

Table 1. Table of hypotheses and associated specific predictions, whether each was supported ('yes'; significant at  $p < 0.05$ ), rejected ('no'; opposite trend significant at  $p < 0.05$ ), or found insignificant ('n.s.'; no significant correlation), and display items showing the results. 'RP' and 'DP' refer to ring- and diffuse- porous species, respectively.

Hypotheses and Specific Predictions	SCBI		Harvard Forest		Results
	RP	DP	RP	DP	
<b>Warmer early springs result in earlier stem growth and longer growing seasons</b>					
Day of year at which 25% of growth is achieved ( $DOY_{25}$ ) is negatively correlated with early spring T.	yes	yes	yes	yes	Figs. 3-5
Day of year at which 50% of growth is achieved ( $DOY_{50}$ ) is negatively correlated with early spring T.	yes	yes	yes	yes	Figs. 4-5
Day of year at which 75% of growth is achieved ( $DOY_{75}$ ) is negatively correlated with early spring T.	n.s.	yes	yes	yes	Figs. 4-5
Day of year of max growth rate ( $DOY_{ip}$ ) is negatively correlated with early spring T.	yes	yes	yes	yes	Fig. 4
Peak growing season length ( $L_{PGS} = DOY_{75} - DOY_{25}$ ) is positively correlated with early spring T.	yes	yes	no	yes	Fig. 4
<b>Maximum growth rates are independent of early spring temperatures.</b>					
Max growth rate ( $g_{max}$ ) is independent of early spring T.	n.s.	no (-)	no (+)	no (-)	Fig. 4
<b>Annual stem growth responds positively to warmer spring temperatures.</b>					
Annual growth ( $\Delta DBH$ ; dendrobands) is positively correlated with early spring T.	n.s.	n.s.	yes	no	Fig. 4
On the centennial time scale, tree ring width ( $RW$ ) is positively correlated with early spring T.	mixed <sup>1</sup>	mixed <sup>2</sup>	n.s.	no <sup>3</sup>	Fig. 6

<sup>1</sup> One of nine species analyzed had significant positive response to April  $T_{max}$ ; one had significant negative response to March  $T_{max}$

<sup>2</sup> One of two species analyzed had significant positive response to April  $T_{max}$ , both had negative response to May  $T_{max}$

<sup>3</sup> One of the two species was negatively correlated with April  $T_{max}$ , and the other positively correlated with May  $T_{max}$ .

Table 2. Dominant ring- and diffuse-porous species at the Smithsonian Conservation Biology Institute (SCBI) and Harvard Forest, along with sample sizes analyzed here.

site	xylem porosity	species	species code	dendrometer bands		tree cores	
				n trees	n tree-years	n cores	date range
SCBI	ring	<i>Carya cordiformis</i>	CACO	0	0	18	1917-2009
		<i>Carya glabra</i>	CAGL	0	0	39	1901-2009
		<i>Carya ovalis</i>	CAOVL	0	0	24	1896-2009
		<i>Carya tomentosa</i>	CATO	0	0	17	1926-2009
		<i>Fraxinus americana</i>	FRAM	0	0	69	1910-2009
		<i>Quercus alba</i>	QURU	34	197	66	1904-2009
		<i>Quercus montana</i>	QUPR	0	0	67	1893-2009
		<i>Quercus rubra</i>	QUAL	35	229	71	1870-2009
		<i>Quercus velutina</i>	QUVE	0	0	83	1902-2009
	diffuse	<i>Fagus grandifolia</i>	FAGR	13	89	81	1932-2009
		<i>Liriodendron tulipifera</i>	LITU	41	354	109	1920-2009
	ring	<i>Fraxinus americana</i>	FRAM	9	27	0	1901-2014
		<i>Quercus alba</i>	QURU	118	575	179	
		<i>Quercus velutina</i>	QUVE	11	50	0	
	diffuse	<i>Fagus grandifolia</i>	FAGR	8	45	0	1952-2013
		<i>Betula lenta</i>	BELE	8	44	0	
		<i>Betula populifolia</i>	BEPO	5	24	0	
		<i>Betula papyrifera</i>	BEPA	3	13	0	
		<i>Betula alleghaniensis</i>	BEAL	21	90	44	
		<i>Prunus serotina</i>	PRSE2	9	37	0	
		<i>Acer rubrum</i>	ACRU	144	669	59	
		<i>Acer pensylvanicum</i>	ACPE	4	16	0	

Table 3. Summary of parameters describing the phenology and rate of growth for ring- and diffuse- porous species at SCBI and Harvard Forest.

	SCBI		Harvard Forest	
	ring	diffuse	ring	diffuse
critical $T_{max}$ window	3/22-4/9	2/19-5/21	4/2-5/7	3/19-5/7
$DOY_{25}$	123 (May 4)	154 (June 4)	132 (May 15)	164 (June 14)
$DOY_{50}$	152 (June 2)	172 (June 22)	159 (June 9)	182 (July 2)
$DOY_{75}$	180 (June 30)	190 (July 9)	186 (July 6)	199 (July 19)
$DOY_{ip}$	152 (June 2)	173 (June 23)	161 (June 11)	183 (July 3)
$g_{max}$ (mm/day)	0.046	0.061	0.03	0.025
$L_{pgs}$	56.5	35.8	54.5	35.1
$\Delta DBH$ (mm/yr)	4.7	3.6	3.1	1.4