

MULTIVAR STATS IN ECOL AND GENETICS — EXERCISES, SHEET 2

---

- 1.** A beak of a Darwin finch has been found. Use the data in the table `FinchesSuloway.txt` to optimize the method of predicting the wing length of the bird by its beak dimensions `BeakH` and `N.UBkL`. Also take transformations of and interactions between these variables into account. Specify your final model in mathematical terms. How much does the accuracy of the prediction change when it is known on which island the beak has been found?
- 2.** The (simulated) dataset in the tables `bacteria_trainig.txt` and `bacteria_predict.txt` contains abundance data for a group of soil bacteria, the sampling seasons, sampling areas, the soil types at the sampling sites and the concentrations of certain elements. For the half of the samples that is shown in `bacteria_predict.txt` the bacteria abundances have not yet been measured. Try to predict these abundances by a model that is fitted to the data from `bacteria_trainig.txt`. It may be necessary to rescale some of the variables and to take interactions into account. Specify your final model in mathematical terms.