

Veni, Vidi, Vici

Harry Hosper en de losse eindjes van
Drusus en Lely

Ruurd Noordhuis

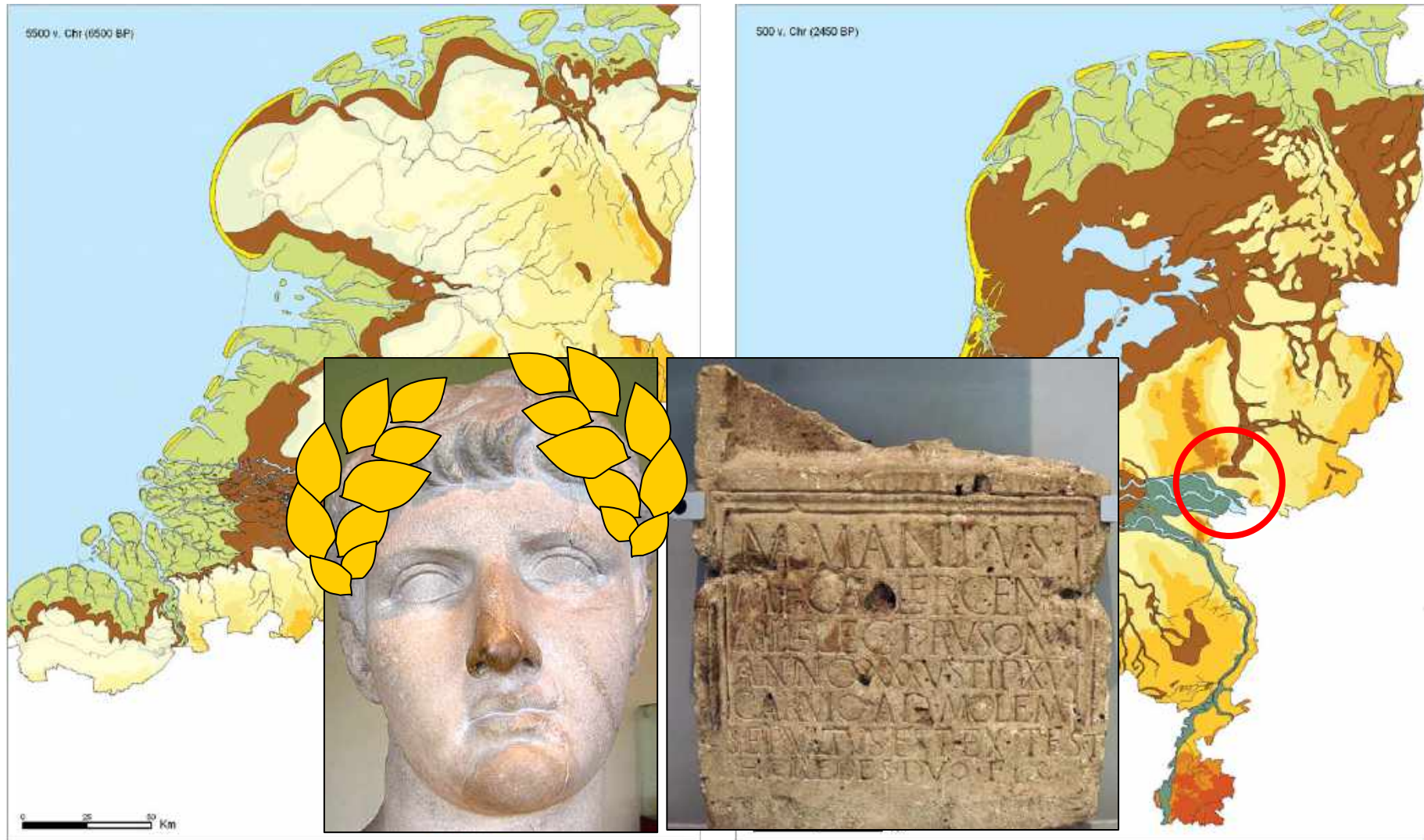
2 december 2011



IJsselmeergebied: Sterk Veranderde Wateren



Romeinen: aantakking op Rijnstroomgebied



Vikingen: introductie mosselsubstraat



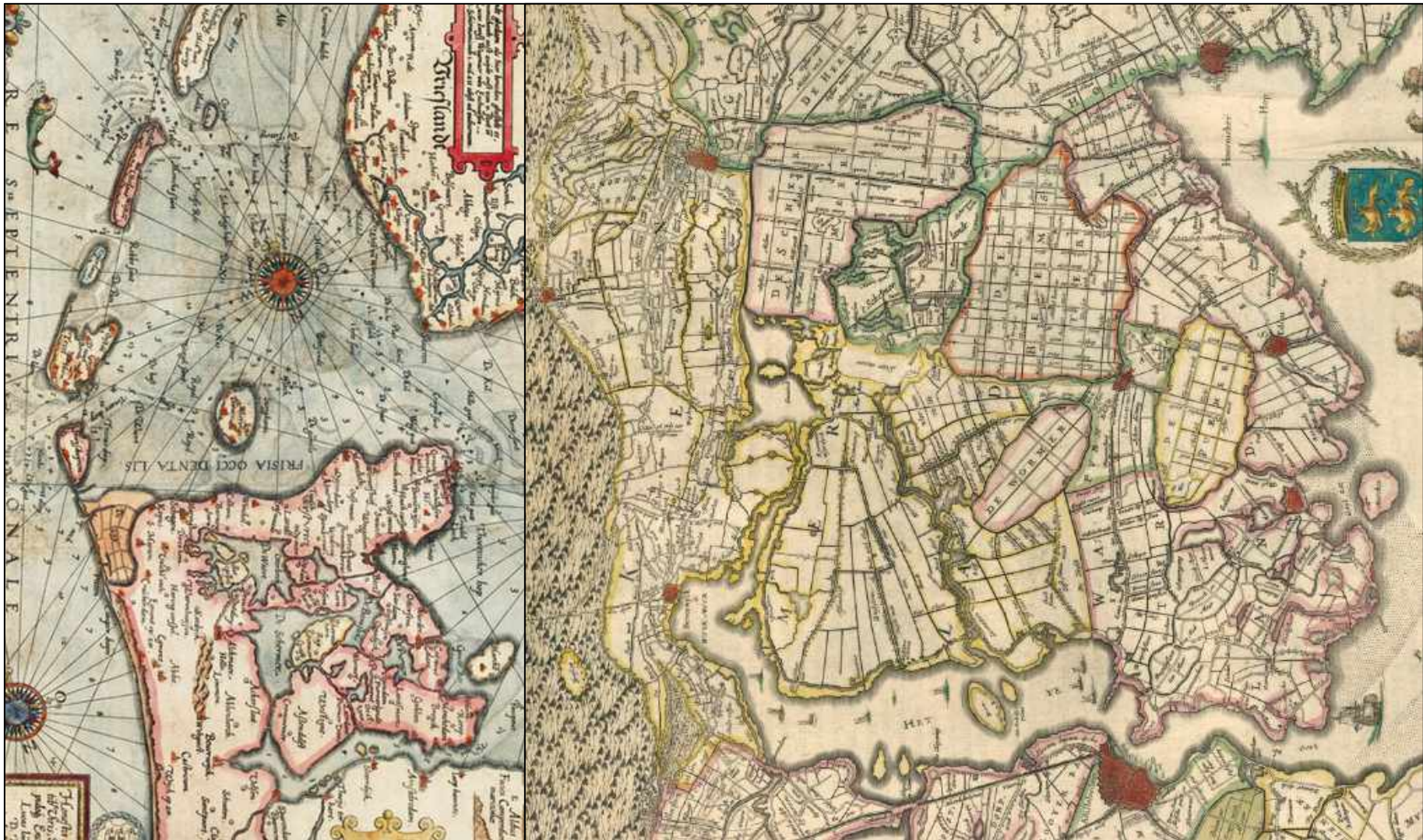
Strandgapers



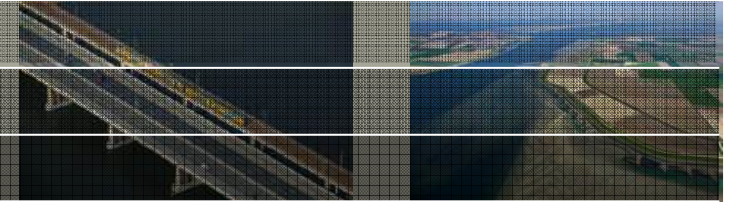
2 december 2011

Deltares

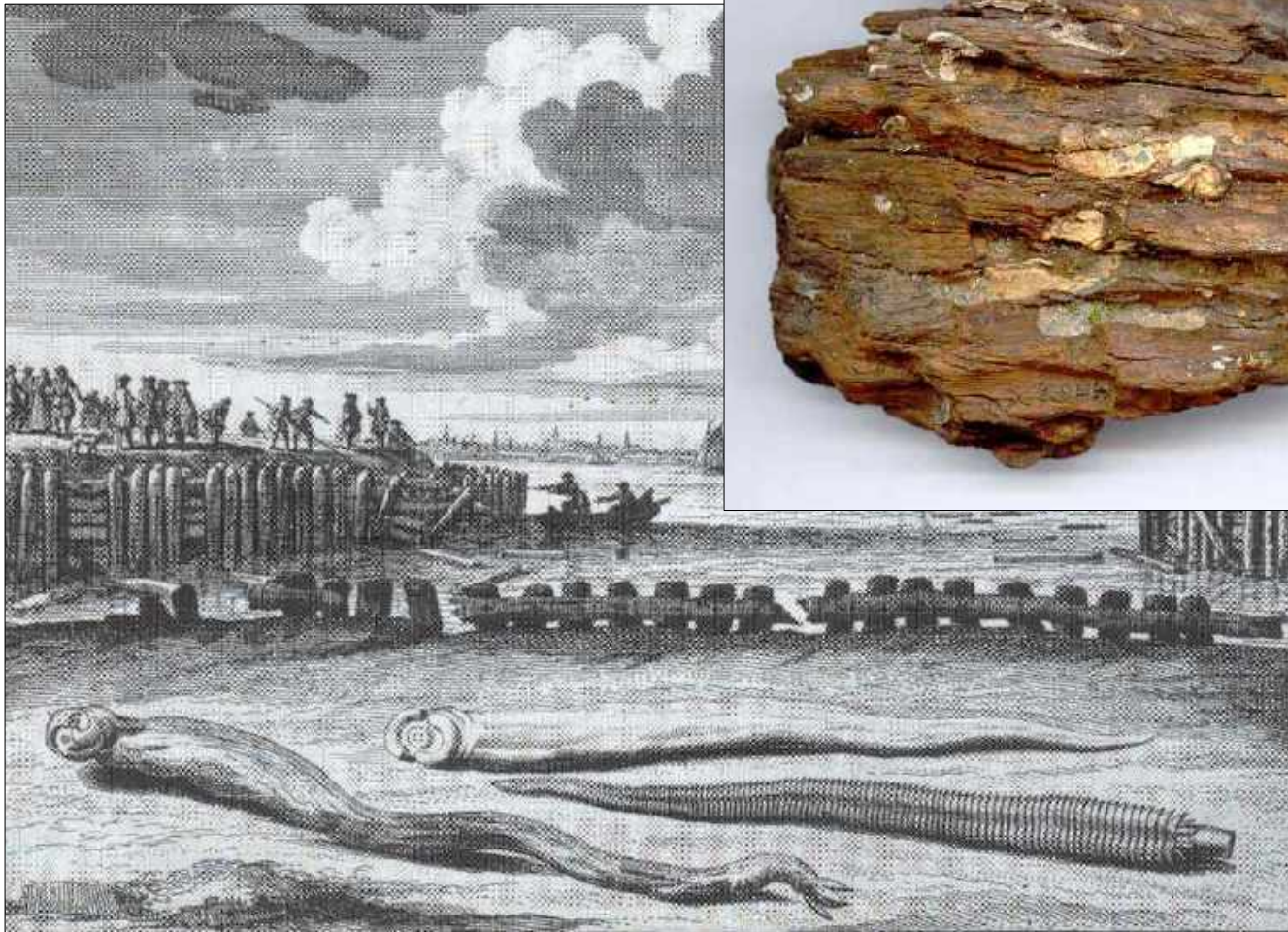
Vroege Middeleeuwen: stormvloeden en bedijking



VOC: stenen dijken



Paalworm epidemie 1731

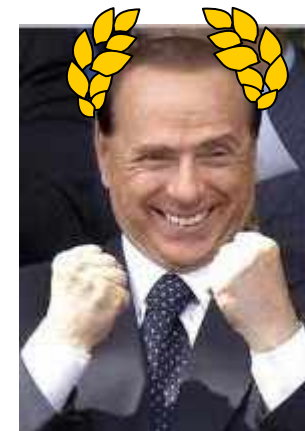
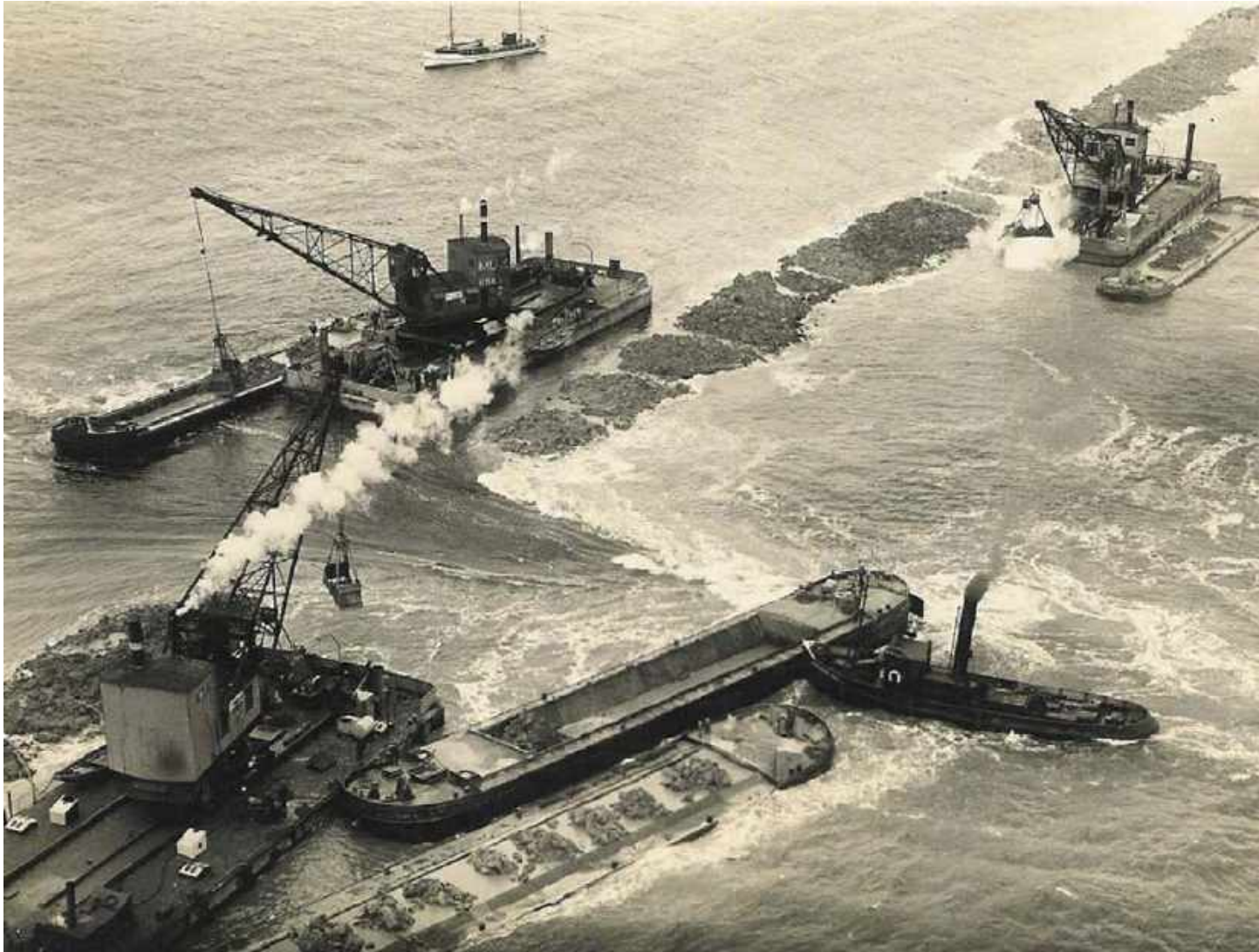


paalworm verandert aanzicht IJsselmeergebied



Deltares

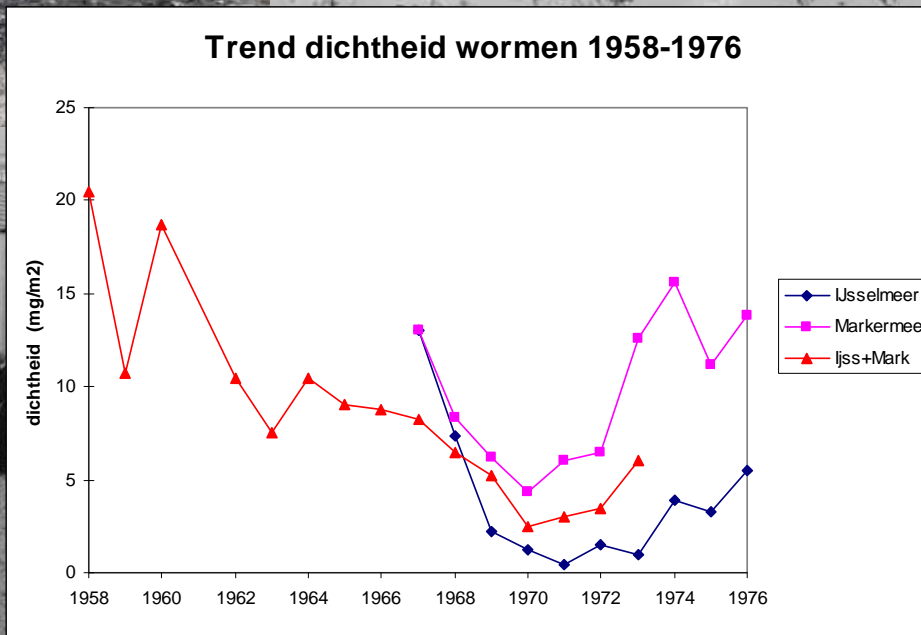
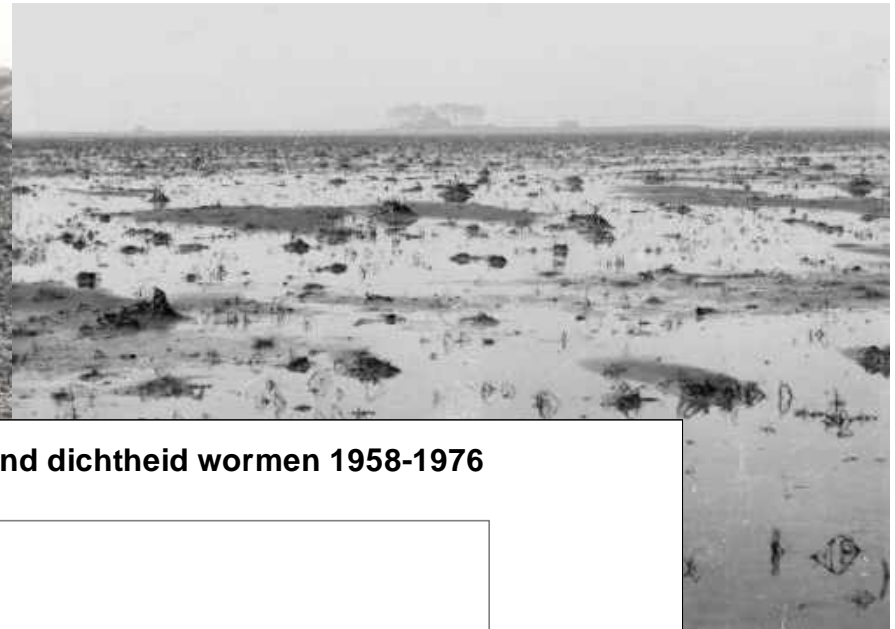
1932: Afsluiting Zuiderzee, verzoeting, accumulatie



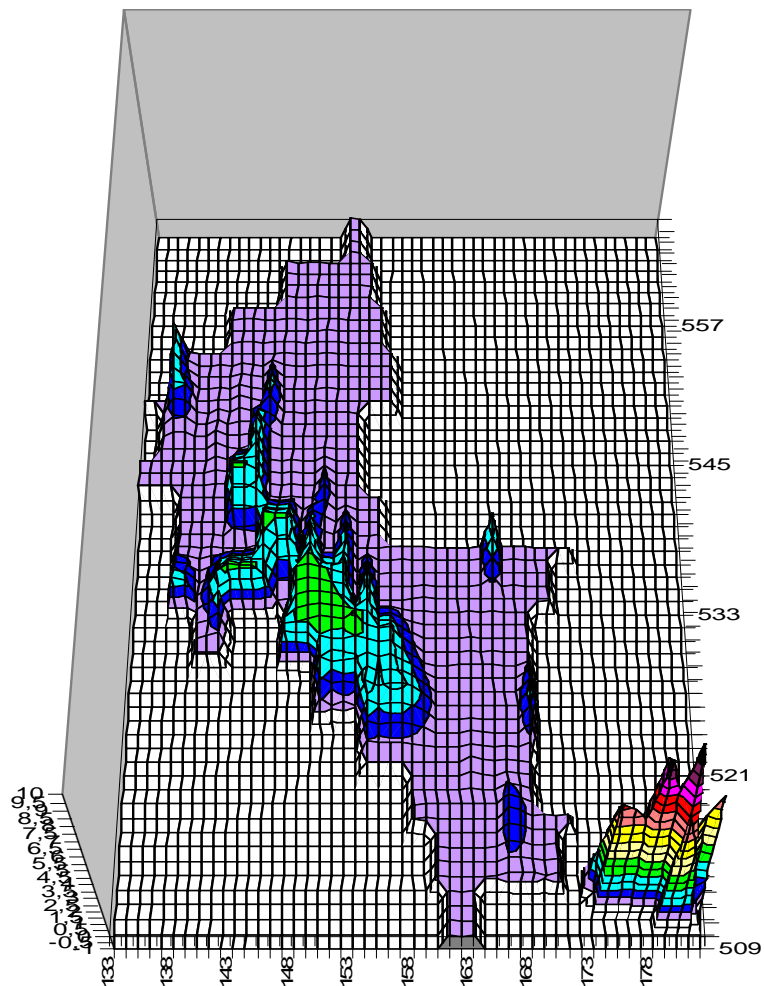
Inpoldering en compartimentering



Compartimentering en verontreiniging



Accumulatie zware metalen



Kwik in de bodem, 1979



Keteloog 2010

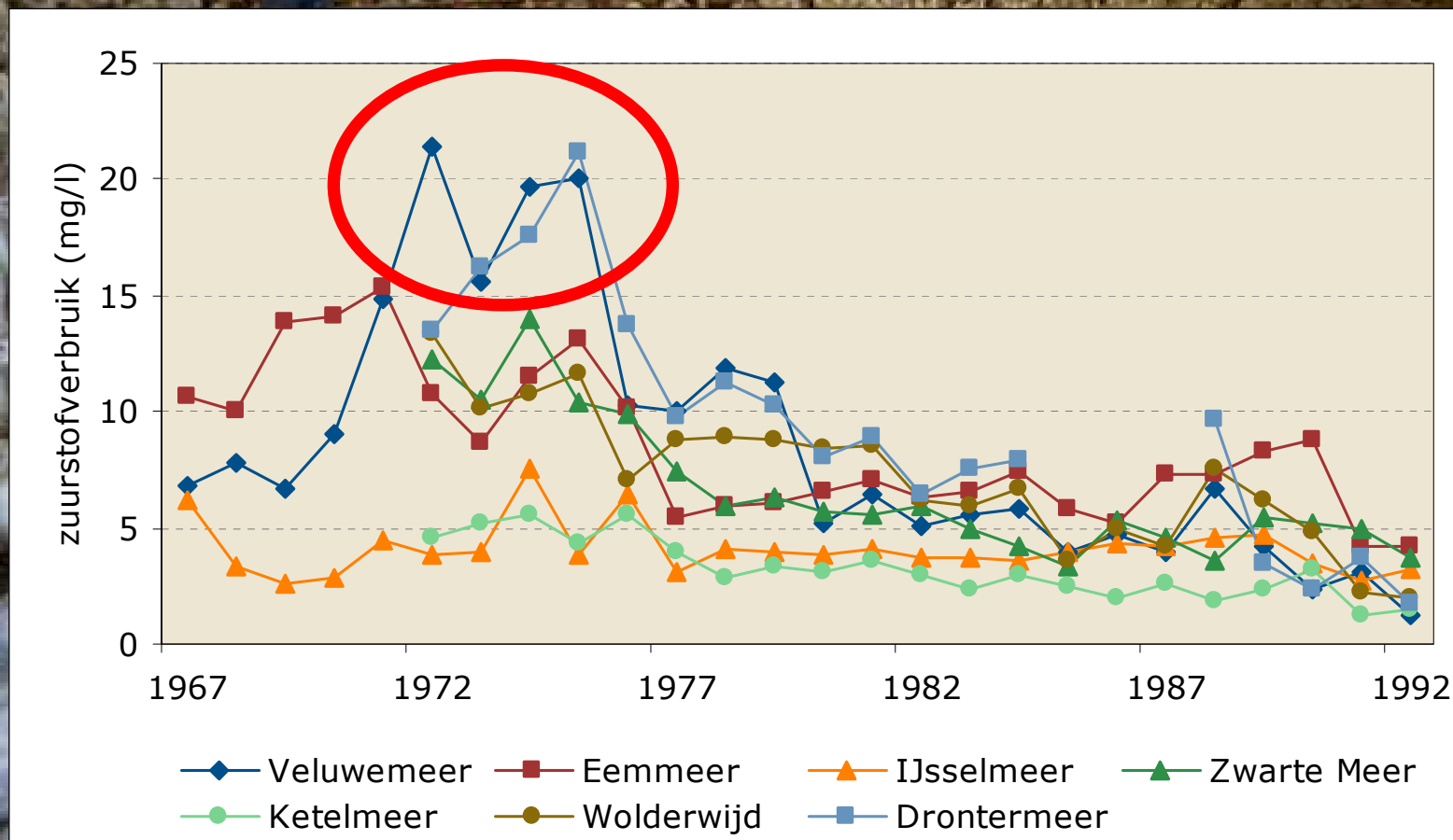
Eutrofiering



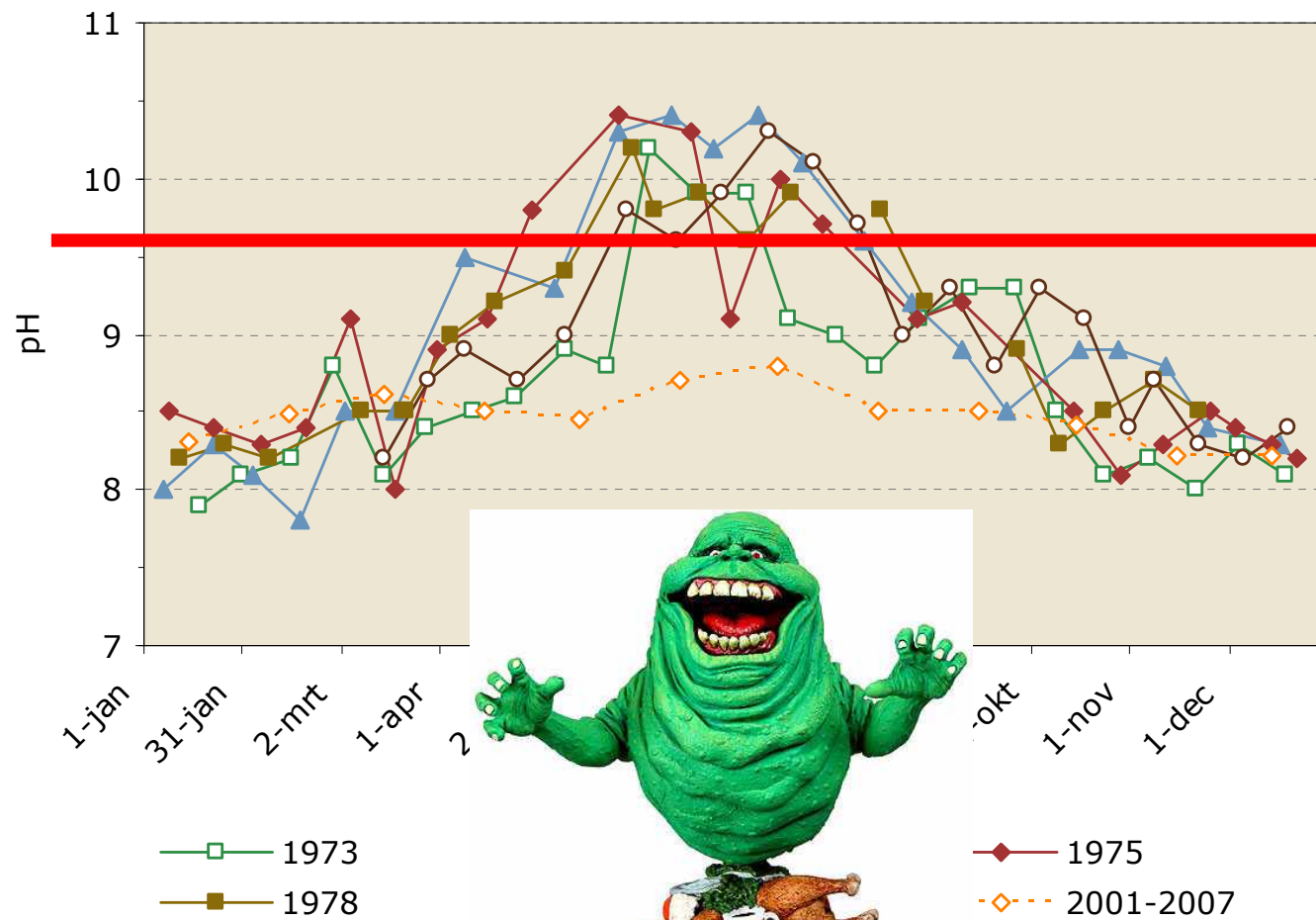
Veluwerandmeren: organische verontreiniging



Ongezuiverde lozingen: hoog zuurstofverbruik



Vergelijking Lake Natron: Oersoep Veluwemeer



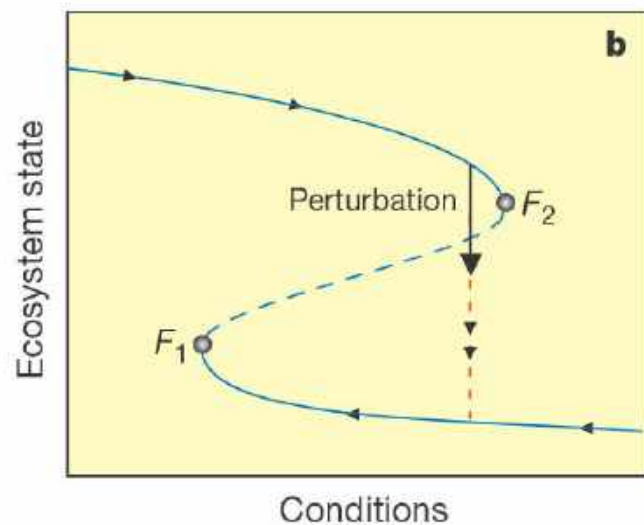
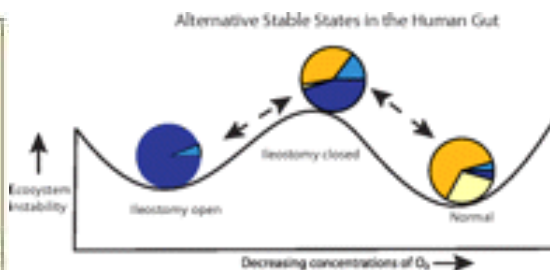
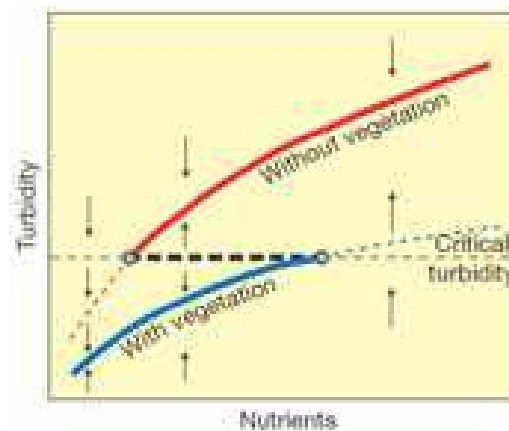
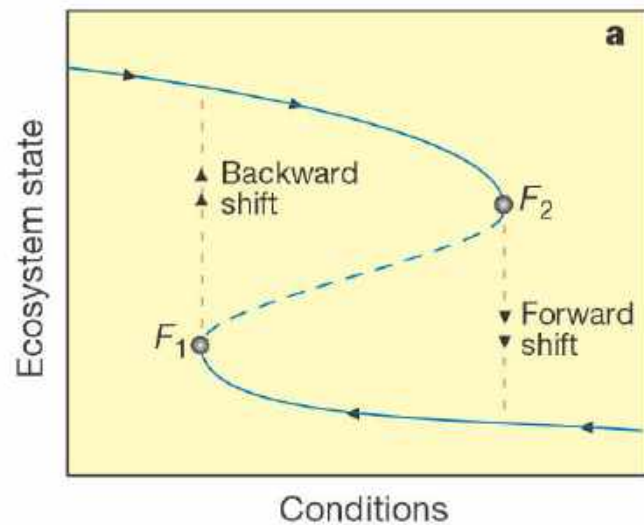
Werkterrein BOVAR: Grootste uitdaging regio



1 November 1986: Sandoz-ramp



Fundamenteel wetenschappelijk onderzoek



Deltares

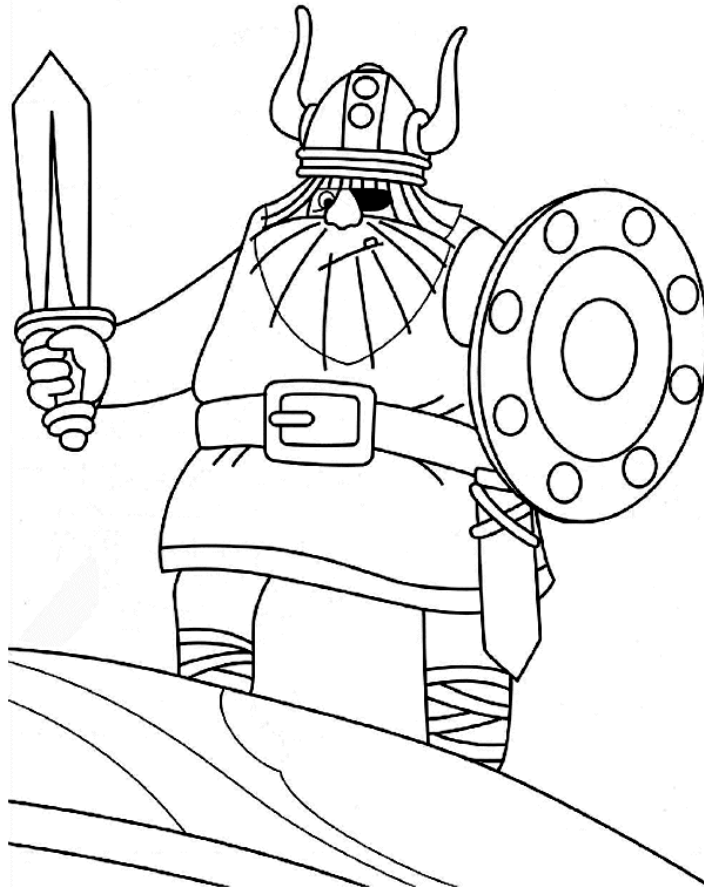
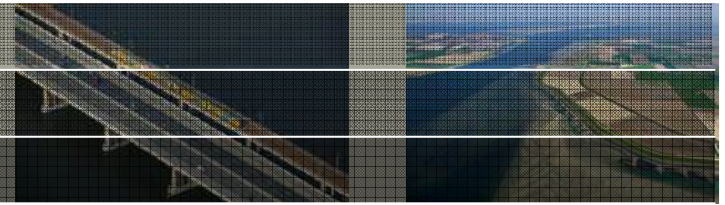


Klok C5. Hard tegen vuil.



Vriendelijk
voor
het milieu.

Internationale samenwerking





Actief Biologisch Beheer



Wolderwijd visserij

1990

Samenvatting verloop algenvolume Veluwemeer

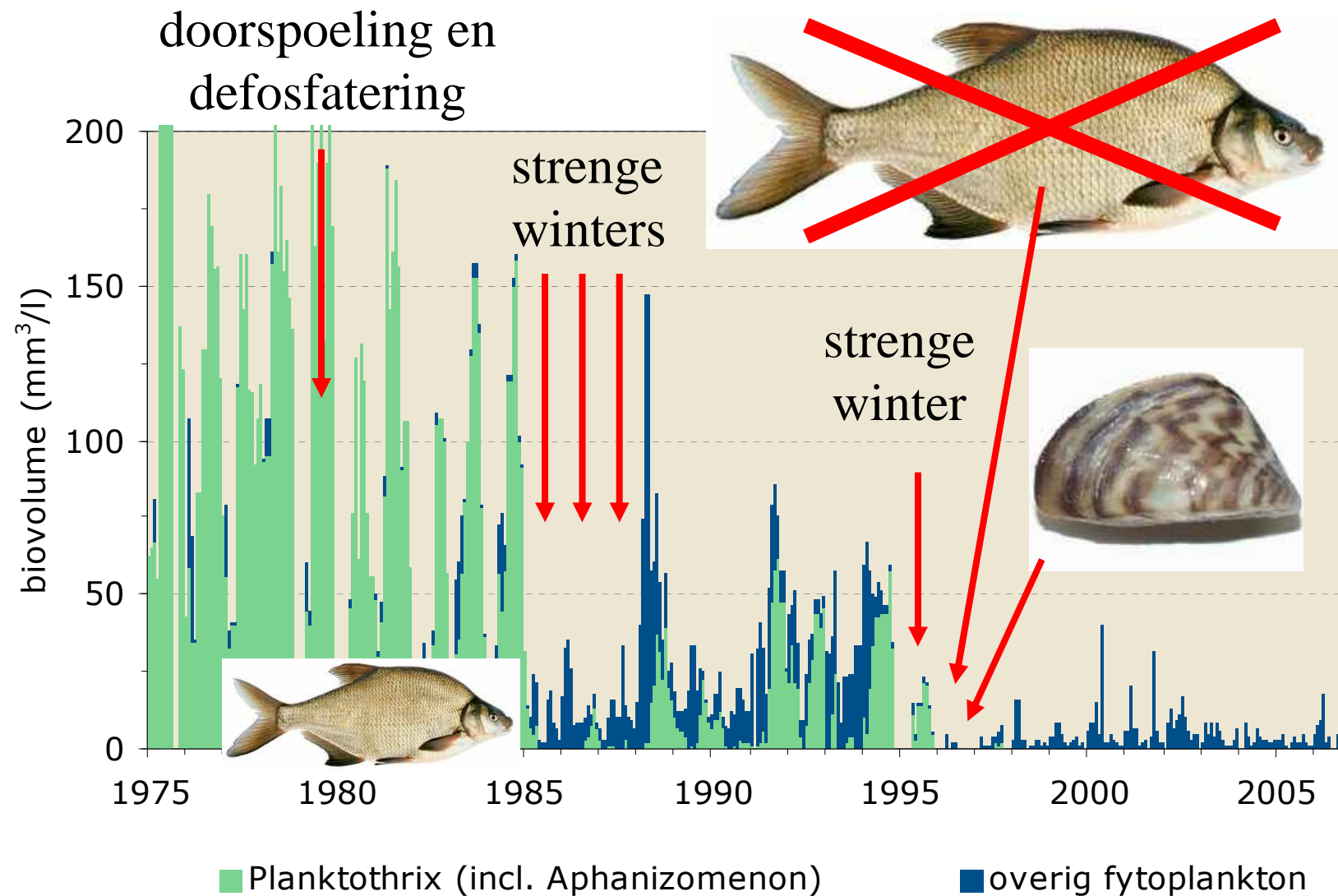
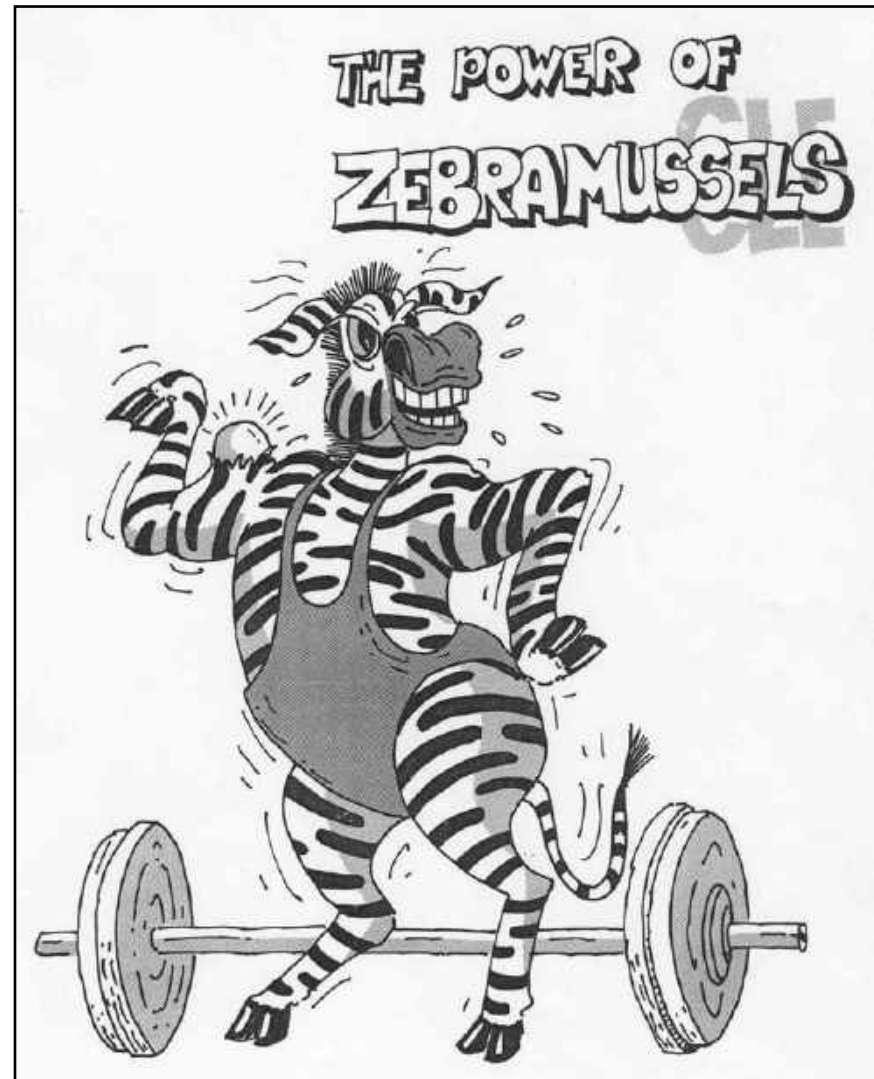


ABB Mosselen

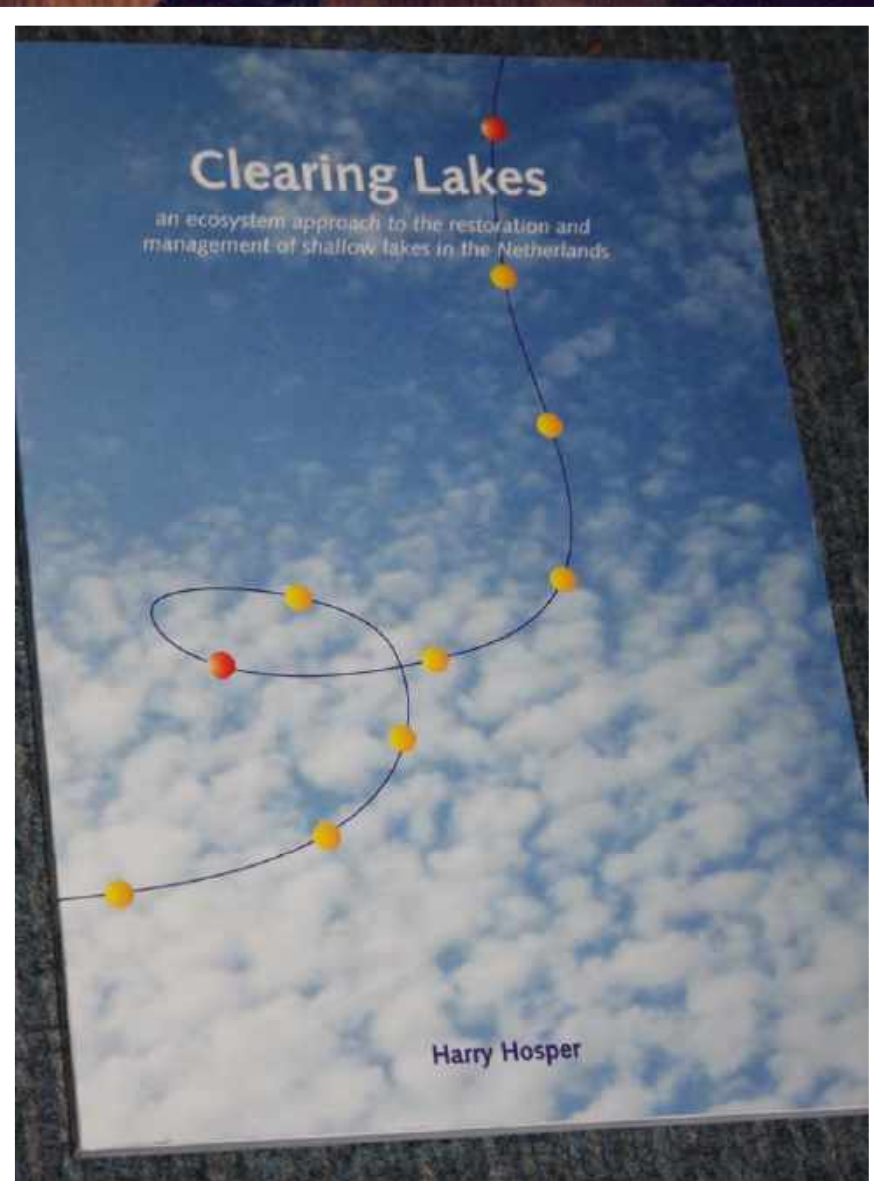


Vierde spoor: Infiltratie gemeenschap Ermelo



Resultaat: Spectaculair Ecologisch Herstel



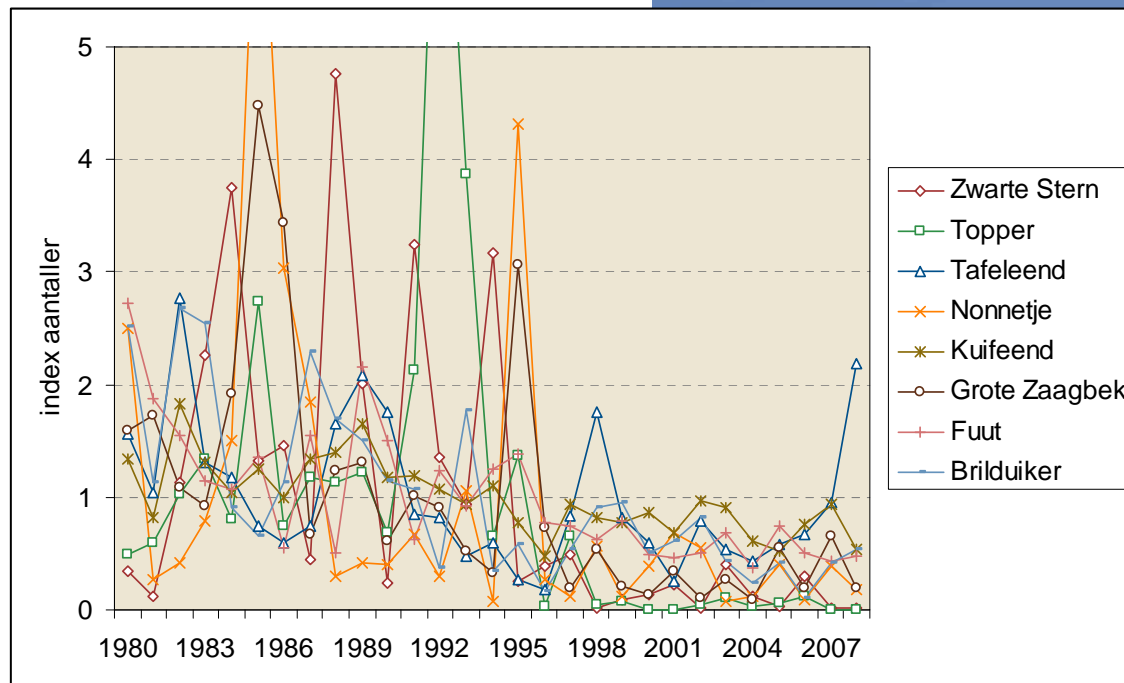




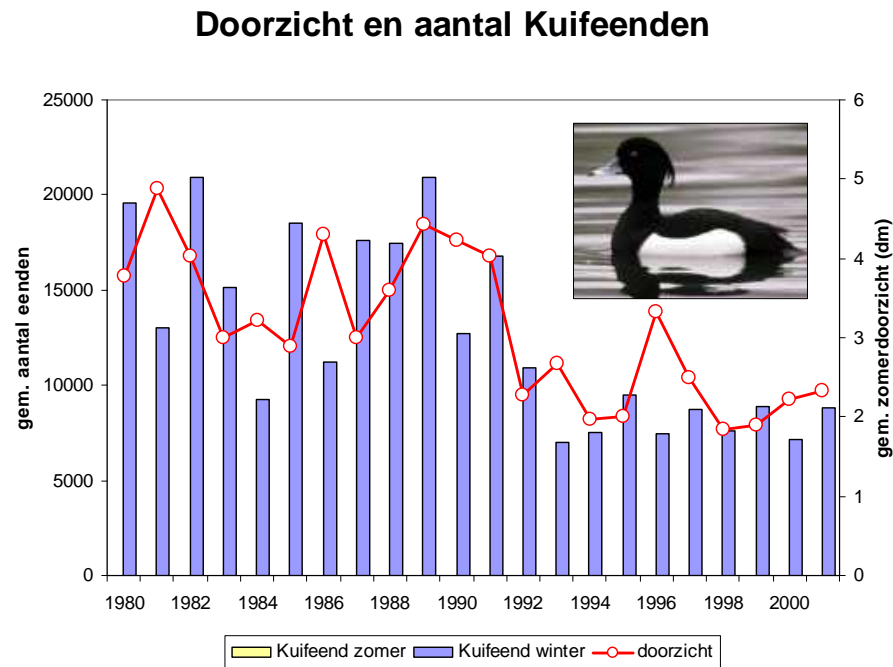
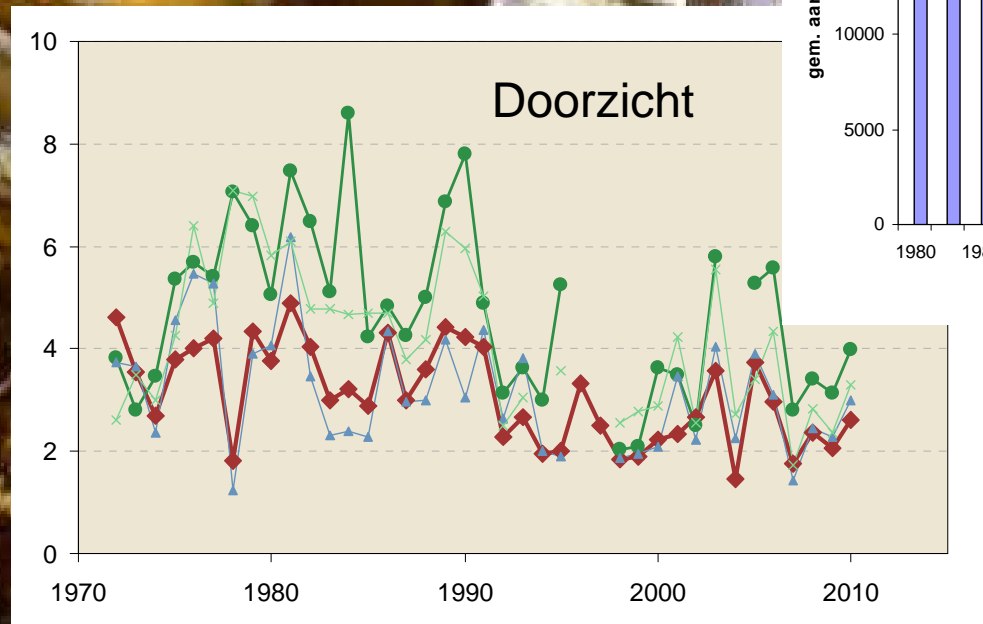
Maar What about the Great Lakes?



Randmeervogels “weggezogen” uit Markermeer?



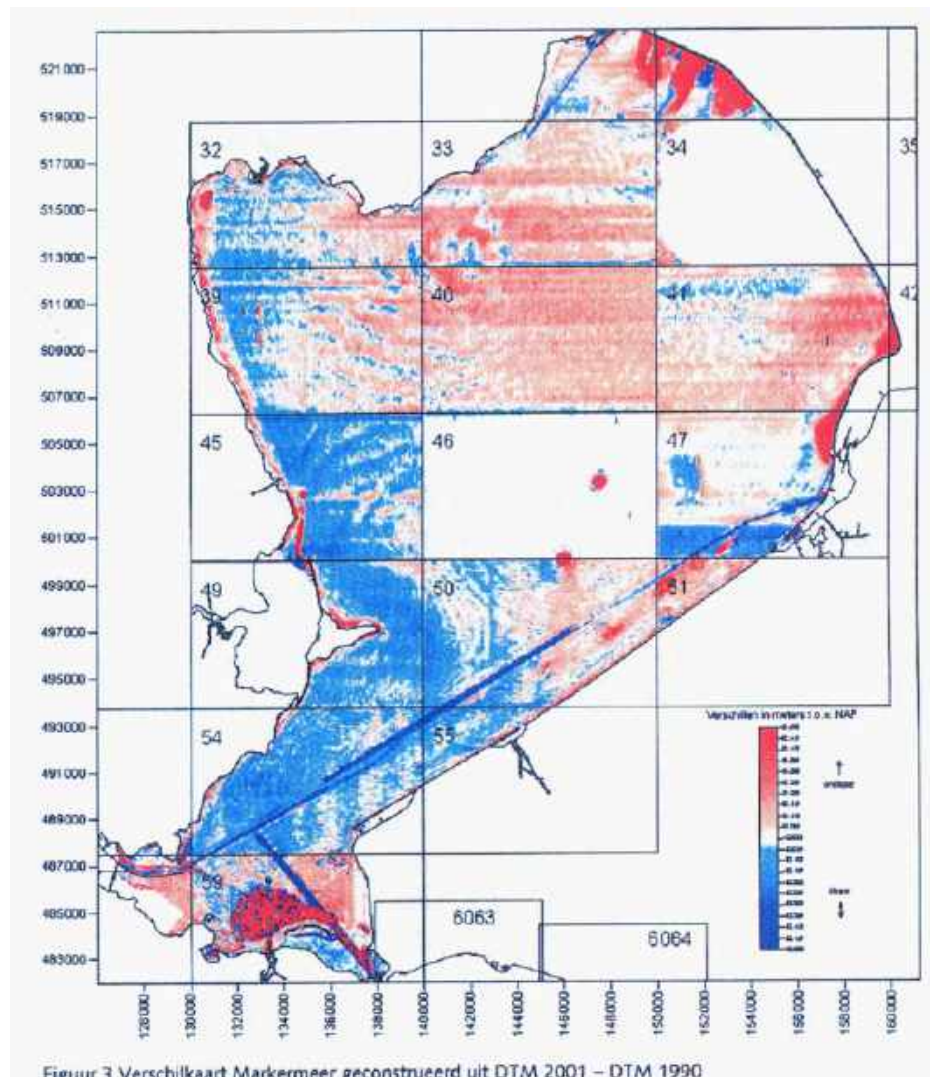
Markermeer/IJmeer: Afname mosselen



Decaluwé Patrick

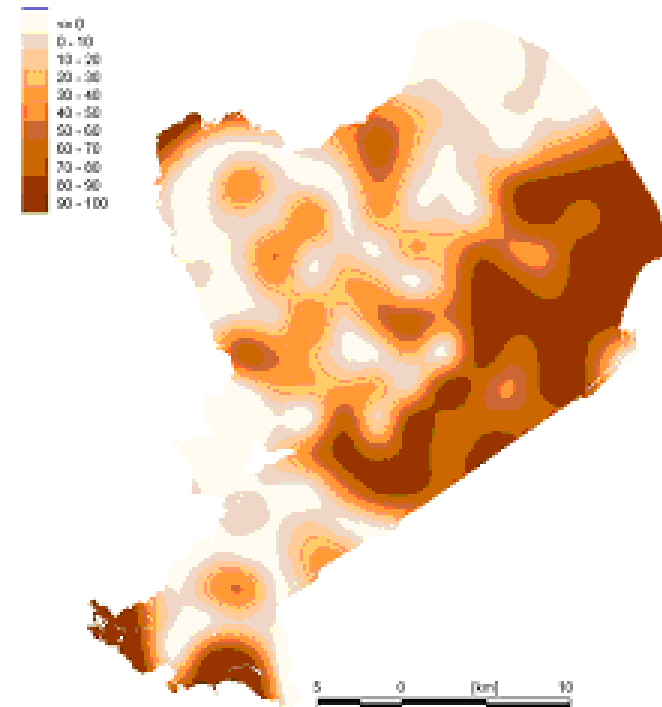
Deltares

Lange termijn gevolgen van afsluiting: slib



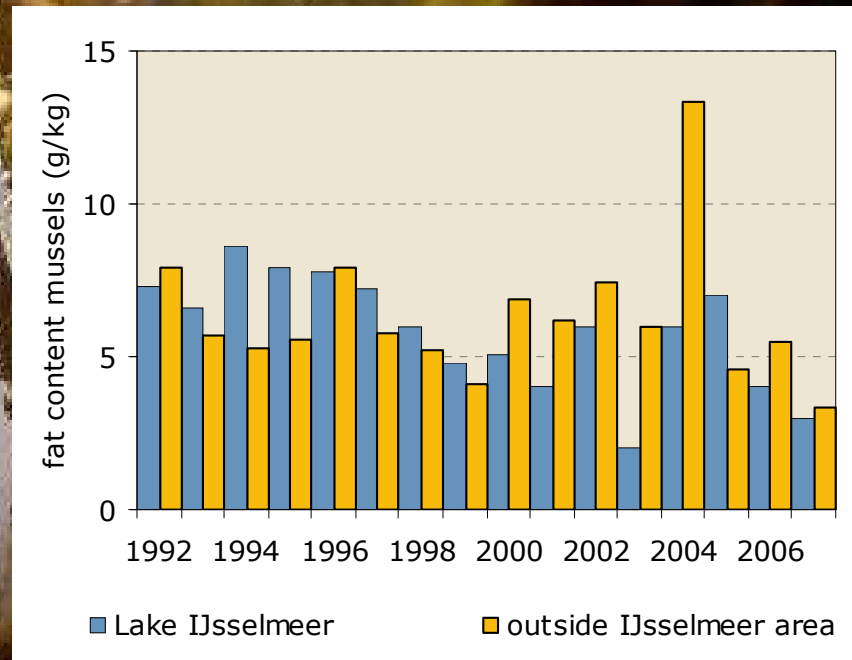
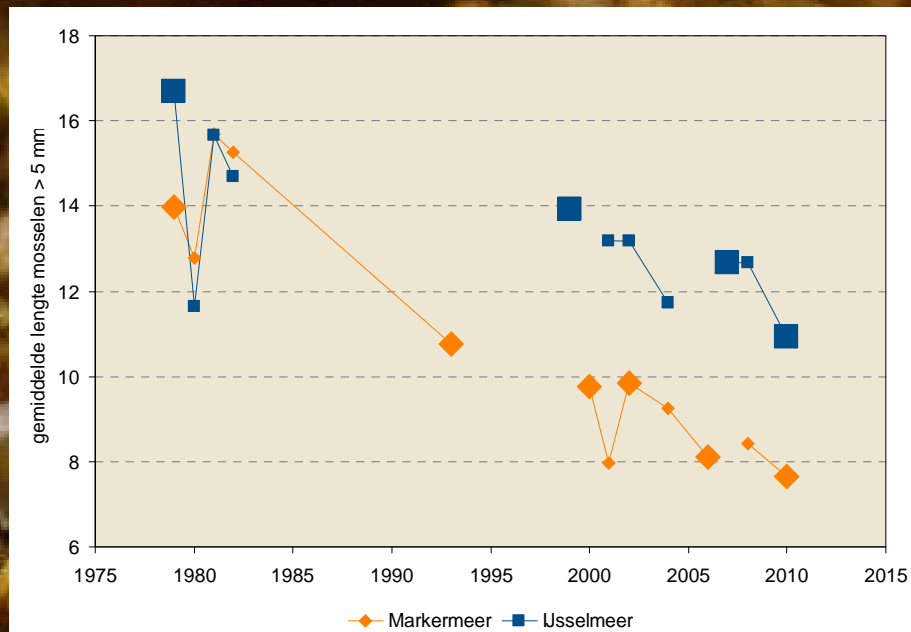
Figuur 3 Verschilkaart Markermeer geconstrueerd uit DTM 2001 – DTM 1990

% slib in de bodem



sedimentatie
erosie

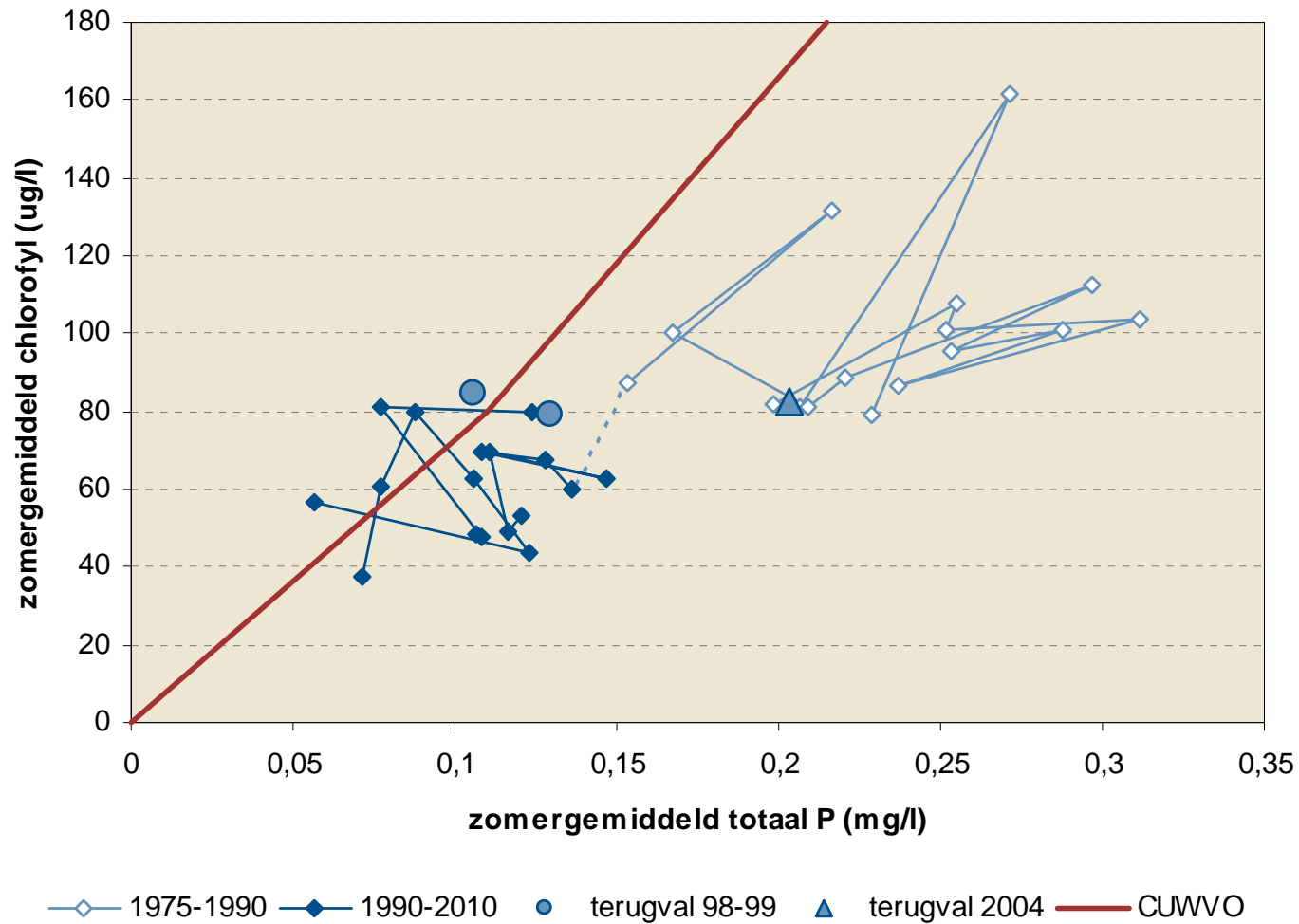
Maar ... ook in IJsselmeer neergaande trends



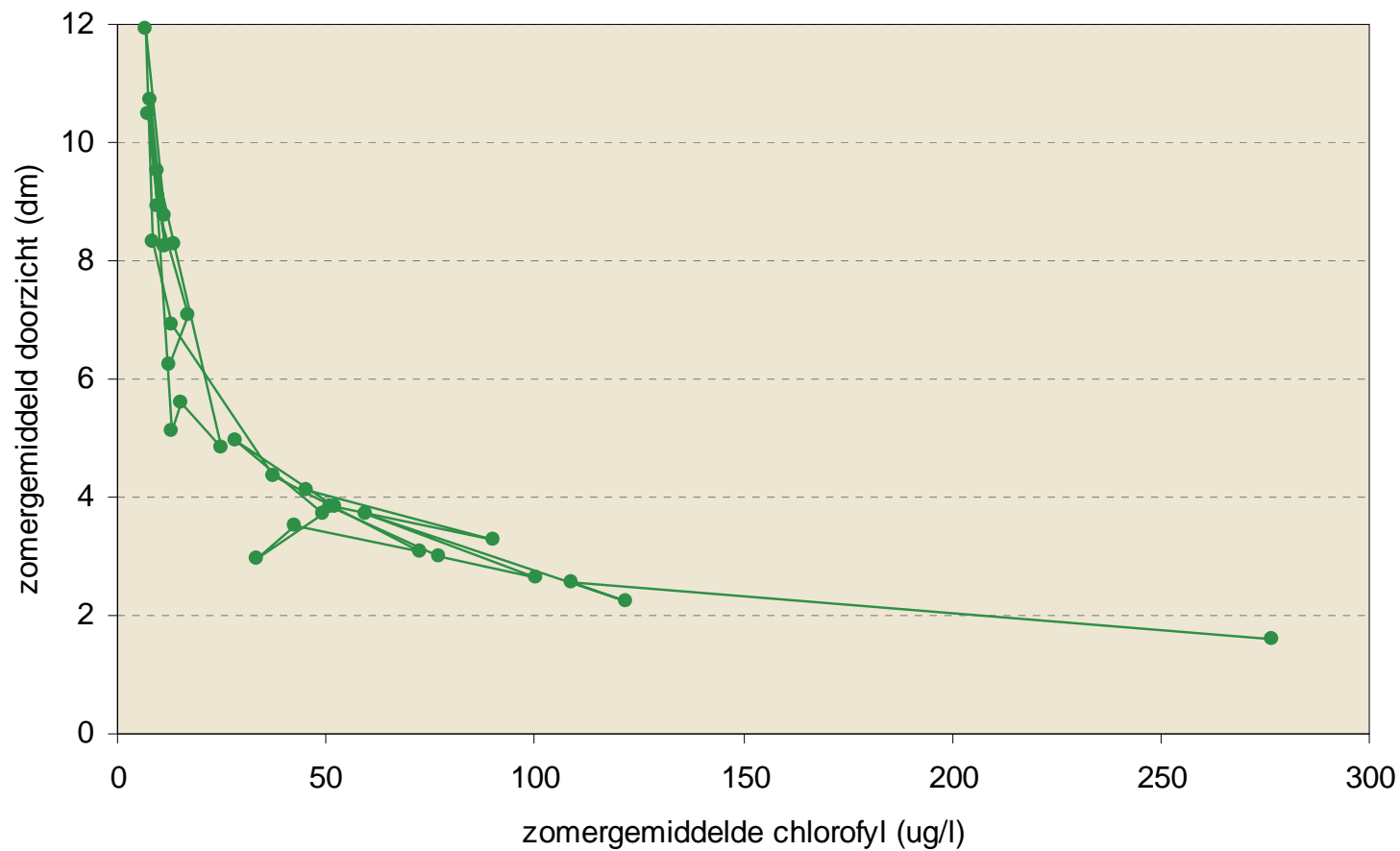
Decaluwé Patrick

Deltares

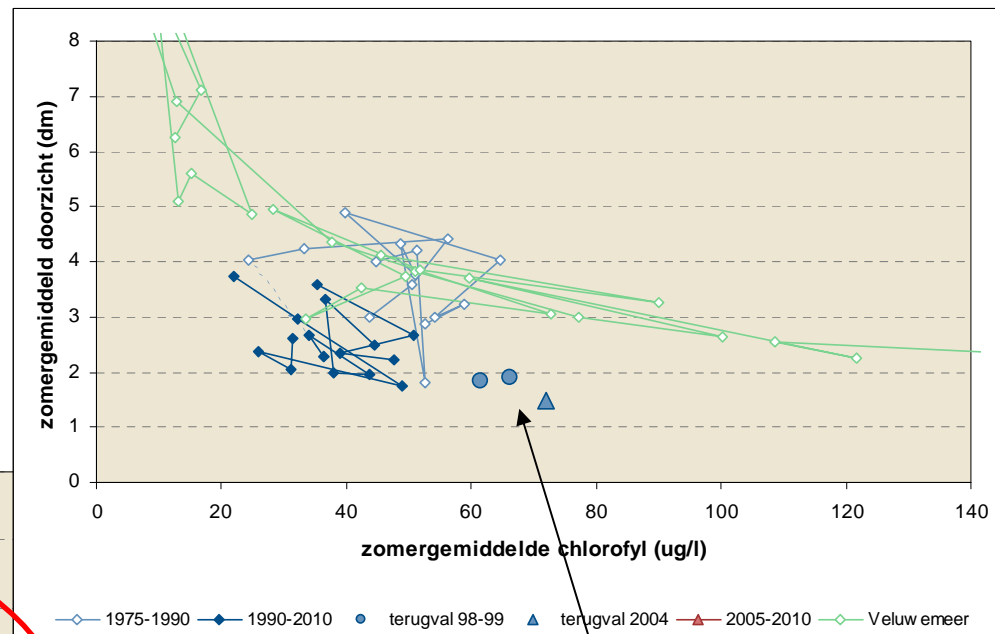
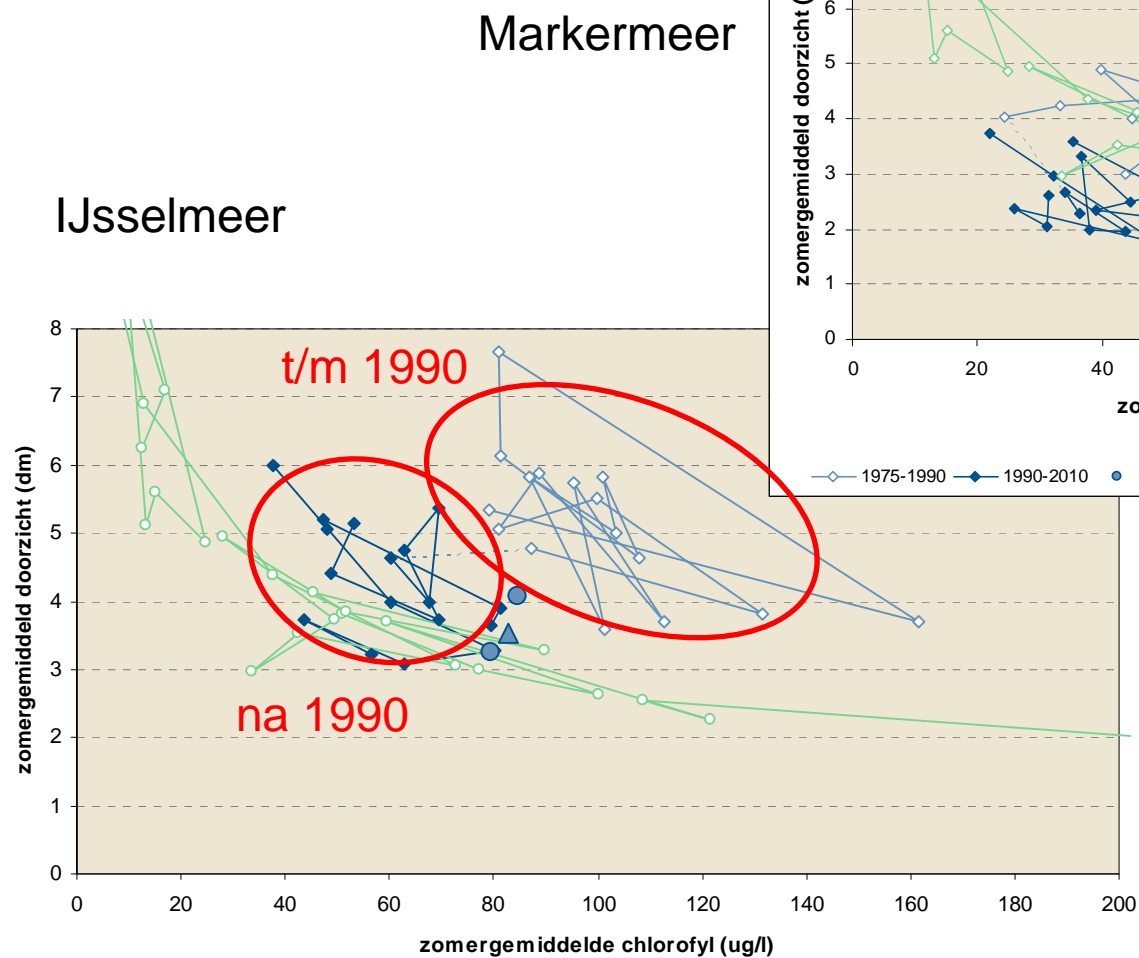
Chlorofyl neemt af met P: Afname prim. productie ..



Relatie chlorofyl – doorzicht Veluwerandmeren



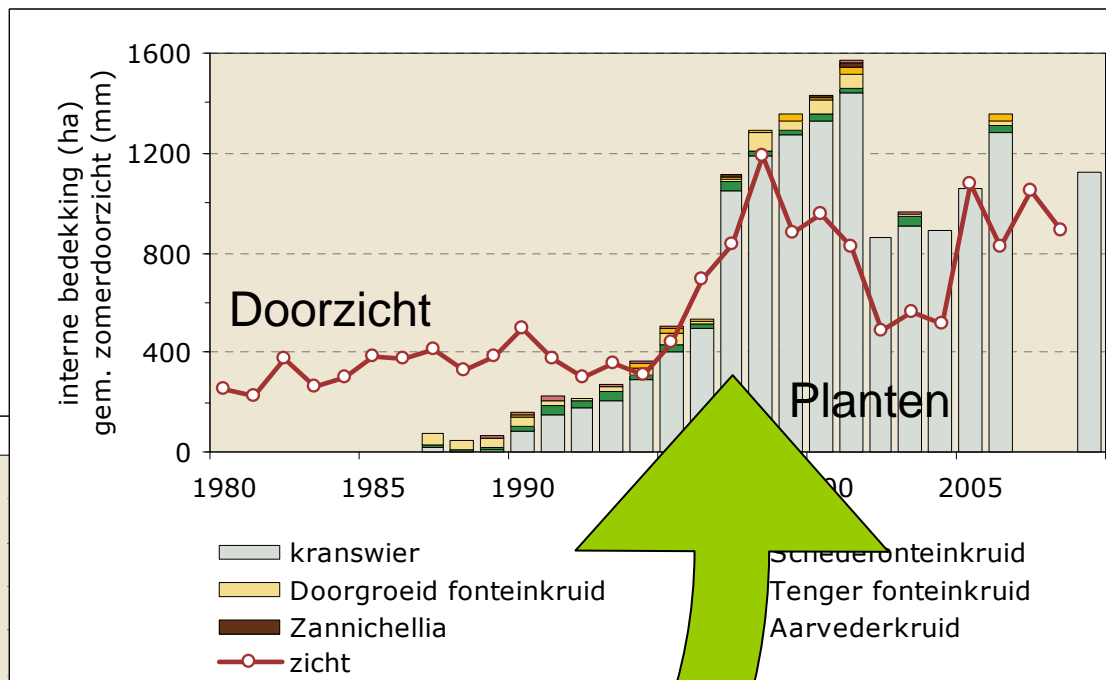
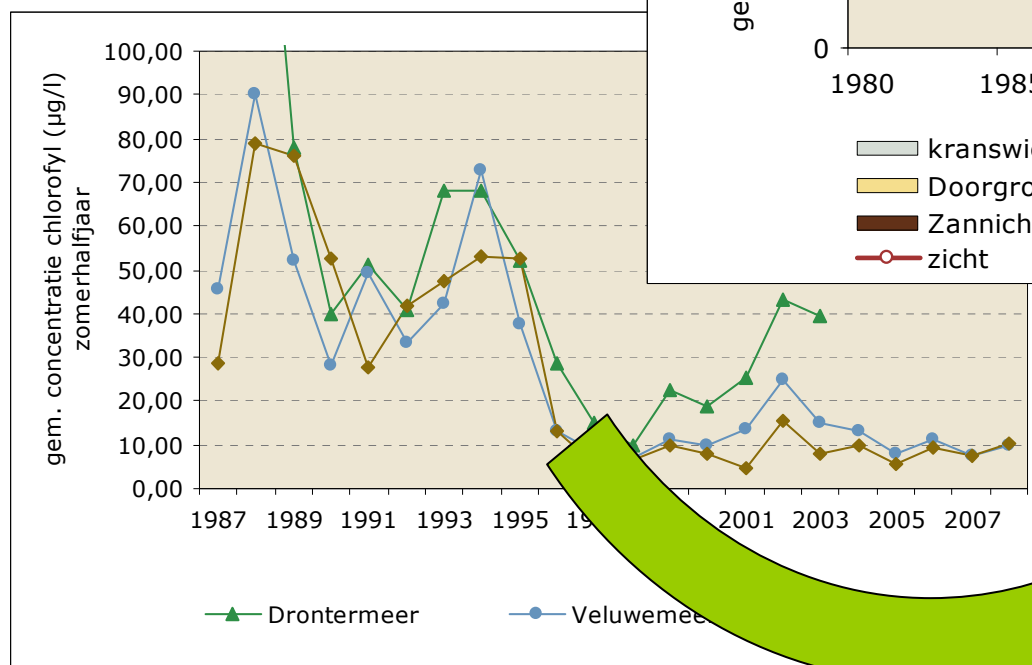
Relatie chlorofyl – doorzicht IJssel/Markermeer



tijdelijke toename P en chlorofyl
leidt niet tot terugkeer oud
doorzicht; nieuwe relatie

Randmeren: primaire productie naar planten

Chlorofyl



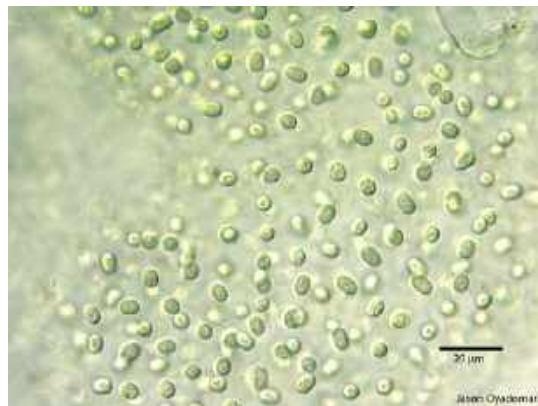
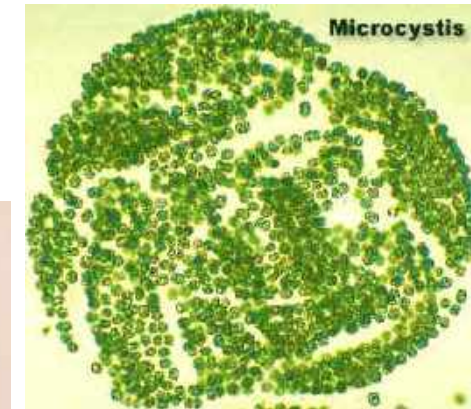
Oorzaak switch in samenstelling plankton?

Fytoplankton jaren zestig: dominantie Aphanizomenon, Microcystis, Tribonema

Huidig fytoplankton: grote kolonies van kleinere blauwalgen

- Andere optische eigenschappen: "Package effect"

-Andere zinksnelheid / relatie met wind



Aphanocapsa



Aphanothece

2 december 2011



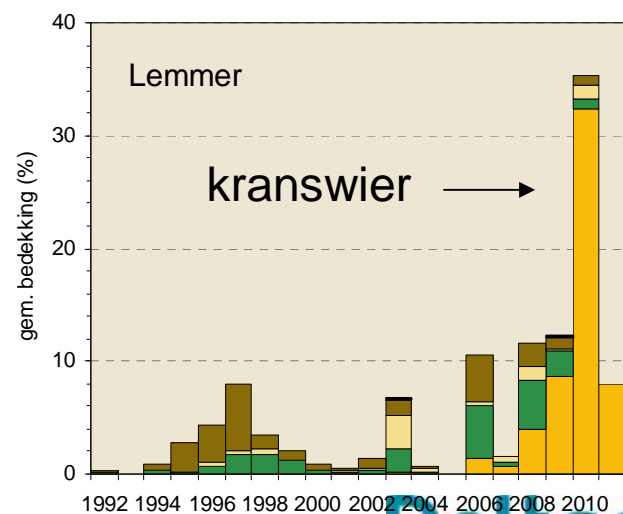
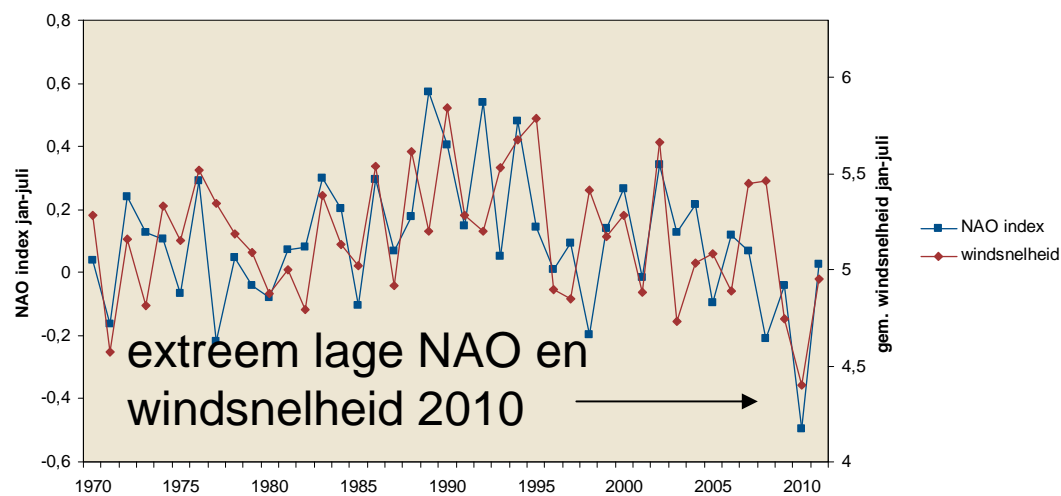
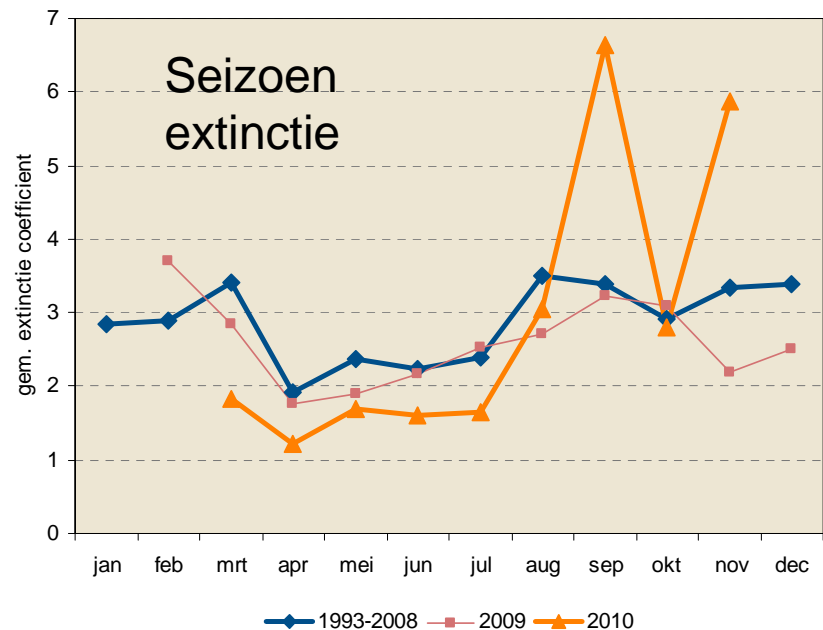
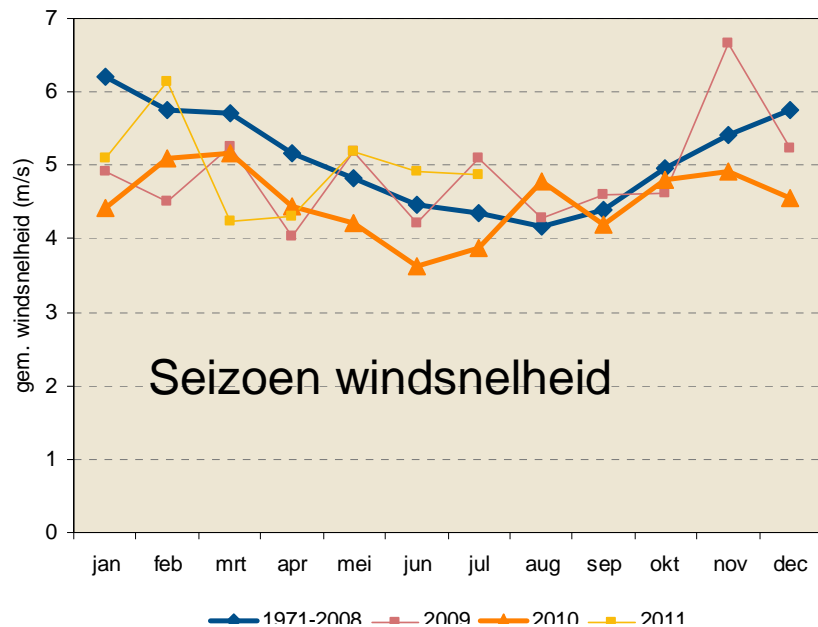
Cyanodictyon



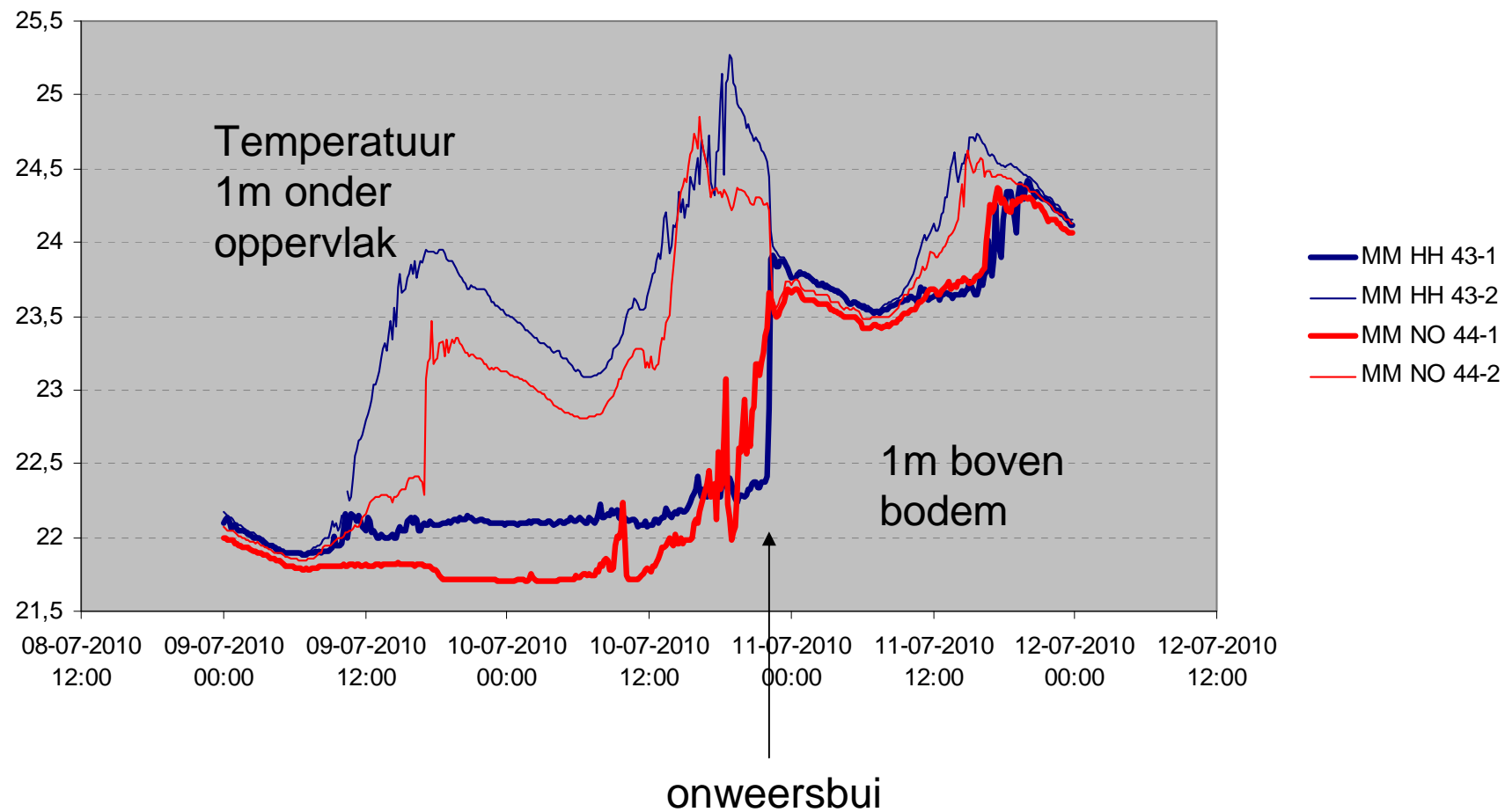
Tetrastrum

Deltares

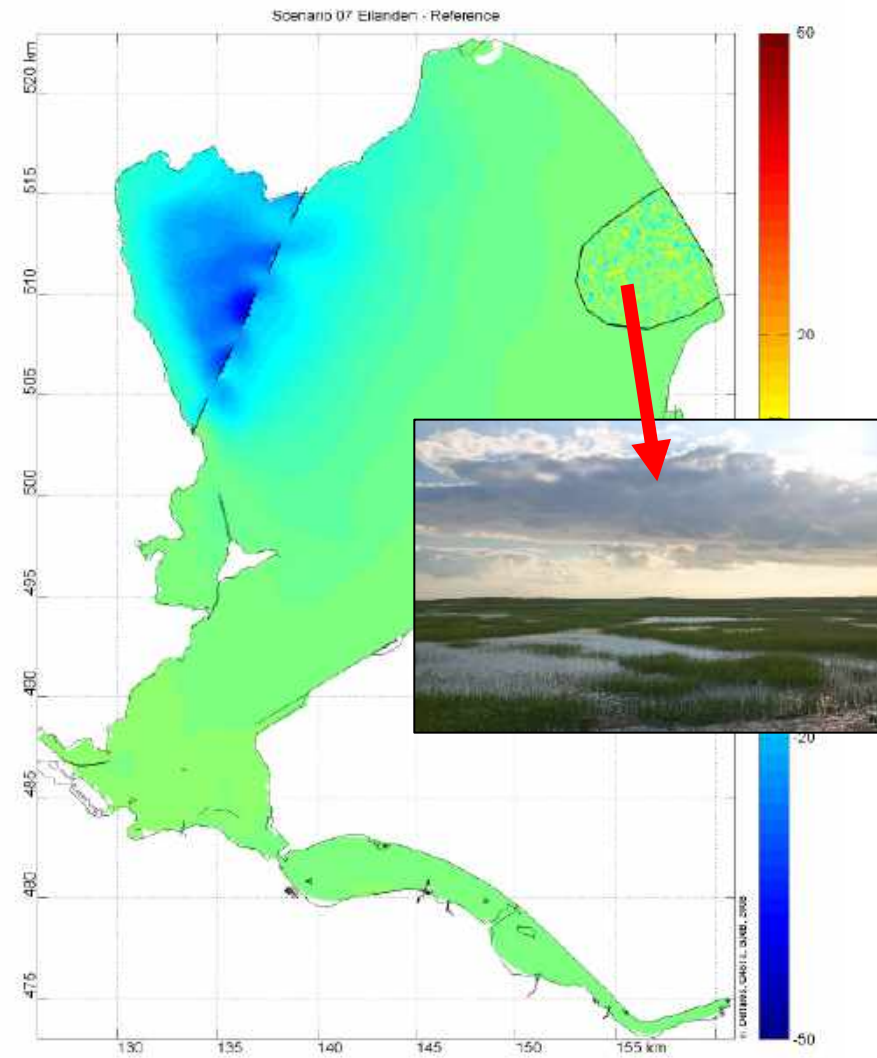
Planten lichtbeperkt: klimaatinvloed via wind



Stratificatie: zuurstoftekort bij hittegolf?

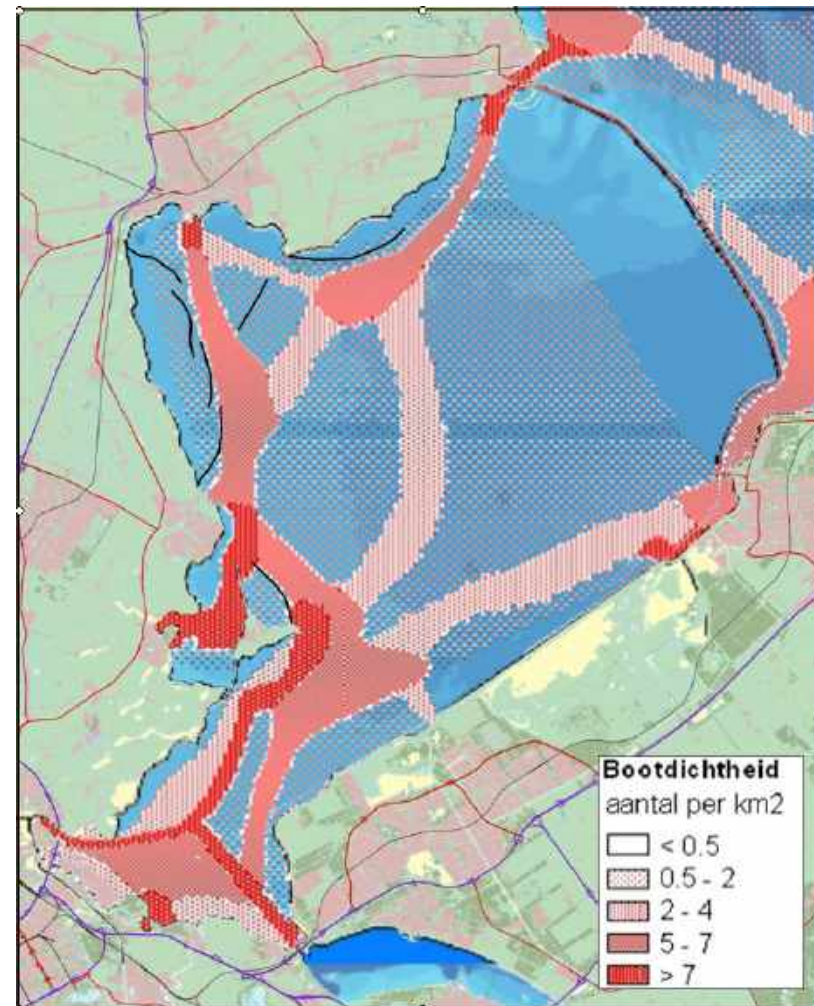
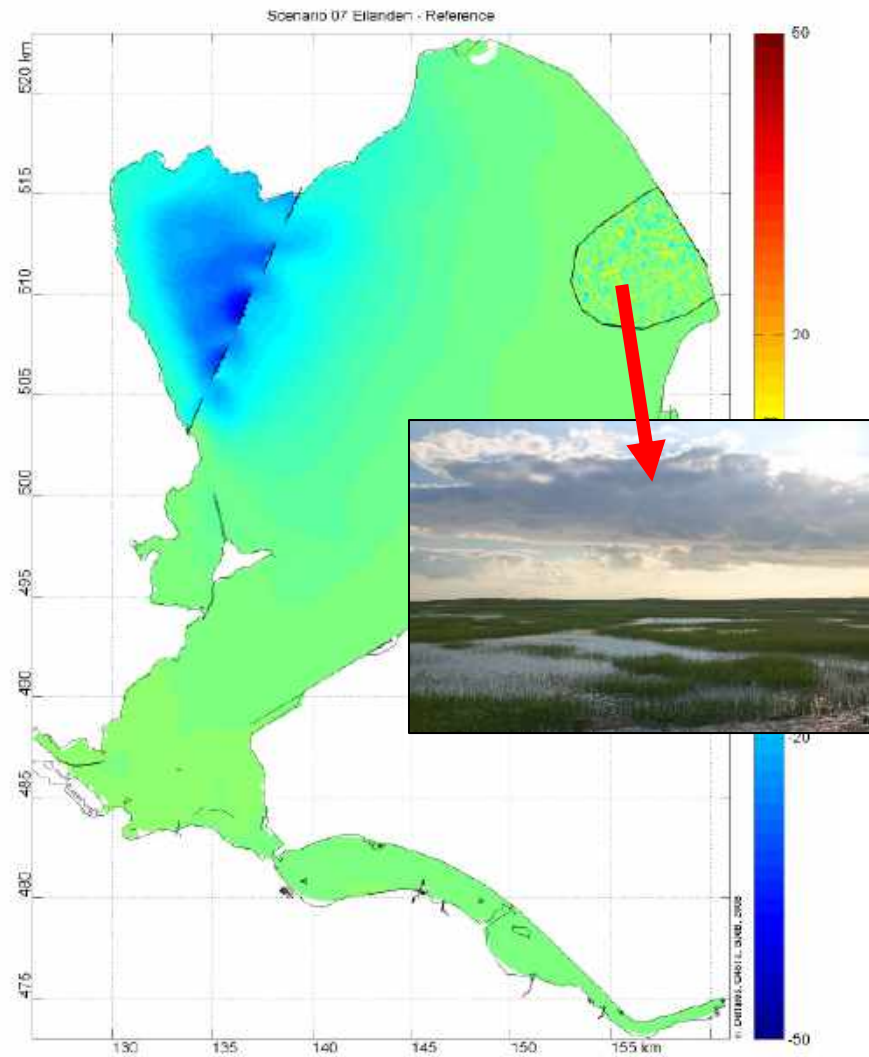


Maatregelen?



Deltares

Inrichting: luwtegebieden en land-water overgang



Deltares

Compensatie door opmars nieuwe exoten?

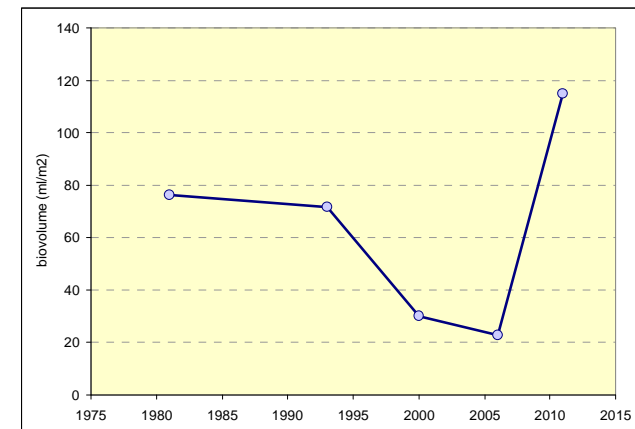
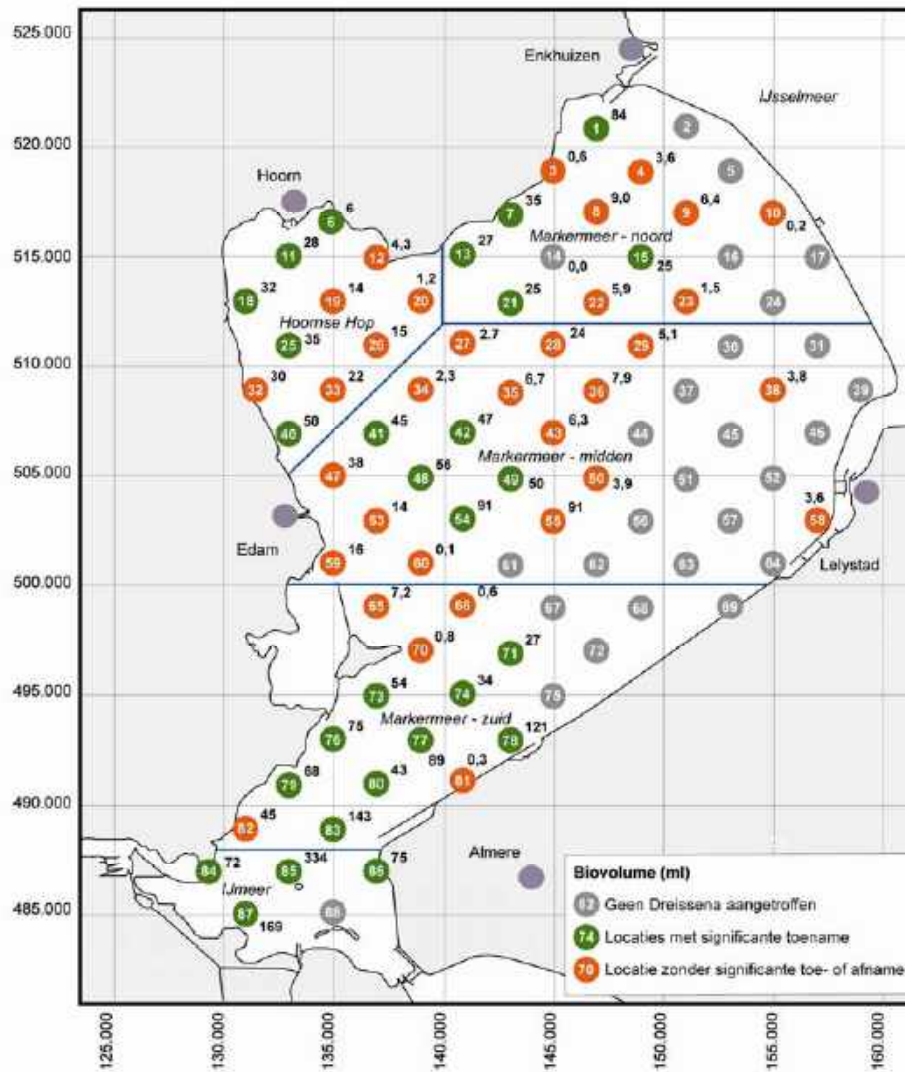
Aziatische Korfmossel
Corbicula fluminea



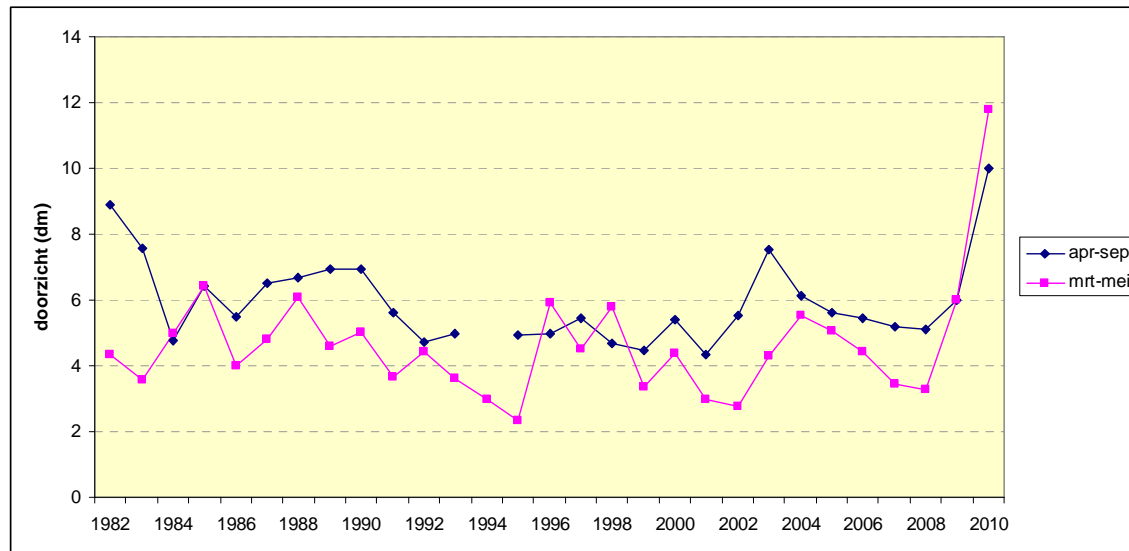
Quagga Mossel
Dreissena (rostriformis) bugensis



Laatste nieuws: sterke opmars van Quagga's

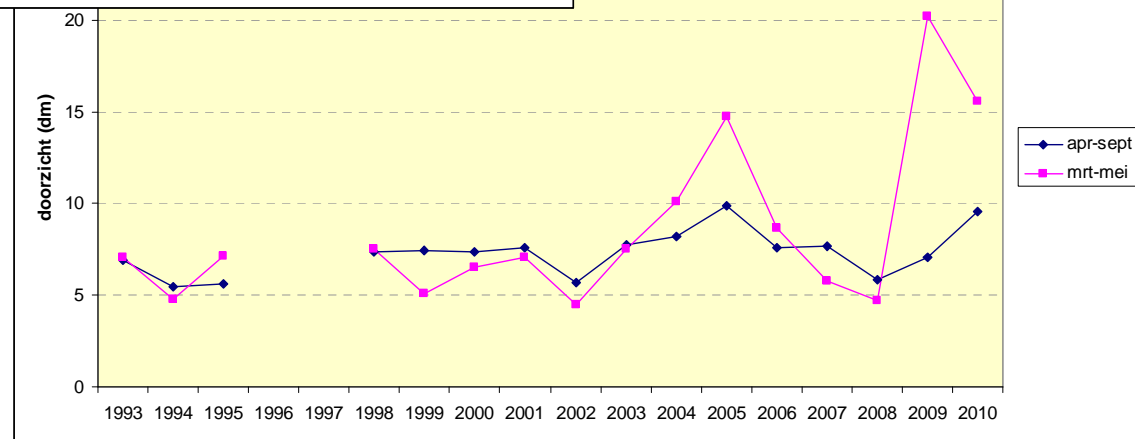


“Kraanwater” vissers: i.e.g. lokaal grote helderheid



IJsselmeer Houtrib

IJmeer



Hoe nu verder?

