

Supplementary information for:

Benthic hotspots in the pelagic zone: light and phosphate availability alter aggregates of microalgae and suspended particles in a shallow turbid lake

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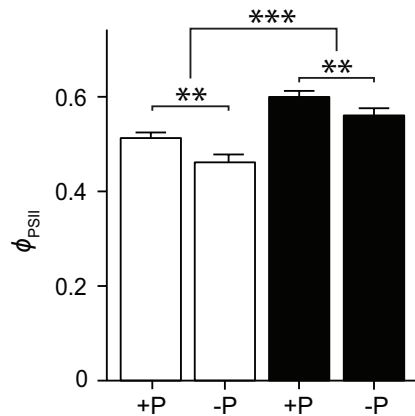


Figure S1: Effects of the selected experimental treatments on photosystem II

maximum quantum yield (ϕ_{PSII}) of *Staurosira* sp. Bars present average ϕ_{PSII} at high-light (white bars; $30\text{-}40 \mu\text{mol}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$) or low-light (black bars; $5\text{-}10 \mu\text{mol}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$) conditions, measured with a mini-PAM instrument (Walz, Effeltrich, Germany) following 16 days of incubation in BG-11 medium with phosphate (+P; $175 \mu\text{M}$ K_2HPO_4) or without phosphate (-P; $0 \mu\text{M}$ K_2HPO_4). Error bars depict the standard error of the mean ($n = 3$). Asterisks represent significant differences (**, $p < 0.01$; ***, $p < 0.001$). Microalgae were incubated in aerated 500 mL Erlenmeyer flasks comprising 300 mL of $4\cdot 10^5$ to $6\cdot 10^5$ cells $\cdot\text{mL}^{-1}$ at the start of the experiment. Monoalgal cultures of *Staurosira* sp. (CCY0034) were obtained from the Culture Collection Yerseke, NIOZ, the Netherlands.

Higher ϕ_{PSII} at low-light than at high-light conditions, indicated that microalgae were limited by the light availability at low-light compared to high-light conditions. Higher light intensities than $45 \mu\text{mol}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$ were omitted, as these resulted in pigment bleaching and ceased microalgal growth.

Higher ϕ_{PSII} measured for *Staurosira* sp. in phosphate-comprising BG-11 medium, than for *Staurosira* sp. in phosphate depleted BG-11 medium, supported that $175 \mu\text{M}$ K_2HPO_4 can alleviate phosphate-limitation of microalgae.