**Assignment**

* Give units: use ggplot and good axis titles
* Statistical number: infer an ecological context from that: posing valid scientific ideas: only half a paragraph is enough: critical thinking
* Low AIC = highest explanatory value, low parsimony
* Make it logical: no marks for the layout

**Tutorial: model fit**

1. **In simpler regression models: R squared**
2. **In multiple regression models: AIC**

**Assignment Submission**

Please Submit the completed questions by the deadline of 12 **noon Thursday 2nd December 2021.**Please title your submission with your exam number to ensure anonymous marking.

**Assessment Criteria**

*For this assignment, you will be provided with a dataset and information that will help you to understand the scientific questions that might be interesting to ask using the dataset. You will be asked to use various statistical approaches to answer some questions and to provide numerical answers. You will also be asked to present figures of different statistical outputs e.g. histograms, boxplots to support your answers to some questions. Lastly, you will be asked to interpret the ecological reasons behind the numerical answers in plain language which would be understandable to a non-scientific audience.*

*Your report will be assessed against the following criteria:*

**Model construction and statistical fluency (50%):**

* Have the correct statistical frameworks been chosen to analyse the data for a specific question?
* Does the student demonstrate a knowledge of appropriate technical statistical terms such residuals, over dispersion, skewedness, heteroscedasticity etc.?
* Have the statistical analyses been constructed in R correctly and produced the correct numerical answers? For example, if you are asked to rank models based on their AIC scores, did you obtain the correct ranking and are the AIC values correct?
* Does the student demonstrate comprehension of the numerical output of statistical analyses in the R Statistical Software?

**Producing high quality scientific figures (20 %):**

* Are figures properly formatted for the data they present? For example x and y axis labels have been changed to specific variable names, correct units for variables included etc.?
* Are figures intelligible and appealing? Do they relate well to the questions asked and the results you are intending to communicate?
* When required are figure captions clearly written and describe all features shown within the plot?

**Scientific reasoning and understanding of results (30%):**

* Has the student inferred the correct ecological context from the statistical results?
* Is the student able to communicate these results in an ecological context with plain, non-technical language?
* Do you show creative thinking about the data and analyses?