

The TESTEREP project: integrated land-sea research to investigate the evolution of a former peninsula along the Belgian coast as a case study for coastal management

PRESENTED BY

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ABSTRACT

Over the past decades, geological, paleoecological, archaeological, and historical research has led to a general understanding of the Belgian coastal plain's evolution during the Holocene and how people interacted with this changing landscape. However, existing research has for the most part been fragmented and fails to connect findings across the land-sea boundary. Questions about the interaction between on- and offshore geomorphological changes and the human impact on the landscape remain unanswered both on short- and long-term scales. In the TESTEREP project, studying the last 5000 years of Belgian coastal evolution, we aim to address these shortcomings through novel interdisciplinary research across the land-sea border. Testerep was once a peninsula located in the middle part of the Belgian coast, separated from the mainland by a broad tidal gully incised during the Iron Age. This gully was embanked and dammed during the Middle Ages and silted up as a consequence. Today, the landward part of the former peninsula has become part of the polders and beach, while the seaward side was lost to the sea. To study the evolution of the Testerep landscape over the past 5000 years, existing data on its historic natural (e.g. palaeo-

channels) and artificial (e.g. embankments) features will be supplemented with new on- and offshore data for the area, collected using geophysical surveys, coring, metal detecting, excavations and sampling for radiocarbon and OSL dating. All information will be integrated through GIS analyses to produce palaeo-geographical maps that will form the basis for geomorphological and hydrodynamic modelling. This new land-sea integrated research will ultimately result in a better understanding of the driving factors behind the landscape change, assessing the relative importance of natural changes and human interventions. The project also includes a significant outreach component, using innovative virtual landscape reconstructions to pass on its multidisciplinary knowledge to stakeholders from policy, industry and the general public. This way, the project aims to raise public awareness about coastal dynamics and current threats and to inspire sustainable coastal management strategies for the future.

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