Ondergrondse wateropslag in de Zuidwestelijke Delta: KREEKRUG INFILTRATIE SYSTEEM: GO-FRESH

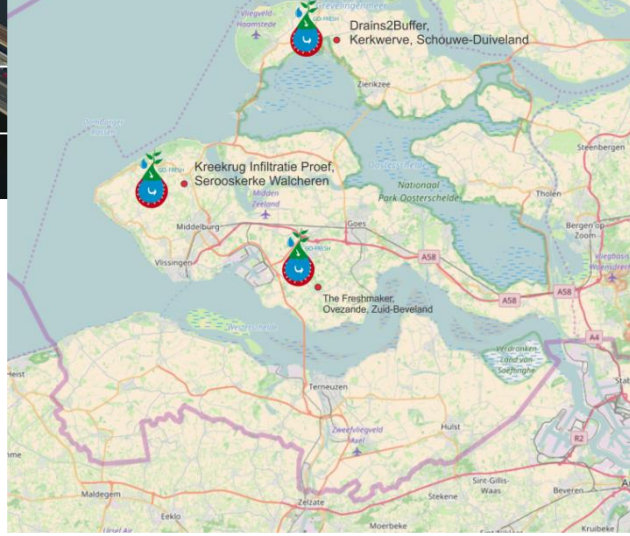
Gualbert Oude Essink
Deltares/UU

- Introductie
- Wiki
- 5 juli Veldbijeenkomst proeven

Meer informatie:
www.go-fresh.info

GO-FRESH
Geohydrological Opportunities for FRESH Water Supply

GO-FRESH: Ondergrondse waterberging

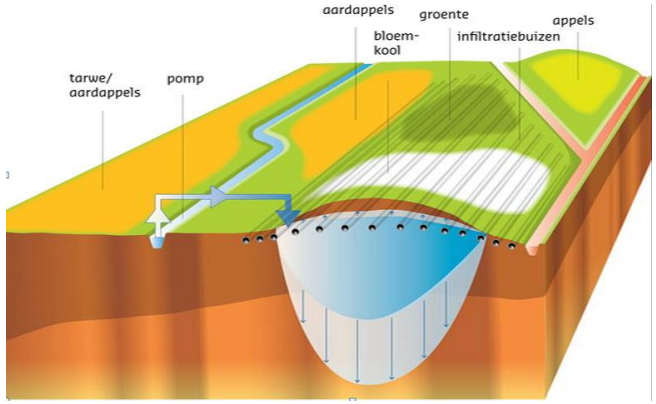


Doel:

- Bestaande zoete grondwatervoorraden beter benutten
- Nieuwe zoete grondwatervoorraden creëren

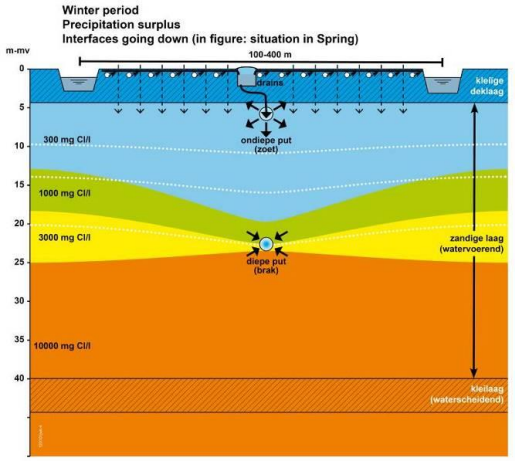
Methode:

Testen efficientie ondergrondse waterberging op drie veldlocatie te Zeeland



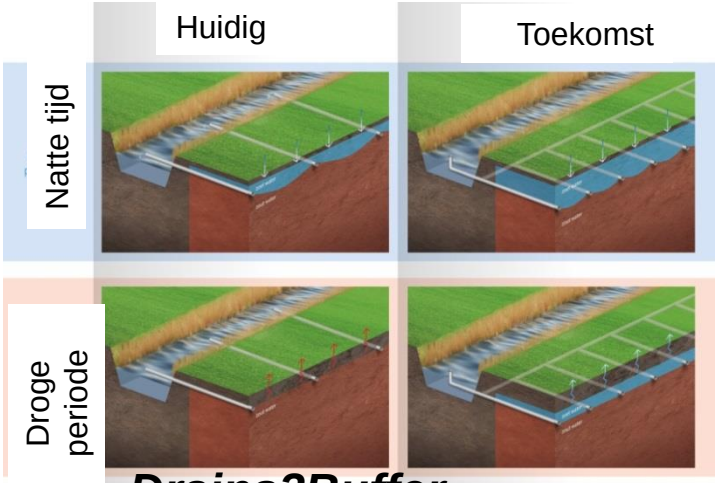
Kreekrug Infiltratie Proef

verhoging grondwaterstand door infiltratie opp.water en peilgestuurde drainage



The Freshmaker

injectie zoet water en onttrekking zout grondwater

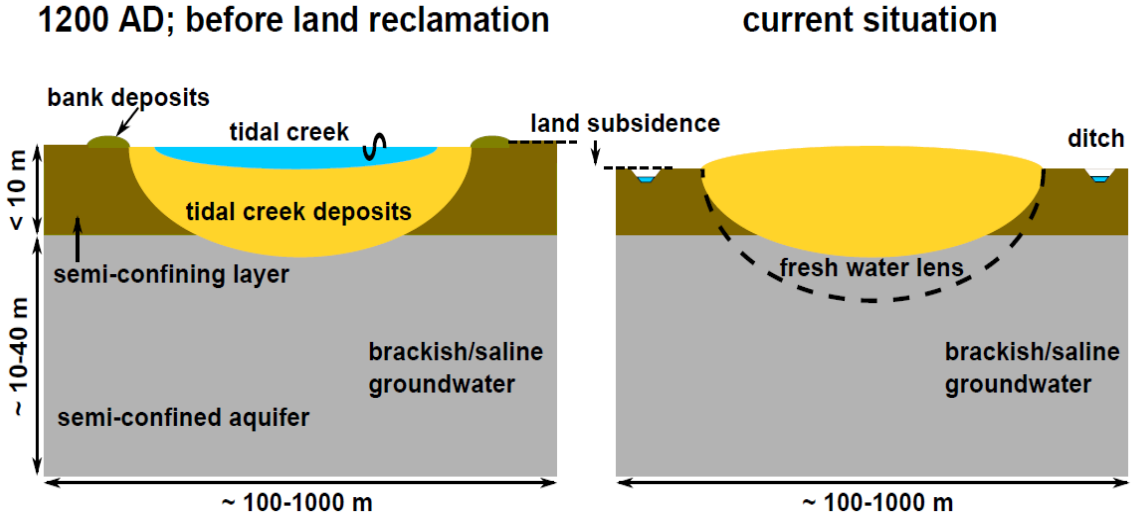


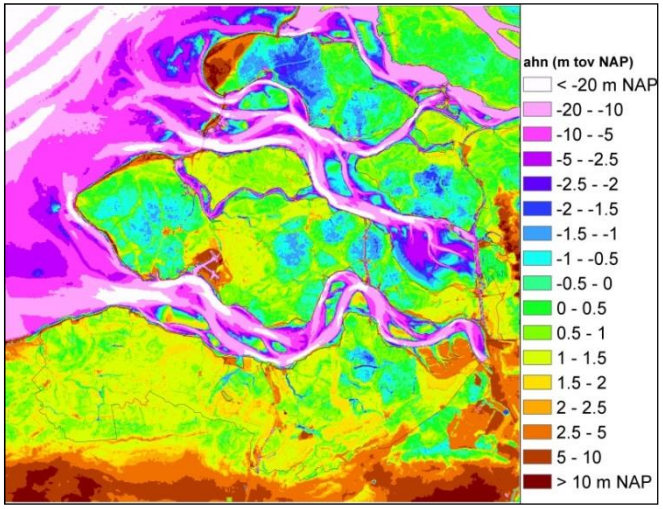
Drains2Buffer

slimme diepe drainage beschermt dunne zoete regenwaterlens

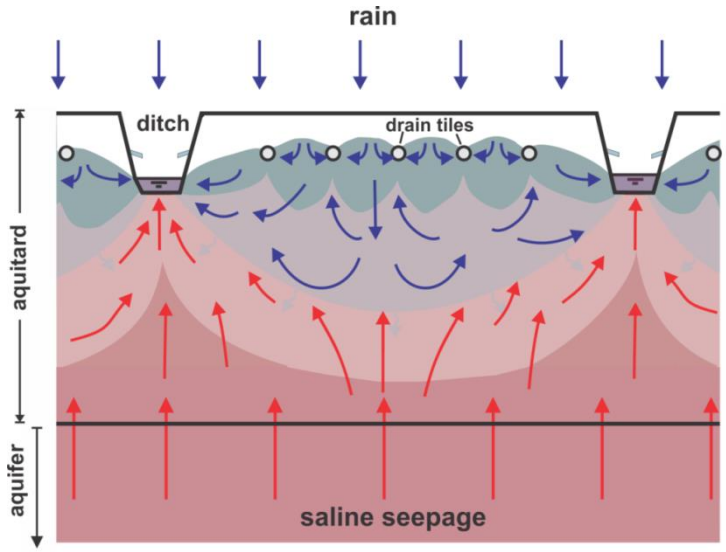
Zoetwaterlandbouw in de zilte Zeeuwse Delta

Kreekrugsystemen



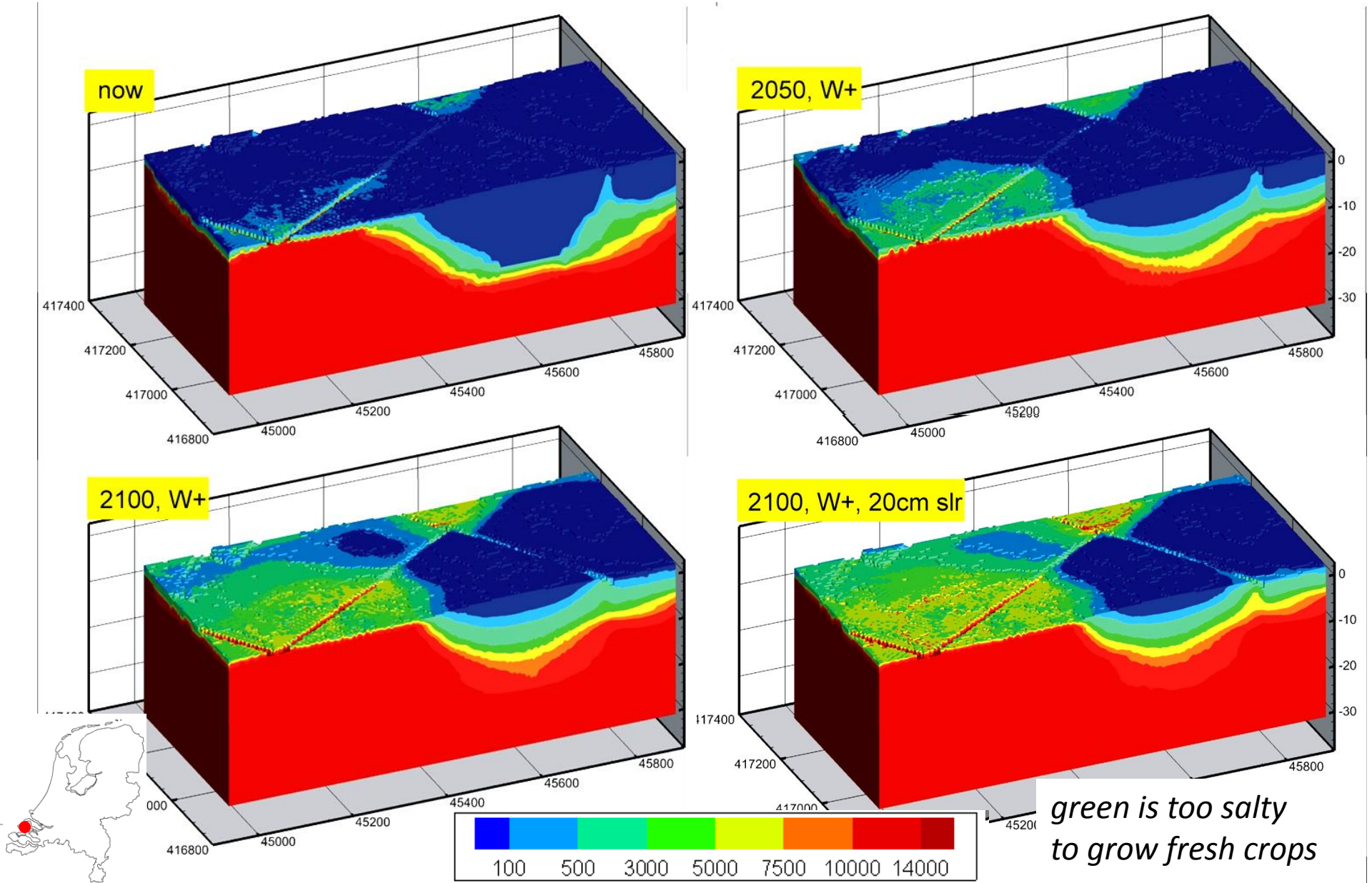


Hoogte maaiveld [m]



Regenwaterlens drijvend op zout water

Simulatie berekenen effecten droger klimaat en zeespiegelstijging op zoet-zout verdeling ondergrond, en indirect op gewasschade, case SD

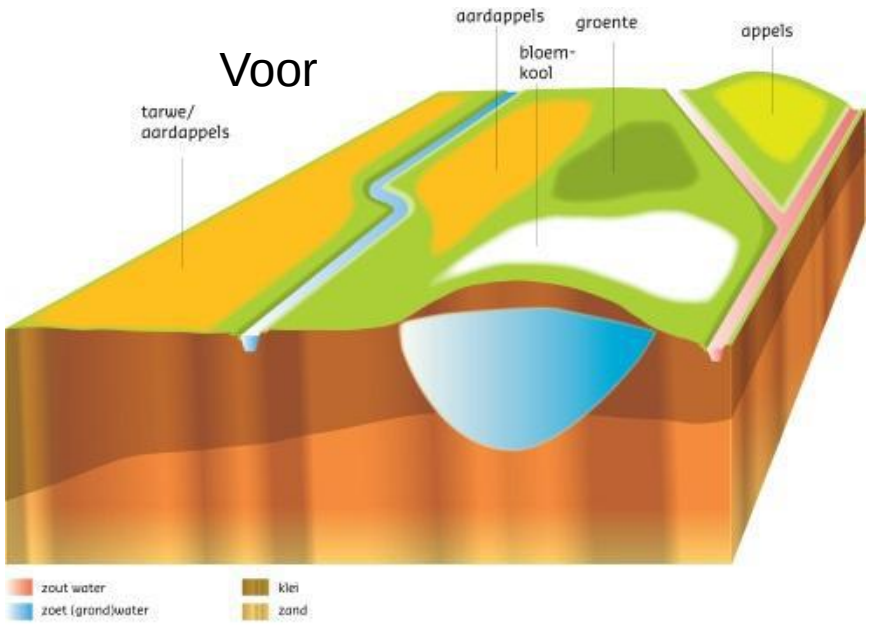


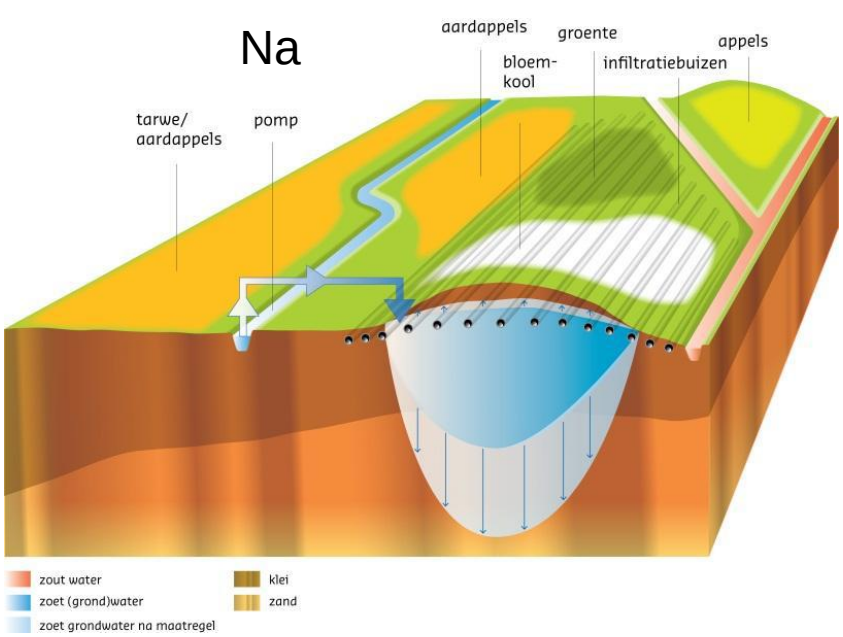
green is too salty to grow fresh crops

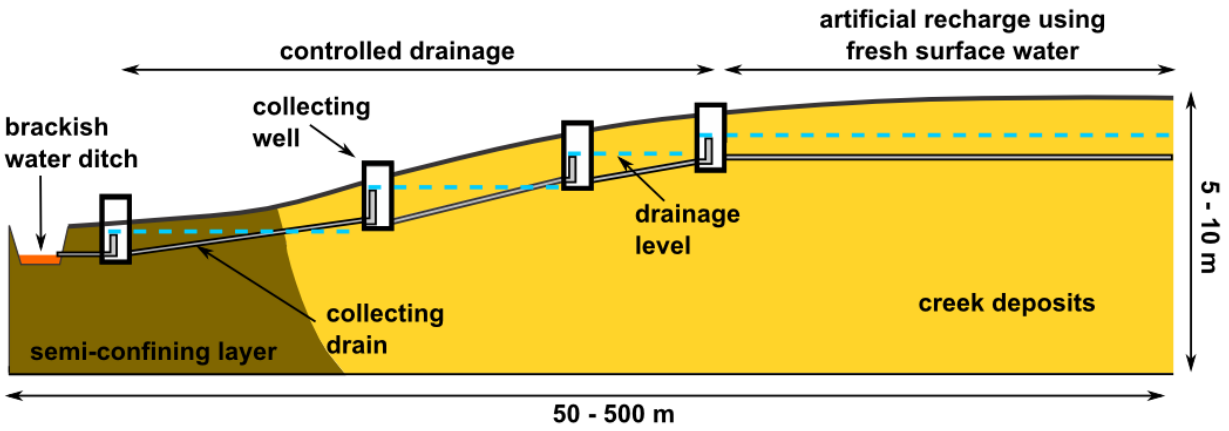
2012/2013: Starting up the three pilots: tubes, drains, pumps

Deltares

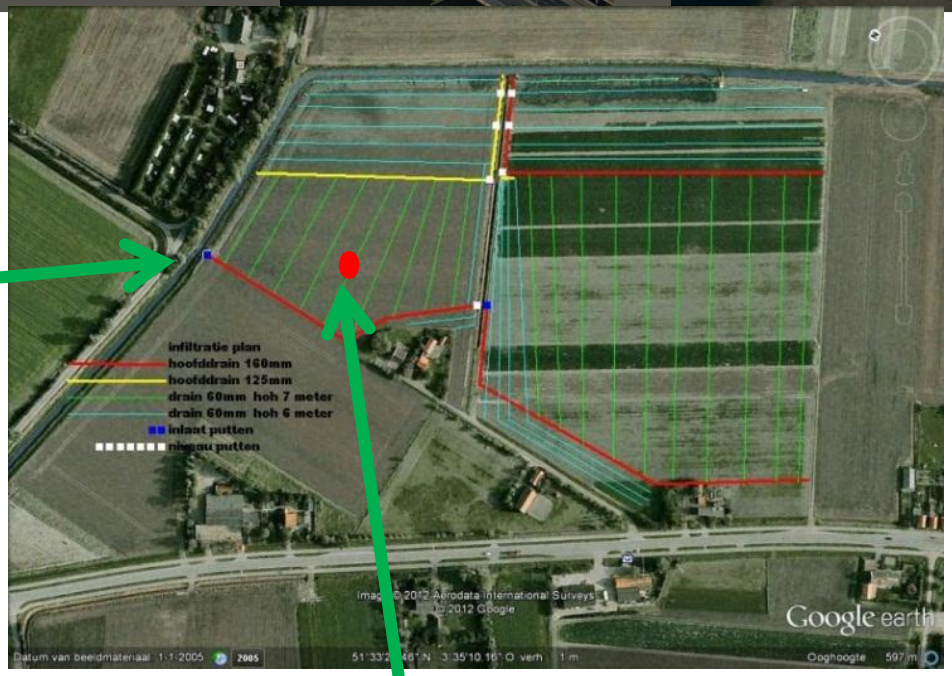
KIS: Verhoging grondwaterstand door infiltratie opp.water en peilgestuurde drainage

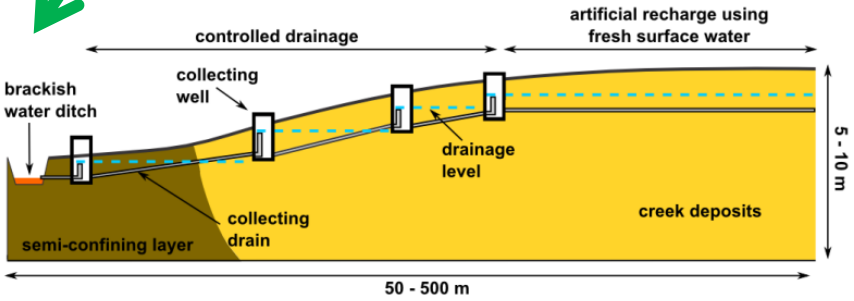


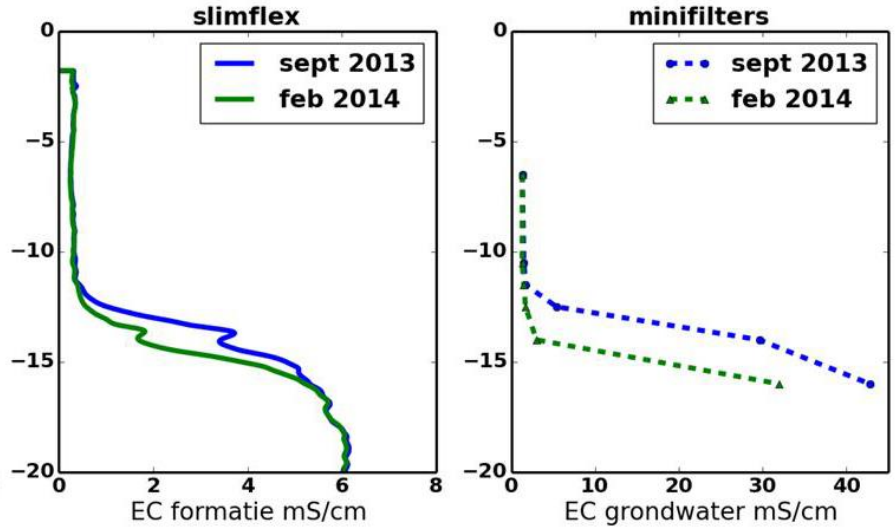




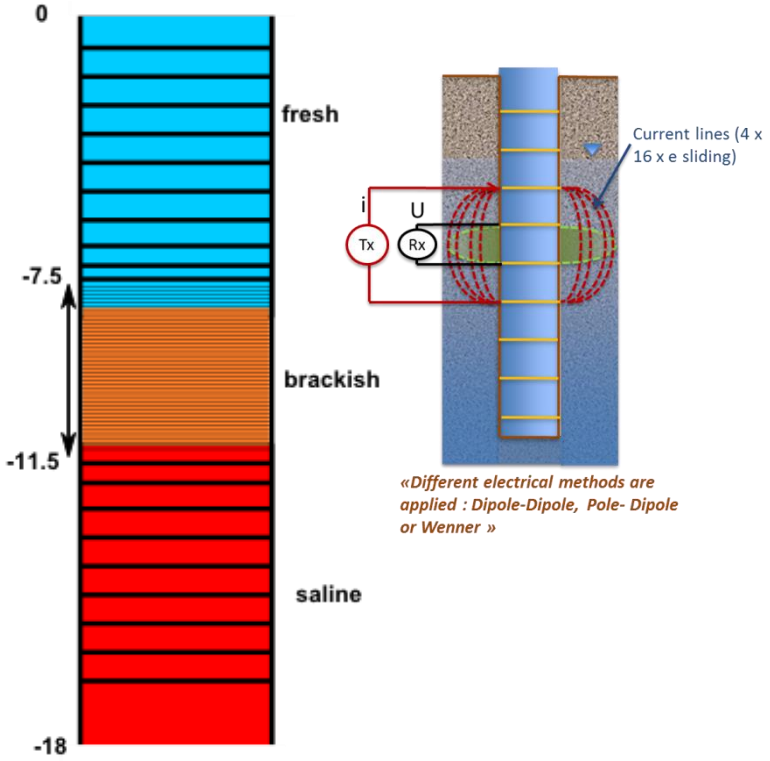
Kreekrug Infiltratie Systeem



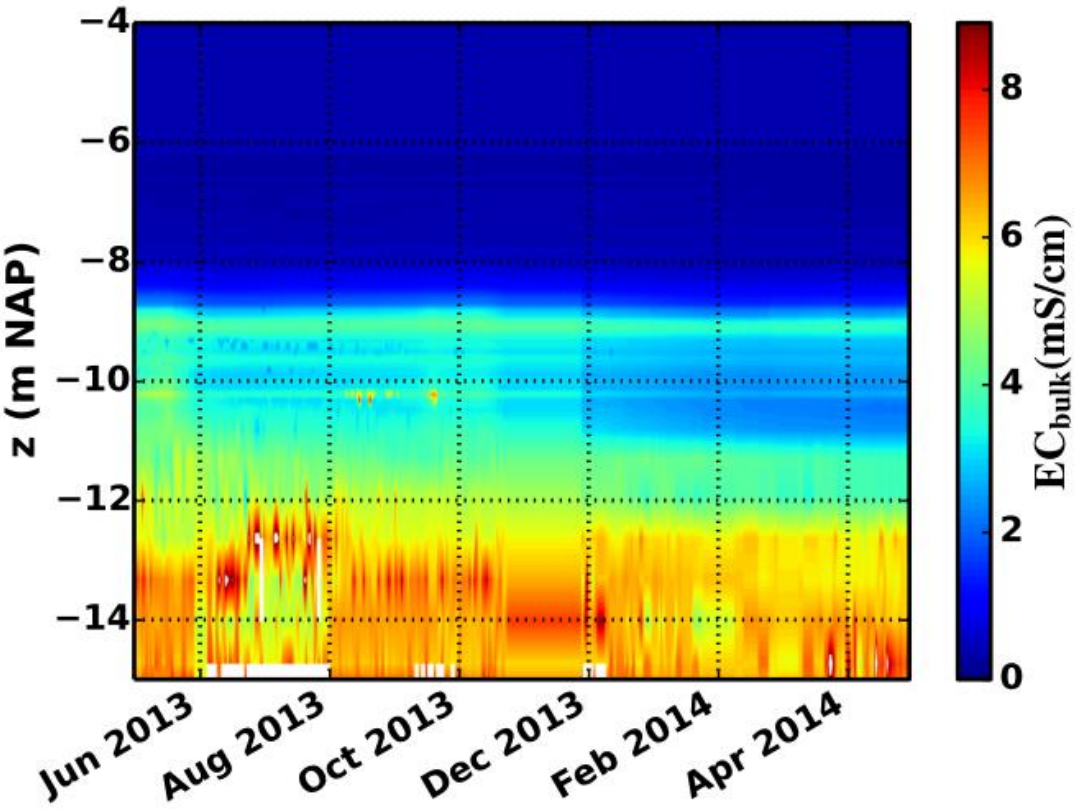




Subsurface Monitoring Device (SMD): Kreekrug Infiltratie Systeem



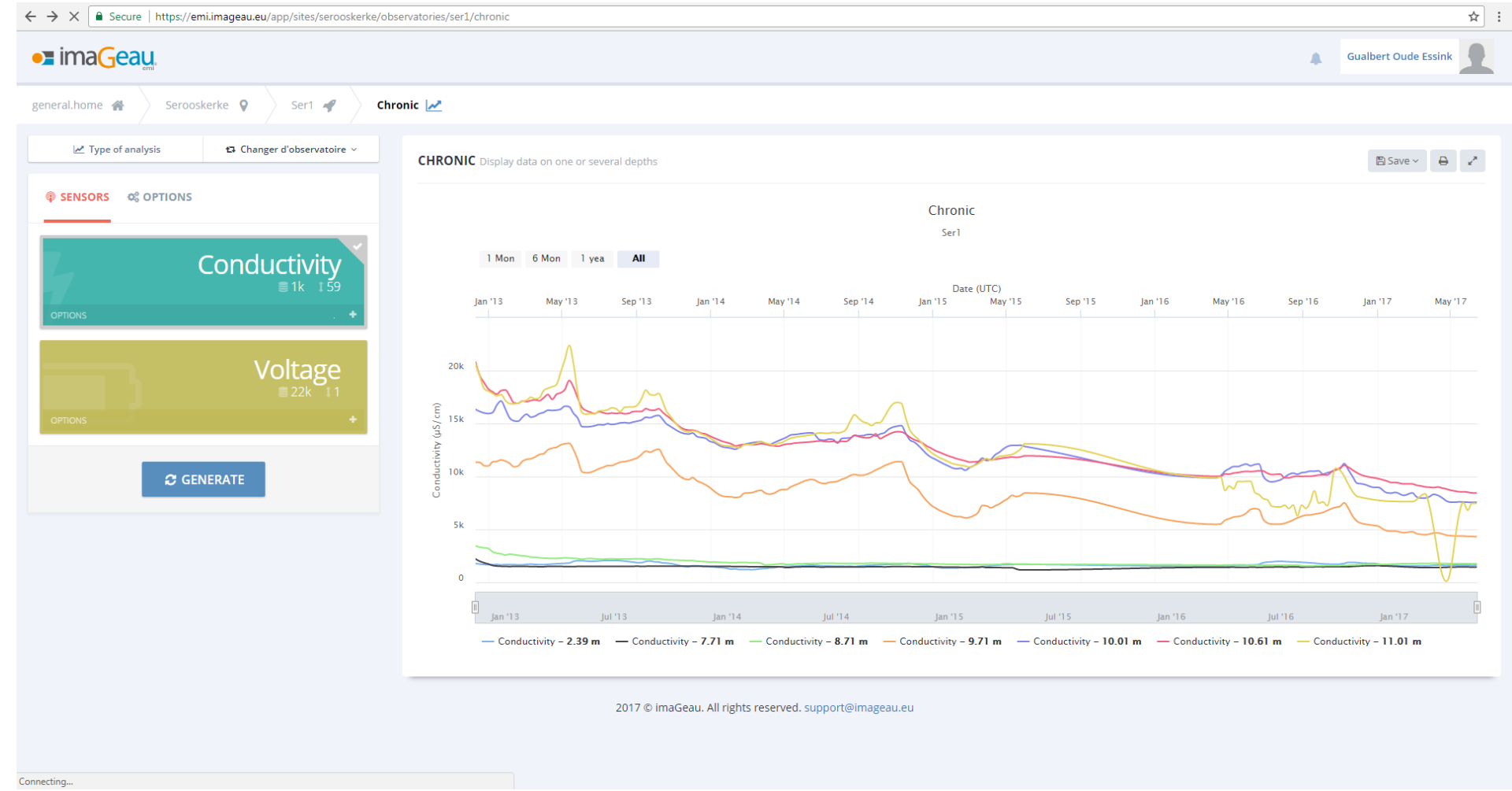
«Different electrical methods are applied : Dipole-Dipole, Pole- Dipole or Wenner »



imaGeau instrumentation du sous-sol

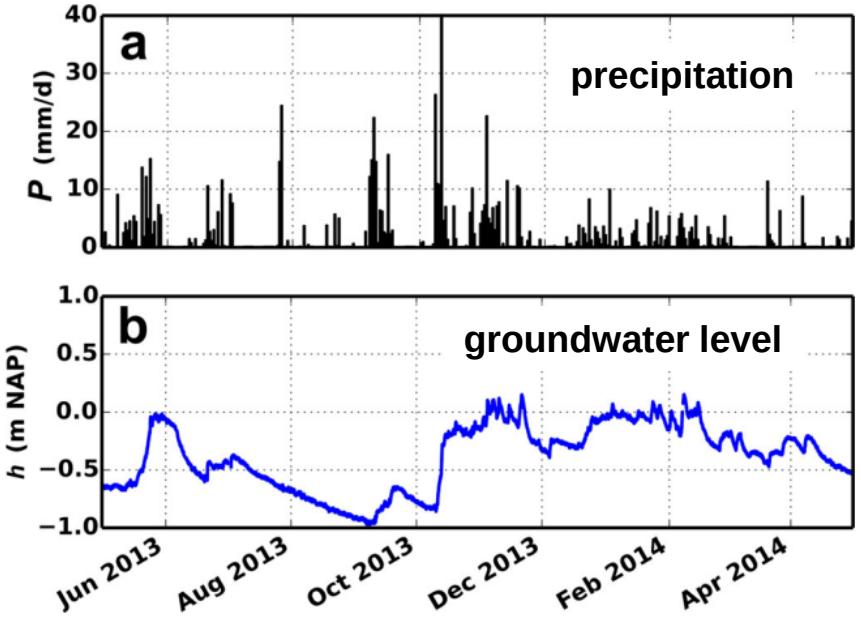
FUGRO

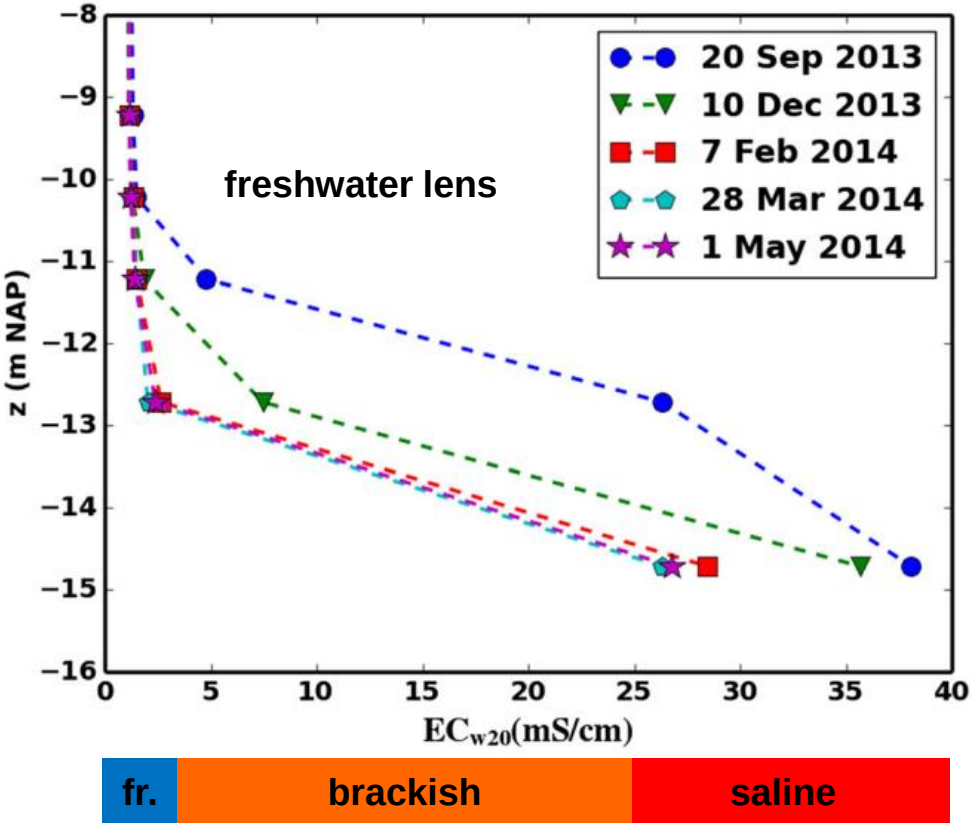
Zoutgehalte online gemeten op de kreekrug



Deltares

Verdieping zoetwaterlens door een hogere grondwaterstand



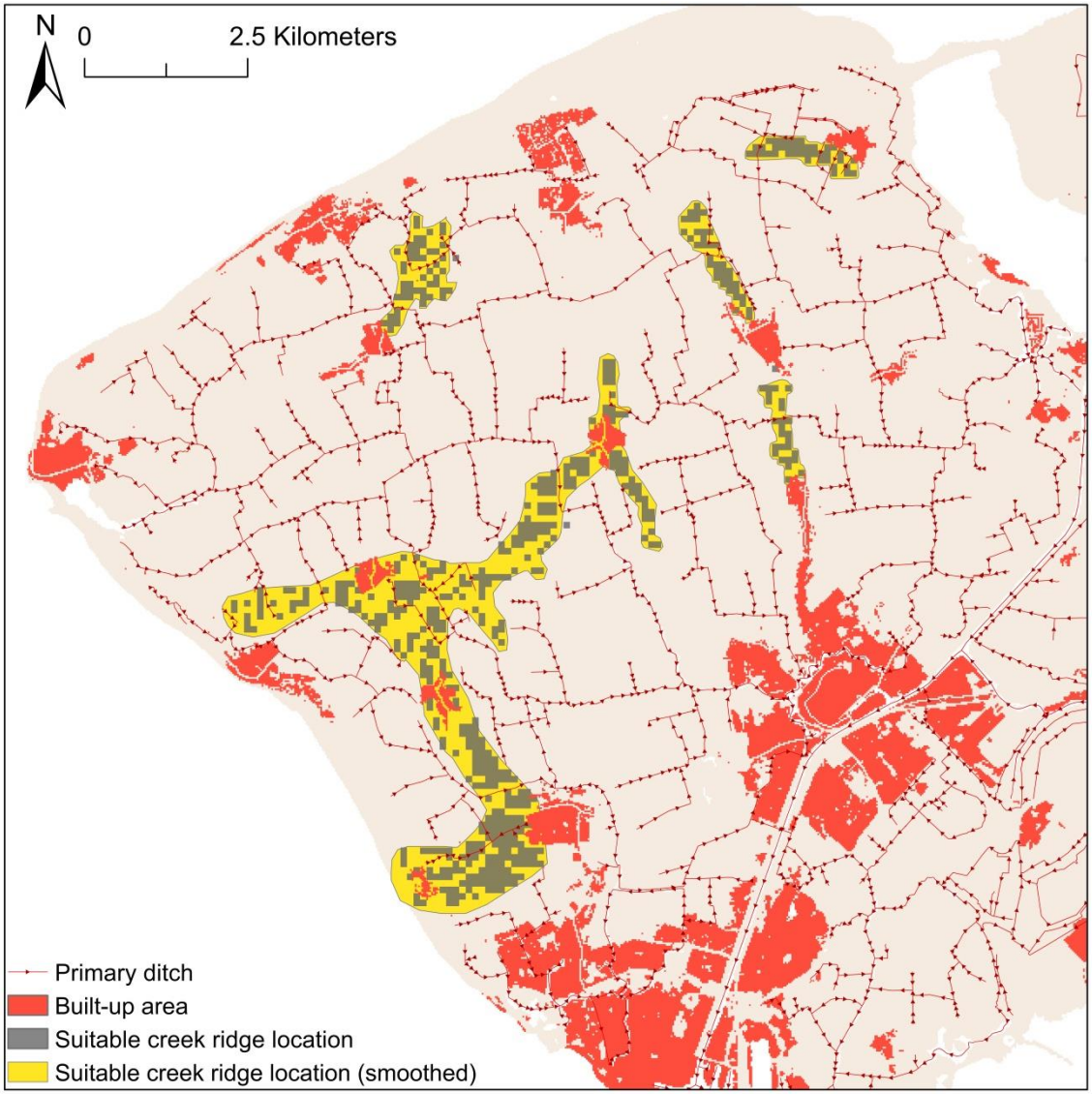


Deltares

Opschalen: potentie/kansen kaarten

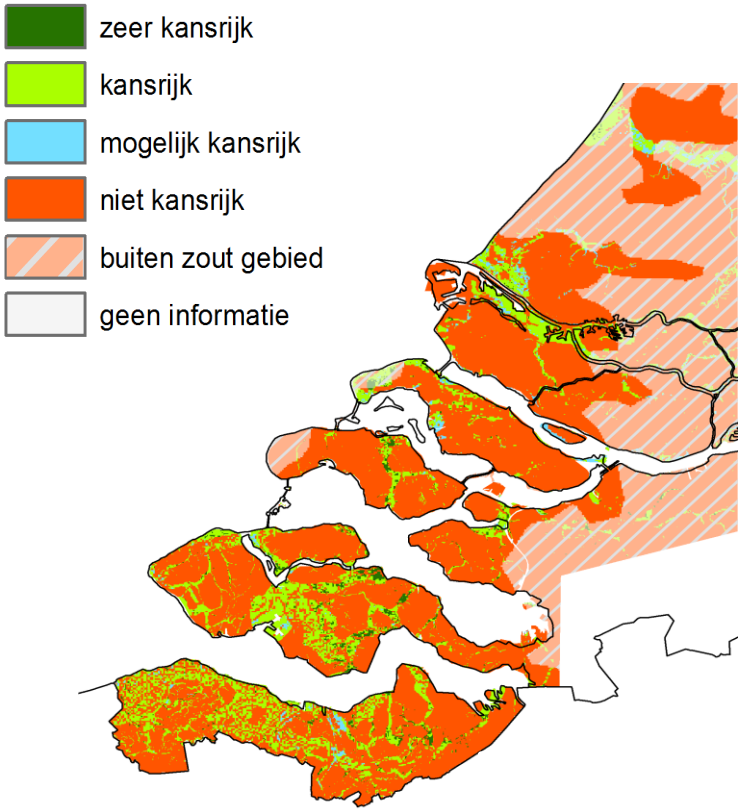
Local scale

- **1342 ha**
- **12%** of agricultural land

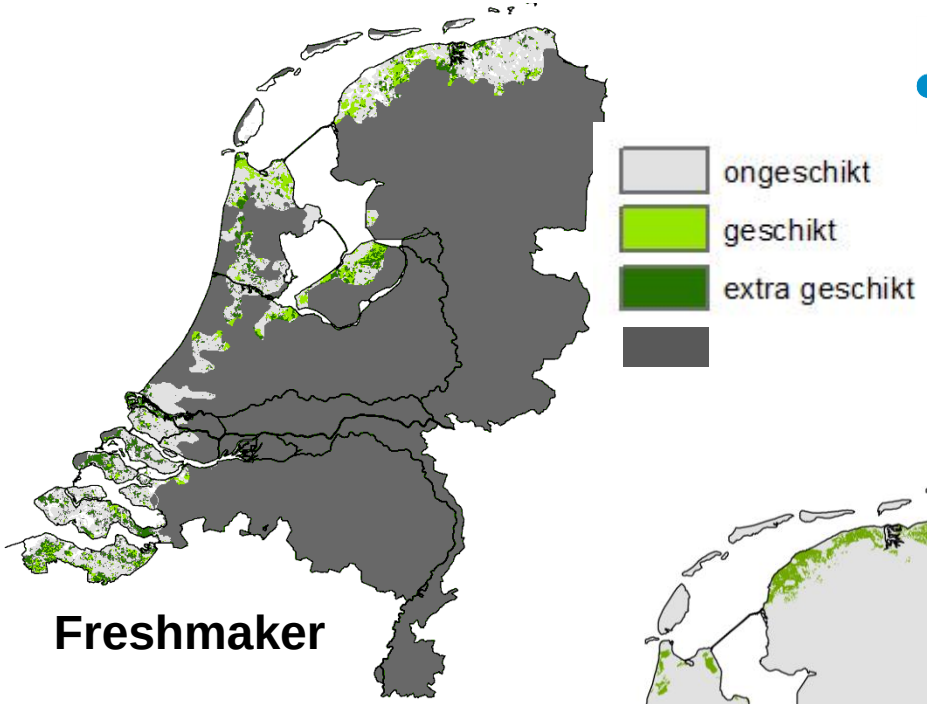


Deltares

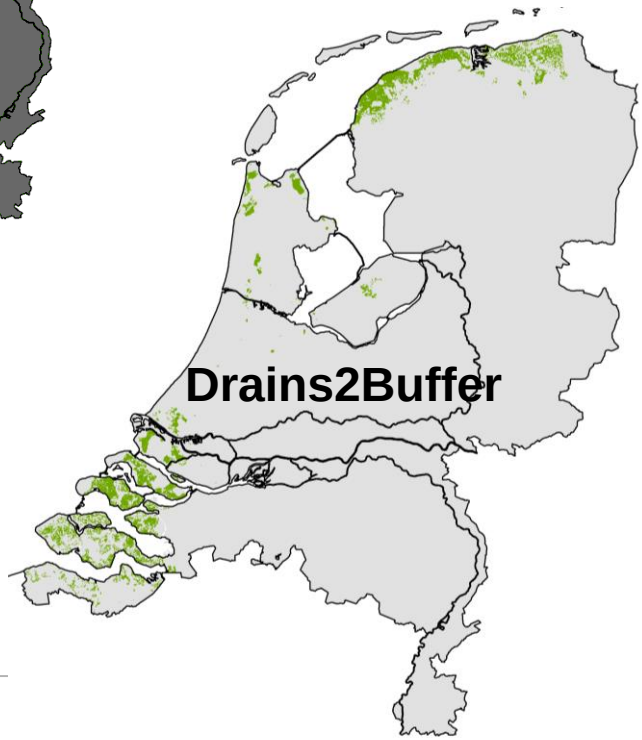
Opschalen: potentie/kansen kaarten



Creek Ridge Infiltration

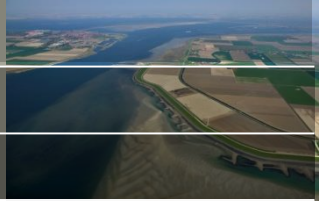


Freshmaker



Drains2Buffer

Met dank aan:



Provincie Zeeland

Kennis voor Klimaat

WaterschapScheldestromen

Waterschap Brabantse Delta

Pier Vellinga

Vincent Klap

STICHTING WATERBUFFER

Meeuwse handelsonderneming bv

Deltacommissaris

Gemeente Schouwen-Duiveland

Lein Kaland

stowa

ZLTO

Productschap Tuinbouw

Dank voor uw aandacht!

Vragen?

info: www.go-fresh.info

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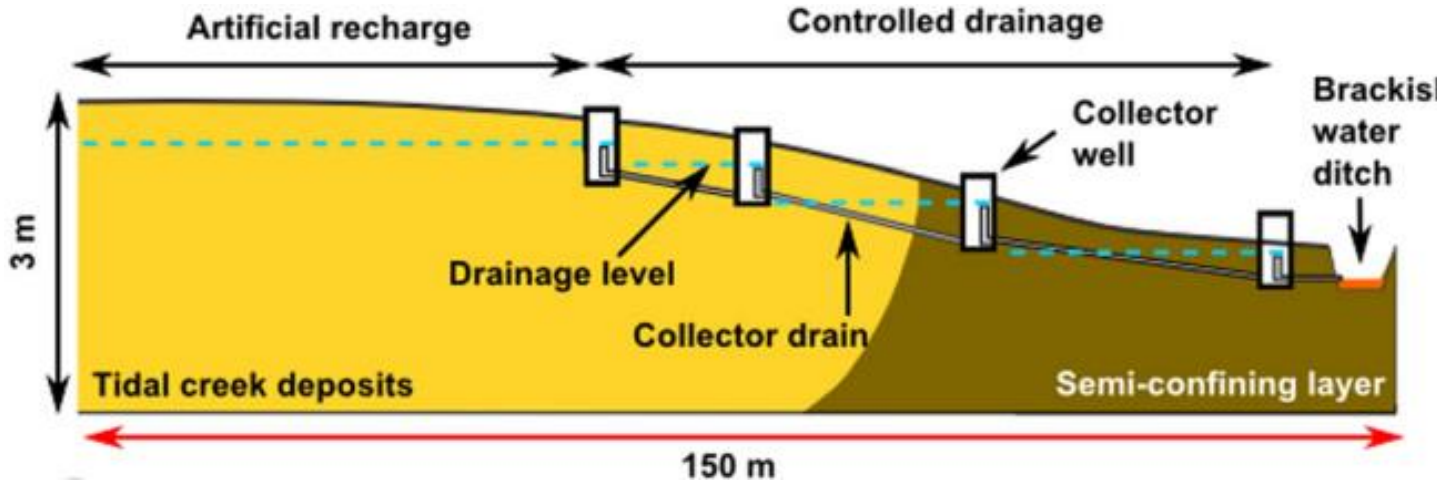
More information:
www.go-fresh.info

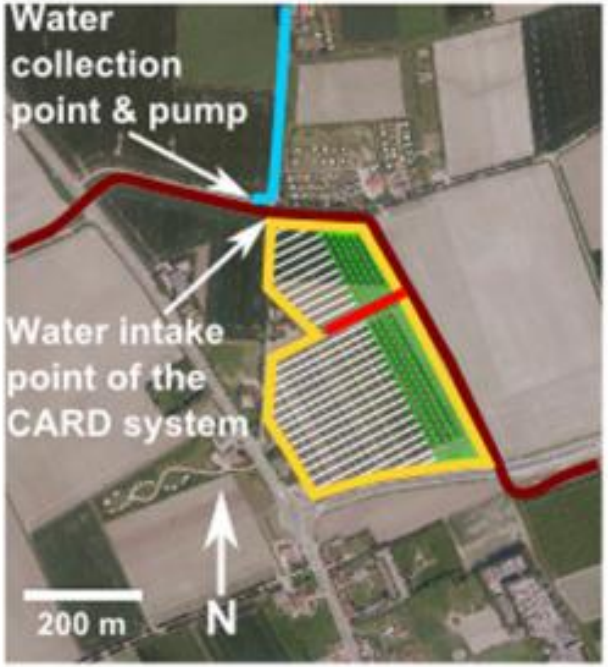
GO-FRESH
Geohydrological Opportunities for FRESH Water Supply

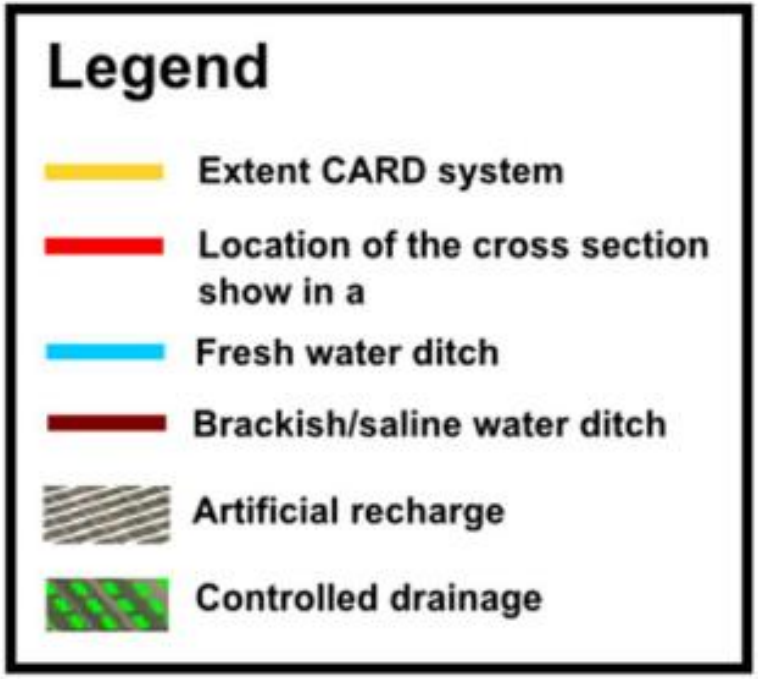
Oude Essink, G.H.P., van Baaren, E.S., Zuurbier, K.G., Velstra, J., Veraart, J., Brouwer, W., Faneca Sànchez, M., Pauw, P.S., de Louw, P.G.B., Vreke, J., Schoevers, M. 2014. GO-FRESH: Valorisatie kansrijke oplossingen voor een robuuste zoetwatervoorziening, KvK 151/2014, ISBN EAN 978-94-92100-12-2, 84 p.

Pauw, P.S., van Baaren, E.S., Visser, M., de Louw, P.G.B., Oude Essink, G.H.P. (2015). Increasing a freshwater lens below a creek ridge using a controlled artificial recharge and drainage system: a case study in the Netherlands. Hydrogeology Journal. doi:10.1007/s10040-015-1264-z

Concept of CARD and pilot layout







Different types of field measurements applied

Measurement type	Purpose
Pressure transducers[a]	Groundwater levels
Sampling using piezometer nest	EC_{w20}
SLIMFLEX[b]	EC_{bulk}
CPT[c]	Lithology and EC_{bulk}
CVES[d]	EC_{bulk}
SMD[e]	EC_{bulk}

a. Schlumberger, The Netherlands (type ‘ Diver ’)

b. Deltares, The Netherlands

c. Fugro, The Netherlands

d. ABEM, Sweden

e. Imageau, France