Supporting information for:

Growth, ammonium metabolism, and photosynthetic properties of *Ulva australis* (Chlorophyta) under decreasing pH and ammonium enrichment.

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S1 Table. Seawater carbonate chemistry estimates. Measurements of total pH (pH_T) and total alkalinity (AT) are described in the methods. AT was measured as 2111.42 ± 18.33 (mean ± SEM) (n = 7). Salinity is assumed to be 35 ‰. Temperature is assumed to be 16.5°C (the average temperature throughout the experiment) MFC = mass flow controller. DIC = dissolved inorganic carbon.

MFC	NH_4^+ treatment	Cycle	pH_T	Salinity (‰)	Temperature (°C)	pCO_2 (µatm)	HCO_3^- (µmol/kg)	CO_3^{2-} (µmol/kg)	DIC (µmol/kg)	AT (µmol/kg)
1	Ambient	light	7.92	35	16.5	513.62	1812.52	118.64	1949.49	2111.42
1	Ambient	light	7.82	35	16.5	666.02	1866.92	97.06	1987.76	2111.42
1	Ambient	light	7.77	35	16.5	756.82	1890.75	87.61	2005.37	2111.42
1	Ambient	light	7.85	35	16.5	616.45	1851.57	103.15	1976.73	2111.42
1	Enriched	light	7.83	35	16.5	649.10	1861.90	99.06	1984.12	2111.42
1	Enriched	light	7.84	35	16.5	632.58	1856.78	101.09	1980.44	2111.42
1	Enriched	light	7.85	35	16.5	616.45	1851.57	103.15	1976.73	2111.42
1	Enriched	light	7.85	35	16.5	616.45	1851.57	103.15	1976.73	2111.42
2	Ambient	light	7.92	35	16.5	513.62	1812.52	118.64	1949.49	2111.42
2	Ambient	light	7.93	35	16.5	500.28	1806.56	121.00	1945.42	2111.42
2	Ambient	light	7.95	35	16.5	474.53	1794.34	125.85	1937.12	2111.42
2	Ambient	light	7.95	35	16.5	474.53	1794.34	125.85	1937.12	2111.42
2	Enriched	light	7.92	35	16.5	513.62	1812.52	118.64	1949.49	2111.42
2	Enriched	light	7.93	35	16.5	500.28	1806.56	121.00	1945.42	2111.42
2	Enriched	light	8.09	35	16.5	325.16	1697.25	164.32	1873.17	2111.42
2	Enriched	light	7.97	35	16.5	449.98	1781.72	130.85	1928.63	2111.42
3	Ambient	light	8.04	35	16.5	372.80	1734.29	149.64	1897.24	2111.42

MFC	NH_4^+ treatment	cycle	pH_T	Salinity (‰)	Temperature (°C)	pCO_2 (µatm)	HCO_3^- (µmol/kg)	CO_3^{2-} (µmol/kg)	DIC (µmol/kg)	AT (µmol/kg)
3	Ambient	light	8.05	35	16.5	362.81	1727.10	152.49	1892.54	2111.42
3	Ambient	light	7.97	35	16.5	449.98	1781.72	130.85	1928.63	2111.42
3	Ambient	light	7.97	35	16.5	449.98	1781.72	130.85	1928.63	2111.42
3	Enriched	light	8.06	35	16.5	353.05	1719.80	155.39	1887.78	2111.42
3	Enriched	light	8.07	35	16.5	343.53	1712.39	158.32	1882.97	2111.42
3	Enriched	light	7.99	35	16.5	426.59	1768.68	136.01	1919.92	2111.42
3	Enriched	light	8.00	35	16.5	415.31	1762.01	138.66	1915.50	2111.42
1	Ambient	dark	7.69	35	16.5	926.19	1924.61	74.18	2031.85	2111.42
1	Ambient	dark	7.71	35	16.5	880.83	1916.62	77.35	2025.41	2111.42
1	Ambient	dark	7.62	35	16.5	1102.72	1950.32	63.98	2053.66	2111.42
1	Ambient	dark	7.69	35	16.5	926.19	1924.61	74.18	2031.85	2111.42
1	Enriched	dark	7.56	35	16.5	1278.69	1969.73	56.28	2071.64	2111.42
1	Enriched	dark	7.66	35	16.5	998.34	1936.06	69.64	2041.33	2111.42
1	Enriched	dark	7.65	35	16.5	1023.53	1939.73	68.18	2044.44	2111.42
1	Enriched	dark	7.66	35	16.5	998.34	1936.06	69.64	2041.33	2111.42
2	Ambient	dark	7.75	35	16.5	796.24	1899.69	84.07	2012.18	2111.42
2	Ambient	dark	7.76	35	16.5	776.30	1895.26	85.82	2008.79	2111.42
2	Ambient	dark	7.75	35	16.5	796.24	1899.69	84.07	2012.18	2111.42
2	Ambient	dark	7.75	35	16.5	796.24	1899.69	84.07	2012.18	2111.42
2	Enriched	dark	7.68	35	16.5	949.68	1928.50	72.64	2035.03	2111.42
2	Enriched	dark	7.75	35	16.5	796.24	1899.69	84.07	2012.18	2111.42
2	Enriched	dark	7.68	35	16.5	949.68	1928.50	72.64	2035.03	2111.42
2	Enriched	dark	7.71	35	16.5	880.83	1916.62	77.35	2025.41	2111.42
3	Ambient	dark	7.8	35	16.5	701.06	1876.71	93.18	1994.91	2111.42
3	Ambient	dark	7.81	35	16.5	683.33	1871.86	95.11	1991.35	2111.42
3	Ambient	dark	7.84	35	16.5	632.58	1856.78	101.09	1980.44	2111.42

MFC	NH_4^+ treatment	cycle	pH_T	Salinity (‰)	Temperature (°C)	pCO_2 (µatm)	HCO_3^- (µmol/kg)	CO_3^{2-} (µmol/kg)	DIC (µmol/kg)	AT (µmol/kg)
3	Ambient	dark	7.85	35	16.5	616.45	1851.57	103.15	1976.73	2111.42
3	Enriched	dark	7.79	35	16.5	719.21	1881.48	91.29	1998.44	2111.42
3	Enriched	dark	7.78	35	16.5	737.80	1886.16	89.44	2001.92	2111.42
3	Enriched	dark	7.82	35	16.5	666.02	1866.92	97.06	1987.76	2111.42
3	Enriched	dark	7.8	35	16.5	701.06	1876.71	93.18	1994.91	2111.42
1	Ambient	whole	7.81	35	16.5	683.33	1871.86	95.11	1991.35	2111.42
1	Ambient	whole	7.78	35	16.5	737.80	1886.16	89.44	2001.92	2111.42
1	Ambient	whole	7.7	35	16.5	903.25	1920.65	75.75	2028.64	2111.42
1	Ambient	whole	7.78	35	16.5	737.80	1886.16	89.44	2001.92	2111.42
1	Enriched	whole	7.69	35	16.5	926.19	1924.61	74.18	2031.85	2111.42
1	Enriched	whole	7.76	35	16.5	776.30	1895.26	85.82	2008.79	2111.42
1	Enriched	whole	7.76	35	16.5	776.30	1895.26	85.82	2008.79	2111.42
1	Enriched	whole	7.76	35	16.5	776.30	1895.26	85.82	2008.79	2111.42
2	Ambient	whole	7.84	35	16.5	632.58	1856.78	101.09	1980.44	2111.42
2	Ambient	whole	7.85	35	16.5	616.45	1851.57	103.15	1976.73	2111.42
2	Ambient	whole	7.86	35	16.5	600.70	1846.28	105.25	1972.97	2111.42
2	Ambient	whole	7.86	35	16.5	600.70	1846.28	105.25	1972.97	2111.42
2	Enriched	whole	7.81	35	16.5	683.33	1871.86	95.11	1991.35	2111.42
2	Enriched	whole	7.85	35	16.5	616.45	1851.57	103.15	1976.73	2111.42
2	Enriched	whole	7.88	35	16.5	570.28	1835.41	109.56	1965.32	2111.42
2	Enriched	whole	7.85	35	16.5	616.45	1851.57	103.15	1976.73	2111.42
3	Ambient	whole	7.92	35	16.5	513.62	1812.52	118.64	1949.49	2111.42
3	Ambient	whole	7.93	35	16.5	500.28	1806.56	121.00	1945.42	2111.42
3	Ambient	whole	7.92	35	16.5	513.62	1812.52	118.64	1949.49	2111.42
3	Ambient	whole	7.92	35	16.5	513.62	1812.52	118.64	1949.49	2111.42
3	Enriched	whole	7.93	35	16.5	500.28	1806.56	121.00	1945.42	2111.42

MFC	NH_4^+ treatment	cycle	pH_T	Salinity (‰)	Temperature (°C)	pCO_2 (µatm)	HCO_3^- (µmol/kg)	CO_3^{2-} (µmol/kg)	DIC (µmol/kg)	AT (µmol/kg)
3	Enriched	whole	7.94	35	16.5	487.25	1800.50	123.40	1941.29	2111.42
3	Enriched	whole	7.92	35	16.5	513.62	1812.52	118.64	1949.49	2111.42
3	Enriched	whole	7.91	35	16.5	527.28	1818.39	116.31	1953.52	2111.42