

Shade plots to aid choice of transform

A major new feature in PRIMER 7 is the large number of additional plotting routines, one of the conceptually simplest but most powerful being Shade Plots, which are simple visualisations of the data matrix, with darker (or different colour) shades in each cell of the array representing higher abundances. White space denotes the absence of that species (row) in that sample (column) and full black the maximum abundance (or biomass etc.) in the array. Grey (or one/two colour) shades are linearly proportional to the intermediate abundances, as shown in a shade/colour key. Clarke KR, Tweedley JR, Valesini FJ 2014, *J Mar Biol Assoc UK* 94: 1-16 demonstrate the usefulness of shade plots in getting a 'feel' for a sensible choice of transformation for the context, e.g. if an assemblage analysis needs to take account of a wide range of common and less abundant species but the current shade plot is largely a sea of white space – because at the current transformation most abundances are still dwarfed by those for the dominant species – then the need for a heavier transformation is immediately seen. At the opposite extreme, if most of the cells from species which are present are displayed at about the same (dark) intensity then the data is likely to have been overtransformed into, effectively, presence or absence, and this may not be the required quantitative analysis.

On both the original and transformed Ekofisk macrofauna sheets take **Plots>Shade Plot**, to give:



