

Kierbesluit Haringvliet

UPDATE OF THE RESEARCH PROGRAM SALINISATION

Starting in 2022 Svašek Hydraulics is working in close collaboration with Hydrologic on updating the Salinisation Research Program. This program directly supports the Kierbesluit Haringvliet (decree to open the sluices during flood), carried out by Rijkswaterstaat. From 2018 onwards, a testing campaign is underway in which the Haringvliet sluices are regularly opened during flood. The aim of opening the sluices is to promote international fish migration and improve biodiversity, but it also results in the western part of the Haringvliet becoming saltier: a treat for freshwater intakes in this estuary.

The uncertainties in the salt intrusion process are studied using practical tests, model analyses, data analyses and expert knowledge.

Svašek Hydraulics carries out the 3D model analyses within this project. In intensive collaboration with Deltares, a dedicated D-Flow FM model of the Haringvliet is being improved and applied: a model with 311 vertical layers, which is able to reproduce the fresh-salt water interaction processes in the Haringvliet.

By defining scenarios, Svašek Hydraulics explores various measures and operations that put the Kierbesluit into practice. The unique character of the Haringvliet, with its deep pits, channels and intertidal shoals, results in a complex process of salt dispersion.

Model simulations have shown that horizontal recirculation in the system as a result of specific wind conditions is a determining factor for the risk of salt transport eastwards towards the Middelharnis-Spui line. This has also been shown previously in analyses of observations¹. The inclination of the saltwater interface in pits and the overflow of salt water between pits during such wind conditions are key processes. Finally, the way salt water is being stirred up from the pits during storm or unfavourable wind conditions is being investigated with model simulations. Measures to push back the salt towards the sluices or to contain the salt in the pits are examined. The obtained knowledge from model simulations is used to develop the operating protocol for the Haringvliet sluices.

CLIENT

HydroLogic

LOCATION

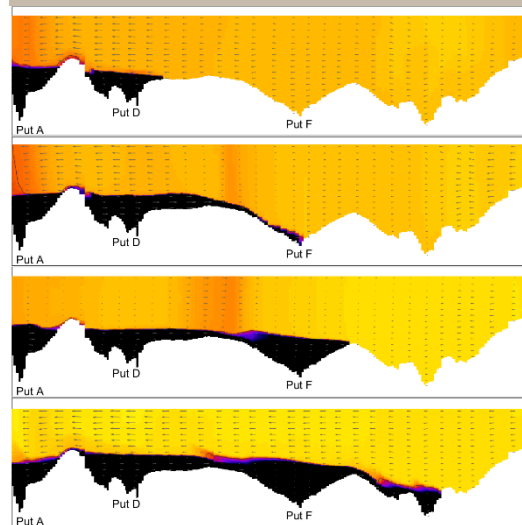
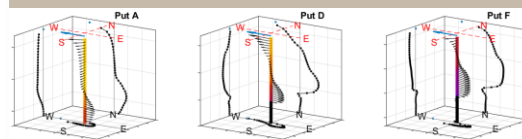
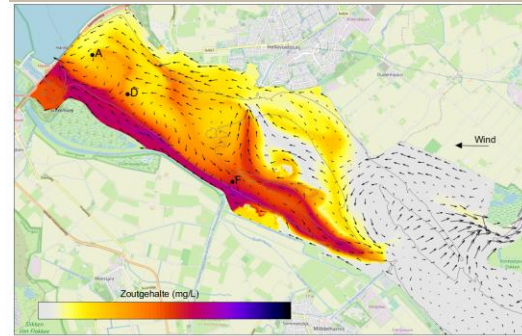
Haringvliet

DATE

2022-2024

SERVICES

D-Flow FM modelling Haringvliet
Taking part in the expert team
Salinisation



SVASEK
HYDRAULICS
COASTAL, HARBOUR AND RIVER CONSULTANTS

Svašek Hydraulics
Kratonkade 23
3024 ES Rotterdam
Nederland

Telefoon: 010 467 13 61
Internet: www.svasek.com
E-mail: info@svasek.com