SUPPORTING INFORMATION

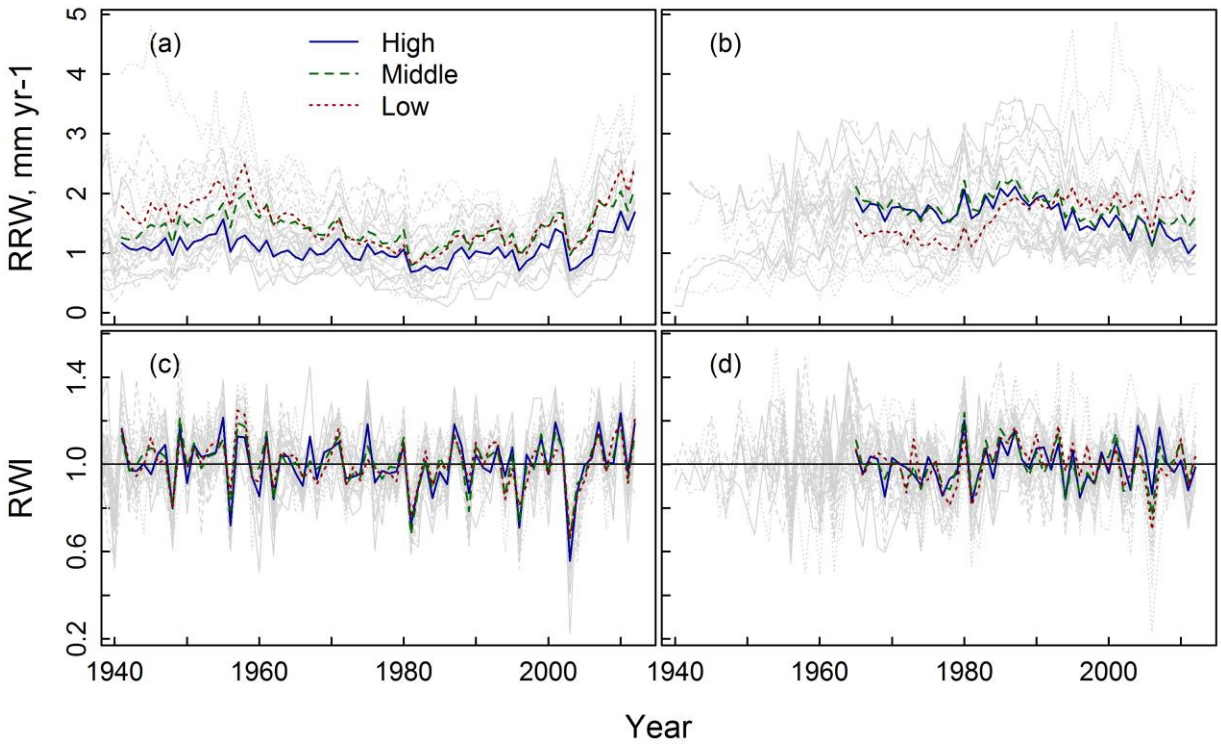

Fig S1. Mean raw ring width increment (RRW; a, b) and mean detrended ring width index (RWI; c, d) for spruce (a, c) and fir (b, d) in three elevation groups (low, middle, and high elevations shown by dotted red, dashed green, or solid blue lines, respectively) across ten mountains in the northeastern United States. Means by elevation group shown only for years with data at all sites for that species. Grey lines represent site means for context, with line type (dotted, dashed, or solid) matching the elevation group. Site means shown only for periods where (*i*) growth at each mountain showed expressed population signal > 0.85 (Kosiba et al., 2013; Wigley et al., 1984) and (*ii*) growth data were available at all three elevations on that mountain.

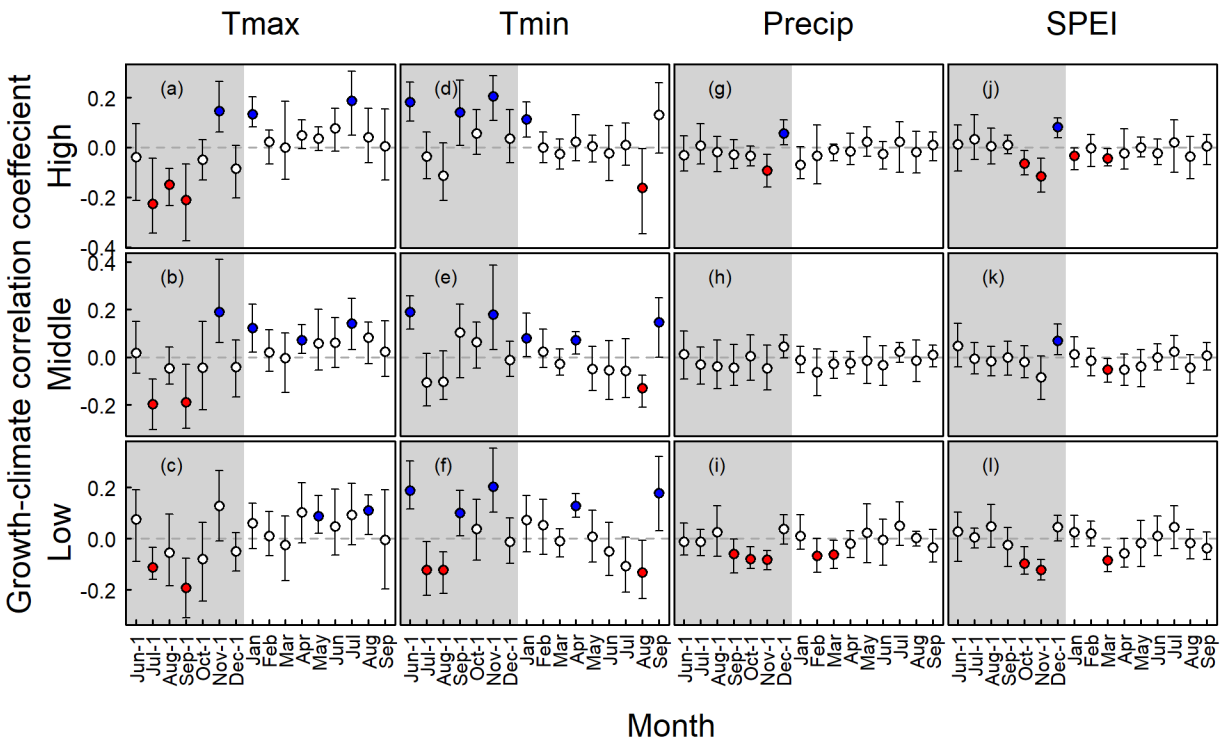

Fig S2. Correlations between red spruce growth and climate variables derived from response function analysis at high, middle, and low elevation sites on mountains across the northeastern US. Correlations shown between site-level ring width index (RWI) and estimates of average daily maximum (T_{max}) average daily minimum (T_{min}), total precipitation (Precip), and the Standardized Precipitation-Evapotranspiration Index (SPEI). Coefficients were derived for each site and bootstrapped 99.9% confidence intervals (error bars; 10,000 bootstraps) were calculated for each variable, month, and elevation group combination. Symbols are solid blue when significantly greater than zero and solid red when significantly lower than zero. Grey shaded area represents prior-year coefficients.

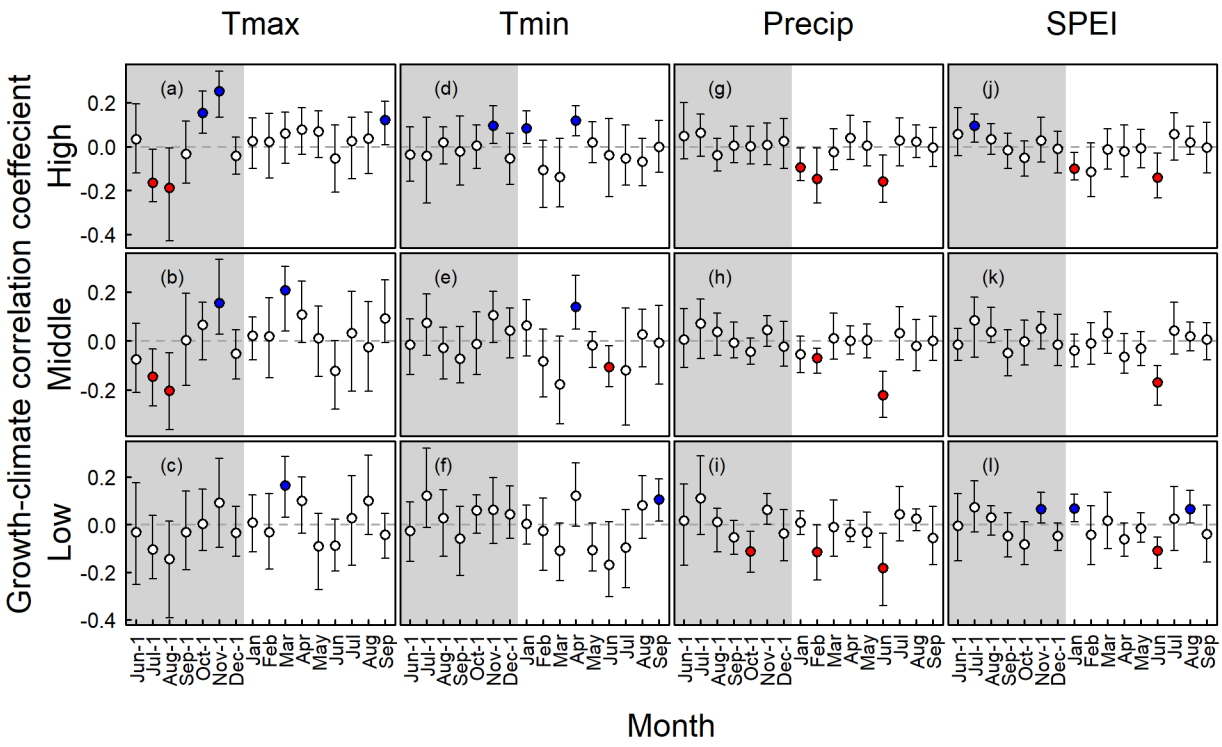

Fig S3. Correlations between balsam fir growth and climate variables derived from response function analysis at high, middle, and low elevation sites on mountains across the northeastern US. Correlations shown between site-level ring width index (RWI) and estimates of average daily maximum (T_{max}) average daily minimum (T_{min}), total precipitation (Precip), and the Standardized Precipitation-Evapotranspiration Index (SPEI). Coefficients were derived for each site and bootstrapped 99.9% confidence intervals (error bars; 10,000 bootstraps) were calculated for each variable, month, and elevation group combination. Symbols are solid blue when significantly greater than zero and solid red when significantly lower than zero. Grey shaded area represents prior-year coefficients.

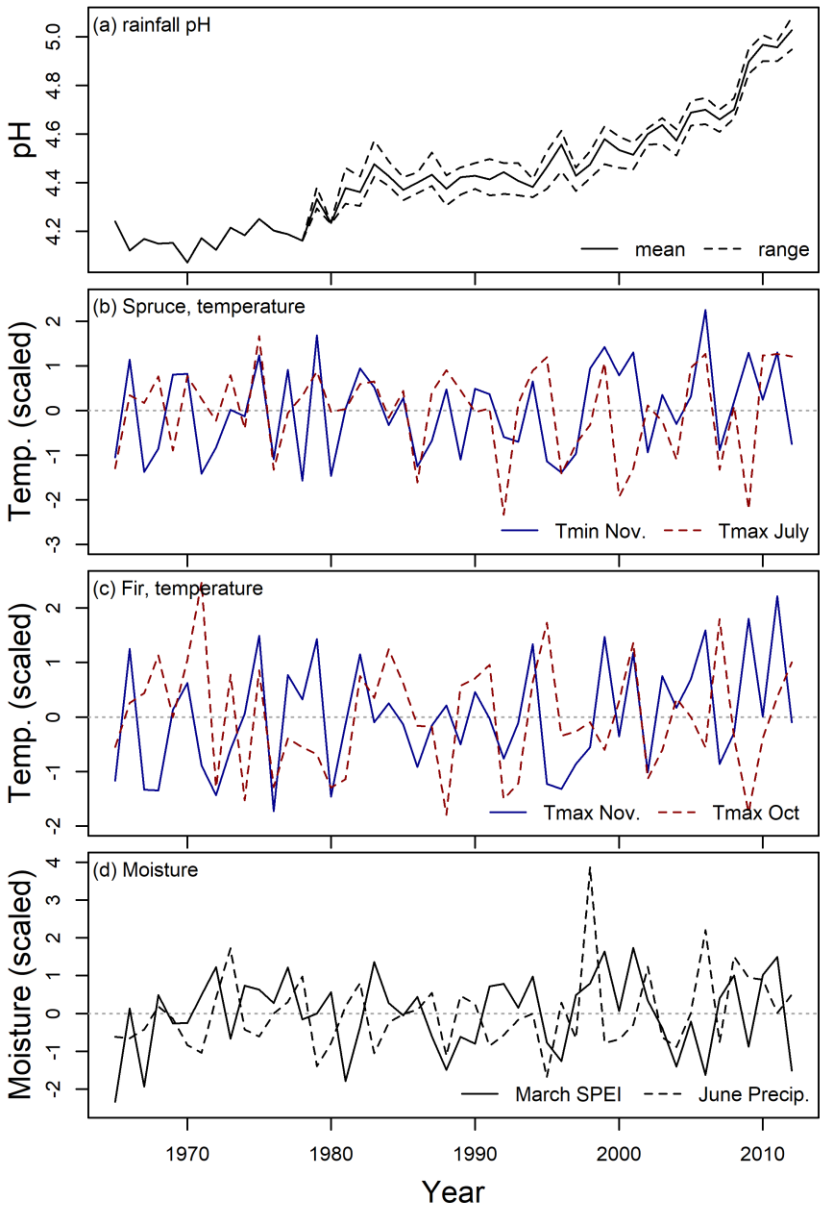

Fig S4. Temporal trends in environmental variables most related to basal area increment growth of red spruce and balsam fir in mountains of the northeastern US. (a) rainfall pH, (b) temperatures driving red spruce growth (positive effect: Tmin November; negative effect: Tmax July; Table 2), (c) temperatures driving balsam fir growth (positive effect: Tmax November; negative effect: Tmax October; Table 2), and (d) moisture variables related positively to red spruce growth (March SPEI) and negatively to balsam fir growth (June precipitation). Panels b - d scaled for comparison (mean = 0, standard deviation = 1).