RDA

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1. Primer paso: cargar las librerias que necesitas.

```
library(BiodiversityR)
library(ggrepel)
library(ggplot2)
library(readxl)
library(ggsci)
library(ggforce)
library(dplyr)
```

2. Segundo paso: cargar los datos.

```
species=read.csv("data/RDA_species.csv", header=T, row.names=NULL, sep=",")
env=read.csv("data/RDA_environmetal.csv", header=T, row.names=NULL, sep=",")
```

3. Before we can use this explanatory matrix we need to check that its rows are in the same order as our response matrix all.equal(rownames(species), rownames(env))

```
all.equal(rownames(species), rownames(env))
```

```
## [1] TRUE
```

4. Remover la columna de sitos.

```
species_1 <- select(species, -site)
env_1 <- select(env, -site)
```

5. Transformar datos. # Apply log+1 transformation to your species occurrences data (spe matrix) # in order to correct for possible statistical errors associated to rare or very #common species

```
species_2 <- decostand(species_1, method = "hellinger")
```

6.

vegan requires that we write out each term if we are not going to

convert the factor to a dummy matrix

```
rda_tree_all = vegan::rda(species_2 ~ temperature + pH +
                oxygen + conductivity + plants, data= env_1)
rda_tree_all
```

```
## Call: rda(formula = species_2 ~ temperature + pH + oxygen +
## conductivity + plants, data = env_1)
##
##               Inertia Proportion Rank
## Total          0.6136     1.0000
## Constrained    0.1684     0.2744    5
## Unconstrained  0.4452     0.7256   47
## Inertia is variance
##
## Eigenvalues for constrained axes:
##    RDA1    RDA2    RDA3    RDA4    RDA5
## 0.08808 0.05558 0.01358 0.00769 0.00346
##
## Eigenvalues for unconstrained axes:
##     PC1     PC2     PC3     PC4     PC5     PC6     PC7     PC8
## 0.11450 0.08018 0.05423 0.03085 0.02713 0.02201 0.01699 0.01612
## (Showing 8 of 47 unconstrained eigenvalues)
```

7. Summary

```
summary(rda_tree_all)
```

```
##
## Call:
## rda(formula = species_2 ~ temperature + pH + oxygen + conductivity +      plants, data = env_1)
##
## Partitioning of variance:
##               Inertia Proportion
## Total          0.6136     1.0000
## Constrained    0.1684     0.2744
## Unconstrained  0.4452     0.7256
##
## Eigenvalues, and their contribution to the variance
##
## Importance of components:
##                            RDA1    RDA2    RDA3     RDA4     RDA5    PC1     PC2
## Eigenvalue            0.08808 0.05558 0.01358 0.007687 0.003461 0.1145 0.08018
## Proportion Explained  0.14354 0.09058 0.02213 0.012528 0.005640 0.1866 0.13067
## Cumulative Proportion 0.14354 0.23412 0.25625 0.268775 0.274415 0.4610 0.59168
##                            PC3     PC4     PC5     PC6     PC7     PC8     PC9
## Eigenvalue            0.05423 0.03085 0.02713 0.02201 0.01699 0.01612 0.01494
```

```
## Proportion Explained  0.08838 0.05028 0.04421 0.03586 0.02769 0.02626 0.02435
## Cumulative Proportion 0.68006 0.73034 0.77455 0.81042 0.83811 0.86437 0.88872
##                           PC10     PC11     PC12     PC13     PC14     PC15
## Eigenvalue            0.009891 0.009312 0.007145 0.005925 0.004544 0.004345
## Proportion Explained  0.016119 0.015176 0.011644 0.009656 0.007404 0.007081
## Cumulative Proportion 0.904843 0.920019 0.931663 0.941319 0.948724 0.955805
##                           PC16     PC17     PC18     PC19     PC20     PC21
## Eigenvalue            0.003909 0.003484 0.002743 0.002623 0.002339 0.002138
## Proportion Explained  0.006370 0.005678 0.004471 0.004275 0.003812 0.003484
## Cumulative Proportion 0.962175 0.967853 0.972324 0.976599 0.980412 0.983896
##                           PC22     PC23     PC24      PC25      PC26      PC27
## Eigenvalue            0.001640 0.001594 0.001001 0.0009003 0.0007229 0.0006956
## Proportion Explained  0.002673 0.002598 0.001631 0.0014672 0.0011781 0.0011336
## Cumulative Proportion 0.986568 0.989167 0.990798 0.9922649 0.9934430 0.9945767
##                           PC28      PC29      PC30      PC31      PC32
## Eigenvalue            0.0005203 0.0004844 0.0004257 0.0003649 0.0003048
## Proportion Explained  0.0008478 0.0007894 0.0006938 0.0005947 0.0004968
## Cumulative Proportion 0.9954245 0.9962139 0.9969077 0.9975024 0.9979992
##                           PC33      PC34      PC35      PC36      PC37
## Eigenvalue            0.0002670 0.0002113 0.0001664 0.0001482 0.0001062
## Proportion Explained  0.0004351 0.0003443 0.0002712 0.0002416 0.0001731
## Cumulative Proportion 0.9984342 0.9987786 0.9990497 0.9992913 0.9994644
##                           PC38      PC39      PC40      PC41      PC42
## Eigenvalue            9.604e-05 7.345e-05 0.0000624 3.781e-05 2.797e-05
## Proportion Explained  1.565e-04 1.197e-04 0.0001017 6.161e-05 4.558e-05
## Cumulative Proportion 9.996e-01 9.997e-01 0.9998423 9.999e-01 9.999e-01
##                           PC43      PC44      PC45      PC46      PC47
## Eigenvalue            2.073e-05 5.958e-06 3.162e-06 9.131e-07 2.190e-07
## Proportion Explained  3.379e-05 9.709e-06 5.153e-06 1.488e-06 3.569e-07
## Cumulative Proportion 1.000e+00 1.000e+00 1.000e+00 1.000e+00 1.000e+00
##
## Accumulated constrained eigenvalues
## Importance of components:
##                           RDA1    RDA2    RDA3     RDA4     RDA5
## Eigenvalue            0.08808 0.05558 0.01358 0.007687 0.003461
## Proportion Explained  0.52307 0.33009 0.08064 0.045652 0.020553
## Cumulative Proportion 0.52307 0.85316 0.93380 0.979447 1.000000
##
## Scaling 2 for species and site scores
## * Species are scaled proportional to eigenvalues
## * Sites are unscaled: weighted dispersion equal on all dimensions
## * General scaling constant of scores:  2.431897
##
##
## Species scores
##
##                          RDA1       RDA2      RDA3       RDA4       RDA5
## acan_speculum      -0.0195879  0.1201530  0.002510  0.0153822  0.0030499
## acan_trilobatum     0.1838193 -0.0501594  0.155267 -0.0214987  0.0436757
## ani_allopterum     -0.0290293 -0.2063634 -0.008296 -0.0159759 -0.0192137
## arg_anceps          0.1171305 -0.3178841 -0.011946  0.0692970 -0.0793909
## arg_ellongata       0.0698218 -0.1352089  0.001841  0.0834834  0.0362356
## arg_pulla           0.1310224 -0.0323255  0.113510 -0.0167043  0.0232036
## arg_translata       0.0059253 -0.0092408  0.006192  0.0114653  0.0074602
```

```
## bra_furcata         0.0156129  0.0386489 -0.034760 -0.0125138 -0.0013917
## can_vibex           0.0124648 -0.0164864  0.004420 -0.0074901  0.0074899
## dyt_nigra           0.0090844  0.0027848 -0.005112 -0.0069683 -0.0103029
## dyt_sterilis        0.1363763 -0.1974526  0.050892  0.0232751  0.0636719
## ena_civile          0.0652120 -0.0782905 -0.014572  0.0689602  0.0168067
## ena_novaehispaniae  0.0455305 -0.0058231 -0.028788  0.0625602 -0.0085061
## erythe_attala      -0.0472494  0.1474763  0.043845  0.0006226  0.0019082
## erythe_peruviana   -0.0131611  0.0896531  0.027049  0.0230139  0.0162562
## erythe_plebeja     -0.0164013  0.0273139  0.020904 -0.0053160  0.0015929
## erythe_vesiculosa  -0.0030544 -0.0163881  0.003307  0.0062574  0.0189755
## erythr_fervida     -0.0219028  0.1202737 -0.002305  0.0248452  0.0218671
## erythr_funerea      0.0160834 -0.0071832 -0.049220  0.0173403  0.0229608
## erythr_fusca       -0.0804216  0.2689727 -0.057556  0.1488511  0.0104707
## erythr_umbrata      0.0127367  0.0000330  0.001721 -0.0085808 -0.0128797
## het_cruentata       0.0057819 -0.0683799 -0.014297  0.0317147 -0.0176881
## isc_capreola       -0.4273648  0.1264380  0.097819 -0.0648008 -0.0462781
## isc_ramburii       -0.4936949 -0.1090163 -0.064166 -0.0253609  0.0831982
## les_tenuatus        0.0194656 -0.0439969 -0.002861 -0.0295284  0.0295925
## lib_herculea       -0.0049265  0.0115853  0.018958  0.0125396 -0.0061272
## mac_pseudimitans    0.0331139 -0.0024123 -0.008360  0.0059360  0.0016055
## mia_marcella        0.0672962  0.0447671 -0.118238 -0.0330436  0.0140612
## mic_aequalis        0.0058628  0.0866822  0.017859  0.0191985 -0.0398135
## mic_atra           -0.0028377  0.0057885  0.004150 -0.0060757 -0.0032288
## mic_mengeri         0.0183940  0.0064881 -0.011664 -0.0122174 -0.0105017
## mic_ocellata       -0.0340837  0.0995177  0.016822  0.0429644 -0.0043947
## mic_schumanni       0.0126048 -0.0050086 -0.017829  0.0152975 -0.0053924
## neo_cultellatum     0.0254449  0.1511699 -0.033641  0.0353278  0.0328861
## oli_umbricola       0.0000000  0.0000000  0.000000  0.0000000  0.0000000
## ort_discolor        0.1680024 -0.0212186  0.090226 -0.0093766 -0.0123234
## ort_ferruginea      0.0715847 -0.0044286 -0.099540 -0.0491367 -0.0126230
## pal_lineatipes      0.0003011 -0.0121365  0.002271 -0.0025813 -0.0069160
## pan_flavecens       0.1154856  0.0002741 -0.140162 -0.0620737 -0.0215456
## pan_hymenaea        0.0120006 -0.0010824 -0.015671 -0.0100355  0.0100931
## per_mooma           0.4975460  0.2658160 -0.031190 -0.0685165  0.0204034
## rem_luteipennis    -0.0846502 -0.0436410 -0.003932 -0.0608047  0.0126963
## rhi_jalapensis     -0.0033813 -0.0173885 -0.007417 -0.0020285 -0.0136065
## tau_argo            0.0000000  0.0000000  0.000000  0.0000000  0.0000000
## tau_australis       0.0058924  0.0029787 -0.001559 -0.0040238 -0.0006889
## tel_digiticolis    -0.0420050  0.1219179  0.051184 -0.0052428 -0.0131359
## tel_filiola        -0.0457863  0.1594013  0.078343  0.0297619 -0.0280357
## tel_salva           0.0000932  0.0090394 -0.001999  0.0011281 -0.0025599
## Gomphidae           0.0489509 -0.0164072  0.040247 -0.0076605  0.0198891
##                           PC1
## acan_speculum       0.0476299
## acan_trilobatum     0.1216562
## ani_allopterum     -0.3180870
## arg_anceps         -0.2973673
## arg_ellongata      -0.1018794
## arg_pulla           0.0621000
## arg_translata       0.0170268
## bra_furcata         0.0059681
## can_vibex          -0.0361880
## dyt_nigra          -0.0004113
## dyt_sterilis        0.0103594
```

```
## ena_civile          0.0230712
## ena_novaehispaniae  0.0226703
## erythe_attala       0.0831409
## erythe_peruviana    0.0026618
## erythe_plebeja      0.0241032
## erythe_vesiculosa   0.0159761
## erythr_fervida      0.0481896
## erythr_funerea     -0.0161644
## erythr_fusca        0.0478607
## erythr_umbrata      0.0062149
## het_cruentata      -0.0856014
## isc_capreola       -0.2387590
## isc_ramburii       -0.3376217
## les_tenuatus       -0.1173859
## lib_herculea        0.0069077
## mac_pseudimitans   -0.0357303
## mia_marcella       -0.0057952
## mic_aequalis        0.0242294
## mic_atra           -0.0072551
## mic_mengeri        -0.0003192
## mic_ocellata        0.0184045
## mic_schumanni      -0.0409585
## neo_cultellatum     0.0940293
## oli_umbricola       0.0000000
## ort_discolor        0.0441692
## ort_ferruginea      0.0188249
## pal_lineatipes     -0.0079754
## pan_flavecens       0.0281183
## pan_hymenaea       -0.0031437
## per_mooma           0.7939872
## rem_luteipennis    -0.1069245
## rhi_jalapensis     -0.0062613
## tau_argo            0.0000000
## tau_australis      -0.0015062
## tel_digiticolis     0.0769957
## tel_filiola         0.0929589
## tel_salva           0.0001169
## Gomphidae           0.0512450
##
##
## Site scores (weighted sums of species scores)
##
##           RDA1      RDA2     RDA3     RDA4     RDA5       PC1
## row1   0.04643  0.764917  0.29715  0.27008 -0.74115  0.428517
## row2  -0.71628 -0.137773 -0.02207 -0.65029  0.64595  0.387214
## row3   0.41345 -0.468505  1.41016  0.49424  1.56503 -0.093103
## row4   0.21313 -0.454368  0.37184  0.53668  1.18767  0.252609
## row5  -0.52908 -0.289284 -0.50736 -0.11977  1.77307 -0.015300
## row6   0.15843 -0.820748 -0.14031  1.28948 -2.26605 -0.165603
## row7   0.06185  0.796779  0.49649  0.64017 -1.29155  0.191576
## row8  -0.71381 -0.142597 -0.04088 -0.61990  0.69563 -0.357088
## row9   0.56885  0.054519  0.58478 -0.70868  1.52406  0.114121
## row10 -0.44441 -0.439669 -0.08349  0.44943 -0.60328 -0.156513
## row11  0.14279 -0.218709 -0.52046  0.25281  0.30603  0.101415
```

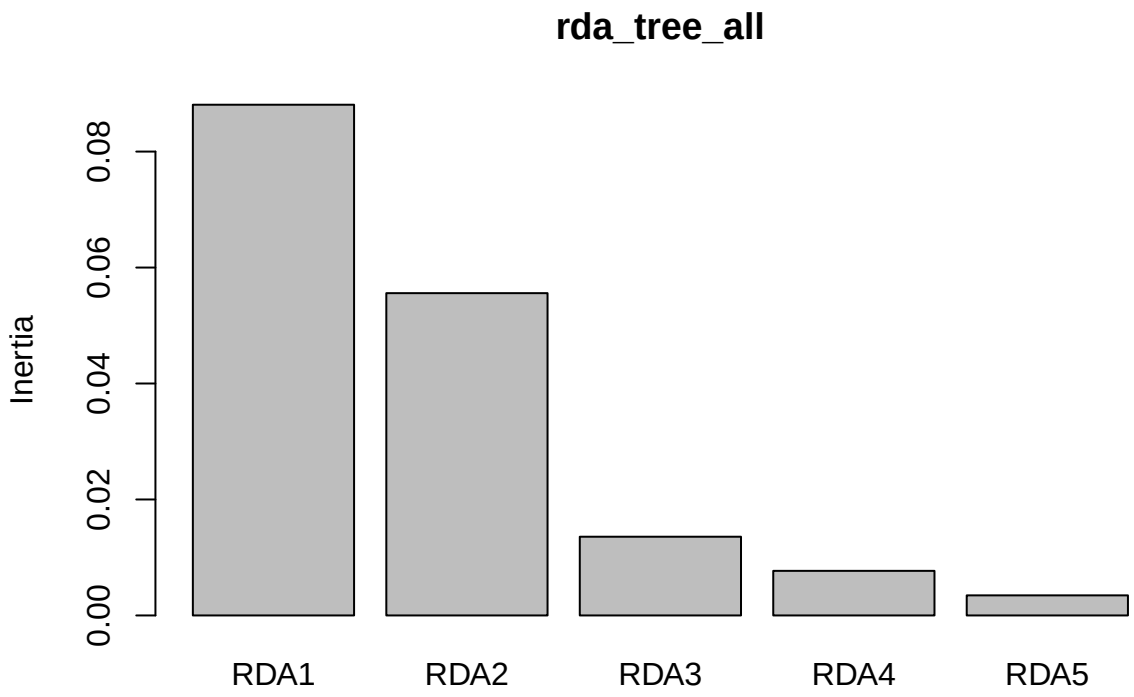
```
## row12 -0.25697 -0.704161  0.05790  0.74157 -0.94769 -0.437593
## row13 -0.07092  0.742518  0.30459  0.53671 -0.70493  0.235137
## row14 -0.71081  0.036662  0.21238 -0.48648 -0.30256 -0.533469
## row15  0.50035 -0.016145  0.95846 -0.64230  1.62575  0.288037
## row16  0.02605  0.082657 -0.08003 -0.42644  1.06112  0.443172
## row17  0.50883  0.293426 -0.57700 -0.69301  0.33992  0.183170
## row18 -0.21596 -0.696096  0.04388  0.62799 -2.16620 -0.681886
## row19 -0.05019  0.765480  0.30012  0.41439 -0.31410  0.123927
## row20 -0.71677 -0.064267  0.17768 -0.71808  0.03585 -0.477796
## row21  0.71265  0.130503  0.68807 -0.70129  0.27129  0.234546
## row22  0.29347  0.139374 -0.09835 -0.24595 -0.67053  0.375189
## row23  0.41937  0.153656 -0.50356 -0.60512 -1.37690  0.051726
## row24 -0.03070 -0.731042  0.16062  0.90237 -1.90311 -0.279045
## row25 -0.04225  0.416310 -0.45685  2.23160 -0.40732 -0.149618
## row26 -0.68403 -0.170282  0.06604 -0.49545  0.21608 -0.173757
## row27  0.52573  0.159926  0.72110 -0.14684  0.55581  0.103682
## row28  0.66009  0.285904 -0.13565 -0.57564  0.40541  0.526683
## row29  0.45982  0.136905 -1.32849 -1.03804 -0.58778 -0.149327
## row30 -0.10419 -0.594644  0.25397  0.36521 -0.28045 -0.574656
## row31  0.31087  0.667280 -0.04732 -0.27295  0.06523  0.671105
## row32 -0.72133 -0.064790  0.13635 -0.54750 -0.05913 -0.078670
## row33  0.72687  0.171354  0.74299 -0.67019  0.90756  0.333327
## row34  0.26482  0.130036 -0.11877 -0.03936 -0.68285  0.320158
## row35  0.23472  0.264852 -1.02835 -1.03335 -1.06245  0.095394
## row36 -0.06688 -0.624384  0.22143  0.10758 -0.61106 -0.460639
## row37  0.19440  0.831335  0.32885  0.43699 -0.44778  0.262582
## row38 -0.68421 -0.040367 -0.09700 -0.10137  0.51837 -0.354016
## row39  0.49120  0.268478 -0.25664 -0.20759  0.15757  0.205709
## row40  0.28953  0.266888 -1.27479 -0.95930 -0.48756  0.272813
## row41  0.06784 -0.757214  0.13185  0.41656 -0.89017 -0.398155
## row42  0.19952  0.740405 -0.07623  0.23748  0.28305  0.104773
## row43 -0.64997 -0.073270 -0.09456 -0.51219  0.62212  0.093400
## row44  0.60803 -0.002859  1.05362  0.49951  1.28621  0.445769
## row45 -0.32530  0.101984 -0.08785  0.00305  0.48114 -0.228161
## row46  0.03042  0.177996 -1.11262 -0.84661  0.03450  0.178418
## row47 -0.15298 -0.761550 -0.14828  0.83032  0.81915 -0.501481
## row48  0.26236  0.568492  0.09484 -0.38756  0.04650  0.404332
## row49 -0.70853 -0.155553  0.15351 -0.77621 -0.08205 -0.197903
## row50  0.61742 -0.055349  0.95128  0.60952  0.80029  0.227484
## row51  0.23232  0.159654 -0.48453  0.30492  1.51208  0.308571
## row52 -0.16966 -0.145922 -0.96685 -0.05938 -0.34179 -0.124175
## row53 -0.22419 -0.665421  0.17023 -0.06453 -1.08495 -0.341082
## row54  0.10673  0.692711  0.24196  0.66366 -0.11828  0.009067
## row55 -0.70731 -0.169189 -0.12387 -0.40303  0.69000 -0.249460
## row56 -0.03968  0.285383 -0.17568  1.18006  0.74548 -0.089374
## row57 -0.43482  0.027772 -0.64376  0.12152  0.48565 -0.476208
## row58 -0.17712 -0.849998 -0.10057  0.59050 -1.23192 -0.229542
##
##
## Site constraints (linear combinations of constraining variables)
##
##              RDA1       RDA2     RDA3     RDA4      RDA5       PC1
## row1  -0.3250099  0.113765  0.12164 -0.31740  0.359600  0.428517
## row2  -1.0880825 -0.283102 -0.50749  0.41128 -0.359854  0.387214
```

```
## row3   0.2987780 -0.177062  0.48687 -0.07922  0.110751 -0.093103
## row4  -0.1032710 -0.497427 -0.12928 -0.06454 -0.273612  0.252609
## row5  -0.2208810 -0.423642 -0.53415  0.18878  0.009161 -0.015300
## row6  -0.0894323 -0.459905 -0.19617 -0.05365 -0.359875 -0.165603
## row7  -0.0852392  0.427446  0.72635  0.47308 -0.439363  0.191576
## row8  -0.3461969  0.298134  0.40807  0.10283  0.421127 -0.357088
## row9   0.4884422  0.103899  0.42435  0.03354  0.031054  0.114121
## row10 -0.0603390 -0.537300  1.06122  0.88324 -0.340103 -0.156513
## row11  0.0982754 -0.130380 -0.40556 -0.03329 -0.068600  0.101415
## row12 -0.0138277 -0.195738  0.02319  0.77251  0.045793 -0.437593
## row13 -0.2034558  0.320506  0.50576  0.33965 -0.021098  0.235137
## row14 -0.1134259  0.469767  0.12654 -0.52933 -0.609007 -0.533469
## row15  0.2884123 -0.191490  0.40512 -0.15856 -0.050458  0.288037
## row16 -0.0847270 -0.454601  0.09173  0.17358  0.526376  0.443172
## row17  0.4735470  0.226488 -0.25245 -0.23842 -0.266674  0.183170
## row18  0.2377742  0.011820 -0.08622  0.32008 -0.412743 -0.681886
## row19 -0.0919221  0.405665  0.03428 -0.34865 -0.146660  0.123927
## row20 -0.1868840  0.381210  0.27329 -0.40013 -0.212641 -0.477796
## row21  0.4372463  0.010395  0.24159 -0.25820 -0.149602  0.234546
## row22  0.1077907 -0.258829  0.05447  0.05922 -0.330540  0.375189
## row23  0.4187332  0.090926 -0.01391 -0.27237  0.187487  0.051726
## row24  0.0105350 -0.424636  0.07944 -0.09032 -0.241982 -0.279045
## row25 -0.1967870  0.704868 -0.43229  0.70936 -0.024946 -0.149618
## row26 -0.5735912  0.117989  0.02178  0.04475  0.526742 -0.173757
## row27  0.3893504  0.018636  0.13366 -0.14281  0.016667  0.103682
## row28  0.2524563 -0.063227 -0.18796 -0.16243 -0.070322  0.526683
## row29  0.5841610  0.295301 -0.15452 -0.39891 -0.068298 -0.149327
## row30  0.1714394  0.047870 -0.30440  0.46192  0.193303 -0.574656
## row31 -0.3511869  0.220648 -0.21289 -0.09737 -0.405242  0.671105
## row32 -0.5792590 -0.059765  0.11294 -0.41541 -0.217240 -0.078670
## row33  0.4226055  0.006004  0.25593 -0.23886  0.356008  0.333327
## row34  0.1119247 -0.197009  0.18751  0.43605 -0.609705  0.320158
## row35  0.2780950 -0.016893 -0.30954 -0.25653 -0.837576  0.095394
## row36  0.1492716 -0.220394 -0.12516 -0.17138 -0.434158 -0.460639
## row37 -0.0766325  0.522347 -0.04503 -0.08596 -0.029490  0.262582
## row38 -0.3620614  0.240164  0.22080 -0.24280  0.454837 -0.354016
## row39  0.3930691  0.169344 -0.08825  0.11584  0.435698  0.205709
## row40  0.0921559 -0.073636 -0.51470  0.06994  0.095889  0.272813
## row41  0.1097973 -0.171057 -0.29416 -0.04325  0.105632 -0.398155
## row42 -0.0003452  0.751540 -0.02134  0.38063  0.567414  0.104773
## row43 -0.6909818 -0.147517  0.01947 -0.35396  0.015444  0.093400
## row44  0.0582400 -0.274902  0.10722  0.22935  0.236185  0.445769
## row45  0.1765580  0.026063 -0.36365  0.29943  0.144616 -0.228161
## row46 -0.0050615 -0.172727 -0.52983  0.10090  0.412443  0.178418
## row47  0.1799631 -0.220350  0.20092 -0.04526  0.511400 -0.501481
## row48 -0.1682069  0.291390  0.13765 -0.34210  0.188197  0.404332
## row49 -0.5014340  0.007790  0.28370 -0.38092  0.277939 -0.197903
## row50  0.2350369 -0.070410  0.17106  0.26711  0.033915  0.227484
## row51  0.1136648 -0.153234 -0.18716  0.10722  0.243981  0.308571
## row52  0.0152938 -0.277393 -0.34932 -0.17640  0.366172 -0.124175
## row53  0.0279339 -0.519598  0.20103 -0.42717  0.204675 -0.341082
## row54  0.0072291  0.701119 -0.15501  0.08750 -0.198550  0.009067
## row55 -0.4573238  0.162917  0.01202 -0.25223 -0.288674 -0.249460
## row56  0.2497064  0.113855 -0.29744  0.35637  0.205724 -0.089374
```

```
## row57  0.2172838  0.093554 -0.53579  0.11021 -0.075118 -0.476208
## row58 -0.1192046 -0.679196  0.10399 -0.45653  0.257903 -0.229542
##
##
## Biplot scores for constraining variables
##
##                    RDA1     RDA2    RDA3    RDA4     RDA5 PC1
## temperature    0.629784  0.75215  0.1264  0.1232 -0.08049   0
## pH            -0.005614 -0.08363 -0.3074 -0.1861 -0.92942   0
## oxygen         0.265261 -0.08027 -0.6809  0.6718 -0.09035   0
## conductivity   0.280737 -0.46948  0.6542  0.4808 -0.20417   0
## plants        -0.752956  0.61069  0.1793 -0.1665 -0.01522   0
```

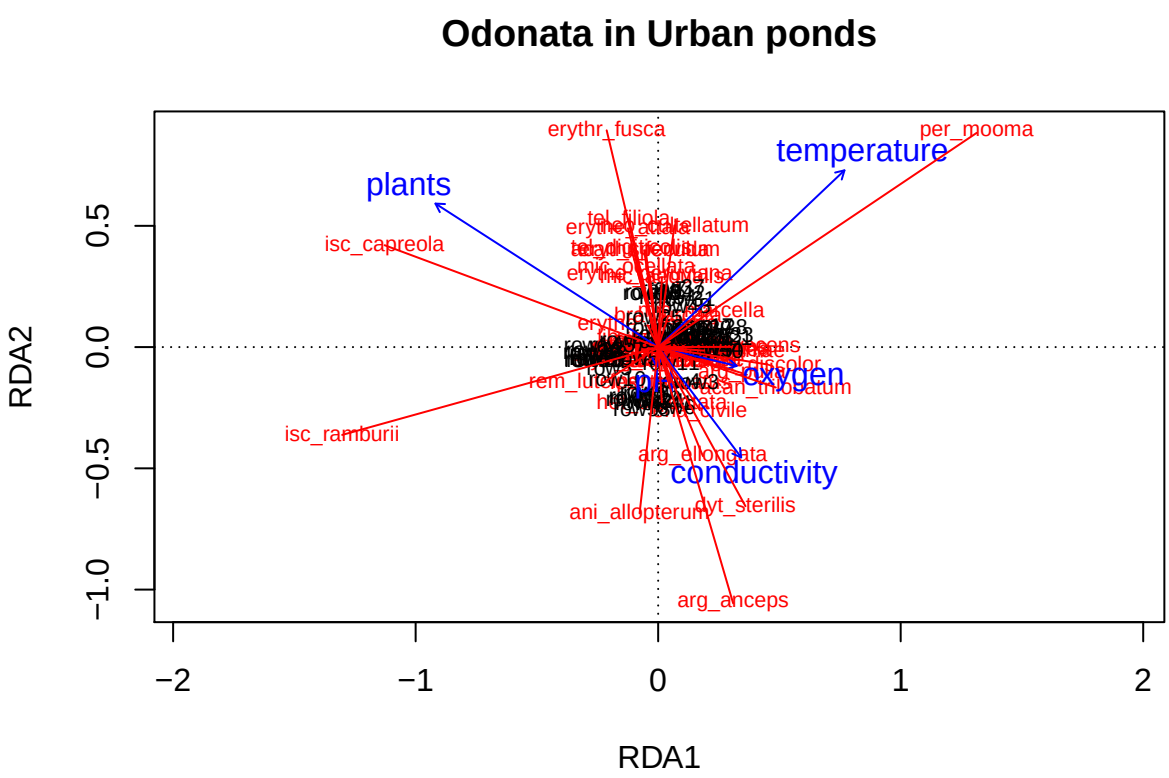
8. Plots

```
screeplot(rda_tree_all)
```



9. Ordination plots

```
plot(rda_tree_all, scaling=1, main="Odonata in Urban ponds")
spe.sc <- scores(rda_tree_all, choices=1:2, scaling=1, display="sp")
arrows(0,0,spe.sc[,1], spe.sc[,2], length=0, lty=1, col='red')
```


Odonata in Urban ponds
erythr_fusca
per_mooma
temperature
plants
isc_capreola
oxygen
isc_ramburii
arg_elongata
conductivity
ani_allopterum
dyt_sterilis
arg_anceps
RDA2
RDA1
0.5
0.0
−0.5
−1.0
−2
−1
0
1
2