

Table 1: 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
		<i>Fagus grandifolia</i>	FAGR	13	89	81	1932-2009
	diffuse	<i>Liriodendron tulipifera</i>	LITU	41	354	109	1920-2009
Harvard		<i>Fraxinus americana</i>	FRAM	9	27	0	
ring	<i>Quercus alba</i>	QURU	118	575	179	1901-2014	
	<i>Quercus velutina</i>	QUVE	11	50	0		
Harvard	diffuse	<i>Fagus grandifolia</i>	FAGR	8	45	0	
		<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	1952-2013
		<i>Prunus serotina</i>	PRSE	9	37	0	
		<i>Acer rubrum</i>	ACRU	144	669	59	1930-2014
		<i>Acer pensylvanicum</i>	ACPE	4	16	0	

Table 2: SCBI bands by species

Species	Before Cleaning	After Cleaning	Wood_Structure
American Beech	85	75	Diffuse-porous
Tulip Poplar	338	312	Diffuse-porous
Red Oak	293	270	Ring-Porous
White Oak	273	254	Ring-Porous

Table 3: HF bands by species

Species	Before Cleaning	After Cleaning	Wood_Structure
American Beech	48	26	Diffuse-porous
Black Birch	50	33	Diffuse-porous
Black Cherry	60	20	Diffuse-porous
Grey Birch	35	13	Diffuse-porous
Red Maple	987	339	Diffuse-porous
Striped Maple	23	8	Diffuse-porous
White Birch	25	6	Diffuse-porous
Yellow Birch	148	69	Diffuse-porous
Black Oak	73	18	Ring-Porous
Red Oak	719	226	Ring-Porous
White Ash	63	9	Ring-Porous

Table 4: sample size by year

Year	SCBI	Harvard Forest
1998	NA	755
1999	NA	733
2000	NA	711
2001	NA	704
2002	NA	701
2003	NA	700
2011	105	NA
2012	99	NA
2013	145	NA
2014	146	NA
2015	144	NA
2016	145	NA
2017	145	NA
2018	143	NA
2019	142	NA

Table 5: 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)
$DOY_{g_{max}}$	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

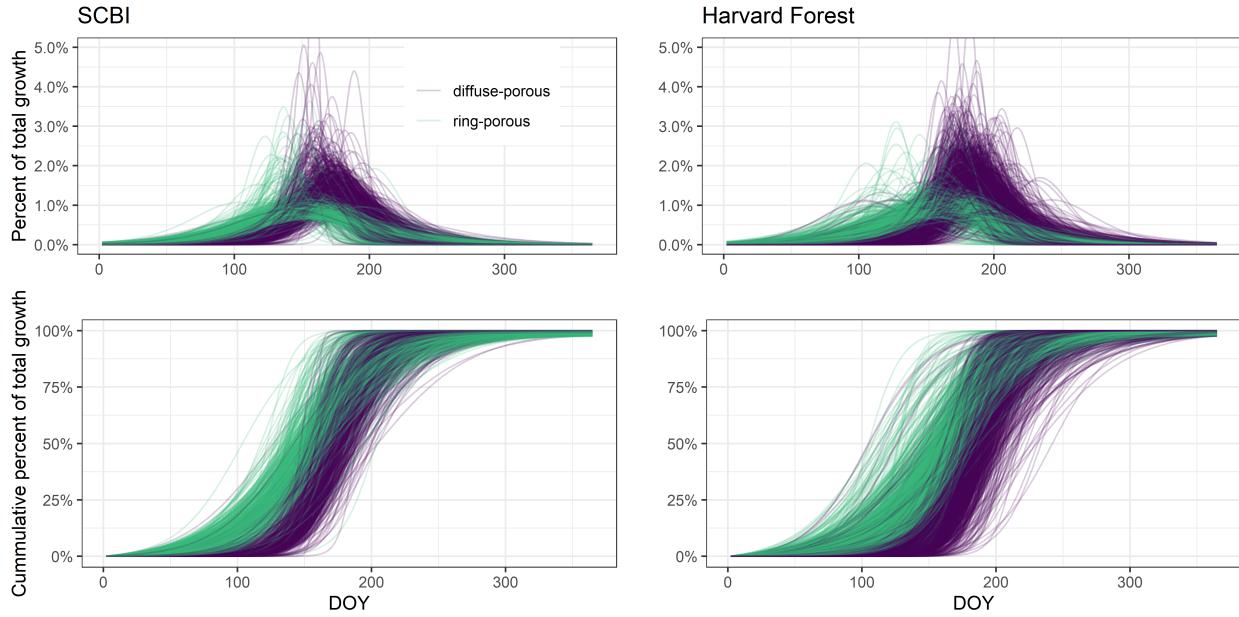
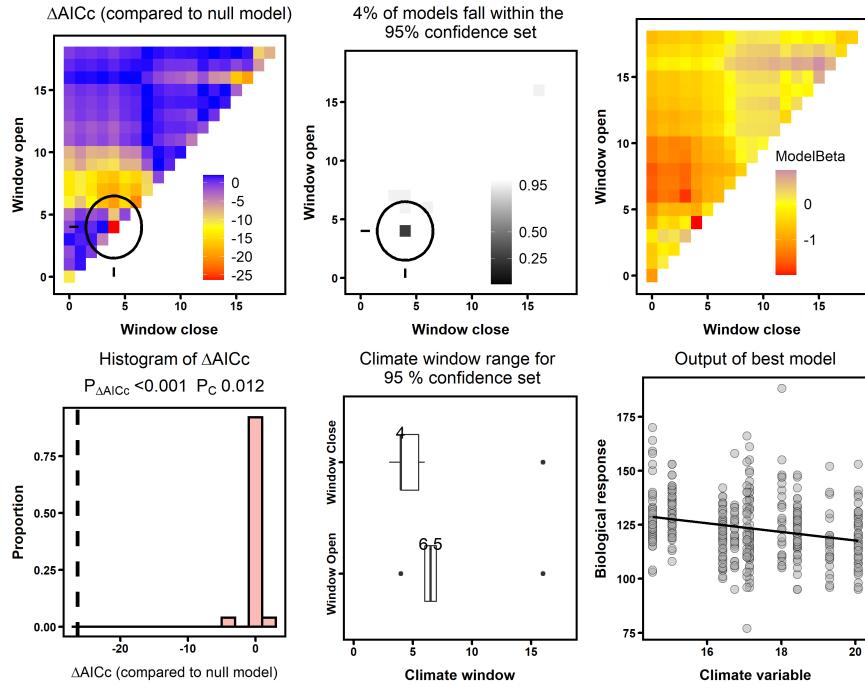


Figure 1: Growth trajectories for ring- and diffuse-porous trees, as both relative and cumulative fractions of total annual growth. Each line represents one year's growth for a given tree, fit with McMahon model.

(a)  $T_{max}$



(b)  $T_{min}$

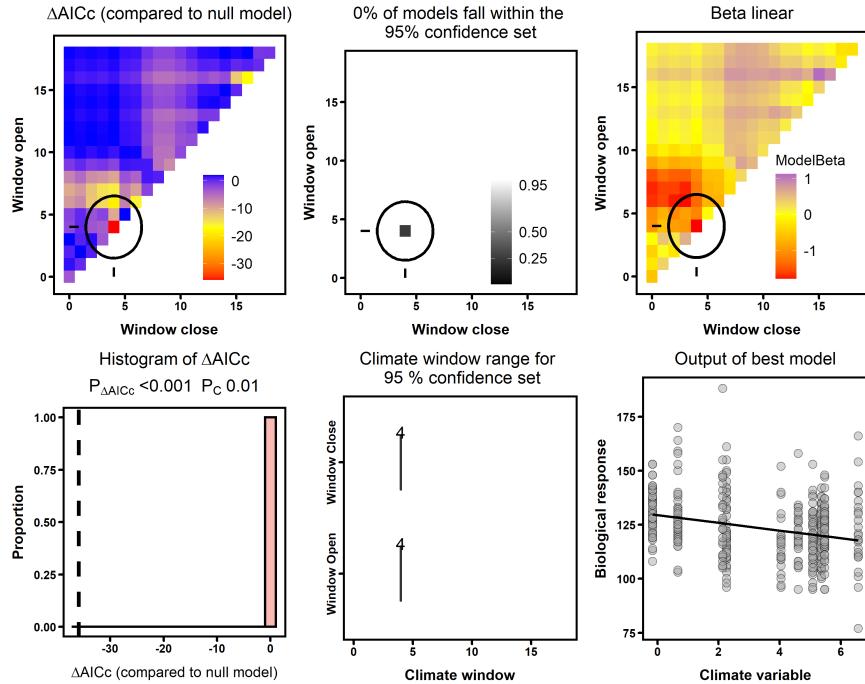
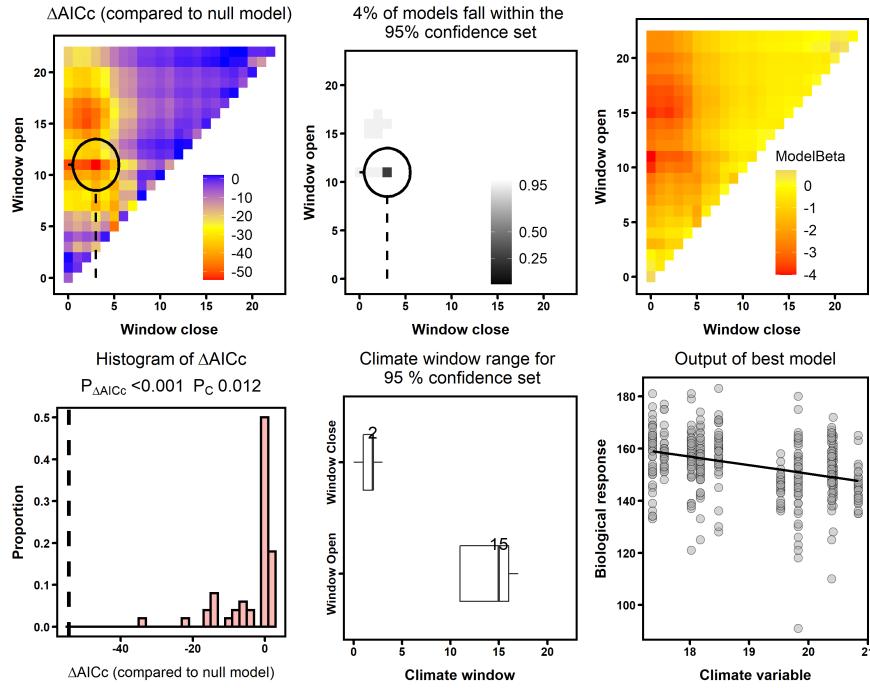


Figure 2: Full climwin output for  $DOY_{25}$  for ring porous species at SCBI.

(a)  $T_{max}$



(b)  $T_{min}$

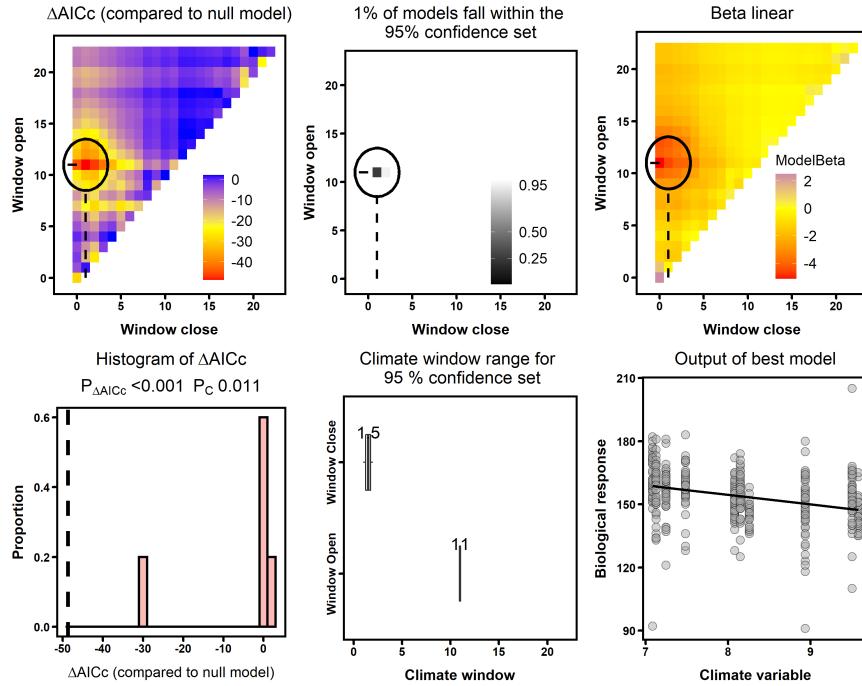
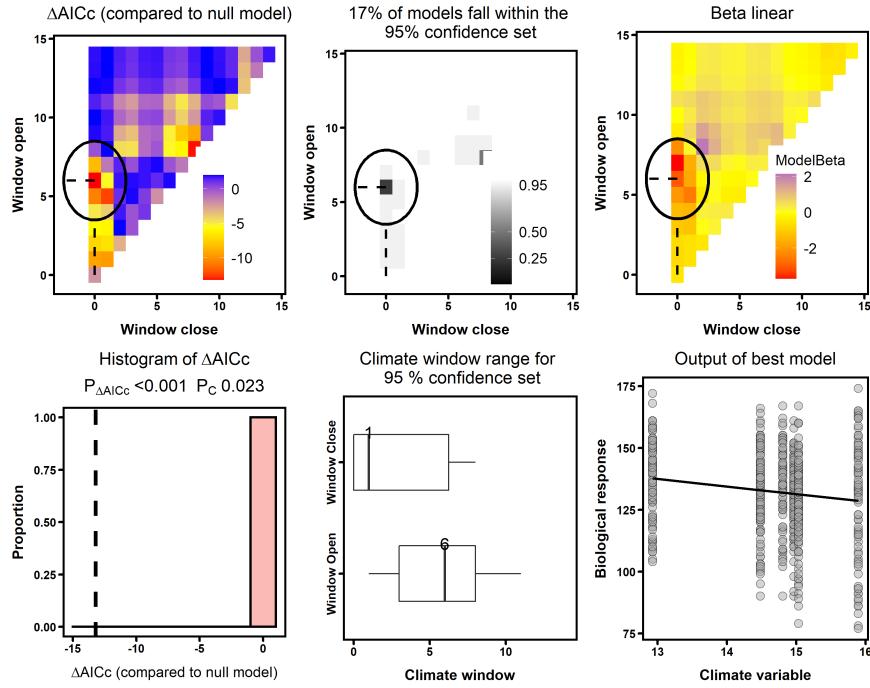


Figure 3: Full climwin output for  $DOY_{25}$  for diffuse porous species at SCBI.

(a)  $T_{max}$



(b)  $T_{min}$

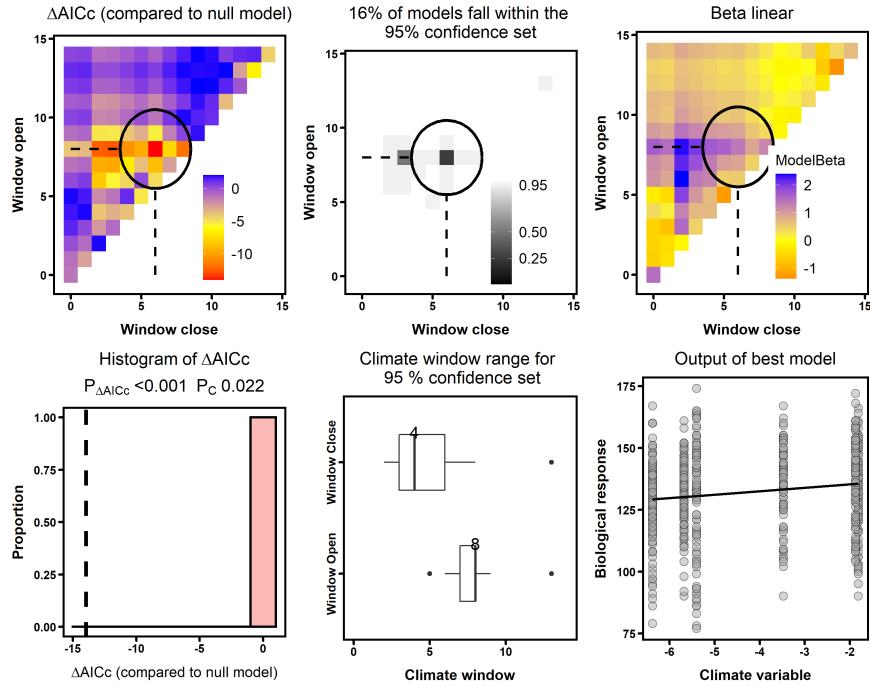
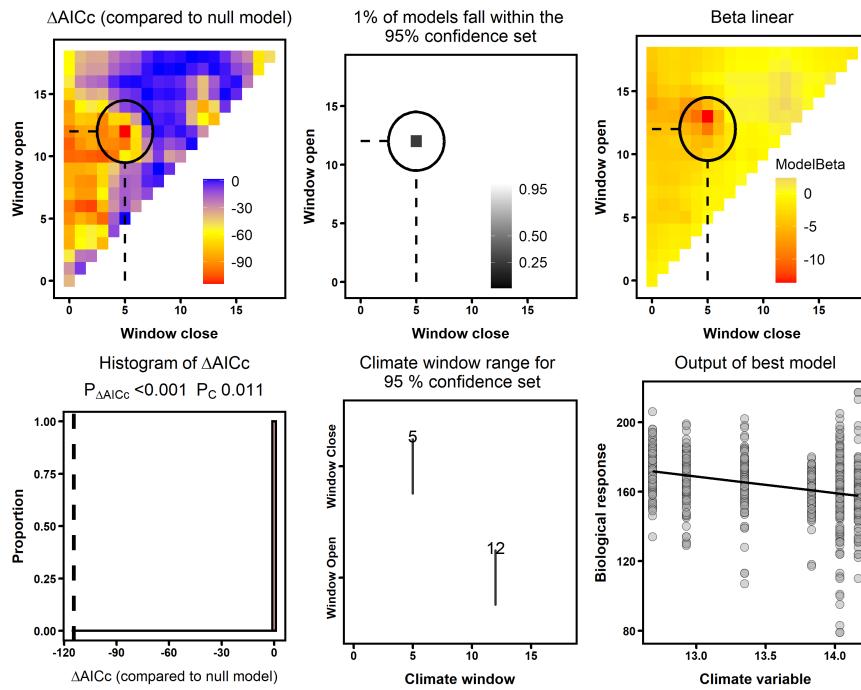


Figure 4: Full climwin output for  $DOY_{25}$  for ring porous species at Harvard Forest.

(a)  $T_{max}$



(b)  $T_{min}$

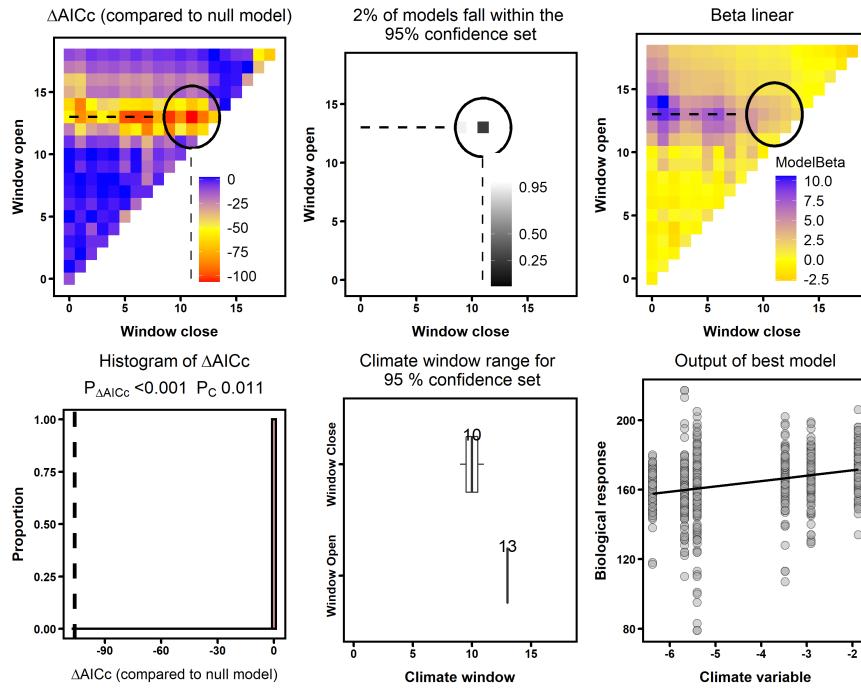


Figure 5: Full climwin output for  $DOY_{25}$  for diffuse porous species at Harvard Forest.