

	sq. km	sq. mi	FIA Plots
Area of Region	9,597.9	3,705.8	232

**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		
		High	Common	Reliability	Adaptability	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85	
Ash	3											
Hickory	5											
Maple	5	Abundant	5	High	21	24	Increase	23	27	Very Good	13	14
Oak	12	Common	34	Medium	27	49	No Change	13	10	Good	15	15
Pine	4	Rare	33	Low	36	14	Decrease	30	29	Fair	7	11
Other	43	Absent	18	FIA	6		New	11	13	Poor	14	10
	<b>72</b>		<b>90</b>		<b>90</b>	<b>87</b>	Unknown	13	11	Very Poor	15	14
								<b>90</b>	<b>90</b>	FIA Only	3	3
										Unknown	7	5
											<b>14</b>	<b>18</b>
											<b>74</b>	<b>72</b>

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	47.5	48.7	50.3	50.5	
	CCSM85	47.5	49.0	50.8	52.9	
	GFDL45	47.5	49.4	51.2	51.8	
	GFDL85	47.5	49.6	51.9	54.6	
	HAD45	47.5	49.3	51.6	52.5	
Growing Season (May—Sep)	CCSM45	58.2	59.4	60.8	61.3	
	CCSM85	58.2	59.7	61.6	64.3	
	GFDL45	58.2	60.4	62.8	63.6	
	GFDL85	58.2	60.8	63.7	66.6	
	HAD45	58.2	60.4	62.6	63.9	
Coldest Month (Average)	CCSM45	30.8	31.8	32.8	33.1	
	CCSM85	30.8	32.7	33.3	34.5	
	GFDL45	30.8	33.5	33.7	34.0	
	GFDL85	30.8	32.5	33.2	33.7	
	HAD45	30.8	31.3	33.0	33.1	
Warmest Month (Average)	CCSM45	61.8	63.0	63.9	64.2	
	CCSM85	61.8	63.5	64.7	66.0	
	GFDL45	61.8	64.2	65.6	66.3	
	GFDL85	61.8	64.7	66.6	68.3	
	HAD45	61.8	64.5	66.4	67.2	
HAD85	61.8	65.7	68.7	70.3		

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	30.2	31.5	34.0	33.5	
	CCSM85	30.2	33.1	34.1	36.4	
	GFDL45	30.2	33.5	34.5	37.0	
	GFDL85	30.2	32.0	35.5	37.5	
	HAD45	30.2	31.2	32.4	31.9	
Growing Season (May—Sep)	CCSM45	13.7	13.8	14.7	14.3	
	CCSM85	13.7	14.0	13.6	14.4	
	GFDL45	13.7	15.3	14.5	15.3	
	GFDL85	13.7	14.2	14.5	14.9	
	HAD45	13.7	14.1	12.7	13.0	
HAD85	13.7	13.5	11.2	11.7		

**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-DGP30 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
eastern redcedar	Juniperus virginiana	WDH	Medium	39.6	791.9	13.0	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	1
white oak	Quercus alba	WDH	Medium	47.8	736.3	10.5	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
red maple	Acer rubrum	WDH	High	42.1	584.3	8.8	Lg. dec.	Sm. dec.	High	Abundant	Good	Good			1	3
yellow-poplar	Liriodendron tulipifera	WDH	High	44.1	535.2	7.4	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	4
black walnut	Juglans nigra	WDH	Low	54.7	502.5	6.8	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	5
black locust	Robinia pseudoacacia	NDH	Low	46.6	493.1	8.6	Sm. dec.	No change	Medium	Common	Poor	Fair			1	6
white ash	Fraxinus americana	WDL	Medium	51.7	480.7	6.6	No change	No change	Low	Common	Poor	Poor			0	7
sugar maple	Acer saccharum	WDH	High	50.6	480.1	5.6	No change	No change	High	Common	Good	Good			1	8
chestnut oak	Quercus prinus	NDH	High	30.4	421.7	9.2	Lg. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	9
green ash	Fraxinus pennsylvanica	WSH	Low	45.1	323.6	5.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	10
Virginia pine	Pinus virginiana	NDH	High	23.1	291.1	7.5	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	11
hackberry	Celtis occidentalis	WDH	Medium	39.2	289.4	6.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	12
scarlet oak	Quercus coccinea	WDL	Medium	35.3	275.4	4.7	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	13
American elm	Ulmus americana	WDH	Medium	40.5	229.9	5.1	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	14
pignut hickory	Carya glabra	WDL	Medium	46.1	222.0	2.8	No change	Sm. dec.	Medium	Common	Fair	Poor			1	15
northern red oak	Quercus rubra	WDH	Medium	33.9	210.4	3.6	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	16
chinkapin oak	Quercus muehlenbergii	NSL	Medium	30.4	208.6	5.1	No change	No change	Medium	Common	Fair	Fair			1	17
mockernut hickory	Carya alba	WDL	Medium	43.7	206.8	3.8	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	18
American beech	Fagus grandifolia	WDH	High	28.3	189.2	3.3	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	19
slippery elm	Ulmus rubra	WSL	Low	46.5	183.0	2.9	No change	Sm. inc.	Medium	Common	Fair	Good			1	20
black oak	Quercus velutina	WDH	High	34.2	182.4	3.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	21
black cherry	Prunus serotina	WDL	Medium	44.6	176.7	3.4	No change	No change	Low	Common	Poor	Poor			0	22
shagbark hickory	Carya ovata	WSL	Medium	32.6	165.4	2.6	Sm. inc.	No change	Medium	Common	Good	Fair			1	23
bitternut hickory	Carya cordiformis	WSL	Low	37	143.9	3.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	24
blackgum	Nyssa sylvatica	WDL	Medium	29.5	143.5	2.7	No change	Sm. inc.	High	Common	Good	Very Good			1	25
eastern redbud	Cercis canadensis	NSL	Low	38.6	135.2	2.5	Sm. dec.	No change	Medium	Common	Poor	Fair			1	26
boxelder	Acer negundo	WSH	Low	24.5	130.5	4.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	27
sourwood	Oxydendrum arboreum	NDL	High	31.1	122.9	2.4	Lg. dec.	Lg. dec.	High	Common	Fair	Fair			1	28
sassafras	Sassafras albidum	WSL	Low	32.9	104.9	1.8	No change	No change	Medium	Common	Fair	Fair			1	29
Osage-orange	Maclura pomifera	NDH	Medium	15	100.9	4.9	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	30
eastern hemlock	Tsuga canadensis	NSH	High	9.3	88.8	4.3	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	31
pitch pine	Pinus rigida	NSH	High	11.1	87.5	2.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	32
eastern white pine	Pinus strobus	WDH	High	10.5	85.3	5.0	Very Lg. dec.	Very Lg. dec.	Low	Common	Lost	Lost			0	33
shellbark hickory	Carya laciniosa	NSL	Low	22.6	83.9	3.2	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	34
Ohio buckeye	Aesculus glabra	NSL	Low	19.9	81.5	2.6	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	35
honeylocust	Gleditsia triacanthos	NSH	Low	21.8	81.5	2.8	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	36
post oak	Quercus stellata	WDH	High	7.6	64.1	6.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	37
sycamore	Platanus occidentalis	NSL	Low	15.7	62.2	3.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	38
shortleaf pine	Pinus echinata	WDH	High	10.6	53.6	3.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	39
Shumard oak	Quercus shumardii	NSL	Low	10.9	49.0	3.6	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	40
yellow buckeye	Aesculus flava	NSL	Low	3.6	44.6	3.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	41
sweetgum	Liquidambar styraciflua	WDH	High	8.5	37.9	3.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	42
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	13.5	37.7	1.7	No change	Lg. inc.	Medium	Rare	Poor	Good			1	43
sweet birch	Betula lenta	NDH	High	9.5	36.8	2.5	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	44
American basswood	Tilia americana	WSL	Medium	10.8	33.4	1.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	45
flowering dogwood	Cornus florida	WDL	Medium	21.2	32.7	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	46
river birch	Betula nigra	NSL	Low	3.4	27.5	5.6	Sm. dec.	Sm. dec.	Medium	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
pin oak	Quercus palustris	NSH	Low	2.1	27.2	13.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	48
shingle oak	Quercus imbricaria	NDH	Medium	8.8	21.7	1.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	49
pawpaw	Asimina triloba	NSL	Low	10.7	17.9	1.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	50
silver maple	Acer saccharinum	NSH	Low	3.1	15.3	4.9	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	2	51
serviceberry	Amelanchier spp.	NSL	Low	11.1	15.3	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	52
cucumbertree	Magnolia acuminata	NSL	Low	5.1	13.0	0.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	53
butternut	Juglans cinerea	NSLX	FIA	3.1	12.0	1.6	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	54
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	3.2	6.4	0.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	55
black maple	Acer nigrum	NSH	Low	1	6.3	6.0	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	56
eastern cottonwood	Populus deltoides	NSH	Low	2	6.1	2.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	57
blue ash	Fraxinus quadrangulata	NSL	Low	3.8	5.8	1.3	No change	No change	Low	Rare	Very Poor	Very Poor			2	58
red mulberry	Morus rubra	NSL	Low	3	5.1	0.9	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	59
common persimmon	Diospyros virginiana	NSL	Low	2.3	5.0	1.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	60
southern red oak	Quercus falcata	WDL	Medium	2.3	4.2	1.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	61
paulownia	Paulownia tomentosa	NSL	FIA	2.1	3.1	1.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	62
ailanthus	Ailanthus altissima	NSL	FIA	1.4	1.7	0.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	63
American chestnut	Castanea dentata	NSLX	FIA	2.2	1.4	0.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	64
bigtooth aspen	Populus grandidentata	NSL	Medium	1	1.0	0.9	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	65
yellow birch	Betula alleghaniensis	NDL	High	0.2	0.8	0.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	66
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	0.8	0.8	0.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	67
blackjack oak	Quercus marilandica	NSL	Medium	0.3	0.8	0.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	68
black willow	Salix nigra	NSH	Low	1	0.8	0.8	No change	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +	2	69
white mulberry	Morus alba	NSL	FIA	0.5	0.7	0.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	70
winged elm	Ulmus alata	WDL	Medium	0.9	0.4	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	71
American holly	Ilex opaca	NSL	Medium	1	0.2	0.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	72
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	73
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	74
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	75
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	76
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	77
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate ++	3	78
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	79
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	80
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	81
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	82
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	83
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	84
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	85
swamp chestnut oak	Quercus michauxii	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	86
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	87
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	88
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	89
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	90