

Supplemental Material:

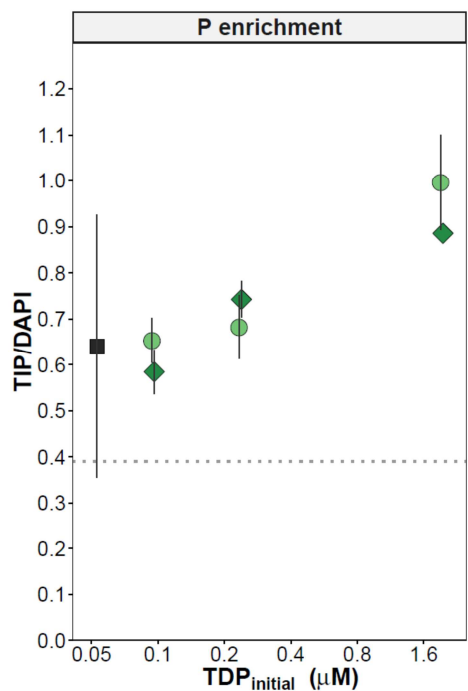


FIG S1: Response of the ratio between total hybridized prokaryotes (TIP) against DAPI counts in a phosphorus enrichment experiment performed in Lake Redon. Mesocosms were constructed using tubular-shaped polythene bags and were filled with ~100 L of water from 0 to 20 m lake depth. Specific P-enrichments were done to create a gradient of increasing P availability, as indicates the initial concentration of total dissolved phosphorus ( $TDP_{initial}$ ). 25 days later mesocosms were sampled to characterize microbial community composition. Prokaryotes were hybridized by CARD-FISH using the same four probes applied in the main manuscript (ARCH915; CF319a; HGC69a and BET42a). The TIP/DAPI ratio shifted from about 40% in initial lake conditions (dotted reference line in the plot) to about 100% in the most P-enriched treatments. The latter treatments were also the ones with a higher increase in phytoplankton growth and general microbial growth. Black square indicates the control mesocosm, and green symbols correspond to enriched mesocosms (average and range between sample replicates are indicated).