

Summary Statistics

File>Open>Filename: **WA fish diets %vol**, and examine the factors sheet with **Edit>Factors**. The samples form 7 groups (identified in the labels by A to G) which are the different predator species, three of which, B: *Sillago schomburgkii* ($n = 10$), E: *Sillago bassensis* ($n = 14$), G: *Sillago vittata* ($n = 16$), are from the same genus (congeneric) and thus of particular interest in terms of whether their diets are distinguishable (they occupy different niches in the 'dietary space'). First, calculate simple summary statistics for each sample with **Analyse>Summary Stats>For•Samples**. Not all summary options (Min, Max, Average, Sum, Standard deviation, Variance, Range, Non zero) may be meaningful in particular contexts: one that is informative here is \checkmark Sum. This shows that three samples (A9, B3 and B4) have low total gut fullness ($<10\%$), even though from a pool of 5 guts, and it is justifiable to look at the effect of (temporarily) dropping these samples from the analysis on the grounds that they contain little information on dietary composition (and could thus have large variability in similarity with other samples, see Section 5 on zero-adjusted Bray-Curtis).

The screenshot shows the PAST software interface. The 'Analyse' menu is open, and 'Summary Stats...' is selected. The 'Summary' dialog box is displayed, with 'For' set to 'Samples'. The 'Sum' option is checked under the 'Summary' section. The 'Data1' window is also open, showing a table of dietary data for 7 nearshore fish species (A1 to A10) and 5 other species (B1 to B5). The table is titled 'Diets of 7 nearshore' and 'Other'.

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2	B3	B4	B5
Nematoda	0	0	0	0	0	0.14	0	0	0.5	0	2.26	0	0.2	0	0
Oligochaeta	0	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0
Combined polych	0	0	0	1.54	0	0	0	0	0	0	15	3	0	15.9	0
Calanoid	56.56	59	50.78	24.8	30.16	25.16	25.4	24.56	0	17.68	0	0	0	0	0
Harpactacoid	0.24	0.1	1.42	0.8	0.22	0.1	2.92	1.4	0	1.3	6.12	0	0	0	0

The 'Summary' dialog box shows the following options:

- For: ☐ Variables ☒ Samples
- Minimum: ☐
- Maximum: ☐
- Average: ☐
- Sum: ☒
- Standard deviation: ☐
- Variance: ☐
- Range: ☐
- Non zero: ☒

The 'Data1' window shows the following data:

Variables	Sum	Non zero
A6	60.8	7
A7	28.84	4
A8	36.3	7
A9	7.4	4
A10	41.48	8
A11	98	3
A12	94	4
A13	28.6	8
A14	31.62	10
A15	36.9	8
A16	34.8	11
B1	63.28	3
B2	47.58	5
B3	6	3
B4	2.7	2
B5	18.6	4

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