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Global Change and Baltic Coastal Zones

Chapter 9: Coastal Erosion along the Portuguese Northwest Coast due to Changing Sediment Discharges from Rivers and Climate Change

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Abstract

Coastal erosion is a common problem along sandy shores in Europe, a result of the dynamic nature of its coastal zones, of anthropogenic influences and of the effects of Climate Change. A possible increase of extreme events, the weakening of river sediment supplies due to dams and embankments, and the expected acceleration of sea level rise tend to aggravate coastal erosion on decadal time scales. To minimize negative effects it is necessary to understand the various processes causing erosion so as to assess possible prediction scenarios for coastal evolution on the medium to long terms. This paper deals with the erosion situation to which the Portuguese northwest coast has been subjected, in relation to known sedimentary changes and to potential impacts of Climate Change on coastal areas. The possibility of re-using sediments from Portuguese reservoirs to nourish eroded beaches is pointed out. Also, coastal response to Climate Change driven variations in the longshore sediment transport regime is considered.