

A black and white photograph of a forest stream. A large, thick tree trunk leans over the water from the left side. The water is calm and reflects the surrounding trees and sky. The forest is dense with various types of trees, and the ground is covered with fallen leaves and branches. The overall atmosphere is serene and natural.

Bouwen met Natuur: Toepassen van hout

Maarten Veldhuis
Waterschap Vallei en Veluwe

**Opstuwen is goed!
...en niet alleen voor de beek**



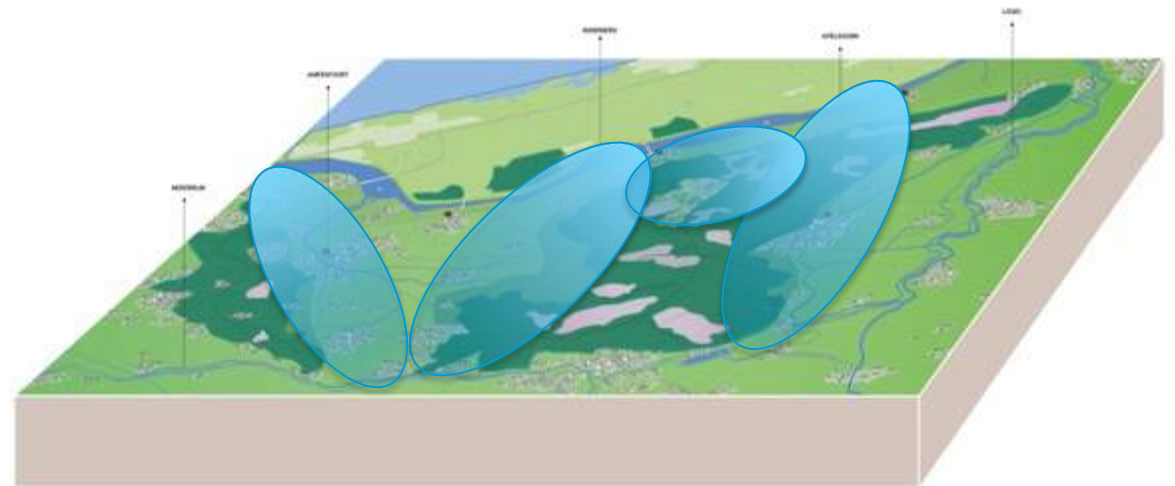
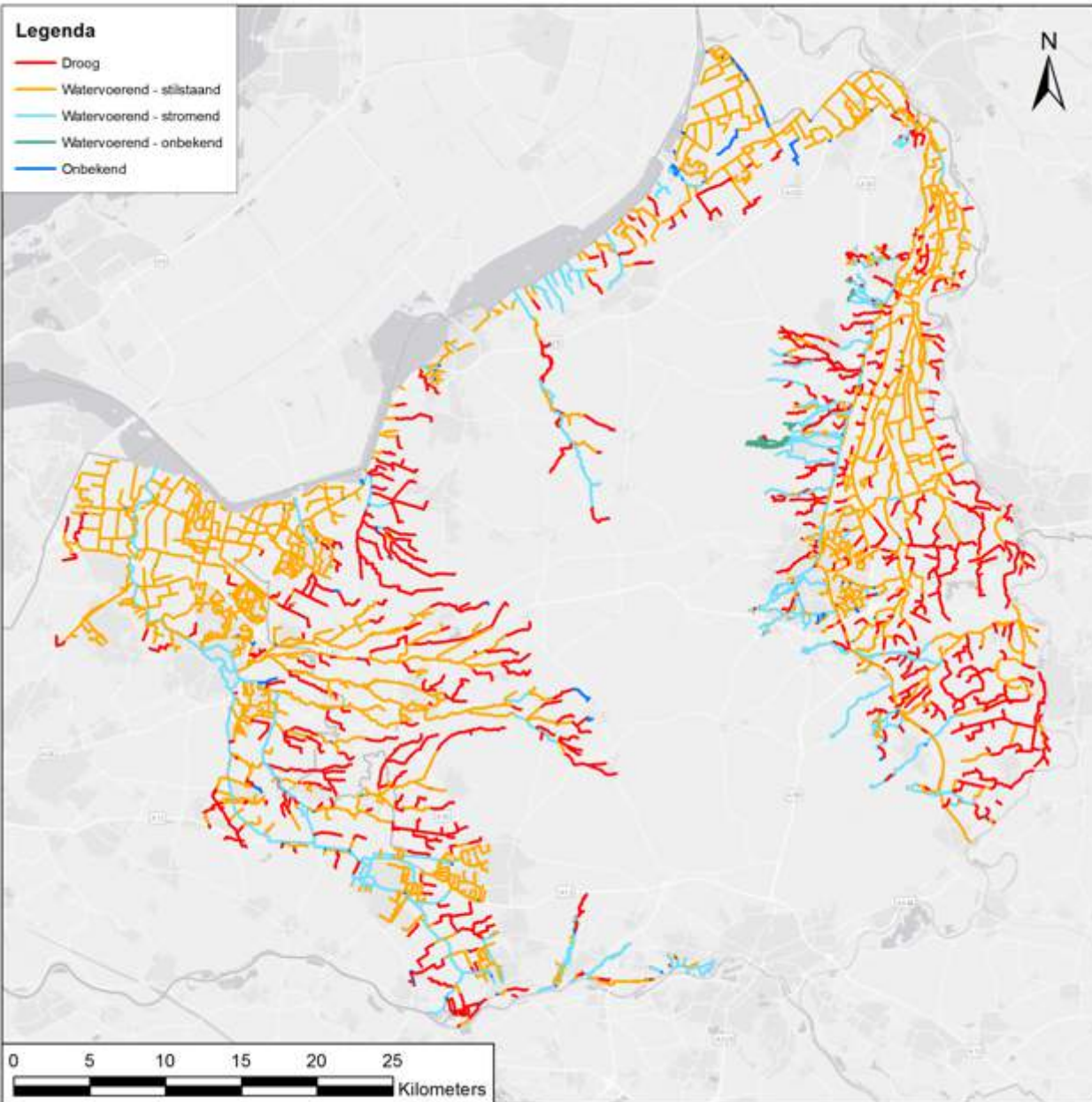


1870



2010

2018



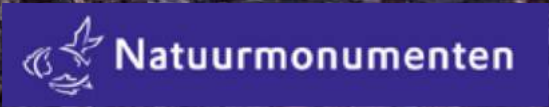
Hout is goed!

- Hout stuwt en maakt de omgeving weer natter
- Hout zorgt voor variatie in stroming, substraat, soorten, stoffen
- Hout kan gesuppleerd zand vasthouden
- Hout hoort in een beek
- Hout toepassen is kostenefficiënt
- Hout









A photograph of a forest stream. A person in a blue and white plaid shirt and waders is wading in the water, holding a long pole. On the right bank, a large brown horse stands near a person in a black jacket and blue jeans. The forest is dense with tall trees, and the ground is covered in fallen leaves. The sun is shining through the trees, creating a bright spot in the upper center.

**RUBEN
SCHIPPER
FOTOGRAFIE**





Hout is nuttig is om zandsuppleties beter vast te leggen in stromende beken. Het vastgehouden zand zal de hydraulische situatie beïnvloeden. Waterstanden worden permanent hoger!



A photograph of a forest stream. The water is a reddish-brown color, likely due to tannins. The stream is surrounded by lush green vegetation, including moss-covered logs and trees. The background is misty, creating a serene atmosphere.

Doelstelling

“Herstel en ontwikkeling van een zo natuurlijk mogelijk functionerend beekstelsel in het gehele beekdal van de Hierdense/Leuvenumse Beek”

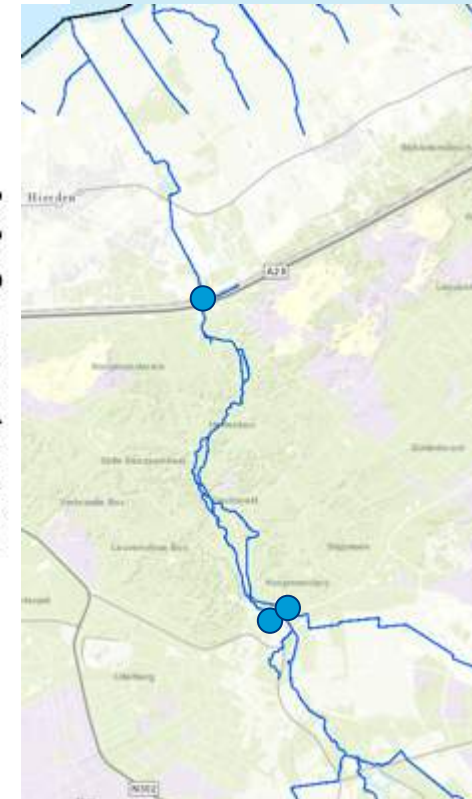
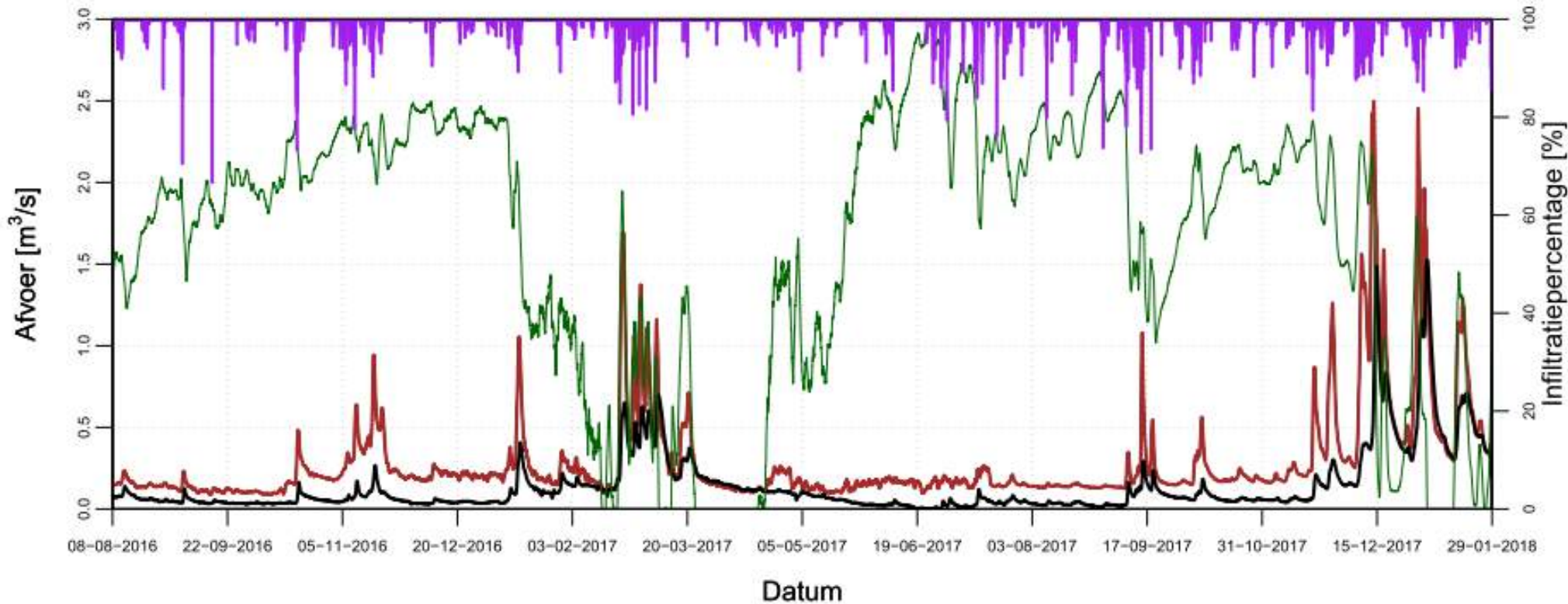
Doorstroommoeras



Monitoring is belangrijk,
Wisselwerking tussen uitvoering, onderzoek en
beheer



Debiet bos in en uit, infiltratie% en neerslagmomenten



■ Neerslag

■ Infiltratiepercentage

■ Afvoer Hierdense Beek A28

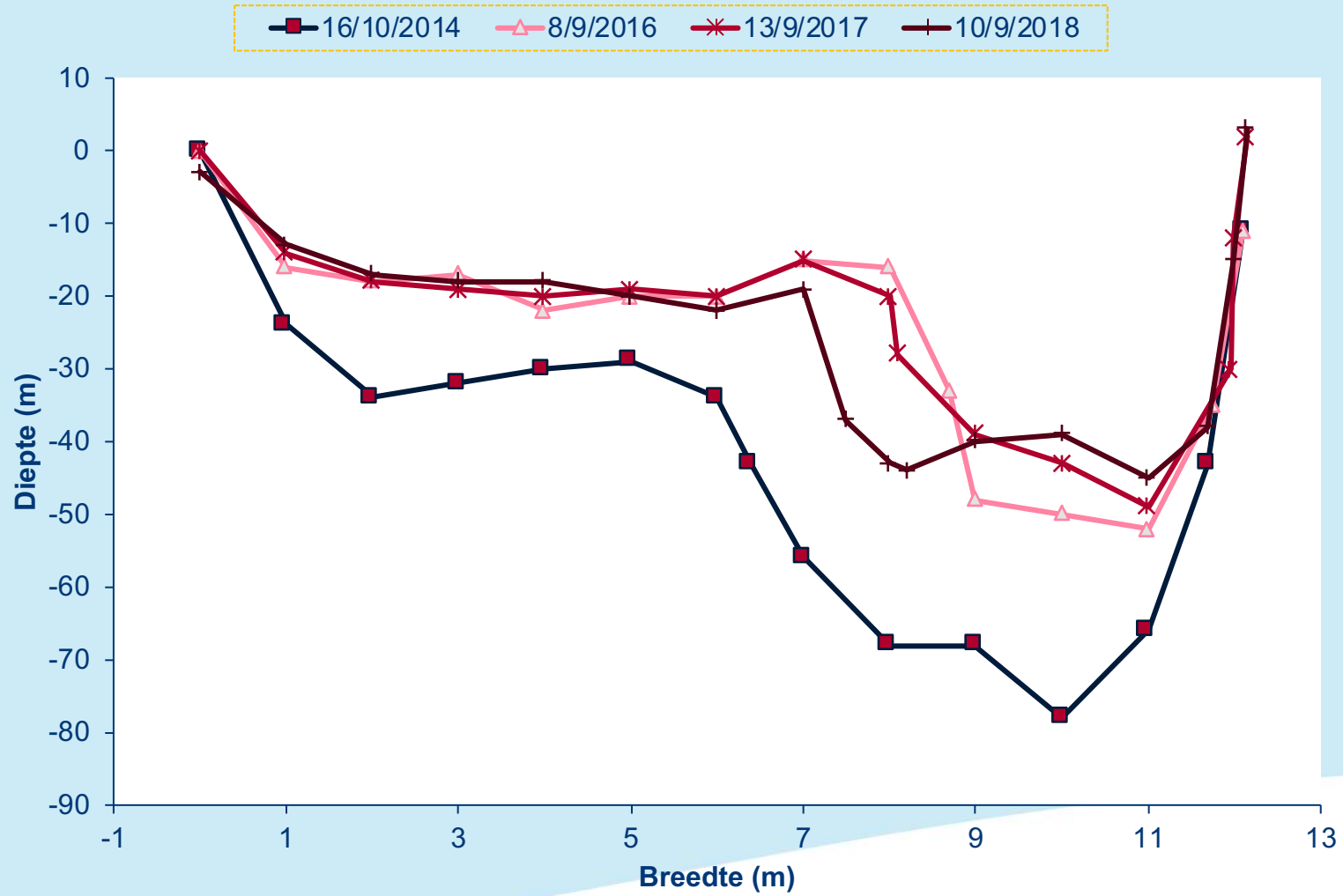
■ Afvoer Leuvenumse Beek + Grote Koloniebeek

- Kijken
- Leren
- Tijd geven
- Handelen

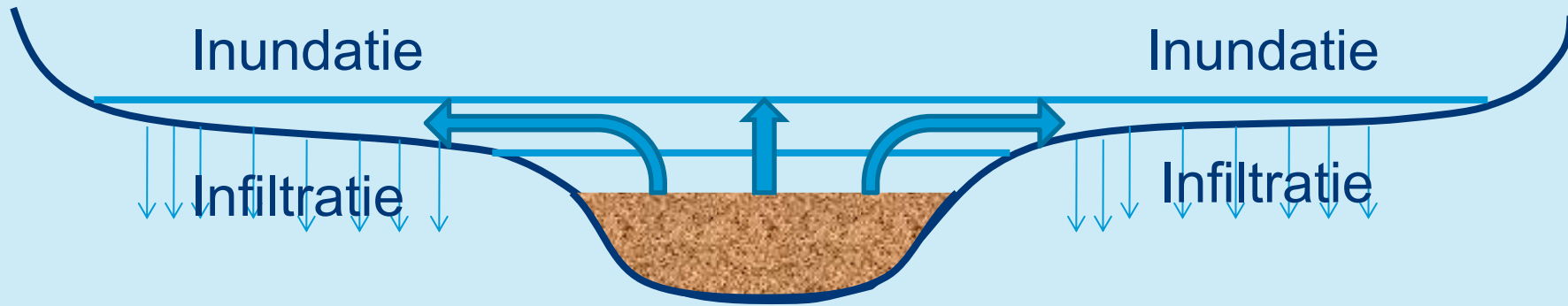




Z2.2a

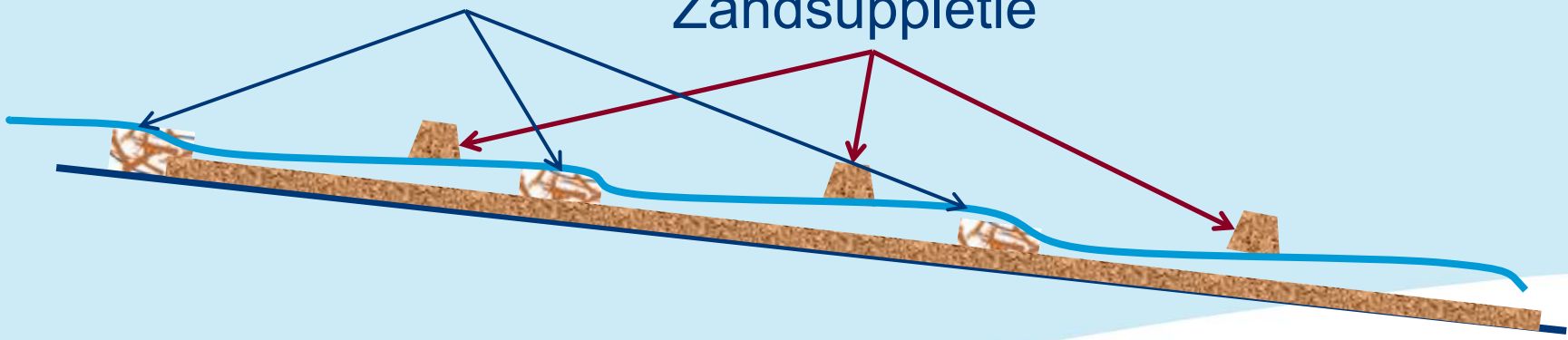


Dwarsprofiel



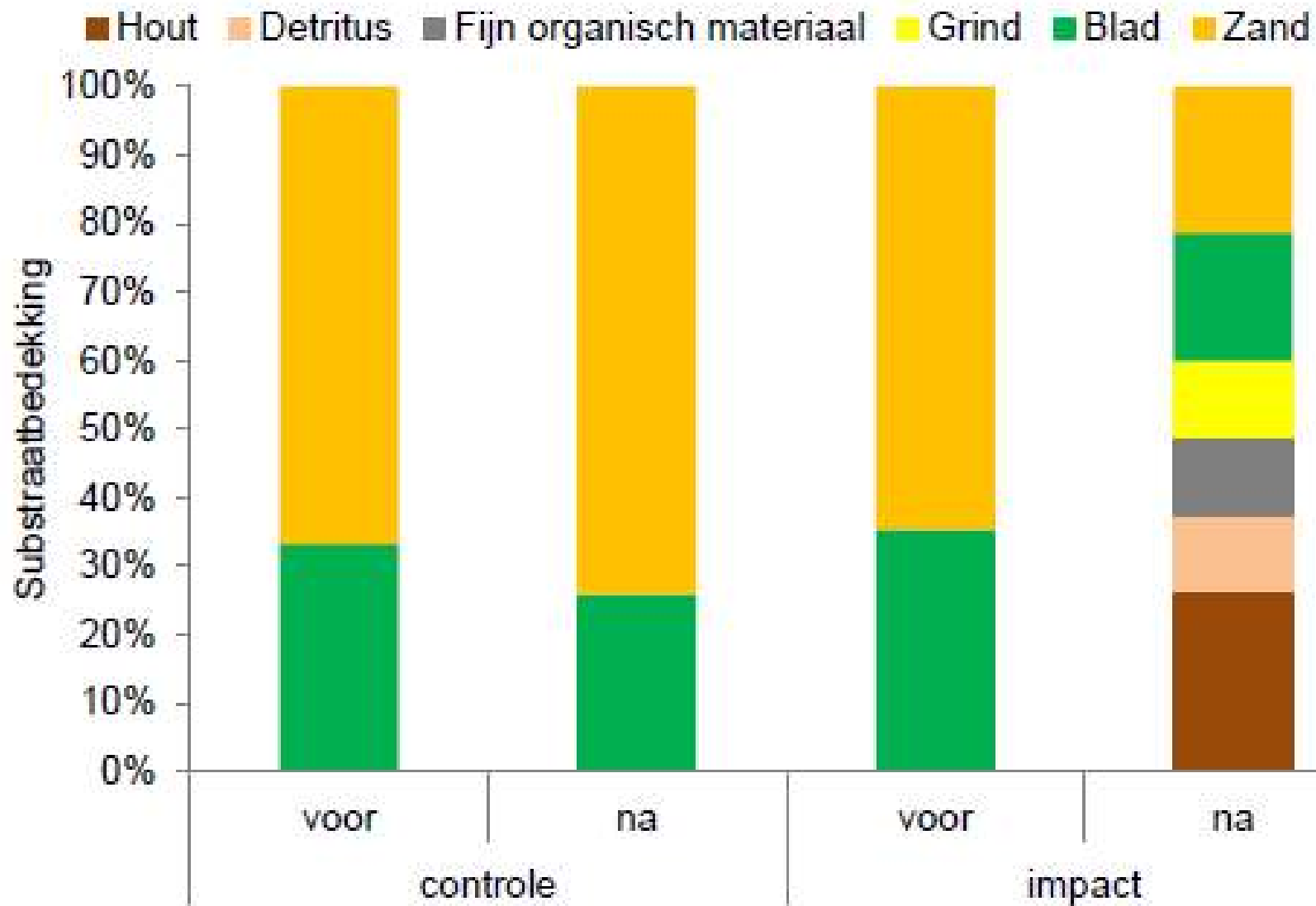
Houtpakketten

Zandsuppletie

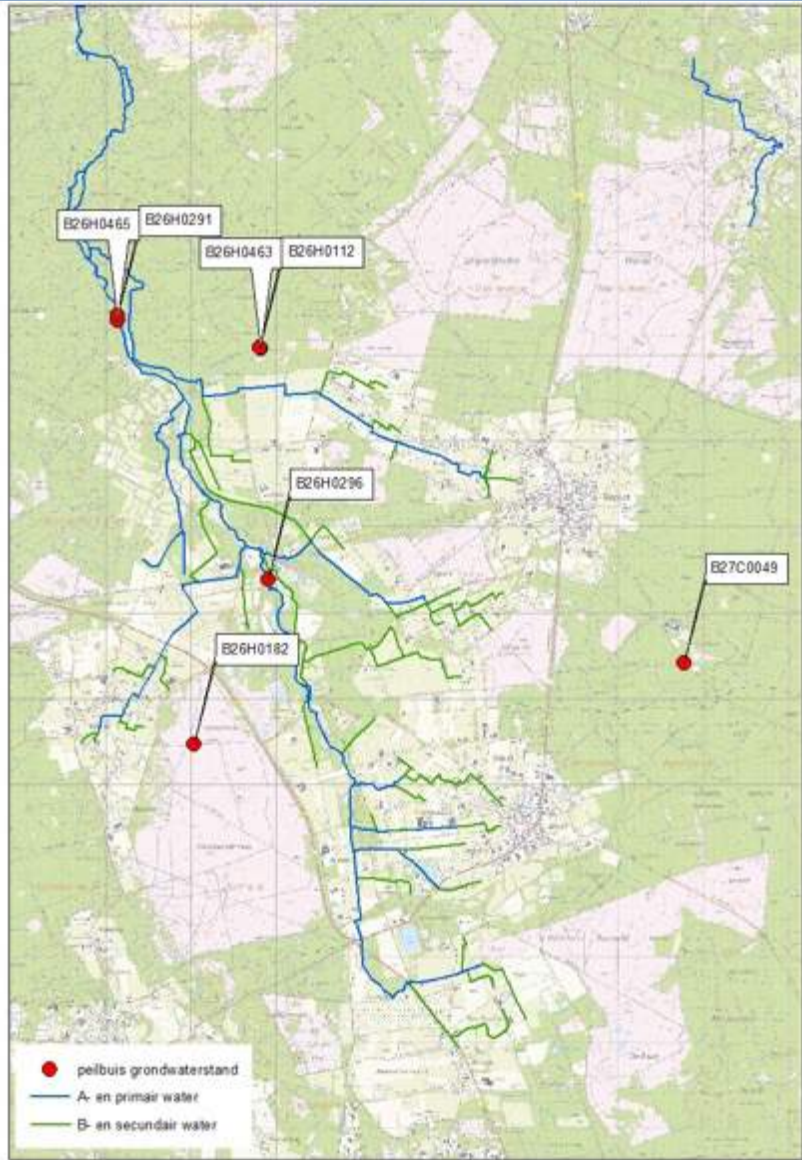


Langsdoorsnede

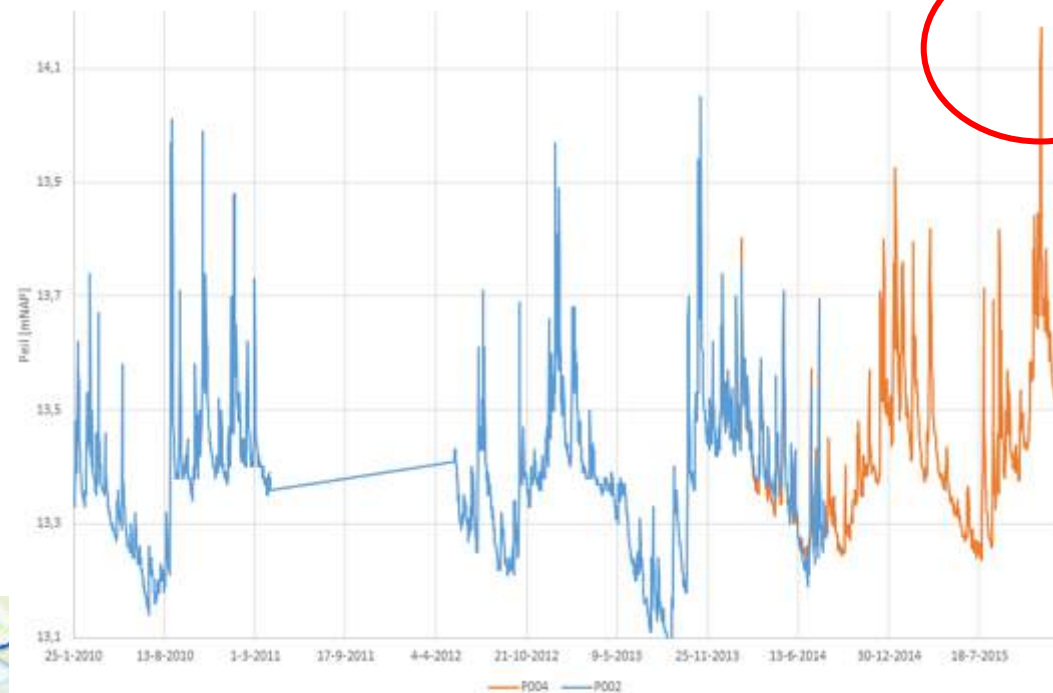
Resultaten monitoring



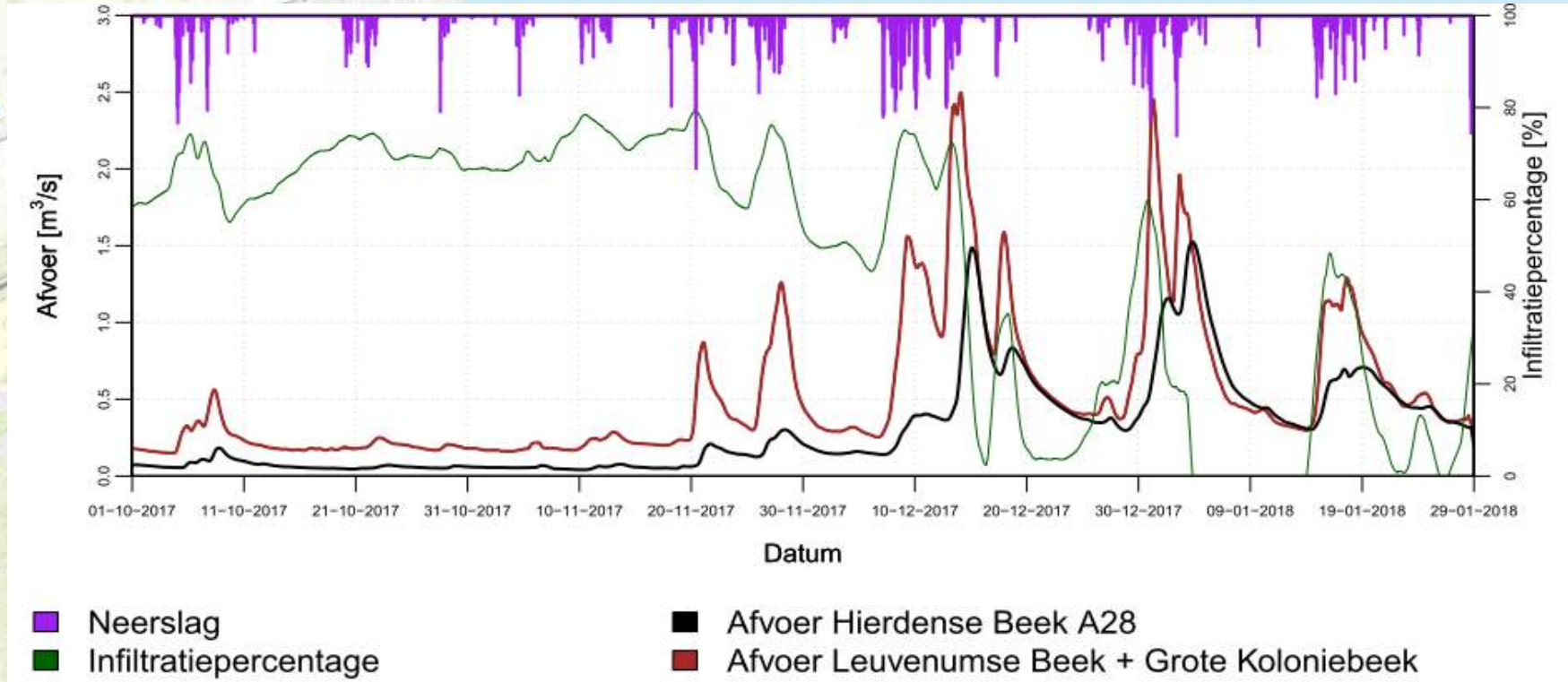
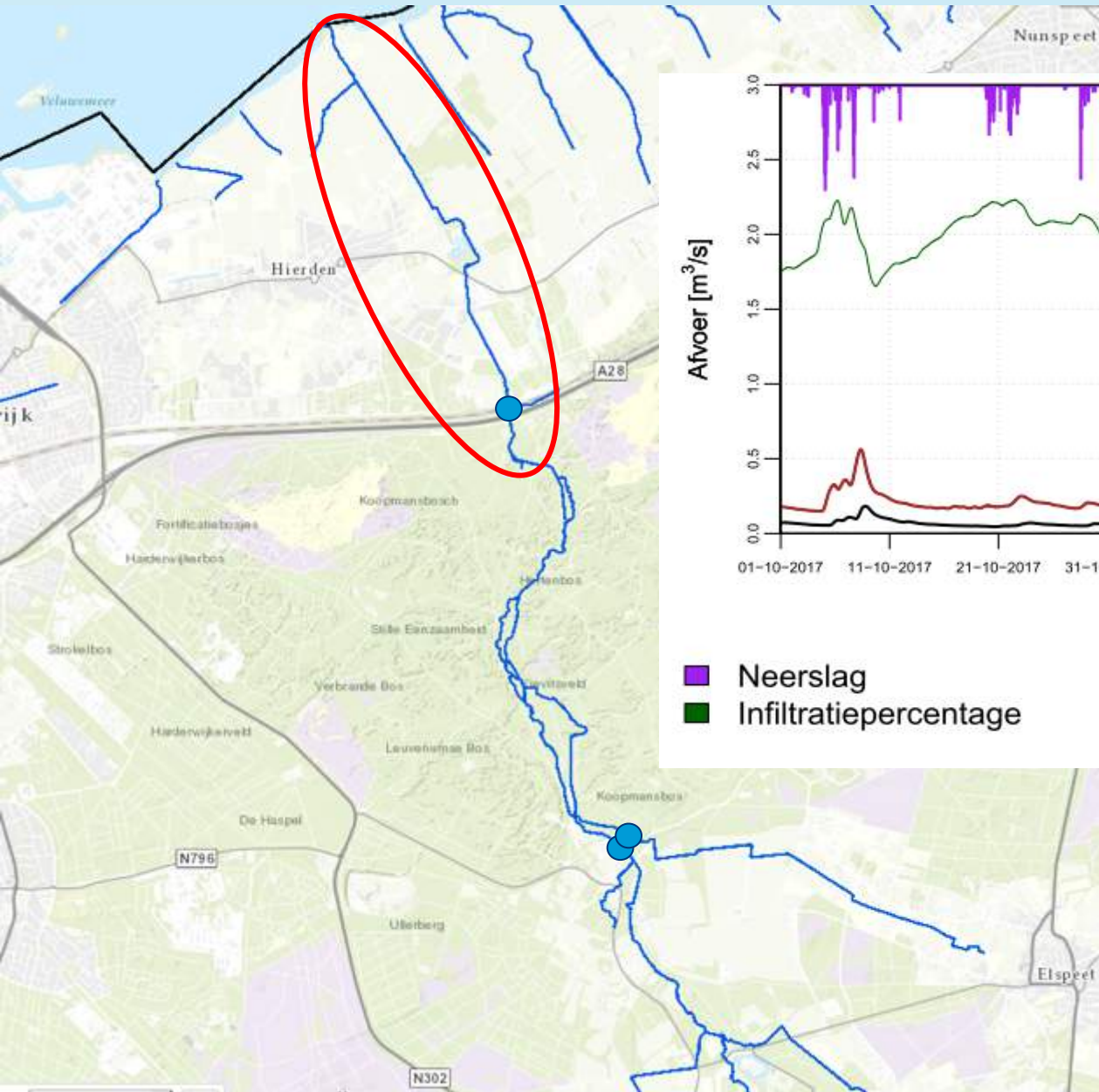
Wateroverlast



Peilen Koekoek



Afname wateroverlast





UW WATERSCHAP