

	sq. km	sq. mi	FIA Plots
Area of Region	30,856	11,914	870

**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			
		Model	Reliability	Adaptability	Scenario	Scenario	Scenario	Scenario	SHIFT	SHIFT			
		High	21	27	RCP45	RCP85	Very Good	RCP45	RCP85	RCP45	RCP85		
Ash	4				Increase	18	21			Likely	1	1	
Hickory	5				No Change	12	12	Good	13	21	Infill	9	10
Maple	6	Abundant	5		Decrease	38	35	Fair	16	5	Migrate	4	7
Oak	11	Common	29		New	12	14	Poor	9	13			
Pine	7	Rare	46		Unknown	24	22	Very Poor	23	21			
Other	47	Absent	23	FIA				FIA Only	5	5			
	<b>80</b>		<b>103</b>			<b>104</b>	<b>97</b>					<b>14</b>	<b>18</b>
									<b>84</b>	<b>82</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

Scenario	2009	2039	2069	2099		
Annual	CCSM45	51.9	53.7	56.2	56.4	
Average	CCSM85	51.9	54.3	56.8	60.0	
	GFDL45	51.9	54.8	57.7	58.6	
	GFDL85	51.9	55.2	58.7	62.9	
	HAD45	51.9	54.7	58.2	59.7	
	HAD85	51.9	55.0	59.6	64.2	
Growing Season	CCSM45	67.9	69.7	72.1	72.6	
	CCSM85	67.9	70.3	72.9	77.0	
May—Sep	GFDL45	67.9	71.3	75.0	76.3	
	GFDL85	67.9	72.0	76.4	81.1	
	HAD45	67.9	71.3	74.7	76.6	
	HAD85	67.9	71.5	77.4	82.3	
Coldest Month	CCSM45	26.9	28.4	30.1	30.5	
	CCSM85	26.9	29.6	30.6	32.3	
Average	GFDL45	26.9	30.4	31.1	31.8	
	GFDL85	26.9	29.9	31.0	32.2	
	HAD45	26.9	27.7	30.3	30.4	
	HAD85	26.9	28.8	30.8	33.1	
Warmest Month	CCSM45	73.4	75.3	76.6	77.0	
	CCSM85	73.4	76.0	77.7	79.8	
Average	GFDL45	73.4	76.7	78.9	79.9	
	GFDL85	73.4	77.7	80.3	83.0	
	HAD45	73.4	77.3	79.9	81.3	
	HAD85	73.4	78.6	82.7	85.9	

**Precipitation (in)**

Scenario	2009	2039	2069	2099		
Annual	CCSM45	40.2	42.7	43.4	44.5	
Total	CCSM85	40.2	42.8	44.3	47.1	
	GFDL45	40.2	44.3	45.9	47.9	
	GFDL85	40.2	41.7	46.8	48.9	
	HAD45	40.2	41.7	42.0	41.7	
	HAD85	40.2	41.8	38.9	42.3	
Growing Season	CCSM45	18.9	20.1	19.9	20.5	
	CCSM85	18.9	19.0	19.4	19.6	
May—Sep	GFDL45	18.9	20.8	20.3	21.1	
	GFDL85	18.9	18.9	19.8	20.2	
	HAD45	18.9	20.1	17.3	18.3	
	HAD85	18.9	19.0	15.8	16.6	

**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
red maple	Acer rubrum	WDH	High	82	1144.1	11.3	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	1
sugar maple	Acer saccharum	WDH	High	70.4	1021.4	10.1	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	2
black cherry	Prunus serotina	WDL	Medium	74.8	906.5	9.8	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	3
yellow-poplar	Liriodendron tulipifera	WDH	High	67.3	861.7	10.6	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	4
white oak	Quercus alba	WDH	Medium	61	592.9	7.5	Sm. inc.	No change	High	Abundant	Very Good	Very Good			1	5
American elm	Ulmus americana	WDH	Medium	66.8	490.5	5.7	Sm. dec.	No change	Medium	Common	Poor	Fair			1	6
white ash	Fraxinus americana	WDL	Medium	63.9	428.4	5.3	No change	No change	Low	Common	Poor	Poor			0	7
black locust	Robinia pseudoacacia	NDH	Low	45.9	398.2	6.7	Lg. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	8
black oak	Quercus velutina	WDH	High	55	318.5	4.6	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	9
sassafras	Sassafras albidum	WSL	Low	58.8	316.9	4.4	No change	Sm. dec.	Medium	Common	Fair	Poor			1	10
northern red oak	Quercus rubra	WDH	Medium	54.4	297.8	4.1	No change	No change	High	Common	Good	Good			1	11
chestnut oak	Quercus prinus	NDH	High	27.7	261.7	7.1	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	12
slippery elm	Ulmus rubra	WSL	Low	55.3	235.1	3.3	No change	No change	Medium	Common	Fair	Fair			1	13
shagbark hickory	Carya ovata	WSL	Medium	50.1	233.3	3.9	No change	Sm. dec.	Medium	Common	Fair	Poor			1	14
American beech	Fagus grandifolia	WDH	High	44.8	220.5	4.0	No change	Sm. dec.	Medium	Common	Fair	Poor			1	15
black walnut	Juglans nigra	WDH	Low	39	203.4	4.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	16
bigtooth aspen	Populus grandidentata	NSL	Medium	27.3	174.4	5.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	17
pignut hickory	Carya glabra	WDL	Medium	39.4	170.9	3.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	18
sycamore	Platanus occidentalis	NSL	Low	27.2	170.8	4.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
blackgum	Nyssa sylvatica	WDL	Medium	43.7	159.9	3.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	20
eastern white pine	Pinus strobus	WDH	High	13.3	153.7	10.8	Lg. dec.	Very Lg. dec.	Low	Common	Very Poor	Lost			0	21
Virginia pine	Pinus virginiana	NDH	High	16.6	137.8	7.0	No change	No change	Medium	Common	Fair	Fair			1	22
ailanthus	Ailanthus altissima	NSL	FIA	20.8	135.5	4.7	Unknown	Unknown	NA	Common	NNIS	NNIS			0	23
bitternut hickory	Carya cordiformis	WSL	Low	33.5	133.3	3.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	24
mockernut hickory	Carya alba	WDL	Medium	34.8	130.9	2.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	25
silver maple	Acer saccharinum	NSH	Low	7.1	123.5	13.6	Sm. dec.	No change	High	Common	Fair	Good			1	26
boxelder	Acer negundo	WSH	Low	17.8	103.6	4.1	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	27
yellow buckeye	Aesculus flava	NSL	Low	16.4	101.2	4.2	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	28
green ash	Fraxinus pennsylvanica	WSH	Low	26	95.6	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	29
scarlet oak	Quercus coccinea	WDL	Medium	22.2	94.1	3.3	No change	Sm. dec.	Medium	Common	Fair	Poor			1	30
flowering dogwood	Cornus florida	WDL	Medium	34.9	69.2	1.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	31
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	21	59.6	2.0	Sm. dec.	No change	High	Common	Fair	Good			1	32
sourwood	Oxydendrum arboreum	NDL	High	15.6	57.1	2.6	Lg. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	33
American basswood	Tilia americana	WSL	Medium	11.1	50.7	2.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	34
eastern cottonwood	Populus deltoides	NSH	Low	5.5	45.1	5.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	35
eastern redbud	Cercis canadensis	NSL	Low	17.5	41.3	1.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			1	36
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	22.7	37.3	1.3	Lg. dec.	No change	Medium	Rare	Very Poor	Poor			1	37
eastern redcedar	Juniperus virginiana	WDH	Medium	3.4	35.7	3.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	38
hackberry	Celtis occidentalis	WDH	Medium	8.4	33.5	2.0	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	39
loblolly pine	Pinus taeda	WDH	High	1.8	30.8	15.0	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	2	40
pawpaw	Asimina triloba	NSL	Low	8.7	29.1	2.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	41
river birch	Betula nigra	NSL	Low	2.6	27.2	10.5	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	42
Osage-orange	Maclura pomifera	NDH	Medium	4.3	24.6	5.2	Sm. dec.	Sm. inc.	High	Rare	Poor	Good	Infill +	Infill ++	1	43
shingle oak	Quercus imbricaria	NDH	Medium	7.8	23.6	2.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	44
black willow	Salix nigra	NSH	Low	3.4	23.5	6.5	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			0	45
honeylocust	Gleditsia triacanthos	NSH	Low	5.7	20.6	3.0	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	46
red pine	Pinus resinosa	NSH	Medium	3.6	20.6	5.8	Lg. dec.	Lg. dec.	Low	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
pitch pine	Pinus rigida	NSH	High	5.4	19.6	3.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	48
Ohio buckeye	Aesculus glabra	NSL	Low	6.1	16.9	2.4	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	49
common persimmon	Diospyros virginiana	NSL	Low	5.7	15.7	1.8	No change	Lg. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	50
eastern hemlock	Tsuga canadensis	NSH	High	1.9	15.3	7.6	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	51
black maple	Acer nigrum	NSH	Low	4	15.0	2.0	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	52
sweetgum	Liquidambar styraciflua	WDH	High	2.5	14.7	5.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	53
Siberian elm	Ulmus pumila	NDH	FIA	0.3	13.9	43.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	54
cucumbertree	Magnolia acuminata	NSL	Low	4.1	13.2	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	55
wild plum	Prunus americana	NSLX	FIA	0.6	11.5	17.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	56
sweet birch	Betula lenta	NDH	High	1.3	11.3	4.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			2	57
chinkapin oak	Quercus muehlenbergii	NSL	Medium	2	10.7	2.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	2	58
serviceberry	Amelanchier spp.	NSL	Low	6.2	10.5	1.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	59
red mulberry	Morus rubra	NSL	Low	1.3	8.7	6.7	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	60
Scots pine	Pinus sylvestris	NSH	FIA	2.6	8.6	3.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	61
pin oak	Quercus palustris	NSH	Low	1.9	7.5	3.9	No change	No change	Low	Rare	Very Poor	Very Poor			2	62
post oak	Quercus stellata	WDH	High	2.4	6.5	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	63
shellbark hickory	Carya laciniosa	NSL	Low	1.4	6.1	2.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	64
quaking aspen	Populus tremuloides	WDH	High	1	4.8	3.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	65
shortleaf pine	Pinus echinata	WDH	High	0.6	3.7	1.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	66
Norway spruce	Picea abies	NSH	FIA	1	2.9	3.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	67
blue ash	Fraxinus quadrangulata	NSL	Low	0.5	2.6	1.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	68
swamp white oak	Quercus bicolor	NSL	Low	0.6	2.4	3.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	69
black ash	Fraxinus nigra	WSH	Medium	0.5	2.0	0.9	Very Lg. dec.	Lg. dec.	Low	Rare	Lost	Very Poor			0	70
northern catalpa	Catalpa speciosa	NSHX	FIA	0.6	2.0	3.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	71
butternut	Juglans cinerea	NSLX	FIA	1.2	1.9	1.0	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	72
rock elm	Ulmus thomasii	NSLX	FIA	0.3	1.4	4.4	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	73
chokecherry	Prunus virginiana	NSLX	FIA	1	1.1	1.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	74
Norway maple	Acer platanoides	NSL	FIA	0.2	0.9	2.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	75
paulownia	Paulownia tomentosa	NSL	FIA	0.8	0.8	0.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	76
white mulberry	Morus alba	NSL	FIA	0.5	0.5	0.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	77
bald cypress	Taxodium distichum	NSH	Medium	0.3	0.3	1.0	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	78
red spruce	Picea rubens	NDH	High	0.3	0.3	0.9	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	79
bur oak	Quercus macrocarpa	NDH	Medium	0.3	0.2	0.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	80
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	81
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	82
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	83
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	84
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	85
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	86
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate ++	3	87
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	88
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	89
loblolly-bay	Gordonia lasianthus	NSH	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	90
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	91
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	92
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	93
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	94

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
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	95
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	96
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	97
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	98
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	99
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	100
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	101
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	102
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	103
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	104