Supplementary material

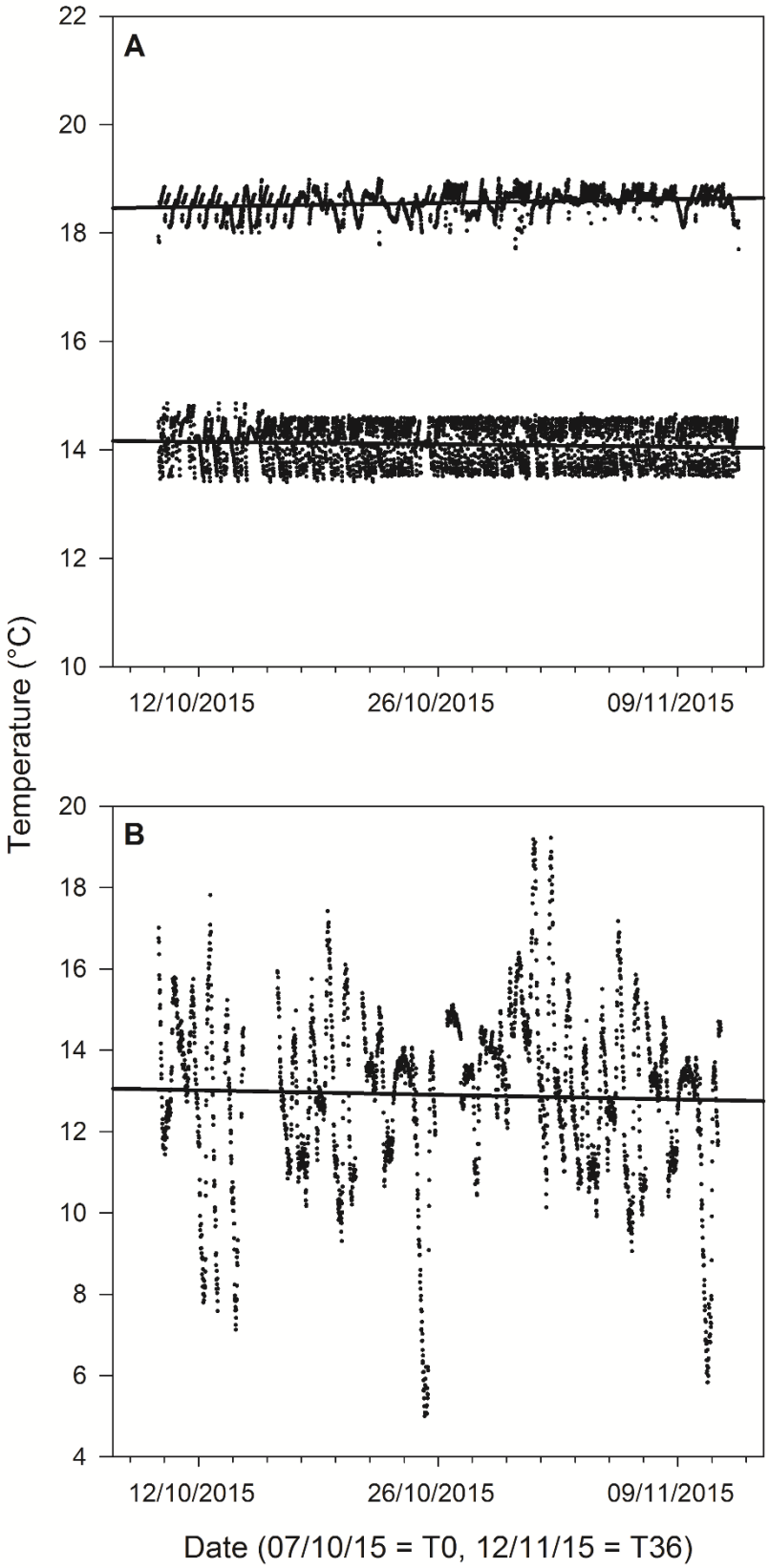

Fig. S1. Time course of temperature treatments throughout the experiment. Control and high CO_2 treatments maintained at a mean temperature of 14.1 °C (± 0.35 sd) and the high temperature and combination treatments maintained at a mean temperature of 18.6 °C (± 0.42 sd) (**A**). External ambient air temperature logged over the experimental period (**B**).

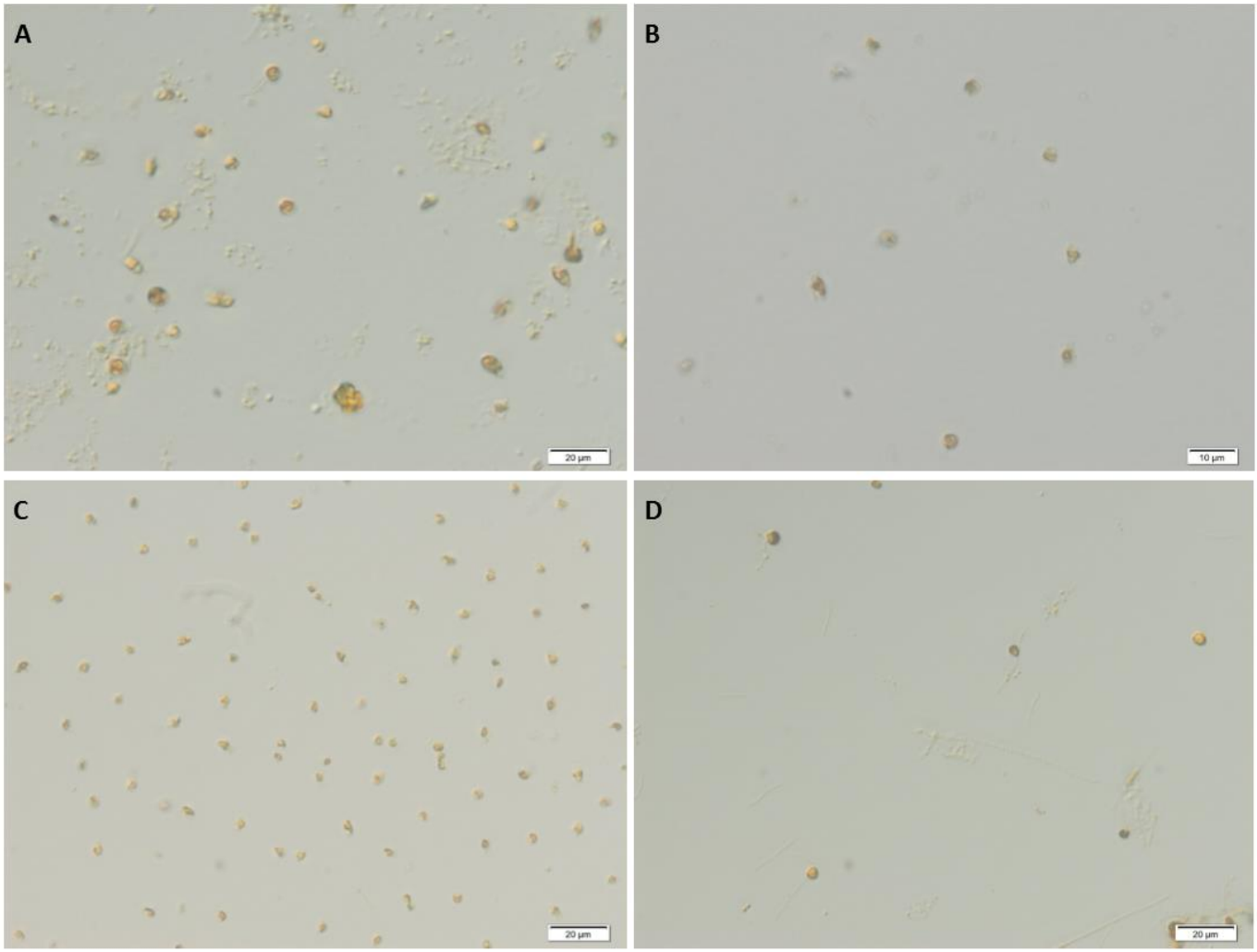

Fig. S2. Nanophytoplankton was the dominant group throughout the experiment between T10-T24 and remained dominant in the high temperature and high CO_2 treatments at T36. Large nano-flagellates observed in the control (**A**), smaller nano-flagellates observed in the high temperature and combination treatments (**B & D**) and *Phaeocystis* spp. observed in the high CO_2 treatment (**C**). Image magnification = x 300.

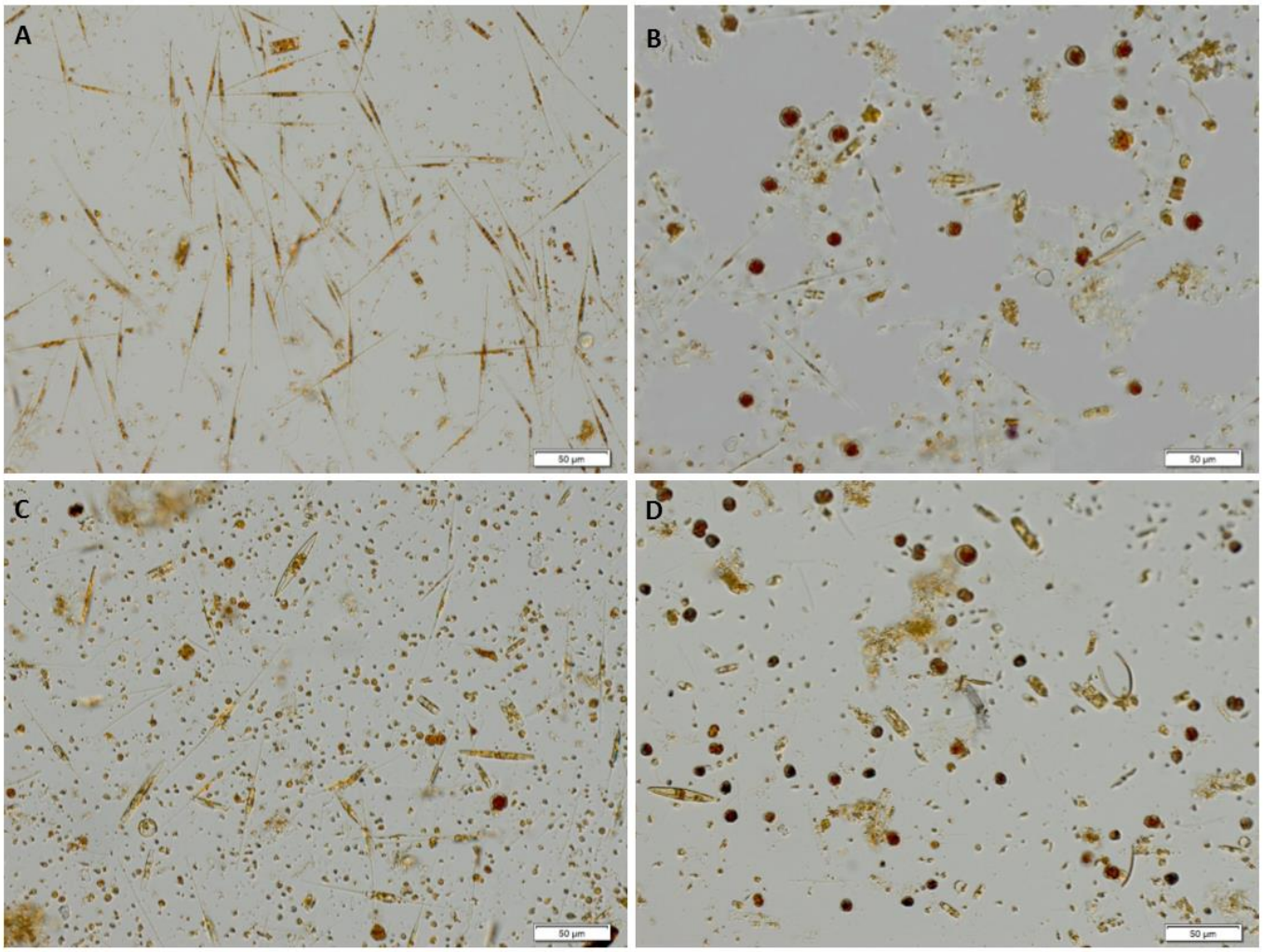

Fig. S3. The micro size fraction of the phytoplankton biomass at T36 showing a diatom dominated community in the control where *C. closterium* was numerically most abundant but *N. distans* dominated the biomass (**A**), diatoms and dinoflagellates (dominated by *N. distans*, *P. cordatum* and undet. *Gymnodiniales*) in the high temperature treatment (**B**), diatoms dominating in the high CO_2 treatment (*N. distans*, *T. subtilis* and *C. closterium*) (**C**) and diatoms and dinoflagellates (dominated by *N. distans* and *P. cordatum*) in the combination treatment (**D**).