

## Supplement: Supporting Information

**Table S1**

Sequence of treatments in Watershed 6, a north-facing 8.9 hectare catchment.

Year	Treatment	References
1909-1923	The Coweeta Basin, including WS6, was commercially cut with ca. 30% reduction in basal area. Cutting progressed from low to high elevation; WS6 would have been the first area cut.	Elliott and Swank, 2008
1934	A weir was installed at the base of the watershed, and nine vegetation plots were measured across the east-side of the watershed.	Hewlett, 1961; Douglass and Swank, 1972
1928-1940	Chestnut blight ( <i>Endothia parasitica</i> Murr.) killed the remaining <i>Castanea dentata</i> trees.	
1942	12% of the catchment (1.1 ha) along the stream was cut to determine the effect of cutting streamside vegetation on water yield.	Dunford and Fletcher, 1947
1958, summer	Vegetation was measured in 37 plots prior to grass conversion.	
1958, fall	All merchantable timber was cut and removed. All remaining vegetation was cut, piled and burned. A seedbed was prepared by burning and soil scarification.	Hibbert, 1969
1959	Grass conversion by application of 1100 kg ha <sup>-1</sup> limestone, 366 kg ha <sup>-1</sup> NPK fertilizer, and 3.7 kg ha <sup>-1</sup> fescue ( <i>Festuca octiflora</i> Walter) grass seed across the entire watershed.	Hibbert, 1969
1960-1965	Woody sprouts were foliar sprayed with 2, 4, 5-T herbicide, annually for five years.	
1960	Application of 37 kg ha <sup>-1</sup> NH <sub>4</sub> -NO <sub>3</sub> .	
1965	Application of 110 kg ha <sup>-1</sup> NPK fertilizer and 27 kg ha <sup>-1</sup> 60% potash.	
1966- early 1967	Three herbicides were used to eliminate the grass cover. Atrazine, paraquat, and 2,4-D were applied on the entire watershed except for a 3 m buffer strip on each side of the perennial stream.	Hibbert, 1969
1967	No further treatments, vegetation was allowed to revert to successional vegetation. For first several growing seasons, the entire area was dominated by a dense cover of herbaceous species.	Burt and Swank, 1992
1968	Vegetation was measured in 34 plots, the first growing season following treatment abandonment.	Burt and Swank, 1992
1982	15-year-old forest	Elliott et al., 1998
1995	28-year-old forest	Elliott et al., 1998
2012	45-year-old forest	This study.

**Table S2**

Common tree species across the eastern United States classified by hydrotpe (mesophytic, semi-mesophytic, xerophytic)<sup>a</sup>, xylem anatomy (diffuse-porous, ring-porous, semi-ring-porous, or tracheid)<sup>b</sup>, and stomatal control (isohydric or anisohydric)<sup>c</sup>.

Species	Hydrotpe <sup>a</sup>	Xylem anatomy <sup>b</sup>	Stomatal control <sup>c</sup>
<i>Acer rubrum</i>	Mesophytic	Diffuse	Isohydric
<i>Acer saccharum</i>	Mesophytic	Diffuse	Isohydric
<i>Acer pensylvanicum</i>	Mesophytic	Diffuse	Isohydric
<i>Betula alleghaniensis</i>	Mesophytic	Diffuse	Isohydric
<i>Betula lenta</i>	Mesophytic	Diffuse	Isohydric
<i>Betula papyrifera</i>	Mesophytic	Diffuse	Isohydric
<i>Carya</i> spp.	Semi-mesophytic	Semi-ring	Intermediate
<i>Castanea dentata</i>	Semi-mesophytic	Semi-ring	Anisohydric
<i>Fagus grandifolia</i>	Mesophytic	Diffuse	Isohydric
<i>Fraxinus</i> spp. ( <i>americana</i> , <i>pennsylvanica</i> )	Mesophytic	Ring	Anisohydric
<i>Liriodendron tulipifera</i>	Mesophytic	Diffuse	Isohydric
<i>Magnolia</i> spp. ( <i>acuminata</i> , <i>fraseri</i> )	Mesophytic	Diffuse	Isohydric
<i>Nyssa sylvatica</i>	Semi-mesophytic	Diffuse	Intermediate
<i>Oxydendron arborea</i>	Semi-mesophytic	Ring	Intermediate
<i>Pinus</i> spp. ( <i>rigida</i> , <i>taeda</i> , <i>echinata</i> , <i>pungens</i> , <i>virginiana</i> )	Xerophytic	Tracheid	Isohydric
<i>Pinus palustris</i>	Xerophytic	Tracheid	Isohydric
<i>Pinus strobus</i>	Semi-mesophytic	Tracheid	Isohydric
<i>Prunus serotina</i>	Semi-mesophytic	Ring	Anisohydric
<i>Quercus alba</i>	Xerophytic	Ring	Anisohydric
<i>Quercus coccinea</i>	Xerophytic	Ring	Anisohydric
<i>Quercus montana</i>	Xerophytic	Ring	Anisohydric
<i>Quercus rubra</i>	Semi-mesophytic	Ring	Anisohydric
<i>Quercus velutina</i>	Semi-mesophytic	Ring	Anisohydric
<i>Robinia pseudoacacia</i>	Semi-mesophytic	Ring	Isohydric
<i>Tilia americana</i>	Mesophytic	Diffuse	Isohydric
<i>Tsuga canadensis</i>	Mesophytic	Tracheid	Anisohydric

Classifications were extracted from the literature; <sup>a</sup>hydrotpe (Flatley et al., 2015), <sup>b</sup>xylem anatomy (Ewers et al., 2007) and <sup>c</sup>stomatal control (Roman et al., 2015); <sup>c</sup>stomatal control of *Castanea dentata* based on *C. sativa* (Gomes-Laranjo et al., 2012).

**Table 3**

Mean density, basal area, total aboveground biomass, and leaf area index (LAI) for the treated (WS6) and reference (WS14, WS18) watersheds overtime. Standard errors are in parentheses.

	WS6				
	1934 N = 5	1958 N = 37	1982 N = 34	1995 N = 34	2012 N = 34
Density (stems ha <sup>-1</sup> )	4302 (213)	5942 (291)	1712 (121)	1338 (142)	1174 (90)
Basal area (m <sup>2</sup> ha <sup>-1</sup> )	28.39 (2.61)	15.96 (1.38)	11.21 (0.82)	21.00 (1.45)	27.36 (1.81)
Biomass (Mg ha <sup>-1</sup> )	209.855 (20.713)	99.508 (12.110)	45.564 (3.760)	126.550 (9.617)	201.470 (14.665)
LAI (m <sup>2</sup> m <sup>-2</sup> )	6.447 (0.603)	3.273 (0.293)	1.823 (0.128)	3.616 (0.241)	4.848 (0.330)
	WS14				
	1934 N = 30	1969 N = 30	1988-1992 N = 30	2009-2010 N = 30	
Density (stems ha <sup>-1</sup> )	2877 (158)	6178 (472)	3872 (576)	3672 (322)	
Basal area (m <sup>2</sup> ha <sup>-1</sup> )	27.21 (1.55)	26.18 (1.11)	29.52 (1.525)	36.93 (1.85)	
Biomass (Mg ha <sup>-1</sup> )	224.260 (20.374)	178.486 (12.920)	206.608 (14.840)	244.290 (17.428)	
LAI (m <sup>2</sup> m <sup>-2</sup> )	5.808 (0.340)	5.115 (0.241)	5.728 (0.298)	6.384 (0.348)	
	WS18				
	1934 N = 8	1953 N=8	1969 N = 8	1992 N = 7	2009 N = 8
Density (stems ha <sup>-1</sup> )	3029 (326)	8025 (1611)	7220 (1727)	5196 (1337)	4636 (1289)
Basal area (m <sup>2</sup> ha <sup>-1</sup> )	26.04 (2.00)	25.75 (1.10)	28.13 (0.92)	35.76 (3.28)	34.37 (3.06)
Biomass (Mg ha <sup>-1</sup> )	190.844 (28.758)	148.424 (12.837)	183.742 (9.641)	218.356 (29.9885)	208.079 (13.518)
LAI (m <sup>2</sup> m <sup>-2</sup> )	5.432 (0.360)	5.001 (0.208)	5.376 (0.195)	6.151 (0.551)	5.951 (0.394)

In 1934, only percent cover of evergreen shrubs (*Kalmia latifolia* and *Rhododendron maximum*) was estimated for each plot. For all other years, diameter of evergreen shrubs was measured. The higher density in years 1953 and 1958 versus 1934 is partly due to evergreen shrub diameters not being measured or counted in the permanent plots in 1934.

**Table S4**

Watershed 14: mean density, basal area, aboveground biomass, and leaf area index (LAI) of species over time [1934, 1969, 1988-1992, and 2009-2010]. Standard errors are in parentheses.

Species in 1934	Density	Basal area	Aboveground biomass (kg ha <sup>-1</sup> )		LAI
	(stems ha <sup>-1</sup> )	(m <sup>2</sup> ha <sup>-1</sup> )	Foliage	Total	(m <sup>2</sup> m <sup>-2</sup> )
<i>Castanea dentata</i>	764 (119)	12.50 (1.44)	1,509 (175)	120,549 (17775)	2.506 (0.291)
<i>Quercus montana</i>	269 (43)	3.79 (0.79)	576 (129)	43,036 (11489)	0.818 (0.184)
<i>Carya</i> spp.	228 (30)	1.62 (0.30)	196 (44)	11,991 (3710)	0.369 (0.084)
<i>Quercus coccinea</i>	164 (37)	1.74 (0.36)	488 (97)	11,225 (2596)	0.605 (0.122)
<i>Acer rubrum</i>	234 (24)	1.22 (0.17)	222 (28)	6,664 (1171)	0.381 (0.048)
<i>Nyssa sylvatica</i>	108 (14)	0.96 (0.22)	68 (11)	5,791 (1814)	0.166 (0.028)
<i>Quercus velutina</i>	56 (12)	0.79 (0.19)	101 (27)	5,112 (1501)	0.126 (0.034)
<i>Quercus alba</i>	29 (15)	0.45 (0.22)	59 (25)	3,347 (2162)	0.087 (0.037)
<i>Robinia pseudoacacia</i>	71 (9)	0.58 (0.09)	68 (11)	2,888 (604)	0.090 (0.015)
<i>Quercus rubra</i>	40 (9)	0.46 (0.13)	58 (19)	2,850 (1146)	0.084 (0.026)
<i>Tsuga canadensis</i>	32 (15)	0.48 (0.26)	100 (48)	2,512 (1384)	0.077 (0.038)
<i>Betula lenta</i>	128 (56)	0.41 (0.15)	21 (9)	1,865 (820)	0.055 (0.024)
<i>Liriodendron tulipifera</i>	181 (70)	0.48 (0.16)	41 (13)	1,429 (444)	0.075 (0.024)
<i>Oxydendrum arboreum</i>	50 (8)	0.32 (0.07)	29 (5)	1,139 (270)	0.073 (0.014)
<i>Cornus florida</i>	121 (24)	0.32 (0.07)	35 (8)	761 (186)	0.076 (0.015)
<i>Sassafras albidum</i>	112 (16)	0.27 (0.04)	32 (5)	723 (165)	0.051 (0.009)
<i>Hamamelis virginiana</i>	113 (35)	0.23 (0.07)	27 (8)	517 (159)	0.056 (0.017)
<i>Castanea pumila</i>	63 (16)	0.14 (0.04)	17 (4)	353 (101)	0.027 (0.007)
<i>Tilia americana</i>	2 (1)	0.04 (0.04)	5 (4)	306 (300)	0.009 (0.008)
<i>Pinus rigida</i>	2 (2)	0.08 (0.08)	4 (4)	300 (300)	0.009 (0.009)
<i>Amelanchier arborea</i>	31 (10)	0.08 (0.03)	9 (3)	213 (81)	0.015 (0.005)
<i>Acer pensylvanicum</i>	28 (11)	0.08 (0.03)	14 (6)	204 (88)	0.029 (0.010)
<i>Magnolia acuminata</i>	2 (1)	0.03 (0.03)	4 (3)	180 (174)	0.011 (0.010)
<i>Magnolia fraseri</i>	6 (4)	0.02 (0.02)	3 (4)	104 (84)	0.023 (0.014)
<i>Fagus grandifolia</i>	3 (2)	0.01 (0.01)	2 (1)	62 (56)	0.003 (0.002)
<i>Symplocos tinctoria</i>	12 (7)	0.02 (0.01)	3 (2)	51 (31)	0.004 (0.003)
<i>Aesculus flava</i>	9 (5)	0.02 (0.01)	2 (1)	50 (24)	0.004 (0.002)
<i>Fraxinus americana</i>	5 (3)	0.01 (0.01)	1 (0.7)	24 (12)	0.005 (0.003)

<i>Quercus falcata</i>	0.8 (0.6)	0.002 (0.001)	2 (1)	5 (3)	0.002 (0.001)
<i>Diospyros virginiana</i>	0.8 (0.8)	0.002 (0.002)	0.2 (0.2)	4 (4)	0.0003 (0.0003)
<i>Salix nigra</i>	5 (4)	0.01 (0.01)	0.03 (0.02)	0.03 (0.02)	0.002 (0.001)
<i>Linder benzoin</i>	2 (2)	0.005 (0.004)	0.01 (0.01)	0.01 (0.01)	<0.0001
All <i>Quercus</i>	560 (65)	7.24 (0.93)	1,284 (168)	65,576 (11941)	1.736 (0.231)
Total	2877 (158)	27.21 (1.55)	3,699 (213)	224,260 (20374)	5.808 (0.340)
<b>Species in 1969</b>					
<i>Quercus montana</i>	215 (34)	5.59 (1.12)	836 (175)	56,570 (13468)	1.188 (0.248)
<i>Quercus coccinea</i>	74 (15)	2.60 (0.57)	418 (85)	19,432 (4697)	0.535 (0.108)
<i>Acer rubrum</i>	216 (22)	2.33 (0.32)	388 (49)	15,618 (2539)	0.678 (0.086)
<i>Carya</i> spp.	148 (28)	1.56 (0.37)	201 (58)	13,069 (4446)	0.330 (0.095)
<i>Quercus rubra</i>	49 (10)	1.66 (0.34)	230 (51)	12,420 (3080)	0.295 (0.066)
<i>Liriodendron tulipifera</i>	98 (26)	1.39 (0.40)	116 (34)	7,270 (2190)	0.214 (0.062)
<i>Betula lenta</i>	93 (33)	0.99 (0.34)	69 (24)	6,332 (2235)	0.188 (0.066)
<i>Quercus velutina</i>	14 (3)	0.76 (0.25)	112 (41)	6,284 (2465)	0.143 (0.052)
<i>Tsuga canadensis</i>	48 (22)	1.11 (0.48)	226 (97)	5,688 (2537)	0.180 (0.078)
<i>Kalmia latifolia</i>	2361 (508)	1.40 (0.29)	239 (51)	5,268 (1124)	0.184 (0.038)
<i>Quercus alba</i>	20 (7)	0.63 (0.28)	78 (32)	5,020 (2667)	0.115 (0.046)
<i>Rhododendron maximum</i>	2092 (411)	1.51 (0.29)	220 (43)	5,539 (1102)	0.170 (0.033)
<i>Robinia pseudoacacia</i>	34 (6)	0.78 (0.16)	93 (20)	4,640 (1074)	0.126 (0.027)
<i>Nyssa sylvatica</i>	45 (7)	0.65 (0.17)	44 (9)	3,780 (1353)	0.111 (0.024)
<i>Oxydendrum arboreum</i>	48 (8)	0.81 (0.15)	60 (11)	3,619 (668)	0.158 (0.028)
<i>Cornus florida</i>	152 (37)	0.57 (0.14)	65 (16)	1,718 (470)	0.131 (0.033)
<i>Magnolia acuminata</i>	5 (2)	0.16 (0.07)	19 (8)	1,142 (517)	0.064 (0.027)
<i>Castanea dentata</i>	104 (24)	0.29 (0.08)	33 (9)	1,069 (552)	0.055 (0.015)
<i>Amelanchier arborea</i>	66 (17)	0.23 (0.06)	26 (7)	747 (228)	0.044 (0.012)
<i>Fagus grandifolia</i>	7 (4)	0.12 (0.09)	14 (11)	656 (530)	0.024 (0.018)
<i>Tilia americana</i>	1 (1)	0.08 (0.08)	10 (9)	619 (606)	0.016 (0.015)
<i>Pinus rigida</i>	2 (2)	0.14 (0.14)	10 (10)	597 (597)	0.019 (0.019)
<i>Acer pensylvanicum</i>	27 (9)	0.11 (0.04)	22 (8)	485 (188)	0.039 (0.013)
<i>Sassafras albidum</i>	23 (4)	0.13 (0.04)	15 (4)	472 (119)	0.024 (0.007)
<i>Hamamelis virginiana</i>	47 (21)	0.11 (0.05)	12 (6)	256 (119)	0.025 (0.012)
<i>Aesculus flava</i>	4 (2)	0.04 (0.02)	5 (3)	215 (125)	0.009 (0.005)
<i>Magnolia fraseri</i>	8 (3)	0.04 (0.02)	5 (2)	155 (64)	0.017 (0.006)

<i>Castanea pumila</i>	16 (7)	0.04 (0.02)	5 (2)	112 (60)	0.008 (0.004)
<i>Fraxinus americana</i>	2 (1)	0.02 (0.02)	3 (2)	102 (73)	0.005 (0.003)
<i>Diospyros virginiana</i>	8 (7)	0.02 (0.02)	3 (3)	84 (80)	0.005 (0.004)
<i>Symplocos tinctoria</i>	5 (2)	0.01 (0.004)	1 (0.4)	22 (8)	0.002 (0.001)
<i>R. calendulaceum</i>	79 (21)	0.16 (0.04)	0.4 (0.1)	0.4 (0.1)	0.001 (0.0002)
<i>Pyrularia pubera</i>	28 (11)	0.06 (0.02)	0.15 (0.06)	0.15 (0.06)	0.0002 (0.0001)
<i>Calycanthus florida</i>	5 (3)	0.01 (0.01)	0.02 (0.02)	0.03 (0.02)	< 0.0001
<i>Ilex opaca</i>	2 (2)	0.01 (0.01)	0.02 (0.02)	0.02 (0.02)	< 0.0001
All <i>Quercus</i>	372 (43)	11.25 (1.26)	1,674 (197)	99,728 (13973)	2.275 (0.273)
Total	6178 (472)	26.18 (1.11)	3,587 (168)	178,486 (12920)	5.114 (0.241)

### Species in 1988-1992

<i>Quercus montana</i>	129 (20)	5.40 (0.98)	808 (156)	53,796 (12688)	1.147 (0.221)
<i>Acer rubrum</i>	147 (19)	3.70 (0.54)	574 (79)	28,991 (4924)	1.004 (0.138)
<i>Quercus rubra</i>	25 (5)	2.14 (0.52)	321 (83)	18,536 (5138)	0.411 (0.106)
<i>Quercus coccinea</i>	46 (11)	2.39 (0.61)	342 (80)	18,224 (4963)	0.438 (0.103)
<i>Tsuga canadensis</i>	45 (16)	2.53 (1.10)	423 (175)	13,731 (6000)	0.357 (0.150)
<i>Liriodendron tulipifera</i>	62 (15)	2.11 (0.56)	175 (47)	13,006 (3573)	0.324 (0.086)
<i>Betula lenta</i>	70 (19)	1.60 (0.51)	120 (39)	11,006 (3595)	0.325 (0.105)
<i>Carya</i> spp.	62 (16)	0.89 (0.24)	115 (34)	7,273 (2424)	0.188 (0.055)
<i>Quercus velutina</i>	11 (4)	0.61 (0.31)	91 (49)	5,289 (2920)	0.117 (0.062)
<i>Oxydendrum arboreum</i>	43 (7)	1.09 (0.19)	76 (13)	5,202 (924)	0.197 (0.034)
<i>Robinia pseudoacacia</i>	21 (3)	0.68 (0.16)	81 (19)	4,333 (1164)	0.111 (0.026)
<i>Nyssa sylvatica</i>	44 (8)	0.78 (0.20)	54 (12)	4,127 (1282)	0.137 (0.029)
<i>Rhododendron maximum</i>	1300 (350)	1.51 (0.31)	152 (37)	3,443 (832)	0.117 (0.029)
<i>Kalmia latifolia</i>	1476 (434)	0.89 (0.25)	150 (43)	3,313 (965)	0.116 (0.034)
<i>Cornus florida</i>	113 (34)	0.76 (0.23)	88 (27)	3,300 (1291)	0.177 (0.055)
<i>Magnolia acuminata</i>	5 (2)	0.27 (0.16)	32 (21)	2,170 (1390)	0.107 (0.066)
<i>Tilia americana</i>	4 (3)	0.29 (0.18)	35 (22)	2,088 (1298)	0.058 (0.036)
<i>Amelanchier arborea</i>	32 (8)	0.29 (0.08)	35 (10)	1,402 (472)	0.058 (0.016)
<i>Quercus alba</i>	9 (5)	0.19 (0.12)	26 (16)	1,133 (760)	0.039 (0.024)
<i>Acer saccharum</i>	10 (6)	0.17 (0.10)	38 (17)	1,050 (665)	0.049 (0.030)
<i>Sassafras albidum</i>	15 (4)	0.20 (0.07)	23 (9)	964 (422)	0.039 (0.015)

<i>Pinus rigida</i>	2 (2)	0.16 (0.15)	16 (14)	830 (808)	0.027 (0.027)
<i>Castanea dentata</i>	37 (12)	0.15 (0.07)	17 (9)	824 (638)	0.029 (0.014)
<i>Hamamelis virginiana</i>	37 (21)	0.13 (0.06)	15 (7)	404 (184)	0.030 (0.014)
<i>Aesculus flava</i>	6 (2)	0.08 (0.03)	9 (4)	378 (180)	0.015 (0.007)
<i>Magnolia fraseri</i>	9 (3)	0.08 (0.03)	19 (10)	350 (136)	0.032 (0.011)
<i>Acer pensylvanicum</i>	12 (6)	0.07 (0.03)	14 (6)	342 (169)	0.024 (0.010)
<i>Diospyros virginiana</i>	2 (2)	0.04 (0.03)	5 (4)	295 (267)	0.009 (0.007)
<i>Fraxinus americana</i>	2 (2)	0.01 (0.01)	1 (0.8)	30 (25)	0.002 (0.001)
<i>Castanea pumila</i>	4 (2)	0.01 (0.005)	0.94 (0.53)	18 (10)	0.002 (0.001)
<i>Fagus grandifolia</i>	0.4 (0.4)	0.001 (0.001)	0.10 (0.10)	2 (2)	0.0002 (0.0002)
<i>R. calendulaceum</i>	22 (14)	0.05 (0.03)	0.12 (0.08)	0.13 (0.08)	0.0002 (0.0001)
<i>Pyralaria pubera</i>	20 (11)	0.04 (0.02)	0.11 (0.06)	0.12 (0.07)	0.0002 (0.0001)
All <i>Quercus</i>	220 (28)	10.72 (1.34)	1,589 (204)	96,981 (15036)	2.153 (0.281)
Total	3872 (576)	29.52 (1.52)	3,861 (195)	206,608 (14840)	5.728 (0.298)

#### Species in 2009-2010

<i>Quercus montana</i>	111 (19)	6.96 (1.17)	1060 (185)	72,528 (14898)	1.505 (0.263)
<i>Acer rubrum</i>	144 (18)	4.61 (0.60)	709 (89)	36,058 (5304)	1.240 (0.156)
<i>Quercus coccinea</i>	42 (8)	3.12 (0.62)	387 (78)	24,268 (5203)	0.496 (0.100)
<i>Quercus rubra</i>	22 (5)	2.08 (0.50)	311 (79)	17,890 (4931)	0.399 (0.102)
<i>Liriodendron tulipifera</i>	49 (12)	2.48 (0.65)	204 (53)	17,740 (4697)	0.379 (0.098)
<i>Betula lenta</i>	43 (11)	1.71 (0.51)	155 (47)	14,730 (4513)	0.422 (0.128)
<i>Carya</i> spp.	55 (14)	1.19 (0.33)	156 (47)	9,996 (3243)	0.255 (0.077)
<i>Kalmia latifolia</i>	1728 (342)	4.35 (0.83)	319 (62)	7,915 (1528)	0.250 (0.048)
<i>Oxydendrum arboretum</i>	38 (6)	1.42 (0.23)	93 (15)	7,422 (1227)	0.240 (0.038)
<i>Rhododendron maximum</i>	1159 (206)	4.47 (0.82)	257 (46)	6,477 (1165)	0.201 (0.035)
<i>Nyssa sylvatica</i>	39 (8)	0.90 (0.21)	60 (13)	4,828 (1233)	0.152 (0.034)
<i>Quercus alba</i>	8 (4)	0.50 (0.28)	58 (29)	4,352 (2819)	0.086 (0.043)
<i>Magnolia acuminata</i>	4 (2)	0.36 (0.20)	42 (24)	3,185 (1803)	0.143 (0.081)
<i>Amelanchier arborea</i>	40 (10)	0.54 (0.14)	64 (17)	2,876 (887)	0.106 (0.029)
<i>Quercus velutina</i>	6 (3)	0.38 (0.21)	48 (26)	2,493 (1407)	0.064 (0.036)
<i>Magnolia fraseri</i>	19 (4)	0.35 (0.11)	41 (13)	2,344 (905)	0.139 (0.045)
<i>Robinia pseudoacacia</i>	11 (2)	0.36 (0.10)	42 (12)	2,210 (736)	0.058 (0.017)
<i>Tilia americana</i>	1 (1)	0.16 (0.12)	18 (14)	1,333 (1079)	0.031 (0.024)
<i>Sassafras albidum</i>	10 (2)	0.15 (0.05)	18 (6)	748 (280)	0.029 (0.009)

<i>Cornus florida</i>	28 (6)	0.18 (0.05)	21 (6)	637 (198)	0.042 (0.011)
<i>Tsuga canadensis</i>	1 (1)	0.10 (0.09)	17 (16)	569 (555)	0.015 (0.014)
<i>Fagus grandifolia</i>	3 (2)	0.08 (0.06)	9 (7)	511 (431)	0.015 (0.012)
<i>Fraxinus americana</i>	5 (3)	0.08 (0.05)	10 (6)	502 (308)	0.016 (0.009)
<i>Acer pensylvanicum</i>	31 (20)	0.11 (0.05)	22 (10)	508 (199)	0.039 (0.018)
<i>Aesculus flava</i>	6 (3)	0.09 (0.05)	11 (6)	457 (238)	0.018 (0.009)
<i>Acer saccharum</i>	4 (4)	0.05 (0.05)	8 (8)	258 (258)	0.014 (0.014)
<i>Hamamelis virginiana</i>	25 (12)	0.08 (0.04)	10 (4)	241 (112)	0.019 (0.009)
<i>Diospyros virginiana</i>	1 (1)	0.02 (0.02)	2 (2)	70 (70)	0.003 (0.003)
<i>Pinus rigida</i>	1 (1)	0.02 (0.02)	1 (1)	69 (48)	0.002 (0.001)
<i>Castanea dentata</i>	8 (2)	0.01 (0.003)	1 (0.4)	20 (7)	0.002 (0.001)
<i>Symplocos tinctoria</i>	3 (2)	0.01 (0.003)	1 (0.4)	16 (10)	0.001 (0.001)
<i>Castanea pumila</i>	2 (2)	0.004 (0.004)	0.5 (0.5)	11 (11)	0.001 (0.001)
<i>Halesia carolina</i>	0.4 (0.4)	0.002 (0.002)	0.2 (0.2)	5 (5)	0.0003 (0.0003)
All <i>Quercus</i>	190 (25)	13.04 (1.48)	1,868 (222)	122,732 (17166)	2.550 (0.307)
Total	3672 (322)	36.93 (1.85)	4,170 (227)	244,290 (17428)	6.384 (0.348)

In 1934, only percent cover of evergreen shrubs (*Kalmia latifolia* and *Rhododendron maximum*) was estimated for each plot. For all other years, diameter of evergreen shrubs was measured.



**Table S5**

Watershed 18: mean density, basal area, aboveground biomass, and leaf area index (LAI) of species over time [1934, 1953, 1969, 1992, and 2009]. Standard errors are in parentheses.

Species in 1934	Density	Basal area	Aboveground biomass (kg ha <sup>-1</sup> )		LAI
	(stems ha <sup>-1</sup> )	(m <sup>2</sup> ha <sup>-1</sup> )	Foliage	Total	(m <sup>2</sup> m <sup>-2</sup> )
<i>Castanea dentata</i>	581 (149)	7.99 (1.51)	963 (186)	76,843 (23586)	1.599 (0.309)
<i>Quercus montana</i>	273 (48)	3.54 (1.19)	525 (193)	34,656 (15047)	0.745 (0.275)
<i>Quercus rubra</i>	45 (17)	2.45 (1.13)	359 (169)	20,131 (9619)	0.460 (0.216)
<i>Quercus coccinea</i>	226 (36)	2.71 (0.70)	716 (152)	16,980 (4885)	0.917 (0.195)
<i>Nyssa sylvatica</i>	167 (30)	1.76 (0.76)	112 (30)	12,220 (7618)	0.285 (0.077)
<i>Pinus rigida</i>	66 (47)	1.37 (1.02)	94 (74)	5,785 (4459)	0.189 (0.147)
<i>Carya</i> spp.	344 (119)	1.27 (0.39)	120 (40)	5,551 (2191)	0.197 (0.066)
<i>Quercus velutina</i>	197 (742)	1.30 (0.53)	132 (55)	5,275 (2211)	0.169 (0.070)
<i>Robinia pseudoacacia</i>	95 (16)	0.76 (0.27)	91 (32)	5,031 (2281)	0.124 (0.044)
<i>Acer rubrum</i>	270 (64)	0.65 (0.16)	140 (33)	2,237 (744)	0.245 (0.059)
<i>Cornus florida</i>	305 (145)	0.83 (0.39)	93 (44)	2,135 (1001)	0.187 (0.088)
<i>Oxydendrum arboreum</i>	109 (24)	0.57 (0.13)	56 (12)	1,789 (450)	0.146 (0.032)
<i>Castanea pumila</i>	211 (104)	0.43 (0.21)	50 (24)	928 (465)	0.081 (0.040)
<i>Quercus alba</i>	9 (6)	0.16 (0.15)	24 (22)	738 (723)	0.036 (0.033)
<i>Sassafras albidum</i>	62 (15)	0.13 (0.04)	14 (4)	275 (67)	0.051 (0.009)
<i>Hamamelis virginiana</i>	56 (43)	0.11 (0.10)	13 (12)	248 (232)	0.056 (0.017)
<i>Liriodendron tulipifera</i>	28 (24)	0.06 (0.04)	5 (4)	120 (105)	0.075 (0.024)
<i>Amelanchier arborea</i>	2 (2)	0.003 (0.003)	0.04 (0.04)	7 (7)	0.001 (0.001)
<i>Diospyros tinctoria</i>	2 (2)	0.003 (0.003)	0.04 (0.04)	7 (7)	0.001 (0.001)
<i>Linder benzoin</i>	6 (6)	0.01 (0.01)	0.03 (0.03)	< 1	< 0.001
All <i>Quercus</i>	752 (105)	10.16 (1.22)	1,757 (199)	77,782 (15104)	2.327 (0.279)
Total	3030 (326)	26.04 (2.00)	3,503 (221)	190,845 (28758)	5.432 (0.360)
<b>Species in 1953</b>					
<i>Quercus montana</i>	293 (92)	3.73 (1.33)	546 (214)	35,634 (17030)	0.776 (0.304)
<i>Quercus rubra</i>	31 (10)	2.62 (1.26)	395 (197)	22,667 (11671)	0.506 (0.252)
<i>Quercus coccinea</i>	153 (36)	3.34 (0.79)	664 (136)	22,541 (6158)	0.851 (0.174)

<i>Kalmia latifolia</i>	5173 (1833)	2.87 (0.91)	522 (180)	11,464 (3935)	0.402 (0.139)
<i>Carya</i> spp.	362 (124)	1.90 (0.65)	202 (76)	10,643 (4624)	0.331 (0.125)
<i>Pinus rigida</i>	66 (42)	2.16 (1.38)	161 (108)	9,690 (6329)	0.319 (0.210)
<i>Quercus velutina</i>	145 (742)	1.45 (0.53)	157 (69)	6,653 (3079)	0.202 (0.089)
<i>Nyssa sylvatica</i>	172 (24)	1.15 (0.30)	94 (19)	5,247 (1738)	0.239 (0.048)
<i>Acer rubrum</i>	301 (71)	1.05 (0.31)	208 (54)	4,482 (1940)	0.365 (0.096)
<i>Robinia pseudoacacia</i>	45 (6)	0.70 (0.21)	84 (25)	4,425 (1765)	0.114 (0.034)
<i>Cornus florida</i>	326 (148)	1.20 (0.56)	136 (63)	3,661 (1702)	0.274 (0.128)
<i>Oxydendrum arboreum</i>	106 (19)	0.95 (0.16)	82 (14)	3,483 (617)	0.216 (0.038)
<i>Liriodendron tulipifera</i>	81 (60)	0.56 (0.41)	47 (35)	2,240 (1550)	0.087 (0.064)
<i>Quercus marilandica</i>	12 (12)	0.31 (0.31)	37 (37)	1,695 (1695)	0.047 (0.047)
<i>Quercus alba</i>	16 (11)	0.25 (0.24)	37 (35)	1,354 (1333)	0.055 (0.051)
<i>Castanea pumila</i>	136 (52)	0.28 (0.11)	33 (13)	635 (261)	0.054 (0.022)
<i>Symplocos tinctoria</i>	101 (34)	0.21 (0.07)	25 (8)	483 (165)	0.041 (0.014)
<i>Castanea dentata</i>	102 (14)	0.21 (0.03)	24 (3)	448 (61)	0.039 (0.005)
<i>Sassafras albidum</i>	72 (32)	0.16 (0.06)	18 (7)	353 (140)	0.030 (0.012)
<i>Hamamelis virginiana</i>	73 (72)	0.15 (0.14)	17 (16)	324 (316)	0.035 (0.033)
<i>Rhododendron maximum</i>	73 (27)	0.10 (0.06)	9 (4)	207 (92)	0.007 (0.001)
<i>Juglans cinerea</i>	12 (7)	0.02 (0.01)	2 (1)	53 (30)	0.003 (0.001)
<i>Tsuga canadensis</i>	2 (2)	0.003 (0.003)	2 (2)	12 (12)	0.001 (0.001)
<i>Acer saccharum</i>	2 (2)	0.003 (0.003)	1 (1)	9 (9)	0.001 (0.001)
<i>Amelanchier arborea</i>	2 (2)	0.003 (0.003)	0.4 (0.4)	7 (7)	0.001 (0.001)
<i>Diospyros virginiana</i>	2 (2)	0.003 (0.003)	0.4 (0.4)	7 (7)	0.001 (0.001)
<i>Rhodo. calendulaceum</i>	162 (105)	0.33 (0.21)	0.9 (0.5)	0.9 (0.6)	0.001 (0.001)
All <i>Quercus</i>	651 (119)	11.71 (0.84)	1,838 (165)	90,547 (11999)	2.437 (0.233)
Total	8025 (1611)	25.75 (1.10)	3,507 (207)	148,424 (12837)	5.001 (0.208)
<b>Species in 1969</b>					
<i>Quercus montana</i>	236 (66)	4.09 (1.36)	605 (219)	40,050 (17662)	0.860 (0.310)
<i>Quercus rubra</i>	38 (9)	3.71 (1.87)	584 (307)	34,908 (19010)	0.747 (0.393)
<i>Quercus coccinea</i>	100 (23)	4.48 (1.21)	664 (161)	33,432 (10073)	0.850 (0.206)
<i>Kalmia latifolia</i>	5216 (1829)	2.73 (0.93)	518 (180)	11,352 (3957)	0.399 (0.139)
<i>Pinus rigida</i>	50 (32)	2.22 (1.48)	185 (125)	10,641 (7143)	0.356 (0.239)
<i>Quercus velutina</i>	62 (26)	1.79 (0.94)	221 (121)	10,417 (5990)	0.282 (0.155)
<i>Carya</i> spp.	153 (62)	1.47 (0.69)	171 (91)	9,729 (5870)	0.281 (0.149)

<i>Nyssa sylvatica</i>	72 (12)	1.07 (0.26)	72 (14)	5839 (1679)	0.182 (0.036)
<i>Acer rubrum</i>	265 (63)	1.21 (0.31)	229 (54)	5837 (1938)	0.402 (0.095)
<i>Oxydendrum arboreum</i>	131 (31)	1.44 (0.27)	118 (22)	5645 (1044)	0.308 (0.058)
<i>Liriodendron tulipifera</i>	52 (36)	0.99 (0.72)	83 (60)	5186 (3520)	0.153 (0.111)
<i>Robinia pseudoacacia</i>	34 (12)	0.62 (0.22)	74 (25)	3660 (1515)	0.101 (0.035)
<i>Cornus florida</i>	248 (102)	1.03 (0.48)	116 (54)	3272 (1568)	0.235 (0.109)
<i>Quercus alba</i>	12 (9)	0.30 (0.29)	42 (40)	1677 (1662)	0.062 (0.059)
<i>Rhododendron maximum</i>	194 (84)	0.20 (0.10)	22 (10)	499 (224)	0.017 (0.007)
<i>Castanea dentata</i>	72 (36)	0.14 (0.07)	17 (8)	317 (158)	0.028 (0.014)
<i>Acer pensylvanicum</i>	14 (12)	0.07 (0.06)	14 (13)	310 (299)	0.024 (0.022)
<i>Sassafras albidum</i>	52 (23)	0.12 (0.05)	14 (6)	299 (140)	0.023 (0.010)
<i>Symplocos tinctoria</i>	50 (23)	0.11 (0.05)	12 (6)	257 (126)	0.021 (0.010)
<i>Hamamelis virginiana</i>	56 (51)	0.11 (0.10)	13 (12)	248 (225)	0.026 (0.024)
<i>Castanea pumila</i>	30 (15)	0.06 (0.03)	7 (3)	131 (66)	0.012 (0.006)
<i>Tsuga canadensis</i>	2 (2)	0.003 (0.003)	2 (2)	12 (12)	0.001 (0.001)
<i>Amelanchier arborea</i>	2 (2)	0.003 (0.003)	0.4 (0.4)	7 (7)	0.001 (0.001)
<i>Magnolia acuminata</i>	2 (2)	0.003 (0.003)	0.4 (0.4)	7 (7)	0.001 (0.001)
<i>Magnolia fraseri</i>	2 (2)	0.003 (0.003)	0.4 (0.4)	7 (7)	0.001 (0.001)
<i>R. calendulaceum</i>	71 (55)	0.16 (0.04)	0.4 (0.3)	0.4 (0.3)	0.001 (0.001)
<i>Pyrularia pubera</i>	3 (3)	0.05 (0.02)	0.14 (0.06)	0.15 (0.06)	0.0002 (0.0001)
All <i>Quercus</i>	448 (83)	14.37 (1.10)	2,116 (155)	120,485 (11264)	2.802 (0.208)
Total	7220 (1727)	28.13 (0.92)	3,786 (169)	183,742 (9641)	5.376 (0.195)

### Species in 1992

<i>Quercus montana</i>	96 (33)	4.54 (1.50)	703 (245)	51,478 (21338)	0.998 (0.349)
<i>Quercus coccinea</i>	52 (13)	3.73 (1.33)	460 (124)	30,313 (12505)	0.589 (0.159)
<i>Quercus rubra</i>	16 (6)	2.12 (1.17)	323 (185)	18,582 (10984)	0.413 (0.237)
<i>Acer rubrum</i>	304 (52)	2.98 (0.64)	516 (102)	17,895 (4906)	0.902 (0.178)
<i>Kalmia latifolia</i>	3859 (1309)	6.72 (2.06)	620 (202)	14,823 (4798)	0.477 (0.155)
<i>Carya</i> spp.	71 (26)	1.75 (0.91)	228 (127)	14,277 (8671)	0.374 (0.208)
<i>Pinus rigida</i>	48 (30)	2.94 (1.73)	240 (140)	14,025 (8224)	0.468 (0.274)
<i>Liriodendron tulipifera</i>	36 (28)	2.04 (1.50)	169 (124)	13,383 (9420)	0.312 (0.231)
<i>Quercus velutina</i>	30 (14)	1.79 (1.19)	238 (166)	12,074 (8800)	0.305 (0.213)
<i>Oxydendrum arboreum</i>	93 (24)	2.08 (0.45)	153 (34)	9,124 (1911)	0.400 (0.088)
<i>Nyssa sylvatica</i>	64 (17)	1.14 (0.26)	78 (16)	5,962 (1634)	0.199 (0.040)

<i>Robinia pseudoacacia</i>	30 (10)	0.74 (0.32)	88 (38)	4,602 (2271)	0.120 (0.052)
<i>Pinus strobus</i>	4 (4)	0.62 (0.62)	65 (65)	3,474 (3474)	0.119 (0.119)
<i>Quercus alba</i>	9 (22)	0.40 (0.39)	54 (71)	2,392 (2383)	0.079 (0.077)
<i>Cornus florida</i>	96 (33)	0.65 (0.32)	74 (26)	2,213 (1156)	0.149 (0.074)
<i>Castanea dentata</i>	89 (12)	0.34 (0.14)	39 (9)	1,221 (732)	0.066 (0.029)
<i>Sassafras albidum</i>	43 (4)	0.15 (0.09)	17 (9)	451 (258)	0.029 (0.018)
<i>Hamamelis virginiana</i>	91 (20)	0.20 (0.16)	23 (7)	447 (358)	0.046 (0.037)
<i>Rhododendron maximum</i>	38 (24)	0.38 (0.26)	14 (9)	359 (241)	0.011 (0.007)
<i>Amelanchier arborea</i>	14 (8)	0.08 (0.05)	9 (10)	233 (164)	0.015 (0.010)
<i>Acer pensylvanicum</i>	5 (4)	0.03 (0.02)	6 (4)	133 (86)	0.011 (0.007)
<i>Tsuga canadensis</i>	5 (4)	0.03 (0.02)	11 (9)	123 (108)	0.008 (0.006)
<i>Castanea pumila</i>	20 (20)	0.04 (0.04)	5 (5)	86 (86)	0.008 (0.008)
<i>Magnolia fraseri</i>	9 (3)	0.02 (0.01)	3 (1)	54 (29)	0.009 (0.004)
<i>Fagus grandifolia</i>	4 (2)	0.01 (0.01)	16 (10)	16 (10)	0.001 (0.001)
<i>Magnolia acuminata</i>	5 (2)	0.004 (0.004)	0.4 (0.4)	8 (8)	0.001 (0.001)
<i>Pyrularia pubera</i>	4 (4)	0.01 (0.01)	0.1 (0.06)	0.02 (0.02)	<0.001
<i>R. calendulaceum</i>	4 (4)	0.01 (0.01)	0.02 (0.02)	0.02 (0.02)	<0.001
All <i>Quercus</i>	204 (42)	12.59 (3.14)	1,778 (394)	114,840 (29105)	2.385 (0.521)
Total	5196 (1337)	35.76 (3.28)	4,163 (422)	218,356 (29985)	6.151 (0.551)
<b>Species in 2009</b>					
<i>Quercus montana</i>	86 (19)	3.21 (0.84)	475 (130)	30,050 (10165)	0.676 (0.185)
<i>Quercus rubra</i>	22 (10)	3.02 (1.61)	468 (248)	27,514 (14470)	0.599 (0.317)
<i>Acer rubrum</i>	257 (39)	3.84 (0.71)	632 (107)	25,849 (6205)	1.106 (0.187)
<i>Quercus coccinea</i>	45 (15)	3.17 (1.10)	405 (133)	25,051 (9099)	0.518 (0.171)
<i>Pinus rigida</i>	41 (25)	3.69 (2.27)	337 (210)	18,836 (11662)	0.636 (0.395)
<i>Liriodendron tulipifera</i>	39 (27)	2.53 (1.92)	209 (158)	18,812 (13746)	0.387 (0.293)
<i>Carya</i> spp.	69 (21)	2.08 (0.83)	276 (120)	17,712 (8396)	0.454 (0.196)
<i>Kalmia latifolia</i>	3378 (1231)	5.88 (1.97)	542 (191)	12,977 (4546)	0.418 (0.147)
<i>Oxydendrum arboretum</i>	94 (20)	2.09 (0.46)	152 (32)	9,444 (2092)	0.396 (0.085)
<i>Nyssa sylvatica</i>	69 (20)	1.31 (0.24)	86 (13)	7,210 (1698)	0.220 (0.033)
<i>Robinia pseudoacacia</i>	20 (5)	0.56 (0.27)	67 (33)	3,691 (1980)	0.091 (0.045)
<i>Quercus alba</i>	6 (5)	0.53 (0.53)	67 (66)	3,689 (3678)	0.099 (0.097)

<i>Quercus velutina</i>	6 (3)	0.31 (0.16)	38 (21)	1,841 (1059)	0.049 (0.027)
<i>Cornus florida</i>	28 (6)	0.42 (0.18)	48 (21)	1,457 (688)	0.097 (0.042)
<i>Rhododendron maximum</i>	233 (131)	0.96 (0.59)	52 (31)	1,303 (767)	0.040 (0.024)
<i>Amelanchier arborea</i>	19 (7)	0.54 (0.11)	31 (13)	1,264 (586)	0.051 (0.022)
<i>Sassafras albidum</i>	45 (41)	0.15 (0.14)	18 (18)	455 (450)	0.030 (0.029)
<i>Acer pensylvanicum</i>	12 (5)	0.06 (0.05)	11 (7)	270 (171)	0.020 (0.012)
<i>Magnolia fraseri</i>	19 (6)	0.06 (0.11)	7 (3)	177 (84)	0.024 (0.011)
<i>Symplocos tinctoria</i>	14 (6)	0.05 (0.03)	5 (3)	142 (99)	0.009 (0.005)
<i>Hamamelis virginiana</i>	40 (34)	0.05 (0.04)	6 (5)	110 (93)	0.013 (0.011)
<i>Castanea dentata</i>	20 (11)	0.03 (0.02)	4 (2)	70 (40)	0.006 (0.003)
<i>Betula lenta</i>	3 (2)	0.02 (0.01)	1 (1)	60 (53)	0.002 (0.002)
<i>Magnolia acuminata</i>	5 (3)	0.02 (0.01)	2 (2)	54 (45)	0.007 (0.005)
<i>Fagus grandifolia</i>	5 (2)	0.01 (0.005)	1 (1)	21 (14)	0.002 (0.001)
<i>Fraxinus americana</i>	2 (2)	0.003 (0.003)	0.4 (0.4)	8 (8)	0.001 (0.001)
<i>Pinus strobus</i>	3 (2)	0.003 (0.002)	0.02 (0.01)	4 (3)	<0.001
<i>Castanea pumila</i>	2 (2)	0.002 (0.002)	0.2 (0.2)	3 (3)	<0.001
<i>R. calendulaceum</i>	17 (8)	0.02 (0.01)	0.06 (0.03)	1 (0.04)	<0.001
All <i>Quercus</i>	167 (29)	10.25 (1.74)	1,455 (235)	88,145 (15363)	1.941 (0.304)
Total	4635 (1289)	34.37 (3.06)	3,944 (312)	208,079 (13518)	5.951 (0.394)

In 1934, only percent cover of evergreen shrubs (*Kalmia latifolia* and *Rhododendron maximum*) was estimated for each plot. For all other years, diameter of evergreen shrubs was measured.

**Table S6**

Watershed 6: mean density, basal area, aboveground biomass, and leaf area index (LAI) of species over time: before (1934, 1958), during (1961-1965), and after grass-to-forest-conversion (1968, 1982, 1995, 2012). Standard errors are in parentheses. Proportional contributions of dominant species to the watershed totals are in brackets.

Species in 1934	Density	Basal area	Aboveground biomass (kg ha <sup>-1</sup> )		LAI
	(stems ha <sup>-1</sup> )	(m <sup>2</sup> ha <sup>-1</sup> )	Foliage	Total	(m <sup>2</sup> m <sup>-2</sup> )
<i>Castanea dentata</i>	600 (162)	11.99 (3.57)	1,443 (430)	102,386 (31647)	2.395 (0.714)
<i>Quercus montana</i>	320 (118)	3.77 (1.20)	568 (209)	40,294 (18605)	0.806 (0.296)
<i>Quercus coccinea</i>	322 (76)	3.35 (1.12)	908 (214)	23,031 (8900)	1.162 (0.274)
<i>Carya</i> spp.	268 (53)	1.95 (0.61)	238 (85)	14,615 (5688)	0.391 (0.140)
<i>Pinus rigida</i>	25 (17)	1.98 (1.23)	179 (112)	10,040 (6241)	0.339 (0.211)
<i>Acer rubrum</i>	498 (184)	1.33 (0.36)	279 (79)	4,914 (1378)	0.488 (0.138)
<i>Nyssa sylvatica</i>	230 (80)	1.04 (0.48)	92 (27)	4,659 (3411)	0.234 (0.070)
<i>Oxydendrum arboreum</i>	180 (28)	0.77 (0.11)	81 (12)	2,167 (296)	0.212 (0.031)
<i>Quercus velutina</i>	50 (9)	0.35 (0.11)	36 (14)	1,466 (633)	0.047 (0.018)
<i>Robinia pseudoacacia</i>	40 (20)	0.28 (0.14)	32 (17)	1,047 (593)	0.044 (0.023)
<i>Cornus florida</i>	135 (56)	0.35 (0.18)	39 (20)	804 (470)	0.078 (0.041)
<i>Quercus alba</i>	75 (25)	0.25 (0.12)	54 (24)	698 (420)	0.079 (0.035)
<i>Amelanchier arborea</i>	52 (14)	0.11 (0.03)	12 (3)	231 (61)	0.020 (0.005)
<i>Quercus rubra</i>	20 (9)	0.06 (0.03)	4 (2)	136 (70)	0.006 (0.003)
<i>Quercus falcata</i>	8 (5)	0.03 (0.02)	19 (11)	97 (68)	0.024 (0.014)
<i>Castanea pumila</i>	15 (9)	0.03 (0.02)	4 (2)	66 (40)	0.006 (0.004)
<i>Sassafras albidum</i>	10 (5)	0.02 (0.01)	2 (1)	44 (21)	0.004 (0.002)
<i>Diospyros virginiana</i>	5 (5)	0.03 (0.01)	1 (1)	22 (22)	0.002 (0.002)
All <i>Quercus</i>	787 (104)	7.78 (2.12)	1,569 (404)	65,626 (24887)	2.122 (0.559)
Total	4302 (213)	28.39 (2.61)	4,134 (377)	209,855 (20713)	6.447 (0.603)
<b>Species in 1958</b>					
<i>Quercus montana</i>	165 (26)	3.14 (0.65)	470 (103)	32,321 (8492)	0.667 (0.146)
<i>Quercus coccinea</i>	88 (16)	2.21 (0.47)	418 (71)	15,557 (1079)	0.536 (0.091)
<i>Acer rubra</i>	284 (42)	1.38 (0.27)	244 (41)	8,593 (2526)	0.428 (0.072)

<i>Carya</i> spp.	186 (26)	1.27 (0.26)	145 (34)	8,182 (2194)	0.238 (0.056)
<i>Pinus rigida</i>	14 (6)	1.13 (0.52)	98 (46)	5,621 (2617)	0.189 (0.088)
<i>Quercus velutina</i>	41 (9)	0.89 (0.27)	112 (37)	5,394 (1856)	0.143 (0.047)
<i>Rhododendron maximum</i>	1893 (270)	1.00 (0.15)	188 (27)	4,128 (592)	0.145 (0.021)
<i>Quercus alba</i>	80 (24)	0.80 (0.28)	126 (39)	4,112 (1757)	0.185 (0.057)
<i>Kalmia latifolia</i>	1827 (338)	0.94 (0.17)	181 (33)	3,692 (732)	0.139 (0.026)
<i>Nyssa sylvatica</i>	98 (18)	0.68 (0.17)	51 (10)	3,592 (1292)	0.131 (0.025)
<i>Oxydendrum arboreum</i>	105 (14)	0.63 (0.11)	57 (9)	2,203 (440)	0.148 (0.024)
<i>Quercus rubra</i>	20 (7)	0.28 (0.14)	36 (18)	1,802 (912)	0.046 (0.023)
<i>Cornus florida</i>	240 (40)	0.50 (0.09)	56 (11)	1,317 (305)	0.113 (0.021)
<i>Robinia pseudoacacia</i>	32 (10)	0.17 (0.04)	19 (5)	697 (210)	0.026 (0.007)
<i>Liriodendron tulipifera</i>	138 (44)	0.18 (0.05)	16 (4)	454 (136)	0.029 (0.008)
<i>Betula lenta</i>	215 (69)	0.20 (0.05)	6 (2)	435 (110)	0.015 (0.004)
<i>Hamamelis virginiana</i>	153 (65)	0.13 (0.05)	15 (5)	236 (89)	0.030 (0.011)
<i>Fagus grandifolia</i>	18 (6)	0.05 (0.03)	6 (4)	222 (165)	0.010 (0.006)
<i>Sassafras albidum</i>	55 (27)	0.06 (0.02)	7 (3)	206 (131)	0.012 (0.005)
<i>Castanea dentata</i>	31 (9)	0.06 (0.02)	6 (2)	119 (39)	0.009 (0.003)
<i>Amelanchier arborea</i>	22 (5)	0.04 (0.01)	5 (1)	111 (32)	0.011 (0.003)
<i>Tsuga canadensis</i>	7 (4)	0.02 (0.01)	11 (6)	102 (59)	0.007 (0.004)
<i>Symplocos tinctoria</i>	10 (4)	0.02 (0.01)	2 (1)	36 (17)	0.003 (0.001)
<i>Diospyros virginiana</i>	2 (1)	<0.01 (0.01)	1 (0.6)	27 (18)	0.002 (0.001)
<i>Magnolia acuminata</i>	7 (2)	0.01 (0.004)	1 (0.5)	24 (9)	0.004 (0.002)
<i>Fraxinus americana</i>	12 (7)	0.01 (0.01)	1 (1)	18 (11)	0.002 (0.001)
<i>Salix nigra</i>	10 (10)	0.01 (0.01)	0.59 (0.59)	7 (7)	0.001 (0.001)
<i>Castanea pumila</i>	1 (0.8)	<0.01 (0.01)	0.33 (0.18)	6 (3)	0.001 (0.001)
<i>Juglans cinerea</i>	2 (1)	<0.01 (0.01)	0.16 (0.14)	5 (4)	0.0003 (0.0002)
<i>Acer pensylvanicum</i>	1 (1)	0.01 (0.01)	0.20 (0.20)	3 (3)	0.001 (0.001)
<i>R. calendulaceum</i>	97 (24)	0.05 (0.01)	0.14 (0.04)	0.16 (0.04)	0.0002 (0.0001)
<i>Cleathra acuminata</i>	62 (33)	0.03 (0.02)	0.09 (0.05)	0.10 (0.05)	0.0001 (0.0001)
<i>Pyrularia pubera</i>	14 (7)	0.03 (0.01)	0.07 (0.04)	0.08 (0.04)	0.0001 (0.0001)
<i>Calycanthus florida</i>	6 (4)	<0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.0001 (0.0001)
<i>Vaccinium stamineum</i>	6 (4)	<0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.0001 (0.0001)
<i>Cornus alternifolia</i>	5 (2)	<0.01 (0.003)	0.65 (0.32)	0.01 (0.01)	0.001 (0.001)
All <i>Quercus</i>	393 (34)	7.33 (1.05)	1,162 (160)	59,187 (11048)	1.577 (0.220)
Total	5942 (292)	15.96 (1.38)	2,283 (206)	99,508 (12110)	3.273 (0.294)

1961 – Grass			3,723	7,300 (276)	9.419
1962 – Grass		SLA = 253; LWR = 0.51 from	3,100	6,080 (201)	7.843
1963 – Grass		Poorter and Remkes (1990) for	2,892	5,670 (932)	7.317
1965 – Grass		<i>Festuca ovina</i>	3,310	6,490 (1067)	8.374
1968 - Grasses & forbs				3,918 (390)	6.462 (0.644)
<b>Species in 1982</b>					
<i>Robinia pseudoacacia</i>	868 (93)	7.13 (0.72)	840 (84)	29,501 (3466)	1.142 (0.115)
<i>Liriodendron tulipifera</i>	166 (33)	2.16 (0.40)	181 (33)	9,745 (1853)	0.336 (0.062)
<i>Betula lenta</i>	99 (48)	0.53 (0.25)	27 (12)	2,284 (1032)	0.072 (0.032)
<i>Acer rubrum</i>	90 (16)	0.22 (0.05)	46 (10)	732 (178)	0.080 (0.017)
<i>Juglans cinerea</i>	1 (1)	0.09 (0.09)	12 (12)	707 (707)	0.019 (0.019)
<i>Sassafras albidum</i>	49 (21)	0.14 (0.06)	16 (7)	372 (171)	0.027 (0.012)
<i>Carya</i> spp.	40 (14)	0.13 (0.04)	10 (4)	367 (128)	0.017 (0.006)
<i>Pinus rigida</i>	10 (7)	0.11 (0.08)	3 (2)	300 (212)	0.009 (0.006)
<i>Prunus serotina</i>	13 (5)	0.08 (0.04)	9 (5)	273 (148)	0.015 (0.007)
<i>Diospyros virginiana</i>	56 (21)	0.10 (0.04)	12 (5)	254 (107)	0.015 (0.006)
<i>Amelanchier arborea</i>	6 (5)	0.06 (0.04)	6 (5)	217 (154)	0.011 (0.008)
<i>Oxydendrum arboreum</i>	43 (11)	0.09 (0.03)	11 (3)	200 (66)	0.030 (0.009)
<i>Quercus montana</i>	10 (5)	0.06 (0.03)	6 (4)	164 (106)	0.009 (0.006)
<i>Cornus florida</i>	32 (10)	0.05 (0.02)	6 (2)	98 (38)	0.011 (0.004)
<i>Quercus alba</i>	6 (6)	0.03 (0.03)	6 (6)	85 (85)	0.009 (0.009)
<i>Symplocos tinctoria</i>	18 (8)	0.03 (0.01)	3 (2)	62 (34)	0.005 (0.002)
<i>Rhododendron maximum</i>	22 (16)	0.01 (0.01)	2 (2)	52 (38)	0.002 (0.001)
<i>Quercus rubra</i>	10 (5)	0.02 (0.01)	1 (1)	37 (24)	0.002 (0.001)
<i>Pinus strobus</i>	3 (2)	0.02 (0.01)	0.4 (0.3)	35 (34)	0.001 (0.001)
<i>Quercus velutina</i>	7 (3)	0.01 (0.01)	1 (1)	29 (15)	0.001 (0.001)
<i>Salix nigra</i>	12 (12)	0.01 (0.01)	1 (1)	21 (21)	0.002 (0.002)
<i>Platanus occidentalis</i>	3 (2)	0.01 (0.004)	0.6 (0.5)	12 (10)	0.001 (0.001)
<i>Fraxinus americana</i>	3 (3)	0.003 (0.003)	0.3 (0.3)	5 (5)	0.001 (0.001)
<i>Hamamelis virginiana</i>	4 (4)	0.003 (0.003)	0.4 (0.4)	5 (5)	0.001 (0.001)
<i>Kalmia latifolia</i>	1 (1)	0.001 (0.001)	0.1 (0.1)	3 (3)	0.0001 (0.0001)
<i>Tilia americana</i>	1 (1)	0.002 (0.002)	0.2 (0.2)	2 (2)	0.0003 (0.0003)
<i>Vitis</i> spp.	106 (22)	0.08 (0.02)	0.2 (0.1)	0.3 (0.1)	0.0004 (0.0001)



<i>Rhus copallina</i>	22 (22)	0.02 (0.02)	0.1 (0.1)	0.1 (0.1)	0.0001 (0.0001)
<i>Sambucus canadensis</i>	4 (4)	0.004 (0.004)	0.01 (0.01)	0.01 (0.01)	<0.0001
<i>Malus angustifolia</i>	1 (1)	0.005 (0.005)	0.01 (0.01)	0.01 (0.01)	<0.0001
All <i>Quercus</i>	34 (9)	0.12 (0.05)	15 (7)	314 (137)	0.021 (0.011)
Total	1712 (121)	11.21 (0.83)	1204 (88)	45,563 (3761)	1.823 (0.128)

### Species in 1995

<i>Liriodendron tulipifera</i>	166 (30)	7.86 (1.07)	651 (89)	52,132 (7157)	1.205 (0.164)
<i>Robinia pseudoacacia</i>	204 (24)	7.33 (0.88)	875 (105)	45,123 (5872)	1.190 (0.142)
<i>Betula lenta</i>	81 (39)	1.26 (0.55)	86 (36)	7,820 (3267)	0.234 (0.098)
<i>Acer rubrum</i>	194 (27)	1.29 (0.25)	235 (43)	6,498 (1415)	0.412 (0.075)
<i>Juglans cinerea</i>	1 (1)	0.29 (0.29)	47 (47)	3,565 (3565)	0.077 (0.077)
<i>Prunus serotina</i>	13 (5)	0.44 (0.22)	53 (27)	2,832 (1574)	0.088 (0.044)
<i>Carya</i> spp.	31 (9)	0.31 (0.10)	31 (10)	1,354 (473)	0.050 (0.017)
<i>Sassafras albidum</i>	26 (13)	0.28 (0.16)	33 (18)	1,179 (683)	0.056 (0.031)
<i>Quercus montana</i>	6 (4)	0.18 (0.13)	25 (18)	1,136 (847)	0.035 (0.025)
<i>Amelanchier arborea</i>	6 (4)	0.15 (0.10)	17 (12)	796 (554)	0.029 (0.020)
<i>Cornus florida</i>	44 (14)	0.24 (0.08)	28 (9)	740 (246)	0.056 (0.018)
<i>Oxydendrum arboretum</i>	42 (12)	0.24 (0.08)	24 (8)	731 (266)	0.063 (0.021)
<i>Diospyros virginiana</i>	12 (7)	0.12 (0.06)	14 (8)	519 (316)	0.023 (0.012)
<i>Rhododendron maximum</i>	147 (60)	0.17 (0.06)	20 (8)	468 (184)	0.015 (0.006)
<i>Quercus alba</i>	7 (6)	0.10 (0.09)	18 (16)	370 (354)	0.026 (0.024)
<i>Pinus strobus</i>	4 (2)	0.11 (0.07)	5 (3)	358 (224)	0.011 (0.007)
<i>Kalmia latifolia</i>	94 (60)	0.10 (0.07)	12 (8)	268 (174)	0.009 (0.006)
<i>Fraxinus americana</i>	7 (4)	0.06 (0.04)	8 (5)	255 (182)	0.013 (0.009)
<i>Symplocos tinctoria</i>	18 (6)	0.04 (0.02)	5 (3)	147 (109)	0.008 (0.005)
<i>Platanus occidentalis</i>	3 (2)	0.02 (0.02)	3 (2)	95 (85)	0.005 (0.004)
<i>Quercus rubra</i>	4 (2)	0.02 (0.01)	2 (1)	63 (47)	0.002 (0.001)
<i>Pinus rigida</i>	1 (1)	0.01 (0.01)	0.4 (0.4)	39 (39)	0.001 (0.001)
<i>Quercus rubra</i>	3 (2)	0.01 (0.01)	0.9 (0.8)	29 (26)	0.001 (0.001)
<i>Hamamelis virginiana</i>	7 (6)	0.01 (0.01)	1 (1)	22 (21)	0.002 (0.002)
<i>Halesia carolina</i>	1 (1)	0.003 (0.003)	0.3 (0.3)	6 (6)	0.001 (0.001)
<i>Acer pensylvanicum</i>	1 (1)	0.001 (0.001)	0.2 (0.2)	2 (2)	0.0004 (0.0004)
<i>Vitis</i> spp.	144 (26)	0.17 (0.03)	0.4 (0.07)	0.5 (0.1)	0.001 (0.0001)
<i>Clethra acuminata</i>	12 (8)	0.01 (0.01)	0.04 (0.02)	0.4 (0.3)	0.0001 (0.0001)

<i>Rhus copallina</i>	40 (24)	0.12 (0.07)	0.3 (0.2)	0.3 (0.1)	0.0005 (0.0003)
<i>Malus angustifolia</i>	1 (1)	0.02 (0.02)	0.04 (0.04)	0.04 (0.04)	0.0001 (0.0001)
<i>Pyrularia pubera</i>	10 (7)	0.01 (0.01)	0.02 (0.01)	0.02 (0.02)	0.0001 (0.0001)
<i>Sambucus canadensis</i>	1 (1)	<0.001	<0.01	<0.01	<0.0001
All <i>Quercus</i>	21 (7)	0.32 (0.15)	46 (23)	1,598 (900)	0.065 (0.034)
Total	1338 (142)	21.00 (1.45)	2196 (142)	126,998 (9618)	3.616 (0.241)

### Species in 2012

<i>Liriodendron tulipifera</i>	144 (19)	14.06 (1.53)	1157 (126)	115,093 (12904)	1.840 (0.200)
<i>Robinia pseudoacacia</i>	82 (13)	4.64 (0.71)	555 (85)	32,210 (5287)	0.689 (0.106)
<i>Acer rubrum</i>	260 (30)	2.93 (0.49)	496 (73)	18,314 (3584)	0.714 (0.113)
<i>Betula lenta</i>	60 (25)	1.71 (0.64)	134 (50)	12,329 (4562)	0.166 (0.061)
<i>Juglans cinerea</i>	1 (1)	0.49 (0.49)	85 (85)	7,221 (7221)	0.140 (0.140)
<i>Prunus serotina</i>	7 (4)	0.64 (0.40)	77 (48)	5,225 (3465)	0.100 (0.063)
<i>Quercus montana</i>	2 (2)	0.19 (0.19)	29 (29)	1,838 (1838)	0.036 (0.036)
<i>Oxydendrum arboretum</i>	41 (13)	0.48 (0.16)	41 (14)	1,772 (616)	0.081 (0.027)
<i>Sassafras albidum</i>	16 (7)	0.25 (0.18)	30 (21)	1,248 (990)	0.038 (0.028)
<i>Carya</i> spp.	19 (8)	0.24 (0.11)	25 (12)	1,194 (602)	0.036 (0.017)
<i>Fraxinus Americana</i>	9 (4)	0.21 (0.11)	25 (14)	1,057 (607)	0.032 (0.018)
<i>Diospyros virginiana</i>	7 (6)	0.12 (0.09)	14 (10)	650 (535)	0.018 (0.013)
<i>Rhododendron maximum</i>	150 (51)	0.33 (0.11)	27 (9)	650 (218)	0.008 (0.003)
<i>Pinus strobus</i>	3 (2)	0.15 (0.11)	9 (6)	599 (430)	0.019 (0.014)
<i>Cornus florida</i>	12 (5)	0.12 (0.05)	13 (6)	429 (204)	0.027 (0.012)
<i>Cornus alternifolia</i>	3 (3)	0.06 (0.06)	13 (6)	429 (204)	0.027 (0.012)
<i>Quercus alba</i>	3 (2)	0.08 (0.07)	8 (8)	387 (387)	0.016 (0.016)
<i>Hamamelis virginiana</i>	25 (17)	0.08 (0.05)	9 (6)	203 (141)	0.012 (0.008)
<i>Kalmia latifolia</i>	54 (25)	0.06 (0.03)	7 (3)	175 (80)	0.002 (0.001)
<i>Platanus occidentalis</i>	1 (1)	0.03 (0.03)	7 (3)	175 (80)	0.002 (0.001)
<i>Quercus rubra</i>	6 (3)	0.05 (0.03)	5 (3)	169 (101)	0.006 (0.003)
<i>Acer pensylvanicum</i>	1 (1)	0.003 (0.003)	4 (4)	141 (141)	0.006 (0.006)
<i>Symplocos tinctoria</i>	7 (4)	0.02 (0.01)	3 (2)	73 (46)	0.005 (0.003)
<i>Malus angustifolia</i>	1 (1)	0.02 (0.02)	2 (2)	62 (62)	0.003 (0.003)
<i>Ligustrum sinense</i>	7 (7)	0.02 (0.02)	2 (2)	43 (43)	0.003 (0.003)
<i>Castanea dentata</i>	4 (4)	0.005 (0.005)	0.58 (0.58)	9 (9)	0.001 (0.001)
<i>Clethra acuminata</i>	24 (24)	0.04 (0.04)	0.11 (0.11)	9 (9)	0.0002 (0.0002)

<i>Juniperus virginiana</i>	3 (2)	0.005 (0.004)	0.05 (0.04)	7 (6)	0.0002 (0.0001)
<i>Vitis</i> spp.	201 (29)	0.31 (0.12)	0.82 (0.12)	0.9 (0.1)	0.001 (0.0002)
<i>Aristolocchia macrophylla</i>	3 (3)	0.002 (0.002)	0.01 (0.01)	0.01 (0.01)	<0.0001
<i>R. calendulaceum</i>	6 (5)	0.006 (0.005)	0.02 (0.01)	0.02 (0.01)	<0.0001
<i>Parthenocissus quinquefolia</i>	4 (2)	0.006 (0.004)	0.02 (0.01)	0.02 (0.01)	<0.0001
<i>Pyrularia pubera</i>	3 (3)	0.003 (0.003)	0.01 (0.01)	0.01 (0.01)	<0.0001
All <i>Quercus</i>	10 (4)	0.31 (0.20)	45 (30)	2,367 (1854)	0.064 (0.043)
Total	1174 (90)	27.36 (1.81)	2770 (185)	201,470 (14665)	4.848 (0.330)

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In 1934, only percent cover of evergreen shrubs (*Kalmia latifolia* and *Rhododendron maximum*) was estimated for each plot. For all other years, diameter of evergreen shrubs was measured.

**Figure S1**

Mean ( $\pm$ SE bars) aboveground biomass for the dominant species in the (a) treated WS6, (b) reference WS14, and (c) reference WS18 over time. Dominant species were *Castanea dentata*, *Quercus* (*montana*, *coccinea*, *rubra*, *velutina*, *alba*), *Carya* spp., *Acer rubrum*, *Liriodendron tulipifera*, *Robinia pseudoacacia*, and *Betula lenta*.

