

sq. km    sq. mi    FIA Plots  
Area of Region    20,972    8,097.3    548

**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	25	23	Increase	19	24	Very Good	4	4	Likely	0	0
Hickory	4			Medium	27	50	No Change	11	11	Good	14	19	Infill	11	15
Maple	6	Abundant	4	Low	32	15	Decrease	28	23	Fair	9	9	Migrate	4	9
Oak	11	Common	18	FIA	8		New	20	21	Poor	16	13			
Pine	3	Rare	44				Unknown	14	13	Very Poor	13	10			
Other	39	Absent	23							FIA Only	5	5			
	<b>66</b>		<b>89</b>		<b>92</b>	<b>88</b>		<b>92</b>	<b>92</b>	Unknown	6	5			
											<b>67</b>	<b>65</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	48.0	49.8	51.9	52.2	
	CCSM85	48.0	50.3	52.7	55.7	
	GFDL45	48.0	51.1	53.6	54.8	
	GFDL85	48.0	51.1	54.9	59.2	
	HAD45	48.0	50.7	53.9	55.6	
Growing Season (May—Sep)	CCSM45	64.4	66.5	68.1	68.5	
	CCSM85	64.4	66.7	69.0	72.4	
	GFDL45	64.4	67.7	70.6	71.9	
	GFDL85	64.4	67.7	71.9	76.4	
	HAD45	64.4	67.1	70.0	72.2	
Coldest Month Average	CCSM45	23.0	24.5	26.2	26.8	
	CCSM85	23.0	25.6	26.6	28.7	
	GFDL45	23.0	26.3	27.9	28.9	
	GFDL85	23.0	26.7	28.4	30.7	
	HAD45	23.0	25.1	27.6	27.9	
Warmest Month Average	CCSM45	70.8	73.1	74.0	74.1	
	CCSM85	70.8	73.3	74.8	76.5	
	GFDL45	70.8	73.5	75.1	76.3	
	GFDL85	70.8	74.3	76.8	79.3	
	HAD45	70.8	73.6	75.1	76.3	
HAD85	70.8	72.9	75.5	79.0		

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	48.8	48.1	46.7	52.6	
	CCSM85	48.8	48.6	50.7	54.5	
	GFDL45	48.8	52.6	54.9	53.4	
	GFDL85	48.8	51.0	53.8	56.4	
	HAD45	48.8	50.1	53.6	52.6	
Growing Season (May—Sep)	CCSM45	20.1	21.2	19.6	21.2	
	CCSM85	20.1	20.1	21.3	21.3	
	GFDL45	20.1	19.7	19.0	19.4	
	GFDL85	20.1	20.0	19.0	19.0	
	HAD45	20.1	21.1	21.0	20.7	
HAD85	20.1	20.3	20.3	20.9		

**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
red maple	Acer rubrum	WDH	High	90.4	2310.7	20.6	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
eastern white pine	Pinus strobus	WDH	High	79	1863.5	19.9	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	2
northern red oak	Quercus rubra	WDH	Medium	65.6	768.7	9.4	No change	No change	High	Abundant	Very Good	Very Good			1	3
eastern hemlock	Tsuga canadensis	NSH	High	50.5	715.2	12.1	Sm. dec.	Lg. dec.	Low	Abundant	Fair	Poor			0	4
sugar maple	Acer saccharum	WDH	High	39	406.3	7.4	No change	No change	High	Common	Good	Good			1	5
black oak	Quercus velutina	WDH	High	53.6	404.3	6.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	6
white oak	Quercus alba	WDH	Medium	53.3	320.7	4.5	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	7
white ash	Fraxinus americana	WDL	Medium	48.5	316.9	4.9	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	8
sweet birch	Betula lenta	NDH	High	50.8	308.6	4.6	No change	No change	Low	Common	Poor	Poor			0	9
scarlet oak	Quercus coccinea	WDL	Medium	37.2	281.3	6.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	10
American beech	Fagus grandifolia	WDH	High	38.6	265.7	5.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	11
black cherry	Prunus serotina	WDL	Medium	49.7	259.2	4.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	12
yellow birch	Betula alleghaniensis	NDL	High	41.7	258.9	4.7	No change	No change	Medium	Common	Fair	Fair			1	13
pitch pine	Pinus rigida	NSH	High	15.4	217.3	12.2	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	14
paper birch	Betula papyrifera	WDH	High	38.4	128.6	2.6	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	15
American elm	Ulmus americana	WDL	Medium	21.4	96.4	3.4	Sm. dec.	No change	Medium	Common	Poor	Fair			1	16
pignut hickory	Carya glabra	WDL	Medium	18.4	92.5	4.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	17
quaking aspen	Populus tremuloides	WDH	High	14.8	76.5	4.0	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	18
bigtooth aspen	Populus grandidentata	NSL	Medium	12.5	72.2	4.8	No change	No change	Medium	Common	Fair	Fair			1	19
blackgum	Nyssa sylvatica	WDL	Medium	15.6	63.3	2.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	20
gray birch	Betula populifolia	NSL	Low	14.3	54.6	2.9	No change	No change	Medium	Common	Fair	Fair			1	21
black walnut	Juglans nigra	WDH	Low	1.2	53.9	36.8	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	22
red spruce	Picea rubens	NDH	High	7.7	53.1	4.8	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	23
chestnut oak	Quercus prinus	NDH	High	5.4	43.5	4.7	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	24
shagbark hickory	Carya ovata	WSL	Medium	13.2	36.7	2.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	25
green ash	Fraxinus pennsylvanica	WSH	Low	6.4	28.6	3.4	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	26
swamp white oak	Quercus bicolor	NSL	Low	4.7	28.5	6.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	27
slippery elm	Ulmus rubra	WSL	Low	1.9	26.4	13.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	28
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	15.2	24.5	1.4	Sm. dec.	Lg. inc.	High	Rare	Poor	Good			1	29
silver maple	Acer saccharinum	NSH	Low	0.8	23.2	6.8	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	30
eastern redcedar	Juniperus virginiana	WDH	Medium	8.7	21.6	1.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	31
Norway maple	Acer platanoides	NSL	FIA	5.3	20.2	4.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	32
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	10.7	18.5	1.4	No change	Lg. inc.	Medium	Rare	Poor	Good			1	33
balsam fir	Abies balsamea	NDH	High	4.6	13.9	2.5	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			2	34
boxelder	Acer negundo	WSH	Low	1.2	13.3	8.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	35
sassafras	Sassafras albidum	WSL	Low	6.2	13.2	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	36
American basswood	Tilia americana	WSL	Medium	6	11.6	1.4	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	37
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	3.2	10.6	3.1	No change	No change	Low	Rare	Very Poor	Very Poor			2	38
serviceberry	Amelanchier spp.	NSL	Low	6.6	9.6	1.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	39
black willow	Salix nigra	NSH	Low	2.1	9.4	8.2	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	40
black locust	Robinia pseudoacacia	NDH	Low	3.3	9.2	2.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	41
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	2.8	8.8	2.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	42
American chestnut	Castanea dentata	NSLX	FIA	4.5	8.0	0.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	43
black ash	Fraxinus nigra	WSH	Medium	1.9	7.6	4.0	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost			2	44
bitternut hickory	Carya cordiformis	WSL	Low	1.4	7.2	5.0	No change	No change	High	Rare	Fair	Fair		Infill +	2	45
Norway spruce	Picea abies	NSH	FIA	2.1	6.1	2.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	46
mockernut hickory	Carya alba	WDL	Medium	2.1	5.9	2.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	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
pin cherry	Prunus pensylvanica	NSL	Low	2.8	4.9	0.8	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost				0 48
red pine	Pinus resinosa	NSH	Medium	2.5	4.8	2.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0 49
honeylocust	Gleditsia triacanthos	NSH	Low	0.2	4.2	3.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0 50
eastern cottonwood	Populus deltoides	NSH	Low	1.9	4.1	2.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 51
tamarack (native)	Larix laricina	NSH	High	2.1	4.0	1.4	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0 52
yellow-poplar	Liriodendron tulipifera	WDH	High	0.5	4.0	8.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2 53
post oak	Quercus stellata	WDH	High	1.2	3.8	4.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2 54
bur oak	Quercus macrocarpa	NDH	Medium	0.5	3.2	6.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0 55
ailanthus	Ailanthus altissima	NSL	FIA	0.5	2.8	6.0	Unknown	Unknown	NA	Rare	NNIS	NNIS				0 56
American holly	Ilex opaca	NSL	Medium	1.4	1.6	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 57
swamp chestnut oak	Quercus michauxii	NSL	Low	0.5	1.0	2.1	Sm. dec.	Lg. inc.	Medium	Rare	Very Poor	Good				2 58
pin oak	Quercus palustris	NSH	Low	0.5	0.7	1.4	Very Lg. dec.	Sm. inc.	Low	Rare	Lost	Poor		Infill +		2 59
chokecherry	Prunus virginiana	NSLX	FIA	0.2	0.7	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0 60
American mountain-ash	Sorbus americana	NSL	Low	0.5	0.5	1.0	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0 61
mountain maple	Acer spicatum	NSL	Low	0.5	0.4	0.8	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor				0 62
black spruce	Picea mariana	NSH	High	0.3	0.4	0.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0 63
northern catalpa	Catalpa speciosa	NSHX	FIA	0.5	0.3	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0 64
butternut	Juglans cinerea	NSLX	FIA	1.6	0.3	2.0	Unknown	Unknown	Low	Rare	FIA Only	FIA Only				0 65
flowering dogwood	Cornus florida	WDL	Medium	0.5	0.2	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 66
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++		3 67
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 68
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++		3 69
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3 70
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 71
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3 72
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				0 73
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 74
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 75
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 76
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +		3 77
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3 78
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown				0 79
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	NA	Absent	Unknown	Unknown				0 80
red mulberry	Morus rubra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 81
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3 82
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0 83
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 84
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 85
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3 86
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				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
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat				0 91
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 92