

**Large-Scale Future Maintenance Of The Dutch Coast;
Learning From Nature**
Abstract

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The Holocene sediment budget for the Dutch coast shows a gradual decline in net accumulation of sediment with time, caused by depletion of the sediment sources or a significant decline in sediment transport capacity to the lower shore face due to a rising relative sea level. This means that in the present-day situation there is NO significant natural net supply of sediment to the Dutch coast. However, the continuing long-term and large-scale processes of sediment redistribution, such as net accretion of tidal basins and estuaries will cause significant erosion of the bounding parts of the coastal system.

Since there is no longer a natural net accretion in the coastal system, it has to be fed artificially with sediment in order to maintain stability. In the perspective of a possible acceleration of relative sea-level rise caused by climate change, nourishment of the coastal system with even larger volumes of sediment will be necessary. The present-day policy in The Netherlands is to nourish the shoreface in order to keep the sand volumes in the coastal system at an adequate level. Sand nourishment proves to be a successful continuation of large-scale natural sediment accumulation by other means.