

## **A Young Stage in the Development of a Calcareous Dune Marsh, Near Hook of Holland, The Netherlands.**

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**A Young Stage in the Development of a Calcareous Dune Marsh, Near Hook of Holland, The Netherlands.** Nutrient poor, calcareous dune marshes are habitats rarely found in the dunes of NW European coasts. These unique ecosystems are now protected under the European network of natural protection areas, also known as Natura 2000. This image shows a young marsh, about 10 years old, in the valley of a dune area approximately 35 ha in size. It was constructed in 2010 by beach and foreshore nourishment (6 mil m<sup>3</sup>). The new dunes were constructed as a compensation for the loss of dune marsh in existing nearby areas, which were already under the protection of Natura 2000. The losses were predicted in an Environmental Impact Assessment, which include multiple impacts from the new harbor extension of Rotterdam, Maasvlakte 2. This extension took place specifically to handle the world's largest container ships. Besides the newly formed dune marsh, other habitats developing in this area include dry grasslands and dune shrub. (Photograph taken October 2020 by Dr. Frank van der Meulen, UNESCO IHE-Delft Institute for Water Education, and Deltares, Delft, The Netherlands.)