Appendix 9. Results for the analysis of residual species richness and macro-ecological predictors.

Table A1. Results from a GAM which assessed the relationship between residual species richness (i.e., the residuals from a fitted GAM between city area and total species richness) after accounting for latitudinal and longitudinal species richness gradients and weighting the model to those cities with more underlying eBird checklists used to estimate species richness. All variables were standardized (i.e., scaled and centered) prior to modelling.

```
Family: gaussian
Link function: identity

Formula:
resids ~ s_distance.to.coast_km + s_mean_EVI + s_tree_mean +
    s_tree_mean * s_proportion_water + s_proportion_water + s(lat,
    lng, bs = "sos", m = 2, k = 100)

Parametric coefficients:
                             Estimate Std. Error t value Pr(>|t|)
(Intercept)                   -0.9330     0.1963  -4.754 2.18e-06 ***
s_distance.to.coast_km        -2.7232     3.6309  -0.750   0.4534
s_mean_EVI                    -0.8902     0.5050  -1.763   0.0781 .
s_tree_mean                    1.5997     0.8343   1.917   0.0554 .
s_proportion_water             4.0719     0.4461   9.127  < 2e-16 ***
s_tree_mean:s_proportion_water -1.9302     0.8712  -2.216   0.0269 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Approximate significance of smooth terms:
            edf Ref.df     F p-value
s(lat,lng) 51.88     99 3.448  <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =   0.23   Deviance explained = 25.8%
GCV = 58.808  Scale est. = 56.654    n = 1580
```