Supplementary Material 6d: Guidance given to students.

Instructions for carrying out correlation analysis using statistical analysis in Excel.

If the stats package is not loaded in Excel then load by selecting:

Tools add in Data analysis. Under tools: select **data analysis**

Then Select: **correlation**

Once you have selected: correlation in Excel Follow instructions: select data and also location for the correlation table to be displayed.

Links to help you with Correlation and interpretation:
https://support.google.com/docs/answer/3093990 accessed 23.10.14

http://www.dummies.com/how-to/content/how-to-interpret-a-correlation-coefficient-r.html accessed 23.10.14

The aim of this correlation analysis is to determine if there is a relationship between 2 parameters from the different habitats. The data needs to be put in a certain layout to be able to carry out a correlation analysis (see example); multiple pairs can be analysed at any one time see output of analysis (Table 1)

Table 1: Example Correlation table between a number of different parameters; sample size was 30.

	pH	*No of species of plants*	*No of different types of invertebrates*	*Number of hits*
pH	1			
No of species of plants	**0.388**	1		
No of different types of invertebrates	**0.541**	**0.477**	1	
Number of hits	**0.566**	0.325	**0.422**	1

To determine whether there is a correlation the p or r number needs to be compared to the value found in a Table of critical values for Pearson correlation; using the link provided you look up the number of samples e.g. 30 samples then look under the column for the 2- tailed option 0.05 probability - that value is 0.361 If you look at Table 1 the numbers in bold are greater than this value therefore show significant correlation at 5% level.

http://faculty.fortlewis.edu/CHEW_B/Documents/Table%20of%20critical%20values%20for%20Pearson%20correlation.htm accessed 23.10.14

Note: If you are using a different correlation table you may need to work out the degrees of freedom. Degrees of freedom equal the number of paired samples minus 2 If there were 30 samples, 2 factors therefore it is 30-2 = 28 degrees of freedom. Look up in a correlation table the 5% p value, need to know number of samples and degrees of freedom.

Part B: **Upload this completed document to FASer by deadline. See Ecology Handbook for instructions on what to do.**