

	sq. km	sq. mi	FIA Plots
Area of Region	10,800	4,169.9	323

**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	20	25	Increase	11	21	Very Good	3	4	Likely	2	2
Hickory	5			Medium	28	45	No Change	14	12	Good	13	21	Infill	6	12
Maple	5	Abundant	4	Low	33	14	Decrease	39	31	Fair	13	9	Migrate	2	5
Oak	10	Common	29	FIA	7		New	10	10	Poor	14	13			
Pine	6	Rare	38				Unknown	14	14	Very Poor	19	13			
Other	43	Absent	16							FIA Only	3	3			
	<b>71</b>		<b>87</b>		<b>88</b>	<b>84</b>		<b>88</b>	<b>88</b>	Unknown	7	7			
											<b>72</b>	<b>70</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	52.6	54.4	56.9	57.1	
	CCSM85	52.6	55.0	57.5	60.7	
	GFDL45	52.6	55.5	58.3	59.2	
	GFDL85	52.6	55.8	59.4	63.5	
	HAD45	52.6	55.3	58.8	60.2	
	HAD85	52.6	55.7	60.2	64.7	
Growing Season May—Sep	CCSM45	68.4	70.3	72.6	73.1	
	CCSM85	68.4	70.8	73.4	77.5	
	GFDL45	68.4	71.7	75.4	76.7	
	GFDL85	68.4	72.5	76.8	81.5	
	HAD45	68.4	71.7	75.1	77.0	
	HAD85	68.4	72.0	78.0	82.7	
Coldest Month Average	CCSM45	28.0	29.5	31.1	31.6	
	CCSM85	28.0	30.7	31.7	33.4	
	GFDL45	28.0	31.6	32.2	32.9	
	GFDL85	28.0	30.9	31.9	33.0	
	HAD45	28.0	28.7	31.2	31.3	
	HAD85	28.0	29.7	31.6	33.7	
Warmest Month Average	CCSM45	73.9	75.7	77.0	77.5	
	CCSM85	73.9	76.4	78.1	80.1	
	GFDL45	73.9	77.2	79.4	80.5	
	GFDL85	73.9	78.2	80.9	83.5	
	HAD45	73.9	77.7	80.4	81.7	
	HAD85	73.9	79.1	83.3	86.3	

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	41.3	44.1	45.1	46.2	
	CCSM85	41.3	44.5	46.1	49.3	
	GFDL45	41.3	45.3	46.7	49.0	
	GFDL85	41.3	42.7	47.7	49.7	
	HAD45	41.3	42.5	42.9	42.5	
	HAD85	41.3	42.5	39.7	43.1	
Growing Season May—Sep	CCSM45	19.2	20.4	20.4	21.0	
	CCSM85	19.2	19.5	19.7	20.3	
	GFDL45	19.2	21.0	20.2	21.2	
	GFDL85	19.2	19.0	19.7	20.1	
	HAD45	19.2	20.3	17.5	18.5	
	HAD85	19.2	19.1	16.1	17.0	

**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
sugar maple	Acer saccharum	WDH	High	77.8	1003.3	12.9	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
yellow-poplar	Liriodendron tulipifera	WDH	High	79.6	943.6	12.3	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	2
red maple	Acer rubrum	WDH	High	87	900.2	10.8	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	3
white oak	Quercus alba	WDH	Medium	69.4	745.8	10.7	No change	Sm. dec.	High	Abundant	Very Good	Good			1	4
black cherry	Prunus serotina	WDL	Medium	67.6	389.2	6.2	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	5
American elm	Ulmus americana	WDH	Medium	65.7	365.9	5.9	Sm. dec.	No change	Medium	Common	Poor	Fair			1	6
white ash	Fraxinus americana	WDL	Medium	67.6	342.8	5.3	No change	No change	Low	Common	Poor	Poor			0	7
sassafras	Sassafras albidum	WSL	Low	65.7	341.7	5.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	8
black locust	Robinia pseudoacacia	NDH	Low	50.9	319.6	6.7	Lg. dec.	No change	Medium	Common	Poor	Fair			1	9
black oak	Quercus velutina	WDH	High	64.8	306.2	5.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	10
northern red oak	Quercus rubra	WDH	Medium	62	272.2	4.4	No change	No change	High	Common	Good	Good			1	11
American beech	Fagus grandifolia	WDH	High	60.2	239.9	4.2	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	12
yellow buckeye	Aesculus flava	NSL	Low	39.8	239.5	6.0	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	13
Virginia pine	Pinus virginiana	NDH	High	37	232.7	6.3	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	14
chestnut oak	Quercus prinus	NDH	High	39.8	219.4	5.5	Sm. dec.	Lg. dec.	High	Common	Fair	Fair			1	15
shagbark hickory	Carya ovata	WSL	Medium	52.8	196.6	3.7	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	16
sycamore	Platanus occidentalis	NSL	Low	38.9	187.2	5.3	No change	Sm. inc.	Medium	Common	Fair	Good			1	17
pignut hickory	Carya glabra	WDL	Medium	60.2	186.4	3.3	Sm. inc.	No change	Medium	Common	Good	Fair			1	18
slippery elm	Ulmus rubra	WSL	Low	58.3	174.9	3.0	No change	Sm. inc.	Medium	Common	Fair	Good			1	19
bigtooth aspen	Populus grandidentata	NSL	Medium	28.7	170.2	5.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	20
black walnut	Juglans nigra	WDH	Low	50	160.8	3.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	21
mockernut hickory	Carya alba	WDL	Medium	44.4	142.8	3.2	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
boxelder	Acer negundo	WSH	Low	23.1	130.7	6.5	No change	Sm. inc.	High	Common	Good	Very Good			1	23
bitternut hickory	Carya cordiformis	WSL	Low	39.8	129.4	3.3	No change	Sm. inc.	High	Common	Good	Very Good			1	24
blackgum	Nyssa sylvatica	WDL	Medium	45.4	116.6	2.6	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	25
eastern white pine	Pinus strobus	WDH	High	13.9	103.5	7.5	Lg. dec.	Very Lg. dec.	Low	Common	Very Poor	Lost			0	26
flowering dogwood	Cornus florida	WDL	Medium	39.8	94.6	2.6	No change	No change	Medium	Common	Fair	Fair			1	27
scarlet oak	Quercus coccinea	WDL	Medium	25	84.8	3.4	No change	No change	Medium	Common	Fair	Fair			1	28
ailanthus	Ailanthus altissima	NSL	FIA	21.3	77.1	3.6	Unknown	Unknown	NA	Common	NNIS	NNIS			0	29
sourwood	Oxydendrum arboreum	NDL	High	25	77.0	3.1	Lg. dec.	Lg. dec.	High	Common	Fair	Fair			1	30
silver maple	Acer saccharinum	NSH	Low	5.6	72.2	13.0	Sm. dec.	No change	High	Common	Fair	Good		Infill ++	1	31
eastern redbud	Cercis canadensis	NSL	Low	25.9	54.9	2.1	No change	Sm. inc.	Medium	Common	Fair	Good			1	32
American basswood	Tilia americana	WSL	Medium	16.7	51.7	3.1	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	33
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	32.4	46.6	1.4	Lg. dec.	No change	Medium	Rare	Very Poor	Poor			1	34
green ash	Fraxinus pennsylvanica	WSH	Low	18.5	34.7	1.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	35
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	22.2	33.6	1.5	Sm. dec.	Sm. inc.	High	Rare	Poor	Good			1	36
wild plum	Prunus americana	NSLX	FIA	0.9	30.9	33.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	37
pitch pine	Pinus rigida	NSH	High	5.6	29.7	5.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	38
sweetgum	Liquidambar styraciflua	WDH	High	7.4	26.2	8.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	39
loblolly pine	Pinus taeda	WDH	High	1.9	26.0	14.0	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	2	40
hackberry	Celtis occidentalis	WDH	Medium	9.3	23.0	2.5	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	41
Osage-orange	Maclura pomifera	NDH	Medium	3.7	22.7	6.1	Sm. dec.	Sm. inc.	High	Rare	Poor	Good		Infill ++	1	42
Ohio buckeye	Aesculus glabra	NSL	Low	8.3	22.1	2.7	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	43
red pine	Pinus resinosa	NSH	Medium	1.9	21.5	11.6	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	44
black willow	Salix nigra	NSH	Low	1.9	20.0	10.8	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			0	45
post oak	Quercus stellata	WDH	High	8.3	19.9	2.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	46
honeylocust	Gleditsia triacanthos	NSH	Low	2.8	19.0	6.9	No change	Sm. inc.	High	Rare	Fair	Good		Infill ++	1	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N	
pawpaw	Asimina triloba	NSL	Low	11.1	17.4	1.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	48
chinkapin oak	Quercus muehlenbergii	NSL	Medium	1.9	14.2	7.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +		2	49
common persimmon	Diospyros virginiana	NSL	Low	7.4	13.0	1.8	No change	Lg. inc.	High	Rare	Fair	Good				1	50
Scots pine	Pinus sylvestris	NSH	FIA	1.9	10.9	5.9	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	51
shingle oak	Quercus imbricaria	NDH	Medium	4.6	9.9	2.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0	52
river birch	Betula nigra	NSL	Low	2.8	9.6	3.5	Lg. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +		1	53
red mulberry	Morus rubra	NSL	Low	1.9	8.8	4.7	Lg. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +		2	54
black maple	Acer nigrum	NSH	Low	4.6	8.8	1.9	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor				0	55
shellbark hickory	Carya laciniosa	NSL	Low	2.8	7.6	2.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0	56
sweet birch	Betula lenta	NDH	High	2.8	7.6	2.7	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost				0	57
eastern cottonwood	Populus deltoides	NSH	Low	1.9	7.3	4.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0	58
eastern redcedar	Juniperus virginiana	WDH	Medium	5.6	7.1	1.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++		2	59
serviceberry	Amelanchier spp.	NSL	Low	7.4	5.1	0.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	60
eastern hemlock	Tsuga canadensis	NSH	High	0.9	3.8	4.1	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost				0	61
paulownia	Paulownia tomentosa	NSL	FIA	1.9	1.9	1.0	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	62
butternut	Juglans cinerea	NSLX	FIA	1.9	1.7	0.9	Unknown	Unknown	Low	Rare	FIA Only	FIA Only				0	63
pin oak	Quercus palustris	NSH	Low	0.9	1.1	1.2	No change	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +		2	64
white mulberry	Morus alba	NSL	FIA	0.9	1.0	1.1	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	65
northern catalpa	Catalpa speciosa	NSHX	FIA	0.9	0.9	1.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0	66
bald cypress	Taxodium distichum	NSH	Medium	0.9	0.9	1.0	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	67
red spruce	Picea rubens	NDH	High	0.9	0.8	0.9	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor				0	68
quaking aspen	Populus tremuloides	WDH	High	0.9	0.7	0.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	69
cucumbertree	Magnolia acuminata	NSL	Low	0.9	0.7	0.8	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0	70
bur oak	Quercus macrocarpa	NDH	Medium	0.9	0.5	0.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor				0	71
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0	72
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3	73
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	74
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	75
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				0	76
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +		3	77
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	78
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	79
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	80
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	81
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	82
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +		3	83
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++		3	84
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	85
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				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