Supplementary information.

S1\_Fig Legend: Algal community composition in experimental ecosystems shifted over time. Non-metric multidimensional scaling plot (NMDS) of temporal phytoplankton taxonomic composition for all temperature treatments and trophic levels (Taxa listed in S3\_Table). Taxonomic abundances are square root transformed. Each point represents one ecosystem observed at one time, and hotter colours are communities at higher temperatures. NMDS is an iterative search for positions of species, time, temperature and food chain length on few dimensions (axes) that minimizes departure from monotonicity in the association between distance (dissimilarity) in the original data and ordination space. See Figure S3 for comparisons of phytoplankton taxonomic composition vs temperature.

S2\_Fig legend: Temperatures from dataloggers in ecosystems illustrate a cooling trend over the course of the experiment, and variable temperatures from day to day. Differences among ecosystems, maintained by heaters of different power (Wattage). Red colors indicate warmer ecosystems at higher wattage and blue colors indicate cooler ecosystems.

**S3\_Fig legend:** Temperature did not clearly shift algal community composition in experimental ecosystems. Non-metric multidimensional scaling plot (NMDS) of temporal phytoplankton taxonomic composition for all temperature treatments and trophic levels (Taxa listed in Table S1). Taxonomic abundances are square root transformed. Each point represents one ecosystem observed at one time, and lighter colours are communities at higher temperatures. NMDS is an iterative search for positions of species, time, temperature and food chain length on few dimensions (axes) that minimizes departure from monotonicity in the association between distance (dissimilarity) in the original data and ordination space. See Figure S2 for comparisons of phytoplankton taxonomic composition vs week.

S4\_Fig Legend. Phytoplankton abundance, estimated as ln[chlorophyll *a*], for each observation date over the course of the experiment. Lines connect observations from the same ecosystem. Trophic treatments are separated: A = algae only, AG = algae + grazers, and AGP = algae + grazers + predators.