

Area of Region    sq. km    sq. mi    FIA Plots  
8,600.0    3,320.5    277

**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	3			High	16	23	Increase	27	34	Very Good	12	13	Likely	1	1
Hickory	7			Medium	26	44	No Change	9	4	Good	17	22	Infill	6	10
Maple	4	Abundant	7	Low	30	8	Decrease	19	17	Fair	9	6	Migrate	3	9
Oak	10	Common	23	FIA	5		New	11	12	Poor	5	4			
Pine	1	Rare	30				Unknown	11	10	Very Poor	10	9			
Other	35	Absent	15							FIA Only	3	3			
	<b>60</b>		<b>75</b>		<b>77</b>	<b>75</b>		<b>77</b>	<b>77</b>	Unknown	6	5		<b>10</b>	<b>20</b>
											<b>62</b>	<b>62</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	57.8	59.6	61.6	61.9	
	CCSM85	57.8	60.0	62.4	65.3	
	GFDL45	57.8	60.6	62.8	63.8	
	GFDL85	57.8	60.7	63.6	67.4	
	HAD45	57.8	60.3	63.3	64.7	
	HAD85	57.8	60.6	65.2	68.9	
Growing Season (May—Sep)	CCSM45	72.8	74.8	76.3	77.0	
	CCSM85	72.8	75.3	77.7	81.3	
	GFDL45	72.8	76.2	78.8	80.7	
	GFDL85	72.8	76.7	79.9	84.7	
	HAD45	72.8	75.8	78.6	80.0	
	HAD85	72.8	76.2	82.2	85.4	
Coldest Month (Average)	CCSM45	34.5	36.8	38.0	38.3	
	CCSM85	34.5	37.3	38.3	40.0	
	GFDL45	34.5	38.6	38.9	38.9	
	GFDL85	34.5	36.1	37.5	38.2	
	HAD45	34.5	35.5	37.7	37.9	
	HAD85	34.5	37.0	38.9	40.7	
Warmest Month (Average)	CCSM45	78.9	80.9	81.8	82.1	
	CCSM85	78.9	81.4	82.4	84.3	
	GFDL45	78.9	83.6	84.8	86.1	
	GFDL85	78.9	83.4	85.0	88.5	
	HAD45	78.9	82.3	84.1	84.7	
	HAD85	78.9	83.5	86.9	88.2	

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	47.9	46.7	50.7	49.0	
	CCSM85	47.9	48.4	50.7	51.1	
	GFDL45	47.9	51.7	55.4	52.9	
	GFDL85	47.9	52.3	58.3	58.0	
	HAD45	47.9	46.8	51.1	51.8	
	HAD85	47.9	52.0	46.2	49.2	
Growing Season (May—Sep)	CCSM45	19.7	18.4	19.2	18.8	
	CCSM85	19.7	19.2	18.0	18.6	
	GFDL45	19.7	21.2	21.2	21.5	
	GFDL85	19.7	21.6	23.7	22.8	
	HAD45	19.7	18.8	19.1	18.8	
	HAD85	19.7	20.2	15.7	15.9	

**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
white oak	Quercus alba	WDH	Medium	90.7	1563.5	17.2	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
black oak	Quercus velutina	WDH	High	86	1026.1	11.9	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	2
northern red oak	Quercus rubra	WDH	Medium	83.7	955.5	11.4	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	3
eastern redcedar	Juniperus virginiana	WDH	Medium	70.9	761.4	10.7	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	4
post oak	Quercus stellata	WDH	High	77.9	716.7	9.2	Lg. inc.	Lg. inc.	High	Abundant	Very Good	Very Good			1	5
black hickory	Carya texana	NDL	High	88.4	580.1	6.6	Sm. inc.	No change	Medium	Abundant	Very Good	Good			1	6
shortleaf pine	Pinus echinata	WDH	High	48.8	525.0	10.8	Lg. inc.	Lg. inc.	Medium	Abundant	Very Good	Very Good			1	7
mockernut hickory	Carya alba	WDL	Medium	76.7	458.0	6.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	8
blackgum	Nyssa sylvatica	WDL	Medium	75.6	354.6	4.7	No change	No change	High	Common	Good	Good			1	9
southern red oak	Quercus falcata	WDL	Medium	45.3	254.4	5.6	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	10
winged elm	Ulmus alata	WDL	Medium	69.8	196.5	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	11
red maple	Acer rubrum	WDH	High	51.2	179.2	3.5	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	12
florida maple	Acer barbatum	NSL	Low	40.7	162.7	4.0	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	13
flowering dogwood	Cornus florida	WDL	Medium	70.9	161.0	2.3	No change	No change	Medium	Common	Fair	Fair			1	14
sweetgum	Liquidambar styraciflua	WDH	High	29.1	153.0	5.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	15
white ash	Fraxinus americana	WDL	Medium	55.8	146.9	2.6	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	16
shagbark hickory	Carya ovata	WSL	Medium	33.7	139.1	4.1	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	17
black cherry	Prunus serotina	WDL	Medium	53.5	110.4	2.1	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	18
sassafras	Sassafras albidum	WSL	Low	48.8	109.1	2.2	No change	Sm. inc.	Medium	Common	Fair	Good			1	19
black locust	Robinia pseudoacacia	NDH	Low	31.4	105.9	3.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	20
sycamore	Platanus occidentalis	NSL	Low	24.4	103.3	4.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	21
hackberry	Celtis occidentalis	WDH	Medium	15.1	97.2	6.4	No change	Sm. inc.	High	Common	Good	Very Good			1	22
American elm	Ulmus americana	WDH	Medium	37.2	95.1	2.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	23
American beech	Fagus grandifolia	WDH	High	12.8	93.3	7.3	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	24
blackjack oak	Quercus marilandica	NSL	Medium	26.7	88.0	3.3	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	25
chinkapin oak	Quercus muehlenbergii	NSL	Medium	37.2	87.9	2.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	26
black walnut	Juglans nigra	WDH	Low	30.2	72.5	2.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	27
slippery elm	Ulmus rubra	WSL	Low	31.4	68.3	2.2	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	28
bitternut hickory	Carya cordiformis	WSL	Low	23.3	60.4	2.6	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	29
pecan	Carya illinoensis	NSH	Low	1.2	58.1	50.0	No change	Sm. inc.	Low	Common	Poor	Fair		Infill +	2	30
eastern redbud	Cercis canadensis	NSL	Low	26.7	43.1	1.6	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	31
sugar maple	Acer saccharum	WDH	High	10.5	42.9	4.1	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	32
common persimmon	Diospyros virginiana	NSL	Low	26.7	39.2	1.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	33
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	33.7	35.4	1.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	34
serviceberry	Amelanchier spp.	NSL	Low	26.7	26.1	1.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	35
American basswood	Tilia americana	WSL	Medium	7	15.3	2.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	36
red mulberry	Morus rubra	NSL	Low	11.6	14.3	1.2	Sm. dec.	Lg. inc.	Medium	Rare	Very Poor	Good			1	37
pignut hickory	Carya glabra	WDL	Medium	10.5	13.6	1.3	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +	Infill ++	1	38
sugarberry	Celtis laevigata	NDH	Medium	11.6	11.9	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	39
green ash	Fraxinus pennsylvanica	WSH	Low	10.5	11.5	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	40
boxelder	Acer negundo	WSH	Low	5.8	11.5	2.0	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	41
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	10.5	10.2	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	42
ashe juniper	Juniperus ashei	NDH	High	1.2	9.9	8.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			0	43
honeylocust	Gleditsia triacanthos	NSH	Low	5.8	8.9	1.5	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	44
Shumard oak	Quercus shumardii	NSL	Low	4.7	7.5	1.6	No change	Sm. inc.	High	Rare	Fair	Good		Infill ++	2	45
Osage-orange	Maclura pomifera	NDH	Medium	2.3	7.3	3.2	No change	Sm. inc.	High	Rare	Fair	Good		Infill ++	2	46
paulownia	Paulownia tomentosa	NSL	FIA	2.3	7.1	3.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			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
northern catalpa	Catalpa speciosa	NSHX	FIA	1.2	7.0	6.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	48
butternut	Juglans cinerea	NSLX	FIA	2.3	7.0	3.0	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	49
cucumbertree	Magnolia acuminata	NSL	Low	3.5	5.7	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	50
ailanthus	Ailanthus altissima	NSL	FIA	2.3	5.5	2.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	51
swamp chestnut oak	Quercus michauxii	NSL	Low	4.7	4.3	0.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	52
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	1.2	4.2	3.6	Sm. dec.	No change	Medium	Rare	Very Poor	Poor	Infill +		2	53
wild plum	Prunus americana	NSLX	FIA	4.7	4.1	0.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	54
pawpaw	Asimina triloba	NSL	Low	3.5	3.0	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	55
blue ash	Fraxinus quadrangulata	NSL	Low	1.2	2.0	1.7	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	56
shellbark hickory	Carya laciniosa	NSL	Low	2.3	1.2	0.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	57
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	1.2	0.8	0.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	58
American holly	Ilex opaca	NSL	Medium	1.2	0.6	0.6	Very Lg. dec.	Sm. dec.	Medium	Rare	Lost	Very Poor			0	59
Ohio buckeye	Aesculus glabra	NSL	Low	1.2	0.6	0.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	60
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	61
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	62
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	63
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	64
silver maple	Acer saccharinum	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	65
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	66
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	67
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	68
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	69
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	70
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	71
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	72
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	73
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	74
chestnut oak	Quercus prinus	NDH	High	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	75
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	76
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate ++	3	77