



**Supplementary Figure S4.** (a) Geographic distribution of *Tsuga canadensis* (eastern hemlock) witness trees ( $n = 19,668$ ; black circles) recorded in mid-19<sup>th</sup> century CE land survey records (LSRs) across Lower Michigan, overlaid upon modern mean annual snowfall totals (1981 – 2010 National Weather Service cooperative weather station data; Garoogian 2011). Note pattern of increasing snowfall totals from SE to NW across Lower Michigan, reflecting the spatial gradient in the Pup Lake study area. (b) Histogram and trendline of *Tsuga canadensis* LSR-derived witness tree frequency with respect to mean annual snowfall totals. Note increasing frequencies of *Tsuga canadensis* with higher snowfall totals. LSR data from Paciorek et al. (2021).