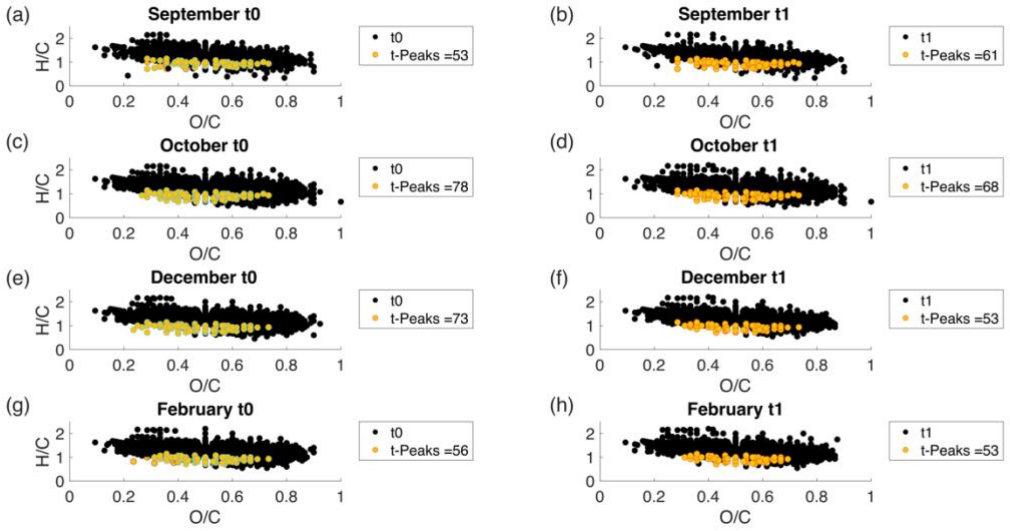

Figure S7: van Krevelen diagram of t-Peaks during experiment months. Each point is an identified molecular formula and plotted according to the oxygen to carbon (O/C) and hydrogen to carbon (H/C) atomic ratio of the molecular formula. a) start of incubation (t0) are shown in black and t-Peak molecular formulas present are highlighted in orange. b) end of incubation (t1) (F treatment) are shown in black and t-Peak molecular formulas matches highlighted are in orange. T-peak molecular formulas are obtained from Medeiros et al. (2016). Results show significant decrease of t-Peaks in December incubations (t-test, $p<0.05$) and not significant in September, October and February incubations (t-test, $p>0.05$).

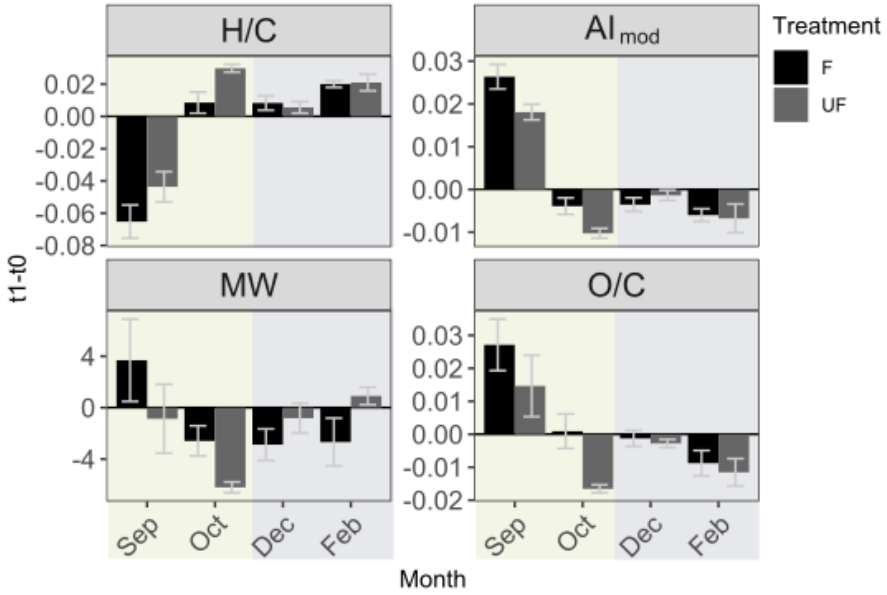

Figure 5: Change of DOM parameters during experiment incubations. a) change in intensity weighted average DOM parameters in seawater at t1 relative to t0. a) molecular weight (MW), b) oxygen to carbon ratio (O/C), c) hydrogen to carbon ratio (H/C), d) modified aromaticity index (AI_{mod}). The first treatment is filtered (F) seawater at start and end of incubation (t1 – t0) and the second treatment is unfiltered (UF) seawater for the duration of the incubation then filtered immediately prior to sampling and compared to filtered at the start (t0) incubation (t1 – t0). The background colors indicate the statistically identified winter (blue) and biologically productive (green) period, respectively.

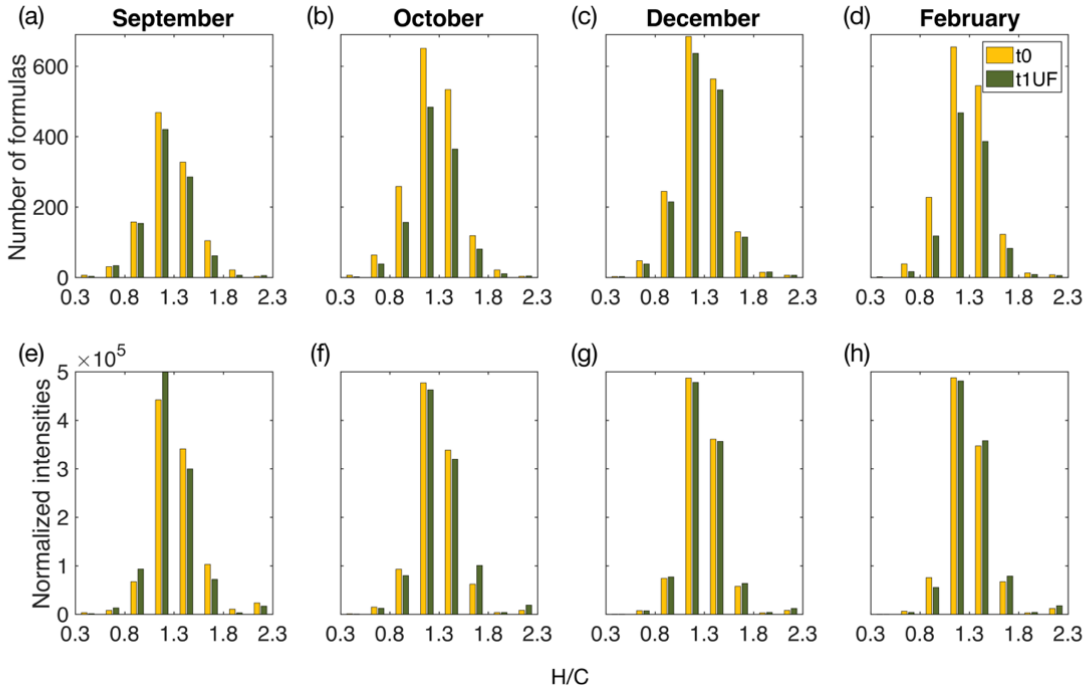

Figure S5: Histograms of all identified organic matter formulas and normalized intensities determined by high-resolution mass spectrometry during start (t0) and end (t1) of incubations of UF treatment water. Number of identified molecular formulas are plotted according to the hydrogen to carbon (H/C) atomic ratio for incubation experiments in a) September, b) October c) December and d) February. Normalized intensities are plotted according to H/C ratios for (e-h) for respective months. The start of the incubation (t0) is shown in yellow and the end of the incubation (t1) in green for UF treatment.