Eucalyptus Regrowth

**Introduction**

background

This study includes data from

The data contains

351 samples from 18 sites (properties)

Between 4 and 11 quadrats per property per survey, new random quadrats each time

3 surveys, new quadrats sampled each time (winter, spring, autumn)

Winter (July) 2006, Spring (October-December) 2006, Autumn (April-May) 2007

– missing August-September 2006 and January-March 2007

The goal of this analysis is to

We hypothesize that

eucalyptus canopy cover ~ property, date/season, aspect, landscape, precipitation, PET, radiation, grasses, litter

total eucalyptus ~ property, landscape, PET, precipitation

**Methods**

Hypothesis testing approach because data has 38 parameters

We first analyzed the data for imbalances and relationships,

The final model was tested by adding and removing variables and weights

The formula for our model with the most explanatory power is:

**Results**

261/351 (74.4%) no seedlings, 90/351 (25.6%) contain seedlings

271/351 (77.2%) no canopy, 80/351 (22.8%) with some canopy cover

The mean

The parameter estimates

**Conclusion**

The greatest predictor of

Future analysis could improve by

Appendix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Mixed effect model summary** | | | |  |
| Formula: hornT ~ age \* mass + sex + (1 | season + density) | | | |  |
| **Fixed effects** | **Estimate** | **Std. Error** | **R2 (M)** | **R2 (C)** |
| (Intercept) | -1.12000 | 7.34660 | --- | --- |
| Age | 46.56103 | 1.10164 | 0.2617 | 0.2374 |
| Mass | 14.03264 | 0.23892 | 0.3539 | 0.3143 |
| SexM | 39.86516 | 1.66785 | 0.1505 | 0.1468 |
| Age:Mass | -1.62995 | 0.04805 | 0.1128 | 0.1079 |
| **Random effects** | **Variance** | **Std. Dev** |  |  |
| Season (Intercept) | 144.7 | 12.030 | 0.1165 | 0.1451 |
| Density (Intercept) | 54.6 | 7.389 | 0.1150 | 0.1270 |
| Residual | 2319.2 | 48.158 | --- | --- |

Table . Estimates of mixed effect model where estimates are the regression coefficient (β) or the slope on the effect: Horn Length (hornT) given in mm. Sex is set relative to male (SexM) and density is set relative to low density. Percent variance explained is given by marginal R2 (M) and conditional R2 (C). Sample size n = 4,394.

Code can be found in Github repository linked below:

<https://github.com/mtindall69/bios14/tree/chamois-midterm>

References