

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 image is a collage of screenshots from a software interface, likely a bioinformatics or ecological data analysis tool, demonstrating the steps to perform variable weighting.

Top Left: Transform Dialog
 - Title: TRANSFORM
 - Selected data: Data4
 - Expression: $1/V$
 - Pick: Cell (selected)
 - Type: Cell (selected)
 - Variables list: Brianola sp., Pseudobradya, Halectinosoma, Tachidius disci, Microarthridior, Harpacticus fle, Stenhelina palus, Stenhelina elizab, Amphiascoides, Robertsonia ce.
 - Divisor column highlighted.

Top Right: Fal copepod counts Data Window
 - Title: Fal copepod counts
 - Subtitle: Fal estuary copepods Abundance
 - Variables: Brianola sp., Pseudobradya, Halectinosoma, Tachidius disci, Microarthridior
 - Samples: R1, R2, R3, R4
 - Labels: Brianola sp., Pseudobradya, Halectinosoma, Tachidius disci, Microarthridior
 - Factors: Brianola sp., Pseudobradya, Halectinosoma, Tachidius disci, Microarthridior

Bottom Left: Data5 Data Window
 - Title: Data5
 - Subtitle: Fal estuary copepods Abundance
 - Variables: Brianola sp., Pseudobradya, Halectinosoma, Tachidius disci, Microarthridior
 - Samples: R1, R2, R3, R4
 - Labels: Brianola sp., Pseudobradya, Halectinosoma, Tachidius disci, Microarthridior
 - Factors: Brianola sp., Pseudobradya, Halectinosoma, Tachidius disci, Microarthridior

Bottom Center: Indicators Dialog
 - Title: Indicators
 - Edit: Fill
 - Add... button
 - Label: Brianola sp.
 - DWT: 1

Bottom Right: Weight Variables Dialog
 - Title: Weight Variables
 - Indicator: DWT
 - OK button

Revision #3

Created 22 May 2024 00:55:26 by Arden

Updated 15 January 2025 00:35:04 by Abby Miller