



**Fig. S7 Relative abundances of the most abundant bacterial classes in seawater.** Bacterial community composition is presented for each sample ( $n = 3$  per treatment) after 0, 4, 8 and 10/11 weeks of treatment during spring, summer, autumn and winter, respectively, in the Kiel Benthocosms at four different conditions (see “Materials and Methods”; T, temperature; CO<sub>2</sub>, pCO<sub>2</sub>; a, ambient; +, increased). Analysis is based on bacterial 16S (V1-V2) MiSeq amplicon sequencing. Relative abundances of bacterial classes are given in cumulative percentage. Low abundant classes ( $\leq 1\%$ ) were summarized as “other”. White bars indicate missing samples or sequence data (e.g., during autumn in week 8 missing samples due to severe storm).