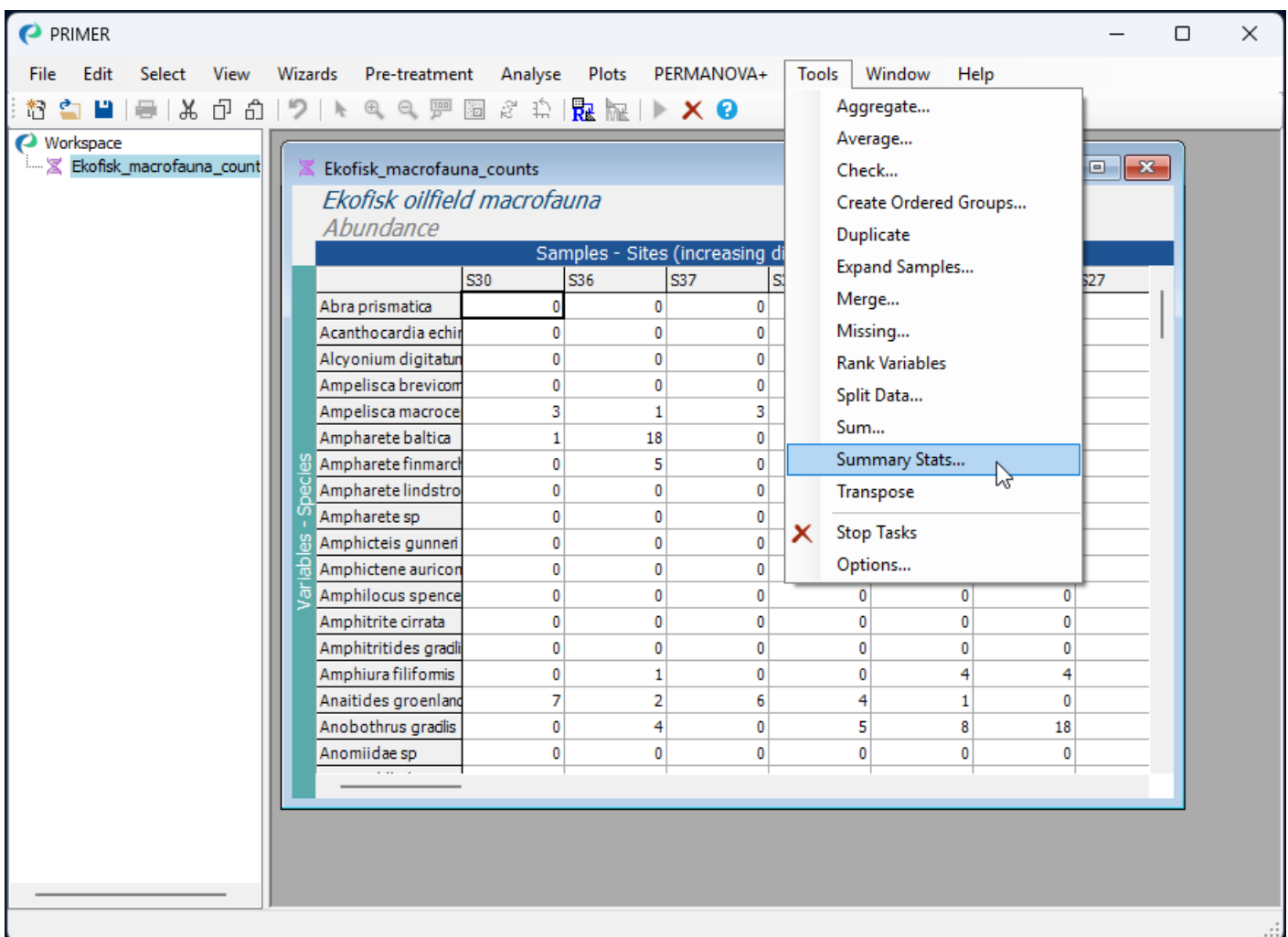


1.3 Biotic data: summary stats

To show the utility of this tool, we will calculate some summary statistics from a study examining changes in macrofaunal communities inhabiting sediments near an oil platform (Ekofisk) in the North Sea, provided by [Gray et al. \(1990\)](#). These data consist of counts of the abundances of $p = 174$ taxa (mostly identified to species level) sampled by 3 day grabs taken at each of $n = 39$ stations, situated in an approximately 5-spoke radial design leading out from the oil platform. The stations were classified into the following four groups according to their relative distance from the centre of drilling activity at the Ekofisk oil platform: D = less than 250m, C = 250m - 1km, B = 1 - 3.5km, and A = more than 3.5km away.

Start running **PRIMER 8**, then click **File > Open...** to open the data file named '**Ekofisk_macrofauna_counts.pri**' (found inside the 'Examples_P8 > Ekofisk_macrofauna' folder).

From the 'Ekofisk_macrofauna_counts' data sheet inside PRIMER, click on **Tools > Summary Stats...**, as shown below:



Choose from the dialog all of the summary statistics you would like to calculate on the dataset. For example, we might choose to calculate the average, median, minimum, maximum, range, standard deviation, number of zeros, singletons, and the number of non-zeros (i.e., frequency of

occurrence), like this:

Summary

Summarise

☒ Variables ☐ Samples

Split by

☐ Factor Dist

☐ Indicator

Output

☐ Levels/groups as separate sheets

Statistics

☒ Average ☐ Symmetry

☒ Median 0.05

☐ Sum ☐ Skewness

☒ Minimum ☐ Kurtosis

☒ Maximum ☒ Number of zeros

☐ Quantiles 0.25, 0.75 ☒ Singletons

☒ Range ☐ Doubletons

☐ IQR ☒ Number of nonzeros (frequency)

☒ Standard deviation ☐ Smallest number above threshold

☐ Variance 0

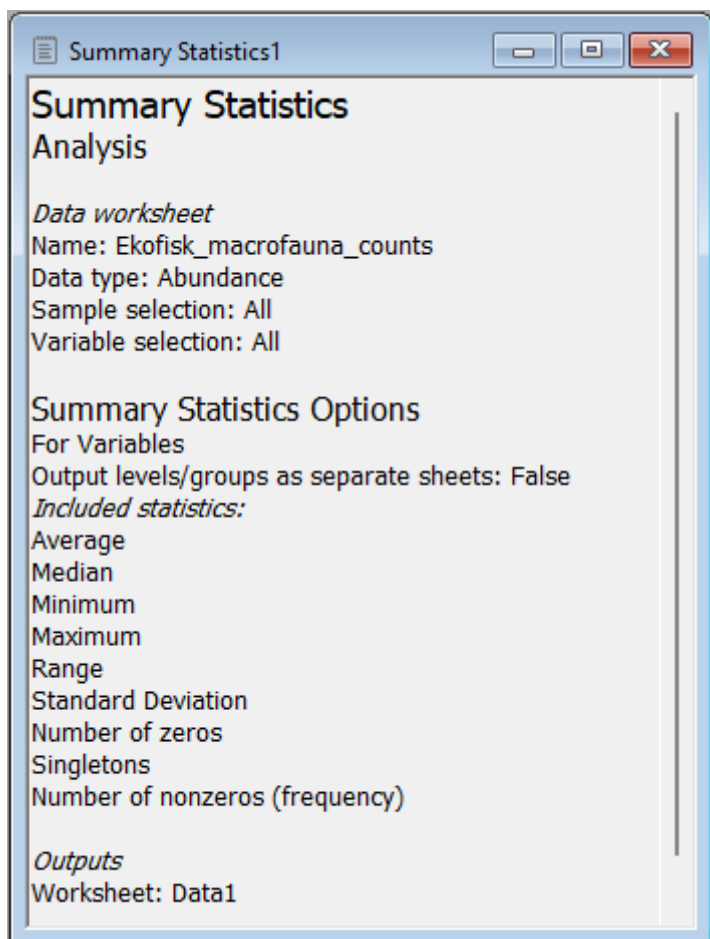
☐ Sample size ☐ Largest number below threshold

☐ Standard error 0

Select all Clear selections Invert selections

OK Cancel Help

Click 'OK', and you will see a 'Summary Statistics 1' file, in which you are shown the choices you made for running that routine, viz:



as well as a resulting output file 'Data1', which provides all of these summary statistics for each of the individual variables (taxa), as shown below:

PRIMER

File Edit Select View Wizards Pre-treatment Analyse Plots PERMANOVA+ Tools Window Help

Workspace
 Ekofisk_macrofauna_counts
 Summary Statistics1
 Data1

Data1
 Ekofisk oilfield macrofauna
 Other

	Average	Median	Minimum	Maximum	Range	Standard Dev	Number of zeros	Singletons	Number of nonzeros
Abra prismatic	18.077	19	0	37	37	10.297	5	0	34
Acanthocardia echin	0.051282	0	0	1	1	0.22346	37	2	2
Alcyonium digitatum	0.17949	0	0	2	2	0.50637	34	3	5
Ampelisca brevicornis	0.051282	0	0	2	2	0.32026	38	0	1
Ampelisca macrocephala	5.1795	5	0	19	19	4.1793	4	3	35
Ampharete baltica	9.7436	7	0	37	37	9.4471	3	5	36
Ampharete finmarkensis	1.5128	1	0	8	8	2.0374	17	10	22
Ampharete lindstroemi	0.051282	0	0	1	1	0.22346	37	2	2
Ampharete sp.	0.051282	0	0	1	1	0.22346	37	2	2
Amphitrite gunneri	0.12821	0	0	2	2	0.40907	35	3	4
Amphitrite auricornis	4.4103	3	0	20	20	4.9774	10	7	29
Amphilocus spencei	0.025641	0	0	1	1	0.16013	38	1	1
Amphitrite cirrata	0.025641	0	0	1	1	0.16013	38	1	1
Amphitrite gradis	0.025641	0	0	1	1	0.16013	38	1	1
Amphipura filiformis	5.9744	5	0	16	16	4.614	4	2	35
Anaitides groenlandicus	1.1282	1	0	7	7	1.542	15	15	24
Anobothrus gradis	5.5897	5	0	18	18	4.8813	5	5	34

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