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| **Biostokastikum** | 2014-05-27 |

Exercise 1 – Logistic regression

The occurrence of epiphytic lichens with respect to tree species and microclimate, represented by the age of forest stands, was studied. Ten forest stands of each age category (Early: 3-8 years old, Late: 15-20 years old and Old: >80 years old) were selected at random within a geographical area in central Sweden. In the next step, five trees each of the species aspen, birch, pine and spruce were selected within each stand and inspected for occurrence of a number of lichen species. Also, the diameter at breast height (DBH) in centimeter was measured as a proxy for the age of the tree. The result for dot lichen (*Micarea prasina*)is summarized in the file lichen.xlsx.

## Exercise

Build a generalized linear model for the occurrence of dot lichen with respect to 1) tree species, 2) age of the forest stand and 3) diameter at breast height. Consider possible interactions in the model and include those that improve the model significantly. Summarize your findings and draw conclusions about the impact of the background variables on the occurrence of dot lichen.