

	sq. km	sq. mi	FIA Plots
Area of Region	38,942	15,036	585

**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	15	23	Increase	19	26	Very Good	8	10
Hickory	7			Medium	25	45	No Change	16	12	Good	14	17
Maple	4	Abundant	3	Low	33	9	Decrease	22	19	Fair	11	9
Oak	13	Common	22	FIA	7		New	9	9	Poor	8	8
Pine	2	Rare	39				Unknown	14	14	Very Poor	15	13
Other	35	Absent	15							FIA Only	4	4
	<b>64</b>		<b>79</b>		<b>80</b>	<b>77</b>		<b>80</b>	<b>80</b>	Unknown	7	7
											<b>67</b>	<b>68</b>

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	51.7	53.3	54.9	55.2	
	CCSM85	51.7	53.8	55.8	58.3	
	GFDL45	51.7	54.5	56.0	56.8	
	GFDL85	51.7	54.1	56.5	59.9	
	HAD45	51.7	53.8	56.3	57.5	
HAD85	51.7	54.0	58.0	61.0		
Growing Season (May—Sep)	CCSM45	65.6	67.5	68.8	69.3	
	CCSM85	65.6	68.2	70.1	73.2	
	GFDL45	65.6	69.0	70.8	72.3	
	GFDL85	65.6	68.7	71.6	75.8	
	HAD45	65.6	67.9	70.0	71.3	
HAD85	65.6	68.2	72.9	75.6		
Coldest Month Average	CCSM45	29.7	31.4	32.6	33.0	
	CCSM85	29.7	32.1	32.9	34.4	
	GFDL45	29.7	33.3	33.6	33.7	
	GFDL85	29.7	31.9	32.9	33.7	
	HAD45	29.7	30.8	33.0	33.0	
HAD85	29.7	32.3	34.3	35.9		
Warmest Month Average	CCSM45	70.9	73.0	73.9	74.3	
	CCSM85	70.9	73.9	75.0	76.3	
	GFDL45	70.9	74.4	75.6	76.7	
	GFDL85	70.9	74.5	75.8	78.9	
	HAD45	70.9	73.5	74.9	75.6	
HAD85	70.9	74.6	77.1	78.4		

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	36.6	35.1	37.8	36.9	
	CCSM85	36.6	36.3	37.5	37.4	
	GFDL45	36.6	40.0	40.8	40.2	
	GFDL85	36.6	39.9	45.4	44.4	
	HAD45	36.6	37.2	38.2	38.3	
HAD85	36.6	38.3	35.2	38.0		
Growing Season (May—Sep)	CCSM45	19.0	17.6	19.0	18.2	
	CCSM85	19.0	18.5	18.2	18.0	
	GFDL45	19.0	21.1	20.0	20.3	
	GFDL85	19.0	20.8	23.0	21.9	
	HAD45	19.0	18.7	19.0	19.0	
HAD85	19.0	19.3	16.2	17.1		

**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
post oak	Quercus stellata	WDH	High	45	896.6	20.6	No change	No change	High	Abundant	Very Good	Very Good			1	1
black oak	Quercus velutina	WDH	High	41.3	576.4	15.3	No change	Sm. dec.	Medium	Abundant	Good	Fair			1	2
white oak	Quercus alba	WDH	Medium	30.1	509.1	15.6	Sm. dec.	Sm. dec.	High	Abundant	Good	Good	Infill ++	Infill ++	1	3
eastern redcedar	Juniperus virginiana	WDH	Medium	53.7	422.2	11.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	4
American elm	Ulmus americana	WDH	Medium	74.1	333.3	7.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	5
black walnut	Juglans nigra	WDH	Low	66.4	284.9	7.8	No change	No change	Medium	Common	Fair	Fair			1	6
Osage-orange	Maclura pomifera	NDH	Medium	48.6	230.4	13.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	7
hackberry	Celtis occidentalis	WDH	Medium	55.9	228.6	7.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	8
honeylocust	Gleditsia triacanthos	NSH	Low	50	177.0	7.3	No change	Sm. inc.	High	Common	Good	Very Good			1	9
northern red oak	Quercus rubra	WDH	Medium	30.8	167.6	7.0	No change	No change	High	Common	Good	Good			1	10
shagbark hickory	Carya ovata	WSL	Medium	38.7	149.1	5.6	Lg. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	11
chinkapin oak	Quercus muehlenbergii	NSL	Medium	38	141.8	5.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	12
black hickory	Carya texana	NDL	High	28.7	129.6	4.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	13
green ash	Fraxinus pennsylvanica	WSH	Low	29.4	110.7	7.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	14
blackjack oak	Quercus marilandica	NSL	Medium	19.7	91.6	5.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	15
mockernut hickory	Carya alba	WDL	Medium	23.7	90.8	4.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	16
red mulberry	Morus rubra	NSL	Low	41.3	82.7	2.6	No change	No change	Medium	Common	Fair	Fair			1	17
slippery elm	Ulmus rubra	WSL	Low	33.5	81.7	3.3	No change	Sm. inc.	Medium	Common	Fair	Good			1	18
sycamore	Platanus occidentalis	NSL	Low	13.7	79.9	7.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	19
pin oak	Quercus palustris	NSH	Low	16.5	75.3	9.1	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	20
silver maple	Acer saccharinum	NSH	Low	10.4	71.8	10.8	Lg. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	21
bitternut hickory	Carya cordiformis	WSL	Low	29.1	71.7	4.1	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
black cherry	Prunus serotina	WDL	Medium	32.9	65.1	2.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	23
white ash	Fraxinus americana	WDL	Medium	33.8	64.7	2.8	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	24
Shumard oak	Quercus shumardii	NSL	Low	13.3	58.0	6.2	No change	Sm. inc.	High	Common	Good	Very Good	Infill ++	Infill ++	1	25
common persimmon	Diospyros virginiana	NSL	Low	26.9	46.2	2.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	26
shingle oak	Quercus imbricaria	NDH	Medium	13.6	41.0	4.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	27
boxelder	Acer negundo	WSH	Low	11.9	40.9	7.3	Sm. dec.	Sm. inc.	High	Rare	Poor	Good	Infill +	Infill ++	1	28
pecan	Carya illinoensis	NSH	Low	15.1	36.4	7.8	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	29
sugar maple	Acer saccharum	WDH	High	5.3	35.9	8.2	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	30
sassafras	Sassafras albidum	WSL	Low	11.8	35.6	3.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	31
bur oak	Quercus macrocarpa	NDH	Medium	11.6	33.7	5.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	32
black willow	Salix nigra	NSH	Low	6.8	30.2	10.9	No change	No change	Low	Rare	Very Poor	Very Poor			2	33
eastern redbud	Cercis canadensis	NSL	Low	24.4	27.9	1.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			1	34
flowering dogwood	Cornus florida	WDL	Medium	8.1	16.9	1.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	35
river birch	Betula nigra	NSL	Low	2.3	14.5	9.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	36
shellbark hickory	Carya laciniosa	NSL	Low	4.7	12.5	6.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	37
pignut hickory	Carya glabra	WDL	Medium	3.1	10.1	4.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	38
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	4.4	9.5	2.1	No change	No change	High	Rare	Fair	Fair		Infill +	2	39
wild plum	Prunus americana	NSLX	FIA	3.4	9.0	3.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	40
scarlet oak	Quercus coccinea	WDL	Medium	1	8.0	7.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	41
sugarberry	Celtis laevigata	NDH	Medium	0.9	7.7	4.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	42
red maple	Acer rubrum	WDH	High	4.5	7.6	2.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	43
eastern cottonwood	Populus deltoides	NSH	Low	4.9	7.3	6.8	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	44
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	5.2	6.6	4.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			2	45
white mulberry	Morus alba	NSL	FIA	0.5	5.3	6.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	46
black locust	Robinia pseudoacacia	NDH	Low	1.6	4.6	2.8	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +		2	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
eastern white pine	Pinus strobus	WDH	High	0	4.0	1.0	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	48
blue ash	Fraxinus quadrangulata	NSL	Low	1.5	3.4	1.6	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	49
serviceberry	Amelanchier spp.	NSL	Low	2.3	3.1	1.2	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	50
northern catalpa	Catalpa speciosa	NSHX	FIA	0.3	3.0	11.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	51
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	4	2.7	0.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	52
swamp white oak	Quercus bicolor	NSL	Low	1.8	2.6	2.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	53
American basswood	Tilia americana	WSL	Medium	1.6	2.6	2.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	54
Ohio buckeye	Aesculus glabra	NSL	Low	3.4	2.5	1.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	55
pawpaw	Asimina triloba	NSL	Low	2.3	2.4	1.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	56
southern red oak	Quercus falcata	WDL	Medium	0.3	2.0	7.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	57
ailanthus	Ailanthus altissima	NSL	FIA	1.2	1.3	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	58
blackgum	Nyssa sylvatica	WDL	Medium	0.3	0.9	3.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	59
Siberian elm	Ulmus pumila	NDH	FIA	0.3	0.7	2.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	60
chokecherry	Prunus virginiana	NSLX	FIA	0.2	0.7	2.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	61
Virginia pine	Pinus virginiana	NDH	High	0.3	0.4	1.6	Very Lg. dec.	No change	Medium	Rare	Lost	Poor			0	62
yellow-poplar	Liriodendron tulipifera	WDH	High	0.3	0.2	0.7	No change	Lg. inc.	High	Rare	Fair	Good			0	63
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	0.3	0.1	0.4	Lg. dec.	Lg. inc.	Medium	Rare	Very Poor	Good			0	64
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	65
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	66
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	67
black maple	Acer nigrum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	68
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	69
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	70
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	71
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	72
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	73
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown			3	74
bigtooth aspen	Populus grandidentata	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	75
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	76
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	77
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	78
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	79
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	80