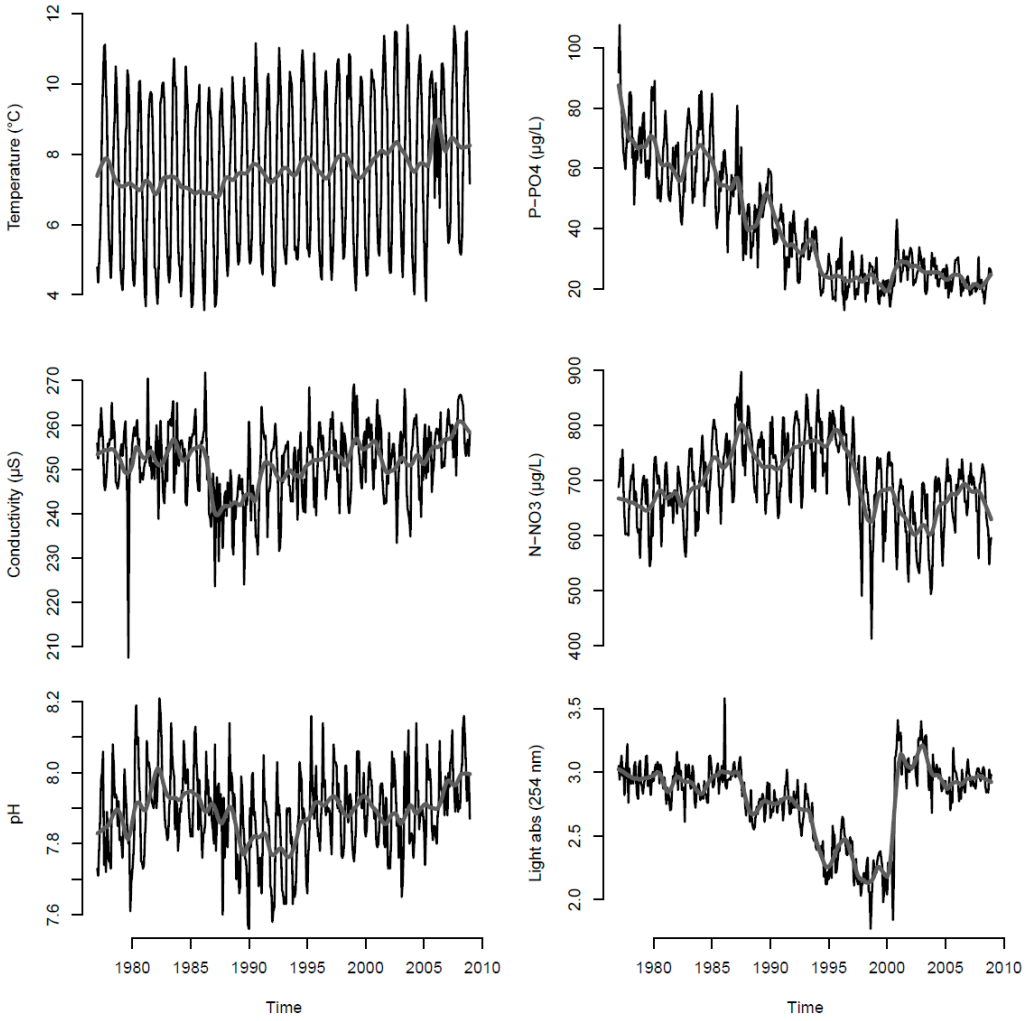
Oikos

**o20055**

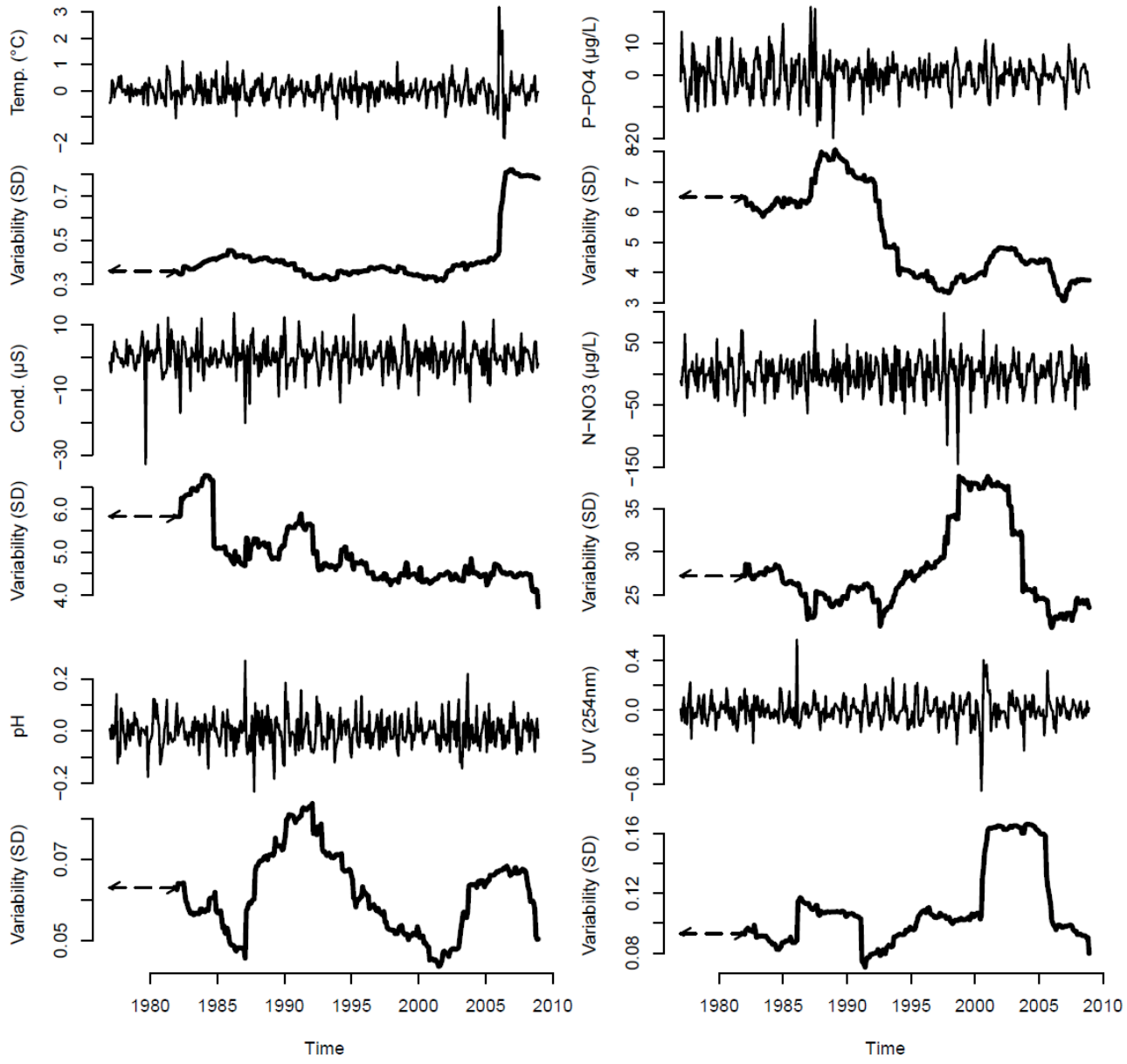
Pomati, F., Matthews, B., Jokela, J., Schildknecht, A. and Ibelings, B. W. 2012. Effects of re-oligotrophication and climate warming on plankton richness and community stability in a deep mesotrophic lake. – Oikos 121: 1317-1327.

# Appendix 1



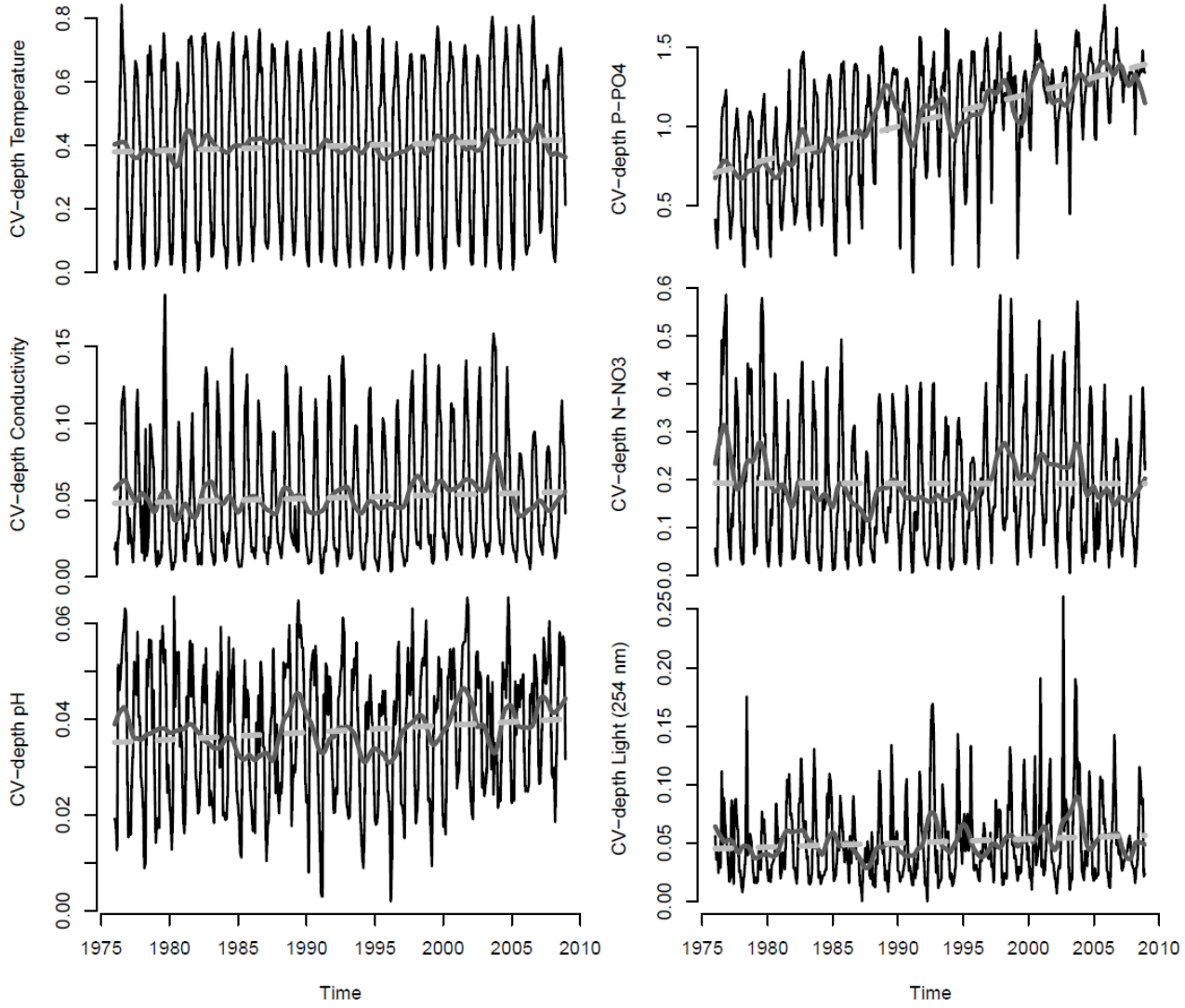

Time-series of Lake Zurich water conditions (temperature, conductivity, pH) and resources ($P\text{-}PO_4^{3-}$, $N\text{-}NO_3^-$, light absorption), relevant for plankton dynamics. Black line = raw data; dark grey line = trend (see Table 2 for the significance of linear trend slopes and intercepts).

# Appendix 2



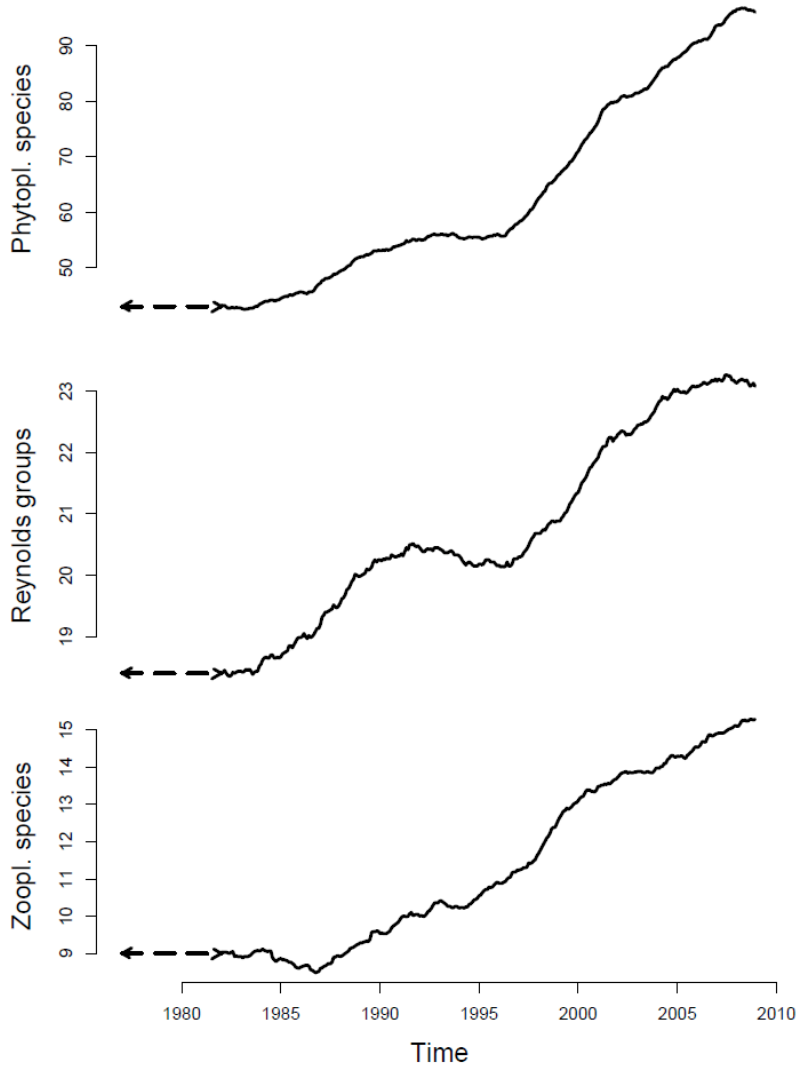

De-seasonalised residuals of Lake Zurich time-series in water conditions and resources (temperature, conductivity, pH; $P\text{-}PO_4^{3-}$, $N\text{-}NO_3^-$, light absorption at 254 nm). Each variable is joined by an analysis of the amplitude of fluctuations (SD) calculated within a five-year window sliding along the time-series. Horizontal dashed arrows show the width of the moving window used to compute SD.

# Appendix 3



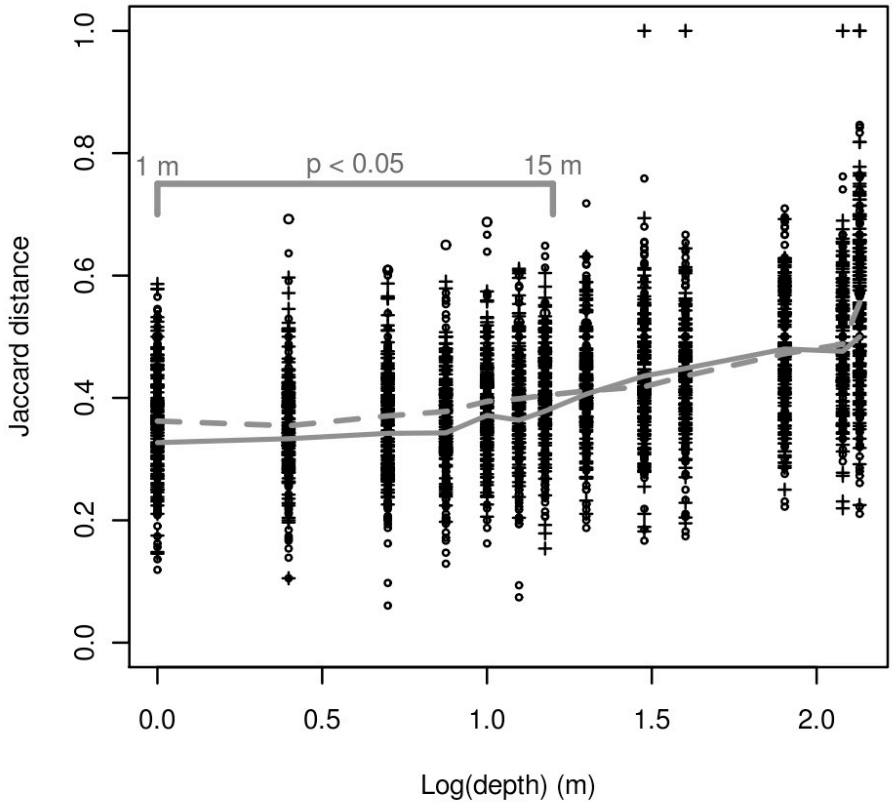

Time series of standard deviation relative to mean values (CV) calculated between different depths in Lake Zurich (Material and methods) for temperature, conductivity, pH, P-$PO_4^{3-}$, N-$NO_3^-$, light absorption. Black line = raw data; dark grey line = trend; dashed grey line= linear fit (see Table 2 for slopes and intercepts).

# Appendix 4




Average plankton richness calculated within a five-year window sliding along the time-series of phytoplankton species, Reynolds groups and zooplankton species numbers. Horizontal dashed arrows show the width of the moving window used to compute the mean.

# Appendix 5




Pair-wise dissimilarity (Jaccard distance) in phytoplankton community composition (presence/absence of species) calculated between adjacent depths in Lake Zurich. Data refer to distances calculated for each pair of sampled depths in two time windows of 10 years each: 1986-1996 (○), and 1996-2006 (+).The year 1996 was chosen as reference since in that year the phytoplankton richness trend showed a change in the slope of species accrual (see Fig. 2 and Appendix 4, top panel). Grey solid line = average pair-wise Jaccard distance during 1986-1996; grey dashed line = average distance during 1996-2006. The pair-wise distance in phytoplankton community composition between adjacent depths in the epilimnion of Lake Zurich was significantly higher ($p < 0.005$ by both t-test and Wilcoxon test) after 1996 compared to before 1996.