

Type

PhD research

Duration

4 years (01/06/2020 – 31/05/2024)

Persons involved:

PhD Student: M. Teixeira Manion

Supervisor: K.M. Wijnberg

Daily supervisor: E.M. Horstman

Funding

NWO – Living Labs in the Dutch Delta

Summary of the research

Title: Modelling socio-biophysical dynamics of anthropogenic sandy shores

This PhD project focuses on understanding the dynamics of the coupled socio-biophysical system and emergent morphologic behavior of anthropogenic sandy shores. To that end, it will advance the study of the morphodynamic interactions of sandy shores, including the interactions of vegetation dynamics, groundwater depth and human activities, and their subsequent morphodynamic impacts. The research will use two large-scale anthropogenic sandy shores implemented at the Dutch coast as a living lab: the Sand Motor and the Hondsbossche Dunes. This work aims to identify limits to, and optima in, the multi-functionality of such anthropogenic sandy shores that are primarily intended to enhance coastal safety. This will result in improved guidelines for the future design and management of these sandy solutions for coastal protection.

Keywords

Coastal Morphology, Building with Nature, Coastal Dynamics, Aeolian Transport, Cellular Automata Modelling