

	sq. km	sq. mi	FIA Plots
Area of Region	12,878	4,972.3	317

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	24	21	Increase	17	18	Very Good	8	8	Likely	1	1
Hickory	5			Medium	34	49	No Change	14	12	Good	9	10	Infill	9	8
Maple	4	Abundant	9	Low	27	17	Decrease	22	23	Fair	9	11	Migrate	4	12
Oak	9	Common	13	FIA	7		New	26	28	Poor	12	8			
Pine	4	Rare	38				Unknown	13	11	Very Poor	12	13			
Other	35	Absent	30							FIA Only	3	3			
	<b>60</b>		<b>90</b>		<b>92</b>	<b>87</b>		<b>92</b>	<b>92</b>	Unknown	6	4			
											<b>59</b>	<b>57</b>			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	49.4	51.2	53.3	53.6	
Average	CCSM85	49.4	51.7	54.1	57.0	
	GFDL45	49.4	52.5	55.0	56.1	
	GFDL85	49.4	52.5	56.2	60.3	
	HAD45	49.4	51.8	55.2	56.8	
	HAD85	49.4	51.7	56.0	60.7	
Growing Season	CCSM45	65.7	67.7	69.4	69.8	
	CCSM85	65.7	67.9	70.3	73.8	
May—Sep	GFDL45	65.7	69.0	71.9	73.1	
	GFDL85	65.7	69.1	73.2	77.5	
	HAD45	65.7	68.2	71.3	73.4	
	HAD85	65.7	67.4	72.3	77.2	
Coldest Month	CCSM45	24.7	26.2	27.8	28.4	
Average	CCSM85	24.7	27.1	28.2	30.2	
	GFDL45	24.7	28.2	29.5	30.4	
	GFDL85	24.7	28.1	29.8	31.9	
	HAD45	24.7	26.1	28.7	29.0	
	HAD85	24.7	27.2	29.3	32.1	
Warmest Month	CCSM45	72.0	74.2	75.2	75.2	
Average	CCSM85	72.0	74.5	76.0	77.7	
	GFDL45	72.0	74.8	76.5	77.6	
	GFDL85	72.0	75.7	78.1	80.6	
	HAD45	72.0	74.6	76.1	77.2	
	HAD85	72.0	73.8	76.2	79.5	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	50.5	50.6	50.1	55.5	
Total	CCSM85	50.5	51.6	54.2	57.5	
	GFDL45	50.5	55.1	58.6	56.4	
	GFDL85	50.5	53.8	57.1	60.3	
	HAD45	50.5	51.3	54.7	54.4	
	HAD85	50.5	54.8	54.9	57.2	
Growing Season	CCSM45	21.2	23.6	22.3	24.2	
	CCSM85	21.2	22.4	23.9	23.6	
May—Sep	GFDL45	21.2	21.4	21.3	22.1	
	GFDL85	21.2	21.7	21.5	22.3	
	HAD45	21.2	21.5	21.2	21.2	
	HAD85	21.2	21.8	21.4	22.1	

**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
red maple	Acer rubrum	WDH	High	94.6	2311.6	19.8	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
sweet birch	Betula lenta	NDH	High	80.1	971.0	9.7	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	2
northern red oak	Quercus rubra	WDH	Medium	77.9	946.0	9.2	No change	Sm. dec.	High	Abundant	Very Good	Good			1	3
black oak	Quercus velutina	WDH	High	65.9	608.0	8.1	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	4
white oak	Quercus alba	WDH	Medium	62.3	549.1	7.4	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	5
white ash	Fraxinus americana	WDL	Medium	57.4	536.2	6.8	No change	No change	Low	Abundant	Fair	Fair			0	6
sugar maple	Acer saccharum	WDH	High	52.3	510.8	7.2	Sm. inc.	No change	High	Abundant	Very Good	Very Good			1	7
eastern hemlock	Tsuga canadensis	NSH	High	37.1	506.3	9.8	Sm. dec.	Lg. dec.	Low	Abundant	Fair	Poor			0	8
eastern white pine	Pinus strobus	WDH	High	40.9	501.4	8.9	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	9
scarlet oak	Quercus coccinea	WDL	Medium	44.5	352.1	5.7	Sm. inc.	No change	Medium	Common	Good	Fair			1	10
black cherry	Prunus serotina	WDL	Medium	46.3	276.5	4.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	11
American beech	Fagus grandifolia	WDH	High	51.9	256.3	4.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	12
eastern redcedar	Juniperus virginiana	WDH	Medium	23.3	236.5	9.7	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	13
yellow birch	Betula alleghaniensis	NDL	High	47.6	215.6	3.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
pignut hickory	Carya glabra	WDL	Medium	42.9	182.8	3.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	15
chestnut oak	Quercus prinus	NDH	High	19.9	136.8	4.4	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	16
American elm	Ulmus americana	WDH	Medium	23.9	124.4	3.8	No change	No change	Medium	Common	Fair	Fair			1	17
shagbark hickory	Carya ovata	WSL	Medium	31.8	107.3	2.7	No change	No change	Medium	Common	Fair	Fair			1	18
yellow-poplar	Liriodendron tulipifera	WDH	High	18.4	86.3	4.6	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	19
black locust	Robinia pseudoacacia	NDH	Low	3.6	72.1	10.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	20
paper birch	Betula papyrifera	WDH	High	15.4	64.8	3.0	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	21
mockernut hickory	Carya alba	WDL	Medium	17.6	62.0	2.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
sassafras	Sassafras albidum	WSL	Low	24.3	56.6	2.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	23
bigtooth aspen	Populus grandidentata	NSL	Medium	18	49.3	2.3	No change	Lg. dec.	Medium	Rare	Poor	Very Poor			1	24
American basswood	Tilia americana	WSL	Medium	5.9	48.4	2.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	25
blackgum	Nyssa sylvatica	WDL	Medium	16.5	45.0	2.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	26
silver maple	Acer saccharinum	NSH	Low	4.4	41.4	15.6	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	27
green ash	Fraxinus pennsylvanica	WSH	Low	2.7	35.1	2.2	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	28
Norway maple	Acer platanoides	NSL	FIA	8.5	32.4	5.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	29
bitternut hickory	Carya cordiformis	WSL	Low	8.7	31.4	3.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	30
swamp white oak	Quercus bicolor	NSL	Low	8.5	30.7	5.0	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		1	31
pitch pine	Pinus rigida	NSH	High	4.5	29.9	2.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	32
sycamore	Platanus occidentalis	NSL	Low	1.6	28.1	18.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	33
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	16.1	24.0	1.3	No change	Lg. inc.	Medium	Rare	Poor	Good			1	34
quaking aspen	Populus tremuloides	WDH	High	7.6	23.3	2.1	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	35
Norway spruce	Picea abies	NSH	FIA	3.9	22.9	5.9	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	36
gray birch	Betula populifolia	NSL	Low	11.3	19.2	1.3	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	37
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	14.4	18.9	1.1	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	38
eastern cottonwood	Populus deltoides	NSH	Low	3.1	18.7	6.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	39
serviceberry	Amelanchier spp.	NSL	Low	6.6	13.8	1.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	40
red pine	Pinus resinosa	NSH	Medium	4.4	11.0	5.1	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	41
butternut	Juglans cinerea	NSLX	FIA	0.8	10.2	13.1	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	42
American chestnut	Castanea dentata	NSLX	FIA	9.6	8.7	1.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	43
flowering dogwood	Cornus florida	WDL	Medium	7.1	5.9	0.6	No change	No change	Medium	Rare	Poor	Poor		Infill +	1	44
black ash	Fraxinus nigra	WSH	Medium	1.6	4.8	3.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	45
Scots pine	Pinus sylvestris	NSH	FIA	1.6	4.2	2.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	46
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0.2	3.7	1.2	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	47

Climate Change Atlas Tree Species

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 cherry	Prunus pensylvanica	NSL	Low	1.6	3.2	2.1	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0	48		
black walnut	Juglans nigra	WDH	Low	0.8	2.6	3.4	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +				2	49	
slippery elm	Ulmus rubra	WDL	Low	2.3	1.9	0.8	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor					2	50	
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	0.1	1.7	0.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only						0	51
red spruce	Picea rubens	NDH	High	2.8	1.7	1.3	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor						0	52
sweetgum	Liquidambar styraciflua	WDH	High	0.2	1.3	0.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good						2	53
northern pin oak	Quercus ellipsoidalis	NSH	Medium	2.4	0.7	2.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor						0	54
shellbark hickory	Carya laciniosa	NSL	Low	0.2	0.5	0.2	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost						0	55
ailanthus	Ailanthus altissima	NSL	FIA	3.2	0.5	0.5	Unknown	Unknown	NA	Rare	NNIS	NNIS						0	56
American mountain-ash	Sorbus americana	NSL	Low	0.3	0.4	0.2	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor						0	57
pin oak	Quercus palustris	NSH	Low	2.4	0.3	1.0	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +					2	58
tamarack (native)	Larix laricina	NSH	High	2	0.2	0.7	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor						0	59
balsam fir	Abies balsamea	NDH	High	0.3	0.2	0.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor						0	60
white spruce	Picea glauca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown						0	61
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++				3	62
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						0	63
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++				3	64
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +				3	65
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						3	66
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat						3	67
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++				3	68
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown						2	69
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat						0	70
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						0	71
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						0	72
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						0	73
American holly	Ilex opaca	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +				3	74
sweetbay	Magnolia virginiana	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +				3	75
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown						0	76
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	New Habitat	NA	Absent	Unknown	New Habitat						0	77
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat						3	78
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat						3	79
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +				3	80
redbay	Persea borbonia	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat						3	81
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +				3	82
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +				3	83
laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						3	84
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat						3	85
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown						0	86
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +				3	87
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +				3	88
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						3	89
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +				3	90
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++				3	91
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat						3	92