
Filtration and biodeposition impacts of mussel seed on ecological carrying capacity

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WUR & IMARES



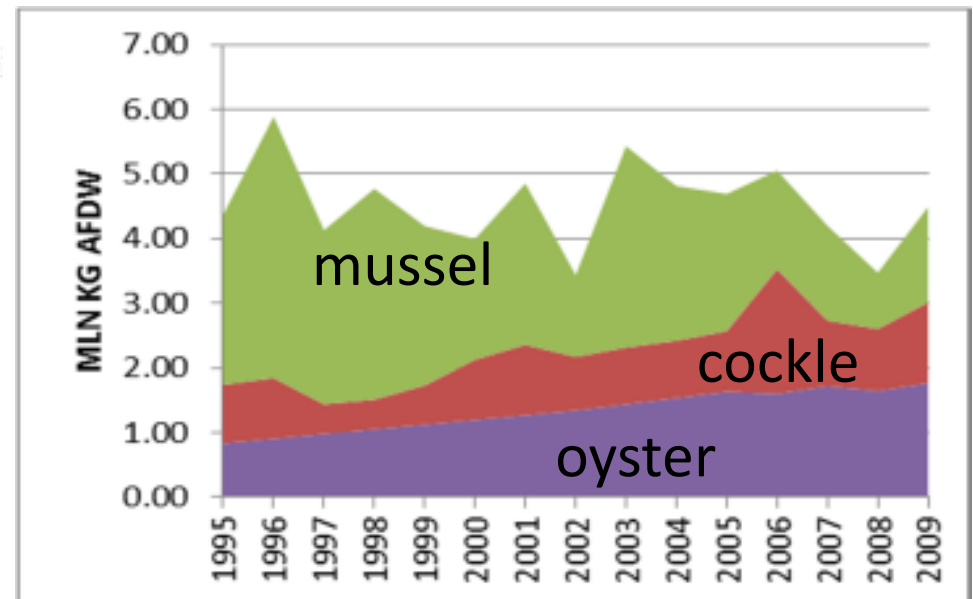
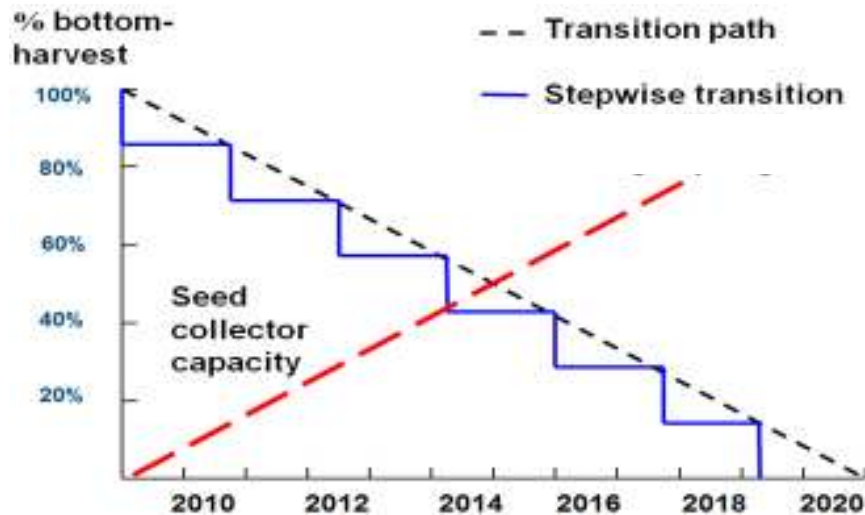
Seed Mussel Collectors (SMCs)

- to replace wild seed fishery, addressing:
 - ecological impacts
 - supply stability
- national target: 40m kg yr⁻¹ by 2020



SMC scale in Oosterschelde

- seed production target: 40m kg FW yr⁻¹ (1.8m kg AFDW)*
assuming half is allocated to Oosterschelde: 0.9m kg AFDW
= approx. 20% of shellfish biomass (Summer)



SMC research programme

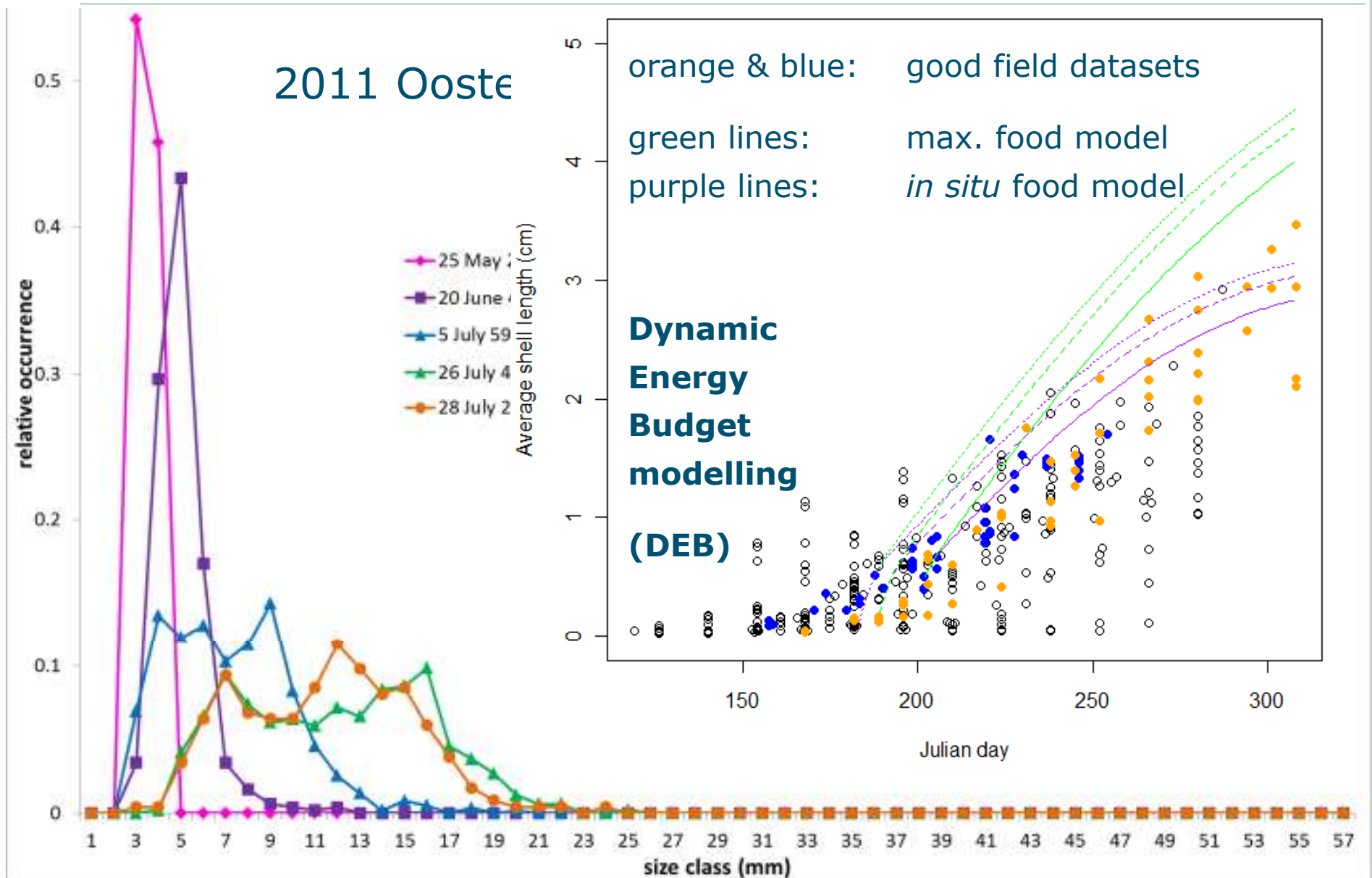
model study &
field campaigns

two PhD projects:

- plankton (Pascalle)
- nutrients (Wouter)



preliminary results: seed growth

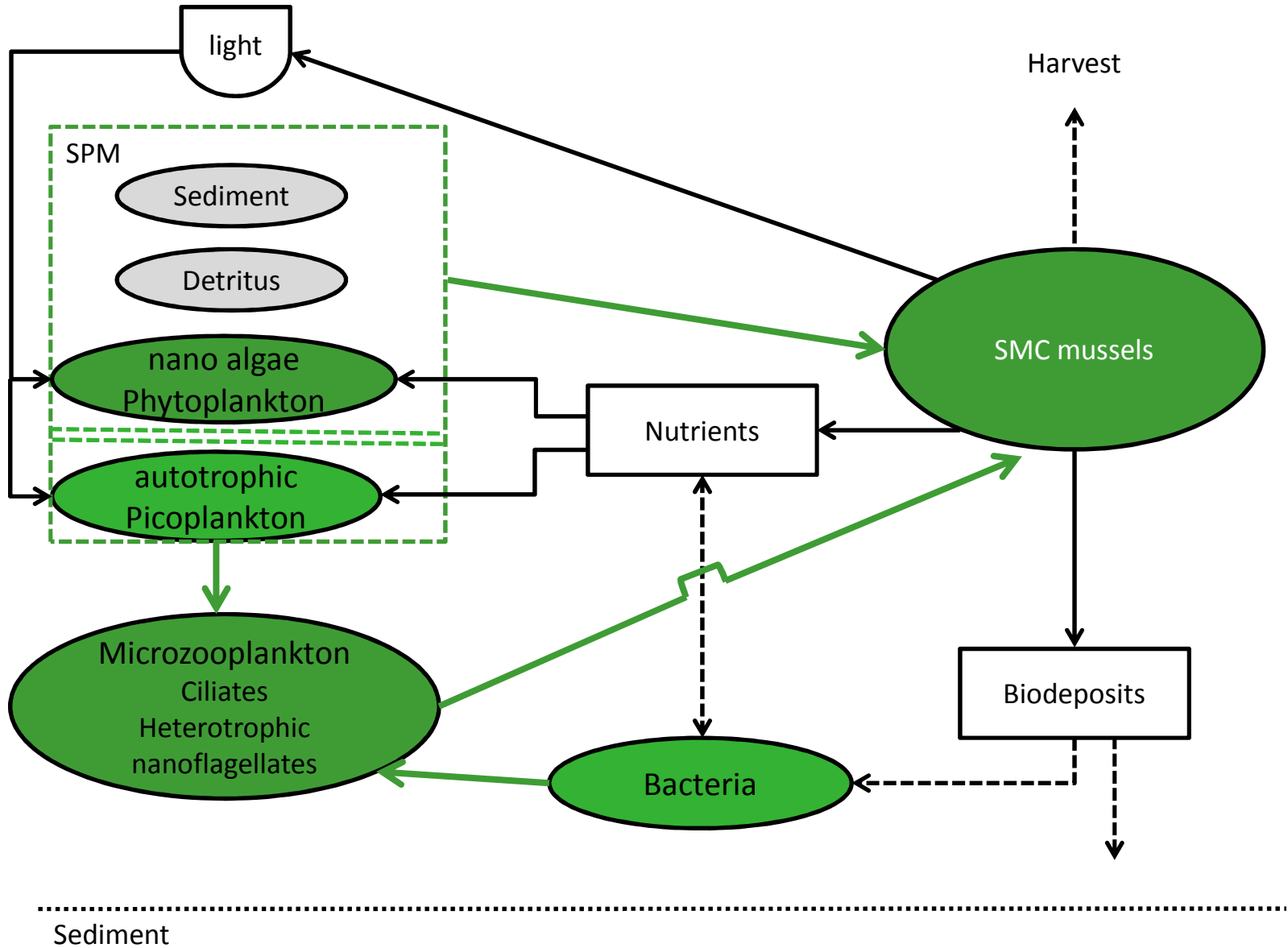


pelagic chamber

- incubation
- intact SMC section
- net rates
- 85 L
- stirring propeller

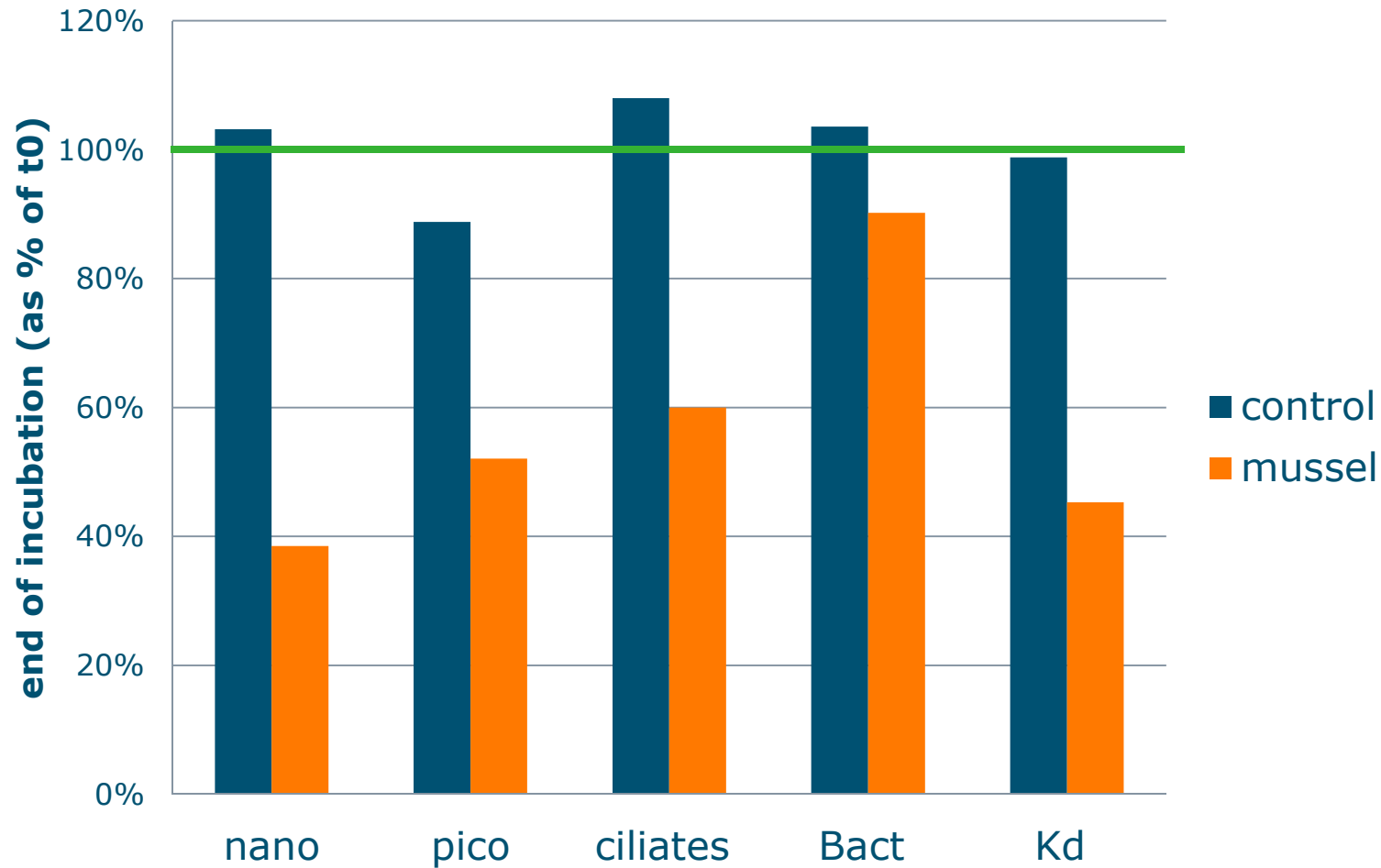


Plankton

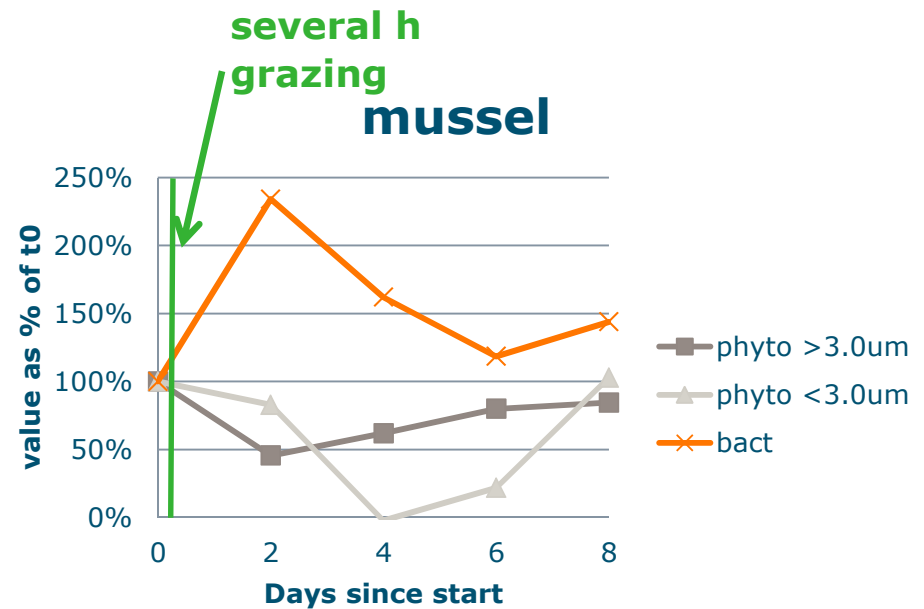
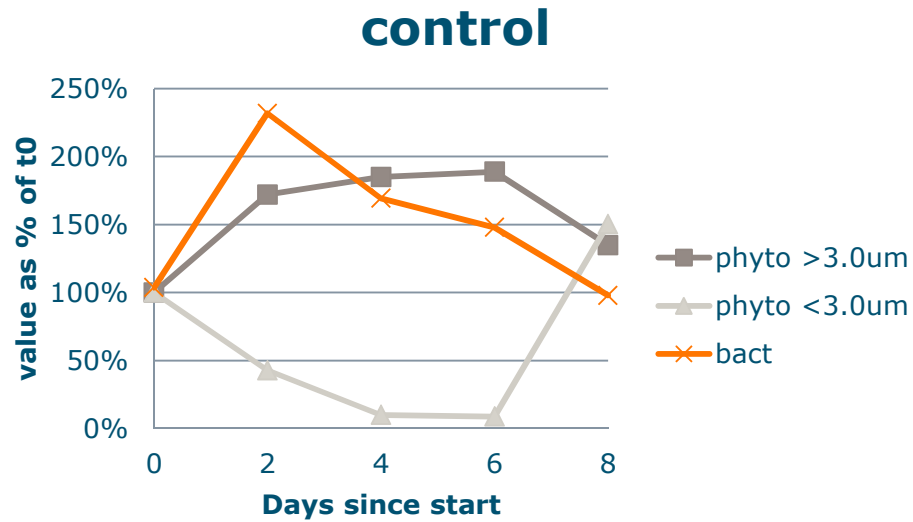


→ = under study (arrow direction from prey to predator)

preliminary results: plankton groups

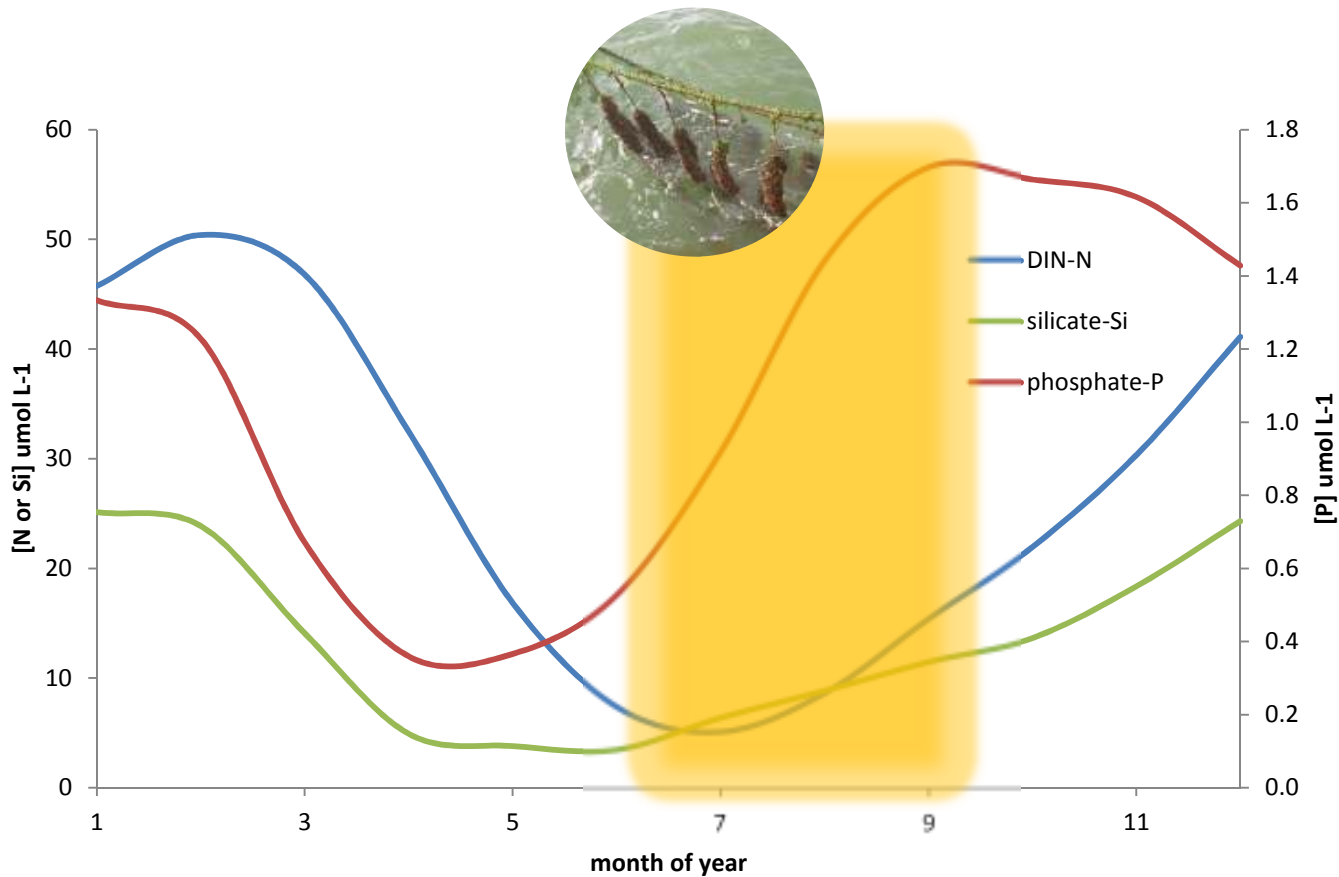


preliminary results: plankton recovery



nutrients

nutrient concentrations Oosterschelde 2004-10 (monthly avg.)

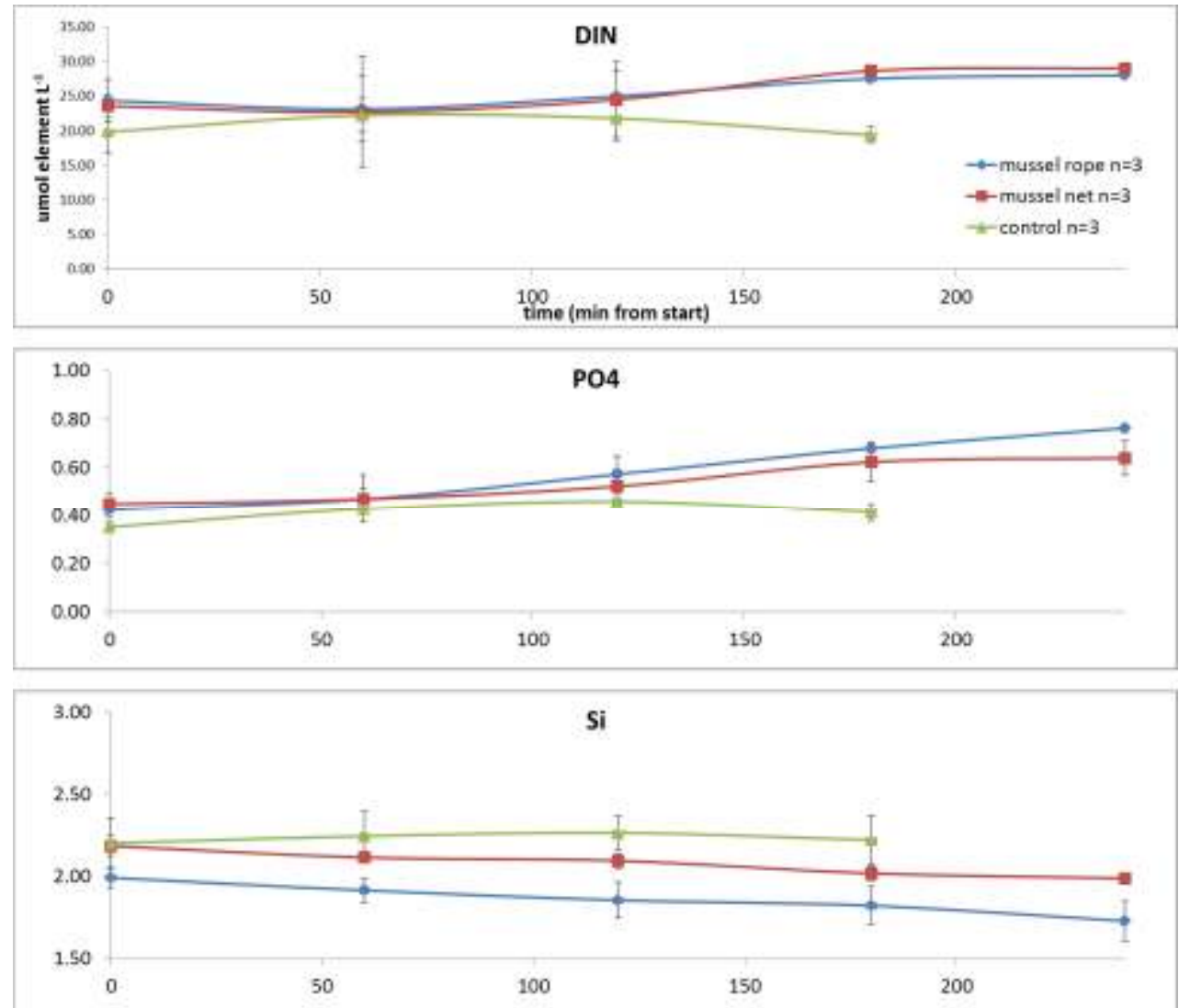


data: Rijkswaterstaat

preliminary results: net nutrient fluxes

pelagic chambers
(april 2012)

- 1.5 kg (wet) SMC section per chamber
- 4 h incubation or 20% O₂ reduction



error bars: S.D.

Outlook

plankton

- microzoopl. cons. data
- recovery data
- food web study (dilution method)

nutrients

- biodeposit-to-nutrient pathways
- pathways nutrient regeneration to mussel food source

