

	sq. km	sq. mi	FIA Plots
Area of Region	4,351.2	1,680.0	141

### 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	25	Increase	27	27	Very Good	10	12	Likely	4	3
Hickory	4			Medium	27	48	No Change	10	9	Good	20	20	Infill	4	5
Maple	6	Abundant	8	Low	36	15	Decrease	15	16	Fair	8	6	Migrate	6	16
Oak	8	Common	26	FIA	4		New	24	27	Poor	9	8			
Pine	4	Rare	22				Unknown	14	11	Very Poor	5	6			
Other	32	Absent	33							FIA Only	2	2			
	<b>56</b>		<b>89</b>		<b>90</b>	<b>88</b>		<b>90</b>	<b>90</b>	Unknown	10	7			
											<b>64</b>	<b>61</b>			

### Potential Changes in Climate Variables

#### Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	46.4	47.6	49.1	49.3	
	CCSM85	46.4	47.9	49.5	51.5	
	GFDL45	46.4	48.1	50.0	50.5	
	GFDL85	46.4	48.5	50.7	53.2	
	HAD45	46.4	48.0	50.2	51.0	
HAD85	46.4	48.3	51.1	53.9		
Growing Season (May—Sep)	CCSM45	56.1	57.4	58.8	59.2	
	CCSM85	56.1	57.7	59.3	62.0	
	GFDL45	56.1	58.2	60.5	61.3	
	GFDL85	56.1	58.7	61.5	64.3	
	HAD45	56.1	58.2	60.3	61.4	
HAD85	56.1	58.4	62.2	65.0		
Coldest Month (Average)	CCSM45	31.4	32.6	33.5	33.7	
	CCSM85	31.4	33.2	33.8	34.7	
	GFDL45	31.4	33.8	34.1	34.5	
	GFDL85	31.4	33.0	33.7	34.3	
	HAD45	31.4	31.8	33.2	33.4	
HAD85	31.4	32.3	33.3	34.5		
Warmest Month (Average)	CCSM45	59.5	60.9	61.7	61.9	
	CCSM85	59.5	61.0	62.1	63.4	
	GFDL45	59.5	61.8	63.2	63.8	
	GFDL85	59.5	62.7	64.4	66.0	
	HAD45	59.5	61.9	63.6	64.3	
HAD85	59.5	62.8	65.4	67.1		

#### Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	30.0	32.0	33.4	33.8	
	CCSM85	30.0	33.3	34.0	36.9	
	GFDL45	30.0	32.7	33.5	35.8	
	GFDL85	30.0	31.4	34.5	35.5	
	HAD45	30.0	30.4	30.9	30.7	
HAD85	30.0	30.7	29.2	30.7		
Growing Season (May—Sep)	CCSM45	14.0	15.1	15.6	15.6	
	CCSM85	14.0	15.4	14.8	16.3	
	GFDL45	14.0	15.3	14.9	15.9	
	GFDL85	14.0	14.2	14.9	15.2	
	HAD45	14.0	14.4	13.2	13.4	
HAD85	14.0	14.2	12.6	13.1		

**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
yellow-poplar	Liriodendron tulipifera	WDH	High	88.6	2030.3	11.2	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	1
white oak	Quercus alba	WDH	Medium	81.3	1399.3	8.2	No change	No change	High	Abundant	Very Good	Very Good			1	2
red maple	Acer rubrum	WDH	High	91.2	1255.0	6.1	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	3
chestnut oak	Quercus prinus	NDH	High	69	1162.1	7.2	No change	No change	High	Abundant	Very Good	Very Good			1	4
sugar maple	Acer saccharum	WDH	High	85.1	884.6	4.7	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	5
American beech	Fagus grandifolia	WDH	High	85.3	872.3	4.8	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	6
northern red oak	Quercus rubra	WDH	Medium	71.7	613.1	3.1	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	7
black oak	Quercus velutina	WDH	High	66.5	609.9	3.9	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	8
black locust	Robinia pseudoacacia	NDH	Low	64.2	498.2	4.0	No change	Sm. inc.	Medium	Common	Fair	Good			1	9
pignut hickory	Carya glabra	WDL	Medium	68	367.8	2.8	Sm. inc.	No change	Medium	Common	Good	Fair			1	10
scarlet oak	Quercus coccinea	WDL	Medium	39.1	341.3	4.0	No change	No change	Medium	Common	Fair	Fair			1	11
eastern hemlock	Tsuga canadensis	NSH	High	33.7	340.5	3.7	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	12
sycamore	Platanus occidentalis	NSL	Low	37.9	335.4	5.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	13
mockernut hickory	Carya alba	WDL	Medium	53.2	333.4	2.9	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	14
sweet birch	Betula lenta	NDH	High	56.5	302.2	2.6	No change	Sm. dec.	Low	Common	Poor	Poor			0	15
white ash	Fraxinus americana	WDL	Medium	48.6	284.3	2.6	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	16
blackgum	Nyssa sylvatica	WDL	Medium	54.4	281.9	1.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	17
sourwood	Oxydendrum arboreum	NDL	High	53.2	275.3	2.2	No change	No change	High	Common	Good	Good			1	18
sassafras	Sassafras albidum	WSL	Low	58.7	274.4	2.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
cucumber tree	Magnolia acuminata	NSL	Low	60.4	221.1	2.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	20
American basswood	Tilia americana	WSL	Medium	40.3	211.8	2.8	No change	No change	Medium	Common	Fair	Fair			1	21
black cherry	Prunus serotina	WDL	Medium	40.8	160.0	2.7	Sm. inc.	Lg. inc.	Low	Common	Fair	Good			1	22
yellow buckeye	Aesculus flava	NSL	Low	29.8	150.3	2.5	Sm. dec.	Lg. dec.	Low	Common	Poor	Very Poor			0	23
yellow birch	Betula alleghaniensis	NDL	High	13.2	133.4	3.6	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	24
shagbark hickory	Carya ovata	WSL	Medium	39.6	125.9	1.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	25
Virginia pine	Pinus virginiana	NDH	High	12.8	110.8	3.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	26
American elm	Ulmus americana	WDH	Medium	21.9	83.9	2.9	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	27
pitch pine	Pinus rigida	NSH	High	12.3	82.9	4.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	28
river birch	Betula nigra	NSL	Low	2.2	82.3	34.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	29
eastern redbud	Cercis canadensis	NSL	Low	35.5	81.4	1.3	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	30
boxelder	Acer negundo	WSH	Low	7.3	80.9	6.6	No change	No change	High	Common	Good	Good			1	31
paulownia	Paulownia tomentosa	NSL	FIA	19.3	79.5	1.9	Unknown	Unknown	NA	Common	NNIS	NNIS			0	32
flowering dogwood	Cornus florida	WDL	Medium	35.4	76.4	1.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	33
bitternut hickory	Carya cordiformis	WSL	Low	21.9	55.9	0.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	34
slippery elm	Ulmus rubra	WSL	Low	27.7	50.7	0.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	35
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	23.5	49.7	1.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			1	36
ailanthus	Ailanthus altissima	NSL	FIA	26.1	48.5	1.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	37
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	14.8	46.1	1.7	No change	No change	Low	Rare	Very Poor	Very Poor			0	38
silver maple	Acer saccharinum	NSH	Low	4	41.0	8.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	39
black walnut	Juglans nigra	WDH	Low	19.7	37.0	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	40
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	16.3	26.1	0.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	41
post oak	Quercus stellata	WDH	High	2.8	26.1	1.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	42
serviceberry	Amelanchier spp.	NSL	Low	12.1	23.5	0.8	No change	No change	Medium	Rare	Poor	Poor			1	43
pawpaw	Asimina triloba	NSL	Low	13.6	21.8	0.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
eastern white pine	Pinus strobus	WDH	High	5.8	21.0	1.7	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	1	45
butternut	Juglans cinerea	NSLX	FIA	3.8	14.0	1.2	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	46
black maple	Acer nigrum	NSH	Low	5	10.6	1.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
common persimmon	Diospyros virginiana	NSL	Low	3.8	9.9	1.7	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	48
bigtooth aspen	Populus grandidentata	NSL	Medium	2.2	9.7	4.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	49
striped maple	Acer pensylvanicum	NSL	Medium	1.9	9.4	0.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	50
eastern redcedar	Juniperus virginiana	WDH	Medium	1.7	4.4	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	51
southern red oak	Quercus falcata	WDL	Medium	2.3	3.8	1.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	52
green ash	Fraxinus pennsylvanica	WSH	Low	2.3	2.2	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	53
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0.8	2.2	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	54
American chestnut	Castanea dentata	NSLX	FIA	3.3	1.7	0.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	55
shortleaf pine	Pinus echinata	WDH	High	1.6	1.3	0.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	56
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	57
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	58
slash pine	Pinus elliottii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	59
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	60
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	61
northern white-cedar	Thuja occidentalis	WSH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	62
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	63
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	64
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	65
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	66
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	67
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	68
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	69
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	70
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	71
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	72
American holly	Ilex opaca	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	73
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	74
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	75
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	76
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown	Likely +		3	77
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	78
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	79
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	80
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	81
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	82
pin oak	Quercus palustris	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	83
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	84
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	85
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	86
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	87
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	88
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	89
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	90