

# 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:  $1/N$ ), 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 displays several screenshots from a software interface, illustrating the process of variable weighting for the 'Fal copepod counts' dataset.

**Data2: Index of Dispersion (Other)**

Samples	Divisor
Brianola sp.	1
Pseudobradya	10.622
Pseudobradya	4.4365
Halectinosoma	7.3333
Tachidius disci	13.67
Microarthridior	11.46
Harpacticus fle	1
Stenhelia palus	6.3882
Stenhelia elizab	5.9618
Amphiascoides	4.661
Robertsonia ce	19.853

**TRANSFORM**

Selected data: Data4

Expression:  $1/N$

Pick: Cell

**Data4: Index of Dispersion (Other)**

Samples	Divisor
Brianola sp.	0.094148
Pseudobradya	0.2254
Pseudobradya	0.13636
Halectinosoma	0.073155
Tachidius disci	0.087261
Microarthridior	1
Harpacticus fle	0.15654
Stenhelia palus	0.16773
Stenhelia elizab	0.21455
Amphiascoides	0.050371
Robertsonia ce	

**Fal copepod counts: Fal estuary copepods Abundance**

Variables	R1	R2	R3	R4
Brianola sp.	0	0	0	0
Pseudobradya	18	13	5	12
Pseudobradya	0	0	0	0
Halectinosoma	0	0	0	0
Tachidius disci	12			
Microarthridior	2			

**Indicators**

Label	Dwt
Brianola sp.	1
Pseudobradya	0.0941478
Pseudobradya	0.2254025
Halectinosoma	0.1363636
Tachidius disci	0.0731545
Microarthridior	0.0872609
Harpacticus fle	1
Stenhelia palus	0.1565383
Stenhelia elizab	0.1677349
Amphiascoides	0.2145468
Robertsonia ce	0.0503712

**Weight Variables**

Indicator: Dwt

**Data5: Fal estuary copepods Abundance**

Variables	R1	R2	R3	R4
Brianola sp.	0	0	0	0
Pseudobradya	1.6947	1.2239	0.47074	1.1298
Pseudobradya	0	0	0	0
Halectinosoma	0	0	0	0
Tachidius disci	0.87785	0	0.14631	0.14631
Microarthridior	0.17452	0.52357	1.7452	0.87261

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