

BIOTOPE INFORMATION SHEET

English name: Baltic photic or aphotic shell gravel characterized by mixed infaunal macrocommunity in fine sand-like shell fragments		Code in HELCOM HUB: AA.E3Y, AB.E3Y	
Characteristic species: unknown			
Past and Current Threats (Habitat directive article 17): Climate change (ocean acidification M01.04), Eutrophication (H01.05)		Future Threats (Habitat directive article 17): Random threat factors (–), Climate change (ocean acidification M01.04), Eutrophication (H01.05)	
Red List Criteria: B1a(ii)	Confidence of threat assessment: L	HELCOM Red List Category:	NT Near Threatened
Previous HELCOM Red List threat assessments			
BSEP 75 (HELCOM 1998): “?” No data available 2.6.1. Shell gravel bottoms of the aphotic zone 2.6.2 Sublittoral shell gravel bottoms of the photic zone		BSEP 113 (HELCOM 2007): Shell gravel bottoms are under threat and/or in decline everywhere where they occur.	
Greater concern stated by:			

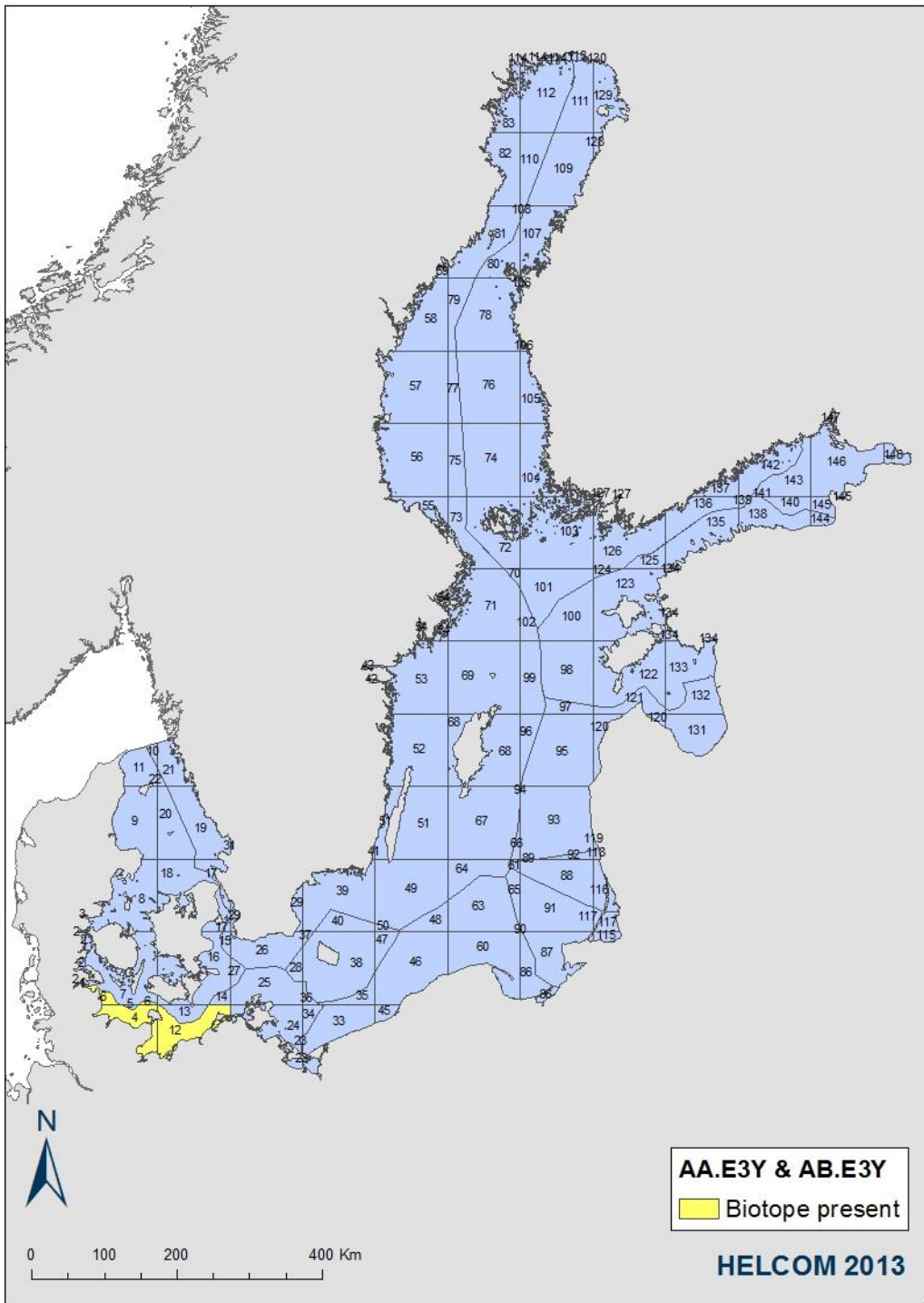
Habitat and Ecology

The biotope is characterized by shell gravel covering more than 90% of the bottom, and most of the shell gravel having been ground down to sand-like fragments. Benthic macroinfauna species that occur in the biotope burrow down in to the substrate that is similar in structure to coarse sand. The community composition of macroinfauna is presumed to be different in the sand like shell gravel sand compared to coarser shell gravel consisting mainly of semi-intact shells among which many different animals can be found including non-burrowing animals. The interstitial space is smaller in the sand-like shell gravel substrate, enabling also burrowing polychaetes and amphipods to build tunnels using the small grains.

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Distribution and status in the Baltic Sea region

The distribution of sand-like shell gravel bottoms in the Baltic Sea is unknown, only few small patches have been recorded from German waters. The distribution map indicates the area in the 100 x 100 km grid where biotope is known to occur, the biotope may occur in other areas of high salinity but currently no other occurrences are known.



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Description of Major threats

Increase in atmospheric CO₂ leading to ocean acidification, eutrophication and pollution are seen as the major threats to the biotope. Ocean acidification is assumed to increase the rate by which the calcium carbonate of mollusc shells dissolve. It is however unclear in what way the process will affect the sand-like shell gravel. Due to a higher acidity, shell gravel may be ground down to a sand-like substrate at an increasing rate possibly making the sand like shell gravel more common, but the acidity may also increase the rate by which the grains are dissolved decreasing the sand-like shell gravel.

Eutrophication affects the sand-like shell gravel biotope adversely by increasing the organic loading the Baltic Sea. The increasing organic load can lead to local oxygen depletion. Some of the sand-like shell gravel patches may also become covered by overgrowth of algae.

Assessment justification

B1a(ii)

The Extent of occurrence of the biotope is $\leq 55\ 000\ \text{km}^2$ and climate change and pollution that constitute a degradation of the environmental quality affection the biotope adversely.

Recommendations for actions to conserve the biotope

The extent and occurrence of the biotope need to be mapped in more detail to establish whether the biotope also exists in areas outside the German exclusive economical zone.

Common names

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References

(HELCOM Website)

http://www.helcom.fi/environment2/biodiv/endangered/Biotopes/en_GB/Shell_gravel_bottoms/
HELCOM (1998). Red List of marine and coastal biotopes and biotopes complexes of the Baltic Sea, Belt Sea and Kattegat. Baltic Sea Environmental Proceedings No. 75. Helsinki Commission, Helsinki. 115pp. Available at: <http://www.helcom.fi/stc/files/Publications/Proceedings/bsep75.pdf>