

Annual algae communities on Baltic infralittoral coarse sediment

Summary

This habitat is found in all the Baltic Sea sub-basins and is especially common in areas with reduced salinity and/or high wave exposure. The extent is believed to have reduced by less than 10% over the past 50 years. No significant change has been predicted for the near future. Moderate reductions in quality have been documented locally (<10% of the region) but no further declines in quality are estimated. Pressures, threats, conservation and management measures have not been identified specifically for this habitat type.

Synthesis

This habitat is present in all the sub-basins of the Baltic and is particularly common in areas with reduced salinity and/or high wave exposure. Site records and distribution maps are available for some of the characteristic species but there are no quantitative data on extent and area of the habitat. Expert opinion is that the extent is believed to have changed by less than 10% over the past 50 years and that there have been moderate changes in quality in some parts of the Baltic (<10%). No significant changes in extent or quality are envisaged for 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 the relevant Baltic biotope (AA.I1S2) as Least Concern (A1). With no additional information on changes in extent or quality of this habitat, the current expert opinion is an assessment of Least Concern for 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

Annual algae communities on Baltic infralittoral coarse sediment

No characteristic photographs of this habitat currently available.

Habitat description

This benthic habitat is distributed in the photic zone with at least 90% coverage of coarse sediment. Coarse sediment has less than 20% of mud/silt/clay fraction (<63 µm), and the proportion of gravel and pebbles (grain size 2–63 mm) exceeds 30% of the combined gravel and sand fraction according to the HELCOM HUB classification. Annual algae cover at least 10% of the bottom, while all other epibenthic biotic structures like perennial algae, rooted plants or blue mussels cover less than 10%. The habitat is present in the full salinity range of the Baltic Sea and is more common in exposed areas, mainly within the surf

zone, in which wave energy prevents the establishment of either perennial vegetation or blue mussels.

One associated biotope has been identified: 'Baltic photic coarse sediment dominated by *Chorda filum* and/or *Halosiphon tomentosus*' (AA.11S2). This is encountered in the Baltic Sea up to the Quark, and is identified by a large representation of *Chorda filum* and/or *Halosiphon tomentosus*, at least 50% of the biovolume of annual algae.

Indicators of quality:

The ratio of annual to perennial epibenthic components is used in several countries to describe habitat quality. As such the area of the habitat itself or the biomass of the corresponding species is used as an indicator for quality. In this particular case the lowest area or biomass is a sign of high quality as only in very high exposure levels should annual algae dominate. In all other circumstances perennials (*Fucus*) should dominate except where there is a low salinity (below 3 psu) as perennial algae growth does not generally occur under such conditions.

Characteristic species:

Chorda filum, *Halosiphon tomentosus*, *Ulva* spp., *Cladophora glomerata*.

Classification

EUNIS:

The closest correspondence in EUNIS (2004) level 4 is A5.11 Infralittoral coarse sediment in low or reduced salinity or A5.52 Kelp and seaweed communities on sublittoral sediment

Annex 1:

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 coarse sediment

Shallow sublittoral mixed sediment

EUSeaMap:

Shallow coarse or mixed sediments

IUCN:

9.3 Subtidal Loose Rock/Pebble/Gravel

9.7 Macroalgal/Kelp

9.10 Estuaries

Other relationships:

Level 5 of the HELCOM HUB classification (2013):

AA.I1S Baltic photic coarse sediment characterized by annual algae This habitat has one associated biotope on HUB level 6; 'Baltic photic coarse sediment dominated by *Chorda filum* and/or *Halosiphon tomentosus*'(AA.I1S2).

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

No

Justification

Biotores dominated by annual algae are found in all regional seas, only characteristic species may vary between regions, but annual algae of the Baltic Sea represent more or less only a reduced marine flora.

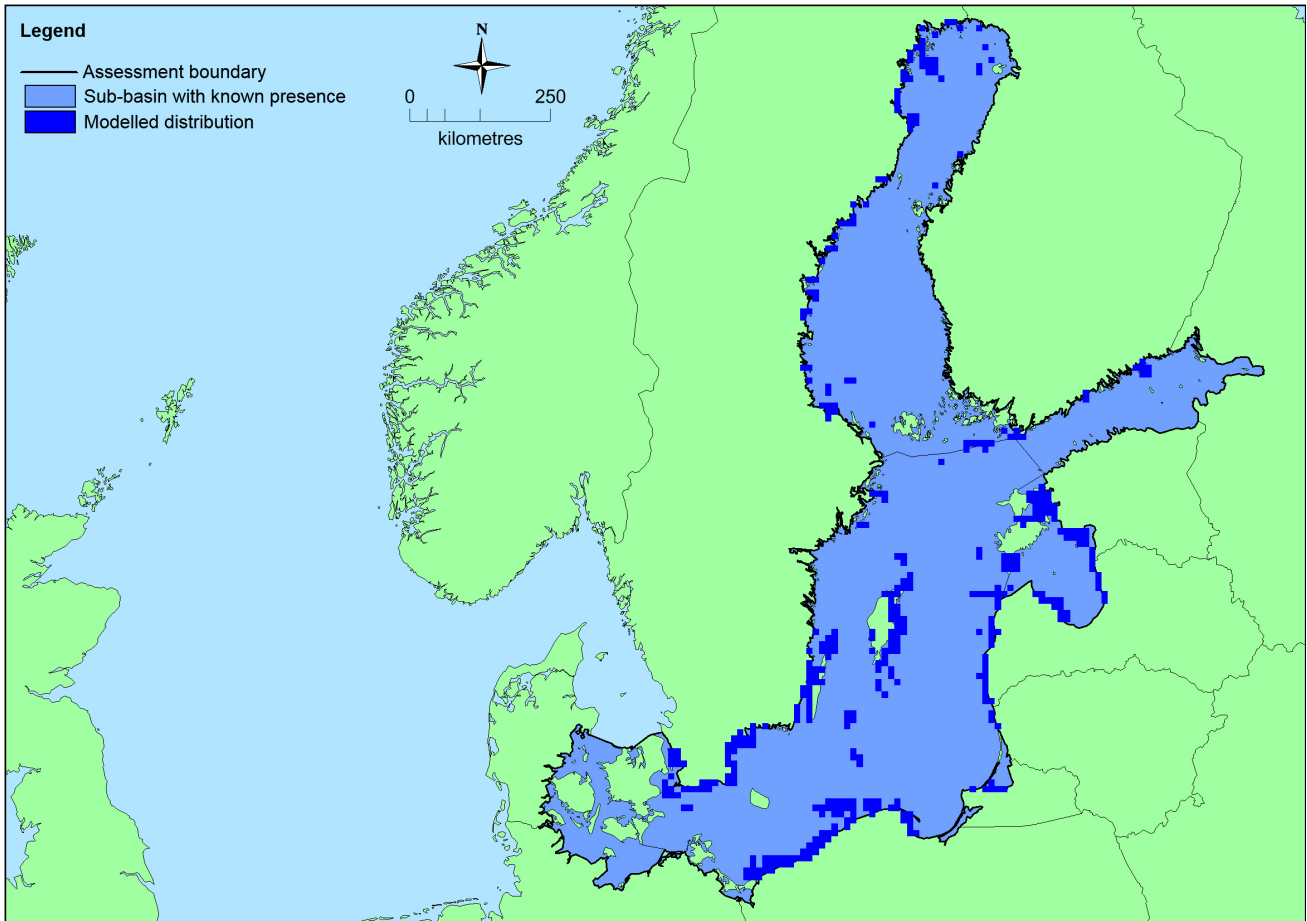
Geographic occurrence and trends

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>	742,934 Km ²	455	Unknown Km ²	This habitat is present in all the Baltic sub-basins.
<i>EU 28+</i>	>50,000 Km ²	>50	Unknown Km ²	This habitat is present in all the Baltic sub-basins

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) supplemented with expert input. 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 occurs in all the Baltic Sea sub-basins and is particularly common in areas with reduced salinity and/or high wave exposure. The extent is believed to have reduced by less than 10% in the recent past (50 years) at certain locations. The habitat has also gained area in other locations where perennials like *Fucus* spp. have lost area (e.g. along the German coastline). No trends have been estimated for the future.

- 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 is present 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 is present in all the Baltic Sea sub-basins therefore does not have a small natural range.

Trends in quality

Moderate reductions in quality have been documented locally (<10% of the region). No trends in quality have been estimated for the the future.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

Pressures and threats

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

List of pressures and threats

-

Conservation and management

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

List of conservation and management needs

-

Conservation status

Annex 1:

1130: MBAL U2

1160: MBAL U2

1650: MBAL U2

HELCOM (2013) assessments:

1130: CR C1

1160: VU C1

1650: VU C1

HELCOM has assessed the associated biotope (AA.I1S2) as LC (A1).

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

As the dominant species of this habitat are annual species, often known as opportunists with short life cycles, recovery can be very fast (1-2 years) even after strong declines.

Effort required

10 years
Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	<25 %	Unknown %	Unknown %	Unknown %
EU 28+	<25 %	Unknown %	Unknown %	Unknown %

Some localised losses have been reported for this habitat but expert opinion is that there has been less than a 25% decline over the last 50 years. This habitat has therefore been assessed as Least Concern under Criteria A for 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	Unknown	>50	Unknown	Unknown	Unknown	Unknown
EU 28+	>50,000 Km ²	Unknown	Unknown	Unknown	>50	Unknown	Unknown	Unknown	Unknown

This habitat has a large natural range in the Baltic Sea extending from the Danish coast in the west to the Bothnian Bay in the north-east. The EOO and AOO are estimated to exceed the threshold for threatened status, but because of lack of information on historical, recent past and possible future trends, this habitat has been assessed as Data Deficient under criterion B.

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

Criterion E	Probability of collapse
EU 28+	Unknown

There is no quantitative analysis available to estimate the probability of collapse of this habitat.

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			
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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

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

Reviewers

K. Fürhaupter.

Date of assessment

07/07/2015

Date of review

04/01/2016

References

HELCOM, 2013. *Red List of Baltic Sea underwater biotopes, habitats and biotope complexes*. Avellan, L. (Ed). Helsinki, Finland.