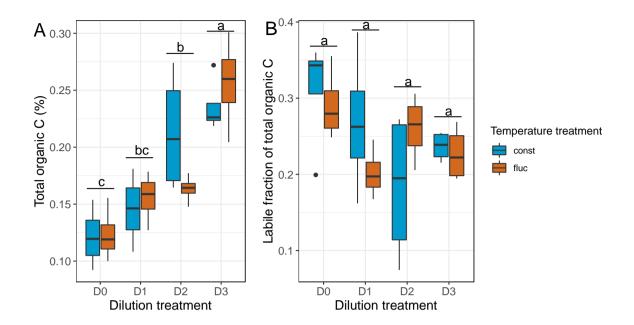
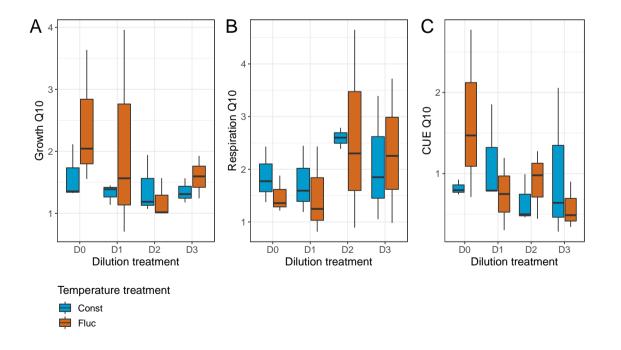
## **Supplementary Figures**

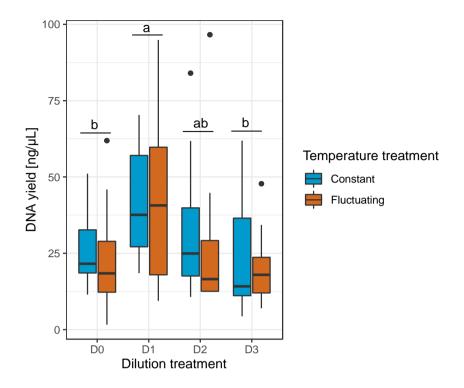


**Supplementary Figure 1. Carbon quantity and quality measurements.** Boxplot of total organic carbon **(A)**, and labile fraction of total organic carbon **(B)**. The difference between temperature treatments was not significant. Carbon quality was measured with the Rock-Eval® ramped thermal pyrolysis method. For boxplots, the box denotes interquartile range, whiskers denote the 1.5 x interquartile range. The horizontal line denotes the median. Points represent outliers outside of the 1.5x interquartile range. Letters indicate significant differences between diversity levels tested with the Tukey-HSD test.



Supplementary Figure 2. Response of C-cycling processes to a  $10^{\circ}$ C increase in temperature ( $Q_{10}$ ). Temperature sensitivity for the distinct C-cycling processes:  $Q_{10}$  of growth (A), respiration (B), and CUE (C) at the two temperature regime treatments within all

dilution levels. Anova followed by Tukey HSD test was used to detect significant differences between diversity levels regarding the different C-cycling processes



**Supplementary Figure 3. DNA yield.** Letters derived from the post hoc Tukey test indicate significant differences between dilution treatments.