**Fig. S1** Diagnostic plots for the annual hotspot regression model (model_ann).

**Note:** Residuals vs. fitted values (top-left) assesses homoscedasticity; normal Q–Q plot (top-right) evaluates residual normality; scale–location plot (bottom-left) examines the spread of residuals; residuals vs. leverage plot (bottom-right) identifies influential observations (point size $\propto$ Cook's distance). All diagnostics support the adequacy of the OLS model (model_ann).