 2014 and 2015.

Reviewers

G. Saunders.

Date of assessment

11/07/2015

Date of review

06/01/2016

References

HELCOM. 2013. Red List of Baltic Sea underwater biotopes, habitats and biotope complexes. Baltic Sea Environmental Proceedings No. 138.