**S4 Table. Pairwise niche comparisons in multivariate space: Factor loadings of environmental variables (the 3 variables that contribute the most are in bold) and explained variation by the principal component axes.** See S2 Fig for comparisons.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Comparison** | ***Cbol* vs. *Ccau*** | ***Cbol* vs. *Clan*** | ***Cbol* vs. *Clin*** | ***Cbol vs. Cpreg*** | ***Cbol vs. Cppar*** | ***Cbol* vs. *Cpnap*** | ***Cbol* vs. *Agal*** | ***Cbol* vs. *Abok*** |
| **Environmental variable** | **PC1** | **PC2** | **PC1** | **PC2** | **PC1** | **PC2** | **PC1** | **PC2** | **PC1** | **PC2** | **PC1** | **PC2** | **PC1** | **PC2** | **PC1** | **PC2** |
| annualpp | -5.65 | **6.55** | -2.24 | **-7.18** | -0.02 | **-7.33** | **-4.42** | -0.44 | -6.35 | 3.08 | **-4.74** | 0.27 | -5.55 | -0.78 | 3.29 | -1.38 |
| ppcoldqua | **-8.42** | 2.64 | 3.25 | **-6.71** | -1.74 | **-6.23** | -4.40 | -0.46 | **-6.99** | -1.23 | -4.73 | 0.29 | **-6.48** | -0.36 | 2.43 | **-2.74** |
| ppdryqua | **-8.72** | 2.73 | -4.59 | -6.40 | 5.68 | -5.44 | -4.29 | **-2.15** | -5.17 | **5.84** | **-4.89** | 0.03 | **-6.79** | 0.00 | **3.52** | -1.64 |
| ppseason | **7.93** | -0.07 | 4.45 | 4.01 | **-7.13** | 1.73 | **4.46** | 1.69 | 2.98 | **-6.35** | **4.75** | 0.61 | **5.37** | -0.26 | **-3.60** | 0.19 |
| ppwarmqua | -1.89 | 4.84 | **-6.44** | -2.10 | 4.76 | -2.03 | 1.04 | -2.04 | 3.52 | 4.61 | -3.38 | 0.80 | -2.96 | -2.51 | 3.43 | 0.86 |
| maxtwarmmo | -5.44 | **-4.90** | **6.38** | -2.13 | -6.78 | -1.69 | -2.79 | **3.28** | -4.87 | -3.52 | -2.68 | **3.20** | 0.06 | **-6.51** | -2.04 | -1.11 |
| mtdryqua | -2.79 | -1.71 | **7.02** | -4.26 | **-6.96** | -3.90 | **-4.42** | 2.27 | **-7.34** | -2.44 | -4.40 | 1.39 | -1.29 | **-4.99** | -2.29 | **-2.50** |
| tseasoncv | -2.79 | -1.71 | -3.04 | **5.37** | 1.61 | **4.81** | 3.96 | 0.56 | **6.06** | -1.15 | 3.65 | 2.39 | 2.59 | **-3.97** | 0.26 | **2.92** |
| cv\_ndvi | 3.03 | 4.05 | 2.35 | -2.43 | 1.35 | -1.70 | -2.38 | 0.40 | -3.18 | -2.31 | -0.90 | **-3.46** | -0.69 | 3.95 | -1.71 | -2.25 |
| maxndvi | 3.30 | **5.01** | -4.59 | -2.42 | **5.74** | -1.15 | -0.49 | **-3.33** | -0.24 | **4.11** | -2.03 | -1.89 | -2.76 | 2.43 | **3.25** | 0.27 |
| Eastness | 1.85 | -1.39 | 0.67 | 0.26 | 0.90 | 1.77 | 0.81 | 1.74 | 0.68 | -1.69 | -0.68 | -0.44 | 1.19 | 1.35 | -0.51 | -0.18 |
| Northness | 0.80 | 1.80 | 0.68 | 0.16 | 2.08 | -0.92 | -0.81 | -1.14 | -0.38 | 0.83 | -0.80 | **-2.60** | -0.13 | 1.50 | -0.25 | -0.99 |
| Slope | 2.65 | 2.49 | -2.03 | 0.44 | 3.97 | 1.22 | 1.70 | -2.73 | 4.09 | 2.67 | 1.35 | -0.57 | -0.24 | 1.54 | 1.32 | 0.69 |
| **Explained variation (%)** | 29 | 15.7 | 22.8 | 22.1 | 27.7 | 19.1 | 37.4 | 14.6 | 30.7 | 17.5 | 44.9 | 12.5 | 26.9 | 18.2 | 38.3 | 17.2 |

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