Analysis of Environmental Data – Reading questions 10
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Q1 (1 pt.): Why would we want a model selection criterion to penalize the number of parameters in a model?

> We lose one degree of freedom for each parameter we estimate to get the best guess for the overall model standard deviation.

Q2 (3 pts.): In 2 - 3 short paragraphs, describe the meaning of the slope parameter β_1 in the context of the relationship between the predictor variable, x, and the response variable y.

> For each 1-unit change in the predictor variable x, we expect a β_1 change in the value of the response variable y. The slope parameter β_1 tells us how steep the line of best fit is. If we have a plant growth of 2.4cm (β_1) every day (x variable), we would have to add 2.4cm every day. So, we would have a plant height of 4.8cm at day 2 and so on…

Q3 (1 pt.): Based on the model table, what is the *base case* water treatment?

> The low water treatment (intercept) is the base case.

Q4 (2 pts.): What is the average plant mass, in grams, for the **low** water treatment? How did you calculate this quantity?

> The average plant mass for the low water treatment is 2.4g.
> It is the estimate value for the intercept.

Q5 (2 pts.): What is the average plant mass, in grams, for the **medium** water treatment? How did you calculate this quantity?

> The average plant mass for the medium water treatment is 3.7g.
> You simply add the estimate value of waterMed to the bas case value, so: 2.4+1.3.

Q6 (1 pt.): Which of the following questions cannot be addressed with the model coefficient table? Select the correct answer or answers:

> B: Is water availability a significant predictor for plant biomass accumulation?