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# Book of Abstracts

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**Geo-logic in coastal and shelf research: a matter of multi-disciplinarity**

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## THE EBB-TIDAL DELTA: BARE OR RARE?

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The ebb-tidal delta is still an underexplored area in terms of both morphodynamics and benthic species diversity. Ebb-tidal deltas are located at the outflow of tidal inlets and consist of shoals, swash bars and channels with various depths. The position and shape of the morphological features change over time. They are governed by tidal currents and by wind-generated waves, causing frequent erosion and settlement of sediment particles. Ebb-tidal deltas are commonly assumed to be too harsh an environment for benthic species. However, as they are protected in the Netherlands under Natura 2000, knowledge of the state of the benthos and its function in the ecosystem is important for protection and conservation. Furthermore, it gives insight into the abiotic-biotic relations and the environmental conditions these species can endure.

As part of the Kustgenese 2.0 and SEAWAD projects, benthic species were sampled at 166 locations at the ebb-tidal delta of Ameland. Prior to the sampling the ebb tidal delta was divided into eight distinctive habitats on the basis of characteristics of the present bathymetry (bed-level slope, slope direction, and bed-level change). Within each habitat an equal number of randomly placed samples were taken. Cluster analysis of the density per species per location revealed a diverse pattern of 12 significant species assemblages (Figure 1). The number of species per assemblage ranges from 5 to 20. Higher species diversity was found in the clusters at the edge of the ebb-tidal delta; lowest diversity in the cluster at the very dynamic and wave-swept shoals in the western part of the ebb-tidal delta.

The species assemblages match rather well with the pre-defined habitats, suggesting a strong relationship with the environmental parameters defining the habitat. However, there are exceptions to this pattern, indicating that other factors also play a role. Unravelling these factors is a key objective of further study.

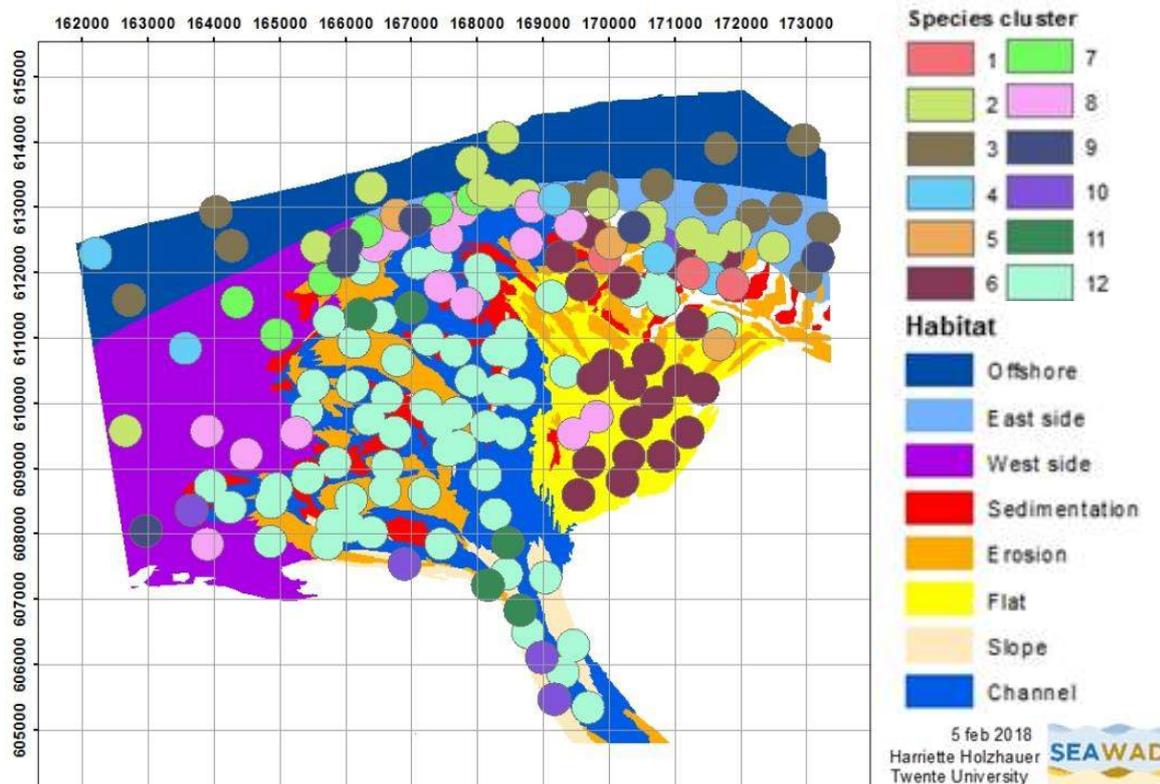


Figure 1: The diversity of the ebb-tidal delta represented in 12 significant species assemblages derived from the density per species per sampled location at the ebb-tidal delta of Ameland.