**Output with Quadrupedal Stand as the Outgroup:**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3134.4

Scaled residuals:

Min 1Q Median 3Q Max

-3.09318 -0.62833 0.02685 0.60039 3.11356

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3788 0.6155

Residual 2.7352 1.6538

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 626.512999 127.280001 4.922

pos\_behLy -1.468689 0.321678 -4.566

pos\_behSq -0.831725 0.690810 -1.204

pos\_behSt -0.097311 0.259671 -0.375

pos\_behQW -0.187070 0.274740 -0.681

pos\_behBp -0.555998 0.281731 -1.974

pos\_behSu 0.160764 0.578995 0.278

pos\_behVC -0.357375 0.414345 -0.863

amb\_t 0.270917 0.017116 15.828

sun 0.048866 0.002927 16.697

date -0.034016 0.007182 -4.736

hab\_typeBMWD 0.429247 0.796962 0.539

hab\_typeGA 1.087375 0.792719 1.372

hab\_typeGL 0.783744 0.814616 0.962

hab\_typeWD 0.777383 0.761911 1.020

Confidence Intervals:

2.5 % 97.5 %

.sig01 0.35441408 0.972738671

.sigma 1.56195777 1.723853725

(Intercept) 379.48665144 880.066999447

pos\_behLy -2.09161587 -0.838901705

pos\_behSq -2.17573462 0.511719731

pos\_behSt -0.60130464 0.409108085

pos\_behQW -0.71990772 0.349380577

pos\_behBp -1.10447747 -0.008411612

pos\_behSu -0.96197465 1.291468192

pos\_behVC -1.16311712 0.448806985

amb\_t 0.23619366 0.304042058

sun 0.04321739 0.054649145

date -0.04832081 -0.020078689

hab\_typeBMWD -1.13786609 1.969683385

hab\_typeGA -0.45702016 2.627015622

hab\_typeGL -0.80590089 2.364109309

hab\_typeWD -0.70628294 2.257931549

**QS outgroup, St/Sq combined**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3136.6

Scaled residuals:

Min 1Q Median 3Q Max

-3.09586 -0.63182 0.03339 0.61007 3.11176

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3808 0.6171

Residual 2.7360 1.6541

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 616.260530 127.028297 4.851

pos\_behLy -1.465106 0.321709 -4.554

pos\_behSt -0.108881 0.259509 -0.420

pos\_behQW -0.189019 0.274776 -0.688

pos\_behBp -0.558830 0.281762 -1.983

pos\_behSu 0.159133 0.579080 0.275

pos\_behVC -0.362005 0.414387 -0.874

amb\_t 0.271599 0.017110 15.873

sun 0.048965 0.002926 16.736

date -0.033446 0.007168 -4.666

hab\_typeBMWD 0.576694 0.786384 0.733

hab\_typeGA 1.210989 0.785251 1.542

hab\_typeGL 0.930170 0.804370 1.156

hab\_typeWD 0.919905 0.751501 1.224

95% CI

2.5 % 97.5 %

.sig01 0.35532027 0.97527214

.sigma 1.56318537 1.72521001

(Intercept) 369.57993302 869.74009291

pos\_behLy -2.08846128 -0.83482829

pos\_behSt -0.61291653 0.39749138

pos\_behQW -0.72226472 0.34783900

pos\_behBp -1.10776655 -0.01087564

pos\_behSu -0.96448048 1.29071746

pos\_behVC -1.16838285 0.44473466

amb\_t 0.23684966 0.30472565

sun 0.04331496 0.05475050

date -0.04774784 -0.01952742

hab\_typeBMWD -0.97043447 2.09760088

hab\_typeGA -0.31961471 2.73728275

hab\_typeGL -0.64040172 2.49175328

hab\_typeWD -0.54422739 2.38136597

**With Quadrupedal Walk as the Outgroup:**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3134.4

Scaled residuals:

Min 1Q Median 3Q Max

-3.09318 -0.62833 0.02685 0.60039 3.11356

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3788 0.6155

Residual 2.7352 1.6538

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 626.325938 127.289454 4.920

pos\_behLy -1.281619 0.251652 -5.093

pos\_behSq -0.644655 0.663008 -0.972

pos\_behSt 0.089759 0.166191 0.540

pos\_behQS 0.187070 0.274740 0.681

pos\_behBp -0.368928 0.195171 -1.890

pos\_behSu 0.347833 0.544247 0.639

pos\_behVC -0.170305 0.363254 -0.469

amb\_t 0.270917 0.017116 15.828

sun 0.048866 0.002927 16.697

date -0.034016 0.007182 -4.736

hab\_typeBMWD 0.429247 0.796962 0.539

hab\_typeGA 1.087375 0.792719 1.372

hab\_typeGL 0.783744 0.814616 0.962

hab\_typeWD 0.777383 0.761911 1.020

**Confidence Intervals**

|  |
| --- |
| 2.5 % 97.5 %  .sig01 0.35441408 0.972738672  .sigma 1.56195777 1.723853725  (Intercept) 379.28073682 879.903130785  pos\_behLy -1.76970696 -0.790294835  pos\_behSq -1.93649839 0.643028791  pos\_behSt -0.23411836 0.412465570  pos\_behQS -0.34938058 0.719907717  pos\_behBp -0.75117232 0.008858555  pos\_behSu -0.70879773 1.408821118  pos\_behVC -0.87855090 0.534794248  amb\_t 0.23619366 0.304042058  sun 0.04321739 0.054649145  date -0.04832081 -0.020078689  hab\_typeBMWD -1.13786609 1.969683385  hab\_typeGA -0.45702016 2.627015622  hab\_typeGL -0.80590089 2.364109309  hab\_typeWD -0.70628294 2.257931549 |
|  |

**QW outgroup, St/Sq combined**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3136.6

Scaled residuals:

Min 1Q Median 3Q Max

-3.09586 -0.63182 0.03339 0.61007 3.11176

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3808 0.6171

Residual 2.7360 1.6541

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 616.071516 127.037650 4.850

pos\_behLy -1.276086 0.251641 -5.071

pos\_behSt 0.080139 0.165996 0.483

pos\_behQS 0.189019 0.274776 0.688

pos\_behBp -0.369811 0.195200 -1.895

pos\_behSu 0.348153 0.544328 0.640

pos\_behVC -0.172986 0.363300 -0.476

amb\_t 0.271599 0.017110 15.873

sun 0.048965 0.002926 16.736

date -0.033446 0.007168 -4.666

hab\_typeBMWD 0.576694 0.786384 0.733

hab\_typeGA 1.210989 0.785251 1.542

hab\_typeGL 0.930170 0.804370 1.156

hab\_typeWD 0.919905 0.751501 1.224

**95% CI**

2.5 % 97.5 %

.sig01 0.35532027 0.975272141

.sigma 1.56318537 1.725210013

(Intercept) 369.37226678 869.574141865

pos\_behLy -1.76443750 -0.784437862

pos\_behSt -0.24361416 0.402632543

pos\_behQS -0.34783900 0.722264722

pos\_behBp -0.75240631 0.008237348

pos\_behSu -0.70930995 1.409975401

pos\_behVC -0.88181746 0.532621052

amb\_t 0.23684966 0.304725650

sun 0.04331496 0.054750496

date -0.04774784 -0.019527421

hab\_typeBMWD -0.97043447 2.097600880

hab\_typeGA -0.31961471 2.737282747

hab\_typeGL -0.64040172 2.491753282

hab\_typeWD -0.54422739 2.381365972

**With Sit as the Outgroup:**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3134.4

Scaled residuals:

Min 1Q Median 3Q Max

-3.09318 -0.62833 0.02685 0.60039 3.11356

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3788 0.6155

Residual 2.7352 1.6538

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 626.415947 127.277502 4.922

pos\_behLy -1.371378 0.228416 -6.004

pos\_behSq -0.734414 0.650438 -1.129

pos\_behQS 0.097311 0.259671 0.375

pos\_behQW -0.089759 0.166191 -0.540

pos\_behBp -0.458687 0.174717 -2.625

pos\_behSu 0.258075 0.535404 0.482

pos\_behVC -0.260064 0.351434 -0.740

amb\_t 0.270917 0.017116 15.828

sun 0.048866 0.002927 16.697

date -0.034016 0.007182 -4.736

hab\_typeBMWD 0.429247 0.796962 0.539

hab\_typeGA 1.087375 0.792719 1.372

hab\_typeGL 0.783744 0.814616 0.962

hab\_typeWD 0.777383 0.761911 1.020

**Confidence Intervals:**

2.5 % 97.5 %

.sig01 0.35441409 0.97273872

.sigma 1.56195777 1.72385373

(Intercept) 379.39341032 879.96843350

pos\_behLy -1.81385168 -0.92448561

pos\_behSq -2.00121076 0.52939063

pos\_behQS -0.40910808 0.60130464

pos\_behQW -0.41246557 0.23411836

pos\_behBp -0.80039773 -0.12026520

pos\_behSu -0.78088718 1.30258071

pos\_behVC -0.94465942 0.42255711

amb\_t 0.23619366 0.30404206

sun 0.04321739 0.05464915

date -0.04832081 -0.02007869

hab\_typeBMWD -1.13786609 1.96968339

hab\_typeGA -0.45702016 2.62701562

hab\_typeGL -0.80590089 2.36410931

hab\_typeWD -0.70628294 2.25793155

**Sit outgroup; St/Sq combined**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3136.6

Scaled residuals:

Min 1Q Median 3Q Max

-3.09586 -0.63182 0.03339 0.61007 3.11176

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3808 0.6171

Residual 2.7360 1.6541

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value p-value

(Intercept) 616.151649 127.025112 4.851 1.2306 e-06

pos\_behLy -1.356225 0.228051 -5.947 2.730589e-09

pos\_behQS 0.108881 0.259509 0.420 6.748041e-01

pos\_behQW -0.080139 0.165996 -0.483 6.292556e-01

pos\_behBp -0.449950 0.174575 -2.577 9.954590e-03

pos\_behSu 0.268014 0.535409 0.501 6.166676e-01

pos\_behVC -0.253125 0.351434 -0.720 4.713638e-01

amb\_t 0.271599 0.017110 15.873

sun 0.048965 0.002926 16.736

date -0.033446 0.007168 -4.666

hab\_typeBMWD 0.576694 0.786384 0.733

hab\_typeGA 1.210989 0.785251 1.542

hab\_typeGL 0.930170 0.804370 1.156

hab\_typeWD 0.919905 0.751501 1.224

**95% CI**

2.5 % 97.5 %

.sig01 0.35532026 0.97527212

.sigma 1.56318537 1.72521001

(Intercept) 369.47654428 869.62850572

pos\_behLy -1.79821290 -0.90966911

pos\_behQS -0.39749138 0.61291653

pos\_behQW -0.40263254 0.24361416

pos\_behBp -0.79159677 -0.11159203

pos\_behSu -0.77158222 1.31324741

pos\_behVC -0.93815101 0.42993811

amb\_t 0.23684966 0.30472565

sun 0.04331496 0.05475050

date -0.04774784 -0.01952742

hab\_typeBMWD -0.97043447 2.09760088

hab\_typeGA -0.31961471 2.73728275

hab\_typeGL -0.64040172 2.49175328

hab\_typeWD -0.54422739 2.38136597

**With Bipedalism as the Outgroup:**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3134.4

Scaled residuals:

Min 1Q Median 3Q Max

-3.09318 -0.62833 0.02685 0.60039 3.11356

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3788 0.6155

Residual 2.7352 1.6538

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 625.957084 127.310318 4.917

pos\_behLy -0.912691 0.258308 -3.533

pos\_behSq -0.275727 0.666034 -0.414

pos\_behSt 0.458687 0.174717 2.625

pos\_behQW 0.368928 0.195171 1.890

pos\_behQS 0.555998 0.281731 1.974

pos\_behSu 0.716762 0.547155 1.310

pos\_behVC 0.198623 0.365344 0.544

amb\_t 0.270917 0.017116 15.828

sun 0.048866 0.002927 16.697

date -0.034016 0.007182 -4.736

hab\_typeBMWD 0.429247 0.796962 0.539

hab\_typeGA 1.087375 0.792719 1.372

hab\_typeGL 0.783744 0.814616 0.962

hab\_typeWD 0.777383 0.761911 1.020

2.5 % 97.5 %

.sig01 0.354414078 0.97273867

.sigma 1.561957769 1.72385373

(Intercept) 378.874079781 879.57020430

pos\_behLy -1.412210310 -0.40545686

pos\_behSq -1.571134511 1.02000810

pos\_behSt 0.120265199 0.80039773

pos\_behQW -0.008858555 0.75117232

pos\_behQS 0.008411612 1.10447747

pos\_behSu -0.343681314 1.78602979

pos\_behVC -0.511258420 0.90982015

amb\_t 0.236193664 0.30404206

sun 0.043217394 0.05464915

date -0.048320812 -0.02007869

hab\_typeBMWD -1.137866094 1.96968339

hab\_typeGA -0.457020156 2.62701562

hab\_typeGL -0.805900891 2.36410931

hab\_typeWD -0.706282939 2.25793155

*With Bp as outgroup & Squat combined with Sit*

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3136.6

Scaled residuals:

Min 1Q Median 3Q Max

-3.09586 -0.63182 0.03339 0.61007 3.11176

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3808 0.6171

Residual 2.7360 1.6541

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 615.703145 127.058283 4.846

pos\_behLy -0.906274 0.258282 -3.509

pos\_behSt 0.449950 0.174575 2.577

pos\_behQW 0.369811 0.195200 1.895

pos\_behQS 0.558831 0.281762 1.983

pos\_behSu 0.717965 0.547237 1.312

pos\_behVC 0.196825 0.365398 0.539

amb\_t 0.271599 0.017110 15.873

sun 0.048965 0.002926 16.736

date -0.033447 0.007168 -4.666

hab\_typeBMWD 0.576691 0.786384 0.733

hab\_typeGA 1.210988 0.785251 1.542

hab\_typeGL 0.930169 0.804370 1.156

hab\_typeWD 0.919904 0.751501 1.224

**With P-values**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B | SE | t | P-values | (p-values) |
| Intercept | 615.70205700 | 1.270585e+02 | 4.8458172 | 1.260916e-06 | 0.00000126 |
| Ly | -0.90627489 | 2.582818e-01 | -3.5088610 | 4.500300e-04 | 0.00045 |
| St | 0.44994980 | 1.745749e-01 | 2.5774027 | 9.954590e-03 | 0.00995 |
| QS | 0.55883043 | 2.817620e-01 | 1.9833419 | 4.732925e-02 | 0.04733 |
| QW | 0.36981104 | 1.951997e-01 | 1.8945270 | 5.815509e-02 | 0.05816 |
| Su | 0.71796403 | 5.472368e-01 | 1.3119805 | 1.895267e-01 | 0.1895 |
| VC | 0.19682507 | 3.653982e-01 | 0.5386592 | 5.901221e-01 | 0.5901 |
| Amb\_t | 0.27159892 | 1.711031e-02 | 15.8734095 | 0.000000e+00 | 0.000 |
| Sun | 0.04896526 | 2.925767e-03 | 16.7358725 | 0.000000e+00 | 0.000 |
| Date | -0.03344646 | 7.168131e-03 | -4.6659948 | 3.071275e-06 | 0.00000307 |
| BMWD | 0.57669319 | 7.863844e-01 | 0.7333477 | 4.633464e-01 | 0.4633 |
| GA | 1.21098862 | 7.852507e-01 | 1.5421682 | 1.230327e-01 | 0.123 |
| GL | 0.93017020 | 8.043703e-01 | 1.1563955 | 2.475194e-01 | 0.2475 |
| WD | 0.91990445 | 7.515013e-01 | 1.2240890 | 2.209187e-01 | 0.2209 |

CI

2.5 % 97.5 %

.sig01 0.355320262 0.97527212

.sigma 1.563185375 1.72521001

(Intercept) 368.964770336 869.24017648

pos\_behLy -1.406007105 -0.39867850

pos\_behSt 0.111592028 0.79159677

pos\_behQW -0.008237348 0.75240631

pos\_behQS 0.010875643 1.10776655

pos\_behSu -0.343272827 1.78811851

pos\_behVC -0.513609893 0.90858669

amb\_t 0.236849663 0.30472565

sun 0.043314956 0.05475050

date -0.047747843 -0.01952742

hab\_typeBMWD -0.970434471 2.09760088

hab\_typeGA -0.319614710 2.73728275

hab\_typeGL -0.640401718 2.49175328

hab\_typeWD -0.544227388 2.38136597

Bp as outgroup, St/Sq combined; Open vs. Closed Habitat Types

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp5

REML criterion at convergence: 3139.6

Scaled residuals:

Min 1Q Median 3Q Max

-3.09733 -0.63080 0.02857 0.58667 3.13251

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.4242 0.6513

Residual 2.7331 1.6532

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 615.756505 127.753921 4.820

pos\_behLy -0.916962 0.257654 -3.559

pos\_behSt 0.422118 0.173438 2.434

pos\_behQS 0.541978 0.280963 1.929

pos\_behQW 0.340325 0.190058 1.791

pos\_behSu 0.681277 0.546387 1.247

pos\_behVC 0.175560 0.364975 0.481

amb\_t 0.271948 0.017102 15.902

sun 0.049268 0.002726 18.075

date -0.033400 0.007208 -4.634

hab\_typeCLOSED 0.332027 0.245232 1.354

95% CI

2.5 % 97.5 %

.sig01 0.388023528 1.02293170

.sigma 1.565280485 1.72745499

(Intercept) 367.796241232 869.14530727

pos\_behLy -1.416910448 -0.41074941

pos\_behSt 0.084762979 0.76128216

pos\_behQS -0.006213901 1.08958949

pos\_behQW -0.029496177 0.71179517

pos\_behSu -0.381278922 1.75032578

pos\_behVC -0.535885698 0.88734860

amb\_t 0.237327330 0.30511496

sun 0.043992040 0.05466821

date -0.047695217 -0.01940972

hab\_typeCLOSED -0.145330453 0.81053081

**Ly as Outgroup, St/Sq combined**

Linear mixed model fit by REML ['lmerMod']

Formula: therm\_t ~ pos\_beh + amb\_t + sun + date + hab\_type + (1 | individual)

Data: prelim\_temp3

REML criterion at convergence: 3136.6

Scaled residuals:

Min 1Q Median 3Q Max

-3.09586 -0.63182 0.03339 0.61007 3.11176

Random effects:

Groups Name Variance Std.Dev.

individual (Intercept) 0.3808 0.6171

Residual 2.7360 1.6541

Number of obs: 804, groups: individual, 12

Fixed effects:

Estimate Std. Error t value

(Intercept) 614.795375 127.037390 4.839

pos\_behBp 0.906275 0.258282 3.509

pos\_behSt 1.356225 0.228051 5.947

pos\_behQW 1.276086 0.251641 5.071

pos\_behQS 1.465106 0.321709 4.554

pos\_behSu 1.624239 0.569082 2.854

pos\_behVC 1.103100 0.397393 2.776

amb\_t 0.271599 0.017110 15.873

sun 0.048965 0.002926 16.736

date -0.033446 0.007168 -4.666

hab\_typeBMWD 0.576694 0.786384 0.733

hab\_typeGA 1.210989 0.785251 1.542

hab\_typeGL 0.930170 0.804370 1.156

hab\_typeWD 0.919905 0.751501 1.224

**95% CI**

2.5 % 97.5 %

.sig01 0.35532026 0.97527212

.sigma 1.56318537 1.72521001

(Intercept) 368.09542068 868.30089699

pos\_behBp 0.39867850 1.40600711

pos\_behSt 0.90966911 1.79821290

pos\_behQW 0.78443786 1.76443750

pos\_behQS 0.83482829 2.08846128

pos\_behSu 0.51705177 2.73250260

pos\_behVC 0.32591140 1.87376486

amb\_t 0.23684966 0.30472565

sun 0.04331496 0.05475050

date -0.04774784 -0.01952742

hab\_typeBMWD -0.97043447 2.09760088

hab\_typeGA -0.31961471 2.73728275

hab\_typeGL -0.64040172 2.49175328

hab\_typeWD -0.54422739 2.38136597