Appendix S2

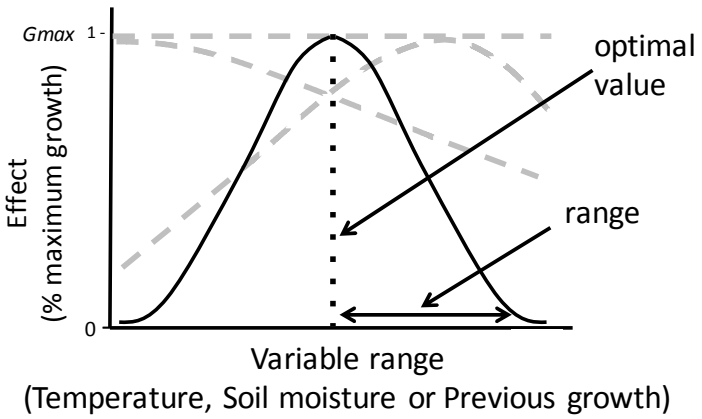
Effects of temperature, soil moisture and previous growth:

We estimated the effects of temperature, soil moisture and previous years' growth on radial tree growth following Canham and Thomas (2010). This is a very flexible approach as it uses a Gaussian equation and allows for all kinds of responses (Fig. S1 dashed gray lines). The effect of a particular variable, V, in year t, VE_t is estimated as:

$$VE_t = exp\left(\frac{-0.5}{range}(V_t - optimal)^2\right)$$

Where Vt is the value assigned to that variable that year (see Appendix S3), *optimal* is the value of the variable at which the effect reaches its peak value (VE_t =1), and the *range* is a scale parameter that determines the decline of the effect as the value of the variable deviates from the optimal. In our model we estimated the effect of temperature, soil moisture and previous years' growth for each N deposition treatment. We estimated optimal and range values for those three variables (see Appendix S4).

Fig. S1. Representation of the effects of each explanatory variable on growth, they peak at the optimal value and decline as a function of the range parameter. Dashed curves indicate potential shapes of the curve along the variable range recorded in the data. Including no effect, a flat line at 1, and only declining or increasing curves.



Reference:
Canham, C.D. and Thomas, R.Q. 2010. Frequency, not relative abundance, of temperate tree species varies along climate gradients in eastern North America. Ecology 91:3433-3440.