Appendix 9. Full model results for the Generalized Additive Models, assessing a checklist-level responses of biodiversity (species richness, abundance, Shannon diversity, and phylogenetic diversity) with parametric terms for urbanness, water, tree, and mean EVI.

Species richness

```
Family: gaussian
Link function: identity

Formula:
log(species_richness) ~ s(DURATION_MINUTES) + s(EFFORT_DISTANCE_KM) +
    s(LATITUDE, LONGITUDE) + urbanness + proportion_water.list +
    tree_mean.list + mean_EVI.list + s(season2, bs = "cc",
    k = 4) + s(city, bs = "re")

Parametric coefficients:
                      Estimate Std. Error t value Pr(>|t|)
(Intercept)           2.3291306  0.0137897  168.90   <2e-16 ***
urbanness            -0.0534694  0.0003593 -148.81   <2e-16 ***
proportion_water.list -0.0065029  0.0004651  -13.98   <2e-16 ***
tree_mean.list       -0.0563630  0.0006644  -84.83   <2e-16 ***
mean_EVI.list        -0.0110510  0.0003951  -27.97   <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Approximate significance of smooth terms:
                         edf  Ref.df         F p-value
s(DURATION_MINUTES)     8.999    9.00  225138.9  <2e-16 ***
s(EFFORT_DISTANCE_KM)   8.996    9.00   33842.8  <2e-16 ***
s(LATITUDE,LONGITUDE)  28.876   28.96     387.3  <2e-16 ***
s(season2)              2.000    2.00 2430392.3  <2e-16 ***
s(city)              1560.044 1580.00     163.8  <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.449   Deviance explained =   45%
fREML = 5.7117e+06  Scale est. = 0.38314   n = 6075827
```

Shannon diversity

```
Family: gaussian
Link function: identity

Formula:
shannon_diversity ~ s(DURATION_MINUTES) + s(EFFORT_DISTANCE_KM) +
    s(LATITUDE, LONGITUDE) + urbanness + proportion_water.list +
    tree_mean.list + mean_EVI.list + s(season2, bs = "cc",
    k = 4) + s(city, bs = "re")

Parametric coefficients:
                       Estimate Std. Error t value Pr(>|t|)
(Intercept)           1.8105799  0.0099520 181.931  < 2e-16 ***
urbanness            -0.0274278  0.0003765 -72.858  < 2e-16 ***
proportion_water.list -0.0034703  0.0004850  -7.155 8.38e-13 ***
tree_mean.list       -0.0028529  0.0006948  -4.106 4.02e-05 ***
mean_EVI.list         0.0418992  0.0004171 100.454  < 2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Approximate significance of smooth terms:
                         edf  Ref.df         F p-value
s(DURATION_MINUTES)     8.996    9.00  147043.1  <2e-16 ***
s(EFFORT_DISTANCE_KM)   8.993    9.00   15082.0  <2e-16 ***
s(LATITUDE,LONGITUDE)  28.806   28.92     254.1  <2e-16 ***
s(season2)              2.000    2.00 2877734.0  <2e-16 ***
s(city)              1544.767 1580.00     117.6  <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.382   Deviance explained = 38.2%
fREML = 5.3177e+06  Scale est. = 0.39018   n = 5602803
```

Abundance

```
Family: gaussian
Link function: identity

Formula:
log(abundance) ~ s(DURATION_MINUTES) + s(EFFORT_DISTANCE_KM) +
    s(LATITUDE, LONGITUDE) + urbanness + proportion_water.list +
    tree_mean.list + mean_EVI.list + s(season2, bs = "cc",
    k = 4) + s(city, bs = "re")

Parametric coefficients:
                       Estimate Std. Error  t value Pr(>|t|)
(Intercept)           3.9178063  0.0485721   80.660   <2e-16 ***
urbanness            -0.0987323  0.0006960 -141.866   <2e-16 ***
proportion_water.list  0.0004911  0.0009038    0.543    0.587
tree_mean.list       -0.1997563  0.0012807 -155.976   <2e-16 ***
mean_EVI.list        -0.1548959  0.0007735 -200.253   <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Approximate significance of smooth terms:
                         edf  Ref.df         F p-value
s(DURATION_MINUTES)     8.998    9.00   82064.0  <2e-16 ***
s(EFFORT_DISTANCE_KM)   8.990    9.00   24479.2  <2e-16 ***
s(LATITUDE,LONGITUDE)  28.946   28.99     839.8  <2e-16 ***
s(season2)              2.000    2.00 3126899.2  <2e-16 ***
s(city)              1571.798 1580.00     207.1  <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.306   Deviance explained = 30.6%
fREML = 8.7303e+06  Scale est. = 1.3184    n = 5602803
```

Phylogenetic Diversity

```
Family: gaussian
Link function: identity

Formula:
log(PD) ~ s(DURATION_MINUTES) + s(EFFORT_DISTANCE_KM) + s(LATITUDE,
    LONGITUDE) + urbanness + proportion_water.list + tree_mean.list +
    mean_EVI.list + s(season2, bs = "cc", k = 4) + s(city,
    bs = "re")

Parametric coefficients:
                       Estimate Std. Error t value Pr(>|t|)
(Intercept)           6.3689985  0.0185208  343.88   <2e-16 ***
urbanness            -0.0426757  0.0002581 -165.37   <2e-16 ***
proportion_water.list -0.0036505  0.0003357  -10.87   <2e-16 ***
tree_mean.list       -0.0550729  0.0004765 -115.58   <2e-16 ***
mean_EVI.list        -0.0111366  0.0002842  -39.18   <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Approximate significance of smooth terms:
                        edf  Ref.df         F p-value
s(DURATION_MINUTES)   8.998    9.00  208531.0  <2e-16 ***
s(EFFORT_DISTANCE_KM) 8.997    9.00   45795.0  <2e-16 ***
s(LATITUDE,LONGITUDE) 28.939   28.99     471.1  <2e-16 ***
s(season2)            2.000    2.00 9399363.9  <2e-16 ***
s(city)               1572.033 1580.00     170.4  <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.467   Deviance explained = 46.7%
fREML = 3.6816e+06  Scale est. = 0.19633   n = 6075827
```