

# ExaminingCovariatesIV

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Repeat of covariance analysis without sites 23, 53 , 74.

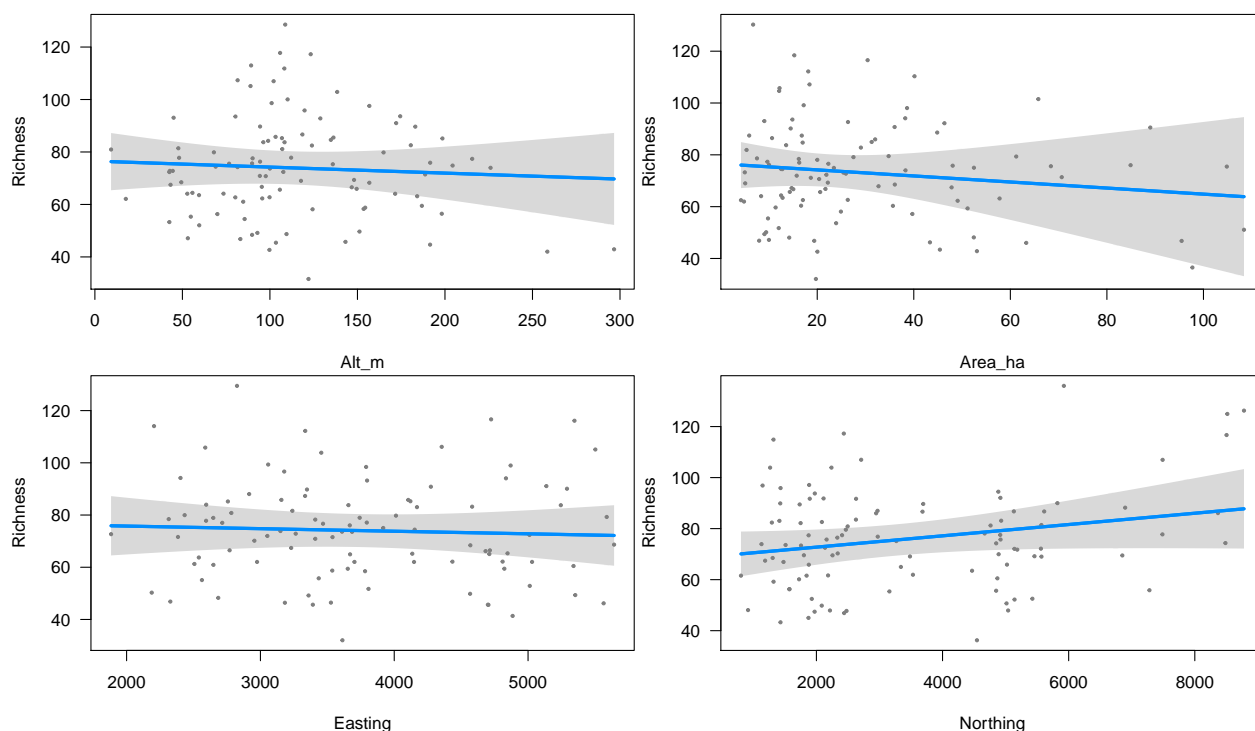
Already dropped :perimeter, meanLBA, sdmean\_dbh, sd\_treedensity, sd\_SOM

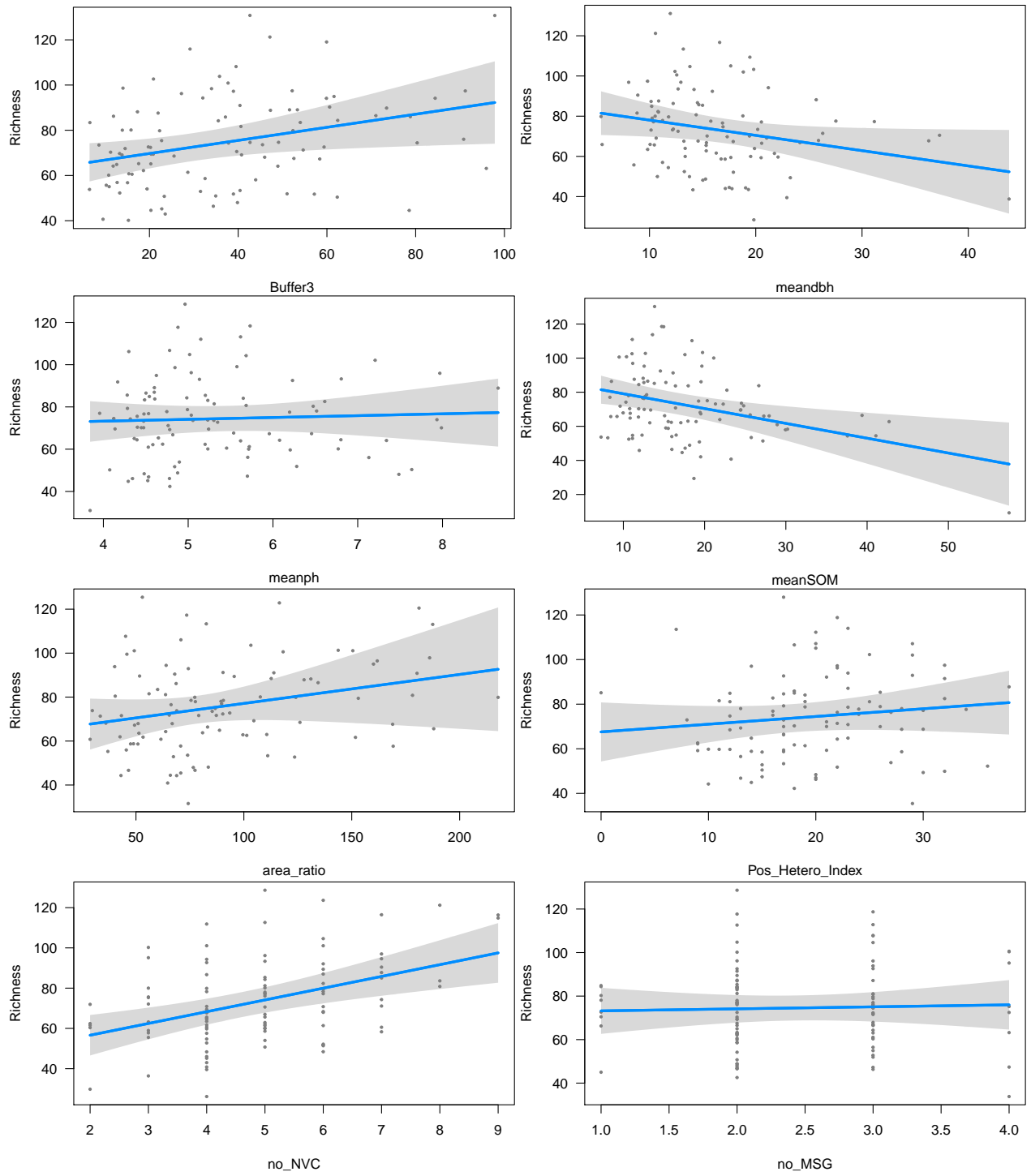
Now drop sd\_LBA, sd\_pH, and combine the variables

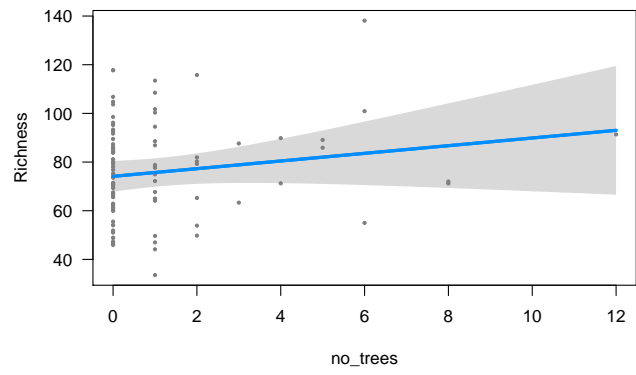
Combined data from variables

```
## [1] "Alt_m"          "Area_ha"          "Easting"
## [4] "Northing"       "Buffer3"          "meandbh"
## [7] "meanph"         "meanSOM"          "area_ratio"
## [10] "Pos_Hetero_Index" "no_NVC"           "no_MSG"
## [13] "no_trees"
```

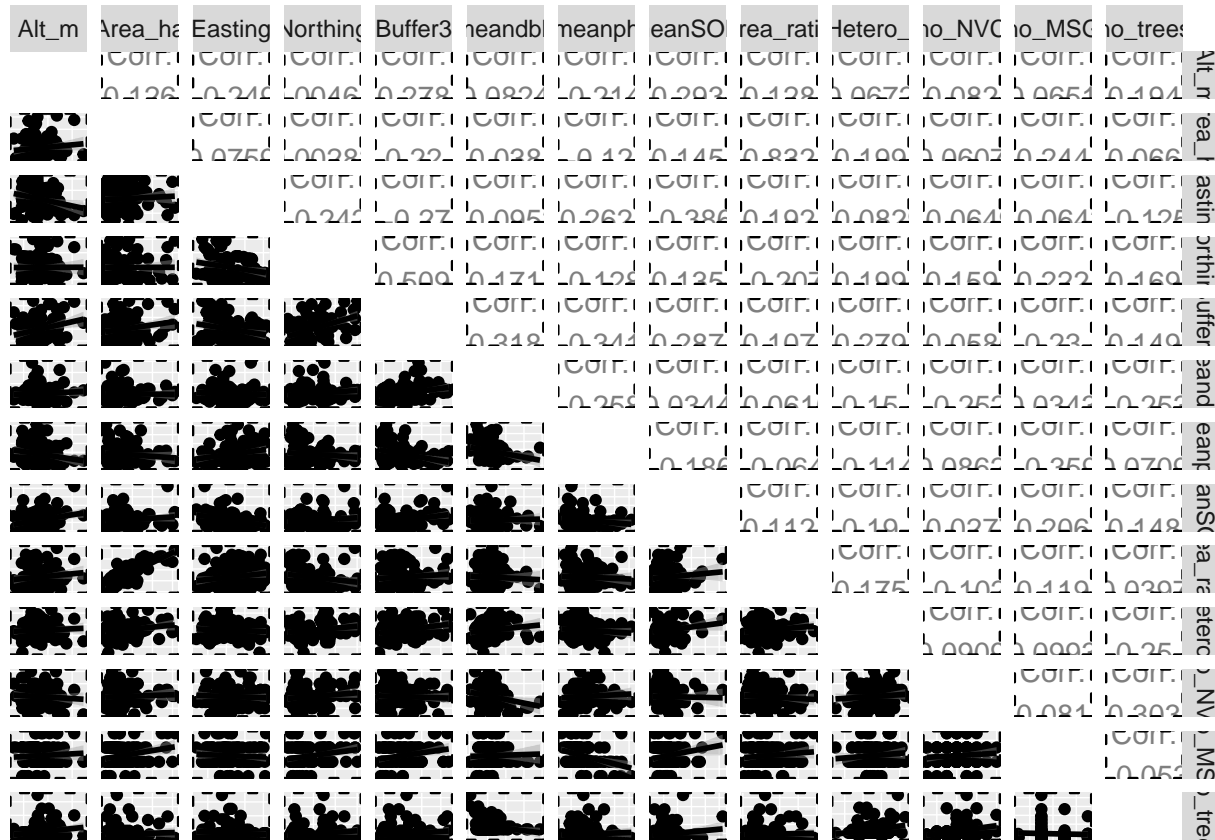
Effect of each variable on richness using multiple linear regression, simple additive model.







## Colinearity of variables using pair plots

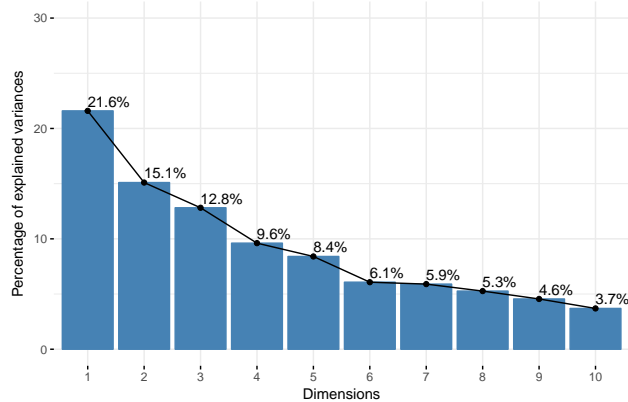


# PCA

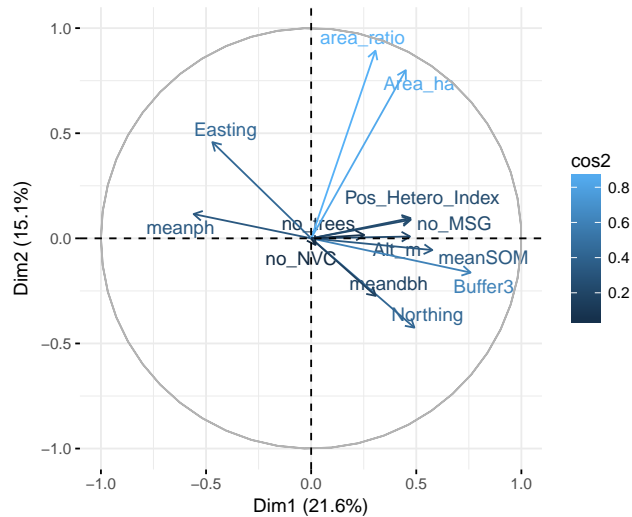
## Physical variables

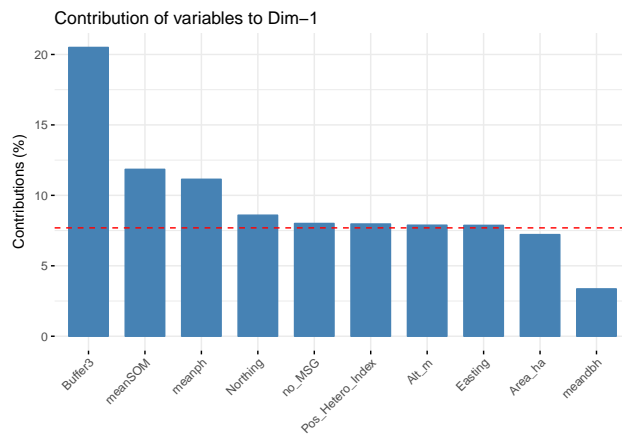
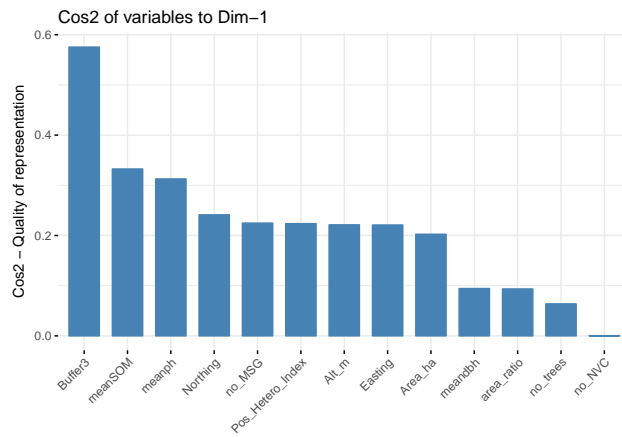
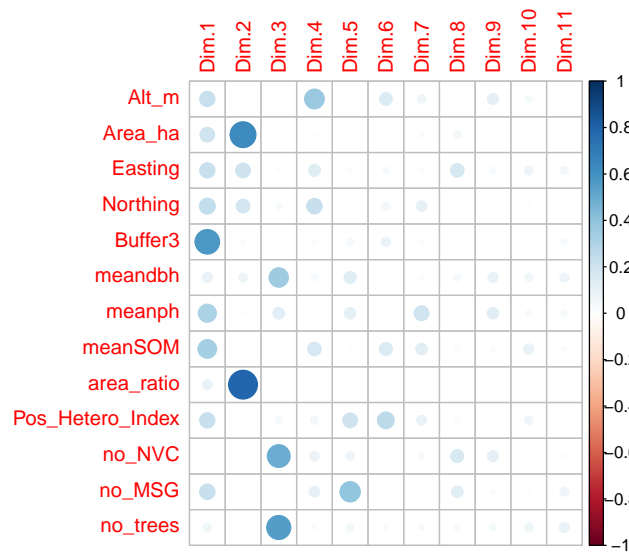
##	eigenvalue	variance.percent	cumulative.variance.percent
## Dim.1	2.8070738	21.5928752	21.59288
## Dim.2	1.9629210	15.0993926	36.69227
## Dim.3	1.6659327	12.8148666	49.50713
## Dim.4	1.2493624	9.6104802	59.11761
## Dim.5	1.0924122	8.4031710	67.52079
## Dim.6	0.7895550	6.0734998	73.59429
## Dim.7	0.7670987	5.9007592	79.49504
## Dim.8	0.6848312	5.2679321	84.76298
## Dim.9	0.5920482	4.5542168	89.31719
## Dim.10	0.4804394	3.6956873	93.01288
## Dim.11	0.4347525	3.3442501	96.35713
## Dim.12	0.3479861	2.6768160	99.03395
## Dim.13	0.1255869	0.9660531	100.00000

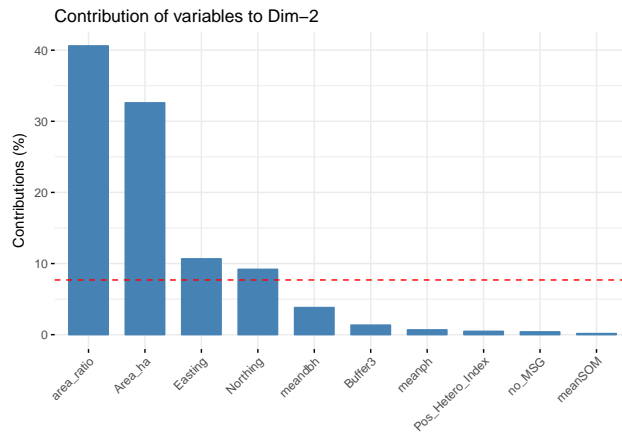
Scree plot



Variables – PCA







**Remove altitude and easting as the richness is not correlated with them. altitude contributes little to component 1. Easting contributes 10% to component 2, not sure if that matters.**