

	sq. km	sq. mi	FIA Plots
Area of Region	9,600.0	3,706.6	375

**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	24	25	Increase	24	33	Very Good	10	10	Likely	4	4
Hickory	5			Medium	31	56	No Change	26	21	Good	16	21	Infill	26	32
Maple	7	Abundant	5	Low	40	17	Decrease	17	13	Fair	14	17	Migrate	2	9
Oak	12	Common	26	FIA	7		New	17	20	Poor	19	15			
Pine	6	Rare	43				Unknown	18	15	Very Poor	7	4			
Other	42	Absent	24							FIA Only	4	4			
	<b>74</b>		<b>98</b>		<b>102</b>	<b>98</b>		<b>102</b>	<b>102</b>	Unknown	11	8			
											<b>81</b>	<b>79</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	54.9	56.8	59.0	59.1	
	CCSM85	54.9	57.2	59.6	62.5	
	GFDL45	54.9	57.6	60.1	60.9	
	GFDL85	54.9	57.9	61.2	64.9	
	HAD45	54.9	57.2	60.3	61.5	
	HAD85	54.9	57.5	61.7	65.7	
Growing Season (May—Sep)	CCSM45	68.7	70.5	72.5	73.0	
	CCSM85	68.7	70.8	73.4	77.2	
	GFDL45	68.7	71.8	74.7	76.0	
	GFDL85	68.7	72.3	76.2	80.3	
	HAD45	68.7	71.8	74.6	76.1	
	HAD85	68.7	71.8	77.7	81.6	
Coldest Month (Average)	CCSM45	34.2	36.3	37.3	37.4	
	CCSM85	34.2	36.8	37.7	38.9	
	GFDL45	34.2	37.4	37.5	38.0	
	GFDL85	34.2	36.0	37.1	37.8	
	HAD45	34.2	34.1	36.1	36.5	
	HAD85	34.2	35.2	36.5	38.2	
Warmest Month (Average)	CCSM45	73.3	75.4	76.5	76.6	
	CCSM85	73.3	75.6	77.2	78.9	
	GFDL45	73.3	76.8	78.2	79.1	
	GFDL85	73.3	77.4	79.8	82.0	
	HAD45	73.3	77.2	79.2	80.0	
	HAD85	73.3	77.9	81.9	84.0	

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	51.6	54.4	57.8	57.4	
	CCSM85	51.6	56.0	57.6	62.6	
	GFDL45	51.6	57.5	59.3	63.2	
	GFDL85	51.6	56.5	60.8	61.8	
	HAD45	51.6	51.0	54.7	55.7	
	HAD85	51.6	55.1	50.7	53.5	
Growing Season (May—Sep)	CCSM45	23.0	24.7	26.2	26.3	
	CCSM85	23.0	25.2	24.7	27.1	
	GFDL45	23.0	26.7	27.2	28.6	
	GFDL85	23.0	25.4	28.0	28.5	
	HAD45	23.0	22.9	23.0	23.6	
	HAD85	23.0	24.9	20.9	22.2	

**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
chestnut oak	Quercus prinus	NDH	High	84.4	1132.2	13.4	No change	No change	High	Abundant	Very Good	Very Good			1	1
red maple	Acer rubrum	WDH	High	93.7	1050.9	11.2	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	2
yellow-poplar	Liriodendron tulipifera	WDH	High	94.8	963.4	10.2	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	3
Virginia pine	Pinus virginiana	NDH	High	62.5	677.2	10.8	No change	No change	Medium	Abundant	Good	Good			1	4
eastern white pine	Pinus strobus	WDH	High	71.9	630.4	8.8	No change	No change	Low	Abundant	Fair	Fair			0	5
eastern hemlock	Tsuga canadensis	NSH	High	71.9	444.3	6.2	No change	No change	Low	Common	Poor	Poor			0	6
sourwood	Oxydendrum arboreum	NDL	High	87.5	429.9	4.9	No change	Sm. dec.	High	Common	Good	Fair			1	7
scarlet oak	Quercus coccinea	WDL	Medium	74	387.4	5.2	No change	Sm. dec.	Medium	Common	Fair	Poor			1	8
northern red oak	Quercus rubra	WDH	Medium	76	356.1	4.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	9
white oak	Quercus alba	WDH	Medium	71.9	336.8	4.7	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	10
sweet birch	Betula lenta	NDH	High	61.5	300.0	4.9	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	11
blackgum	Nyssa sylvatica	WDL	Medium	82.3	223.0	2.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	12
black locust	Robinia pseudoacacia	NDH	Low	67.7	214.0	3.2	No change	No change	Medium	Common	Fair	Fair			1	13
black cherry	Prunus serotina	WDL	Medium	50	183.7	3.7	No change	Sm. inc.	Low	Common	Poor	Fair			1	14
pignut hickory	Carya glabra	WDL	Medium	64.6	166.5	2.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	15
loblolly pine	Pinus taeda	WDH	High	19.8	166.4	8.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	16
sugar maple	Acer saccharum	WDH	High	43.8	165.7	3.8	No change	Sm. dec.	High	Common	Good	Fair	Infill ++	Infill +	1	17
shortleaf pine	Pinus echinata	WDH	High	39.6	156.9	4.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	18
American beech	Fagus grandifolia	WDH	High	38.5	153.0	4.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	19
black oak	Quercus velutina	WDH	High	58.3	138.6	2.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	20
mockernut hickory	Carya alba	WDL	Medium	38.5	120.9	3.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	21
eastern redcedar	Juniperus virginiana	WDH	Medium	17.7	120.2	6.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	22
pitch pine	Pinus rigida	NSH	High	35.4	115.0	3.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	23
flowering dogwood	Cornus florida	WDL	Medium	59.4	109.7	1.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	24
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	37.5	104.0	2.8	No change	No change	Low	Common	Poor	Poor			0	25
white ash	Fraxinus americana	WDL	Medium	26	82.2	3.2	Sm. inc.	Lg. inc.	Low	Common	Fair	Good			1	26
yellow buckeye	Aesculus flava	NSL	Low	18.7	79.5	4.2	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	27
sassafras	Sassafras albidum	WSL	Low	43.8	65.0	1.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	28
yellow birch	Betula alleghaniensis	NDL	High	19.8	62.6	3.2	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	29
sweetgum	Liquidambar styraciflua	WDH	High	14.6	57.3	3.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	30
shagbark hickory	Carya ovata	WSL	Medium	19.8	54.6	2.8	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	31
southern red oak	Quercus falcata	WDL	Medium	19.8	49.1	2.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	32
American basswood	Tilia americana	WSL	Medium	15.6	48.3	3.1	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	33
American elm	Ulmus americana	WDH	Medium	12.5	45.0	3.6	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +	Infill ++	1	34
cucumbertree	Magnolia acuminata	NSL	Low	24	43.0	1.8	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	35
serviceberry	Amelanchier spp.	NSL	Low	41.7	42.7	1.0	No change	No change	Medium	Rare	Poor	Poor			1	36
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	19.8	42.7	2.2	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	37
hackberry	Celtis occidentalis	WDH	Medium	6.2	38.6	6.2	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	38
Table Mountain pine	Pinus pungens	NSL	Low	10.4	37.6	3.6	Lg. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	1	39
black walnut	Juglans nigra	WDH	Low	11.5	34.4	3.0	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	40
striped maple	Acer pensylvanicum	NSL	Medium	29.2	33.9	1.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	41
common persimmon	Diospyros virginiana	NSL	Low	8.3	29.4	3.5	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	1	42
post oak	Quercus stellata	WDH	High	15.6	28.0	1.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	43
winged elm	Ulmus alata	WDL	Medium	11.5	21.9	1.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	44
bitternut hickory	Carya cordiformis	WSL	Low	11.5	21.1	1.8	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	45
eastern redbud	Cercis canadensis	NSL	Low	12.5	21.0	1.7	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	46
chinkapin oak	Quercus muehlenbergii	NSL	Medium	6.2	20.1	3.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	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
green ash	Fraxinus pennsylvanica	WSH	Low	9.4	18.0	1.9	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	48
boxelder	Acer negundo	WSH	Low	4.2	14.5	3.5	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	1	49
paulownia	Paulownia tomentosa	NSL	FIA	2.1	13.3	6.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	50
pin cherry	Prunus pensylvanica	NSL	Low	3.1	12.6	4.0	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	51
sycamore	Platanus occidentalis	NSL	Low	2.1	12.0	5.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	52
American holly	Ilex opaca	NSL	Medium	13.5	11.1	0.8	Lg. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	53
American hornbeam; muscley	Carpinus caroliniana	WSL	Low	11.5	10.5	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	54
red mulberry	Morus rubra	NSL	Low	5.2	9.3	1.8	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	55
silverbell	Halesia spp.	NSL	Low	5.2	7.5	1.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	56
ailanthus	Ailanthus altissima	NSL	FIA	4.2	5.4	1.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	57
American chestnut	Castanea dentata	NSLX	FIA	11.5	5.3	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	58
slippery elm	Ulmus rubra	WSL	Low	5.2	4.6	0.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	59
bigleaf magnolia	Magnolia macrophylla	NSL	Low	4.2	4.2	1.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	60
blackjack oak	Quercus marilandica	NSL	Medium	2.1	3.9	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	61
honeylocust	Gleditsia triacanthos	NSH	Low	1	3.5	3.3	No change	Sm. inc.	High	Rare	Fair	Good			2	62
white mulberry	Morus alba	NSL	FIA	2.1	2.1	1.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	63
silver maple	Acer saccharinum	NSH	Low	2.1	1.4	0.7	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	64
willow oak	Quercus phellos	NSL	Low	1	1.3	1.3	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +	2	65
sand hickory	Carya pallida	NSL	FIA	1	0.9	0.8	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	66
mountain maple	Acer spicatum	NSL	Low	2.1	0.8	0.4	No change	No change	High	Rare	Fair	Fair			0	67
black willow	Salix nigra	NSH	Low	1	0.8	0.8	Very Lg. dec.	Lg. inc.	Low	Rare	Lost	Fair		Infill +	2	68
southern magnolia	Magnolia grandiflora	NSL	Low	1	0.7	0.7	No change	Lg. inc.	Medium	Rare	Poor	Good			2	69
Shumard oak	Quercus shumardii	NSL	Low	2.1	0.7	0.3	No change	Lg. inc.	High	Rare	Fair	Good			2	70
wild plum	Prunus americana	NSLX	FIA	1	0.6	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	71
butternut	Juglans cinerea	NSLX	FIA	1	0.4	0.4	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	72
black maple	Acer nigrum	NSH	Low	1	0.4	0.4	Lg. dec.	Sm. dec.	High	Rare	Poor	Poor			0	73
overcup oak	Quercus lyrata	NSL	Medium	1	0.2	0.1	Lg. dec.	No change	Low	Rare	Very Poor	Very Poor			0	74
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	75
red spruce	Picea rubens	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	76
slash pine	Pinus elliotii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	77
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	78
northern white-cedar	Thuja occidentalis	WSH	High	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	79
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	80
Ohio buckeye	Aesculus glabra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	81
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	82
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	83
gray birch	Betula populifolia	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	84
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	85
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	86
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	87
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	88
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	89
blue ash	Fraxinus quadrangulata	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	90
sweetbay	Magnolia virginiana	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	91
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	92
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	93
bigtooth aspen	Populus grandidentata	NSL	Medium	0	0	0	Unknown	Unknown	Medium	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
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	95
shingle oak	Quercus imbricaria	NDH	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	96
laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	97
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	98
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	99
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	100
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	101
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	102