

*Using innovative geotextile constructions  
to control fine sediment transport and  
to improve water quality*

## **9th International Sednet Conference**

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september 24th 2015**

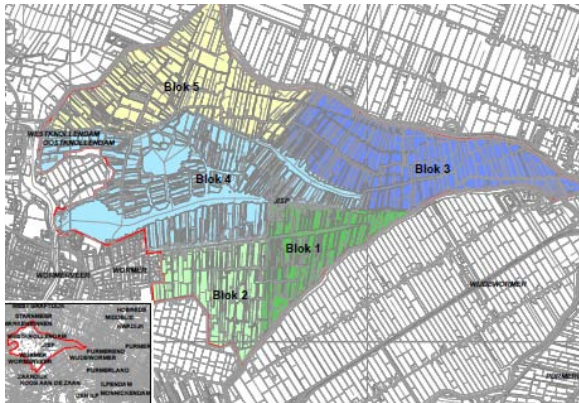
# Content

- Introduction
- Design innovations
- Results



# Wormer- and Jisperveld

- A large uninterrupted peaty grassland near Amsterdam (The Netherlands)
- Long history of different activities
- European Natura 2000 protection area

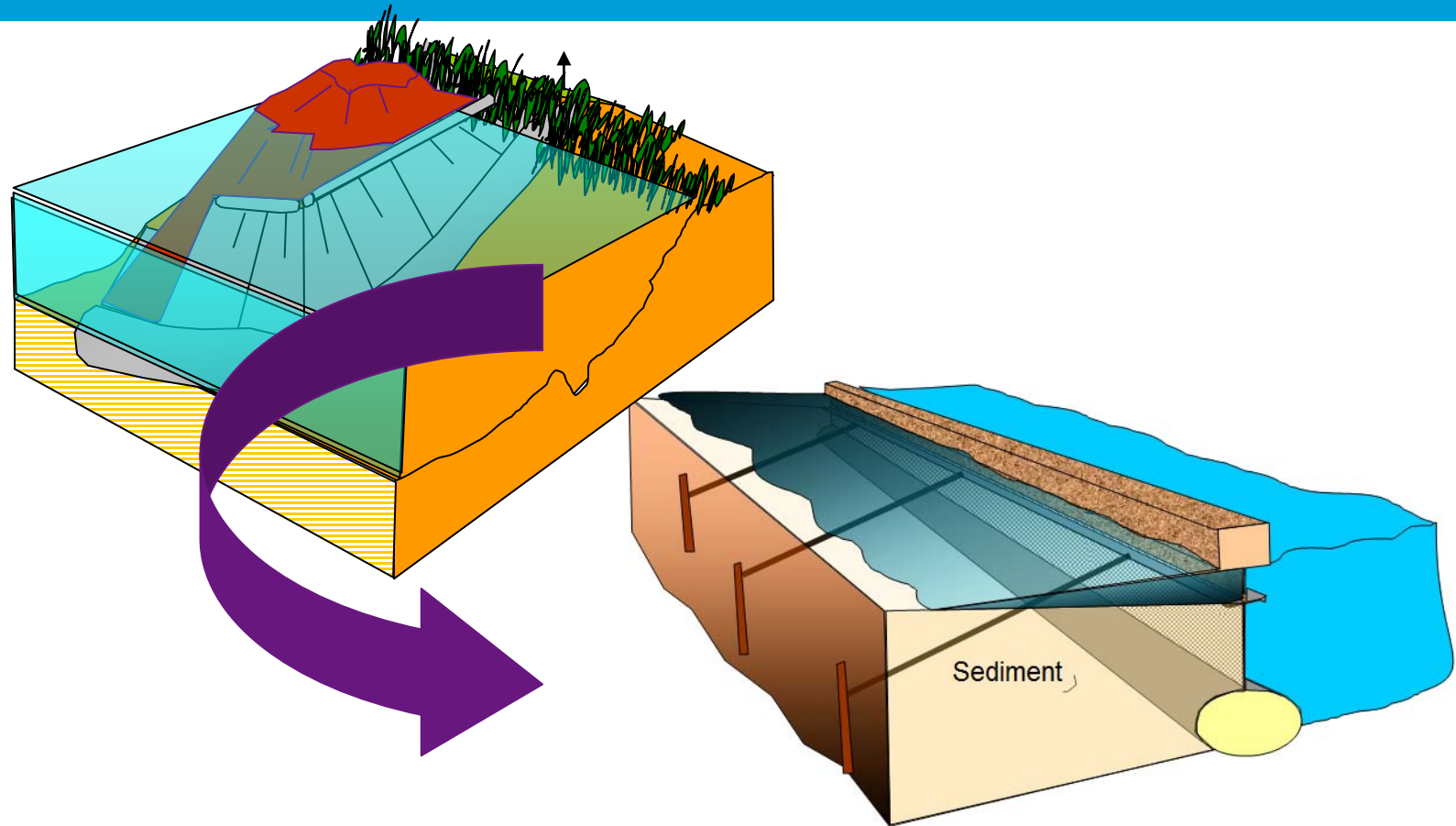


# Current situation

- Land subsidence
- Poor water quality
- Reduces growth of aquatic plants
- Shoreline erosion
- Contaminated sediment
- Bottlenecks for recreational use of the area
- Dredging operations



# Sediment Storer





# Sediment Settler

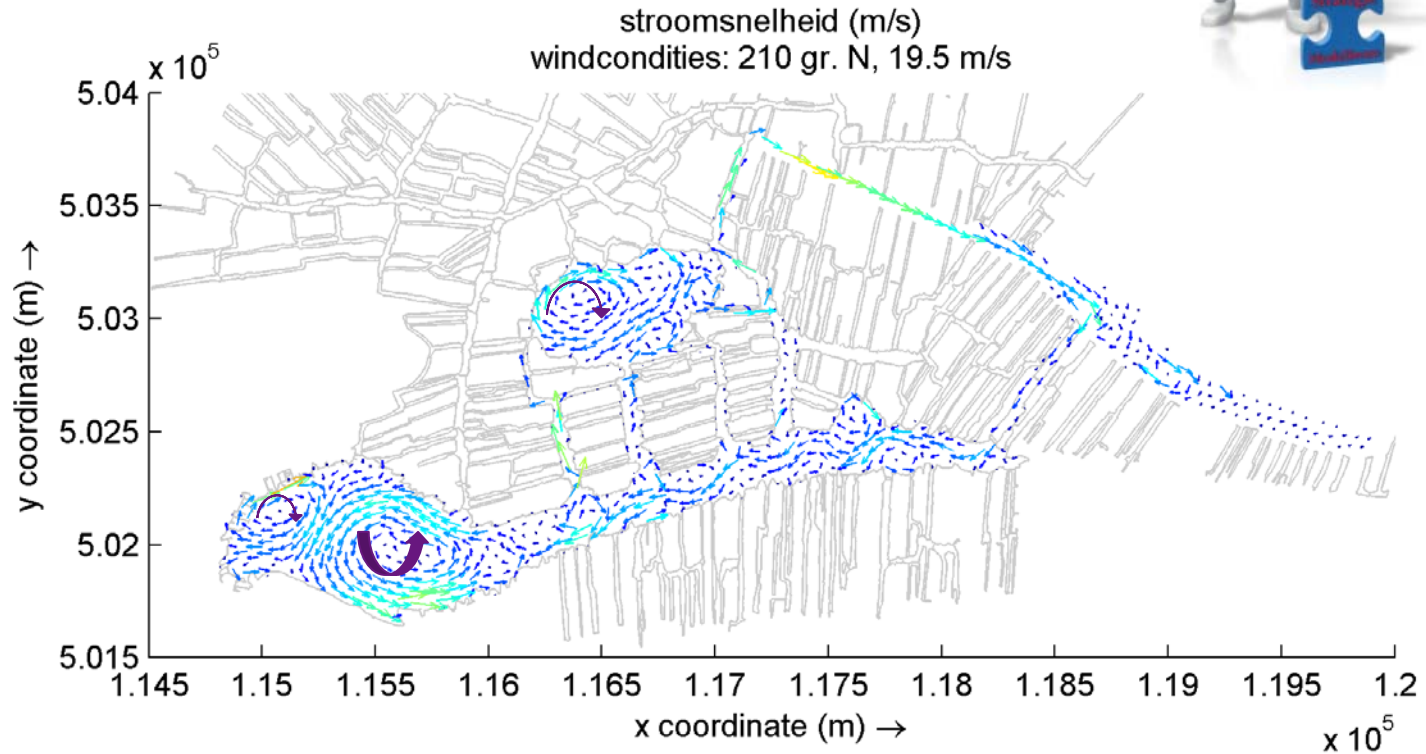
Dutch innovation award 2015



Tauw

02.02.2015

# Hydrodynamics (1)



# Control measures installed



- 13 locations
- 2,200 meters of geotextile
- 5 hectares water surface enclosed
- 30.000 m<sup>3</sup> storage capacity





# Installment Sediment Storer

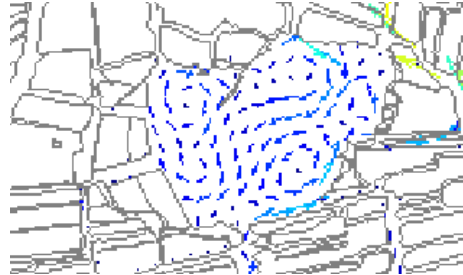
- <https://www.youtube.com/watch?v=VERVvWVoc64>



# Results ~ sediment

- Sedimentation in 'de Marken' (max. 30 cm)
- Consolidation in the Sediment Stores
- Forming lee zones
- Creating new balance

In November 2015 another measurement



# Results ~ lee area



Tauw

# Results ~ water quality (1)





# Results ~ water quality (2)



# Results ~ water quality (3)



# Results ~ ecology (1)



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# Results ~ ecology (2)





# Results ~ ecology (3)





# Results ~ ecology (4)

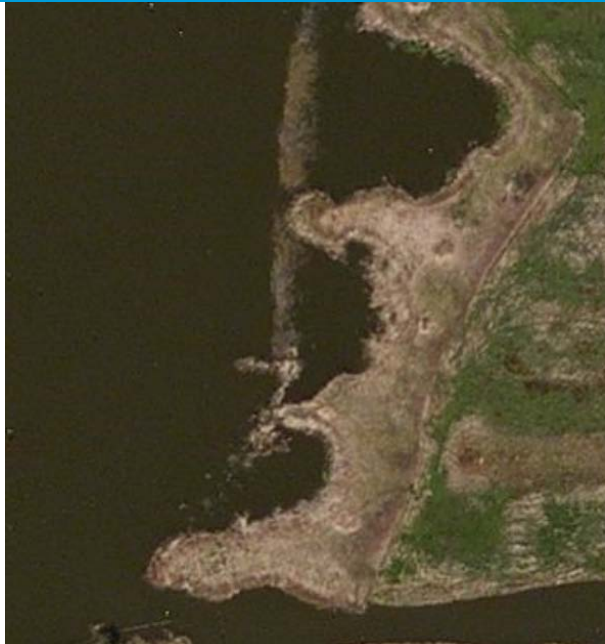


# Results ~ ecology (5)





# Results ~ ecology (6)



2013



2014 (pilot)



2015



Tauw

  
materials that make a difference



# Results ~ ecology (6)



Tauw

# Results ~ recreation



# Advantages Sediment Storer/ Settler

Very cost effective because of the combi effects:

1. Reuse of (contaminated) sediment
2. Sustainable protection of shores
3. Wetland reconstruction
4. Improving water quality
5. Yearly small scale dredging possibilities
6. CO<sub>2</sub> reduction
7. Time



Tauw



