

Effecten van zuurstofloosheid

Beggiatoa en schade aan het
bodemleven 2007-2017

Karin Didden



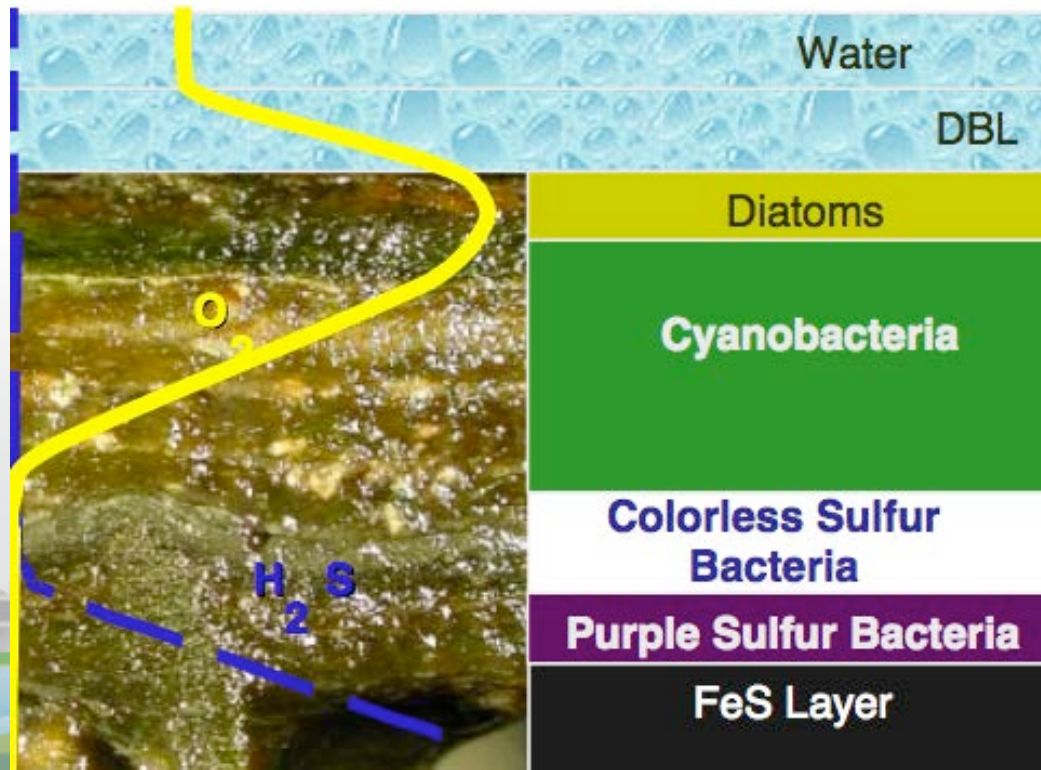
Bureau Waardenburg
Ecologie & Landschap





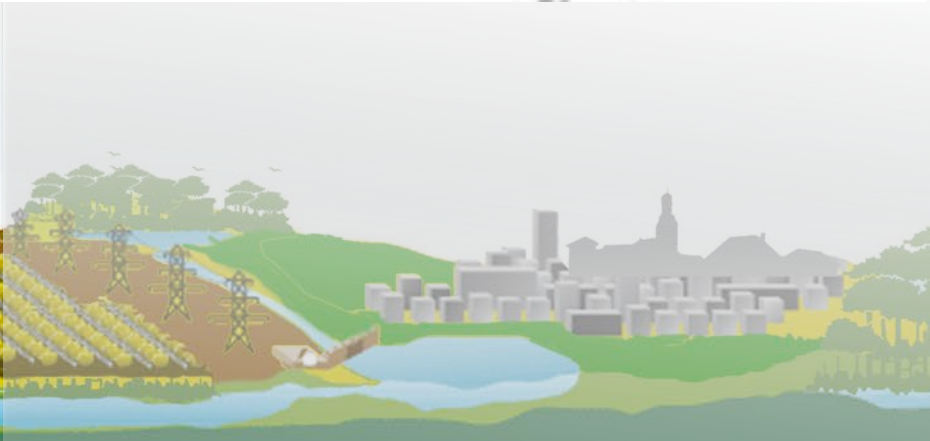
Korte intro: Beggiatoa

- Kleurloze zwavelbacterie
- Leeft op grensvlak van zwavel en zuurstof
- Komt van nature voor in waterbodems



Hinck 2008

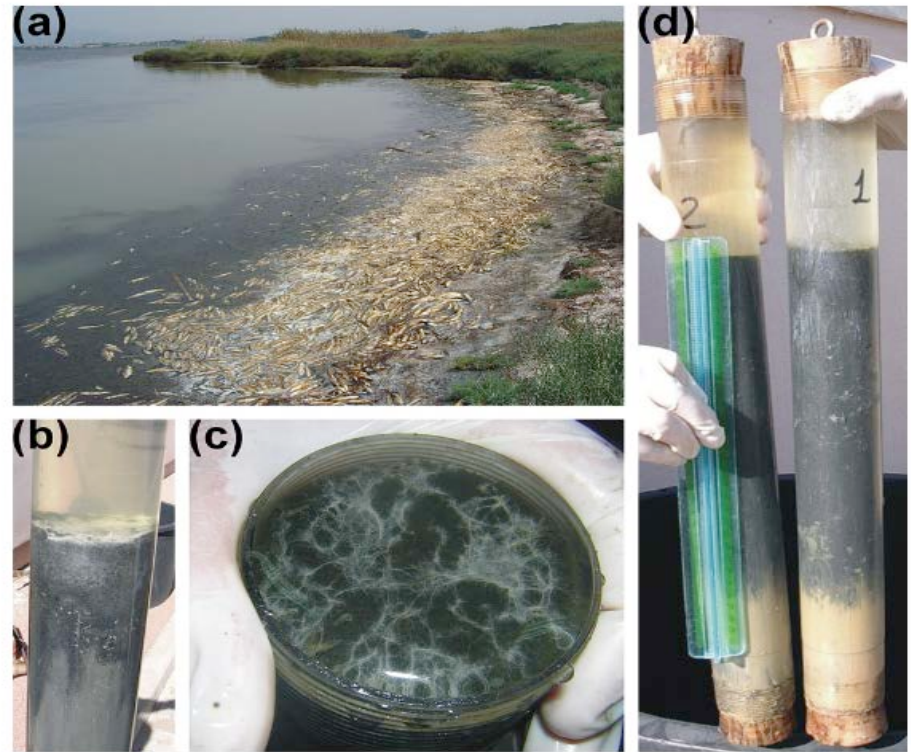






Beggiatoa-achtige matten en waterkwaliteit

- Matten op de bodem aangemerkt als indicator voor organische verrijking in ondiepe wateren*
- Aanwezig na periode van zuurstofloosheid



*Fenchel & Bernard 1995, Pearson 1975, Crawford et al. 2001, Eliot et al. 2006 Hamoutene et al. 2016





Afsluiting Grevelingen



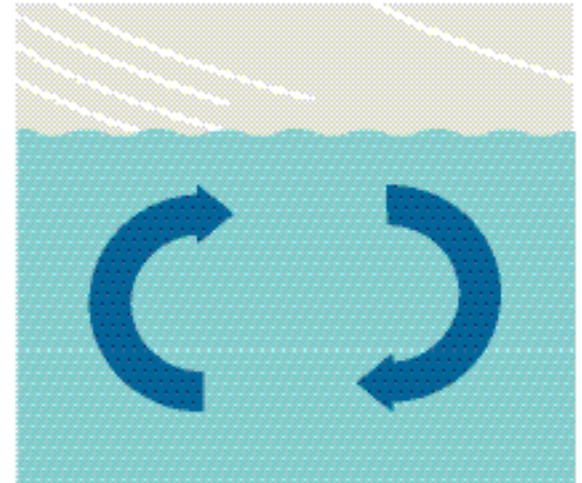
- Wateruitwisseling is verminderd



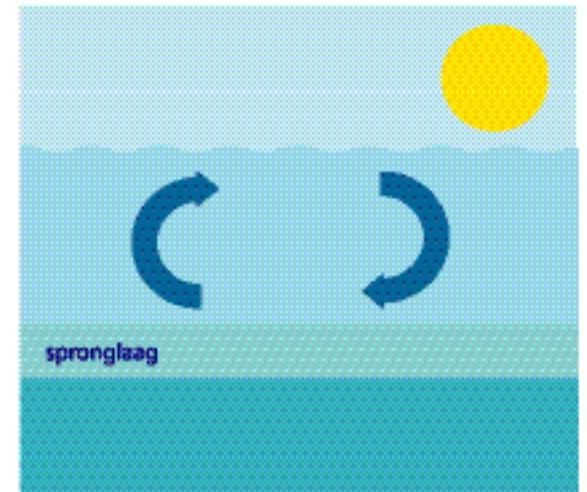


Lage zuurstofconcentraties bodem

Oorzaak 1: Stratificatie van waterlagen

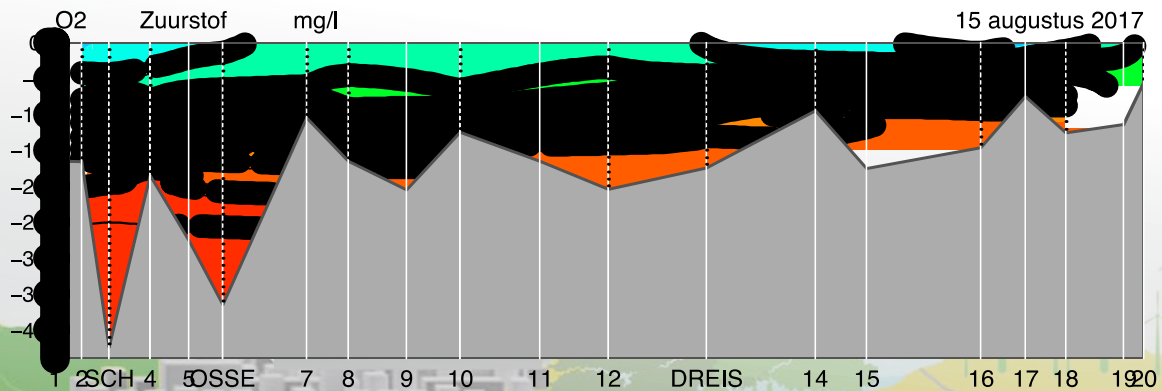
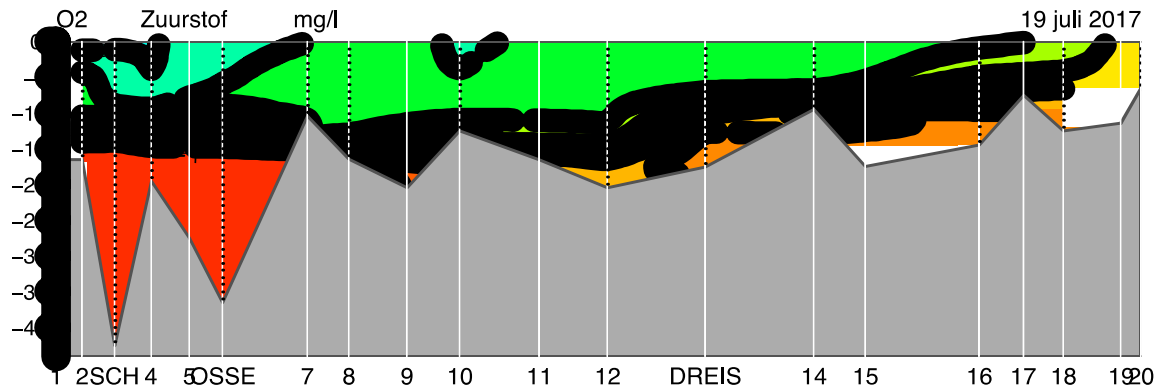
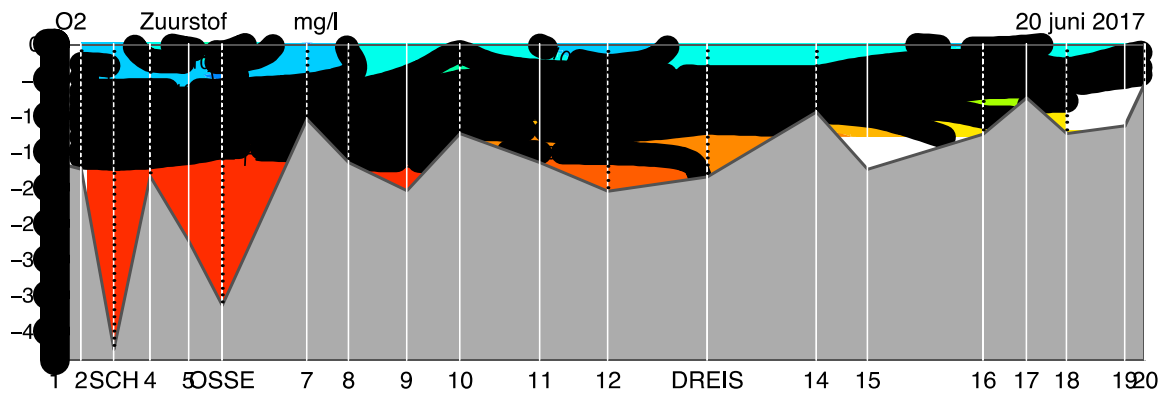


herfst / winter



voorjaar / zomer





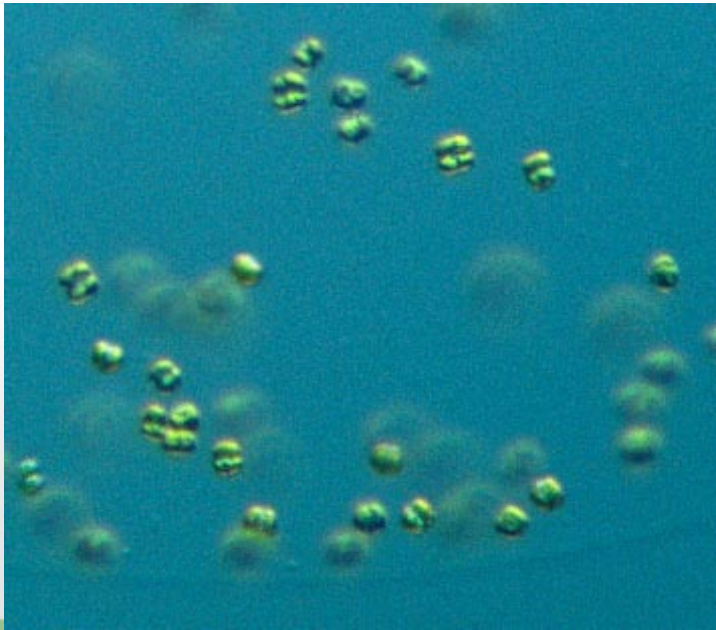


Lage zuurstofconcentraties bodem

Oorzaak 2:

Het bezinken en rotten van organisch materiaal

Zuurstofloze laag bij de bodem door afbraakprocessen





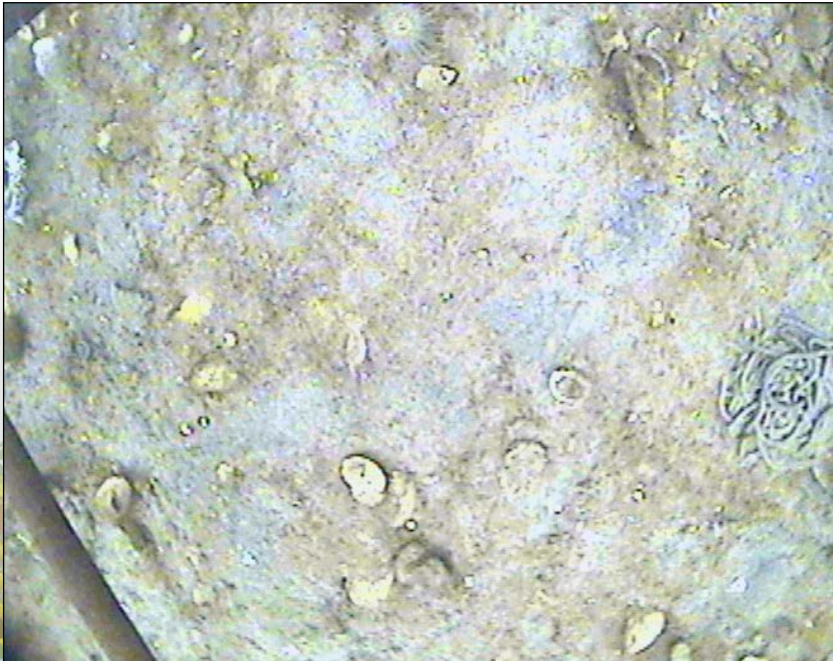






Monitoring Beggiatoa Grevelingen

- Metingen op diverse locaties op 1 dag
- Jaren 2007, 2010, 2011, 2013, 2016 en 2017
- Combinatie met zuurstofconcentratie en schade aan bodemleven



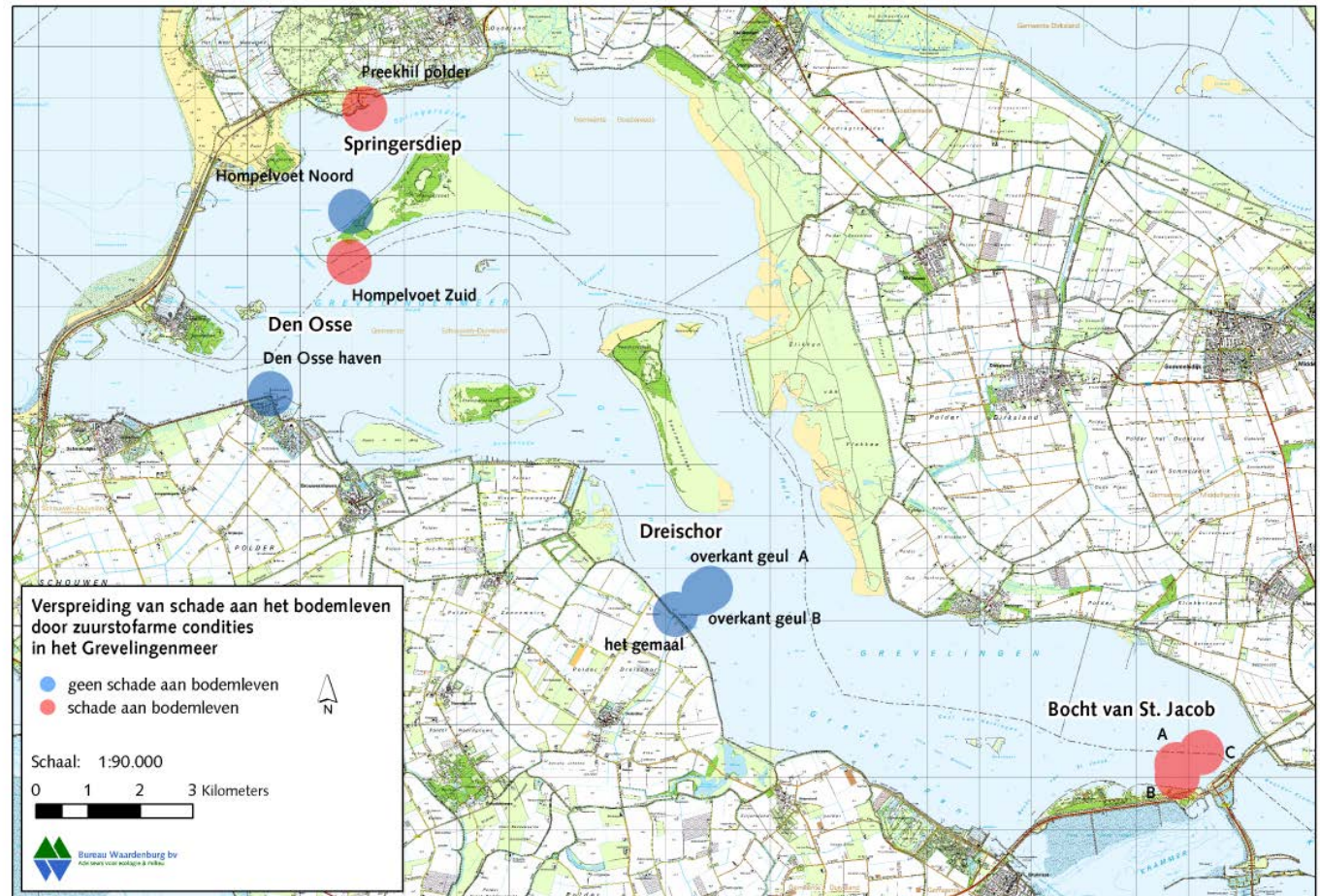


2007: 10 locaties

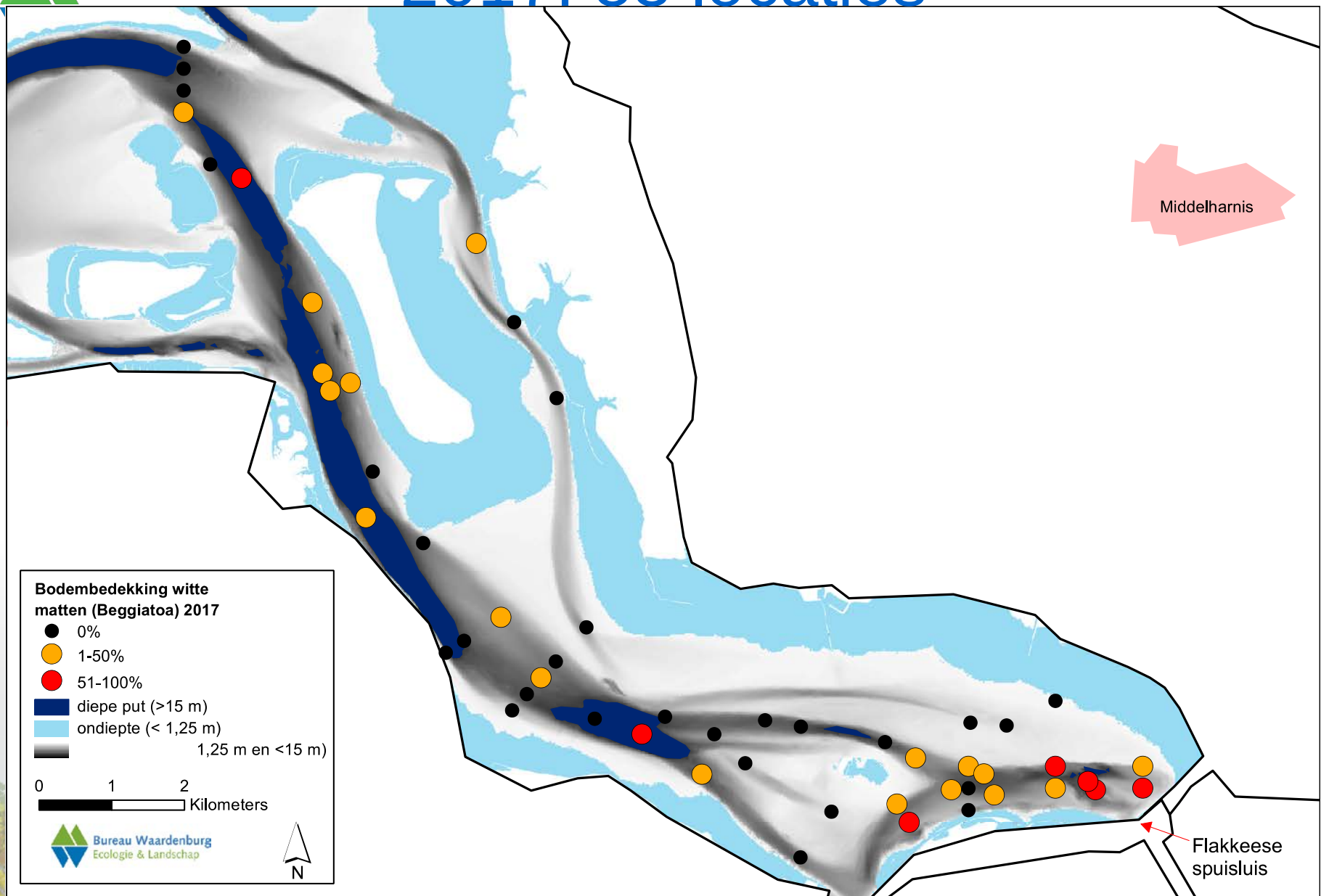
Springersdiep tot 8 meter

Hompelvoet zuid tot op 8 meter

Bocht van Sint Jacob tot op 5 meter



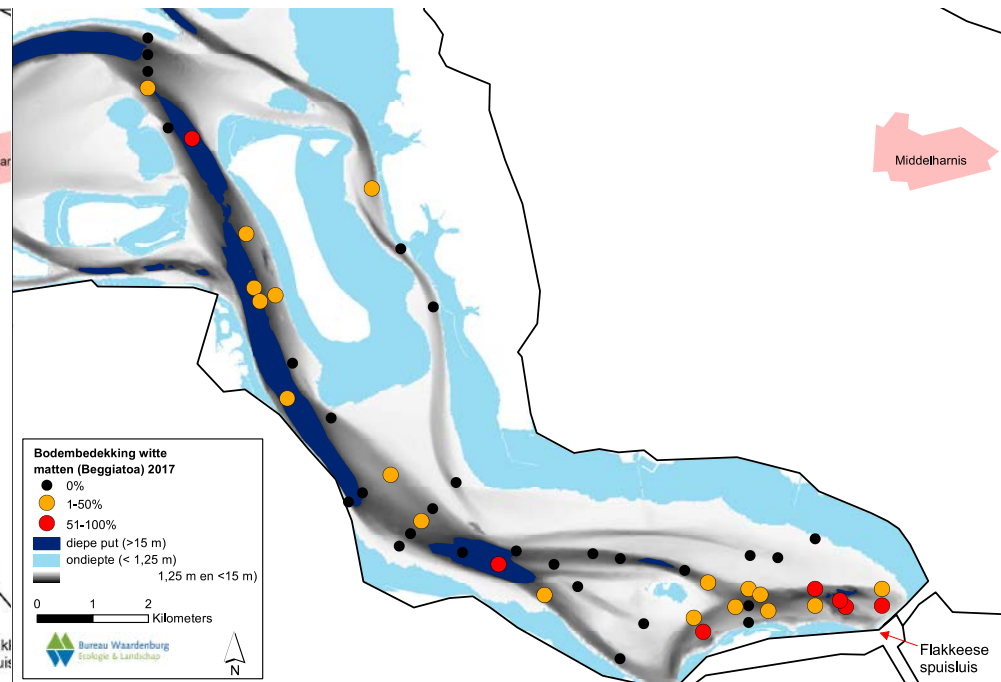
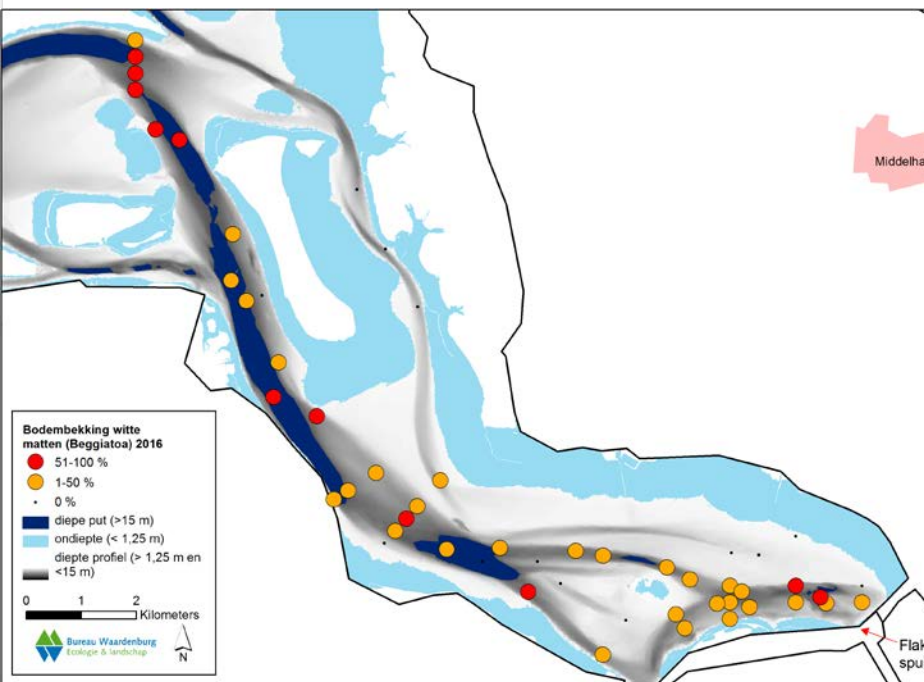
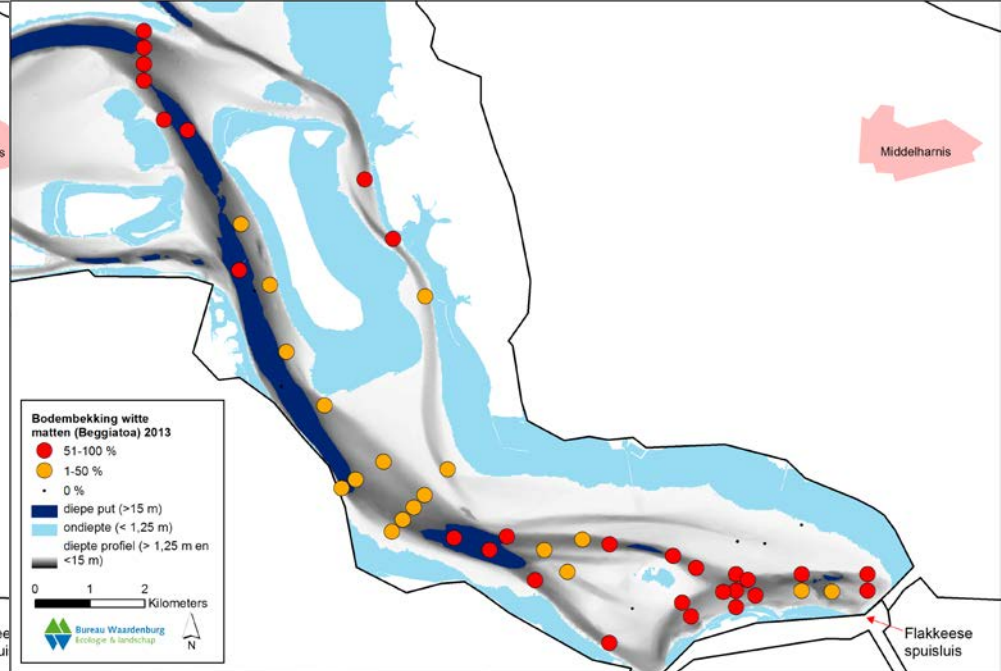
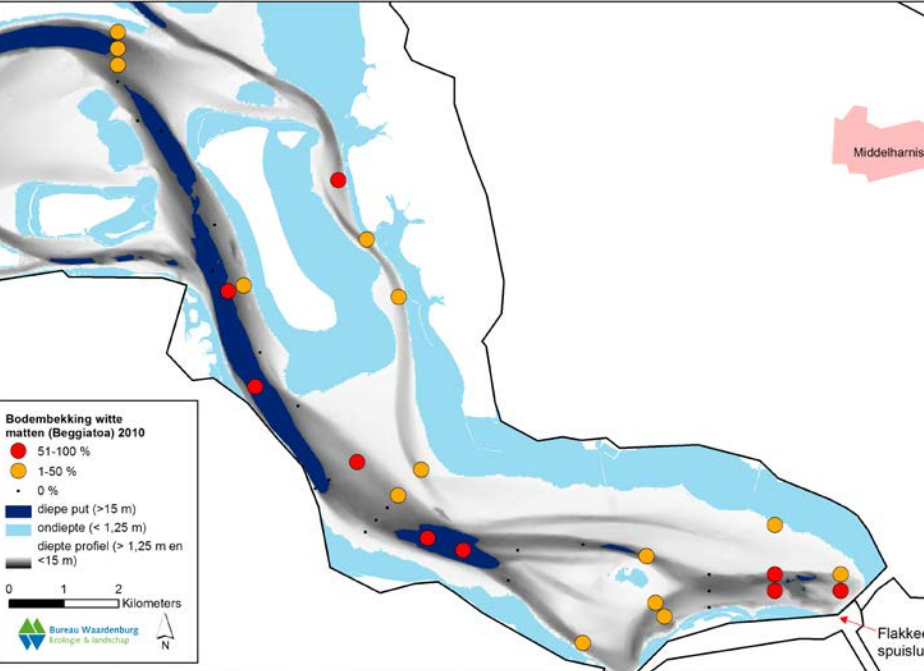
2017: 53 locaties

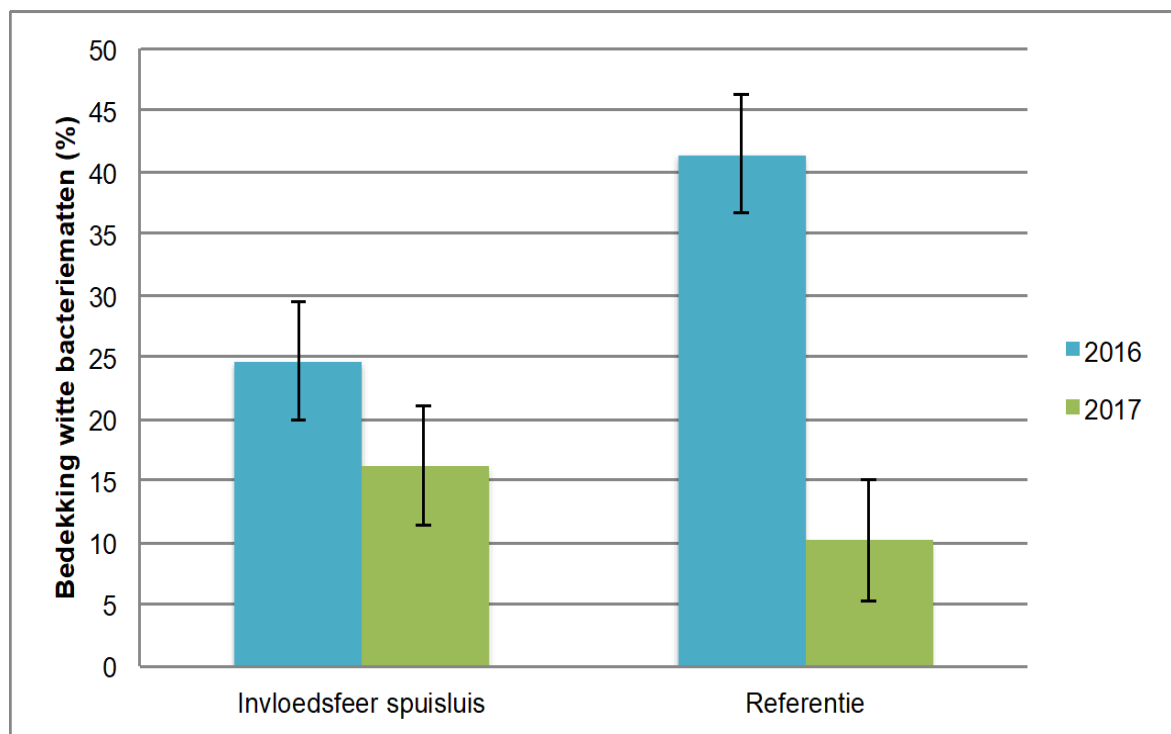


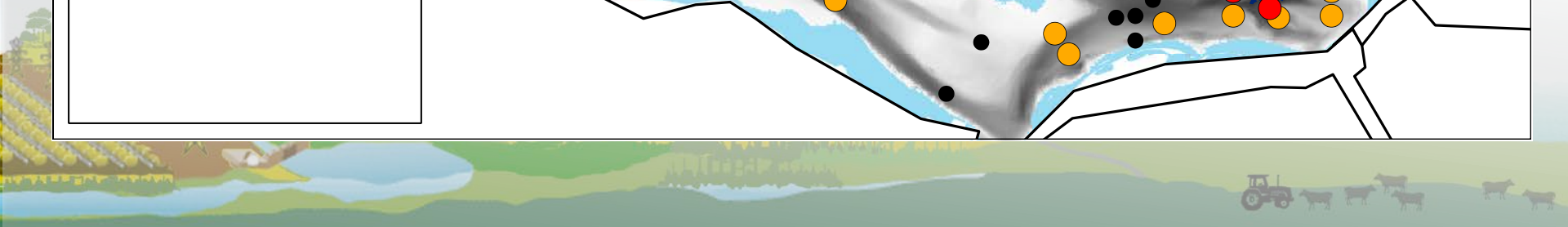
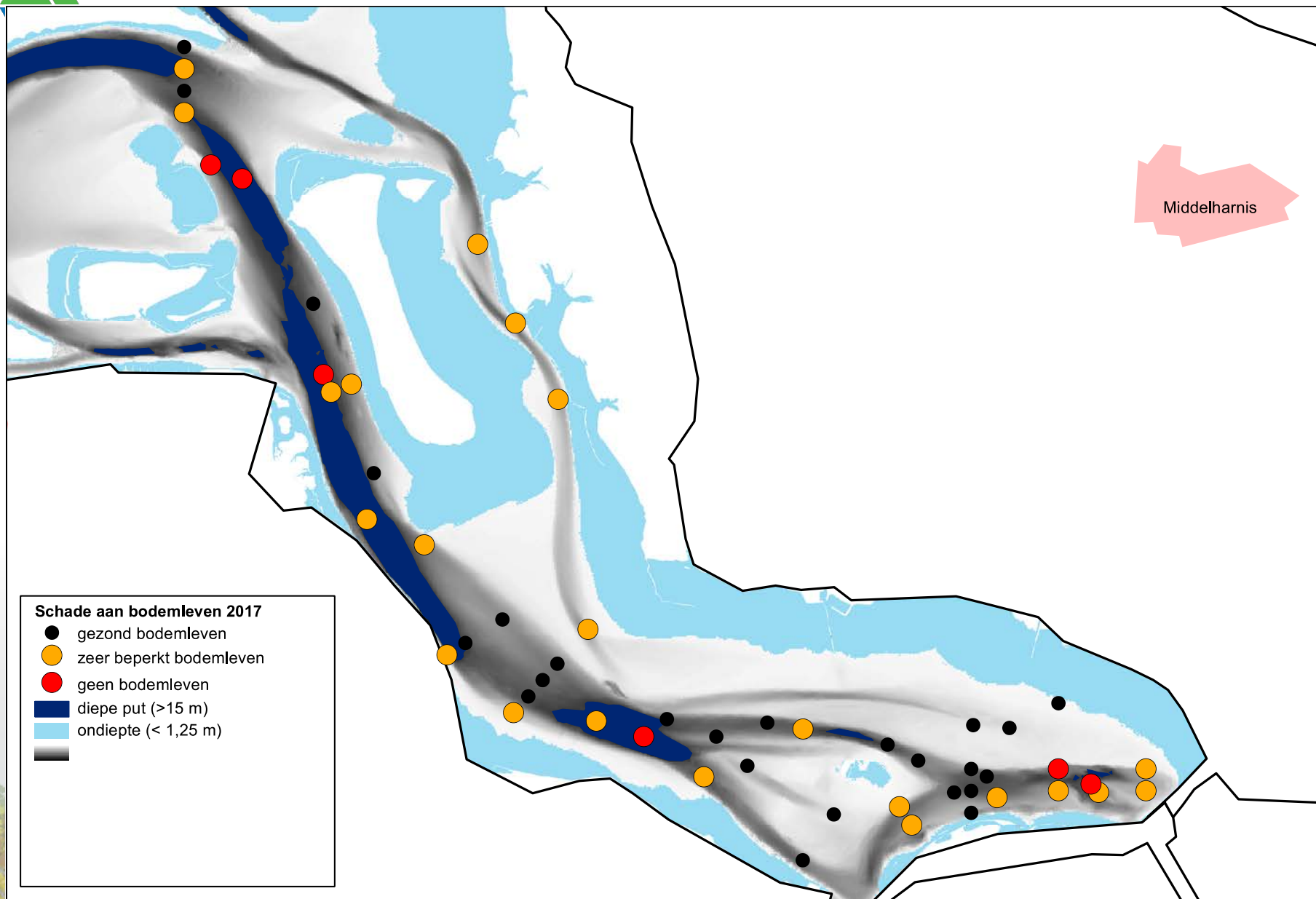


Figuur 3.6 Locaties met hoge bedekkingen (51-100%) van witte matten nabij de spuisluis (links locatie 400, 12.3 meter diep; rechts locatie 2014, 4.5 meter diep).











Zuurstof bij bodem

