

Other variable weighting

There are other cases in which variables (species) might need prior weighting, e.g. when a species is known to be often misidentified, its contribution (and those of the species it is mistaken for) can be reduced by multiplying the entries in the two species through by some downweighting constant. This is achieved by placing weights for each species in an Indicator (see Section 2) and taking **Pre-treatment>Weight variables**, supplying the indicator name. In this context, most weights would be 1, with a value less than 1 used for downweighting less-reliably identified species (the default weight could be 100, or any number, since similarities such as Bray-Curtis are invariant to a scale change). A further context in which this routine might be useful is to convert counts to approximate biomass, using a known average weight of an individual of each species. Also dispersion weighting is seen just to be another case of variable weighting, with weights as the reciprocal of the Divisor column. You might like to demonstrate this for the **Fal copepod counts** example above, by selecting or highlighting the Divisor column from **Data2** then take **Pre-treatment>Transform(individual)** > (Expression: $1/V$), highlighting the new column and copying (Ctrl-C) to the clipboard; opening **Fal copepod counts**, **Edit>Indicators>Add>** (Add indicator named: **DWt**), highlighting that blank new column and pasting (Ctrl-V); and finally **Pre-treatment>Weight Variables>** (Indicator: **DWt**). The resulting matrix should be identical to **Data1**. Save the workspace as **Fal ws** for later use.

The collage illustrates the workflow for variable weighting in the software:

- Transform Dialog:** Shows the 'Transform' window with 'Selected data' set to 'Data4'. The 'Expression' is $1/V$. The 'Pick' list shows 'Divisor' selected from the 'Variables' list.
- Indicators Dialog:** Shows the 'Indicators' window with 'Add...' button. The 'Label' column shows 'DWT' for the new indicator.
- Weight Variables Dialog:** Shows the 'Weight Variables' window with 'Indicator' set to 'DWT'.
- Data2 Window:** Shows a table with 'Samples' and 'Divisor' columns. The 'Divisor' column contains values like 1, 10.622, 4.4365, etc.
- Fal copepod counts Window:** Shows a table with 'Samples' and 'Abundance' columns. The 'Abundance' column contains values like 0, 18, 13, 5, 12, etc.
- Data5 Window:** Shows a table with 'Samples' and 'Abundance' columns. The 'Abundance' column contains values like 0, 1.6947, 1.2239, 0.47074, 1.1298, etc.

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