# ExaminingCovariatesIII

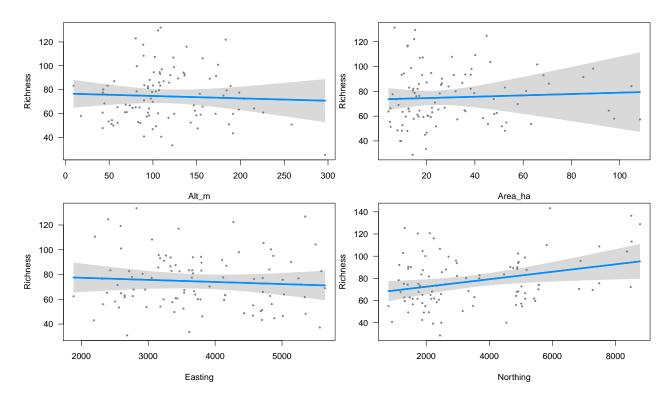
PetraGuy 27 March 2018

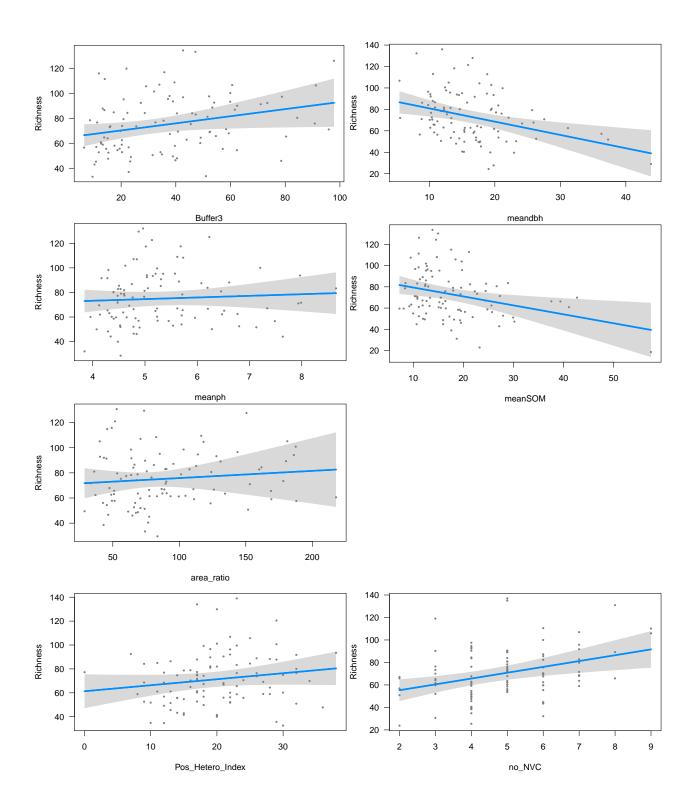
Repeat of covariance analysis without sites 23, 53, 74.

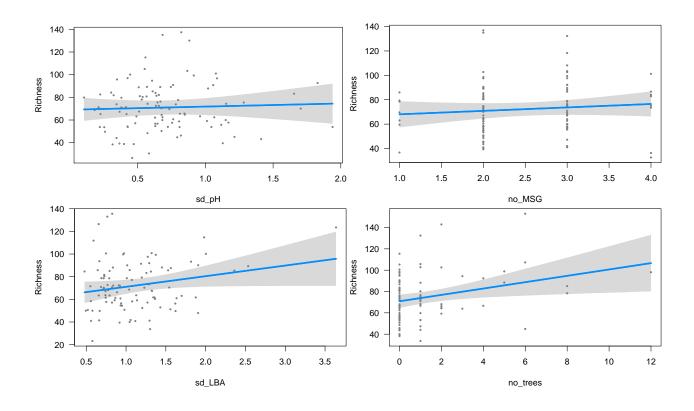
Drop perimeter, meanLBA, sdmean\_dbh, sd\_treedensity, sd\_SOM

```
Physical Variables
## [1] "Alt_m"
                     "Area_ha"
                                    "Easting"
                                                  "Northing"
                                                                "Buffer3"
## [6] "meandbh"
                                    "meanSOM"
                     "meanph"
                                                  "area ratio"
Heterogeneity variables
## [1] "Pos_Hetero_Index" "no_NVC"
                                                 "sd_pH"
## [4] "no MSG"
                            "sd LBA"
                                                 "no trees"
```

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







## Colinearity of variables using pair plots

				meandbh				
Corr:	Corr:	Corr:	Corr:	Corr:	Corr:	Corr:	Corr:	Αlt
0.126	-0.249	0.00461	0.278	0.0824	-0.214	0.293	0.128	3
3	Corr:	Corr:	Corr:	Corr:	Corr:	Corr:	Corr:	∖rea
	0.0759	0.00282	0.22	-0.0384	-0.12	0.145	0.832	j h
		Corr:	Corr:	Corr: -0.0952	Corr:	Corr:	Corr:	E as
		-0.242	_0.27	-0.0952	0.262	-0.386	0.192	ting
	5		Corr:	Corr:	Corr:	Corr:	Corr:	lort
## B.T.	- <b>1</b>		0.509	0.171	_0.128	0.135	-0.207	hing
	34.			Corr: 0.318	Corr:	Corr:	Corr:	Buf
		34:		0.318	_0.341	0.287	0.107	fer3
			2.00		Corr:	Corr:	Corr:	near
		<b>\$</b> \$77	<b>449.</b> **		-0.258	0.0344	-0.0616	db
	.32:	<b>b</b> ,				Corr: -0.186	Corr:	nea
	355					-0.186	-0.064	npr
in the second				•••	3.0		Corr: 0.112	ean
				<b>₹</b>			0.112	SO
A MARINE	.471.	<b>c</b> :•	The second	30	83.			rea_
	<b>437</b>				<b>**</b>			_rati

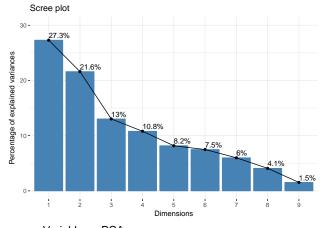
	τ	
L		

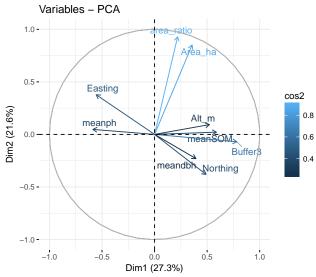
Pos_Hetero_Index	no_NVC	sd_pH	no_MSG	sd_LBA	no_trees	
 	Corr: 0.0909	Corr: -0.168	Corr: 0.0993	Corr: -0.162	Corr: 0.25	_Hetero_In
		Corr: 0.283	Corr: 0.081	Corr: 0.193	Corr: 0.303	no_NVC
-	iliii÷.		Corr: -0.0483	Corr: 0.0787	Corr: 0.153	sd_pH
• • • • • • • • • • • • • • • • • • • •				Corr: -0.16	Corr: -0.053	no_MSG
- 100	ıilili.		<del>i     1</del>		Corr: -0.226	sd_LBA
		die.				no_trees

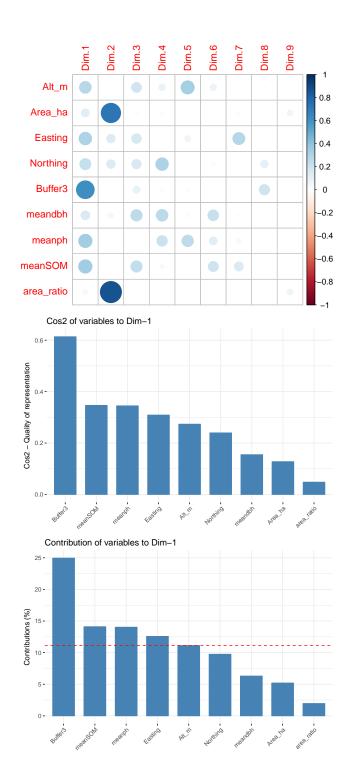
## PCA

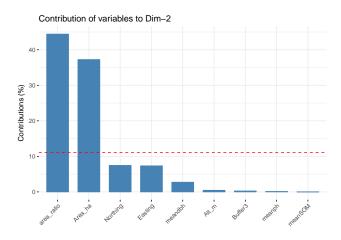
### Physical variables

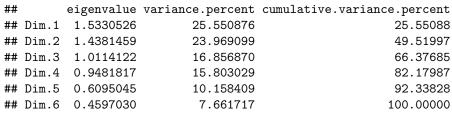
eigenvalue	variance.percent	<pre>cumulative.variance.percent</pre>
2.4571555	27.301727	27.30173
1.9442830	21.603144	48.90487
1.1727301	13.030335	61.93521
0.9717474	10.797194	72.73240
0.7358330	8.175922	80.90832
0.6740325	7.489250	88.39757
0.5392184	5.991316	94.38889
0.3673959	4.082176	98.47107
0.1376041	1.528935	100.00000
	2.4571555 1.9442830 1.1727301 0.9717474 0.7358330 0.6740325 0.5392184 0.3673959	1.9442830       21.603144         1.1727301       13.030335         0.9717474       10.797194         0.7358330       8.175922         0.6740325       7.489250         0.5392184       5.991316         0.3673959       4.082176

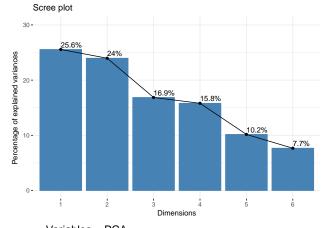


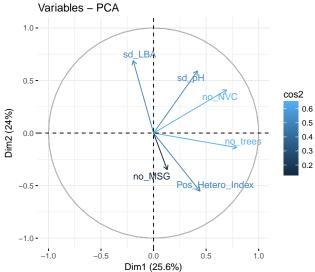


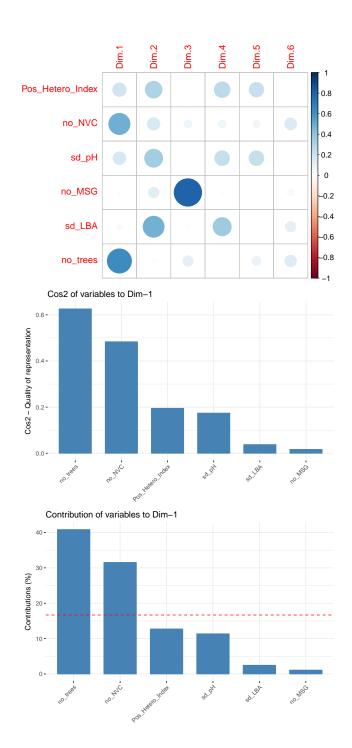


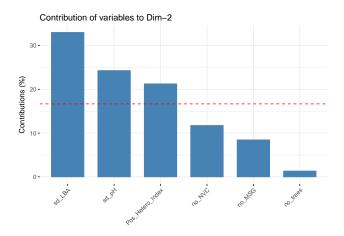












#### Discussion

Regression of Richness: Abiotic Still postive correlations for Northing, buffer, negative correlations for mean dbh and mean SOM. Hetero Still positive for positive hetero index, no NVC sd LBA and no\_trees

Since sd\_LBA is related to no\_ trees, and I'm not sure about the sd variables (what hapens when they are standardised??) maybe sd\_LBA shold be dropped sd pH doesnt seem to be contributing to anything - drop this

Now combine all variables and look at correlations again