

	sq. km	sq. mi	FIA Plots
Area of Region	8,200.0	3,166.0	139

Species Information

The columns below provide brief summaries of the species associated with the region and described in the table on the next pages. Definitions are provided in the Excel file for this region.

Genus	Species	Abundance		Model		Potential Change in Habitat Suitability		Capability to Cope or Persist		Migration Potential					
				Reliability	Adaptability	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85				
Ash	2			High	23	24	Increase	19	25	Very Good	5	6	Likely	0	0
Hickory	4			Medium	26	47	No Change	16	12	Good	20	22	Infill	35	38
Maple	5	Abundant	2	Low	31	12	Decrease	23	21	Fair	8	10	Migrate	9	11
Oak	12	Common	26	FIA	8		New	18	18	Poor	10	6		44	49
Pine	7	Rare	38				Unknown	12	12	Very Poor	13	12			
Other	36	Absent	21							FIA Only	3	3			
	66		87		88	83		88	88	Unknown	4	4			
											63	63			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	53.8	55.6	57.8	58.1	
	CCSM85	53.8	56.0	58.6	61.7	
	GFDL45	53.8	57.6	59.5	60.6	
	GFDL85	53.8	57.2	60.7	64.7	
	HAD45	53.8	56.5	59.9	61.4	
	HAD85	53.8	56.7	60.8	65.5	
Growing Season May—Sep	CCSM45	69.7	71.5	73.4	73.9	
	CCSM85	69.7	71.8	74.5	78.3	
	GFDL45	69.7	74.0	76.4	78.0	
	GFDL85	69.7	73.9	77.9	82.4	
	HAD45	69.7	72.7	76.0	77.9	
	HAD85	69.7	72.6	77.7	82.9	
Coldest Month Average	CCSM45	30.0	31.8	33.4	33.8	
	CCSM85	30.0	32.4	33.7	35.3	
	GFDL45	30.0	33.2	33.8	34.5	
	GFDL85	30.0	32.9	34.0	35.5	
	HAD45	30.0	31.8	34.0	34.1	
	HAD85	30.0	32.2	34.0	36.0	
Warmest Month Average	CCSM45	75.5	77.6	78.6	78.9	
	CCSM85	75.5	77.8	79.7	81.4	
	GFDL45	75.5	78.6	80.6	82.0	
	GFDL85	75.5	80.2	82.5	85.3	
	HAD45	75.5	79.0	81.1	82.2	
	HAD85	75.5	79.4	82.6	86.2	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	40.6	44.0	45.1	46.7	
	CCSM85	40.6	44.3	45.6	51.4	
	GFDL45	40.6	45.5	47.9	48.1	
	GFDL85	40.6	41.8	47.9	49.3	
	HAD45	40.6	43.5	44.2	43.5	
	HAD85	40.6	46.3	42.1	45.7	
Growing Season May—Sep	CCSM45	18.5	21.3	22.0	22.4	
	CCSM85	18.5	21.3	21.5	24.0	
	GFDL45	18.5	19.5	20.2	20.4	
	GFDL85	18.5	17.6	19.8	20.2	
	HAD45	18.5	20.0	18.6	18.0	
	HAD85	18.5	20.3	17.5	18.5	

NOTE: For the six climate variables, four 30-year periods are used to indicate six potential future trajectories. The period ending in 2009 is based on modeled observations from the PRISM Climate Group and the three future periods were obtained from the NASA NEX-DCP30 dataset. Future climate projections from three models under two emission scenarios show estimates of each climate variable within the region. The three models are CCSM4, GFDL CM3, and HadGEM2-ES and the emission scenarios are the 4.5 and 8.5 RCP. The average value for the region is reported, even though locations within the region may vary substantially based on latitude, elevation, land-use, or other factors.

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Current and Potential Future Habitat, Capability, and Migration

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
chestnut oak	Quercus prinus	NDH	High	65.9	635.2	15.2	Sm. dec.	Lg. dec.	High	Abundant	Good	Good	Infill ++	Infill ++	1	1
red maple	Acer rubrum	WDH	High	59.8	523.9	10.9	Sm. dec.	Sm. dec.	High	Abundant	Good	Good	Infill ++	Infill ++	1	2
white oak	Quercus alba	WDH	Medium	61	482.4	11.5	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	3
yellow-poplar	Liriodendron tulipifera	WDH	High	45.1	468.7	12.9	Sm. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	4
eastern redcedar	Juniperus virginiana	WDH	Medium	19.5	319.9	20.4	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	1	5
black cherry	Prunus serotina	WDL	Medium	57.3	290.7	7.3	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	6
black locust	Robinia pseudoacacia	NDH	Low	43.9	257.3	8.0	Lg. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	1	7
white ash	Fraxinus americana	WDL	Medium	45.1	226.2	6.0	No change	Sm. inc.	Low	Common	Poor	Fair	Infill +	Infill +	1	8
pignut hickory	Carya glabra	WDL	Medium	54.9	222.6	6.2	No change	Sm. dec.	Medium	Common	Fair	Poor	Infill +	Infill +	1	9
northern red oak	Quercus rubra	WDH	Medium	51.2	201.7	6.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	10
black oak	Quercus velutina	WDH	High	52.4	197.5	7.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	11
black walnut	Juglans nigra	WDH	Low	42.7	180.9	6.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	12
mockernut hickory	Carya alba	WDL	Medium	34.1	172.5	6.6	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	13
scarlet oak	Quercus coccinea	WDL	Medium	34.1	150.8	6.3	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	14
Virginia pine	Pinus virginiana	NDH	High	31.7	150.1	7.8	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	15
bitternut hickory	Carya cordiformis	WSL	Low	26.8	128.2	8.9	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	16
boxelder	Acer negundo	WSH	Low	9.8	124.9	12.8	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	17
blackgum	Nyssa sylvatica	WDL	Medium	40.2	123.4	4.4	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	18
hackberry	Celtis occidentalis	WDH	Medium	25.6	112.5	5.1	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	19
American beech	Fagus grandifolia	WDH	High	14.6	106.9	7.3	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	20
ailanthus	Ailanthus altissima	NSL	FIA	36.6	100.9	4.1	Unknown	Unknown	NA	Common	NNIS	NNIS			0	21
sweet birch	Betula lenta	NDH	High	14.6	98.8	6.8	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	22
sassafras	Sassafras albidum	WSL	Low	30.5	80.8	3.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	23
shagbark hickory	Carya ovata	WSL	Medium	22	80.6	4.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	24
pin oak	Quercus palustris	NSH	Low	17.1	72.9	9.5	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor		Infill +	2	25
eastern white pine	Pinus strobus	WDH	High	8.5	67.9	8.0	Sm. dec.	Lg. dec.	Low	Common	Poor	Very Poor	Infill +		0	26
sycamore	Platanus occidentalis	NSL	Low	22	67.3	4.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	27
silver maple	Acer saccharinum	NSH	Low	3.7	52.5	14.4	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	2	28
American elm	Ulmus americana	WDH	Medium	23.2	49.1	3.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	29
green ash	Fraxinus pennsylvanica	WSH	Low	9.8	44.3	7.5	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	30
sugar maple	Acer saccharum	WDH	High	7.3	39.5	5.4	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	31
American basswood	Tilia americana	WSL	Medium	6.1	32.5	5.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	32
American hornbeam; muscley	Carpinus caroliniana	WSL	Low	4.9	24.1	4.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	33
loblolly pine	Pinus taeda	WDH	High	3.7	23.8	6.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	34
slippery elm	Ulmus rubra	WSL	Low	14.6	23.6	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	35
eastern redbud	Cercis canadensis	NSL	Low	15.9	22.3	1.9	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	36
red mulberry	Morus rubra	NSL	Low	7.3	22.0	11.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	37
southern red oak	Quercus falcata	WDL	Medium	7.3	17.9	5.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	38
white mulberry	Morus alba	NSL	FIA	8.5	17.6	6.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	39
swamp chestnut oak	Quercus michauxii	NSL	Low	2.4	16.3	6.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	40
common persimmon	Diospyros virginiana	NSL	Low	3.7	15.9	4.3	No change	Lg. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	41
pitch pine	Pinus rigida	NSH	High	9.8	14.5	2.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	42
eastern hemlock	Tsuga canadensis	NSH	High	2.4	12.0	4.9	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	43
flowering dogwood	Cornus florida	WDL	Medium	22	11.9	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	44
Osage-orange	Maclura pomifera	NDH	Medium	2.4	11.7	4.8	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	45
serviceberry	Amelanchier spp.	NSL	Low	8.5	9.2	1.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	46
pawpaw	Asimina triloba	NSL	Low	9.8	9.0	1.7	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	47

Current and Potential Future Habitat, Capability, and Migration

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
honeylocust	Gleditsia triacanthos	NSH	Low	2.4	8.2	3.4	No change	Sm. inc.	High	Rare	Fair	Good				2 48
river birch	Betula nigra	NSL	Low	2.4	5.2	2.1	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair		Infill +		2 49
willow oak	Quercus phellos	NSL	Low	3.7	4.2	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 50
Table Mountain pine	Pinus pungens	NSL	Low	1.2	4.1	3.3	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0 51
black willow	Salix nigra	NSH	Low	1.2	3.7	3.0	No change	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +		2 52
Norway maple	Acer platanoides	NSL	FIA	1.2	3.4	2.8	Unknown	Unknown	NA	Rare	NNIS	NNIS				0 53
Scots pine	Pinus sylvestris	NSH	FIA	1.2	3.0	2.5	Unknown	Unknown	NA	Rare	NNIS	NNIS				0 54
chinkapin oak	Quercus muehlenbergii	NSL	Medium	1.2	3.0	2.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 55
paulownia	Paulownia tomentosa	NSL	FIA	1.2	2.5	2.0	Unknown	Unknown	NA	Rare	NNIS	NNIS				0 56
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	7.3	2.3	1.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++		2 57
cucumbertree	Magnolia acuminata	NSL	Low	1.2	2.1	1.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 58
shortleaf pine	Pinus echinata	WDH	High	1.2	2.0	1.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 59
chokecherry	Prunus virginiana	NSLX	FIA	1.2	2.0	1.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0 60
pin cherry	Prunus pensylvanica	NSL	Low	1.2	1.7	1.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 61
bigtooth aspen	Populus grandidentata	NSL	Medium	1.2	1.3	1.1	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0 62
yellow birch	Betula alleghaniensis	NDL	High	1.2	1.1	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0 63
shingle oak	Quercus imbricaria	NDH	Medium	1.2	0.9	0.7	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0 64
butternut	Juglans cinerea	NSLX	FIA	4.9	0.7	2.4	Unknown	Unknown	Low	Rare	FIA Only	FIA Only				0 65
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	4.9	0.2	0.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0 66
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 67
red spruce	Picea rubens	NDH	High	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0 68
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			Migrate +	3 69
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 70
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				0 71
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3 72
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 73
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 74
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3 75
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3 76
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 77
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 78
quaking aspen	Populus tremuloides	WDH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 79
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 80
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			Migrate +	3 81
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3 82
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3 83
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3 84
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3 85
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 86
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3 87
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				0 88