Supplementary Information

Competition between cyanobacteria and green algae at low versus elevated CO_2: who will win, and why?

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Table S1. Steady-state characteristics in the monoculture experiments.

Parameter	*Monoraphidium*	*Scenedesmus*	*Microcystis*	*Chlorella*
Population density ($mm^3\ L^{-1}$)				
Low pCO_2	422 ± 21	722 ± 37	437 ± 12	370 ± 25
High pCO_2	1943 ± 94	2556 ± 91	2103 ± 143	2353 ± 182
Light penetration I_{out} (µmol photons $m^{-2}\ s^{-1}$)				
Low pCO_2	7.89 ± 0.58	7.52 ± 0.38	6.24 ± 0.83	9.31 ± 0.29
High pCO_2	0.15 ± 0.02	0.01 ± 0.00	0.01 ± 0.00	0.03 ± 0.01
CO_2(aq) (µmol L^{-1})				
Low pCO_2	0.0048 ± 0.0013	0.0012 ± 0.0002	0.0041 ± 0.0017	0.0031 ± 0.0007
High pCO_2	31.2 ± 2.5	30.4 ± 4.1	33.8 ± 2.9	29.9 ± 4.3
HCO_3^- concentration (µmol L^{-1})				
Low pCO_2	134 ± 16	49 ± 3	123 ± 25	84 ± 10
High pCO_2	5714 ± 86	7391 ± 190	6008 ± 141	6492 ± 220
pH				
Low pCO_2	10.6 ± 0.2	10.8 ± 0.1	10.7 ± 0.1	10.7 ± 0.1
High pCO_2	8.5 ± 0.0	8.6 ± 0.1	8.5 ± 0.0	8.6 ± 0.1
Alkalinity (mEq L^{-1})				
Low pCO_2	2.01 ± 0.04	1.34 ± 0.10	1.97 ± 0.09	1.35 ± 0.18
High pCO_2	6.24 ± 0.11	8.42 ± 0.18	6.51 ± 0.16	7.19 ± 0.22
Cellular N:C ratio (molar ratio)				
Low pCO_2	0.11 ± 0.01	0.14 ± 0.00	0.18 ± 0.01	0.13 ± 0.00
High pCO_2	0.12 ± 0.00	0.14 ± 0.00	0.19 ± 0.01	0.14 ± 0.00

The steady-state values (± SD) are based on the last 5 time points measured in each of the monoculture experiments (i.e., n=5).