**Correlations of PCO axes to original functional group variables, and percent of total variation explained by each PCO axis**

**STM 1**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA NA NA NA

ANNUAL -0.1088402000 -0.12444778 -0.09584624

ARAD -0.2006723916 0.07789218 -0.19285197

ARFRI 0.1267365518 -0.12099907 0.76867933

BARTEM -0.0853175611 0.02136629 -0.06929104

CLEIST 0.0006702024 0.12608654 -0.18458984

CXDU -0.0813335638 0.60525640 0.43086855

LEYM -0.0348612988 0.19713136 0.15342908

ELCHN -0.0348612988 0.19713136 0.15342908

MEADPF 0.0306267437 0.03409652 0.10977632

MEADPG 0.0724707807 -0.08741647 -0.01076887

NISB NA NA NA

PPFF 0.1995503824 -0.20254215 0.23037209

PPGG -0.8795199737 -0.05128781 -0.10245463

SMBPG 0.6115710828 0.15474601 -0.38932892

STBA -0.0318472595 0.16863335 0.04895658

STGBGL -0.0499067717 -0.05448788 0.09595534

STGR NA NA NA

STIPA 0.0687675775 -0.08657760 0.07461446

STKR 0.1883605516 -0.52987403 0.24196569

GOOD.ARTEMISIA 0.0069189583 0.13224747 -0.39705591

HIMTNMEADOWSPP NA NA NA

OTHER.ALLIUM 0.0233332114 0.07622840 0.20295048

SHRUB 0.0095133825 -0.13450641 0.04775485

SUB.SHRUB -0.4096942889 -0.07546442 -0.13708013

CXPED -0.0754436443 -0.06494071 -0.27657384

POTAC 0.0531992762 0.08621479 0.04203208

POTBI -0.0327944328 -0.15852853 0.24138821

*Proportion of variation explained by the 3 PCO Axes*

0.1942646 0.1530958 0.1507911

**STM 2**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA 0.048542021 0.009415445 0.007774200

ANNUAL -0.143578915 -0.177377028 -0.392885533

ARAD -0.172101885 -0.157844183 -0.316551266

ARFRI 0.070133154 0.225930873 -0.432830086

BARTEM -0.211624959 -0.245756195 -0.515316353

CLEIST 0.050472759 0.038760194 -0.108560753

CXDU -0.830365944 -0.237005489 0.206862143

LEYM -0.101023900 -0.009314868 -0.040610845

ELCHN -0.101023900 -0.009314868 -0.040610845

MEADPF -0.066215693 0.191629087 -0.055484796

MEADPG -0.078726369 0.105154231 -0.015424563

NISB NA NA NA

PPFF -0.155291868 0.741631388 0.325206337

PPGG 0.263752083 -0.043056300 -0.092673136

SMBPG -0.073195699 0.429948264 0.097869004

STBA -0.050377396 0.071122984 -0.075958374

STGBGL NA NA NA

STGR NA NA NA

STIPA -0.028611120 0.102952880 -0.062104009

STKR 0.676614251 -0.284787486 0.339667800

GOOD.ARTEMISIA -0.022132829 -0.100461560 0.092285467

HIMTNMEADOWSPP 0.001350007 0.090386122 -0.007391343

OTHER.ALLIUM 0.045558861 0.039172911 0.067138970

SHRUB -0.023738252 0.065091231 -0.011866830

SUB.SHRUB 0.032516569 0.127449828 -0.117943831

CXPED 0.095207563 0.154879264 -0.318383883

POTAC -0.063206011 0.349736174 0.298641820

POTBI -0.106425539 0.361420208 -0.044485676

*Proportion of variation explained by the 3 PCO Axes*

0.2188055 0.1444860 0.1046754

**STM 3**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA -0.042065267 -0.0388901231 0.041849639

ANNUAL 0.058804790 -0.0949569912 0.093501466

ARAD 0.132191064 -0.0481238070 0.087294089

ARFRI -0.121513021 0.2041940074 0.132685553

BARTEM 0.125192957 -0.0974296349 0.097115827

CLEIST 0.122717751 -0.0509145612 -0.048433003

CXDU -0.874050281 -0.0751940586 0.002257248

LEYM -0.027278452 -0.7325175659 -0.218176417

ELCHN -0.027278452 -0.7325175659 -0.218176417

MEADPF -0.009117493 -0.0468937882 -0.183003717

MEADPG 0.026526473 -0.0237704949 -0.033278140

NISB NA NA NA

PPFF 0.042195274 0.4826446643 -0.589005895

PPGG 0.233704944 0.2452955710 0.581351962

SMBPG -0.037523855 0.2248178104 -0.222172244

STBA 0.489913845 -0.0805794950 0.027059640

STGBGL 0.052816227 -0.0252621835 -0.010277384

STGR NA NA NA

STIPA -0.020978825 -0.0149178419 -0.037533254

STKR -0.034286127 -0.0449713814 0.165611663

GOOD.ARTEMISIA -0.062629863 -0.1065477978 -0.088025866

HIMTNMEADOWSPP -0.084688489 -0.0389900985 -0.060355809

OTHER.ALLIUM 0.179418174 -0.0748968884 -0.024050903

SHRUB -0.145593121 -0.0002021105 0.022342650

SUB.SHRUB 0.005536138 0.0709608481 0.020303619

CXPED 0.494277957 -0.2530795819 -0.208219004

POTAC -0.147597871 0.3366852025 -0.249240302

POTBI 0.006173908 0.0544443318 -0.159684558

*Proportion of variation explained by the 3 PCO Axes*

0.1968673 0.1501298 0.1213463

**STM 6**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA -0.019357028 -4.745788e-02 0.10864980

ANNUAL 0.133283320 5.013764e-02 0.18329686

ARAD 0.108819373 6.752640e-02 0.14775246

ARFRI -0.020960391 -5.206548e-02 -0.22951428

BARTEM 0.189947225 1.281241e-01 0.34877522

CLEIST 0.019488068 6.051455e-02 0.12812315

CXDU -0.368600578 3.930272e-01 0.40126267

LEYM -0.156095681 8.143597e-01 -0.42317652

ELCHN -0.156095681 8.143597e-01 -0.42317652

MEADPF -0.010469890 -6.278124e-02 -0.03234847

MEADPG 0.014984336 -5.906580e-02 -0.03092550

NISB NA NA NA

PPFF -0.462927287 -5.575402e-02 -0.26193821

PPGG -0.333164504 -4.802966e-01 -0.59182569

SMBPG -0.028013567 -6.225488e-02 -0.14371816

STBA -0.012466481 -9.290522e-02 -0.03380005

STGBGL 0.002565784 -1.009403e-02 -0.04043612

STGR 0.861519374 1.108860e-01 -0.23646034

STIPA -0.036573235 -9.898870e-02 -0.12177214

STKR -0.109808092 7.997078e-02 -0.02023205

GOOD.ARTEMISIA -0.029244987 -1.699611e-01 0.16253463

HIMTNMEADOWSPP 0.046474212 -1.342859e-01 -0.04542173

OTHER.ALLIUM -0.196036214 -3.748636e-02 -0.16962454

SHRUB -0.122002849 -7.706793e-02 -0.03802542

SUB.SHRUB 0.019829603 -7.277257e-05 -0.10441743

CXPED 0.023395404 6.810570e-02 -0.07932755

POTAC -0.085103509 -3.295791e-02 -0.09094553

POTBI -0.328500716 1.196313e-01 -0.12453750

*Proportion of variation explained by the 3 PCO Axes*

0.2204813 0.1918993 0.1306257

**STM 8**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA 0.060134281 0.03908981 0.017936590

ANNUAL 0.239188226 0.22177715 0.477338782

ARAD 0.168750198 0.01080097 0.410978041

ARFRI 0.068211706 -0.15333001 -0.542760650

BARTEM 0.265269310 0.13839419 0.659314540

CLEIST 0.013779645 0.03009408 0.092685780

CXDU 0.574706636 -0.27819071 -0.218059713

LEYM 0.420450715 -0.48475347 0.091651353

ELCHN 0.420450715 -0.48475347 0.091651353

MEADPF NA NA NA

MEADPG -0.023372748 0.02003387 -0.012397330

NISB NA NA NA

PPFF 0.126176718 0.01306069 -0.223155920

PPGG -0.048802564 0.47973724 -0.208392728

SMBPG -0.086448130 -0.01150176 -0.086788830

STBA 0.003237550 -0.07189254 -0.014836630

STGBGL 0.003175306 0.06256999 0.014559558

STGR NA NA NA

STIPA -0.018483016 0.03333782 -0.016769412

STKR -0.740010817 -0.47424028 0.137490447

GOOD.ARTEMISIA 0.037067130 -0.02961796 0.001928448

HIMTNMEADOWSPP NA NA NA

OTHER.ALLIUM -0.036627551 0.16362533 0.050567348

SHRUB 0.026108410 -0.09977043 -0.010970485

SUB.SHRUB -0.056807606 0.01172956 -0.034142828

CXPED 0.032339734 0.18289804 -0.019827396

POTAC 0.033538710 -0.03101645 -0.170376001

POTBI 0.124036751 0.03352690 -0.041778382

*Proportion of variation explained by the 3 PCO Axes*

0.2201665 0.1315958 0.1128070

**STM 12**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA 0.01555826 0.074000978 -0.055618968

ANNUAL 0.07863105 0.391899697 -0.155175990

ARAD 0.07862859 0.255586658 -0.128139289

ARFRI -0.03460711 0.067348532 0.493045159

BARTEM 0.08671644 0.313093400 -0.045730177

CLEIST 0.02546158 -0.070739459 -0.053959323

CXDU 0.04584240 0.377837757 0.328951644

LEYM 0.06294955 0.197569058 0.081118040

ELCHN 0.06294955 0.197569058 0.081118040

MEADPF -0.04613470 -0.008519439 -0.027708019

MEADPG 0.04832802 0.006151459 -0.049630404

NISB NA NA NA

PPFF 0.08498409 0.371012468 0.388099635

PPGG -0.01136260 -0.099821879 0.706089323

SMBPG -0.01252849 0.021225911 0.123716502

STBA NA NA NA

STGBGL -0.69869861 -0.315535228 0.178723897

STGR 0.02730747 -0.024258412 0.003767742

STIPA 0.01719086 -0.038910696 0.044798652

STKR 0.68485499 -0.506541505 -0.016918913

GOOD.ARTEMISIA 0.09702596 -0.070362544 0.074673822

HIMTNMEADOWSPP NA NA NA

OTHER.ALLIUM 0.01341768 0.134992489 0.001250913

SHRUB -0.01315134 0.006050091 0.033626241

SUB.SHRUB -0.01598257 -0.046566862 0.067665847

CXPED 0.04040488 -0.044469563 0.094421699

POTAC 0.08931421 -0.043110982 0.063899283

POTBI 0.05786453 0.082868993 0.231721639

*Proportion of variation explained by the 3 PCO Axes*

0.22678681 0.13367815 0.09839003

**STM 15**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA -0.06074541 -0.09995680 -0.02392870

ANNUAL -0.10365514 -0.18959281 0.04072786

ARAD -0.09376488 -0.15552436 0.05000275

ARFRI -0.04220296 -0.29985295 -0.19664089

BARTEM -0.07975353 -0.11845573 0.01748526

CLEIST -0.10833221 -0.02837428 0.12886060

CXDU -0.06954487 -0.27463230 -0.18943758

LEYM 0.01584045 -0.08576102 0.04757458

ELCHN 0.01584045 -0.08576102 0.04757458

MEADPF NA NA NA

MEADPG -0.06594048 -0.10302586 -0.10123823

NISB NA NA NA

PPFF -0.01203167 -0.32107655 -0.13446620

PPGG -0.10192917 -0.35365257 -0.49659735

SMBPG -0.02113522 -0.08744138 -0.11199253

STBA NA NA NA

STGBGL 0.71959065 -0.30449981 0.31265786

STGR NA NA NA

STIPA -0.05755244 -0.05906365 0.04183238

STKR NA NA NA

GOOD.ARTEMISIA -0.10142449 -0.13132882 0.01946980

HIMTNMEADOWSPP NA NA NA

OTHER.ALLIUM -0.03263648 -0.18668536 -0.19802419

SHRUB -0.04206520 0.04612148 0.05340403

SUB.SHRUB 0.06613193 0.03340695 0.01979475

CXPED -0.01658714 -0.09395505 0.01884778

POTAC NA NA NA

POTBI -0.02543048 -0.19843684 -0.08308292

*Proportion of variation explained by the 3 PCO Axes*

0.23951926 0.16674842 0.08965654

**STM 16**

*Correlation of original indicators to the PCO Axes*

Dim1 Dim2 Dim3

ACHNA -0.12856024 -0.123167528 -0.018855353

ANNUAL 0.38193312 -0.310831343 -0.477189834

ARAD 0.07656956 -0.169512902 0.182188067

ARFRI -0.02801255 -0.327285728 0.385634720

BARTEM 0.11429105 -0.195285808 -0.022071183

CLEIST 0.03434890 0.159828536 -0.371810847

CXDU 0.05256783 0.023967569 -0.082529739

LEYM -0.09282196 -0.043115734 -0.104904874

ELCHN -0.09282196 -0.043115734 -0.104904874

MEADPF NA NA NA

MEADPG 0.14205222 -0.106110767 -0.051416136

NISB 0.05019240 0.086772301 0.024856244

PPFF 0.05046829 -0.417402501 0.237603828

PPGG 0.12969536 -0.487026763 0.567192440

SMBPG NA NA NA

STBA NA NA NA

STGBGL -0.82591704 -0.292070765 -0.171310863

STGR NA NA NA

STIPA NA NA NA

STKR -0.08634026 0.002626878 -0.020227090

GOOD.ARTEMISIA 0.07436408 -0.088512850 0.032767673

HIMTNMEADOWSPP NA NA NA

OTHER.ALLIUM 0.11512853 -0.081194693 -0.211811500

SHRUB 0.06226835 -0.026573894 -0.030981031

SUB.SHRUB 0.03989797 0.054938701 0.001246223

CXPED -0.09549688 -0.047202356 -0.014405878

POTAC NA NA NA

POTBI 0.10505604 -0.054503232 0.069182083

*Proportion of variation explained by the 3 PCO Axes*

0.2487477 0.1644434 0.1168383