Annual algal communities on Baltic infralittoral sand

Summary

This habitat is found throughout the Baltic Sea in sheltered areas on sandy sediments in the photic zone. Annual algae are characteristic and conspicuous species although other epibenthic biotic structures such a rooted plants, unattached perennial algae or blue mussels may be present. 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 Sea with site records and distribution maps available for some of the characteristic species. There is a lack of quantitative data but expert opinion is that the extent has been stable over the past 50 years. 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 two relevant Baltic biotopes (AA.J1S1 and AA.J1S2) 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 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

Annual algal communities on Baltic infralittoral sand

Description	Dense stands of *Chorda filum* on a sandy bottom at the east coast of the island of Fehmarn , Germany (© E.Mielke, MariLim GmbH).

Habitat description

This benthic Baltic Sea habitat occurs in the photic zone with at least 90% coverage of sand according to the HELCOM HUB classification. Annual algae cover at least 10%, while all other epibenthic biotic structures like rooted plants, unattached perennial algae or blue mussels cover less than 10%. The habitat occurs in the full salinity range of the Baltic Sea and is more common in moderate to sheltered, very shallow areas.

Two associated biotopes with different dominant species of algae (at least 50% of the biovolume of the annual algae) have been identified. 'Baltic photic sand dominated by *Chorda filum* and/or *Halosiphon tomentosus*' (AA.J1S2) usually down to a depth of 4 meters, in areas moderately exposed to wave action. These species give the appearance of growing on the sand but attach to small fractions of stable substrate like small stones, shell fragments or gravel buried in the sand. It is distributed in the whole Baltic Sea except in the most northern part of the Bothnian Bay. A second associated biotope, 'Baltic photic sand dominated by *Vaucheria* spp.' (AA.J1S3), is usually present down to a depths of 7 meters, in areas more sheltered areas and in salinities less than 7 psu. It is distributed in the whole Baltic Sea except for the Belt Sea and the Sound.

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:

Chorda filum, Halosiphon tomentosus, Vaucheria spp.

Classification

EUNIS:

The closest correspondence in EUNIS (2004) level 4 is A5.21 Sublittoral sand in low or reduced salinity or A5.52 Kelp and seaweed communities on sublittoral sediment.

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

9.7 Macroalgal/Kelp

9.10 Estuaries

Other relationships:

Level 5 of the HELCOM HUB classification (2013):

AA.J1S Baltic photic sand characterized by annual algae. This habitat has two sub-habitats on HUB level 6;

‘Baltic photic sand dominated by *Chorda filum* and/or *Halosiphon tomentosus*’ (AA.J1S2) ‘Baltic photic sand dominated by *Vaucheria* spp.’ (AA.J1S3).

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

No

Justification

Biotopes dominated by annual algae are found in all regional seas, although the characteristic species may vary between regions. For example, mats of *Vaucheria* spp. are very common in the tidal areas of the Wadden Sea.The annual algae of the Baltic Sea represent more or less only a reduced marine flora.

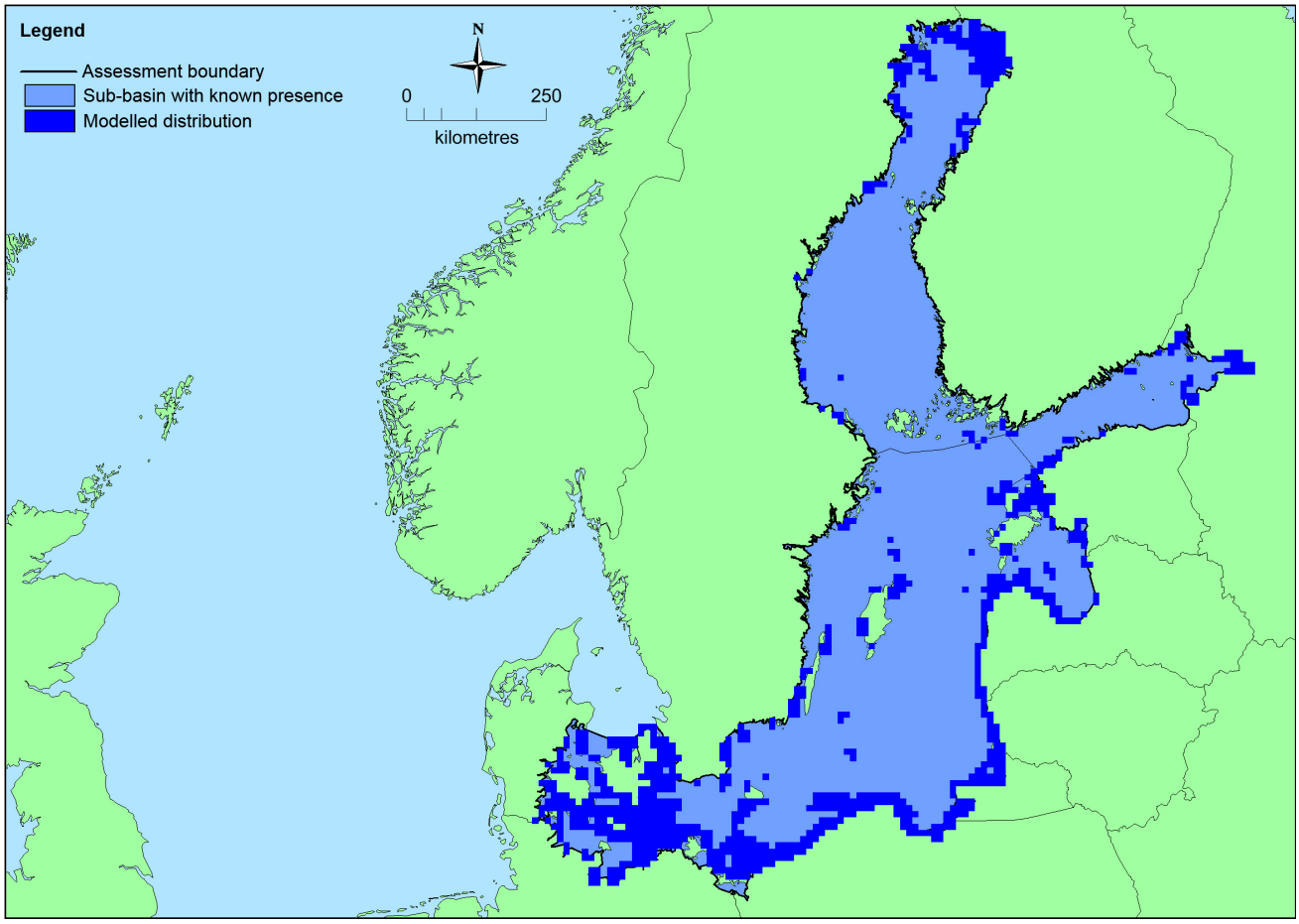
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Baltic Sea	Baltic Proper: Present Gulf of Bothnia: Present Gulf of Finland: Present Gulf of Riga: Present The Sound: Present Belt Sea: 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	>50	Unknown Km^2	This habitat is present in all the Baltic sub-basins.
EU 28+	>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). 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 present all sub-basins of the Baltic Sea. There are no quantitative data on trends in area but it is believed to have been relatively stable over the last 50 years. No estimates have been made 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 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 the Baltic Sea sub-basins so does not have a small natural range.

Trends in quality

There is insufficient information to determin any trends in quality of this habitat.

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

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:

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 associated biotopes AA.J1S2 and AA.J1S3 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 annuals, 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	0 %	unknown %	unknown %	unknown %
EU 28+	0 %	unknown %	unknown %	unknown %

Expert opinion is that this habitat has been stable over the last 50 years. It has therefore been 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	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 Baltic Sea extending from the Danish coast in the west to the Bothnian Bay in the north-east. EOO >50,000 km^2 and AOO >50 and it is not limited to a few locations, although the precise extent of this habitat over the last 50 years is unknown. This habitat has been assessed as Least Concern under Criteria 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
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
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Contributors
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Reviewers
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References

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